



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

JAMES TREADAWAY, DIRECTOR

**2023
HICKS 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**

HICKS CANYON RETARDING BASIN (F27B01)

STATION 22+50 TO 26+00

AS-BUILT PLANS: F27B01-701 STA 20+19 TO 24+76.20

NOTE: DUE TO THE AS-BUILT PLAN DATA NOT REFLECTING ACTUAL AS-BUILT CONDITIONS. THIS SCOUR STUDY COMPARES THE 2000 AERIAL SURVEY FROM RATTRAY & ASSOC. MERGED WITH THE 2003 O.C. GEOMATICS SURVEY WITH THE PRESENT 2023 GROUND SURVEY.

BASIS OF SPILLWAY CREST ELEVATION WAS DERIVED FROM THE 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:	Kevin Martinez, Surveyor III

COUNTY of ORANGE
OC PUBLIC WORKS DEPARTMENT
OC SURVEY SERVICE AREA
FIELD UNIT

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

HICKS CANYON RETARDING BASIN (F27B01), STATION 22+50 to 26+00

ALIGNMENT: Hicks Canyon Basin Control Line
SURFACE 1: EG_Hicks_UAV_LIDAR_2023(2023 Ground)
SURFACE 2: HICKSPLN-NAV88 TRANSFORMED(As-Built Plan)

BASELINE STATION NUMBER	STATION CUT AREA	STATION CUT VOLUME	STATION FILL AREA	STATION FILL VOLUME	MASS ORDINATE VOLUME
22+50.00	438.54	0	199.19	0	0
22+75.00	631.41	492.64	243.76	204.72	57.53
23+00.00	888.68	700.36	69.24	136.7	240.67
23+25.00	1009.25	878.08	34.38	47.04	641.69
23+50.00	864.17	866.46	77.18	50.33	1124.45
23+75.00	583.39	665.93	213.02	129.14	1537.18
24+00.00	1260.63	833.83	19.36	91.54	2227.13
24+25.00	1097.8	1091	41.24	27.42	3254.76
24+50.00	887.26	917.28	19.5	27.5	4056.22
24+75.00	438.7	601.8	44.71	28.93	4530.51
25+00.00	400.45	388.36	105.04	67.37	4781.94
25+25.00	402.32	371.65	68.84	79.91	4997.68
25+50.00	485.35	410.35	41.91	50.76	5237.51
25+75.00	558.27	482.76	75.25	53.49	5491.83
26+00.00	501.87	490.58	99.75	80.75	5704.99

CUT: 6,780.59 Cu. Yds.

FILL: 1,075.60 Cu. Yds.

NET:5,704.99 Cu. Yds

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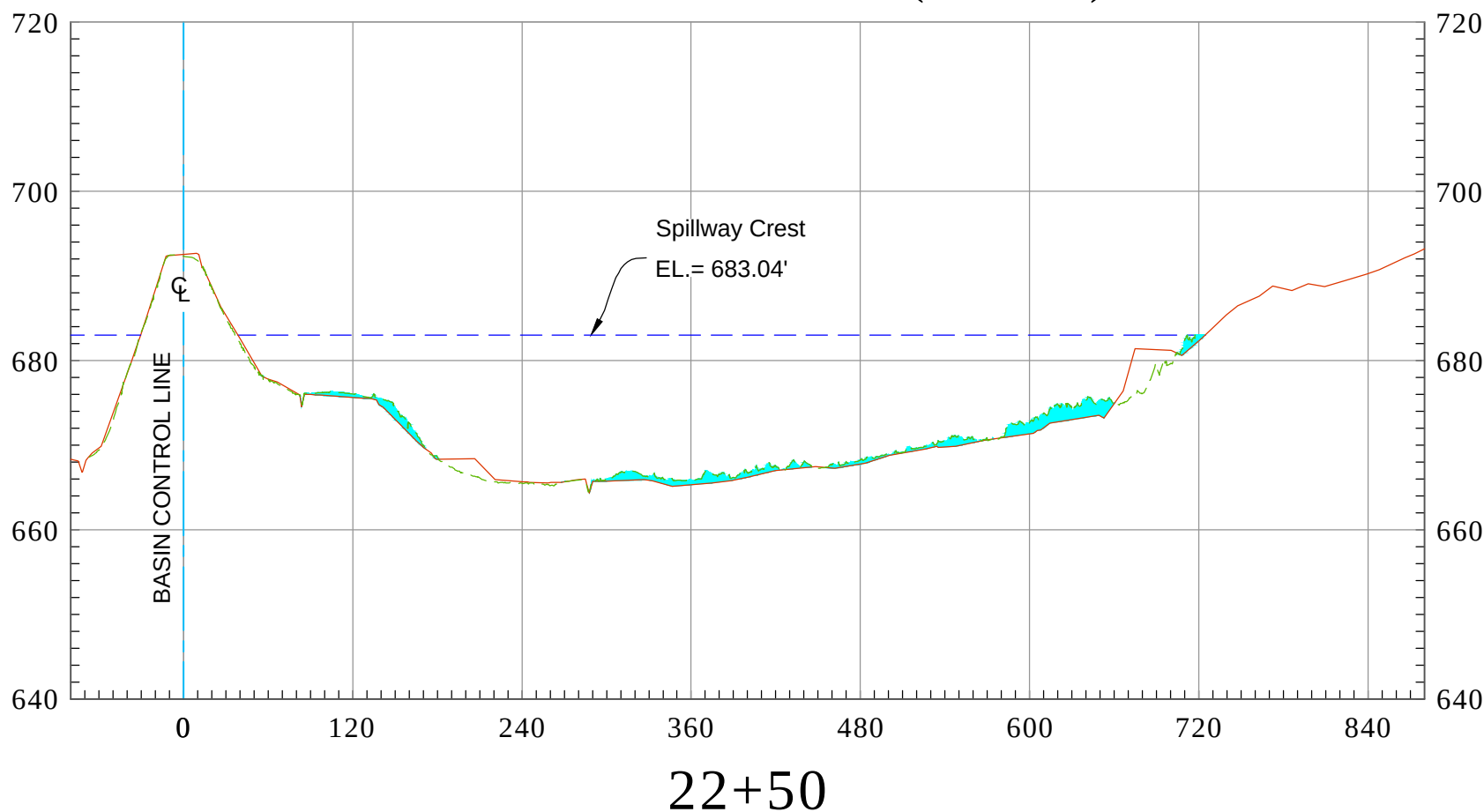
2023 SCOURS STUDY - % OF MAXIMUM CAPACITY VOLUME REPORT

HICKS CANYON RETARDING BASIN (F27B01), STATION 22+50 TO 26+00

<u>STATION</u>	<u>CUT AREA</u>	<u>CUT VOLUME</u>	<u>FILL AREA</u>	<u>FILL VOLUME</u>	<u>% of CAPACITY</u>
22+50.00	333.46	0	8437.35	0	0%
22+75.00	235.81	262.25	8537.12	7858.51	3.34%
23+00.00	468.2	319.84	8928.36	8085.2	3.96%
23+25.00	499.79	448.06	9535.14	8546.38	5.24%
23+50.00	65519	533.09	10344.69	9201.08	5.79%
23+75.00	517.93	541.87	11737.89	10216.63	5.30%
24+00.00	1219.38	781.49	12627.97	11277.98	6.93%
24+25.00	1061.36	1055.05	11767.06	11291.65	9.34%
24+50.00	738.9	828.96	10766.3	10428.68	7.95%
24+75.00	369.21	503.22	9476.91	9365.51	5.37%
25+00.00	319.99	318.8	8448.53	8294.26	3.84%
25+25.00	318.62	295.65	6933.35	7109.7	4.16%
25+50.00	309.08	290.59	5906.65	5938.1	4.89%
25+75.00	356.34	307.81	5846.47	5441.24	5.66%
26+00.00	280.03	293.91	5923.09	5448.83	5.39%
		TOTAL CUT VOLUME		TOTAL MODIFIED BASIN VOLUME	PERCENT OF CAPACITY
	Cu.Yds.	6,780.59		118,503.75	5.72%

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

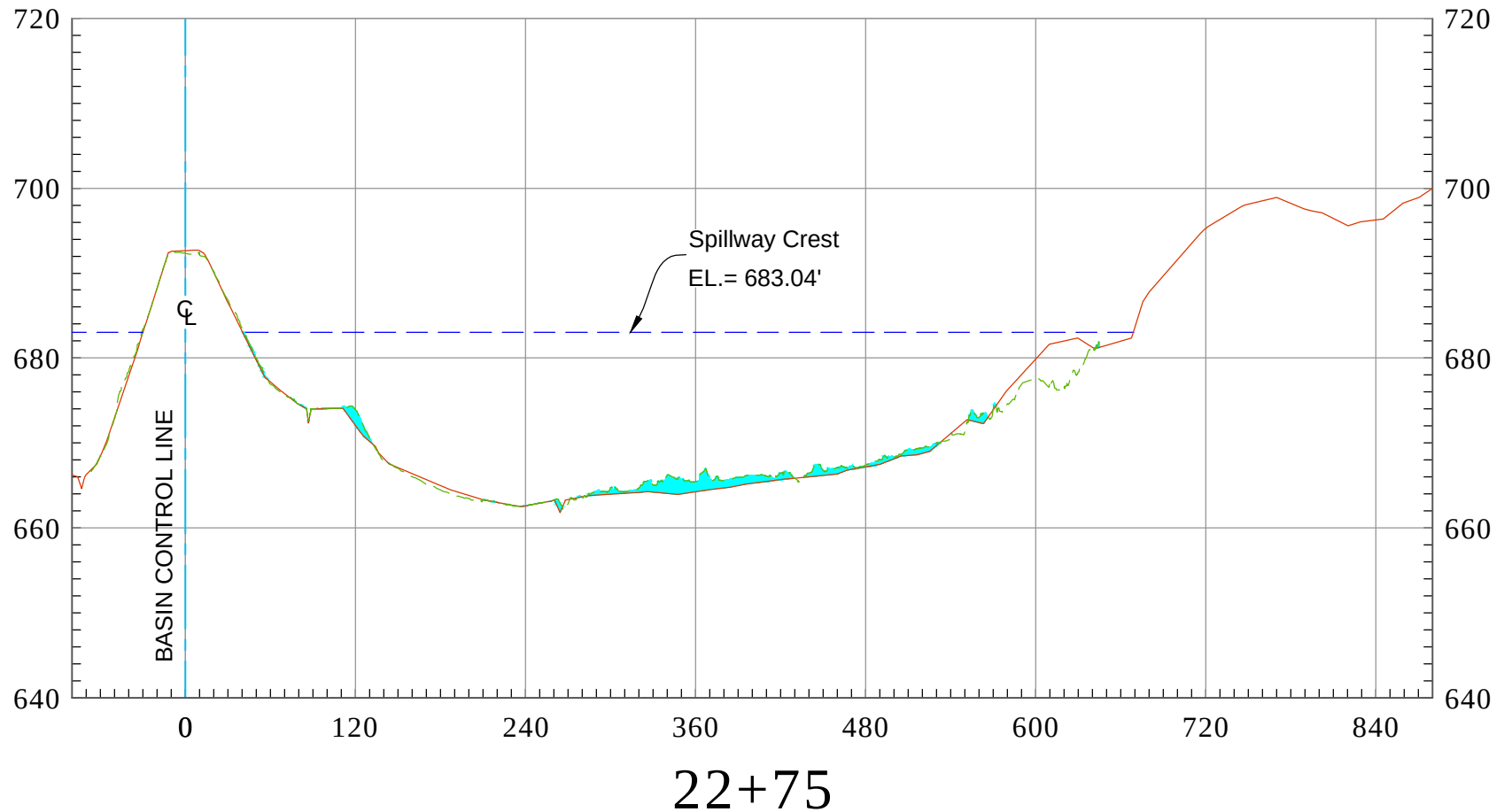
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 120'

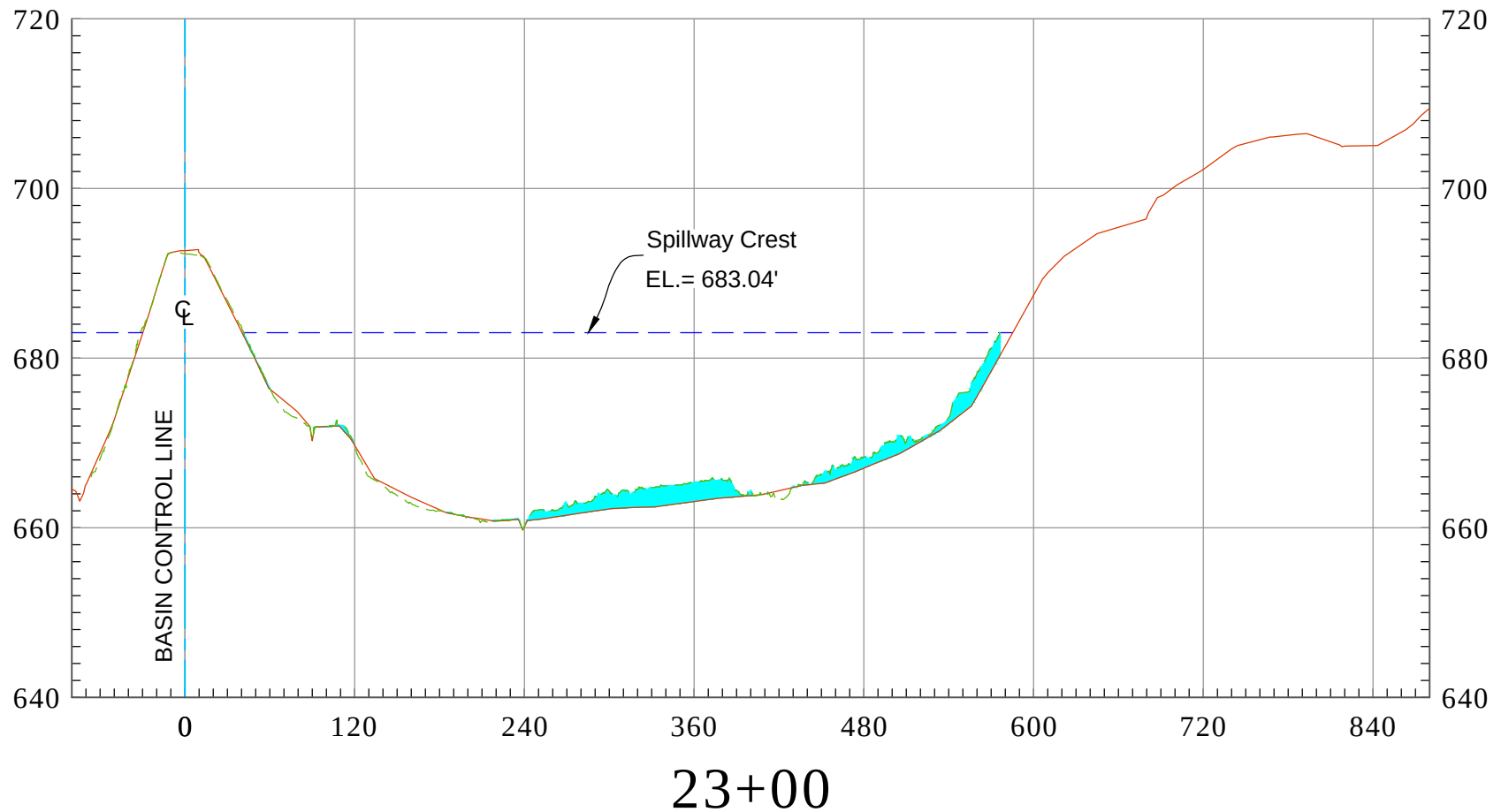
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

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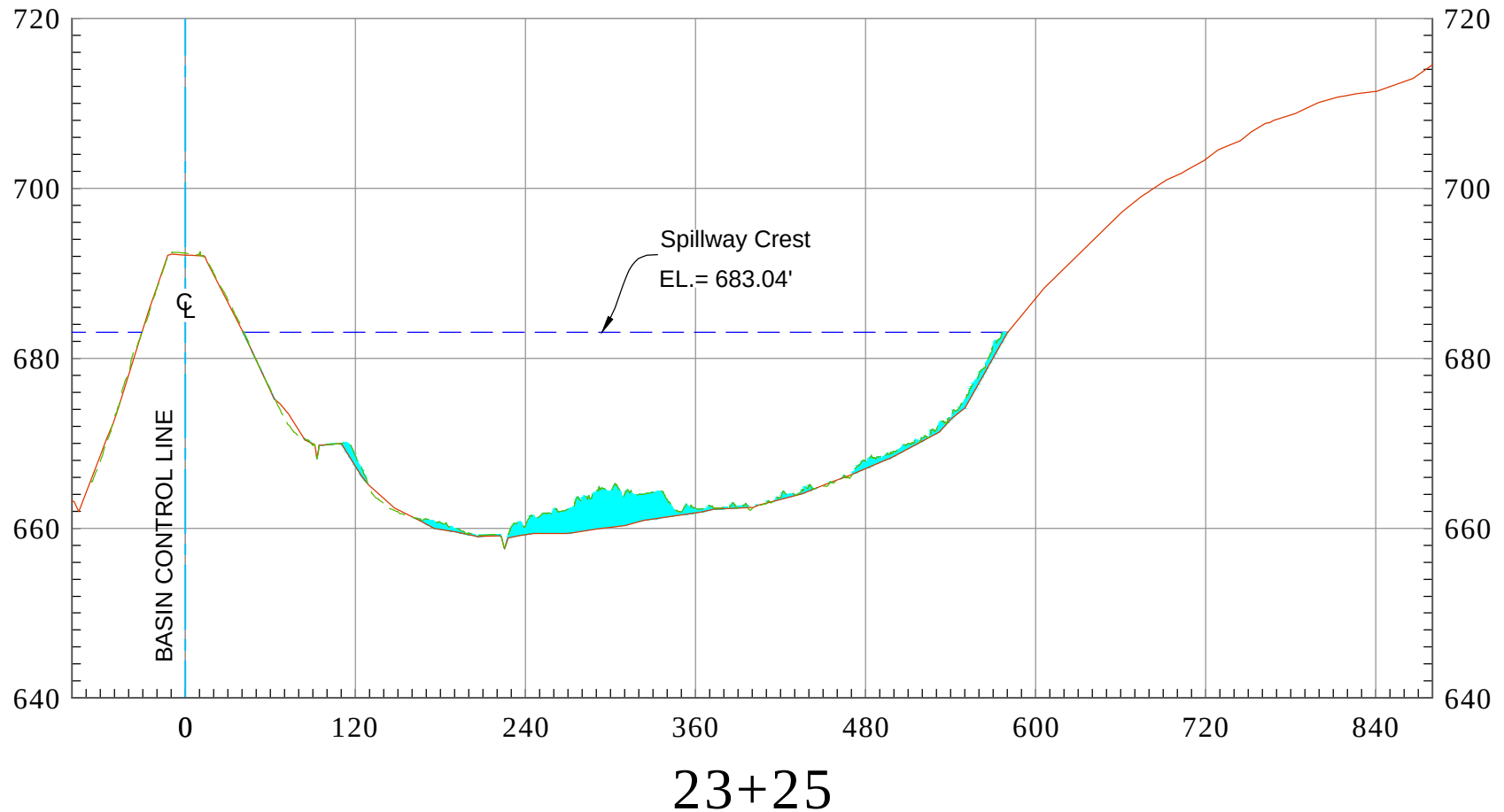
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

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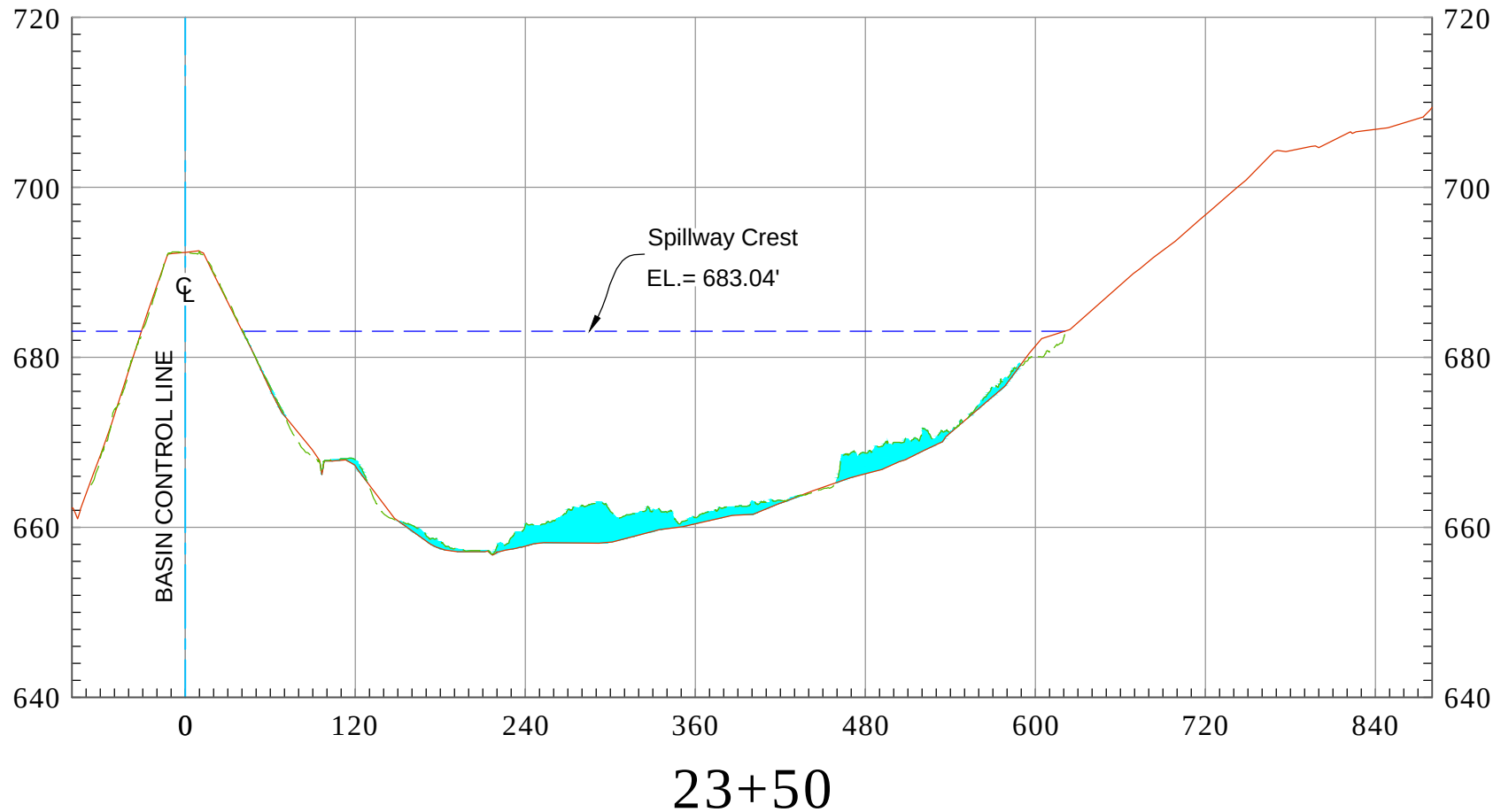
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

Vert. Scale: 1" = 20'
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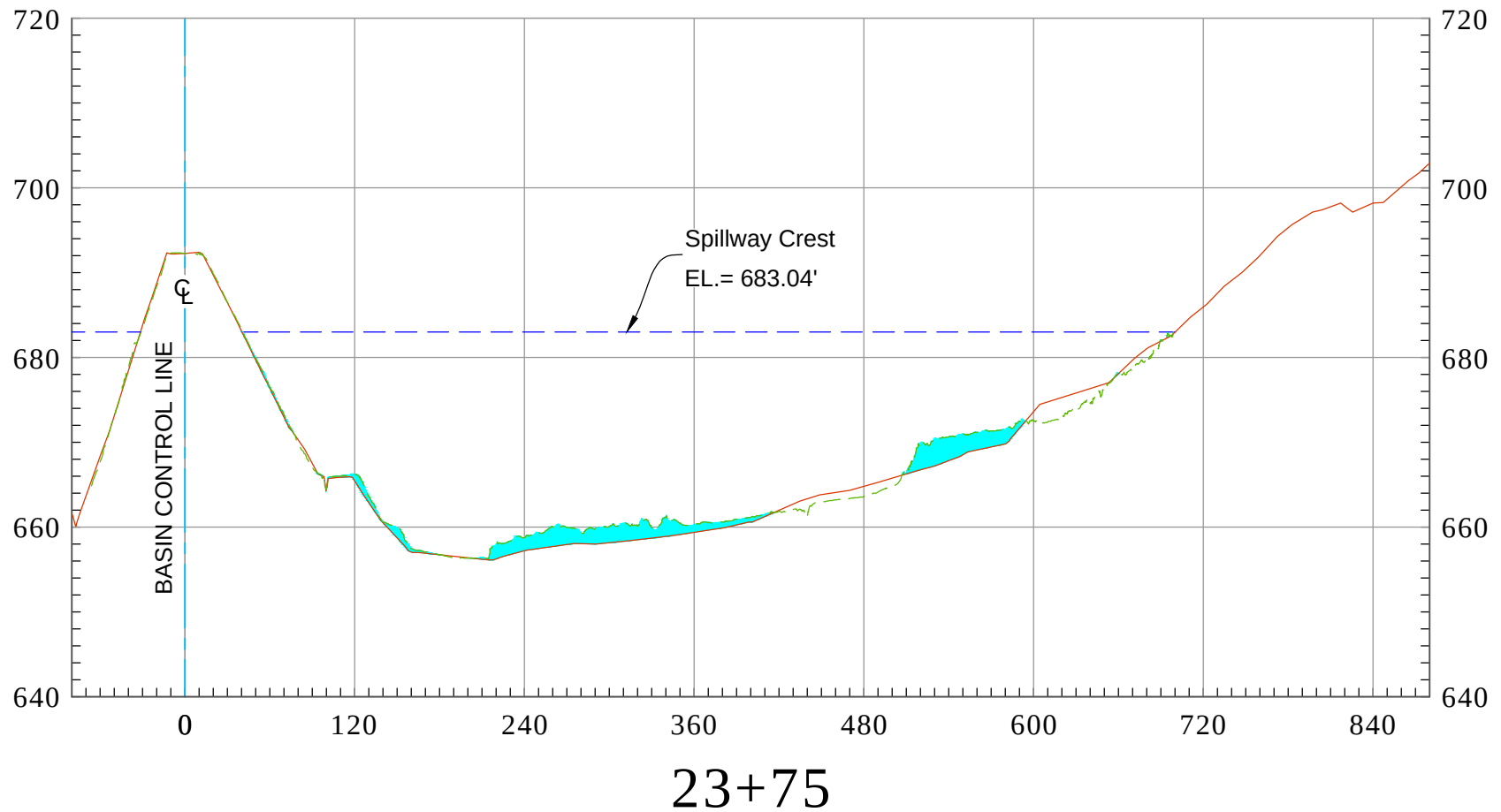
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 120'

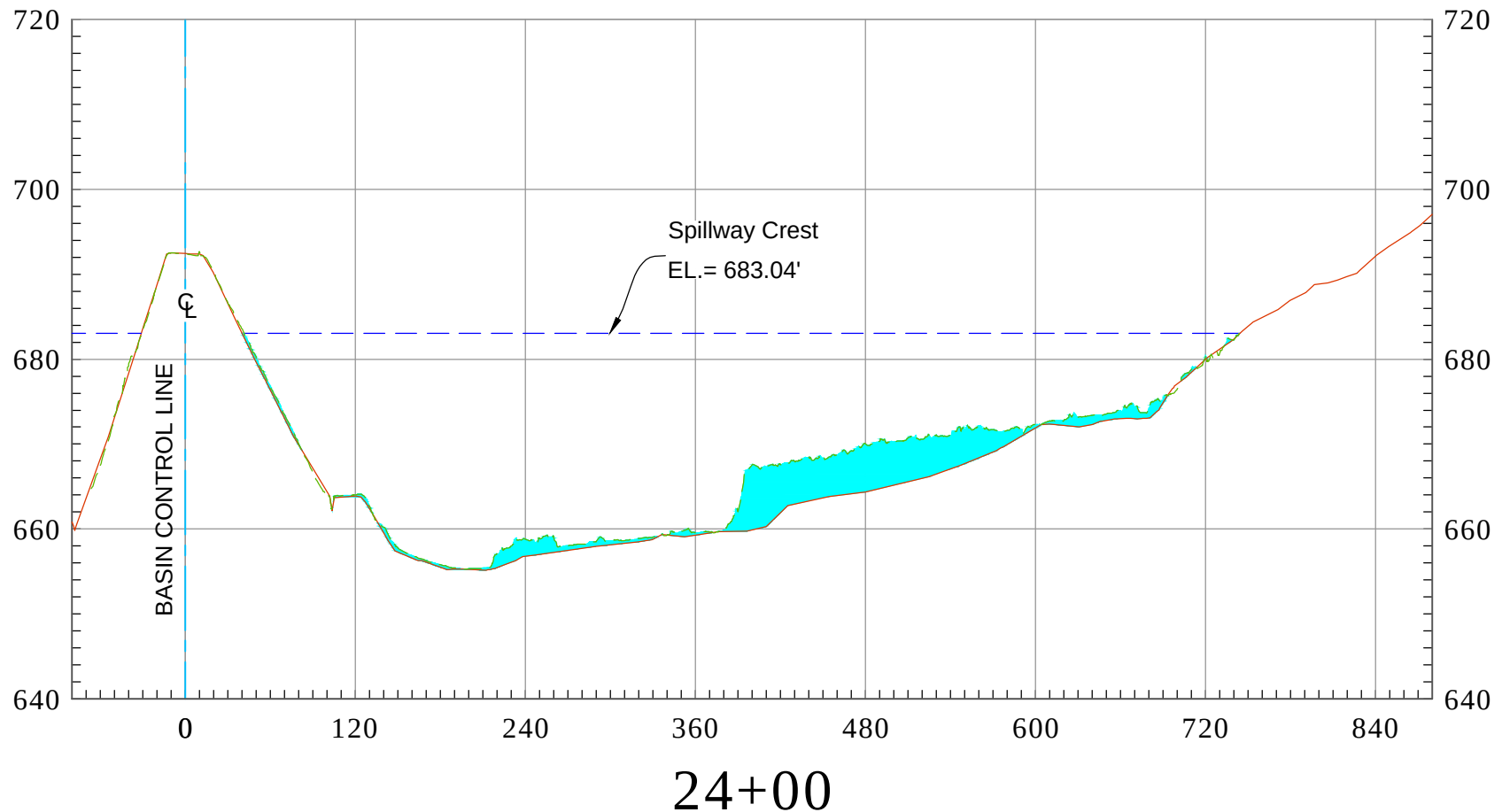
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

Vert. Scale: 1" = 20'
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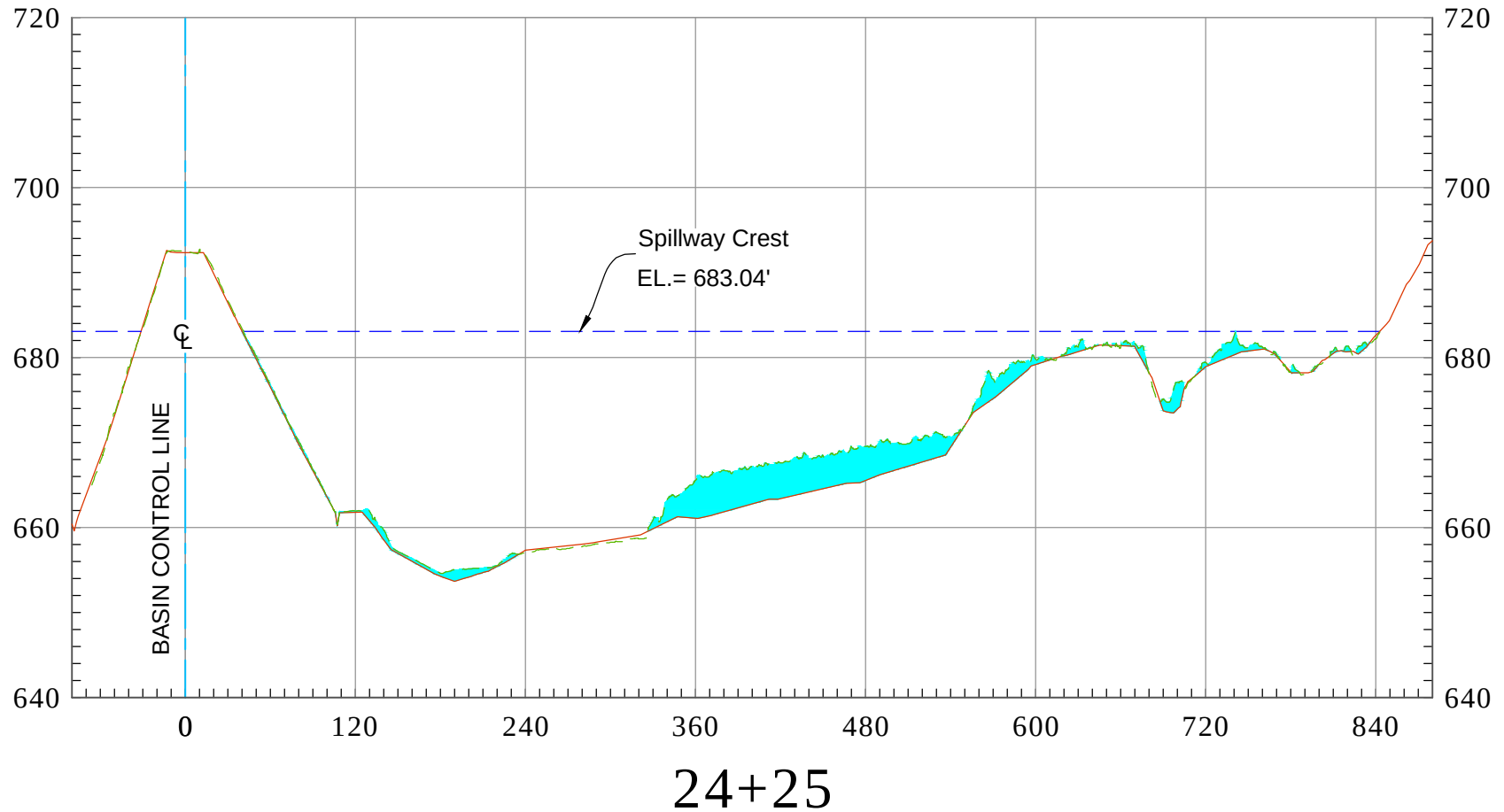
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

Vert. Scale: 1" = 20'
Horiz. Scale: 1" = 120'

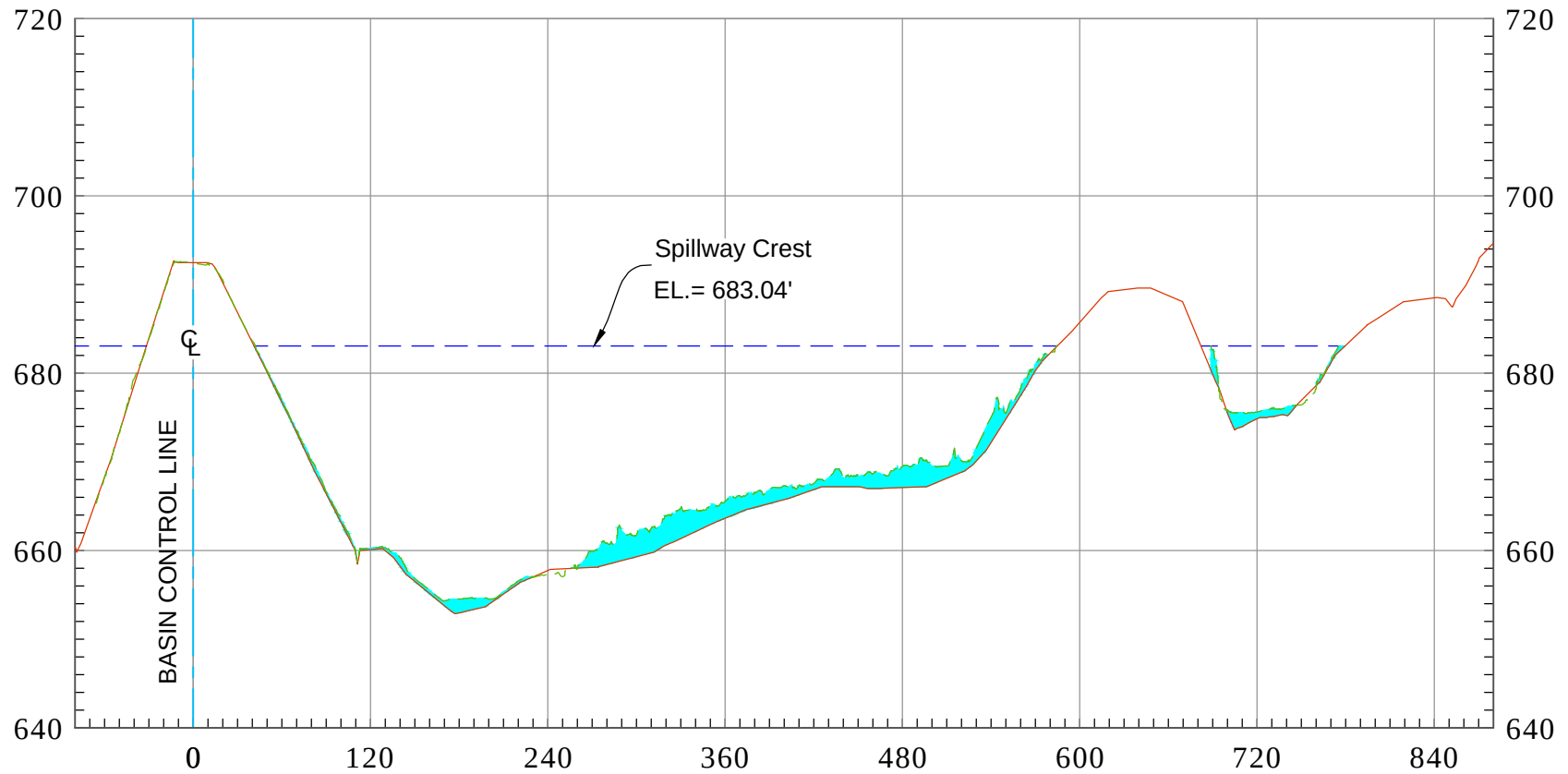
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 120'

HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS

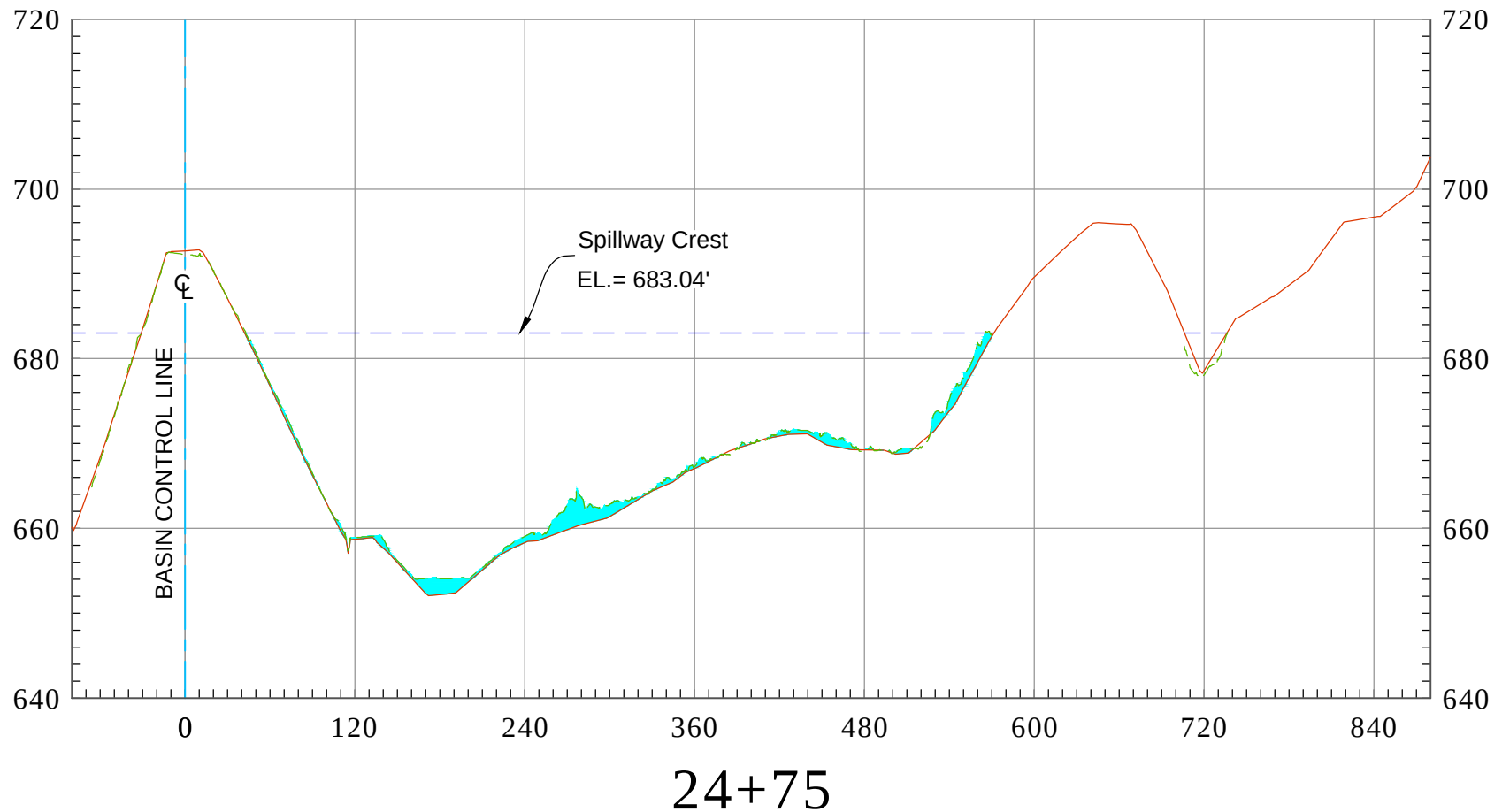


24+50

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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 120'

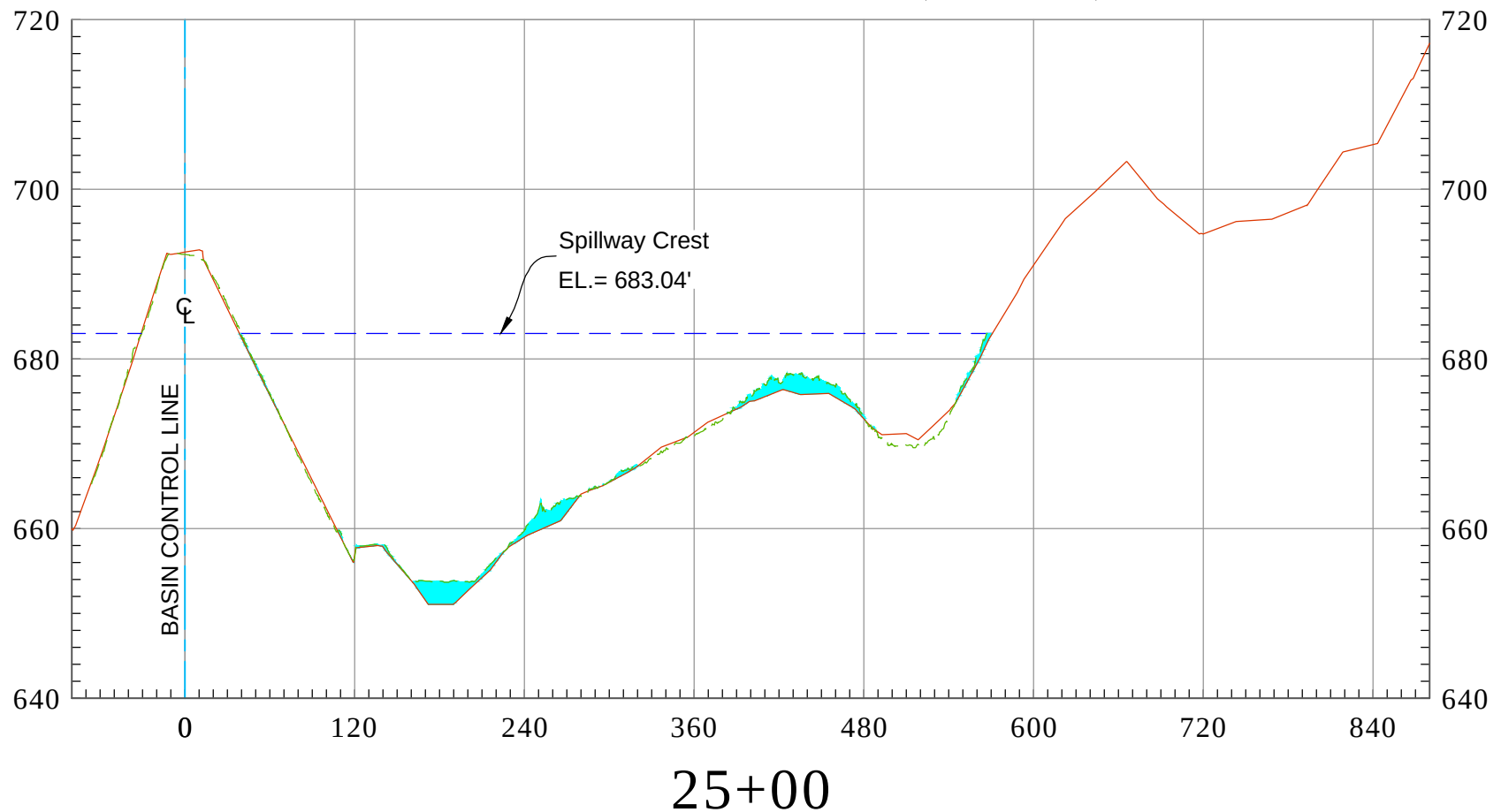
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 120'

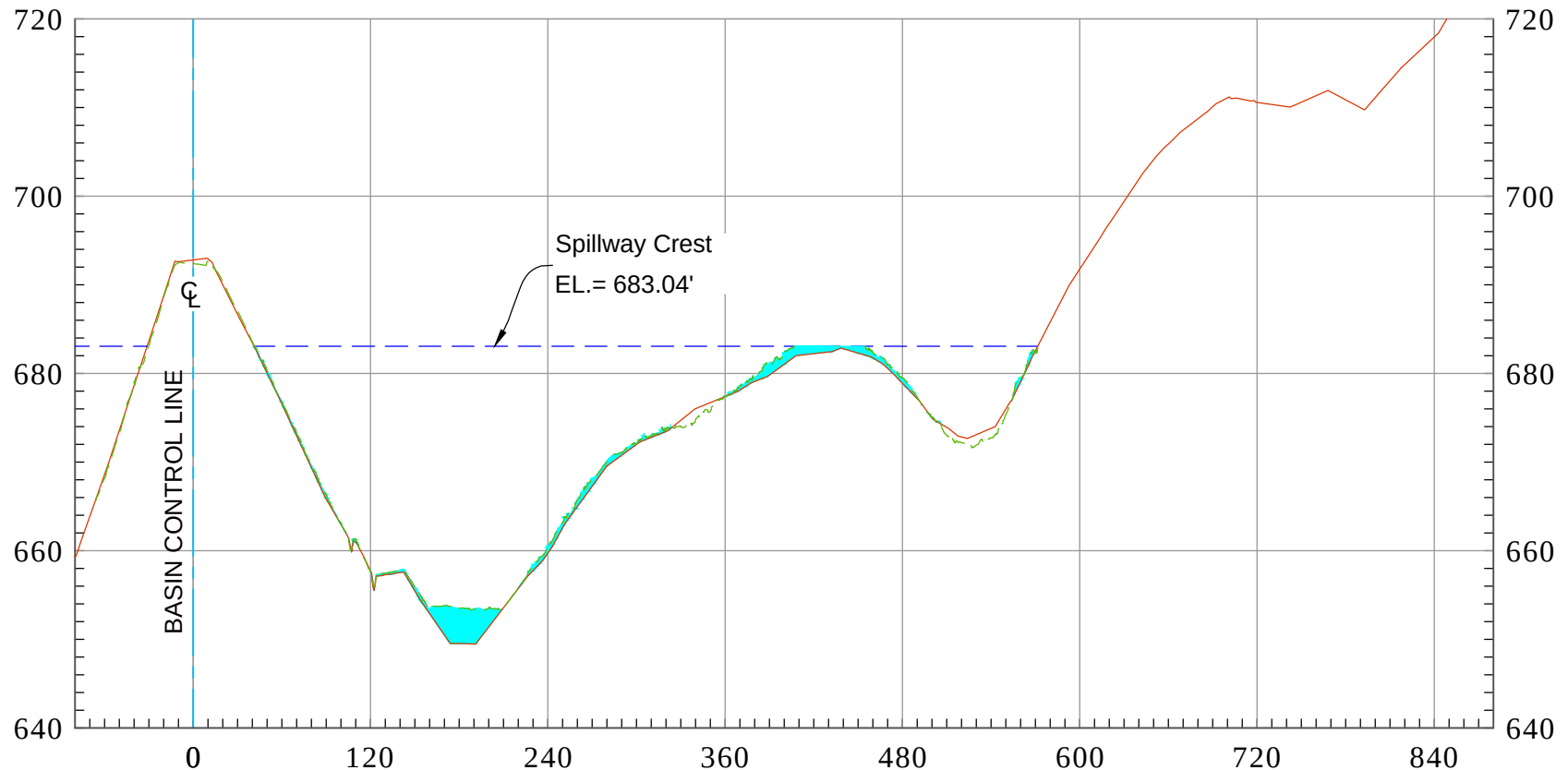
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 120'

HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS

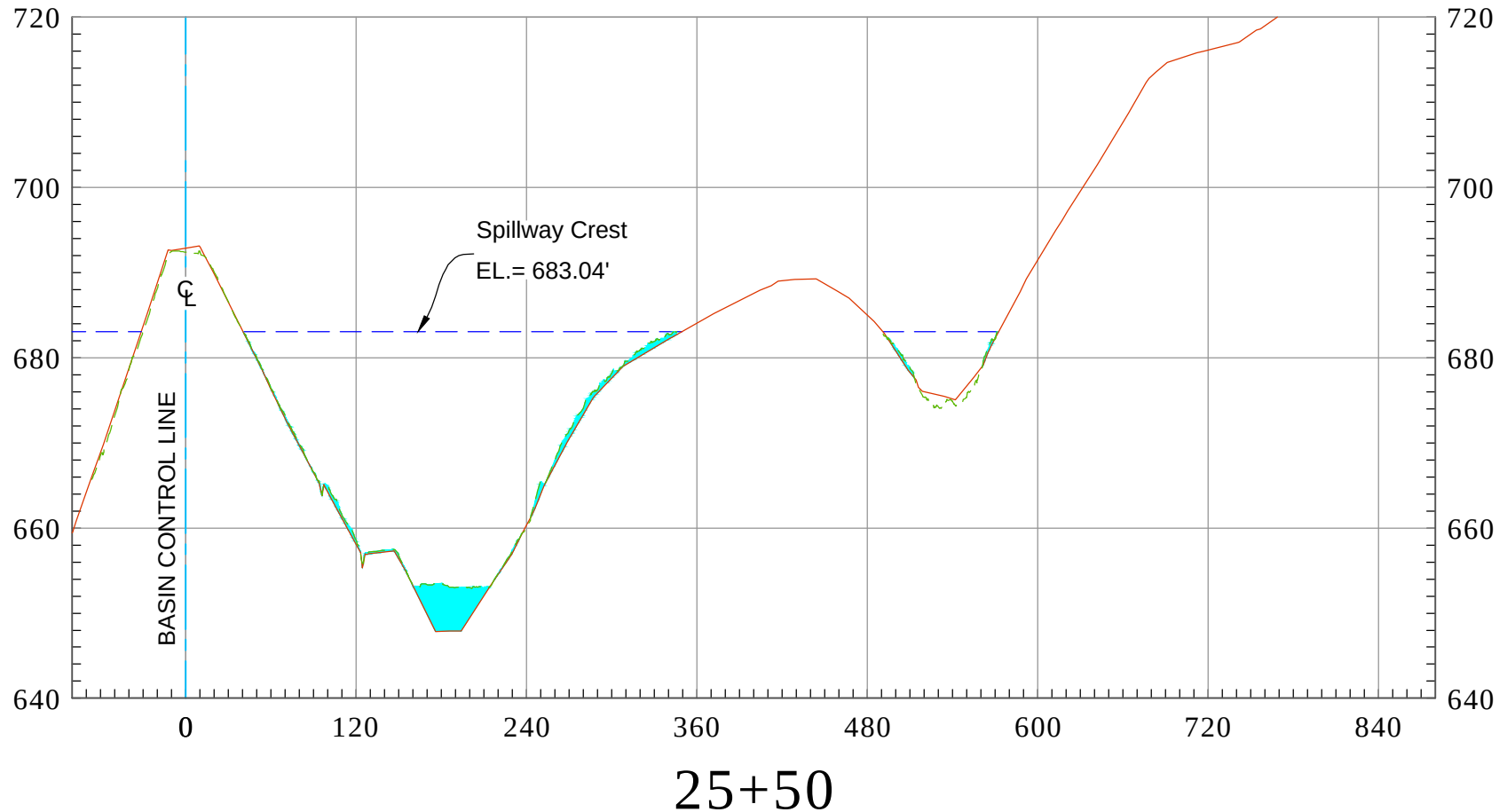


25+25

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

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 Horiz. Scale: 1" = 120'

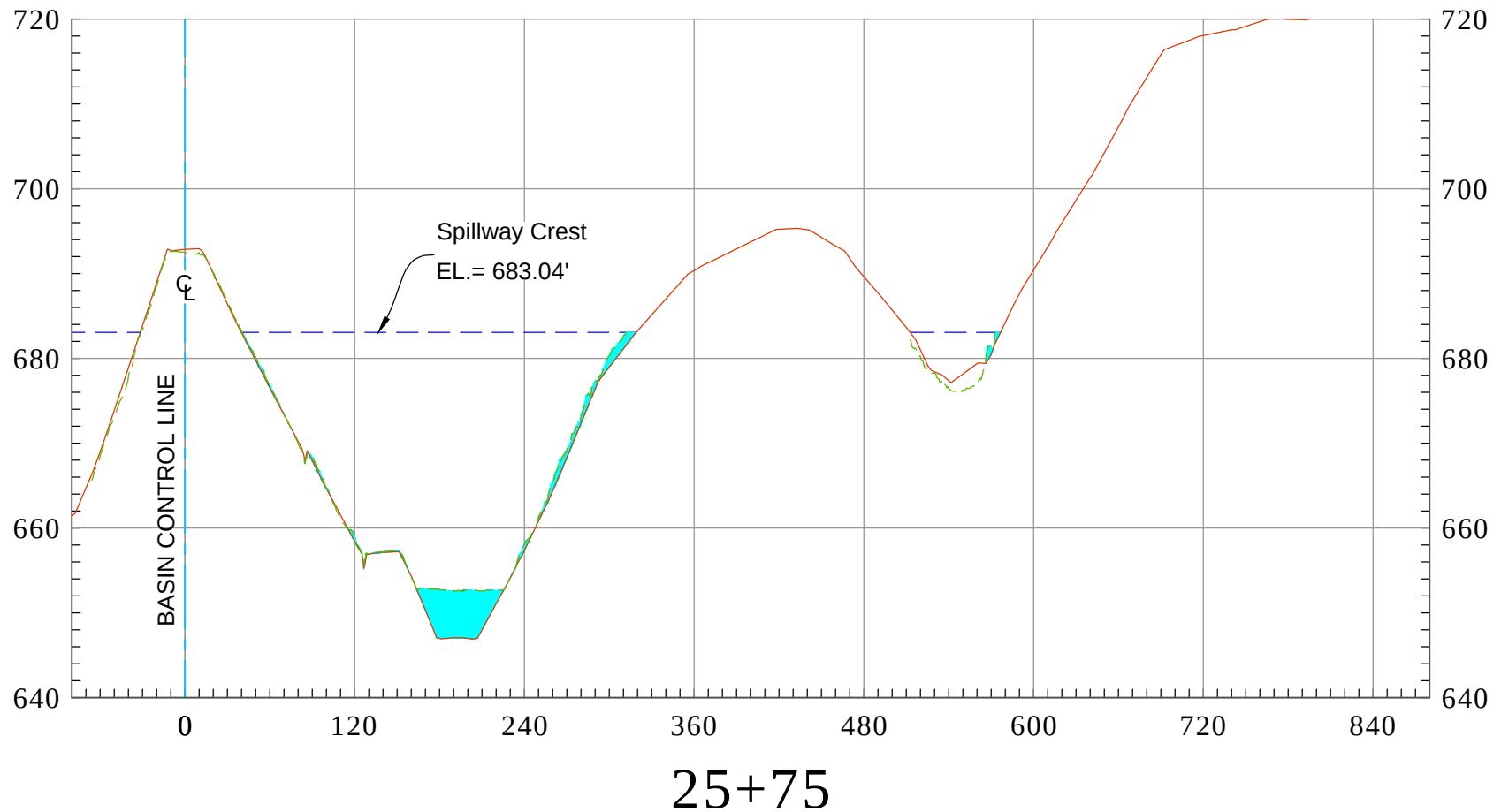
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 120'

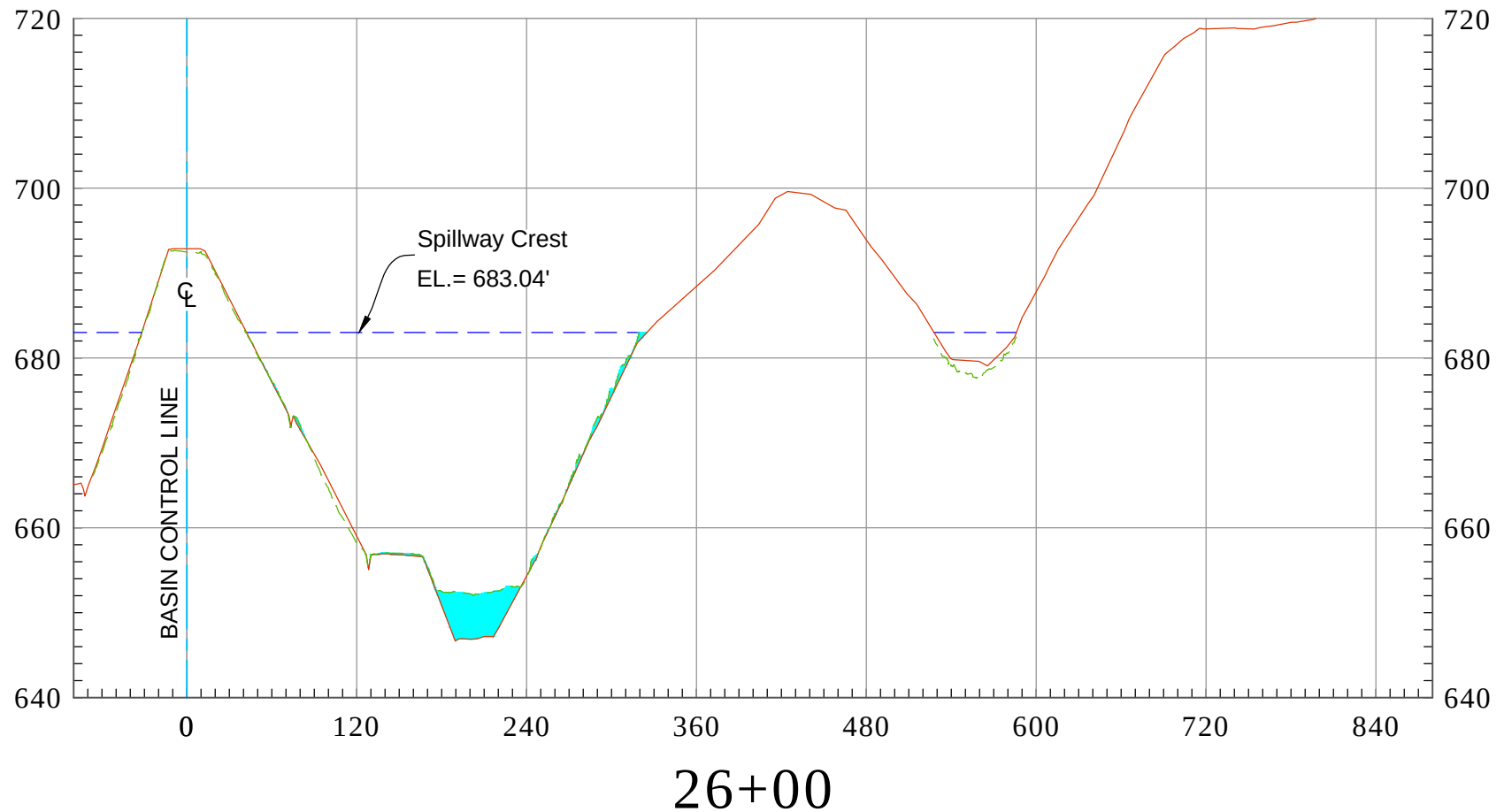
HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 120'

HICKS CANYON RETARDING BASIN (F27B01) - 2023 SCOURS



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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 120'