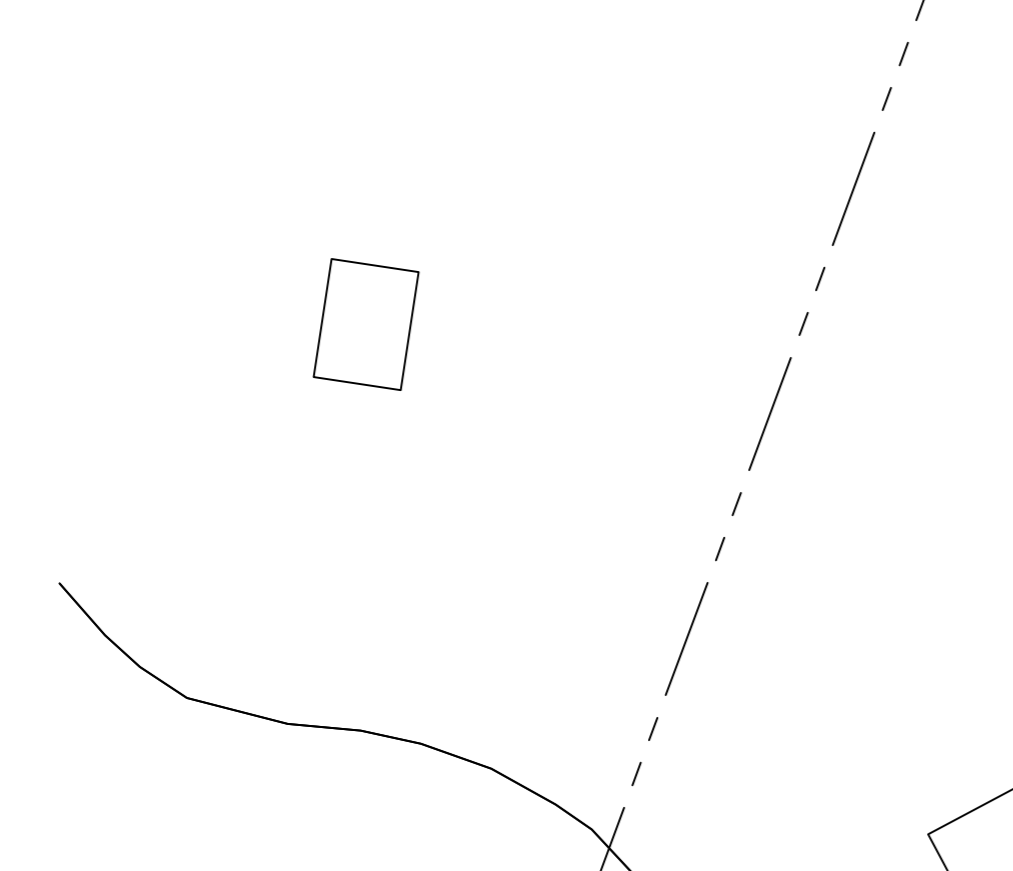


Location: Wychmere Harbor
Asses. Map 15, Parcel 23
(Sunny)

Property Owner: Town of Harwich
Date: 12/07/10 10:45 am
Engineer: Robert Cafarelli - SE294

Test Hole #1:

Depth	Soil Horizon	Texture/Color	Mottling	Other
0-5"		Asphalt		
5"-17"	B	Loamy Sand 10YR4/4		
17"-44"	C1	Medium-Coarse Sand 2.5Y 6/3		
44"-90"	C2	Loam 2.5YR 3/3		
@ 72"	Groundwater Encountered			
	Soils moist @ 60"			



INSIDE VOLUME OF 3 - 6' DIA DRYWELL WITH 5' BELOW INVERT = 356.19 CF
OUTSIDE VOLUME OF 3 - 6' DIA DRYWELL WITH 5' BELOW INVERT = 423.90 CF
DRYWELL AND STONE VOLUME = 1200 CF
STONE VOLUME = 775.19 CF
TOTAL VOID AND STORAGE = 589.02 CF
DESIGN WS AREA = 7068.24 SF > IMPERVIOUS WS AREA OF 6510 SF

IMPERVIOUS AREA TO DRYWELLS = 6510 SF

3 - 6' DIA DRYWELLS 5' DEEP (H=20 LOAD)
BOTTOM EL = 4.11, 12' N2 INV. IN = 8.1'

DRYWELLS IN 10' BY 24' ENVELOPE OF
3/4" - 1 1/2" DOUBLE WASHED STONE
WRAPPED IN GEOTEXTILE FABRIC

2 - 4' DIA CB WITH 4' MIN SUMP AND FLAT TOP
RIM EL = 10.5', 12' N2 INV OUT = 8.2'

THE LANDOWNER IS RESPONSIBLE FOR VERIFYING THE EXISTENCE AND LOCATION OF UTILITIES, AND IS LIABLE FOR ANY DAMAGE BY CONSTRUCTION ACTIVITY. UTILITY LOCATIONS, IF SHOWN ON THE DRAWINGS, ARE ONLY APPROXIMATE. ADDITIONAL UTILITIES MAY EXIST EVEN THOUGH NOT SHOWN.

CALL 1-888-DIG-SAFE
(1-888-344-7233)

REFER TO WWW.DIGSAFE.COM FOR MORE INFORMATION

EXCAVATION SAFETY
ALL EXCAVATION MUST FOLLOW OSHA MASSACHUSETTS, AND LOCAL REGULATIONS FOR SAFETY. ALL TRENCH EXCAVATION EXCEEDING 3' OF DEPTH WILL REQUIRE A TRENCH PERMIT FROM THE LOCAL TOWN OR CITY PRIOR TO ANY EXCAVATION

Flow Diffuser Perimeter Stone		Envelope		Net Area		Depth		Volume		Storage	
Rows	Columns	Without Stone	With Stone	Stone	Area	Stone	Area	Stone	Volume	Volume	Volume
Ea	Ea	Ft ²	Ft ²	Ft ²	Ft ²	Ft ²	Ft ²	Ft ²	Ft ³	Ft ³	Gallons
4	4	1152	1440	288		1	288.00	86.4	646.3		
Total Storage for 2 Sets of 8		Ratio		Design WS		Impervious WS		95%			
Total Number Units	Total Storage Volume	Total Storage Volume	Design WS Area	Design WS Area	Impervious WS Area	Design WS Area	Impervious WS Area	12336.0	13020.0		
Ea	Ft ³	Gallons	Ft ²	Ft ²	Ft ²	Ft ²	Ft ²	12336.02	13020.00		
36	1023.89	7658.7									



TABLE 1.1. RECOMMENDED PERFORATED PIPES

PIPE DIAMETER	PERFORATION PATTERN	PERFORATION SPACING	PERFORATION SIZE
4"	1" x 1/2"	12"	1/2"
6"	1 1/2" x 1"	12"	3/4"
8"	1 1/2" x 1"	12"	3/4"
10"	1 1/2" x 1"	12"	3/4"
12"	1 1/2" x 1"	12"	3/4"
15"	1 1/2" x 1"	12"	3/4"
18"	1 1/2" x 1"	12"	3/4"
24"	1 1/2" x 1"	12"	3/4"
30"	1 1/2" x 1"	12"	3/4"
36"	1 1/2" x 1"	12"	3/4"
42"	1 1/2" x 1"	12"	3/4"
48"	1 1/2" x 1"	12"	3/4"
60"	1 1/2" x 1"	12"	3/4"
72"	1 1/2" x 1"	12"	3/4"
90"	1 1/2" x 1"	12"	3/4"
108"	1 1/2" x 1"	12"	3/4"
120"	1 1/2" x 1"	12"	3/4"

WYCHMERE HARBOR
DRAINAGE IMPROVEMENTS

AS PREPARED FOR
TOWN OF HARWICH

DEC, 2010

ENGINEERING DEPARTMENT
TOWN OF HARWICH
732 MAIN STREET
HARWICH, MA
02645

SCALE: 1"=40'

SHEET 1 OF 2

DATUM: NAVD 88