

QREQ'D (AREA # B) = 0.07 cfs
↳ SEE STORM CALCS

Dura Trench
GRATE INFLOW CALCULATIONS

05B24DI INSERT GRATE PART NUMBER IN CELL TO LEFT
31.0 INSERT LENGTH OF TRENCH DRAIN RUN TO LEFT IN FEET → PLAN LENGTH = 31 LF

HEAD (IN)	HEAD (FT)	OPEN AREA (IN ² / FT)	OPEN AREA (FT ² / FT)	MAX INFLOW (GPM/FT)	MAX FLOW RATE (CFS/FT)	TOTAL CAPTURE OF TRENCH RUN (CFS)
0.125	0.010	21.48	0.149	36	0.079	2.5
0.250	0.021	21.48	0.149	50	0.112	3.5
0.500	0.042	21.48	0.149	71	0.159	4.9
0.750	0.063	21.48	0.149	87	0.194	6.0
1.000	0.083	21.48	0.149	101	0.224	7.0
1.250	0.104	21.48	0.149	113	0.251	7.8
1.500	0.125	21.48	0.149	123	0.275	8.5
1.750	0.146	21.48	0.149	133	0.297	9.2
2.000	0.167	21.48	0.149	142	0.317	9.8
2.250	0.188	21.48	0.149	151	0.336	10.4
2.500	0.208	21.48	0.149	159	0.355	11.0
2.750	0.229	21.48	0.149	167	0.372	11.5
3.000	0.250	21.48	0.149	174	0.389	12.0
4.000	0.333	21.48	0.149	201	0.449	13.9
5.000	0.417	21.48	0.149	225	0.502	15.6
6.000	0.500	21.48	0.149	247	0.549	17.0
7.000	0.583	21.48	0.149	266	0.594	18.4
8.000	0.667	21.48	0.149	285	0.635	19.7
9.000	0.750	21.48	0.149	302	0.673	20.9

*** for additional assistance please contact customer support at 770-505-6575 or visit us on the web at www.trenchdrain.net

Formula used for calculations is:

$Q = 448.2 * C_d * A * (2 * g * h)^{0.5}$

where Q = flow rate (gpm)
C_d = discharge coefficient (0.6 assumed)
A = open area of grate
g = gravitational acceleration (32 ft/sec/sec)
h = head above grate (in)

AT 0.08' OF HEAD, GRATE
CAPACITY = 7.0 cfs > 0.37 cfs REQ'D

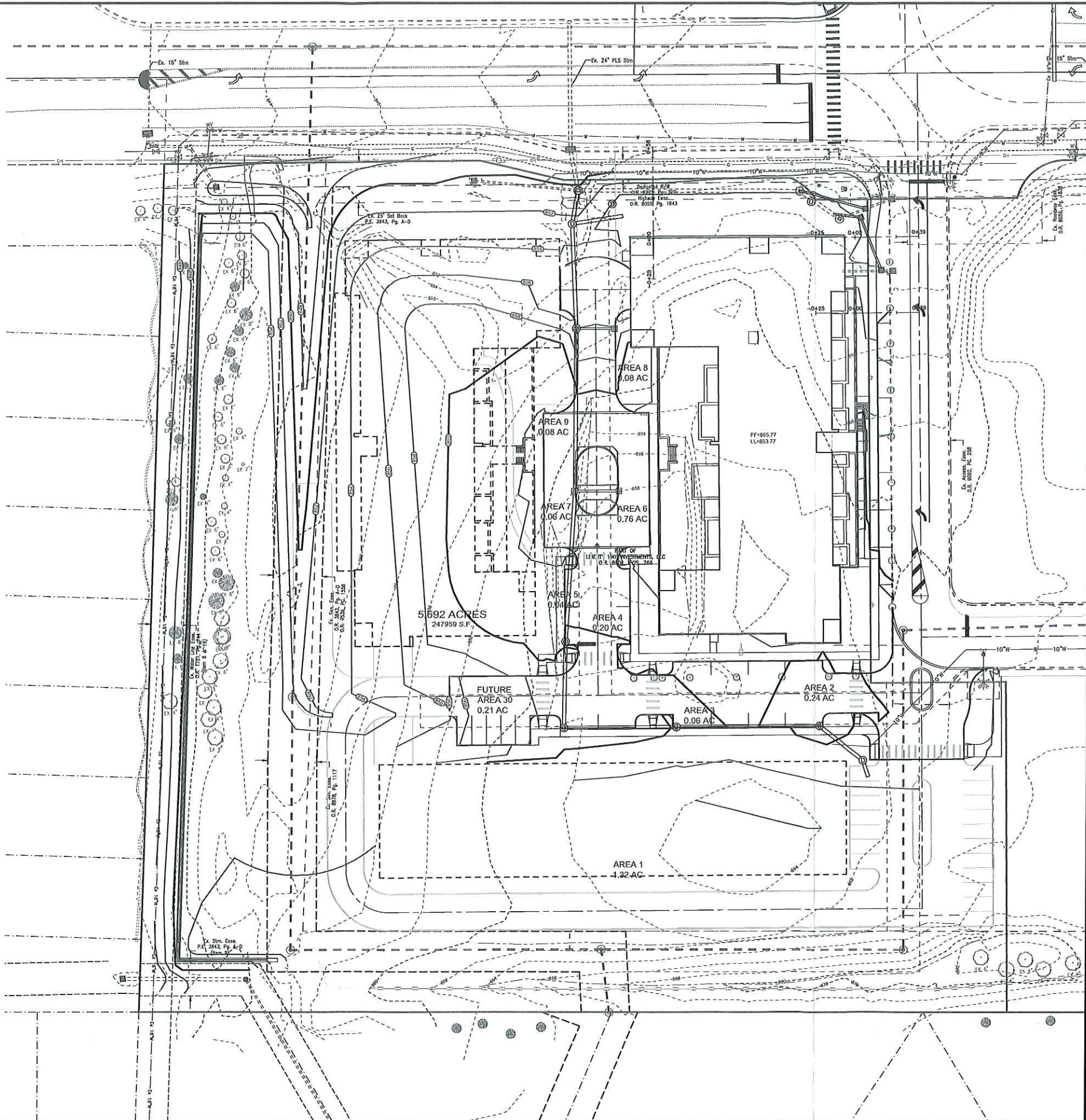
QREQ'D (AREA * 8) = 0.07 cfs
LDSEE STORM CALC

4 INTERNAL TRENCH WIDTH

- 0.013 MANNINGS ROUGHNESS (CONC)
- 0.009 MANNINGS ROUGHNESS (FRP)
- 0.75 GRATE HEIGHT (IN)
- 2 BOTTOM CORNER RADIUS (IN)

SLOPE (%)	SECTION #	START INVERT (IN)	END INVERT (IN)	FLOW RATE FORMING SYSTEMS (CFS)	FLOW RATE FORMING SYSTEMS (GPM)	FLOW RATE PRECAST SYSTEM (CFS)	FLOW RATE PRECAST SYSTEM (GPM)
0.5	4.5	4.0	4.5	0.17	78	0.25	113
	5.0	4.5	5.0	0.21	93	0.30	134
	5.5	5.0	5.5	0.24	108	0.35	155
	6.0	5.5	6.0	0.27	122	0.39	177
	6.5	6.0	6.5	0.31	137	0.44	198
	7.0	6.5	7.0	0.34	152	0.49	219
	7.5	7.0	7.5	0.37	167	0.54	241
	8.0	7.5	8.0	0.41	182	0.59	263
	8.5	8.0	8.5	0.44	197	0.63	284
	9.0	8.5	9.0	0.47	212	0.68	306
	9.5	9.0	9.5	0.51	227	0.73	328
	10.0	9.5	10.0	0.54	242	0.78	350
	10.5	10.0	10.5	0.57	257	0.83	371
	11.0	10.5	11.0	0.61	272	0.88	393
	11.5	11.0	11.5	0.64	287	0.92	415
	12.0	11.5	12.0	0.67	303	0.97	437
	12.5	12.0	12.5	0.71	318	1.02	459
	13.0	12.5	13.0	0.74	333	1.07	481
	13.5	13.0	13.5	0.78	348	1.12	503
	14.0	13.5	14.0	0.81	363	1.17	525
	14.5	14.0	14.5	0.84	378	1.22	547
	15.0	14.5	15.0	0.88	394	1.27	569
	15.5	15.0	15.5	0.91	409	1.32	591
	16.0	15.5	16.0	0.94	424	1.36	613
	16.5	16.0	16.5	0.98	439	1.41	635
	17.0	16.5	17.0	1.01	455	1.46	657
	17.5	17.0	17.5	1.05	470	1.51	679
	18.0	17.5	18.0	1.08	485	1.56	701
	18.5	18.0	18.5	1.11	500	1.61	723
	19.0	18.5	19.0	1.15	515	1.66	745
	19.5	19.0	19.5	1.18	531	1.71	767
	20.0	19.5	20.0	1.22	546	1.76	789
	20.5	20.0	20.5	1.25	561	1.81	811
	21.0	20.5	21.0	1.28	576	1.86	833
	21.5	21.0	21.5	1.32	592	1.90	855
	22.0	21.5	22.0	1.35	607	1.95	877
	22.5	22.0	22.5	1.39	622	2.00	899
	23.0	22.5	23.0	1.42	638	2.05	921
	23.5	23.0	23.5	1.45	653	2.10	943
	24.0	23.5	24.0	1.49	668	2.15	965

TRENCH CAPACITY



Revit	Revision Description	Date	Drawn:	CHK:
1	ASSEMBLY #1	07-25-18	MMT	JSD
2				
3				
4				
5				
6				
7				
8				
9				

KEW COMMONS PHASE 1
SP-PUD TRACT 3
LIBERTY WAY & TYLERS PLACE BLVD
SECTION 18, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

STORM DRAINAGE MAP



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

DRN