Environment One Corporation

Pressure Sewer Preliminary Cost and Design Analysis For Swidt Beach Area - Wareham MA

Prepared For:
Wareham Sewer Department
6 Tony's Ln
Wareham MA 02571
Tel: (508) 295-6144
Fax:
Prepared By: MTS
November 12, 2021

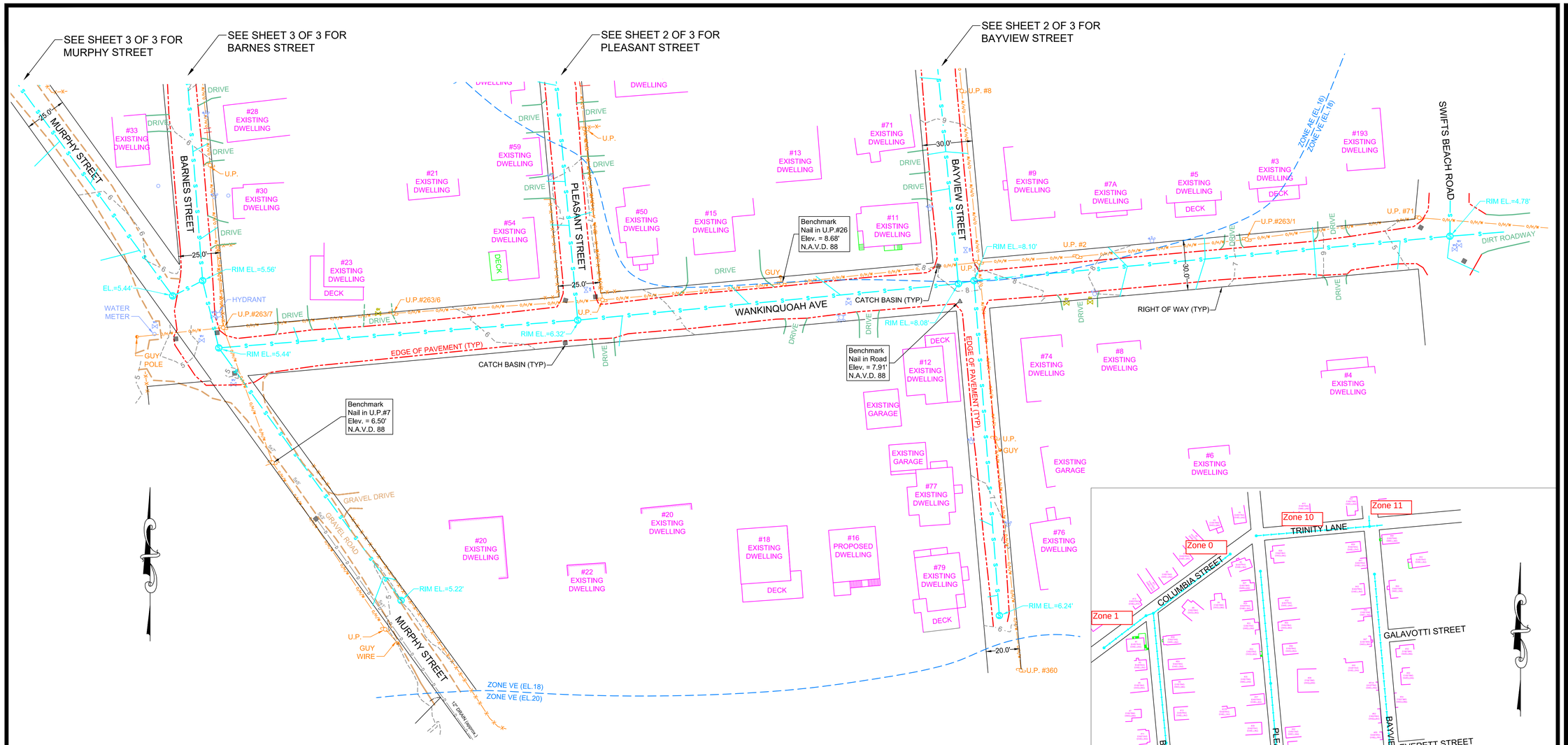
Swidt Beach Area - Wareham MA

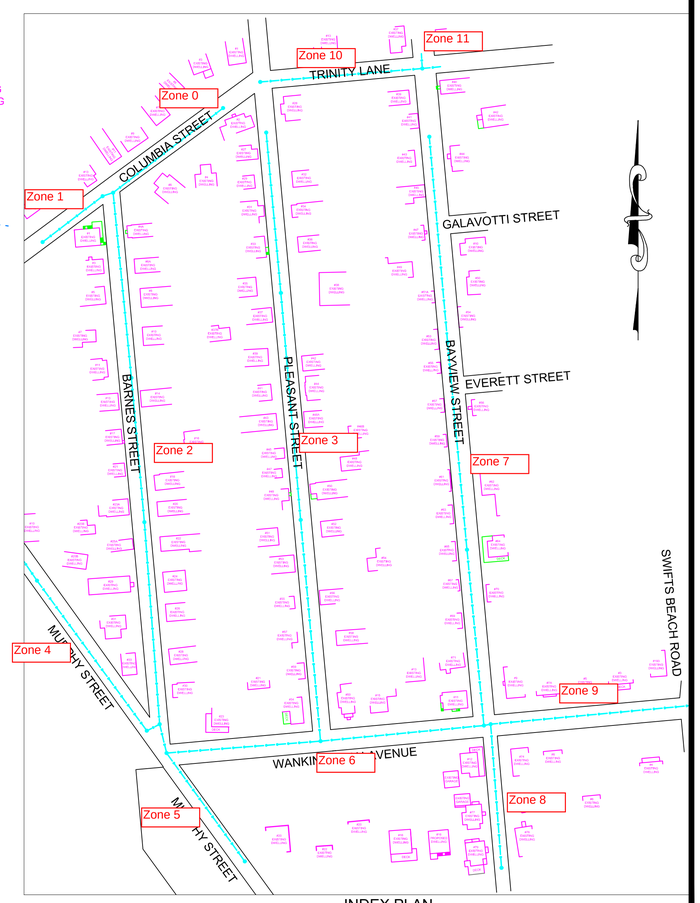
Prepared by : MTS **On:** November 12, 2021

Notes :
JC Engineering Provided current drawings of the area.

All of the zones will funnel down to Wankinquoah Ave, with the exception of the Zone located on Trinity Lane and Bayview.

<<<<< E N D O F N O T E S >>>>>





INDEX PLAN

SCALE: 1"=100'

U.S.G.S. LOCUS MAP

SCALE: 1"=1000'

LEGEND

100	EXISTING CONTOUR
O/H/W	EXISTING OVERHEAD UTILITIES
W	EXISTING WATER LINE
X	EXISTING FENCE LINE
S	EXISTING SEWER LINE
	RIGHT OF WAY LINE
	FLOOD ZONE LINE
	EDGE OF PAVEMENT
	EDGE OF GRAVEL
GV	EXISTING GAS VALVE
W	EXISTING WATER VALVE
	EXISTING CURBSTOP
	EXISTING METER PIT
	EXISTING HYDRANT
	EXISTING TREE
	EXISTING UTILITY POLE
S	EXISTING SEWER MANHOLE
	EXISTING CATCH BASIN

NOTES:

1. THE PURPOSE OF THIS PLANS SET IS TO SHOW ONLY LIMITED SURFICIAL EXISTING CONDITIONS IN THE ROADWAY (*i.e.* EXISTING UTILITIES AND STRUCTURES, RIGHT OF WAY LINES, EDGE OF PAVEMENT; FRONT HOUSE CORNERS; DRIVEWAYS; UTILITY POLES; VALVES; CURBSTOPS; WATER METER PITS; LIMITED TOPOGRAPHY, DRAINAGE STRUCTURES; ETC.).
2. LOCATION ALL EXISTING UTILITIES AND/OR STRUCTURES SHOWN ON THIS PLANS SET IS BASED ON A FIELD INSTRUMENT SURVEY. THERE MAY BE OTHER EXISTING UTILITIES AND/OR STRUCTURES IN THE ROADWAY THAT ARE NOT SHOWN ON THIS PLANS SET.
3. WETLAND RESOURCE AREAS AND THEIR BUFFER ZONES ARE NOT DEPICTED ON THIS PLANS SET.
4. EXISTING SEWER MAIN ALIGNMENT SHOWN ON THIS PLANS SET IS BASED ON PLAN ENTITLED: *TOWN OF WAREHAM MASSACHUSETTS WANKINCO AREA SEWER SEWERSHED #10*, DATED JULY 15, 2021, PROVIDED BY THE WAREHAM SEWER DEPARTMENT. LOCATION OF ALL EXISTING SEWER SERVICES SHOWN ON PLAN IS APPROXIMATE. LOCATION OF ALL PIPING SHALL BE VERIFIED BY THE WAREHAM SEWER DEPARTMENT. ALL EXISTING SEWER MANHOLES SHOWN ON THIS PLANS SET WERE LOCATED BY A FIELD INSTRUMENT SURVEY UNLESS OTHERWISE NOTED.
5. OVERHEAD WIRES SERVICING EACH DWELLING ARE NOT DEPICTED ON THIS PLANS SET.
6. LOCATION OF ALL FLOOD ZONE LINES SHOWN ON THIS PLANS SET IS CONSIDERED APPROXIMATE AND WAS DIGITIZED BASED ON FEMA MAP #25023C0576K, DATED FEBRUARY 5, 2014.

EXISTING CONDITIONS

AT

WANKINQUOAH AVE., BAYVIEW ST., PLEASANT ST., BARNES ST., MURPHY ST. & COLUMBIA ST.

IN

WAREHAM MASSACHUSETTS

(PLYMOUTH COUNTY)

REVISIONS:

No.	DATE	DESC.

PREPARED FOR:

TOWN OF WAREHAM
SEWER DEPARTMENT
6 TONY'S LANE
WAREHAM, MA 02571

PREPARED BY:

JC ENGINEERING, INC.
2854 CRANBERRY HIGHWAY
EAST WAREHAM, MA 02538
508-273-0377

SCALE: 1" = 30'
0 15 30 60 FEET

DATE: NOVEMBER 7, 2021
FIELD: GK/JO/JF
CALC./DESIGN: MCP
DRAWN: MCP
CHECK: JLC
JOB NO: 5788

SHEET 1 OF 3

PRELIMINARY PRESSURE SEWER - PIPE SIZING AND BRANCH ANALYSIS

Prepared By: Swidt Beach Area - Wareham MA

MTS November 12, 2021

Zone Number	Connects to Zone	Number of Pumps in Zone	Accum Pumps in Zone	Gals/day per Pump	Max Flow Per Pump (gpm)	Max Sim Ops	Max Flow (GPM)	Pipe Size (inches)	Max Velocity (FPS)	Length of Main this Zone	Friction Loss Factor (ft/100 ft)	Friction Loss This Zone	Accum Fric Loss (feet)	Max Main Elevation	Minimum Pump Elevation	Static Head (feet)	Total Dynamic Head (ft)
This spreadsheet was calculated using pipe diameters for: SDR11HDPE											Friction loss calculations were based on a Constant for inside roughness "C" of: 150						
.00	2.00	9	9	200	13.38	3	40.13	2.00	4.34	160.00	3.62	5.79	28.78	10.00	3.00	7.00	35.78
Off																	
1.00	2.00	1	1	200	13.57	1	13.57	1.50	2.30	100.00	1.44	1.44	24.43	10.00	3.00	7.00	31.43
2.00	6.00	31	41	200	13.68	6	81.66	3.00	4.07	771.00	2.04	15.75	22.99	8.00	2.00	6.00	28.99
3.00	6.00	33	33	200	13.52	6	81.14	3.00	4.04	904.00	2.02	18.25	25.49	12.00	5.00	7.00	32.49
4.00	6.00	2	2	200	14.11	2	28.21	2.00	3.05	380.00	1.88	7.16	14.40	8.00	3.00	5.00	19.40
5.00	6.00	1	1	200	14.25	1	14.25	1.25	3.16	100.00	3.04	3.04	10.28	6.00	0.00	6.00	16.28
6.00	9.00	2	79	200	14.43	7	95.31	4.00	2.87	436.00	0.80	3.49	7.24	6.00	1.00	5.00	12.24
7.00	9.00	29	29	200	13.97	5	69.84	3.00	3.48	900.00	1.53	13.76	17.51	12.00	7.00	5.00	22.51
8.00	9.00	4	4	200	14.31	3	42.92	2.00	4.64	150.00	4.10	6.15	9.90	6.00	1.00	5.00	14.90
9.00	9.00	5	117	200	14.58	9	123.91	4.00	3.73	288.00	1.30	3.75	3.75	6.00	1.00	5.00	8.75
10.00	11.00	4	4	200	14.32	3	42.96	2.00	4.65	224.00	4.11	9.20	9.61	12.00	7.00	5.00	14.61
11.00	11.00	0	4	200	14.95	3	42.96	2.00	4.65	10.00	4.11	0.41	0.41	12.00	12.00	0.00	0.41

Note: This analysis is valid only with the use of progressive cavity type grinder pumps as manufactured by Environment One.

PRELIMINARY PRESSURE SEWER - ACCUMULATED RETENTION TIME(HR)

Prepared By:
MTS

Swidt Beach Area - Wareham MA

November 12, 2021

Zone Number	Connects to Zone	Accumulated Total of Pumps this Zone	Pipe Size (inches)	Gallons per 100 lineal feet	Length of Zone	Capacity of Zone	Average Daily Flow	Average Fluid Changes per Day	Average Retention Time (Hr)	Accumulated Retention Time (Hr)
This spreadsheet was calculated using pipe diameters for: SDR11HDPE								Gals per Day per Dwelling		200
0.00	2.00	9	2.00	15.40	160.00	24.64	1,800	73.04	0.33	1.61
1.00	2.00	1	1.50	9.85	100.00	9.85	200	20.30	1.18	2.47
2.00	6.00	41	3.00	33.47	771.00	258.03	8,200	31.78	0.76	1.28
3.00	6.00	33	3.00	33.47	904.00	302.54	6,600	21.82	1.10	1.63
4.00	6.00	2	2.00	15.40	380.00	58.53	400	6.83	3.51	4.04
5.00	6.00	1	1.25	7.52	100.00	7.52	200	26.59	0.90	1.43
6.00	9.00	79	4.00	55.31	436.00	241.17	15,800	65.52	0.37	0.53
7.00	9.00	29	3.00	33.47	900.00	301.20	5,800	19.26	1.25	1.41
8.00	9.00	4	2.00	15.40	150.00	23.10	800	34.63	0.69	0.86
9.00	9.00	117	4.00	55.31	288.00	159.30	23,400	146.89	0.16	0.16
10.00	11.00	4	2.00	15.40	224.00	34.50	800	23.19	1.04	1.08
11.00	11.00	4	2.00	15.40	10.00	1.54	800	519.38	0.05	0.05

Note: This analysis is valid only with the use of progressive cavity type grinder pumps as manufactured by Environment One