

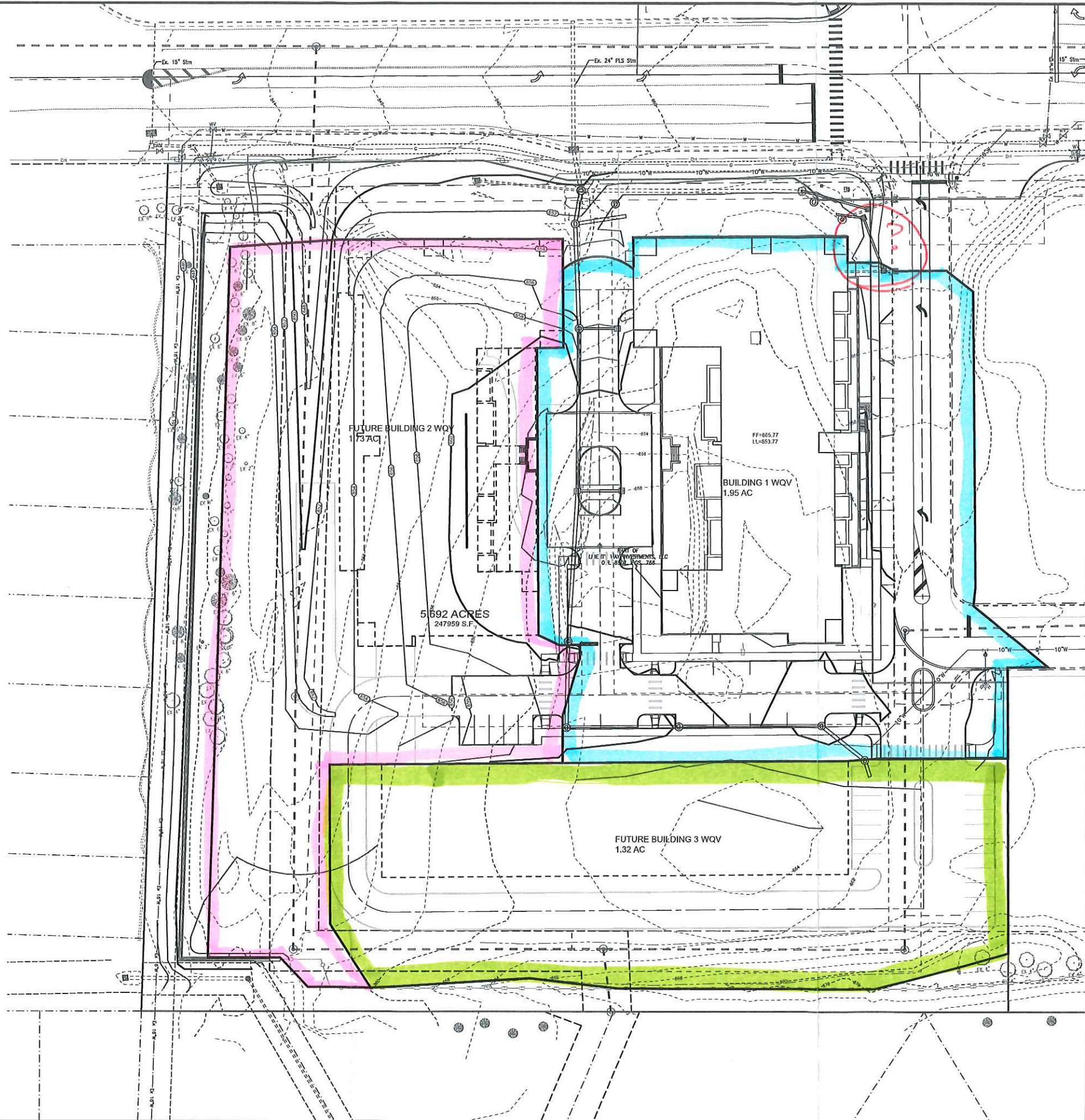


PROJECT #: 15M053-000 SHEET _____ OF _____
PROJECT: Kew Commons
CLIENT NAME: _____
SUBJECT: _____
DRAWN BY: _____ DATE 7-25-18
CHECKED BY: _____ DATE _____

Summary of WQV Strategy For Residential Pod 1 Foster Ln

- 1.) BUILDING 1: FOSTER LANE: DIRECT ROOFTOP RUNOFF 1/2 FOSTER LN TO STORMTECH SYSTEM LOCATED ON NORTHSIDE OF BUILDING (PHASE 1)
- 2.) BUILDING 2: DIRECT ROOFTOP RUNOFF TO STORMTECH SYSTEM (FUTURE PHASE) LOCATED ON WEST SIDE OF BUILDING
- 3.) BUILDING 3: DIRECT ROOFTOP RUNOFF TO STORMTECH SYSTEM (FUTURE PHASE) LOCATED ON EAST SIDE OF BUILDING
- 4.) PRIVATE STREETS: Storm System Directs Water to Stormtech Systems. PHASE 1 PAVEMENT IS DIRECTED INTO BUILDING 1 STORMTECH. FUTURE PAVEMENT WILL BE DIRECTED TO FUTURE BUILDING 2 & 3 STORMTECH SYSTEM

20% gravel void space (compaction occurs)
max 30% with submitted source documentation



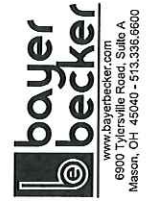
Item	Revision	Description	Date	Drwn:	Chk:
			06-25-18	AJY	JSD
1					
2					
3					
4					
5					
6					
7					
8					
9					

**KEW COMMONS PHASE 1
SP-PUD TRACT 3**

SP-POD THACT 3
LIBERTY WAY & TYLERS PLACE BLVD
SECTION 18, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

WQV DRAINAGE MAP

WQV DRAINAGE MAP

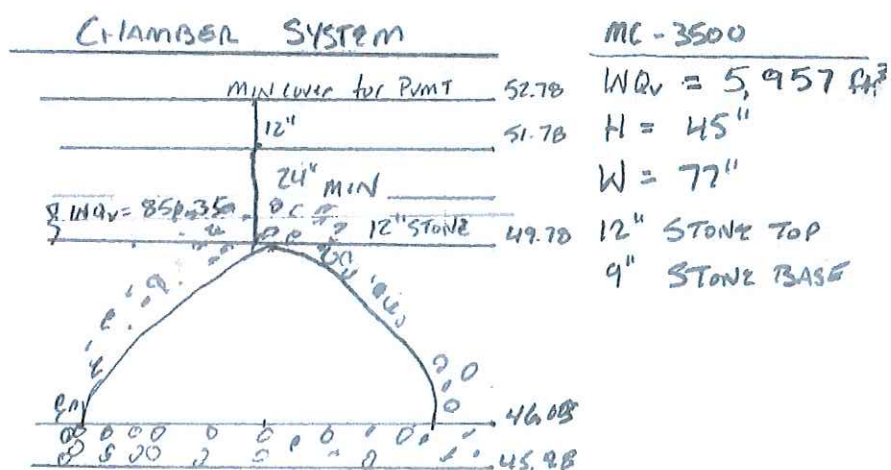
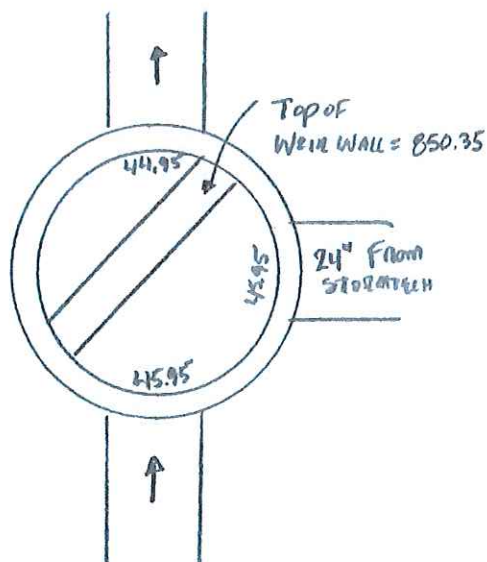
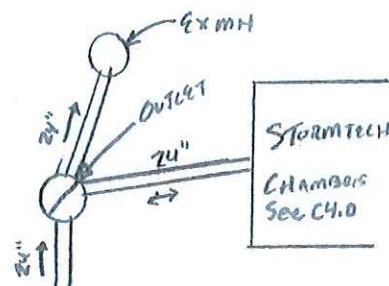


Drawing: 15M053-000 GRADING RES
 Drawn by: AJW
 Checked By: JSD
 Issue Date: 03-13-18
 Sheet:
WQv

WQv



PROJECT #: 15M053-000 SHEET _____ OF _____
 PROJECT: _____
 CLIENT NAME: _____
 SUBJECT: BUILDING 1 STORMTECH CHAMBERS
 DRAWN BY: _____ DATE 7-25-18
 CHECKED BY: _____ DATE _____



SIZE Weir in DOWNSTREAM CB TO PASS 100 YR

$$Q = CLH^{3/2} \rightarrow H = \left(\frac{Q}{CL} \right)^{2/3}$$

$$H = \left(\frac{21.20}{(30)(4)} \right)^{2/3} = 1.46'$$

$$850.35 + 1.46' = 851.81 \quad 100 \text{ YR}$$

$$T/G @ 852.53$$

? where is the
1.25" orifice
as calculated
on next page?
(see C4.5 in CDs)

NOTE: with system design as per CDs
majority of stormwater does not
reach the chambers



Water Quality Volume

Project:	Kew Commons Phase 1	Designed By:	AJW	Date:	5/31/18
Job No.:	15M053.000	Checked By:		Date:	
Basin ID:	Building 1 & Foster Lane	Revised By:		Date:	

Required Water Quality Volume

WQ_v = P R_v A/12

Site Drainage Area (A) = 1.95 acres (To Basin)

Rainfall Depth (P) = 0.9 in.

Runoff Coefficient (R_v) = 0.78

R_v=0.05 +0.9*i*; *i*=fraction of post -construction impervious surface

Impervious (i) = 0.81

WQ_v = 0.114 acre-ft.

Sediment Storage Allowance = 20 %

Sediment Storage Allowance = 0.023 Ac-ft

Total WQ_v = 0.137 Ac-ft

= 5,957 cu.ft.

Water Quality Release Rate

Q_{wqv} = Total WQ_v/RT

Required Retention Time (RT) 24 hours

Provided Retention Time (PT) 28.78 hours

Q_{wqv} = 0.069 cfs

Water Quality Outlet Orifice

Contour Areas

	Elevation ft	Area ft ²	Volume ft ³	Cum. Vol. ft ³	Elevation at V	Storage at Elev
Basin Inv. =	846.03		0.00	0.00		
Contour 1 =	850.36		5967.28	5967.28	850.35	5957.05
Contour 2 =						
Contour 3 =						
Contour 4 =						
Contour 5 =						
Contour 6 =						
Contour 7 =						
Contour 8 =						
Contour 9 =						
Contour 10 =						
Contour 11 =						
Contour 12 =						
Contour 13 =						
Contour 14 =						

Q = N C_d A_o (2 g Δh)^{1/2}

C_d = 0.61

A_o = 0.0085 π D²/4 for circular orifices; = h * w for rectangular orifices

g = 32.20 ft/sec²

Q = 0.058 cfs

Orifice h = 1.250 inch

Orifice w = inch (= 0 for circular orifice)

Number of orifices = N = 1

Δh_{avg} = (Elev at V - Basin Inv)/2 - 1/2 h = 1.90 ft

Project: Kew Commons Bldg 1 & Foster Lane



Chamber Model -
Units -
Number of Chambers -
Number of End Caps -
Voids in the stone (porosity) -
Base of STONE Elevation -
Amount of Stone Above Chambers -
Amount of Stone Below Chambers -
Area of system -

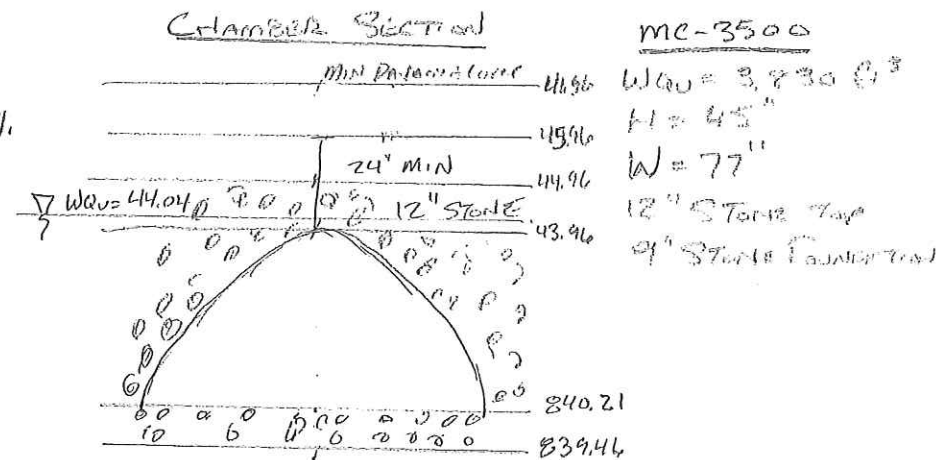
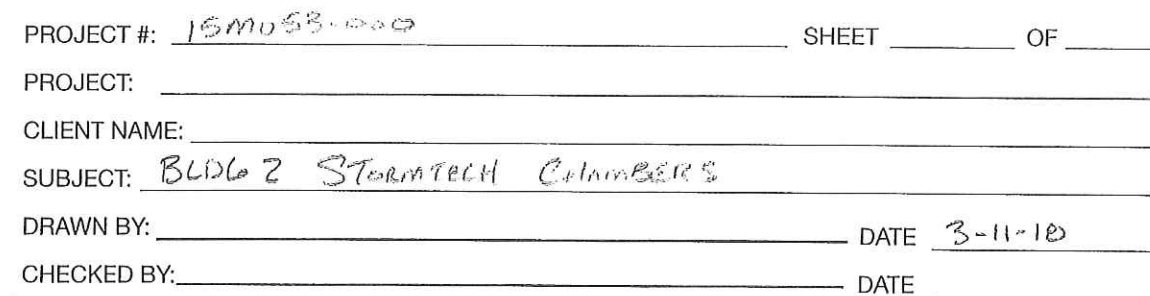
MC-3500
Imperial
34
4
40
845.28
12
9
1814

Click Here for Metric

☒ Include Perimeter Stone in Calculations

sf Min. Area - 1814 sf min. area

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Single End Cap (cubic feet)	Incremental Chambers (cubic feet)	Incremental End Cap (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch. EC and Stone (cubic feet)	Cumulative System (cubic feet)	Elevation (feet)
66	0.00	0.00	0.00	0.00	60.47	60.47	6269.62	850.78
65	0.00	0.00	0.00	0.00	60.47	60.47	6209.15	850.70
64	0.00	0.00	0.00	0.00	60.47	60.47	6148.68	850.61
63	0.00	0.00	0.00	0.00	60.47	60.47	6088.22	850.53
62	0.00	0.00	0.00	0.00	60.47	60.47	6027.75	850.45
61	0.00	0.00	0.00	0.00	60.47	60.47	5967.28	850.36
60	0.00	0.00	0.00	0.00	60.47	60.47	5906.82	850.28
59	0.00	0.00	0.00	0.00	60.47	60.47	5846.35	850.20
58	0.00	0.00	0.00	0.00	60.47	60.47	5785.88	850.11
57	0.00	0.00	0.00	0.00	60.47	60.47	5725.42	850.03
56	0.00	0.00	0.00	0.00	60.47	60.47	5664.95	849.95
55	0.00	0.00	0.00	0.00	60.47	60.47	5604.48	849.86
54	0.06	0.00	1.97	0.00	59.68	61.65	5544.02	849.78
53	0.19	0.02	6.60	0.10	57.79	64.48	5482.37	849.70
52	0.29	0.04	9.99	0.15	56.41	66.55	5417.88	849.61
51	0.40	0.05	13.72	0.21	54.89	68.82	5351.33	849.53
50	0.69	0.07	23.36	0.27	51.01	74.65	5282.50	849.45
49	1.03	0.09	34.96	0.35	46.34	81.66	5207.86	849.36
48	1.25	0.11	42.48	0.43	43.30	86.21	5126.20	849.28
47	1.42	0.13	48.36	0.51	40.92	89.78	5039.99	849.20
46	1.57	0.14	53.49	0.58	38.84	92.91	4950.20	849.11
45	1.71	0.16	58.04	0.65	36.99	95.68	4857.30	849.03
44	1.83	0.18	62.17	0.73	35.31	98.20	4761.61	848.95
43	1.94	0.20	65.88	0.80	33.79	100.48	4663.41	848.86
42	2.04	0.22	69.39	0.87	32.36	102.62	4562.93	848.78
41	2.13	0.23	72.58	0.94	31.06	104.58	4460.31	848.70
40	2.22	0.25	75.62	1.00	29.82	106.44	4355.73	848.61
39	2.31	0.27	78.43	1.06	28.67	108.16	4249.29	848.53
38	2.38	0.28	81.08	1.12	27.59	109.79	4141.13	848.45
37	2.46	0.29	83.61	1.18	26.55	111.34	4031.34	848.36
36	2.53	0.31	85.96	1.23	25.59	112.78	3920.00	848.28
35	2.59	0.32	88.19	1.28	24.68	114.15	3807.22	848.20
34	2.66	0.33	90.31	1.34	23.81	115.45	3693.07	848.11
33	2.72	0.35	92.31	1.39	22.99	116.69	3577.62	848.03
32	2.77	0.36	94.22	1.44	22.20	117.86	3460.93	847.95
31	2.82	0.37	96.04	1.49	21.46	118.98	3343.06	847.86
30	2.88	0.38	97.77	1.54	20.75	120.05	3224.08	847.78
29	2.92	0.40	99.42	1.58	20.06	121.07	3104.03	847.70
28	2.97	0.41	100.98	1.63	19.42	122.03	2982.96	847.61
27	3.01	0.42	102.42	1.67	18.83	122.93	2860.93	847.53
26	3.05	0.43	103.81	1.72	18.25	123.78	2738.01	847.45
25	3.09	0.44	105.21	1.76	17.68	124.65	2614.22	847.36
24	3.13	0.45	106.44	1.80	17.17	125.41	2489.58	847.28
23	3.17	0.46	107.63	1.84	16.68	126.15	2364.16	847.20
22	3.20	0.47	108.78	1.88	16.20	126.87	2238.01	847.11
21	3.23	0.48	109.86	1.92	15.76	127.53	2111.15	847.03
20	3.26	0.49	110.89	1.96	15.33	128.17	1983.61	846.95
19	3.29	0.50	111.87	1.99	14.92	128.78	1855.44	846.86
18	3.32	0.51	112.81	2.03	14.53	129.37	1726.66	846.78
17	3.34	0.51	113.70	2.06	14.16	129.92	1597.29	846.70
16	3.37	0.52	114.53	2.09	13.82	130.44	1467.37	846.61
15	3.39	0.53	115.35	2.12	13.48	130.94	1336.93	846.53
14	3.41	0.54	116.09	2.15	13.17	131.41	1205.98	846.45
13	3.44	0.54	116.86	2.17	12.85	131.89	1074.57	846.36
12	3.46	0.55	117.56	2.20	12.56	132.32	942.69	846.28
11	3.48	0.56	118.28	2.22	12.27	132.76	810.36	846.20
10	3.51	0.59	119.17	2.38	11.85	133.40	677.60	846.11
9	0.00	0.00	0.00	0.00	60.47	60.47	544.20	846.03
8	0.00	0.00	0.00	0.00	60.47	60.47	483.73	845.95
7	0.00	0.00	0.00	0.00	60.47	60.47	423.27	845.86
6	0.00	0.00	0.00	0.00	60.47	60.47	362.80	845.78
5	0.00	0.00	0.00	0.00	60.47	60.47	302.33	845.70
4	0.00	0.00	0.00	0.00	60.47	60.47	241.87	845.61
3	0.00	0.00	0.00	0.00	60.47	60.47	181.40	845.53
2	0.00	0.00	0.00	0.00	60.47	60.47	120.93	845.45
1	0.00	0.00	0.00	0.00	60.47	60.47	60.47	845.36



SIZE W24x11 DOWNSTREAM CB TO PG 100 1/2

$$Q = LLH^{3/2} \rightarrow H = \left(\frac{Q}{LL} \right)^{2/3}$$

$$H = \left(\frac{7.00}{(3 \times 4)} \right)^{2/3} = 0.70'$$

$$44.04 + 0.70' = \$44.74 \quad 100 \text{ yr}$$

- well well
- orifice (1" as per next page)



Water Quality Volume

Project:	Kew Commons Future Phase	Designed By:	AJW	Date:	3/10/18
Job No.:	15M053.000	Checked By:		Date:	
Basin ID:	Building 2	Revised By:		Date:	

Required Water Quality Volume

WQ_v = P R_v A/12

Site Drainage Area (A) = 1.72 acres (To Basin)

WQ_v = 0.073 acre-ft.

Rainfall Depth (P) = 0.9 in.

Sediment Storage Allowance = 20 %

Sediment Storage Allowance = 0.01 Ac-ft

Runoff Coefficient (R_v) = 0.57

Total WQ_v = 0.088 Ac-ft

= 3,830 cu.ft.

R_v=0.05 +0.9*i*; *i*=fraction of post -construction impervious surface

Impervious (i) = 0.58

Water Quality Release Rate

Q_{wqv} = Total WQ_v/RT

Required Retention Time (RT) 24 hours

Q_{wqv} = 0.044 cfs

Provided Retention Time (PT) 29.14 hours

Water Quality Outlet Orifice

Contour Areas

	Elevation ft	Area ft ²	Volume ft ³	Cum. Vol. ft ³	Elevation at V	Storage at Elev
Basin Inv. =	840.21		0.00	0.00		
Contour 1 =	844.04		3843.00	3843.00	844.03	3830.23
Contour 2 =						
Contour 3 =						
Contour 4 =						
Contour 5 =						
Contour 6 =						
Contour 7 =						
Contour 8 =						
Contour 9 =						
Contour 10 =						
Contour 11 =						
Contour 12 =						
Contour 13 =						
Contour 14 =						

Q = N C_d A_o (2 g Δh)^{1/2}

C_d = 0.61

A_o = 0.0055 π D²/4 for circular orifices; = h * w for rectangular orifices

g = 32.20 ft/sec²

Q = 0.037 cfs

Orifice h = 1.000 inch

Orifice w = inch (= 0 for circular orifice)

Number of orifices = N = 1

Δh_{avg} = (Elev at V - Basin Inv)/2 - 1/2 h =

1.87 ft

J:\2015\15M053-000\CV\Design Calcs\Water Quality\15M053-000 WQv Release Orifice Calc-005.xls

3/11/2018 3:47 PM

Project: Kew Commons Future Building 2



Chamber Model -
Units -
Number of Chambers -
Number of End Caps -
Voids in the stone (porosity) -
Base of STONE Elevation -
Amount of Stone Above Chambers -
Amount of Stone Below Chambers -
Area of system -

MC-3500

Imperial

23

4

40

100.00

12

9

1249

Click Here for Metric

20%

☒ Include Perimeter Stone in Calculations

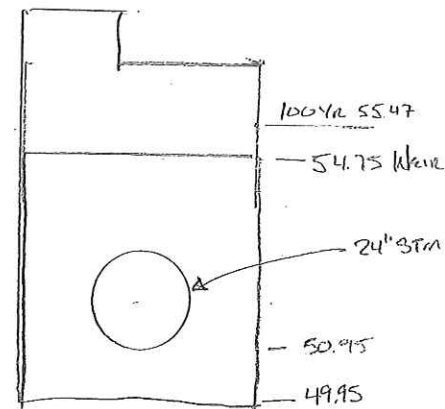
sf Min. Area - 1249 sf min. area

Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Single End Cap (cubic feet)	Incremental Chambers (cubic feet)	Incremental End Cap (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch. EC and Stone (cubic feet)	Cumulative System (cubic feet)	Elevation (feet)
66	0.00	0.00	0.00	0.00	41.63	41.63	4300.97	105.50
65	0.00	0.00	0.00	0.00	41.63	41.63	4259.33	105.42
64	0.00	0.00	0.00	0.00	41.63	41.63	4217.70	105.33
63	0.00	0.00	0.00	0.00	41.63	41.63	4176.07	105.25
62	0.00	0.00	0.00	0.00	41.63	41.63	4134.43	105.17
61	0.00	0.00	0.00	0.00	41.63	41.63	4092.80	105.08
60	0.00	0.00	0.00	0.00	41.63	41.63	4051.17	105.00
59	0.00	0.00	0.00	0.00	41.63	41.63	4009.53	104.92
58	0.00	0.00	0.00	0.00	41.63	41.63	3967.90	104.83
57	0.00	0.00	0.00	0.00	41.63	41.63	3926.27	104.75
56	0.00	0.00	0.00	0.00	41.63	41.63	3884.63	104.67
55	0.00	0.00	0.00	0.00	41.63	41.63	3843.00	104.58
54	0.06	0.00	1.34	0.00	41.10	42.43	3801.37	104.50
53	0.19	0.02	4.46	0.10	39.81	44.37	3758.93	104.42
52	0.29	0.04	6.76	0.15	38.87	45.78	3714.56	104.33
51	0.40	0.05	9.28	0.21	37.84	47.33	3668.78	104.25
50	0.69	0.07	15.81	0.27	35.20	51.28	3621.45	104.17
49	1.03	0.09	23.65	0.35	32.03	56.04	3570.18	104.08
48	1.25	0.11	28.74	0.43	29.97	59.13	3514.14	104.00
47	1.42	0.13	32.71	0.51	28.35	61.56	3455.01	103.92
46	1.57	0.14	36.18	0.58	26.93	63.69	3393.44	103.83
45	1.71	0.16	39.26	0.65	25.67	65.58	3329.75	103.75
44	1.83	0.18	42.06	0.73	24.52	67.30	3264.17	103.67
43	1.94	0.20	44.57	0.80	23.49	68.86	3196.87	103.58
42	2.04	0.22	46.94	0.87	22.51	70.32	3128.01	103.50
41	2.13	0.23	49.10	0.94	21.62	71.66	3057.69	103.42
40	2.22	0.25	51.16	1.00	20.77	72.93	2986.04	103.33
39	2.31	0.27	53.06	1.06	19.99	74.10	2913.11	103.25
38	2.38	0.28	54.85	1.12	19.25	75.22	2839.00	103.17
37	2.46	0.29	56.56	1.18	18.54	76.27	2763.79	103.08
36	2.53	0.31	58.15	1.23	17.88	77.26	2687.51	103.00
35	2.59	0.32	59.66	1.28	17.26	78.20	2610.25	102.92
34	2.66	0.33	61.09	1.34	16.66	79.09	2532.05	102.83
33	2.72	0.35	62.45	1.39	16.10	79.93	2452.96	102.75
32	2.77	0.36	63.74	1.44	15.56	80.74	2373.03	102.67
31	2.82	0.37	64.97	1.49	15.05	81.51	2292.29	102.58
30	2.88	0.38	66.14	1.54	14.56	82.24	2210.78	102.50
29	2.92	0.40	67.26	1.58	14.10	82.94	2128.54	102.42
28	2.97	0.41	68.31	1.63	13.66	83.60	2045.61	102.33
27	3.01	0.42	69.29	1.67	13.25	84.21	1962.01	102.25
26	3.05	0.43	70.22	1.72	12.86	84.80	1877.80	102.17
25	3.09	0.44	71.17	1.76	12.46	85.39	1793.00	102.08
24	3.13	0.45	72.00	1.80	12.11	85.92	1707.61	102.00
23	3.17	0.46	72.81	1.84	11.77	86.43	1621.69	101.92
22	3.20	0.47	73.59	1.88	11.45	86.92	1535.27	101.83
21	3.23	0.48	74.32	1.92	11.14	87.37	1448.35	101.75
20	3.26	0.49	75.01	1.96	10.85	87.81	1360.98	101.67
19	3.29	0.50	75.68	1.99	10.57	88.23	1273.16	101.58
18	3.32	0.51	76.31	2.03	10.30	88.64	1184.93	101.50
17	3.34	0.51	76.91	2.06	10.04	89.02	1096.29	101.42
16	3.37	0.52	77.48	2.09	9.81	89.37	1007.28	101.33
15	3.39	0.53	78.03	2.12	9.58	89.72	917.90	101.25
14	3.41	0.54	78.53	2.15	9.36	90.04	828.18	101.17
13	3.44	0.54	79.05	2.17	9.14	90.37	738.14	101.08
12	3.46	0.55	79.53	2.20	8.94	90.67	647.77	101.00
11	3.48	0.56	80.01	2.22	8.74	90.97	557.10	100.92
10	3.51	0.59	80.62	2.38	8.43	91.43	466.13	100.83
9	0.00	0.00	0.00	0.00	41.63	41.63	374.70	100.75
8	0.00	0.00	0.00	0.00	41.63	41.63	333.07	100.67
7	0.00	0.00	0.00	0.00	41.63	41.63	291.43	100.58
6	0.00	0.00	0.00	0.00	41.63	41.63	249.80	100.50
5	0.00	0.00	0.00	0.00	41.63	41.63	208.17	100.42
4	0.00	0.00	0.00	0.00	41.63	41.63	166.53	100.33
3	0.00	0.00	0.00	0.00	41.63	41.63	124.90	100.25
2	0.00	0.00	0.00	0.00	41.63	41.63	83.27	100.17
1	0.00	0.00	0.00	0.00	41.63	41.63	41.63	100.08

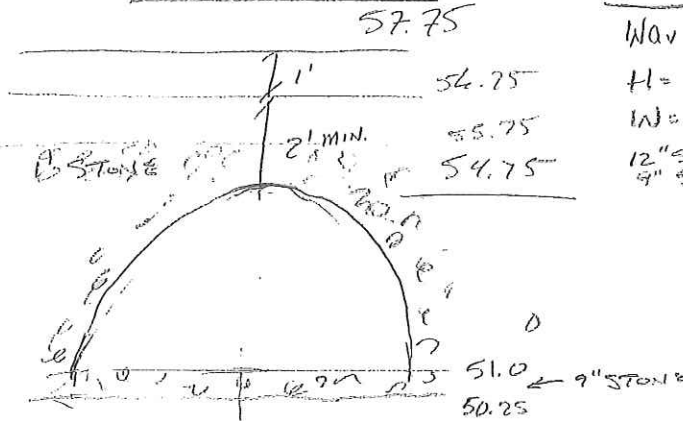


PROJECT #: 15M053-000 SHEET _____ OF _____
PROJECT: _____
CLIENT NAME: _____
SUBJECT: BLDG 3 STORMTECH CHAMBERS
DRAWN BY: _____ DATE 3-9-18
CHECKED BY: _____ DATE _____

OUTLET STRUCTURE

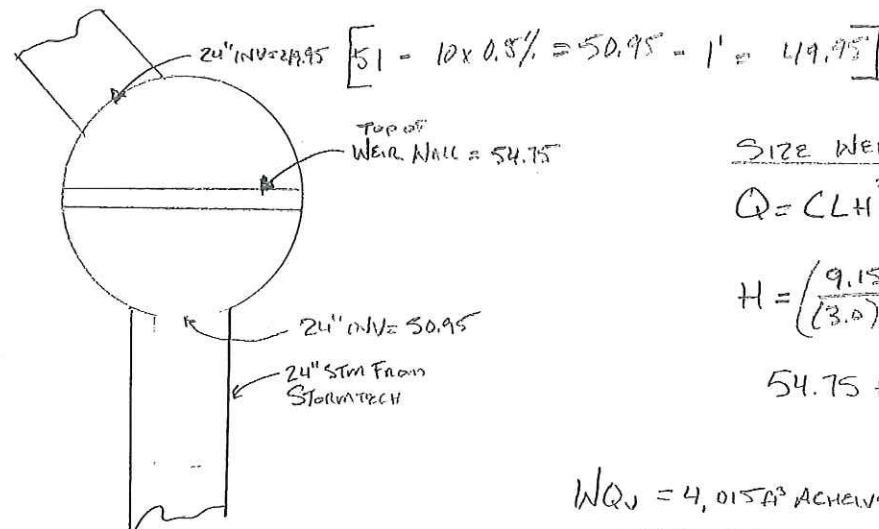


CHAMBER SECTION



MC-3500
WAV = 4,015 ft³
H = 45"
W = 77"
12" STONE TOP
9" STONE FOUNDATION

Where is the 1.25' offset as calculated on the next page



SIZE WEIR IN DOWNSTREAM CB TO PASS 100% Q

$$Q = CLH^{3/2} \rightarrow H = \left(\frac{Q}{CL} \right)^{2/3}$$

$$H = \left(\frac{9.15 \text{ cfs}}{(3.0)(5')} \right)^{2/3} = 0.72'$$

$$54.75 + 0.72 = 55.47$$

WAV = 4,015 ft³ ACHIEVED @ Top of Chambers
SEE SPREADSHEETS FOR WAV REQUIRED &
CHAMBER STORAGE CALCULATIONS



Water Quality Volume

Project:	Kew Commons Future Phase	Designed By:	AJW	Date:	3/10/18
Job No.:	15M053.000	Checked By:		Date:	
Basin ID:	Building 3	Revised By:		Date:	

Required Water Quality Volume

WQ_v = P R_v A/12

Site Drainage Area (A) = 1.33 acres (To Basin)

WQ_v = 0.077 acre-ft.

Rainfall Depth (P) = 0.9 in.

Sediment Storage Allowance = 20 %

Sediment Storage Allowance = 0.02 Ac-ft

Runoff Coefficient (R_v) = 0.77

Total WQ_v = 0.092 Ac-ft

= 4,015 cu.ft.

R_v=0.05 +0.9*i*; *i*=fraction of post -construction impervious surface

Impervious (i) = 0.80 Estimated based on Building 1

Water Quality Release Rate

Q_{wqv} = Total WQ_v/RT

Required Retention Time (RT) = 24 hours

Q_{wqv} = 0.046 cfs

Provided Retention Time (PT) = 24.40 hours

Water Quality Outlet Orifice

Contour Areas

	Elevation ft	Area ft ²	Volume ft ³	Cum. Vol. ft ³	Elevation at V	Storage at Elev
Basin Inv. =	851.00		0.00	0.00		
Contour 1 =	854.75		4116.90	4116.90	854.66	4014.88
Contour 2 =						
Contour 3 =						
Contour 4 =						
Contour 5 =						
Contour 6 =						
Contour 7 =						
Contour 8 =						
Contour 9 =						
Contour 10 =						
Contour 11 =						
Contour 12 =						
Contour 13 =						
Contour 14 =						

Q = N C_d A_o (2 g Δh)^{1/2}

C_d = 0.61

A_o = 0.0069 π D²/4 for circular orifices; = h * w for rectangular orifices

g = 32.20 ft/sec²

Q = 0.046 cfs

Orifice h = 1.125 inch

Orifice w = 0.00 inch (= 0 for circular orifice)

Number of orifices = N = 1

Δh_{avg} = (Elev at V - Basin Inv)/2 - 1/2 h =

1.83 ft

J:\2015\15M053-000\CV\Design Calcs\Water Quality\15M053-000 WQv Release Orifice Rate-005.xls

3/10/2018 12:11 PM

Chamber Model -
Units -
Number of Chambers -
Number of End Caps -
Voids in the stone (porosity) -
Base of STONE Elevation -
Amount of Stone Above Chambers -
Amount of Stone Below Chambers -
Area of system -

MC-3500

Imperial

25

4

40

100.00

12

9

1351

Click Here for Metric

20%

☒ Include Perimeter Stone in Calculations

sf Min. Area - 1351 sf min. area



Height of System (inches)	Incremental Single Chamber (cubic feet)	Incremental Single End Cap (cubic feet)	Incremental Chambers (cubic feet)	Incremental End Cap (cubic feet)	Incremental Stone (cubic feet)	Incremental Ch, EC and Stone (cubic feet)	Cumulative System (cubic feet)	Elevation (feet)
66	0.00	0.00	0.00	0.00	45.03	45.03	4657.30	105.50
65	0.00	0.00	0.00	0.00	45.03	45.03	4612.27	105.42
64	0.00	0.00	0.00	0.00	45.03	45.03	4567.24	105.33
63	0.00	0.00	0.00	0.00	45.03	45.03	4522.20	105.25
62	0.00	0.00	0.00	0.00	45.03	45.03	4477.17	105.17
61	0.00	0.00	0.00	0.00	45.03	45.03	4432.14	105.08
60	0.00	0.00	0.00	0.00	45.03	45.03	4387.10	105.00
59	0.00	0.00	0.00	0.00	45.03	45.03	4342.07	104.92
58	0.00	0.00	0.00	0.00	45.03	45.03	4297.04	104.83
57	0.00	0.00	0.00	0.00	45.03	45.03	4252.00	104.75
56	0.00	0.00	0.00	0.00	45.03	45.03	4206.97	104.67
55	0.00	0.00	0.00	0.00	45.03	45.03	4161.94	104.58
54	0.06	0.00	1.45	0.00	44.45	45.90	4116.90	104.50
53	0.19	0.02	4.85	0.10	43.05	48.00	4071.00	104.42
52	0.29	0.04	7.35	0.15	42.03	49.53	4023.00	104.33
51	0.40	0.05	10.09	0.21	40.91	51.21	3973.46	104.25
50	0.69	0.07	17.18	0.27	38.05	55.50	3922.25	104.17
49	1.03	0.09	25.71	0.35	34.61	60.67	3866.75	104.08
48	1.25	0.11	31.24	0.43	32.37	64.03	3806.08	104.00
47	1.42	0.13	35.56	0.51	30.61	66.67	3742.04	103.92
46	1.57	0.14	39.33	0.58	29.07	68.98	3675.37	103.83
45	1.71	0.16	42.68	0.65	27.70	71.03	3606.40	103.75
44	1.83	0.18	45.71	0.73	26.46	72.90	3535.37	103.67
43	1.94	0.20	48.44	0.80	25.33	74.58	3462.47	103.58
42	2.04	0.22	51.02	0.87	24.28	76.17	3387.89	103.50
41	2.13	0.23	53.37	0.94	23.31	77.62	3311.72	103.42
40	2.22	0.25	55.61	1.00	22.39	79.00	3234.10	103.33
39	2.31	0.27	57.67	1.06	21.54	80.27	3155.10	103.25
38	2.38	0.28	59.62	1.12	20.74	81.48	3074.83	103.17
37	2.46	0.29	61.48	1.18	19.97	82.63	2993.35	103.08
36	2.53	0.31	63.20	1.23	19.26	83.69	2910.73	103.00
35	2.59	0.32	64.84	1.28	18.58	84.71	2827.03	102.92
34	2.66	0.33	66.40	1.34	17.94	85.68	2742.32	102.83
33	2.72	0.35	67.88	1.39	17.33	86.59	2656.65	102.75
32	2.77	0.36	69.28	1.44	16.74	87.47	2570.05	102.67
31	2.82	0.37	70.62	1.49	16.19	88.30	2482.59	102.58
30	2.88	0.38	71.89	1.54	15.66	89.09	2394.29	102.50
29	2.92	0.40	73.10	1.58	15.16	89.85	2305.20	102.42
28	2.97	0.41	74.25	1.63	14.68	90.56	2215.36	102.33
27	3.01	0.42	75.31	1.67	14.24	91.22	2124.80	102.25
26	3.05	0.43	76.33	1.72	13.81	91.86	2033.57	102.17
25	3.09	0.44	77.36	1.76	13.39	92.50	1941.71	102.08
24	3.13	0.45	78.26	1.80	13.01	93.07	1849.20	102.00
23	3.17	0.46	79.14	1.84	12.64	93.62	1756.13	101.92
22	3.20	0.47	79.99	1.88	12.29	94.15	1662.51	101.83
21	3.23	0.48	80.78	1.92	11.95	94.65	1568.35	101.75
20	3.26	0.49	81.54	1.96	11.64	95.13	1473.70	101.67
19	3.29	0.50	82.26	1.99	11.33	95.58	1378.57	101.58
18	3.32	0.51	82.95	2.03	11.04	96.02	1282.99	101.50
17	3.34	0.51	83.60	2.06	10.77	96.43	1186.97	101.42
16	3.37	0.52	84.22	2.09	10.51	96.82	1090.54	101.33
15	3.39	0.53	84.81	2.12	10.26	97.19	993.72	101.25
14	3.41	0.54	85.36	2.15	10.03	97.54	896.53	101.17
13	3.44	0.54	85.93	2.17	9.79	97.89	798.99	101.08
12	3.46	0.55	86.44	2.20	9.58	98.22	701.10	101.00
11	3.48	0.56	86.97	2.22	9.36	98.55	602.88	100.92
10	3.51	0.59	87.63	2.38	9.03	99.04	504.34	100.83
9	0.00	0.00	0.00	0.00	45.03	45.03	405.30	100.75
8	0.00	0.00	0.00	0.00	45.03	45.03	360.27	100.67
7	0.00	0.00	0.00	0.00	45.03	45.03	315.23	100.58
6	0.00	0.00	0.00	0.00	45.03	45.03	270.20	100.50
5	0.00	0.00	0.00	0.00	45.03	45.03	225.17	100.42
4	0.00	0.00	0.00	0.00	45.03	45.03	180.13	100.33
3	0.00	0.00	0.00	0.00	45.03	45.03	135.10	100.25
2	0.00	0.00	0.00	0.00	45.03	45.03	90.07	100.17
1	0.00	0.00	0.00	0.00	45.03	45.03	45.03	100.08