

SITEC, Inc.
449 Faunce Corner Road
Dartmouth, MA 02747
Tel. (508) 998-2125 FAX (508) 998-7554

Unit C
769 Plain Street
Marshfield, MA 02050
Tel. (781) 319-0100 FAX (781) 834-4783

DRAINAGE SUMMARY

TIRE REPAIR FACILITY 956 – 958 BROCK AVENUE



FEBRUARY 15, 2018

EXISTING CONDITIONS

The subject property is currently a fully developed commercial site that is 100% developed consisting of a compacted former building area, existing parking/driveway, and a single story brick building. At the present time there are no onsite drainage controls for the surface runoff and all surface water is directed into the public way.

PROPOSED CONDITIONS

The redevelopment of this property will result in two drainage mitigation features being implemented for surface runoff control. The first feature is the elimination of the impervious gravel surface and unused sidewalk (North property line) along the edge of the public way and along the north property line. This area will be converted to a 4-5 foot wide landscaped buffer that will create a pervious zone for runoff recharge. This landscaping will increase the pervious area from the current 0% to 9% of the lot.

The second drainage feature will be the addition of a crushed stone filter strip which is proposed to be installed along the Harmony Street and Brock Avenue sides of the storage area. This strip will intercept the surface runoff from the storage area and promote the onsite recharge of this water. The filter strip will consist of a 24" wide by 24" deep trench, lined with a filter fabric, and filled with washed, crushed stone. The filter fabric will be wrapped over the crushed stone and a 2" layer of washed peastone will be placed over the fabric.

This layered system will allow for the long term maintenance of the strip with minimal effort. As the filter fabric gets clogged, the maintenance will consist of the removal of the peastone, removal/replacement of the top layer of fabric, and the resetting of the peastone. Due to the small contributing drainage area, it is anticipated that this maintenance will be needed on a 3-5 year frequency, depending on sediment loads.

The HydroCAD analysis for this drainage indicates that the trench can intercept and retain 100% of the surface runoff for storms up to and exceeding the 2 year event (3.4" of rainfall in 24 hours). This recharge coupled with the reduced lot coverage results in a significant reduction in stormwater runoff that currently drains into the City system.

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STORMWATER OPERATION & MAINTENANCE PLAN

PROJECT: Tire Repair Facility
956-958 Brock Avenue
New Bedford, MA 02744

OWNER/OPERATOR: Humberto Martinez
163 Query Street, #2
New Bedford, MA 02745



Responsible Party: The maintenance of the stormwater management system for the proposed project shall be the responsibility of the contractor during the construction period. Upon completion of construction and full stabilization of the site, the responsibility for the maintenance will shift to the property owner.

INSPECTION PROTOCOL

1. The parking area and adjacent storage area of the site will be checked and cleaned of accumulated litter on a daily basis.
2. The parking surface, storage area, and surrounding areas shall be cleaned upon completion of all construction activities prior to acceptance by the Owner.
3. The filter strip shall be inspected in the Spring and Fall and cleaned of accumulated debris as needed.
4. The perimeter shall be inspected quarterly for accumulated debris and/or erosion. Sediment shall be removed and repairs, if required, shall be completed.

NOTES

1. All sediment and hydrocarbons removed from the oil/water separator shall be properly handled and disposed of in accordance with local, state, and Federal guidelines and regulations.
2. Where the need for maintenance is contributing to a water quality problem, immediate action shall be taken by the Owner to correct the problem. Corrective action shall be taken within 14 days.
3. Estimated cost of yearly maintenance - \$250

4. Snow disposal shall be the Owner's responsibility. Snow will be disposed of in the storage area or for small events in the southeast corner of the parking area. For significant snow events, excess snow shall be trucked offsite for legal offsite disposal.

Soil Map—Bristol County, Massachusetts, Southern Part
(956-958 Brock Avenue)



MAP LEGEND

Area of Interest (AOI)	Area of Interest (AOI)	Spoil Area
Soils		
Special Point Features		
		Water Features
		Transportation
		Background
		Miscellaneous Water

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: [Web Soil Survey \(EPSG:3857\)](http://websoilsurvey.nrcs.usda.gov/)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bristol County, Massachusetts, Southern Part
Survey Area Data: Version 11, Oct 6, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Jun 7, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

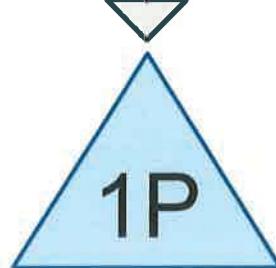
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
602	Urban land	15.4	100.0%
Totals for Area of Interest		15.4	100.0%





Storage Area



Recharge Strip



Routing Diagram for Matinez Tire Repair Facility
Prepared by {enter your company name here}, Printed 2/15/2018
HydroCAD® 10.00 s/n 01164 © 2012 HydroCAD Software Solutions LLC

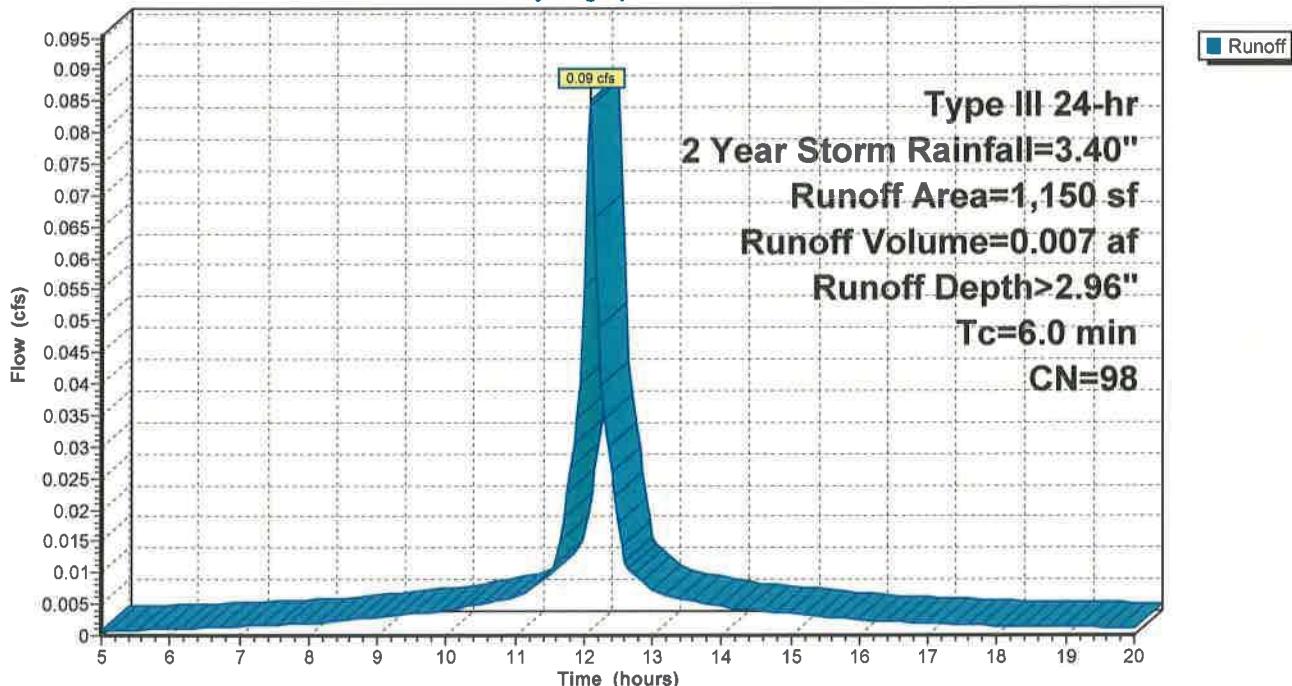
Summary for Subcatchment D-1: Storage Area

Runoff = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 Year Storm Rainfall=3.40"

Area (sf)	CN	Description
* 1,150	98	Impervious
1,150		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0				0.09	Direct Entry, AB

Subcatchment D-1: Storage Area**Hydrograph**

Summary for Pond 1P: Recharge Strip

Inflow Area = 0.026 ac, 100.00% Impervious, Inflow Depth > 2.96" for 2 Year Storm event
 Inflow = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af
 Outflow = 0.01 cfs @ 11.60 hrs, Volume= 0.007 af, Atten= 88%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 11.60 hrs, Volume= 0.007 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 20.16' @ 12.69 hrs Surf.Area= 0 sf Storage= 95 cf

Plug-Flow detention time= 64.8 min calculated for 0.007 af (100% of inflow)
 Center-of-Mass det. time= 64.4 min (802.4 - 738.0)

Volume	Invert	Avail.Storage	Storage Description
#1	18.50'	124 cf	Custom Stage Data Listed below

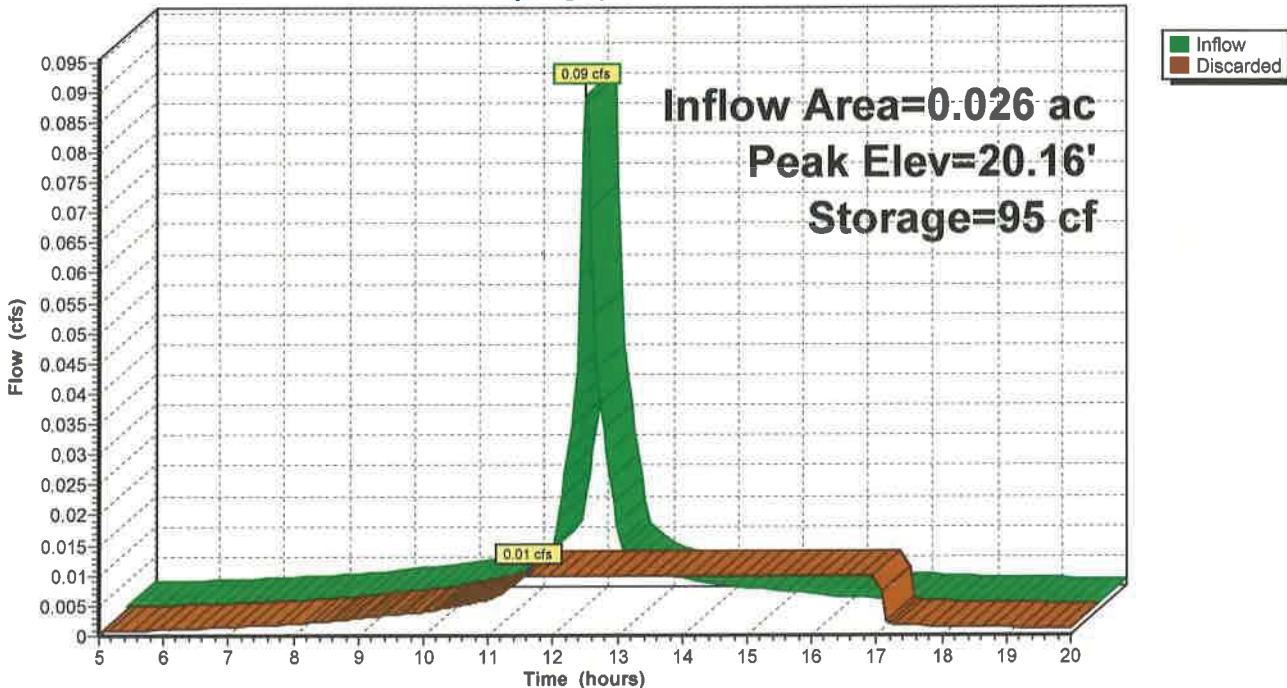
Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
18.50	0	0
20.67	124	124

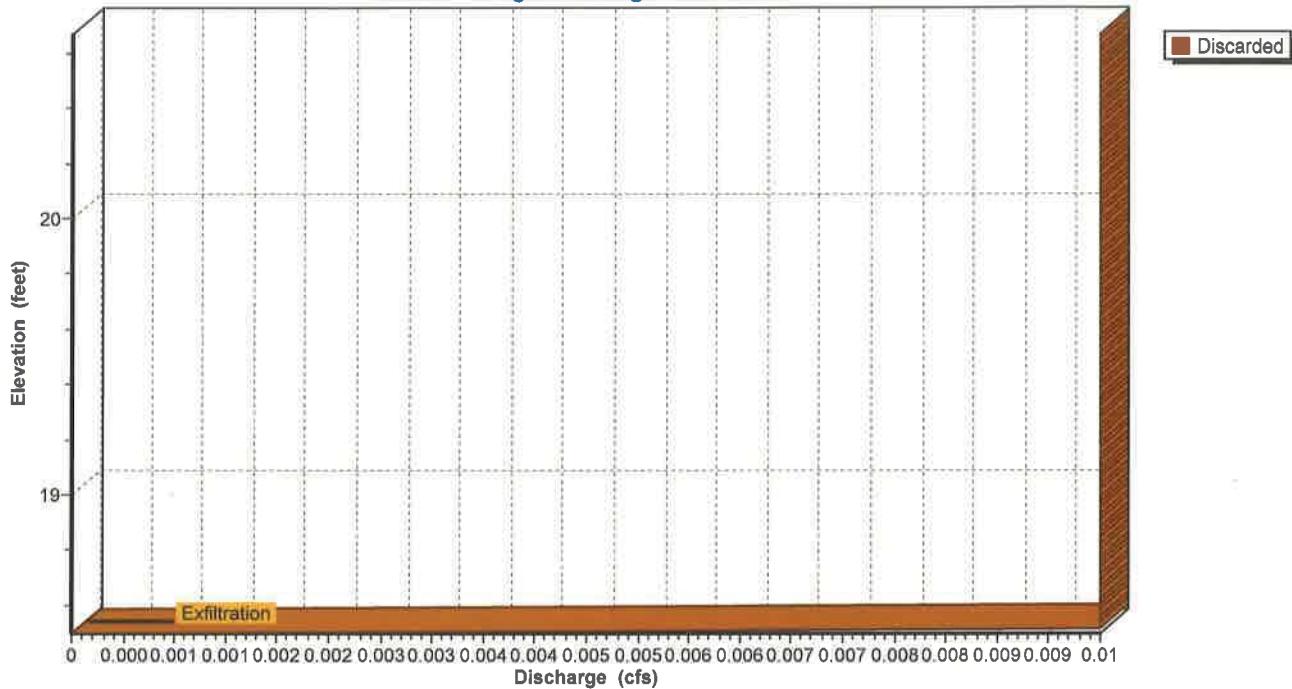
Device	Routing	Invert	Outlet Devices
#1	Discarded	18.50'	0.01 cfs Exfiltration at all elevations

Discarded OutFlow Max=0.01 cfs @ 11.60 hrs HW=18.53' (Free Discharge)
 ↑ 1=Exfiltration (Exfiltration Controls 0.01 cfs)

Pond 1P: Recharge Strip

Hydrograph



Pond 1P: Recharge Strip**Stage-Discharge****Pond 1P: Recharge Strip****Stage-Area-Storage**