



COUNTY OF ORANGE
OC PUBLIC WORKS DEPARTMENT
SANTA ANA, CALIFORNIA
SHANE L. SILSBY, DIRECTOR

2019
SCOUR STUDY

Prepared by:
OC SURVEY

KEVIN HILLS, COUNTY SURVEYOR
FIELD UNIT – BOUNDARY ANALYSIS & MAPPING

ORANGE COUNTY BOARD OF SUPERVISORS

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2019
ANNUAL SCOUR STUDY

SAN DIEGO CREEK CHANNEL (F05) BASIN 2

MAXIMUM CAPACITY OF BASIN 2

STATION 82+00 TO 98+00

AS-BUILT PLANS:

F05-101-4-A

STA. 10+00 TO 25+00

F05-101-1-A

STA. 25+00 TO 98+00

NOTE: As-Built plans were used for left side of the basin, the right side of the template was modified based on the San Diego Creek 2004 Emergency Repair Agreement whereas, a 40' Wildlife Corridor was established on the right side of the channel

VERTICAL DATUM

NGVD 1929 Mean Sea Level / 1995 O.C.S. Vertical Adjustment

Office Check by:	Wade Weaver, PLS, Deputy County Surveyor
	Michael LaFontaine, PLS, Senior Land Surveyor
Filed Data Provided by:	OC survey and JFA, Inc. (Consultant)
Survey Party Chief:	Jonathan Johns, Surveyor III
Computer processing done by:	Hanna Aftim, Surveyor III

COUNTY of ORANGE
OC PUBLIC WORKS
OC SURVEY
FIELD UNIT- BOUNDARY ANALYSIS & MAPPING

2019 SCOURS STUDY (MAX. CAPACITY BASIN TEMPLATE) - VOLUME REPORT

SAN DIEGO CREEK (F05) BASIN #2, STATION 82+00 to 98+00

Date of Survey September 2019

ALIGNMENT: CENTERLINE ALIGNMENT REACH 1

SURFACE 1: SAN DIEGO CREEK SCOURS REACH1 EG (2019 Ground)

SURFACE 2: F05B2-08 MAX CAP (2010 MAX CAP Basin #2 Template)

BASILINE STATION NUMBER	STATION CUT AREA	STATION CUT VOLUME	STATION FILL AREA	STATION FILL VOLUME	MASS ORDINATE VOLUME
82+00	658.42	0.00	8.72	0.00	0.00
83+00	331.25	1832.72	1.28	18.51	1814.21
84+00	206.40	995.64	44.51	84.79	2725.05
85+00	252.46	849.73	58.51	190.78	3384.00
86+00	267.78	963.40	45.90	193.34	4154.06
87+00	313.35	1076.17	11.24	105.80	5124.43
88+00	260.82	1063.29	45.65	105.35	6082.36
89+00	365.91	1160.62	25.83	132.38	7110.61
90+00	307.14	1246.39	79.77	195.57	8161.43
91+00	407.11	1322.68	39.25	220.41	9263.70
92+00	284.92	1281.53	82.95	226.29	10318.94
93+00	361.84	1197.70	68.65	280.74	11235.90
94+00	412.60	1434.15	68.55	254.07	12415.98
95+00	423.42	1548.19	93.09	299.33	13664.84
96+00	379.28	1486.49	74.34	310.05	14841.29
97+00	409.10	1459.98	69.89	267.08	16034.18
98+00	575.72	1823.74	67.19	253.86	17604.06

CUT: 20,742 Cu. Yds.

FILL: 3,440 Cu. Yds

NET: 17,302 Cu. Yds.

COUNTY of ORANGE
OC PUBLIC WORKS

OC SURVEY
FIELD UNIT – BOUNDARY ANALYSIS & MAPPING

2019 SCOURS STUDY – % MAX. CAPACITY BASIN TEMPLATE
VOLUME REPORT (SEPTMBER 20, 2019)

SAN DIEGO CREEK (F05) BASIN # 2, STATION 82+00 to 98+00

STATION	CUT AREA	CUT VOLUME	FILL AREA	FILL VOLUME	% of CAPACITY
82+00	658.42	0.00	1082.31	0.00	
83+00	331.25	1832.72	1104.24	4049.00	45.26%
84+00	206.40	995.64	1042.63	3976.00	25.04%
85+00	252.46	849.73	970.78	3729.00	22.79%
86+00	267.78	963.40	974.99	3603.00	26.74%
87+00	313.35	1076.17	1005.25	3667.00	29.35%
88+00	260.82	1063.29	1048.59	3803.00	27.96%
89+00	365.91	1160.62	1268.96	4292.00	27.04%
90+00	307.14	1246.39	1506.45	5140.00	24.25%
91+00	407.11	1322.68	1577.62	5711.00	23.16%
92+00	284.92	1281.53	1473.94	5651.00	22.68%
93+00	361.84	1197.70	1610.97	5713.00	20.96%
94+00	412.60	1434.15	1286.18	5365.00	26.73%
95+00	423.42	1548.19	1737.43	5599.00	27.65%
96+00	379.28	1486.49	1816.07	6581.00	22.59%
97+00	409.10	1459.98	1911.00	6902.00	21.15%
98+00	575.72	1823.74	1920.00	7094.00	25.71%
		TOTAL CUT VOLUME		MAX. CAPACITY BASIN 3 VOLUME	TOTAL % OF CAPACITY
	Cubic Yards	20,742	Cubic Yards	80,875	25.65%

NOTE: NO STATIONS ARE FILLED BEYOND 50% OF THE MAXIMUM CAPACITY OF BASIN #2

2019 SCOURS

SAN DIEGO CREEK (F05) BASIN # 2

2019 GROUND DATA

STATION	OFFSET	ELEV.
82+00	189.48	25.00
82+00	171.07	24.99
82+00	168.58	24.80
82+00	138.83	12.81
82+00	130.30	11.80
82+00	103.73	12.79
82+00	94.06	9.41
82+00	59.96	10.26
82+00	46.48	8.40
82+00	33.89	5.32
82+00	29.05	5.36
82+00	15.23	10.01
82+00	-0.49	9.49
82+00	-14.94	8.82
82+00	-88.60	8.94
82+00	-133.93	10.56
82+00	-173.49	25.49
82+00	-177.15	25.38
84+00	178.90	26.20
84+00	174.69	26.17
84+00	171.57	26.12
84+00	152.06	17.64
84+00	137.73	14.31
84+00	122.71	5.25
84+00	112.64	5.85
84+00	101.04	13.69
84+00	90.59	8.54
84+00	68.47	6.99
84+00	5.46	6.75
84+00	-30.18	3.37
84+00	-90.68	8.38
84+00	-103.70	11.72
84+00	-136.46	10.94
84+00	-177.12	25.94
84+00	-181.27	25.78
85+00	179.52	26.05
85+00	176.01	25.93
85+00	172.29	25.72
85+00	150.84	17.12
85+00	138.17	14.57
85+00	127.65	10.30
85+00	116.71	10.83
85+00	102.27	14.81
85+00	95.45	10.43

2019 SCOURS

SAN DIEGO CREEK (F05) BASIN # 2

2019 GROUND DATA

STATION	OFFSET	ELEV.
85+00	19.76	7.02
85+00	8.41	4.55
85+00	-21.43	4.38
85+00	-43.92	3.19
85+00	-93.28	8.98
85+00	-102.28	11.29
85+00	-129.70	9.23
85+00	-176.95	26.31
85+00	-181.72	26.17
86+00	180.18	26.28
86+00	175.57	26.09
86+00	172.87	25.79
86+00	152.79	17.37
86+00	138.91	15.40
86+00	125.32	11.69
86+00	105.93	11.00
86+00	95.76	8.52
86+00	60.15	7.23
86+00	12.31	7.14
86+00	-10.13	4.22
86+00	-40.09	3.61
86+00	-93.86	9.03
86+00	-98.39	10.36
86+00	-129.81	9.42
86+00	-176.60	26.41
86+00	-181.27	26.23
87+00	181.03	26.28
87+00	176.56	26.17
87+00	174.23	25.90
87+00	155.32	18.72
87+00	139.99	17.25
87+00	126.24	9.92
87+00	113.10	9.89
87+00	101.65	13.49
87+00	92.58	8.61
87+00	44.55	7.25
87+00	10.06	6.83
87+00	-3.70	4.43
87+00	-89.38	8.57
87+00	-104.26	11.30
87+00	-133.24	10.48
87+00	-176.50	26.41
87+00	-180.38	26.16

2019 SCOURS

SAN DIEGO CREEK (F05) BASIN # 2

2019 GROUND DATA

STATION	OFFSET	ELEV.
88+00	181.84	26.14
88+00	176.93	26.05
88+00	174.54	25.76
88+00	156.35	19.25
88+00	143.90	17.99
88+00	127.06	9.54
88+00	114.09	9.87
88+00	99.28	14.22
88+00	87.25	7.60
88+00	44.19	7.01
88+00	1.65	6.84
88+00	-18.65	3.22
88+00	-94.50	9.55
88+00	-102.88	11.58
88+00	-132.46	10.82
88+00	-176.44	26.63
88+00	-180.60	26.33
89+00	181.68	26.14
89+00	177.18	26.01
89+00	174.47	25.67
89+00	129.89	10.26
89+00	118.90	11.05
89+00	100.18	13.55
89+00	94.71	8.14
89+00	41.03	6.69
89+00	-13.85	7.09
89+00	-19.85	5.25
89+00	-58.87	8.06
89+00	-88.84	8.79
89+00	-100.55	12.05
89+00	-135.74	11.03
89+00	-141.03	14.29
89+00	-176.07	26.58
89+00	-179.70	26.48
90+00	181.85	26.38
90+00	177.23	26.32
90+00	174.99	26.12
90+00	156.91	19.67
90+00	147.31	18.65
90+00	132.47	10.85
90+00	121.32	10.69
90+00	104.30	14.22
90+00	99.22	8.47
90+00	53.03	4.85

2019 SCOURS

SAN DIEGO CREEK (F05) BASIN # 2

2019 GROUND DATA

STATION	OFFSET	ELEV.
90+00	19.10	3.53
90+00	-4.33	5.24
90+00	-35.88	10.03
90+00	-63.04	8.48
90+00	-92.83	8.37
90+00	-102.86	12.37
90+00	-134.62	12.00
90+00	-175.75	26.69
90+00	-179.70	26.58
91+00	181.79	26.32
91+00	177.31	26.26
91+00	175.25	26.08
91+00	154.84	19.23
91+00	146.90	18.87
91+00	129.79	11.60
91+00	115.62	11.35
91+00	106.21	13.60
91+00	101.81	8.56
91+00	74.56	7.06
91+00	68.75	3.96
91+00	-38.01	9.21
91+00	-53.86	8.76
91+00	-92.65	8.94
91+00	-105.41	11.62
91+00	-130.27	11.48
91+00	-175.64	27.06
91+00	-179.96	26.86
92+00	181.99	24.34
92+00	177.33	24.41
92+00	175.14	24.10
92+00	159.88	19.65
92+00	152.12	18.27
92+00	136.30	12.77
92+00	124.90	12.64
92+00	109.37	13.53
92+00	102.77	8.54
92+00	80.32	6.64
92+00	56.79	2.67
92+00	-8.91	5.79
92+00	-48.44	8.88
92+00	-93.70	8.54
92+00	-102.97	11.67
92+00	-136.95	12.73
92+00	-175.48	27.14

2019 SCOURS

SAN DIEGO CREEK (F05) BASIN # 2

2019 GROUND DATA

STATION	OFFSET	ELEV.
92+00	-178.89	26.95
93+00	187.56	21.71
93+00	176.56	17.54
93+00	164.49	17.26
93+00	153.16	16.83
93+00	137.24	15.02
93+00	122.75	14.31
93+00	106.61	8.86
93+00	75.73	6.59
93+00	66.62	3.35
93+00	3.09	6.90
93+00	-49.28	8.98
93+00	-92.43	8.79
93+00	-102.59	11.88
93+00	-133.17	11.68
93+00	-175.52	27.08
93+00	-179.76	26.86
94+00	165.11	15.21
94+00	156.81	15.75
94+00	145.26	15.68
94+00	139.28	15.35
94+00	112.03	10.12
94+00	102.97	6.25
94+00	71.34	4.91
94+00	16.98	4.36
94+00	-3.15	9.49
94+00	-40.34	9.53
94+00	-59.91	9.41
94+00	-91.19	8.84
94+00	-106.75	12.58
94+00	-136.71	12.83
94+00	-175.68	26.89
94+00	-180.25	26.77
95+00	180.62	18.54
95+00	174.41	18.55
95+00	163.17	18.54
95+00	160.21	18.38
95+00	149.08	15.78
95+00	134.13	12.51
95+00	113.43	12.95
95+00	109.20	8.17
95+00	66.59	4.27
95+00	13.77	6.15

2019 SCOURS

SAN DIEGO CREEK (F05) BASIN # 2

2019 GROUND DATA

STATION	OFFSET	ELEV.
95+00	3.32	9.99
95+00	-22.89	9.61
95+00	-52.36	8.62
95+00	-89.93	8.65
95+00	-105.81	12.78
95+00	-136.32	13.56
95+00	-176.04	26.98
95+00	-180.57	26.74
96+00	183.43	25.51
96+00	178.34	25.59
96+00	175.36	25.36
96+00	162.55	19.40
96+00	154.80	18.30
96+00	144.50	12.82
96+00	127.73	11.94
96+00	113.39	14.35
96+00	101.57	8.11
96+00	54.93	4.59
96+00	-3.94	6.44
96+00	-30.58	10.35
96+00	-55.49	9.07
96+00	-90.27	8.64
96+00	-103.66	11.09
96+00	-142.44	15.25
96+00	-176.26	27.17
96+00	-179.23	27.02
97+00	183.63	26.97
97+00	179.12	26.96
97+00	176.25	26.77
97+00	163.07	20.56
97+00	157.56	19.90
97+00	140.06	12.56
97+00	130.30	12.41
97+00	110.01	15.19
97+00	98.58	7.33
97+00	48.18	4.35
97+00	-10.46	6.79
97+00	-19.70	9.39
97+00	-35.52	8.72
97+00	-56.13	9.99
97+00	-77.00	9.17
97+00	-109.84	11.17
97+00	-148.52	20.91
97+00	-168.29	23.69

2019 SCOURS

SAN DIEGO CREEK (F05) BASIN # 2

2019 GROUND DATA

STATION	OFFSET	ELEV.
97+00	-176.61	27.15
97+00	-180.29	27.01
98+00	183.10	26.98
98+00	178.91	26.97
98+00	175.81	26.69
98+00	149.96	15.46
98+00	134.36	12.81
98+00	108.65	13.84
98+00	98.08	7.82
98+00	39.94	5.80
98+00	-13.38	6.88
98+00	-32.52	10.84
98+00	-66.74	11.35
98+00	-101.10	8.63
98+00	-138.70	12.68
98+00	-147.64	16.41
98+00	-176.23	27.44
98+00	-180.57	27.21

2019 SCOURS

SAN DIEGO CREEK (F05) BASIN # 2

MAXIMUM CAPACITY PLAN TEMPLATE DATA

<u>STATION</u>	<u>OFFSET</u>	<u>ELEV.</u>
82+00.00	-100.26	10.91
82+00.00	-100.26	10.91
82+00.00	-83.54	5.00
82+00.00	75.47	5.00
82+00.00	93.48	10.91
83+00.00	-100.54	11.01
83+00.00	-83.54	5.00
83+00.00	69.72	5.00
83+00.00	88.16	11.01
84+00.00	-100.54	11.10
84+00.00	-83.59	5.00
84+00.00	69.40	5.00
84+00.00	87.79	11.10
85+00.00	-100.05	10.70
85+00.00	-83.56	5.00
85+00.00	71.13	5.00
85+00.00	88.27	10.70
86+00.00	-99.52	10.29
86+00.00	-83.56	5.00
86+00.00	84.12	5.00
86+00.00	99.98	10.29
87+00.00	-100.07	10.70
87+00.00	-83.57	5.00
87+00.00	78.03	5.00
87+00.00	95.12	10.70
88+00.00	-100.30	11.00
88+00.00	-83.57	5.00
88+00.00	70.23	5.00
88+00.00	88.23	11.00
89+00.00	-101.89	11.60
89+00.00	-82.77	5.00
89+00.00	74.11	5.00
89+00.00	93.86	11.60
90+00.00	-103.50	12.20
90+00.00	-81.98	5.00
90+00.00	77.72	5.00
90+00.00	99.23	12.20
91+00.00	-104.09	12.45
91+00.00	-81.79	5.00
91+00.00	82.46	5.00
91+00.00	104.76	12.45

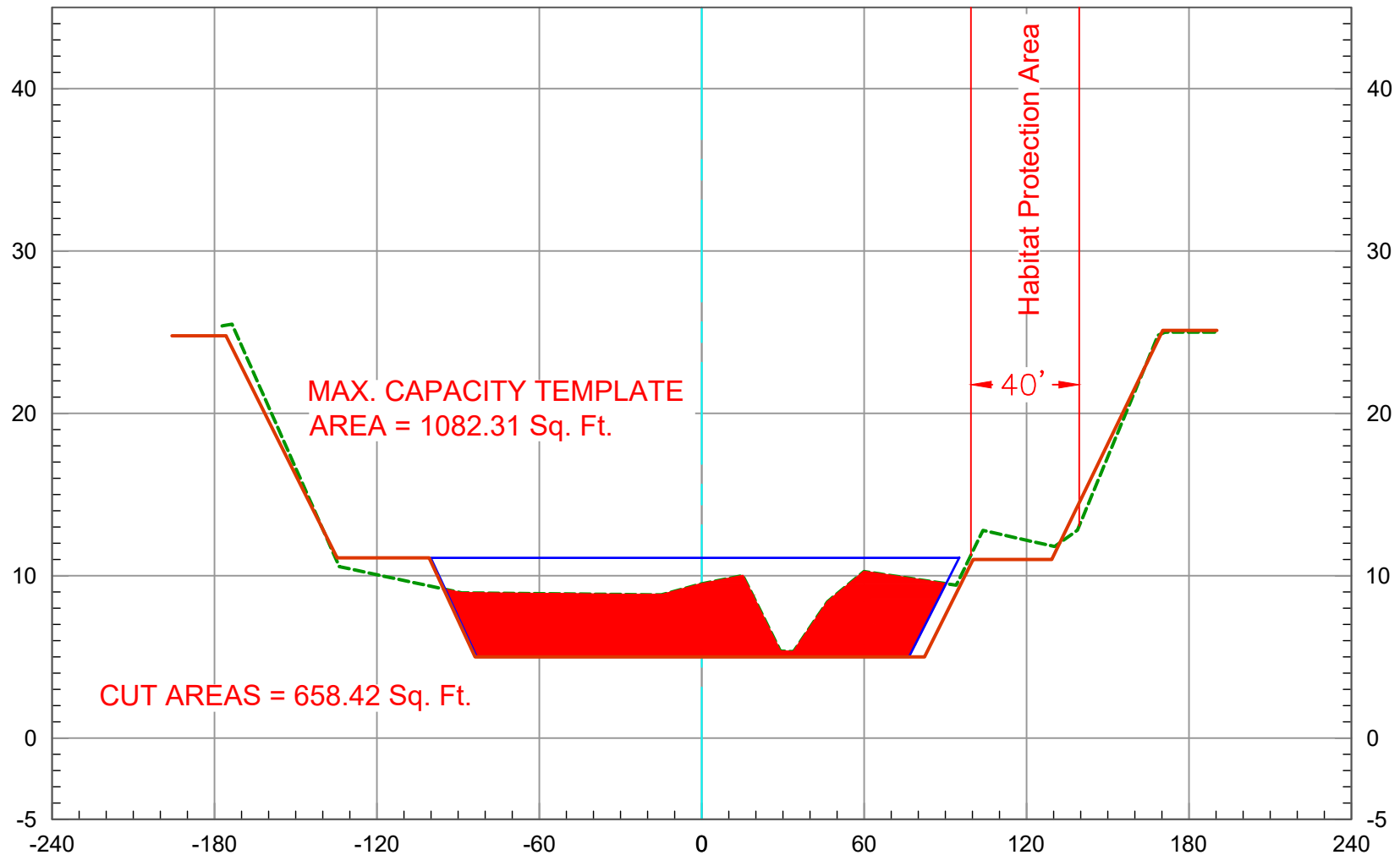
2019 SCOURS

SAN DIEGO CREEK (F05) BASIN # 2

MAXIMUM CAPACITY PLAN TEMPLATE DATA

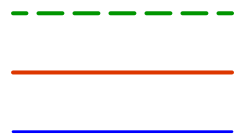
<u>STATION</u>	<u>OFFSET</u>	<u>ELEV.</u>
92+00.00	-104.10	12.50
92+00.00	-81.59	5.00
92+00.00	89.47	5.00
92+00.00	111.99	12.51
93+00.00	-105.29	12.95
93+00.00	-81.40	5.00
93+00.00	85.58	5.00
93+00.00	109.49	12.95
94+00.00	-102.38	12.03
94+00.00	-81.21	5.00
94+00.00	85.92	5.00
94+00.00	107.10	12.03
95+00.00	-106.00	13.30
95+00.00	-81.01	5.00
95+00.00	80.77	5.00
95+00.00	106.24	13.30
96+00.00	-106.06	13.38
96+00.00	-80.85	5.00
96+00.00	81.62	5.00
96+00.00	107.78	13.38
97+00.00	-112.81	14.00
97+00.00	-85.75	5.00
97+00.00	80.34	5.00
97+00.00	107.85	14.00
98+00.00	-115.86	13.41
98+00.00	-90.84	5.00
98+00.00	84.15	5.00
98+00.00	109.37	13.41

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

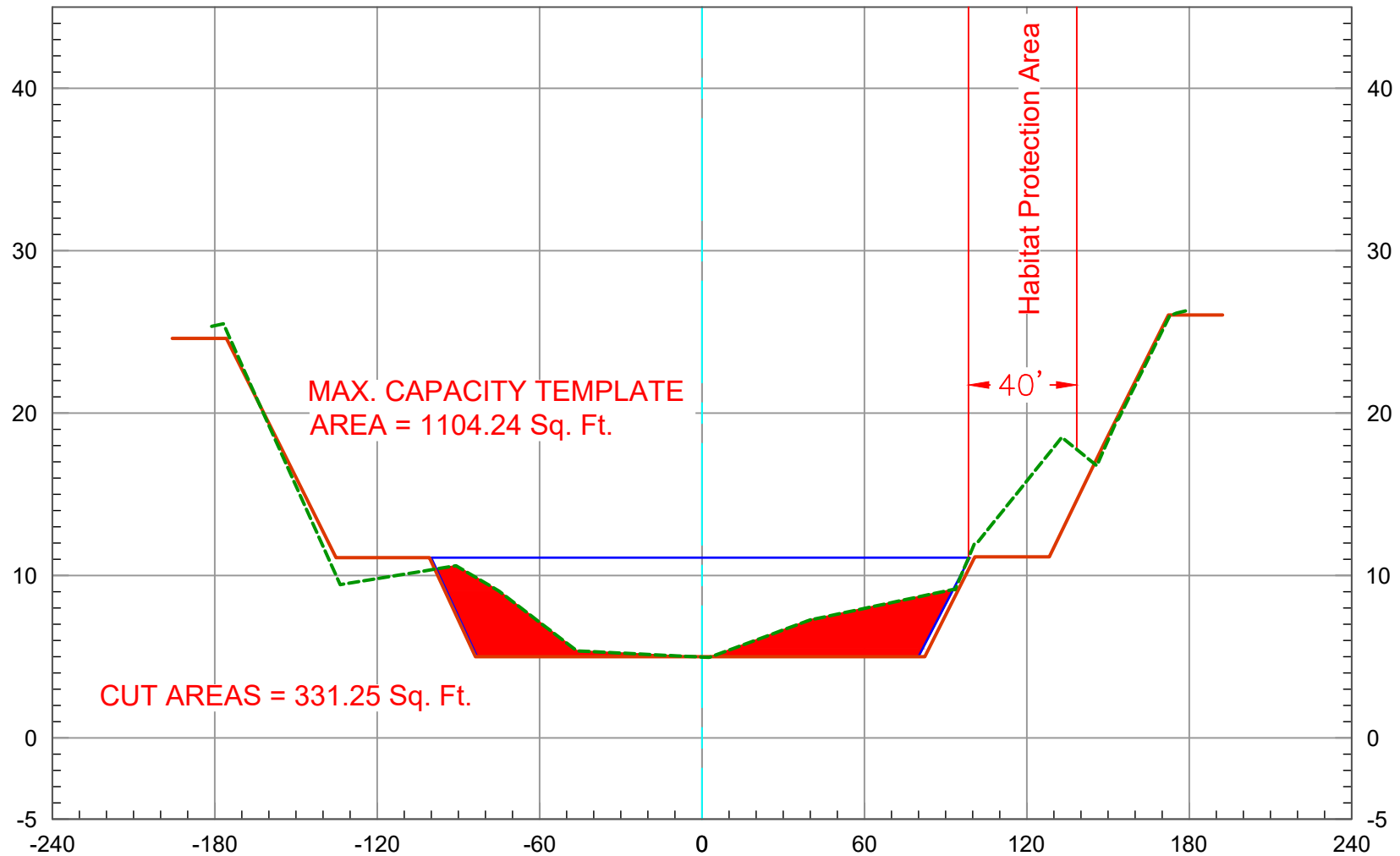
Maximum Capacity



82+00

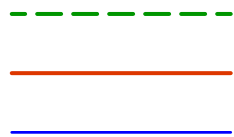
Vert. Scale: 1" = 10'
Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

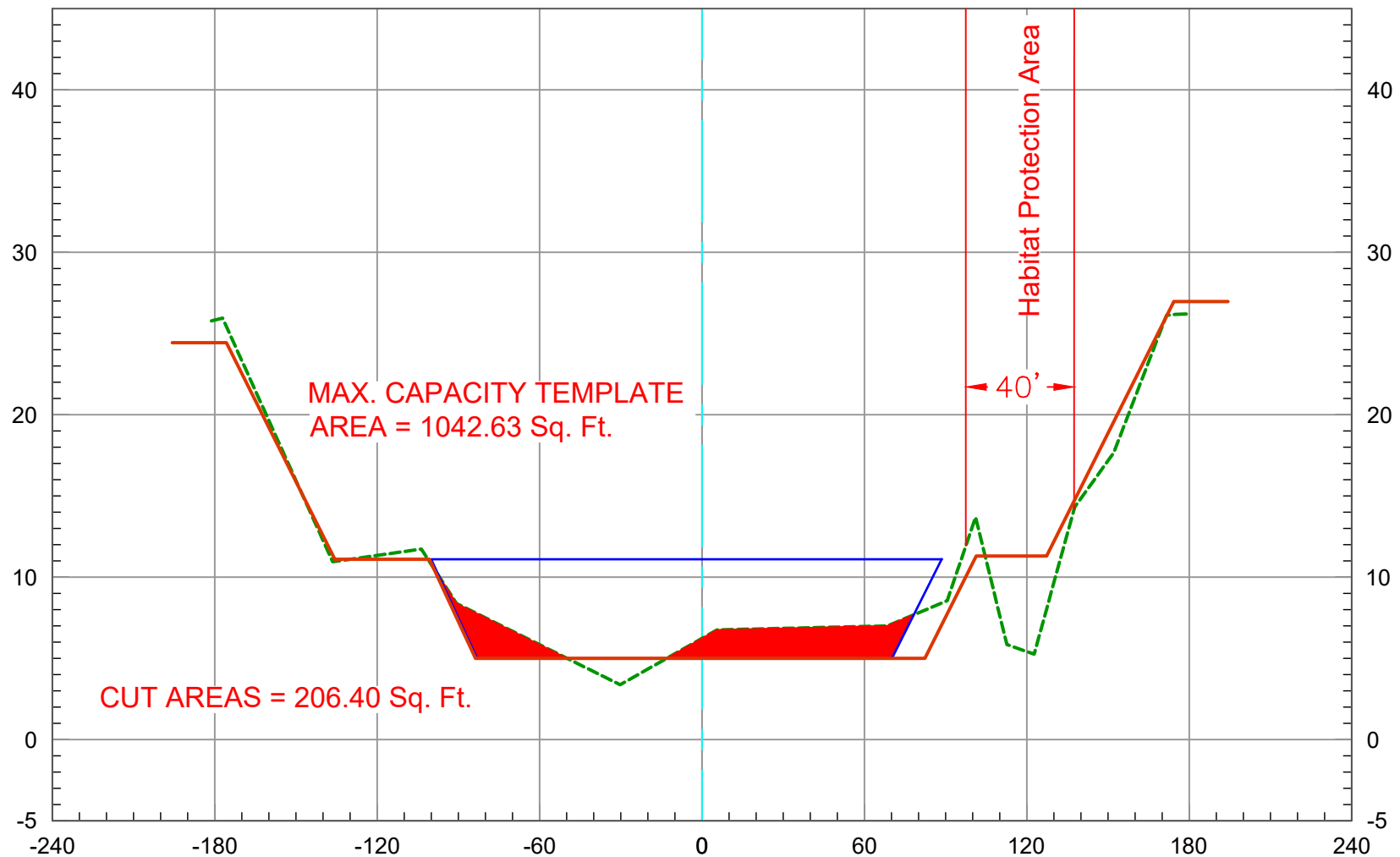
Maximum Capacity



83+00

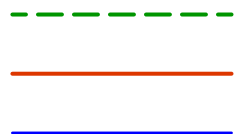
Vert. Scale: 1" = 10'
Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

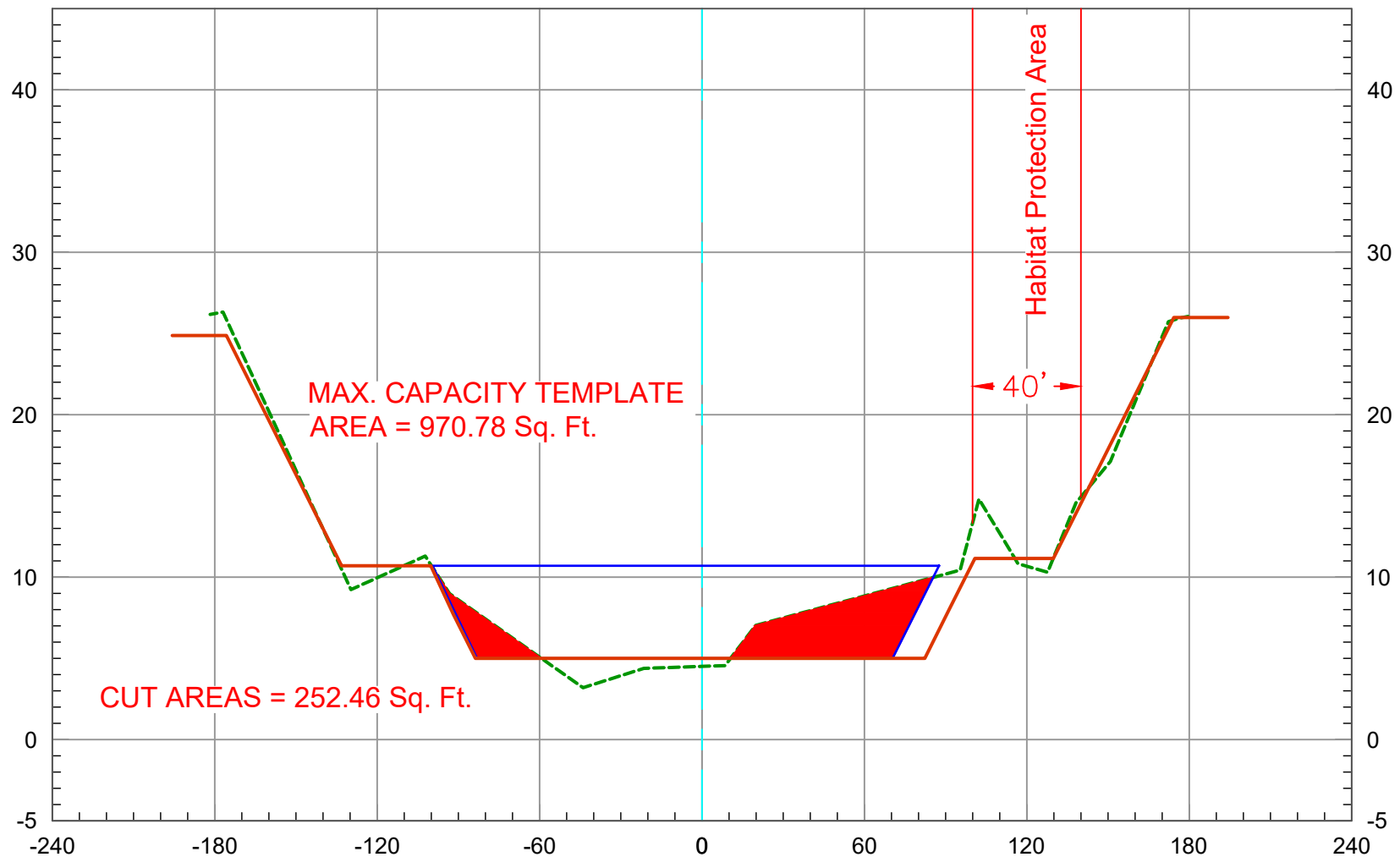
Maximum Capacity



84+00

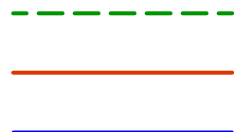
Vert. Scale: 1" = 10'
Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

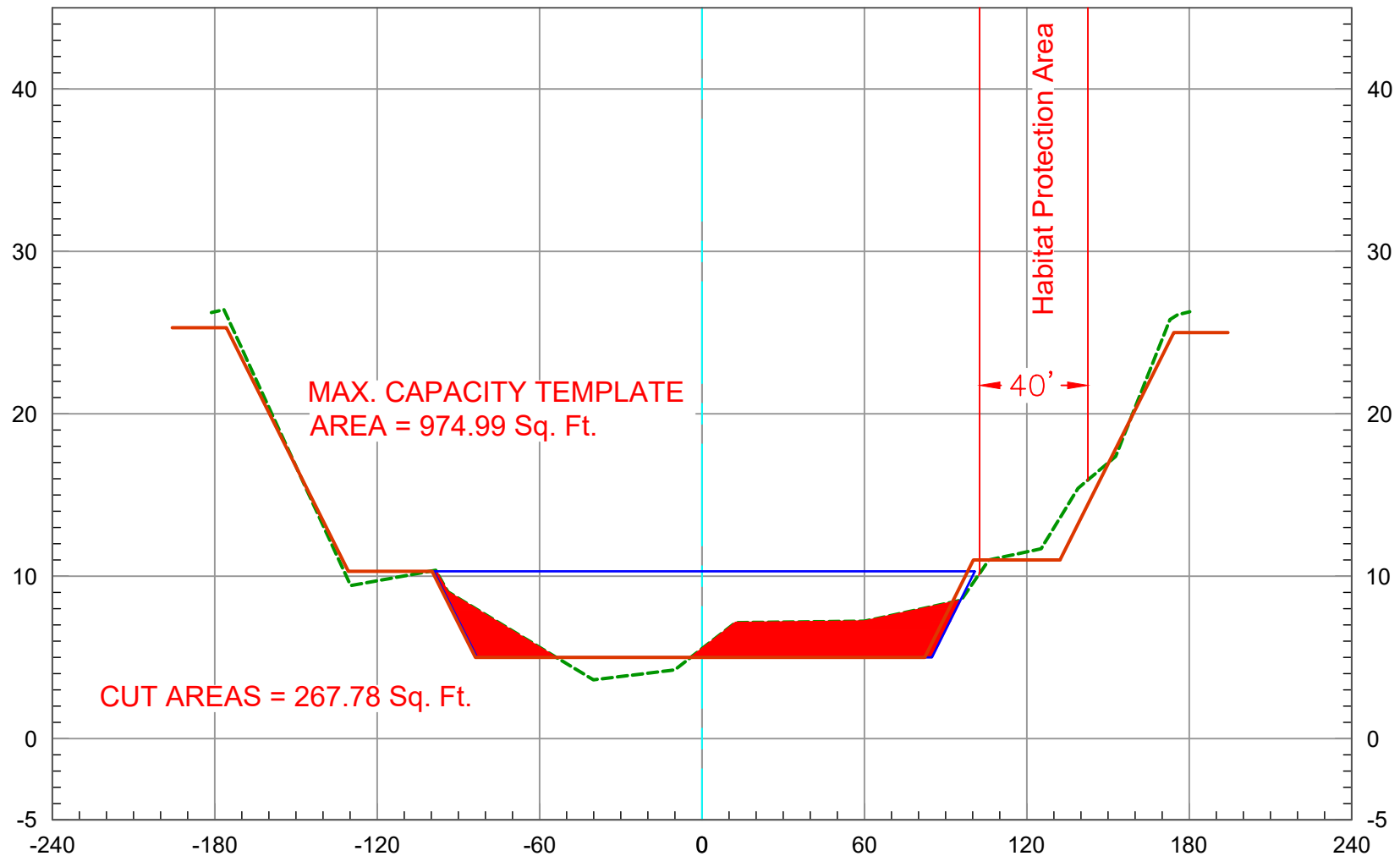
Maximum Capacity



85+00

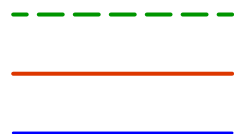
Vert. Scale: 1" = 10'
Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

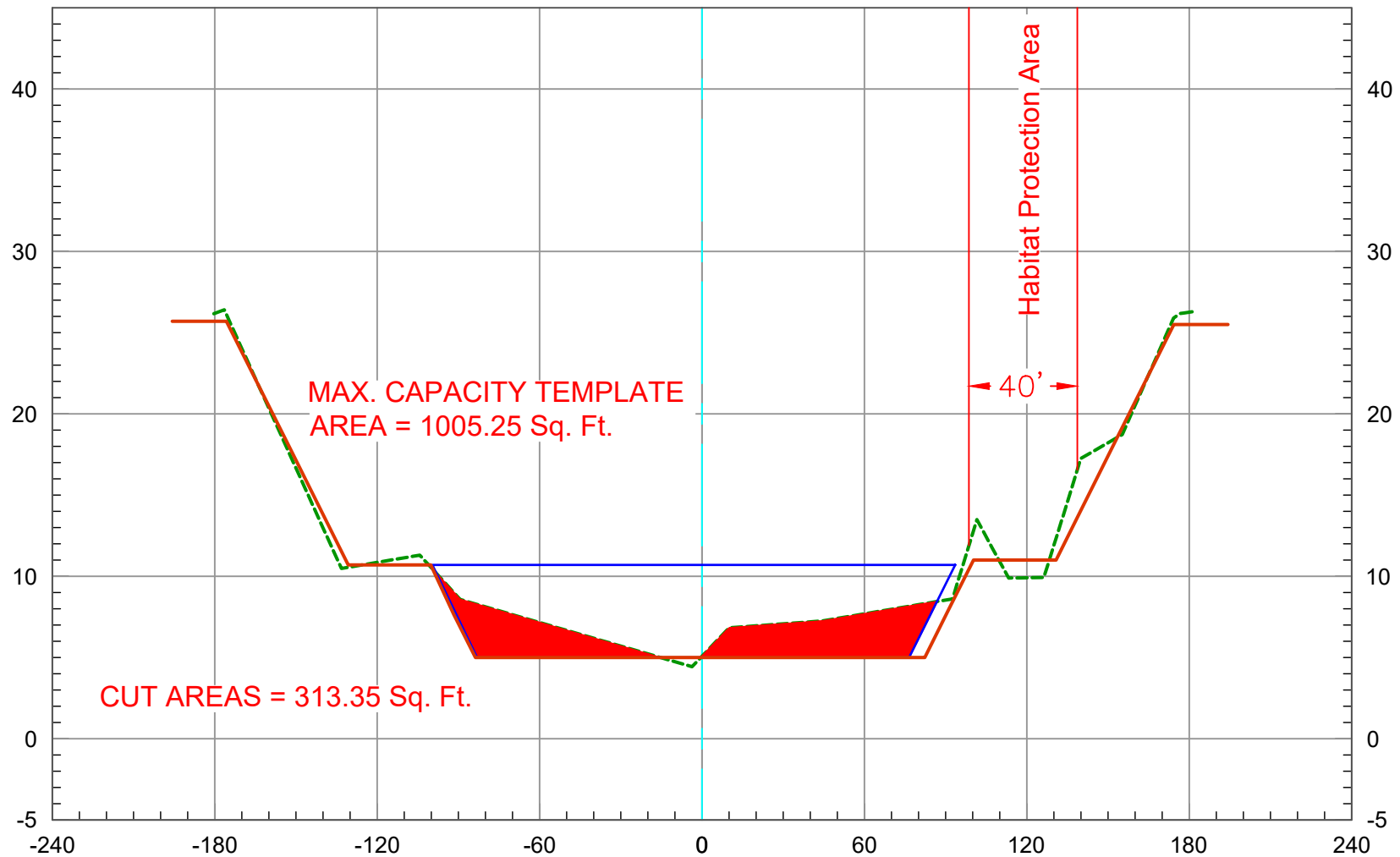
Maximum Capacity



86+00

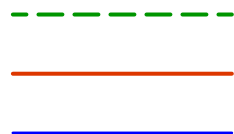
Vert. Scale: 1" = 10'
Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

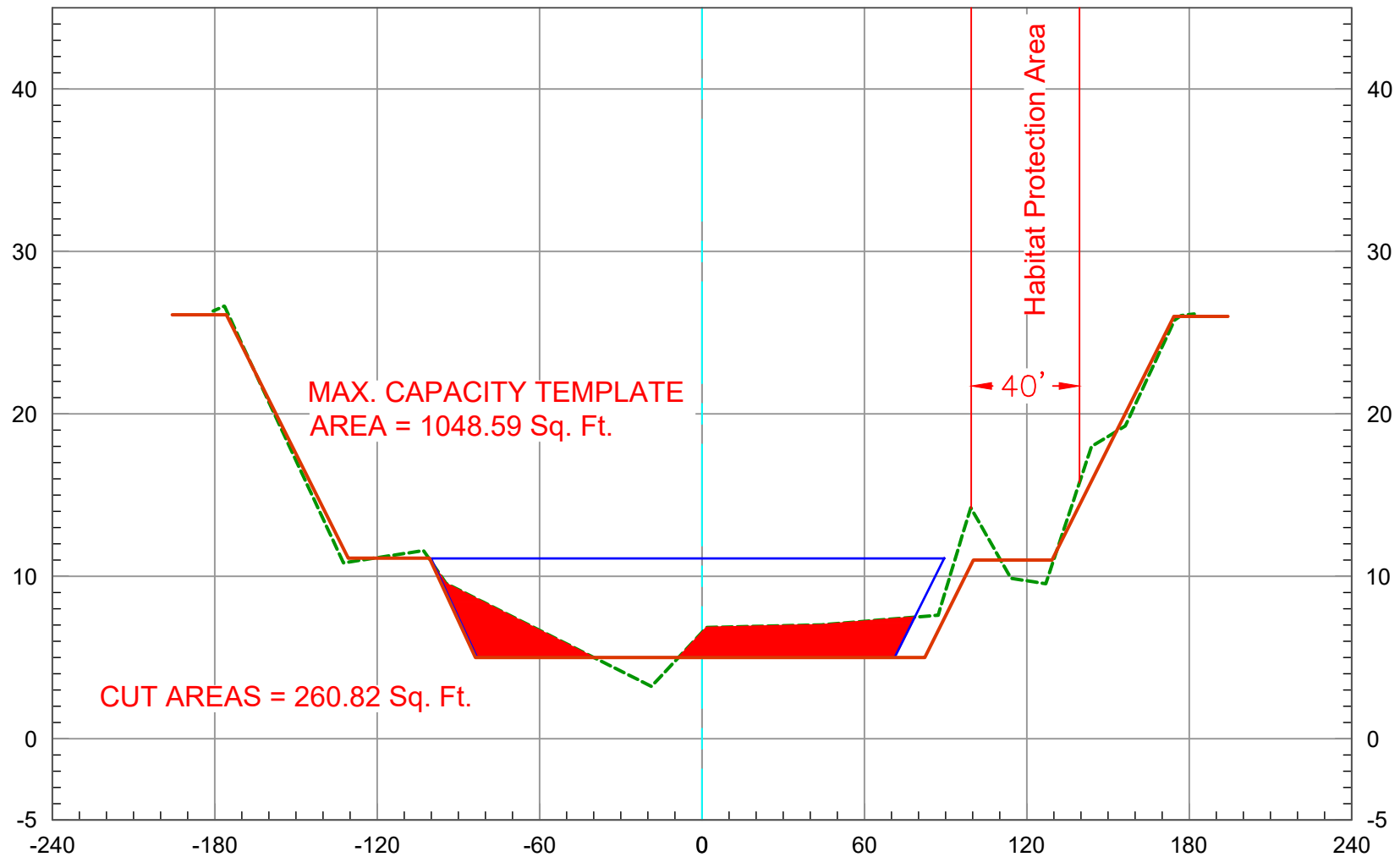
Maximum Capacity



87+00

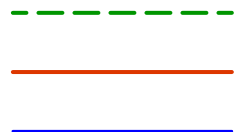
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Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

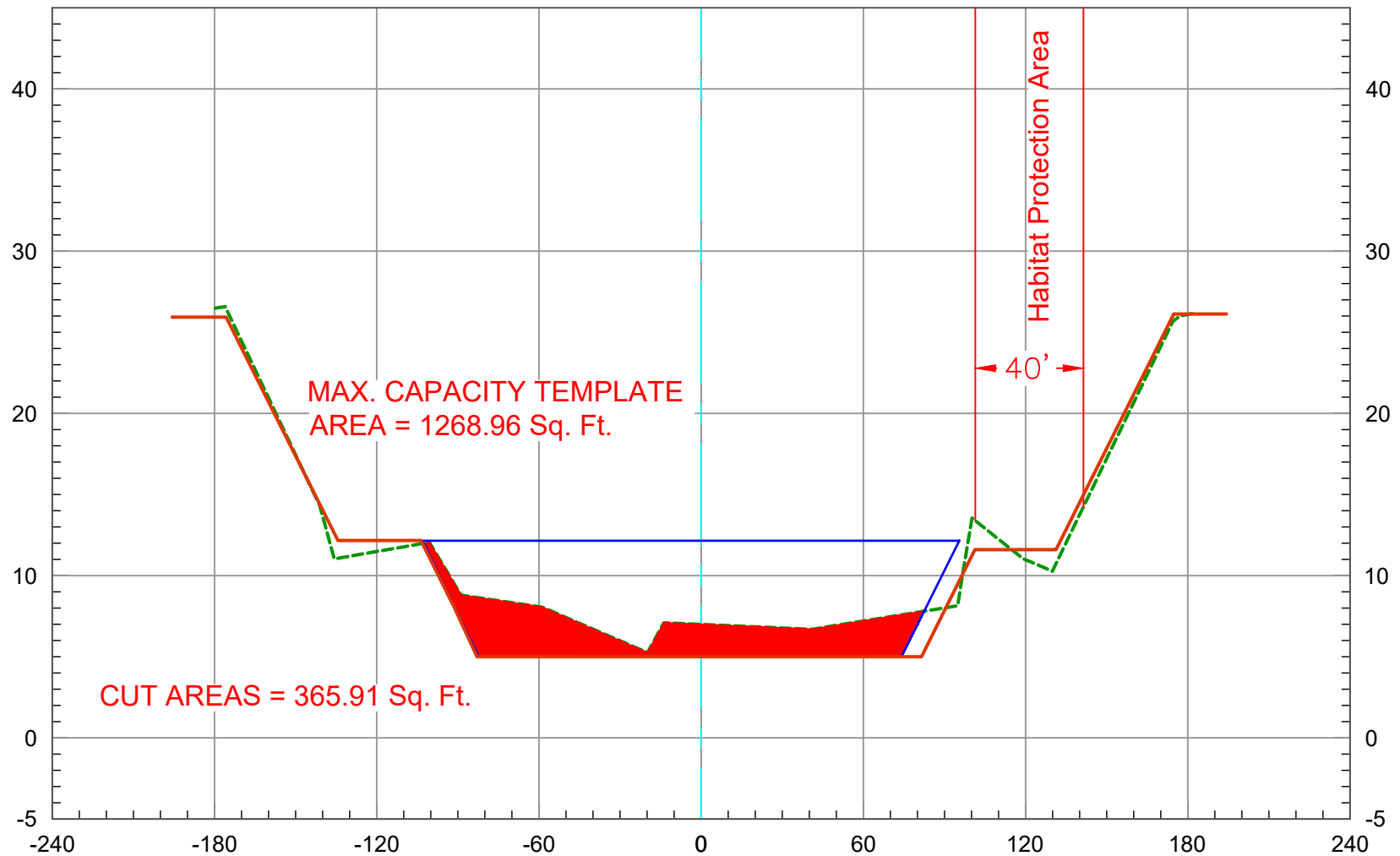
Maximum Capacity



88+00

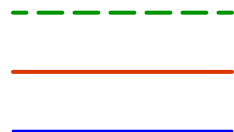
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Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

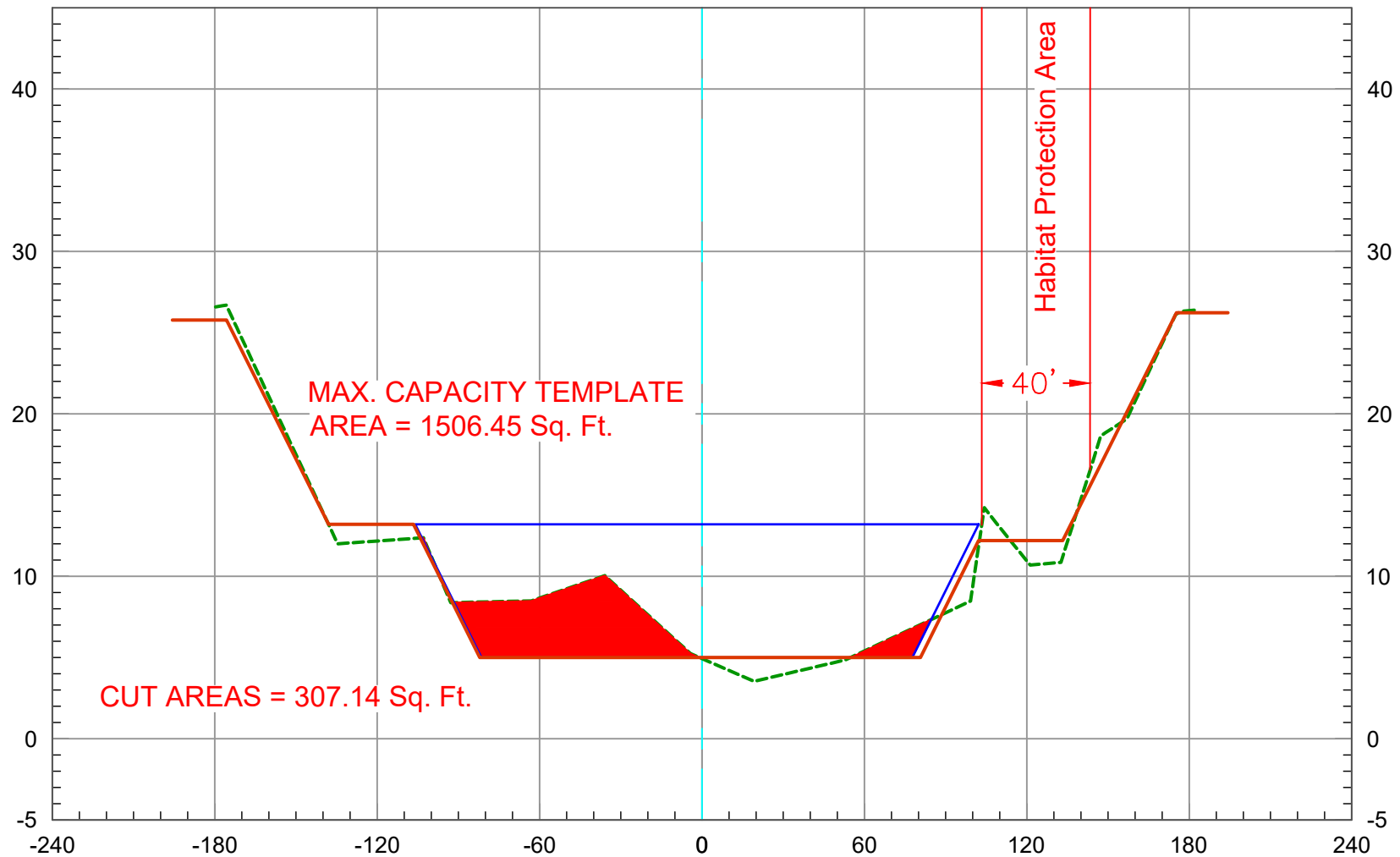
Maximum Capacity



89+00

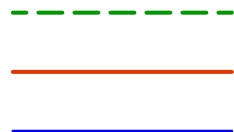
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Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



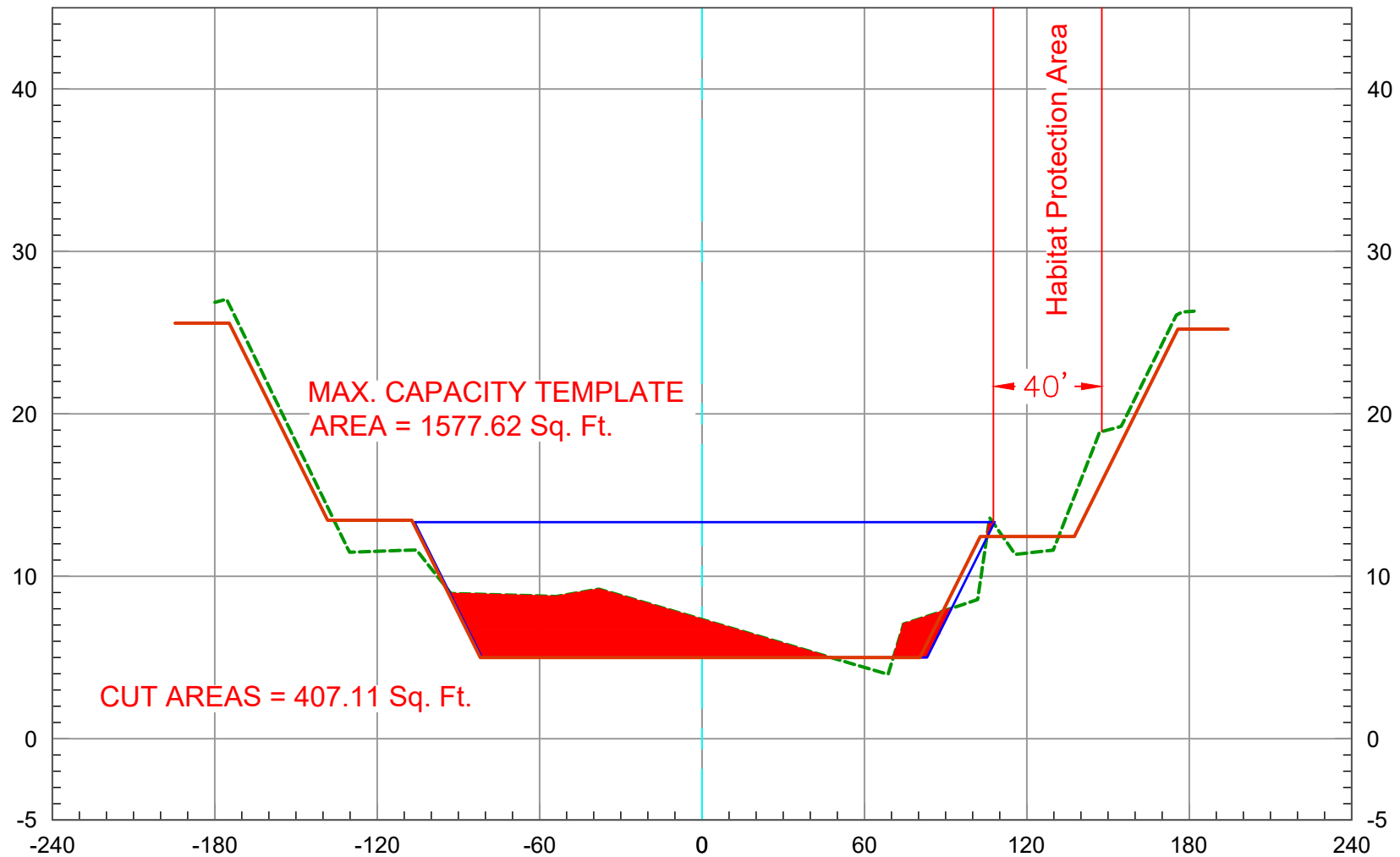
2019 Ground
As-Built Plan

Maximum Capacity



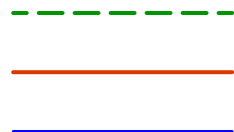
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Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

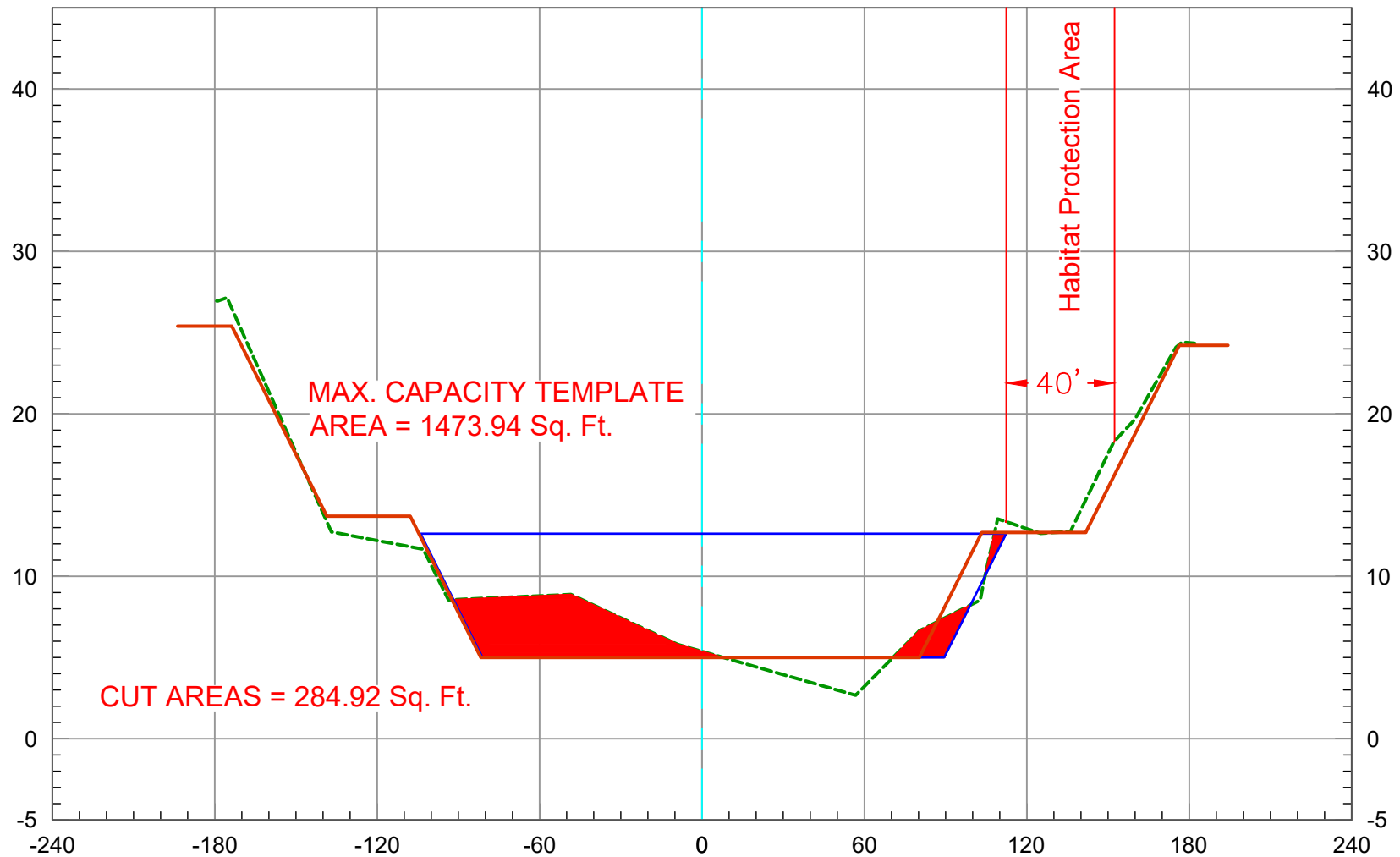
Maximum Capacity



91+00

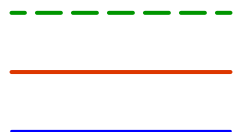
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Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

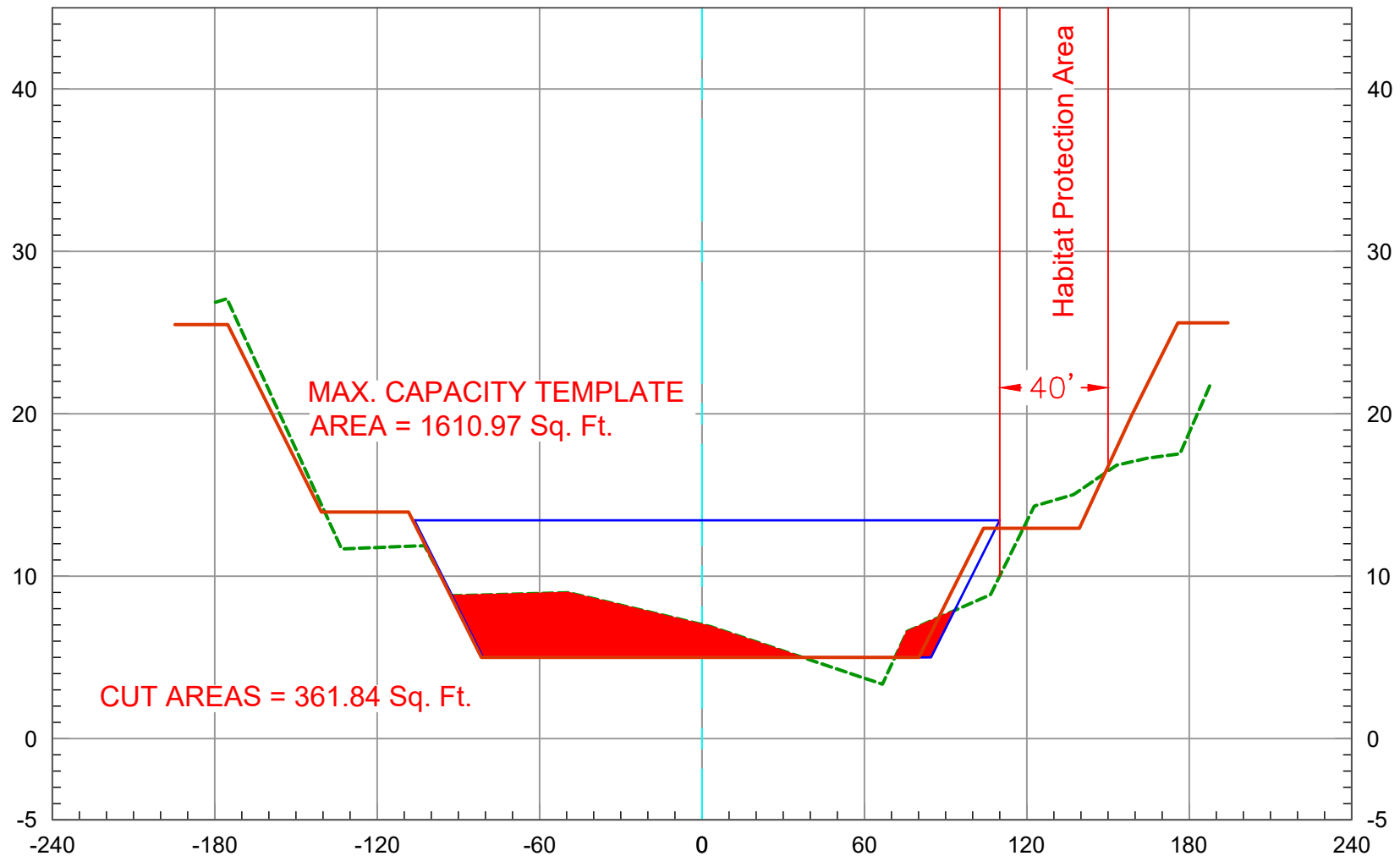
Maximum Capacity



92+00

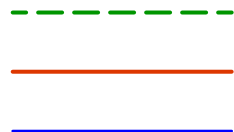
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Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

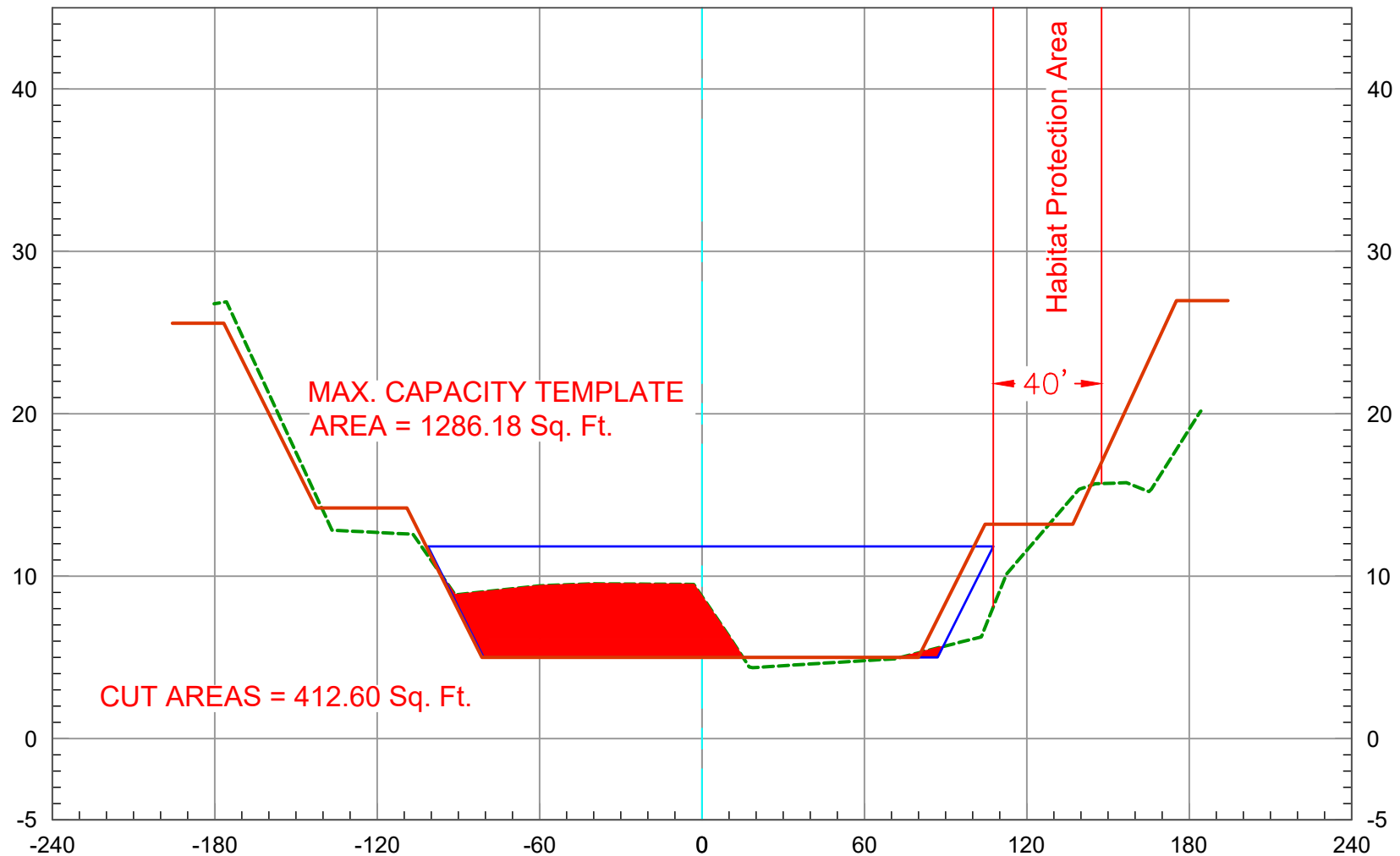
Maximum Capacity



93+00

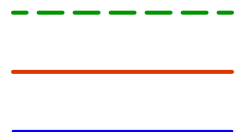
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Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

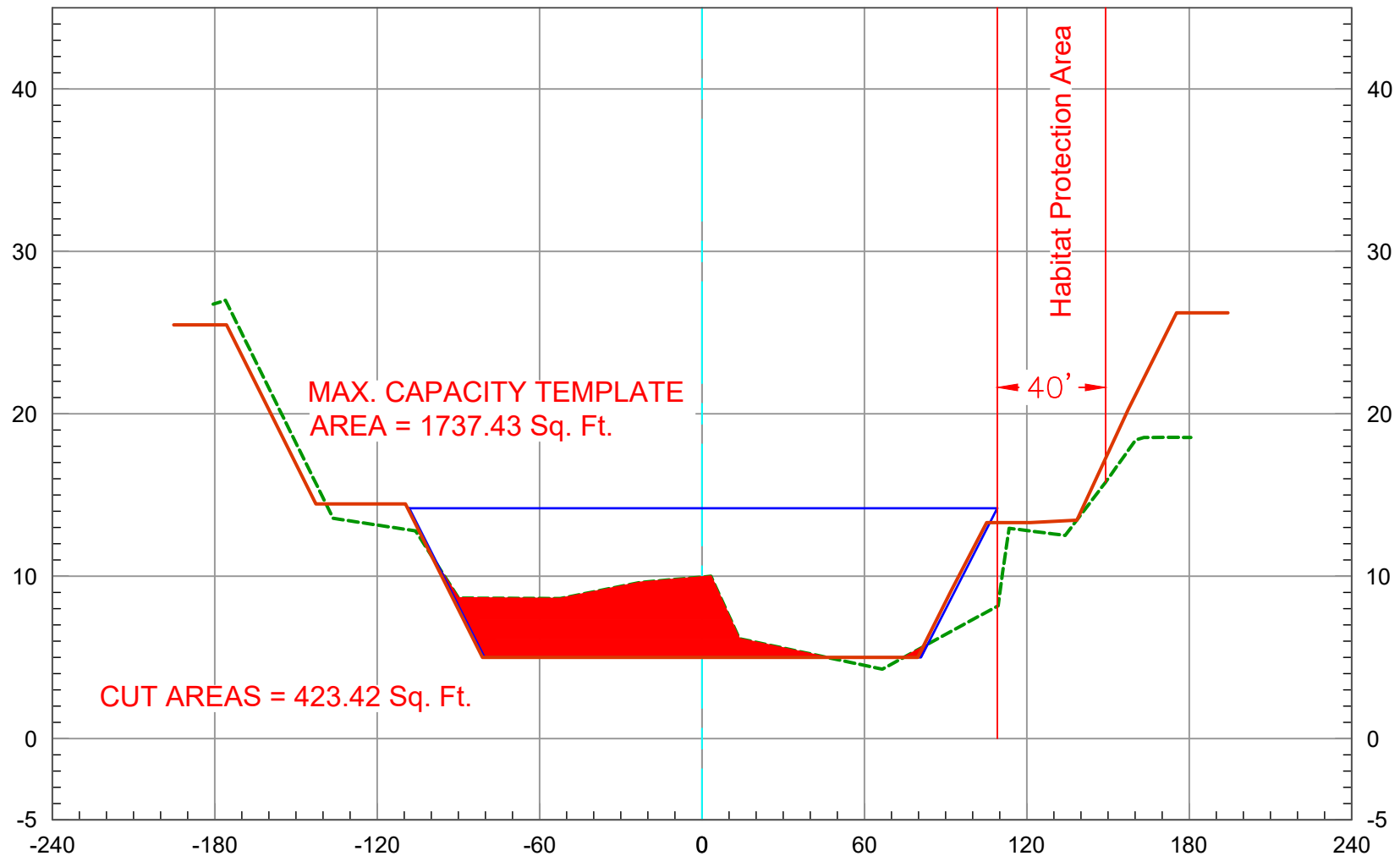
Maximum Capacity



94+00

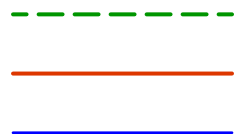
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Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

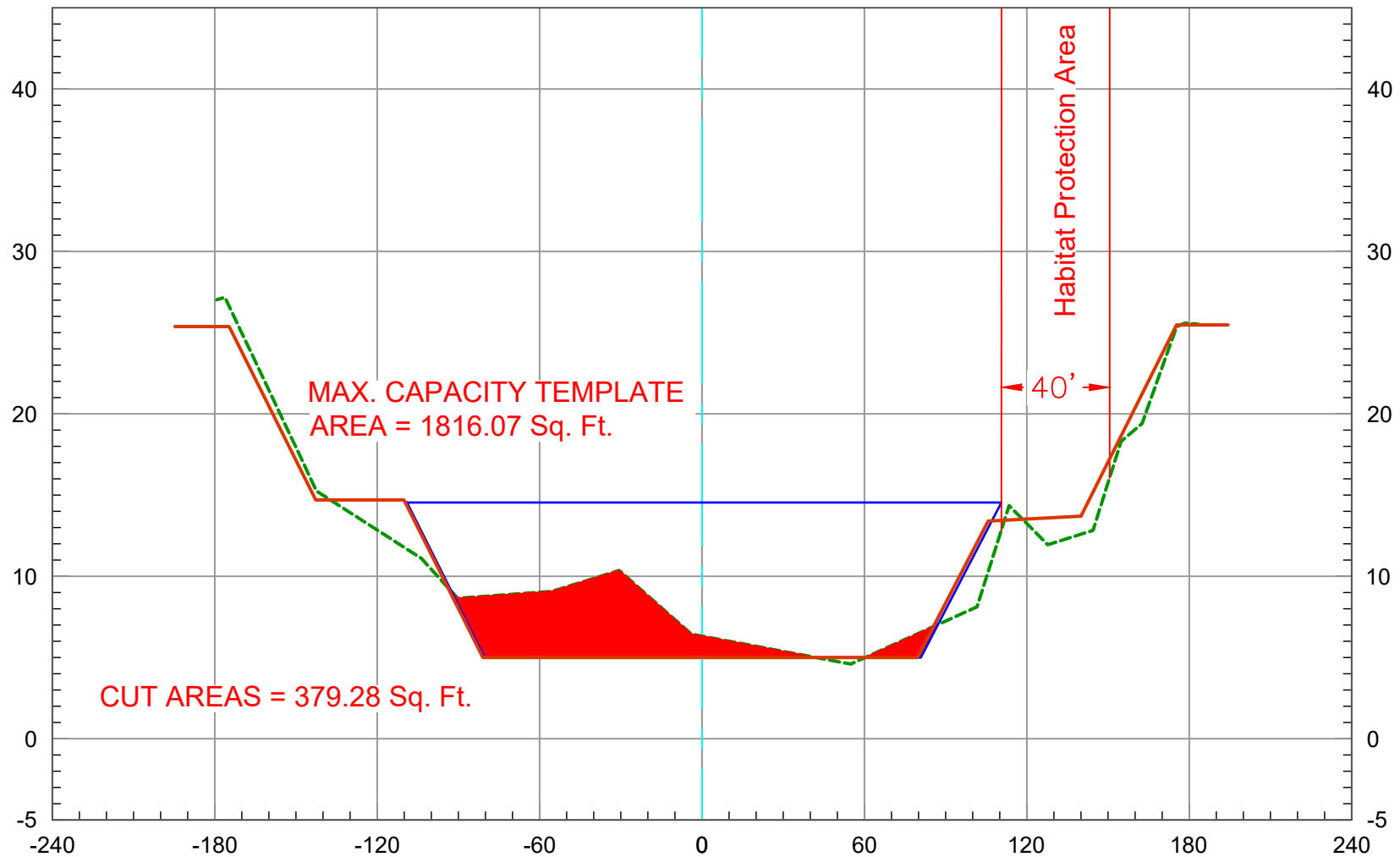
Maximum Capacity



95+00

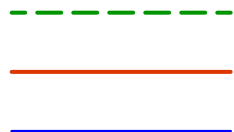
Vert. Scale: 1" = 10'
Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

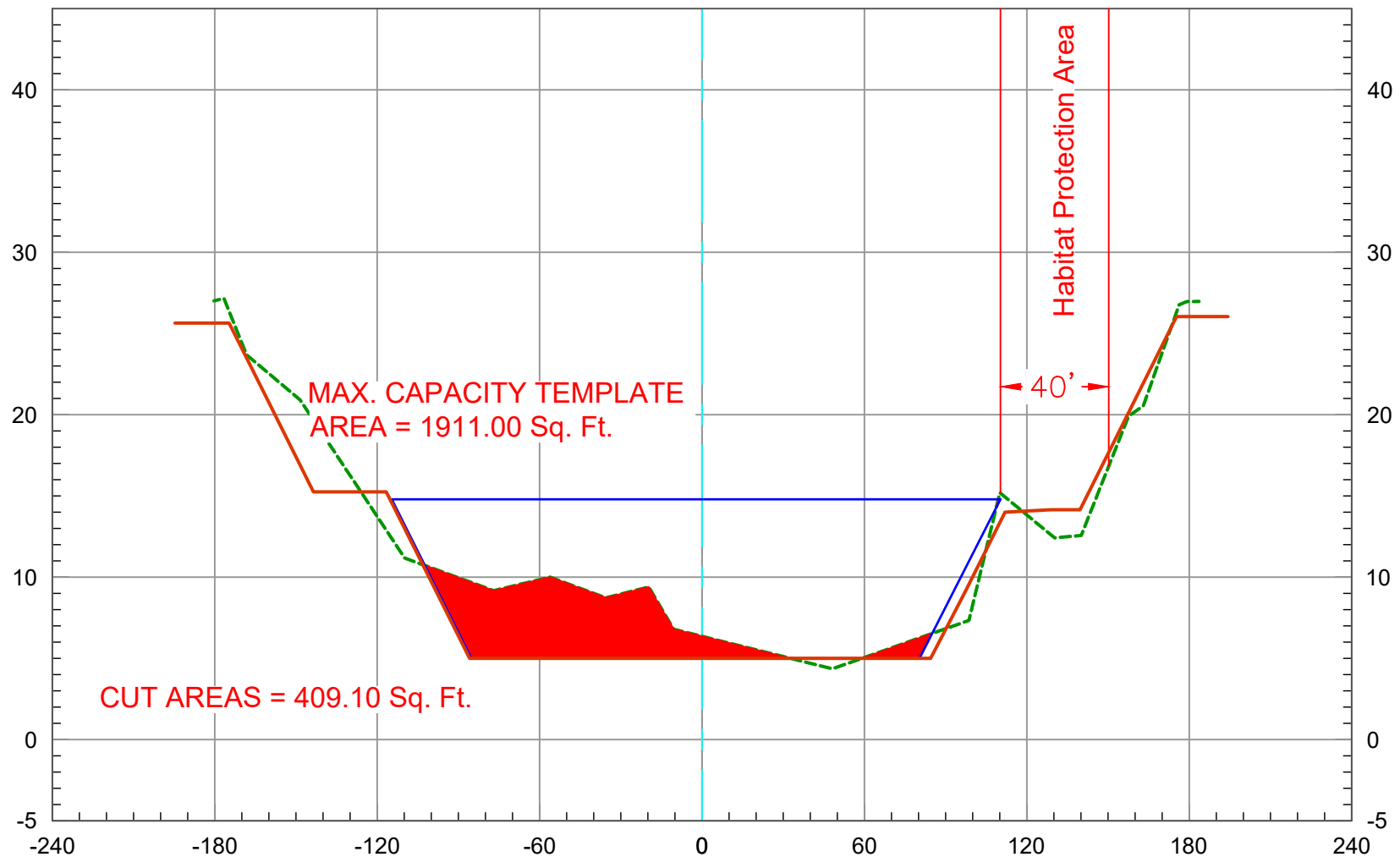
Maximum Capacity



96+00

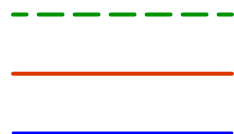
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Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

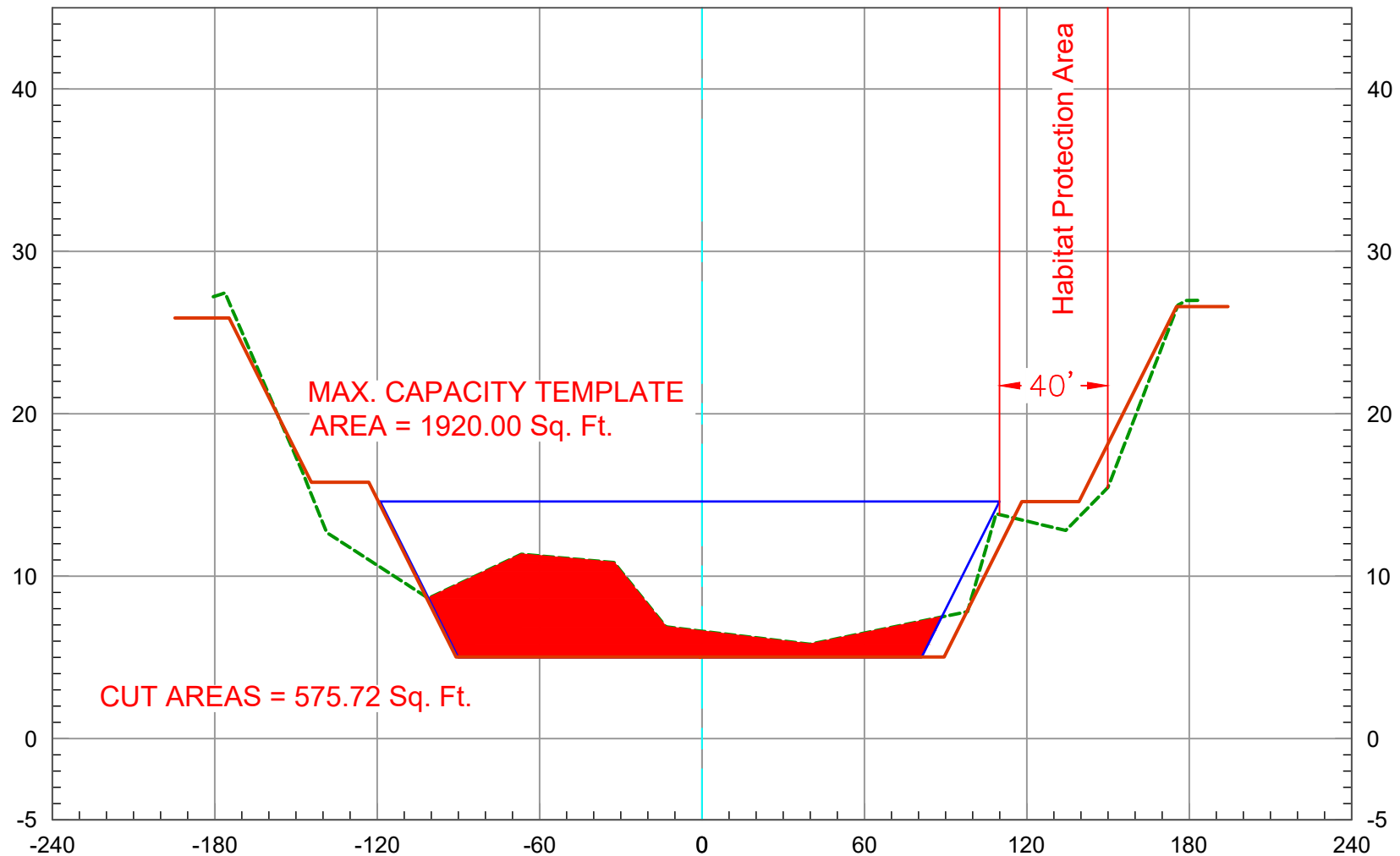
Maximum Capacity



97+00

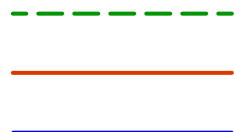
Vert. Scale: 1" = 10'
Horiz. Scale: 1" = 60'

SAN DIEGO CREEK (F05) BASIN 2 - 2019 SCOURS CL



2019 Ground
As-Built Plan

Maximum Capacity



98+00

Vert. Scale: 1" = 10'
Horiz. Scale: 1" = 60'