Stormwater Report
"170-184 Worcester Street"
Wellesley, MA

Date: February 25, 2019

Prepared For:
Equity Partners
868 Worcester Street
Wellesley, MA 02482

2/27/19

DALE MACKINNON CIVIL No. 36575 REGISTERED PROFESSIONAL ENGINEER

Prepared By:
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333 West street
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G&H Project W-2784

Project Description

170-184 Worcester Street is an existing commercial property located on the eastbound side of Route 9 at the corner of Burke Lane. The businesses within the 11,600 square foot building is a dance studio, Chinese restaurant, window sales and a medical office. The existing 32,986 square foot site is almost completely impervious, with 52 existing parking spaces with curb cuts to Route 9 and Burke Lane. No wetlands exist on the site.

The proposal would include removing the existing asphalt and repaving the existing parking lot with porous pavement. It will also include paving the abutting property to the south with porous pavement to increase the parking for the commercial building. Porous pavement is being proposed for the site because soil tests done on the site found sand as the parent material with deep groundwater. Stormwater management functions of porous asphalt installations include water quality treatment, peak flow reduction, storm volume reduction via groundwater recharge, and increased hydrograph time lag.

Stormwater runoff will be treated and attenuated through the use of porous pavement and a crushed stone reservoir below the pavement surface. The site has a very sandy parent soil classified as a Merrimac Urban land complex with highly permeable characteristics. The site does not contain any wetlands or other environmental considerations.

Compliance with the 10 Stormwater Standards

Standard 1: No new untreated Discharges

Stormwater from the roofs and parking areas will be infiltrated directly into the ground with no new discharges being proposed. Any existing discharges will be eliminated in favor of the groundwater recharge.

Standard 2: Peak Rate Attenuation

Stormwater from the existing parking lot generally flows from the parking lot out to Worcester Street or Burke Lane. The existing vacant lot flows toward both Burke Lane and the existing parking lot. There is one leaching catch basin at the rear of the building behind #180 Worcester Street.

The post development analysis of the site shows an overall decrease in runoff from the site due to the use of porous pavement that essentially eliminates the impervious area of the parking areas.

HydroCAD, a stormwater design program based on TR-55, was used to evaluate the pre-development and post development peak discharge rates for the 2, 10 and 100 year 24-hour storm events. The stone bed beneath the previous pavement acts as reservoir and was modeled as a pond. The size of the stone bed was modelled as a 188-foot square area. This is equivalent to the area of pavement existing and proposed onsite.

The HydroCAD model also requires information regarding the site. The existing conditions, or Pre-Development, conditions were model using one watershed. In order to get an accurate model of the stormwater infiltration and surface flows, the underlying soils, surface cover and slopes are considered. The NRCS Soil Survey for the site, included in Appendix 2, depicts one soil type "A" throughout the site.

The Post Development condition was evaluated using one overall watershed area due to the relatively small size of the site. The Post Development Water Sheds discharges to the same location as the Pre-development at Worcester Street and Burke Lane.

In order to meet the Pre-Development peak discharge rates, porous pavement is being proposed to allow for rainfall and roof runoff to be infiltrated directly into the ground without flowing offsite. The following table lists the Pre and Post Development peak flows for each of the design storms at each analysis point. The detailed HydroCAD report included in Appendix 4 includes the calculations required to determine the Post Development peak flows do not exceed the Pre-Development peak flows.

Table 1: Peak Rate Attenuation Summary

	2-yr Storm	10-yr Storm	100-yr Storm
Pre-Development	2.10 cfs	3.85 cfs	6.26 cfs
Post-Development	0.00 cfs	0.00 cfs	0.00 cfs

Table 1A: Total Volume Runoff Attenuation Summary

	2-yr Storm	10-yr Storm	100-yr Storm
Pre-Development	0.142 Acre Feet	0.262 Acre Feet	0.434 Acre Feet
Post-Development	0.000 Acre Feet	0.000 Acre Feet	0.000 Acre Feet

Standard 3: Recharge

Soil Evaluation

Soil evaluation is broken down into two stages. Stage 1 identifies the underlying soils just beneath the surface that contribute to how much runoff is generated as stormwater falls and moves across the surface. Stage 2 evaluates the soils in direct contact with the proposed infiltration BMPs. Appendix 2 includes the NRCS Soil Survey used for Stage 1 while Appendix 3 includes the on-site soil textural analysis in the specific locations that infiltration is proposed.

Recharge Volume

The required recharge volume is determined by calculating the impervious area proposed over the corresponding soil identified in the NRCS Soil Survey. Since this site has varying soils beneath the proposed impervious surfaces, the required recharge volume is comprised of the required recharge volume over each of the underlying soils. The area of impervious within each Soil Hydrologic Group is compiled from the Post Development Plan and included in the HydroCAD Report in Appendix 4.

Table 1B: Total Volume Infiltrated Summary

	2-yr Storm	10-yr Storm	100-yr Storm
Post Development Storm	0.276 Acre Feet	0.412 Acre Feet	0.593 Acre Feet

Table 2: Required Recharge Volume Calculation

	Recharge	Impervious	Volume
Hydrologic Group	(in/sqft)	(sqft)	(cf)
A - *sand*	0.60	51,994	2,600
B - *loam*	0.35	None	0
C - *silty loam*	0.25	None	0
D - *clay*	0.10	None	0
Required Recharge Volume Total			**2,600 cf**
			0.060 Acre Feet

Stormwater Basin Sizing

There are three ways of determining the recharge volume provided by a stone beneath the pavement (Static, Simple Dynamic and Dynamic Field). The Static Method, used here, includes the volume of water that can be stored beneath the pavement. This, the most conservative method of determining the recharge volume, doesn't account for any infiltration that takes place while the basin is filling with water and isn't dependent on maintenance of the basin since the only way for the water below the lowest invert can leave the basin is though infiltration. The following table summarizes the recharge volume provided underneath the pavement. The depth of the stone beneath the pavement was based on the amount of fill that would need to be removed from the site to native material and also on the University of New Hampshire study that conservatively determined that the depth of stone be based on 0.65 x the average frost depth in the area.

Table 3: Basin Recharge Volumes

	Recharge Volume
Stone beneath pavement with voids	21,206 cf
	0.487 Acre Feet

72-hour Drawdown

Because the Static Method is the most conservative evaluation of recharge volume, hydraulic conductivity is not included in the analysis. Instead, the Rawls Rate is used to represent the infiltration rate. The specific rate chosen is based on the textural analysis of the in-site soil performed by a competent soil professional.

A Massachusetts Certified Soil Evaluator performed a soil evaluation at each of the proposed infiltration BMPs. The soil textural analysis for each of the infiltration BMPs is listed below with the associated Rawls Rate used in the HydroCAD calculations. Where textural analysis varied within any single BMP, the most restrictive textural evaluation and Rawls Rate were used.

Table 4: Rawls Rate

	Most Restrictive Soil Texture	Rawls Rate (in/hour)
Stone beneath pavement	Sand	2.41 in/hr

Drawdown time for each basin is modeled by HydroCAD and included in Appendix 4 for each of the basins. The following table summarizes the drawdown time for each basin to show each will drawdown within the 72-hour maximum.

Table 5: Basin Drawdown

	Time for Drawdown
Stone beneath pavement	14 hours

Standard 4: Water Quality

Water Quality Volume

The required water quality volume is determined through a calculation of the proposed impervious pavement throughout the site and a determination of whether the site is located in a critical area or the proposed use is considered to produce a high pollutant load. Since the soils have a infiltration rate greater than 2.4 inches per hour per the Rawl's rate, development qualifies as a use with high pollutant load although no critical areas were identified for this site, so the water quality volume is calculated at one inch over the area of proposed impervious pavement. Since asphalt shingle roofs are not considered to contribute contaminants to stormwater runoff, those impervious areas are not included in the required water quality volume.

The area of impervious pavement within the proposed site is calculated from the information entered into HydroCAD and can be found in Appendix 4. One inch across 40,386 of pavement requires a water quality volume of 3,381 cubic feet.

The proposed stone reservoir beneath the pavement has a volume of 10,603 cubic feet of storage assuming 30% voids in the stone to allow for water quality treatment.

Removal of Total Suspended Solids

The water quality volume, as calculated in the previous section, is treated to provide a minimum of 80-percent TSS removal. One treatment train was utilized in the project design. The pervious pavement and associated infiltration treat stormwater to 80-percent TSS removal by providing that the rainfall does not run off from the site.

Standard 5: Land Uses with Higher Potential Pollutant Loads

The proposed residential project does not qualify as a LUHPPL.

Standard 6: Critical Areas

The proposed project is not within, nor does it discharge stormwater to an identified Critical Area.

Standard 7: Redevelopment Project

While a portion of the project is considered a redevelopment, Storm Water Standards 2 through 6 were fully met. Where the existing parking lot doesn't include drainage control, the upgrade of the pavement and introduction of stormwater management is an improvement to the current condition.

Standard 8: Construction Period Controls

The Construction Period Pollution Control Plan included in Appendix 5 will be followed to prevent discharge of erosion to resource areas and abutting properties.

Standard 9: Operation and Maintenance Plan

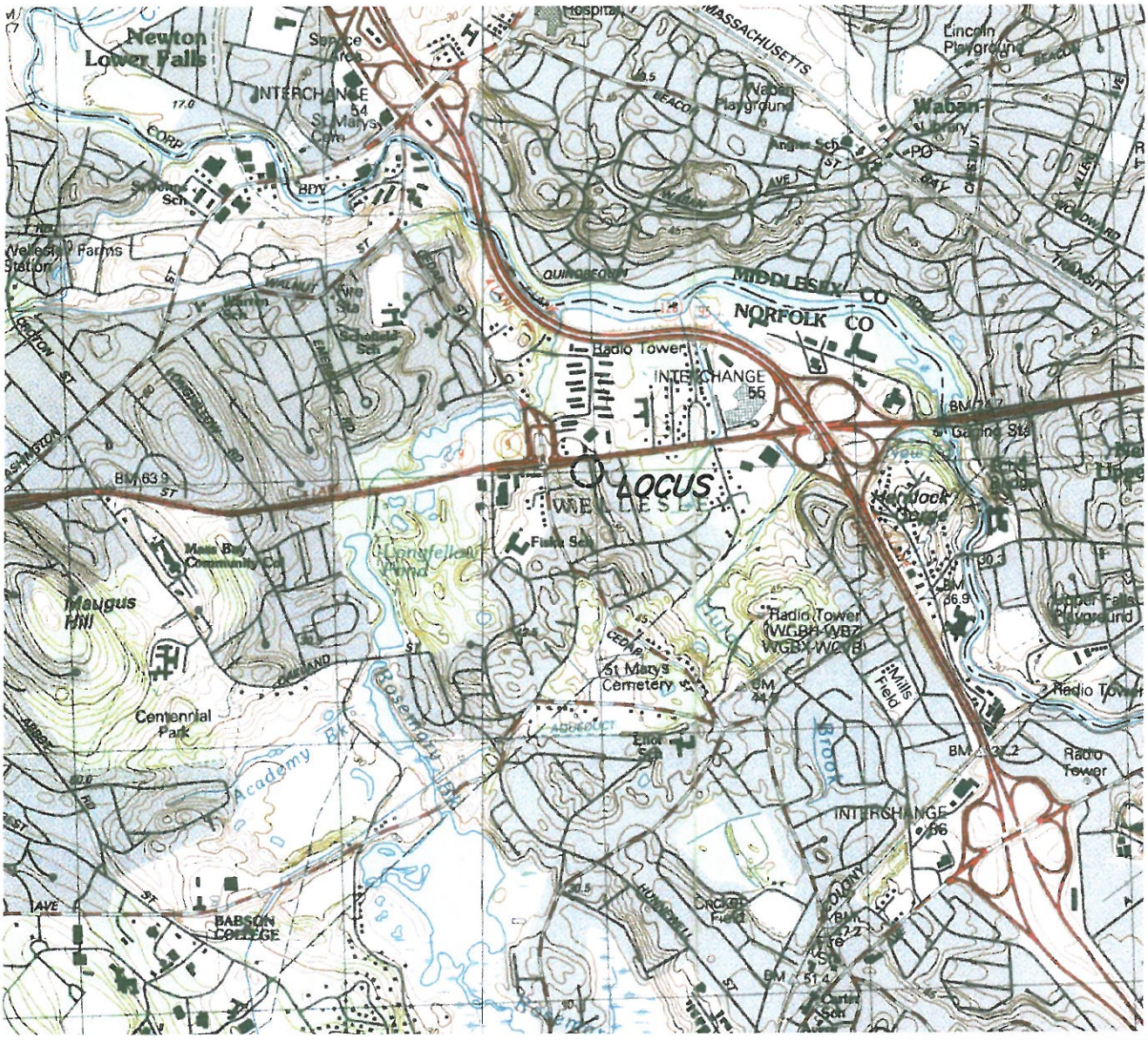
The Operation and Maintenance Plan included in Appendix 6 address the responsibilities of maintaining the stormwater BMPs.

Standard 10: Illicit Discharges to Drainage System

It is the intent of the developer to follow the Construction Period Pollution Prevention Control Plan to mitigate the effects of the proposed project on the adjacent environment. Following completion of construction, the Operation and Maintenance Plan will be provided to the property owner who will continue the maintenance of the project. The Illicit Discharge Statement is included in Appendix 7.

Locus Map

Appendix 1



U.S.G.S. Quadrangle

Scale: 1"=2000'

0 2000' 4000' 6000' 8000'

LOCUS MAP

3 Burke Lane

Wellesley, Massachusetts

Date: February 25, 2019 | ***Project No. W-2784***

Guerriere & Halnon, Inc.

Engineering & Land Surveying

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NRCS Soils Report

Appendix 2

Soil Map—Norfolk and Suffolk Counties, Massachusetts

Map Scale: 1:1,800 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

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:
Coordinate System: Web Mercator (EPSG:3857)

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: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 14, Sep 12, 2018

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

Date(s) aerial images were photographed: Aug 10, 2014—Aug 25, 2014

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, 0 to 15 percent slopes	6.0	46.8%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	6.8	53.2%
Totals for Area of Interest		**12.7**	**100.0%**

Norfolk and Suffolk Counties, Massachusetts

602—Urban land, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: vkyj
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 99 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Excavated and filled land

Minor Components

Rock outcrops

Percent of map unit: 1 percent
Hydric soil rating: Unranked

Data Source Information

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 14, Sep 12, 2018

Norfolk and Suffolk Counties, Massachusetts

626B—Merrimac-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyr9
Elevation: 0 to 820 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Merrimac and similar soils: 45 percent
Urban land: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Merrimac

Setting

Landform: Outwash terraces, outwash plains, kames, eskers, moraines
Landform position (two-dimensional): Backslope, footslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, riser, tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits derived from granite, schist, and gneiss over sandy and gravelly glaciofluvial deposits derived from granite, schist, and gneiss

Typical profile

Ap - 0 to 10 inches: fine sandy loam
Bw1 - 10 to 22 inches: fine sandy loam
Bw2 - 22 to 26 inches: stratified gravel to gravelly loamy sand
2C - 26 to 65 inches: stratified gravel to very gravelly sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.4 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Urban Land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Hinckley

Percent of map unit: 5 percent
Landform: Outwash plains, eskers, kames, deltas
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent
Landform: Outwash plains, terraces, deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Windsor

Percent of map unit: 5 percent
Landform: Outwash terraces, deltas, outwash plains, dunes
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex

Hydric soil rating: No

Data Source Information

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 14, Sep 12, 2018

Field Soils Evaluation

Appendix 3

Commonwealth of Massachusetts
City/Town of Wellesley

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

A. Facility Information

Hyman Feldman Family Trust
Owner Name

170-184 Worcester Street
Street Address

15-1
Map/Lot #

Wellesley
City

MA
State

02482
Zip Code

B. Site Information

1. (Check one) ☐ New Construction ☐ Upgrade ☐ Repair

2. Soil Survey Available? ☒ Yes ☐ No If yes: USDA (Source) 626B (Soil Map Unit)

Merrimac-Urban land complex
Soil Name

Soil Limitations

Sand and Gravel
Soil Parent material

Landform

3. Surficial Geological Report Available? ☐ Yes ☐ No If yes: Year Published/Source Map Unit

Description of Geologic Map Unit:

4. Flood Rate Insurance Map Within a regulatory floodway? ☐ Yes ☒ No

5. Within a velocity zone? ☐ Yes ☒ No

6. Within a Mapped Wetland Area? ☐ Yes ☒ No If yes, MassGIS Wetland Data Layer: Wetland Type

7. Current Water Resource Conditions (USGS): 8/2018 (Month/Day/ Year) Range: ☒ Above Normal ☐ Normal ☐ Below Normal

8. Other references reviewed:

Commonwealth of Massachusetts
City/Town of Wellesley

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review *(minimum of two holes required at every proposed primary and reserve disposal area)*

Deep Observation Hole Number: 1 (Hole #) | 8/23/18 (Date) | _____ (Time) | 75 (Weather) | _____ (Latitude) | _____ (Longitude:)

1. Land Use: urban vacant lot (e.g., woodland, agricultural field, vacant lot, etc.) | _____ (Vegetation) | _____ (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | _____ (Slope (%))

   Description of Location: _____

2. Soil Parent Material: sand | _____ (Landform) | _____ (Position on Landscape (SU, SH, BS, FS, TS))

3. Distances from: Open Water Body _____ feet | Drainage Way _____ feet | Wetlands _____ feet
   Property Line _____ feet | Drinking Water Well _____ feet | Other _____ feet

4. Unsuitable Materials Present: ☒ Yes ☐ No If Yes: ☐ Disturbed Soil ☒ Fill Material ☐ Weathered/Fractured Rock ☐ Bedrock

5. Groundwater Observed: ☐ Yes ☒ No If yes: _____ Depth Weeping from Pit _____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-18"	Fill										
18-132"	C	Sand	5Y 6/3								Stratified layers

Additional Notes: _____

Commonwealth of Massachusetts
City/Town of Wellesley

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review *(minimum of two holes required at every proposed primary and reserve disposal area)*

Deep Observation Hole Number: 2 (Hole #) 8/23/18 (Date) _____ (Time) _____ (Weather) _____ (Latitude) _____ Longitude:

1. Land Use: Urban vacant lot (e.g., woodland, agricultural field, vacant lot, etc.) _____ Vegetation _____ Surface Stones (e.g., cobbles, stones, boulders, etc.) _____ Slope (%)

Description of Location: _____

2. Soil Parent Material: Sand _____ Landform _____ Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body _____ feet Drainage Way _____ feet Wetlands _____ feet
Property Line _____ feet Drinking Water Well _____ feet Other _____ feet

4. Unsuitable Materials Present: ☒ Yes ☐ No If Yes: ☐ Disturbed Soil ☒ Fill Material ☐ Weathered/Fractured Rock ☐ Bedrock

5. Groundwater Observed: ☐ Yes ☒ No If yes: _____ Depth Weeping from Pit _____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-30"	Fill										
30-108"	C	Coarse sand	5Y 5/2								

Additional Notes: _____

Commonwealth of Massachusetts
City/Town of Wellesley

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

	Obs. Hole #1	Obs. Hole #2
☐ Depth observed standing water in observation hole	None inches	None inches
☐ Depth weeping from side of observation hole	None inches	None inches
☐ Depth to soil redoximorphic features (mottles)	None inches	None inches
☐ Depth to adjusted seasonal high groundwater (S_h) (USGS methodology)	_____ inches	_____ inches

_____ Index Well Number _____ Reading Date

$S_h = S_c - [S_r \times (OW_c - OW_{max})/OW_r]$

Obs. Hole/Well# _____ S_c _____ S_r _____ OW_c _____ OW_{max} _____ OW_r _____ S_h _____

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?

☒ Yes ☐ No

b. If yes, at what depth was it observed (exclude A and O Horizons)? Upper boundary: _____ inches Lower boundary: _____ inches

c. If no, at what depth was impervious material observed? Upper boundary: _____ inches Lower boundary: _____ inches

Commonwealth of Massachusetts
City/Town of Wellesley

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

F. Certification

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.

Signature of Soil Evaluator	Date
Typed or Printed Name of Soil Evaluator / License #	Expiration Date of License
Name of Approving Authority Witness	Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with Percolation Test Form 12.

Field Diagrams: Use this area for field diagrams:

Commonwealth of Massachusetts
City/Town of Wellesley

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

A. Facility Information

Hyman Feldman Family Trust
Owner Name

170-184 Worcester Street
Street Address

15-1
Map/Lot #

Wellesley
City

MA
State

02482
Zip Code

B. Site Information

1. (Check one) ☐ New Construction ☐ Upgrade ☐ Repair

2. Soil Survey Available? ☒ Yes ☐ No If yes: USDA (Source) 626B (Soil Map Unit)

Merrimac-Urban land complex
Soil Name

Soil Limitations

Sand and Gravel
Soil Parent material

Landform

3. Surficial Geological Report Available? ☐ Yes ☐ No If yes: Year Published/Source Map Unit

Description of Geologic Map Unit:

4. Flood Rate Insurance Map Within a regulatory floodway? ☐ Yes ☒ No

5. Within a velocity zone? ☐ Yes ☒ No

6. Within a Mapped Wetland Area? ☐ Yes ☒ No If yes, MassGIS Wetland Data Layer: Wetland Type

7. Current Water Resource Conditions (USGS): 8/2018 (Month/Day/ Year) Range: ☒ Above Normal ☐ Normal ☐ Below Normal

8. Other references reviewed:

Commonwealth of Massachusetts
City/Town of Wellesley

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review *(minimum of two holes required at every proposed primary and reserve disposal area)*

Deep Observation Hole Number: 3 (Hole #) | 8/23/18 (Date) | ____ (Time) | 75 (Weather) | ____ (Latitude) | ____ (Longitude:)

1. Land Use: urban vacant lot (e.g., woodland, agricultural field, vacant lot, etc.) | ____ (Vegetation) | ____ (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | ____ (Slope (%))

Description of Location: ____

2. Soil Parent Material: sand | ____ (Landform) | ____ (Position on Landscape (SU, SH, BS, FS, TS))

3. Distances from: Open Water Body ____ feet | Drainage Way ____ feet | Wetlands ____ feet
Property Line ____ feet | Drinking Water Well ____ feet | Other ____ feet

4. Unsuitable Materials Present: ☒ Yes ☐ No If Yes: ☐ Disturbed Soil ☒ Fill Material ☐ Weathered/Fractured Rock ☐ Bedrock

5. Groundwater Observed: ☐ Yes ☒ No If yes: ____ Depth Weeping from Pit ____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-38"	Fill										
38-114"	C	Sand	5Y 6/3								

Additional Notes: ____

Commonwealth of Massachusetts
City/Town of Wellesley

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review *(minimum of two holes required at every proposed primary and reserve disposal area)*

Deep Observation Hole Number: _____ (Hole #) _____ (Date) _____ (Time) _____ (Weather) _____ (Latitude) _____ (Longitude:)

1. Land Use: _____ (e.g., woodland, agricultural field, vacant lot, etc.) _____ Vegetation _____ Surface Stones (e.g., cobbles, stones, boulders, etc.) _____ Slope (%)

   Description of Location: _____

2. Soil Parent Material: _____ _____ Landform _____ Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body _____ feet Drainage Way _____ feet Wetlands _____ feet
   Property Line _____ feet Drinking Water Well _____ feet Other _____ feet

4. Unsuitable Materials Present: ☐ Yes ☐ No If Yes: ☐ Disturbed Soil ☐ Fill Material ☐ Weathered/Fractured Rock ☐ Bedrock

5. Groundwater Observed: ☐ Yes ☐ No If yes: _____ Depth Weeping from Pit _____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			

Additional Notes: _____

Commonwealth of Massachusetts
City/Town of Wellesley

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

	Obs. Hole #1	Obs. Hole #2
☐ Depth observed standing water in observation hole	None inches	None inches
☐ Depth weeping from side of observation hole	None inches	None inches
☐ Depth to soil redoximorphic features (mottles)	None inches	None inches
☐ Depth to adjusted seasonal high groundwater (S_h) (USGS methodology)	_____ inches	_____ inches

_____ Index Well Number _____ Reading Date

$S_h = S_c - [S_r \times (OW_c - OW_{max})/OW_r]$

Obs. Hole/Well# _____ S_c _____ S_r _____ OW_c _____ OW_{max} _____ OW_r _____ S_h _____

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?

☒ Yes ☐ No

b. If yes, at what depth was it observed (exclude A and O Horizons)? Upper boundary: _____ inches Lower boundary: _____ inches

c. If no, at what depth was impervious material observed? Upper boundary: _____ inches Lower boundary: _____ inches

Commonwealth of Massachusetts
City/Town of Wellesley

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

F. Certification

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.

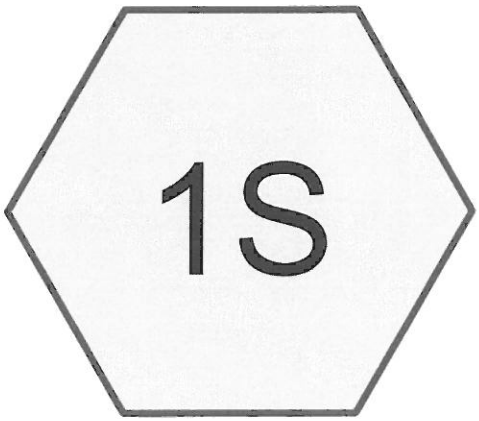
Signature of Soil Evaluator	Date
Typed or Printed Name of Soil Evaluator / License #	Expiration Date of License
Name of Approving Authority Witness	Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with Percolation Test Form 12.

Field Diagrams: Use this area for field diagrams:

Pre- & Post-Development HydroCAD Calculations

Appendix 4



Predevelopment area

Subcat Reach Pond Link

Routing Diagram for W-2784 predevelopment Rev00
Prepared by {enter your company name here}, Printed 2/22/2019

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.467	98	Paved parking, HSG A (1S)
0.266	98	Roofs, HSG A (1S)
0.460	57	Woods/grass comb., Poor, HSG A (1S)
1.194	**82**	**TOTAL AREA**

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Predevelopmentarea Runoff Area=51,994 sf 61.42% Impervious Runoff Depth>1.43"
Tc=6.0 min CN=82 Runoff=2.10 cfs 0.142 af

Total Runoff Area = 1.194 ac Runoff Volume = 0.142 af Average Runoff Depth = 1.43"
38.58% Pervious = 0.460 ac 61.42% Impervious = 0.733 ac

Summary for Subcatchment 1S: Predevelopment area

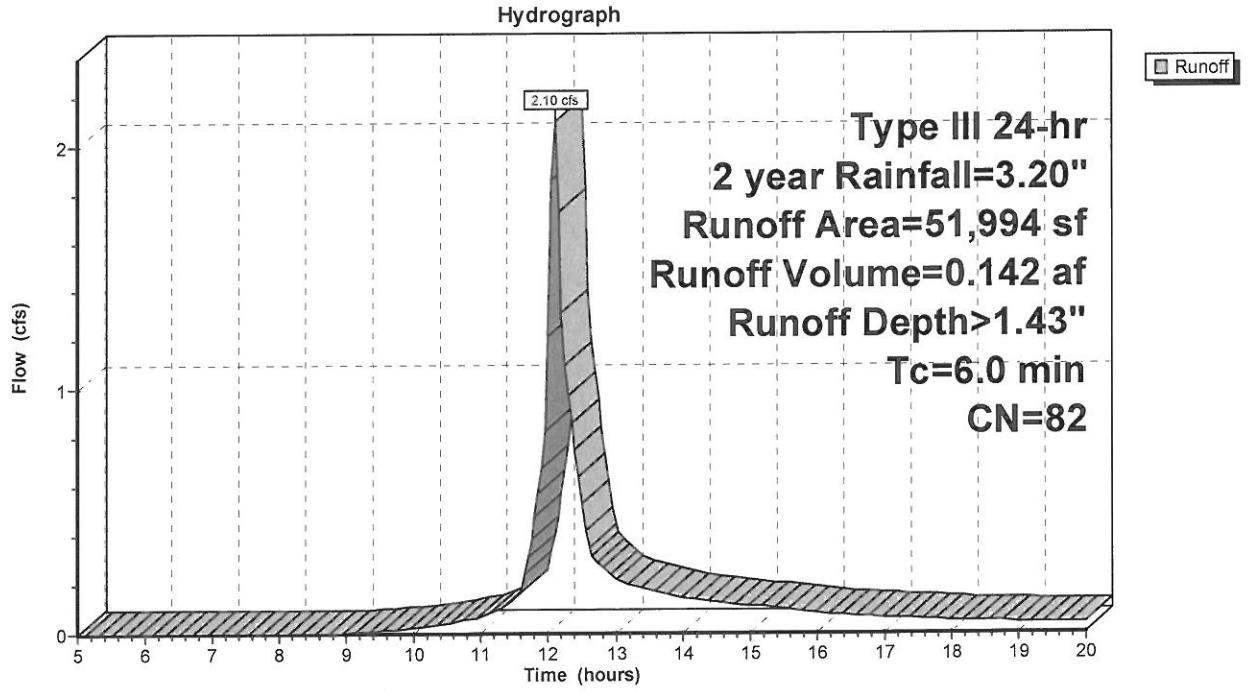
Runoff = 2.10 cfs @ 12.09 hrs, Volume= 0.142 af, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.20"

Area (sf)	CN	Description
11,608	98	Roofs, HSG A
20,329	98	Paved parking, HSG A
20,057	57	Woods/grass comb., Poor, HSG A
51,994	82	Weighted Average
20,057		38.58% Pervious Area
31,937		61.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct entry impervious**

Subcatchment 1S: Predevelopment area



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Predevelopmentarea Runoff Area=51,994 sf 61.42% Impervious Runoff Depth>2.63"
Tc=6.0 min CN=82 Runoff=3.85 cfs 0.262 af

Total Runoff Area = 1.194 ac Runoff Volume = 0.262 af Average Runoff Depth = 2.63"
38.58% Pervious = 0.460 ac 61.42% Impervious = 0.733 ac

Summary for Subcatchment 1S: Predevelopment area

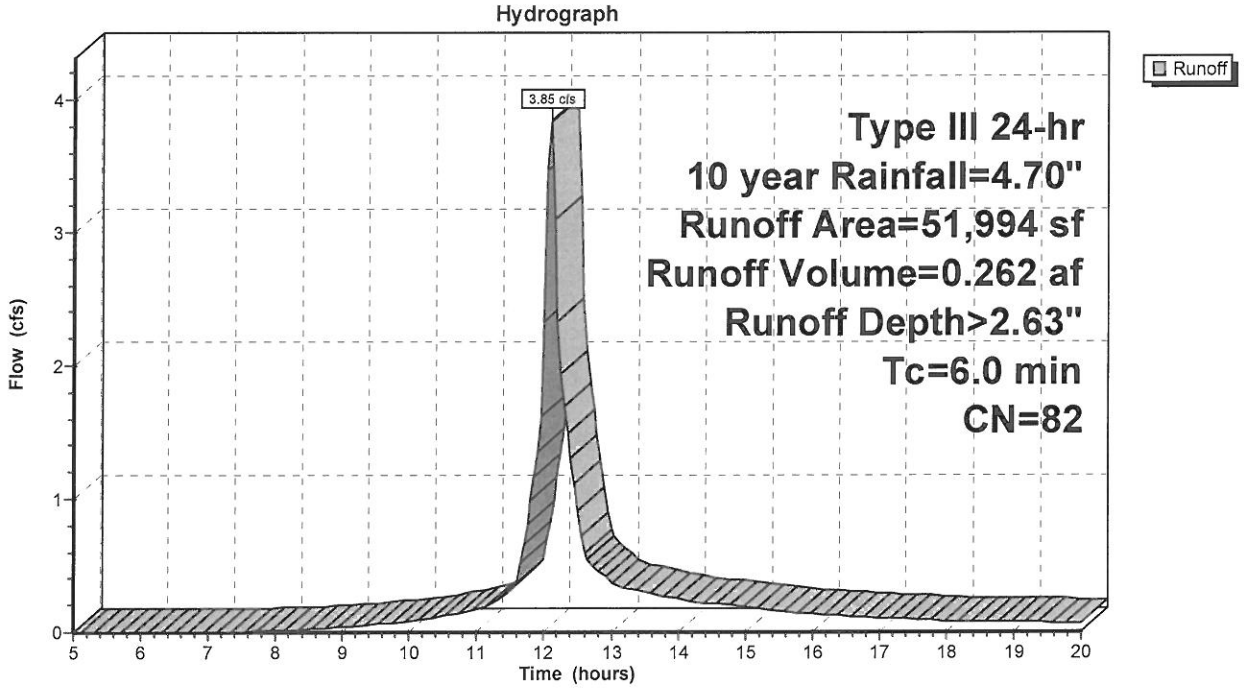
Runoff = 3.85 cfs @ 12.09 hrs, Volume= 0.262 af, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 year Rainfall=4.70"

Area (sf)	CN	Description
11,608	98	Roofs, HSG A
20,329	98	Paved parking, HSG A
20,057	57	Woods/grass comb., Poor, HSG A
51,994	82	Weighted Average
20,057		38.58% Pervious Area
31,937		61.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct entry impervious**

Subcatchment 1S: Predevelopment area



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Predevelopmentarea Runoff Area=51,994 sf 61.42% Impervious Runoff Depth>4.36"
Tc=6.0 min CN=82 Runoff=6.26 cfs 0.434 af

Total Runoff Area = 1.194 ac Runoff Volume = 0.434 af Average Runoff Depth = 4.36"
38.58% Pervious = 0.460 ac 61.42% Impervious = 0.733 ac

Summary for Subcatchment 1S: Predevelopment area

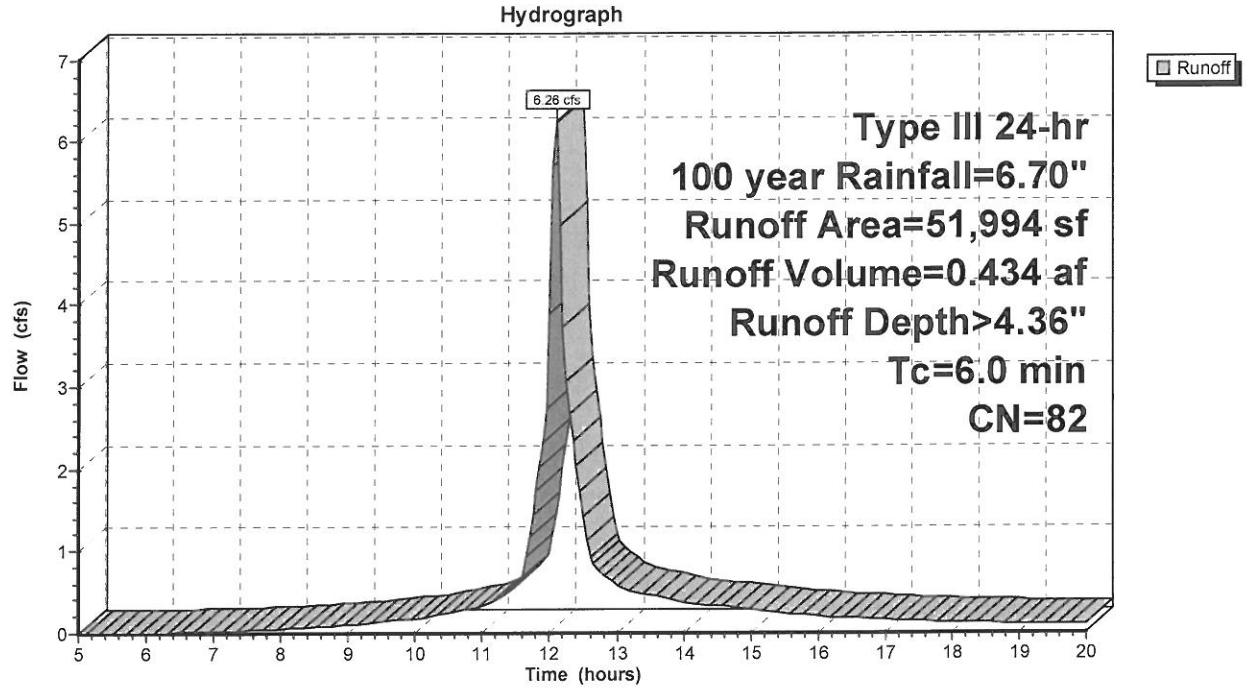
Runoff = 6.26 cfs @ 12.09 hrs, Volume= 0.434 af, Depth> 4.36"

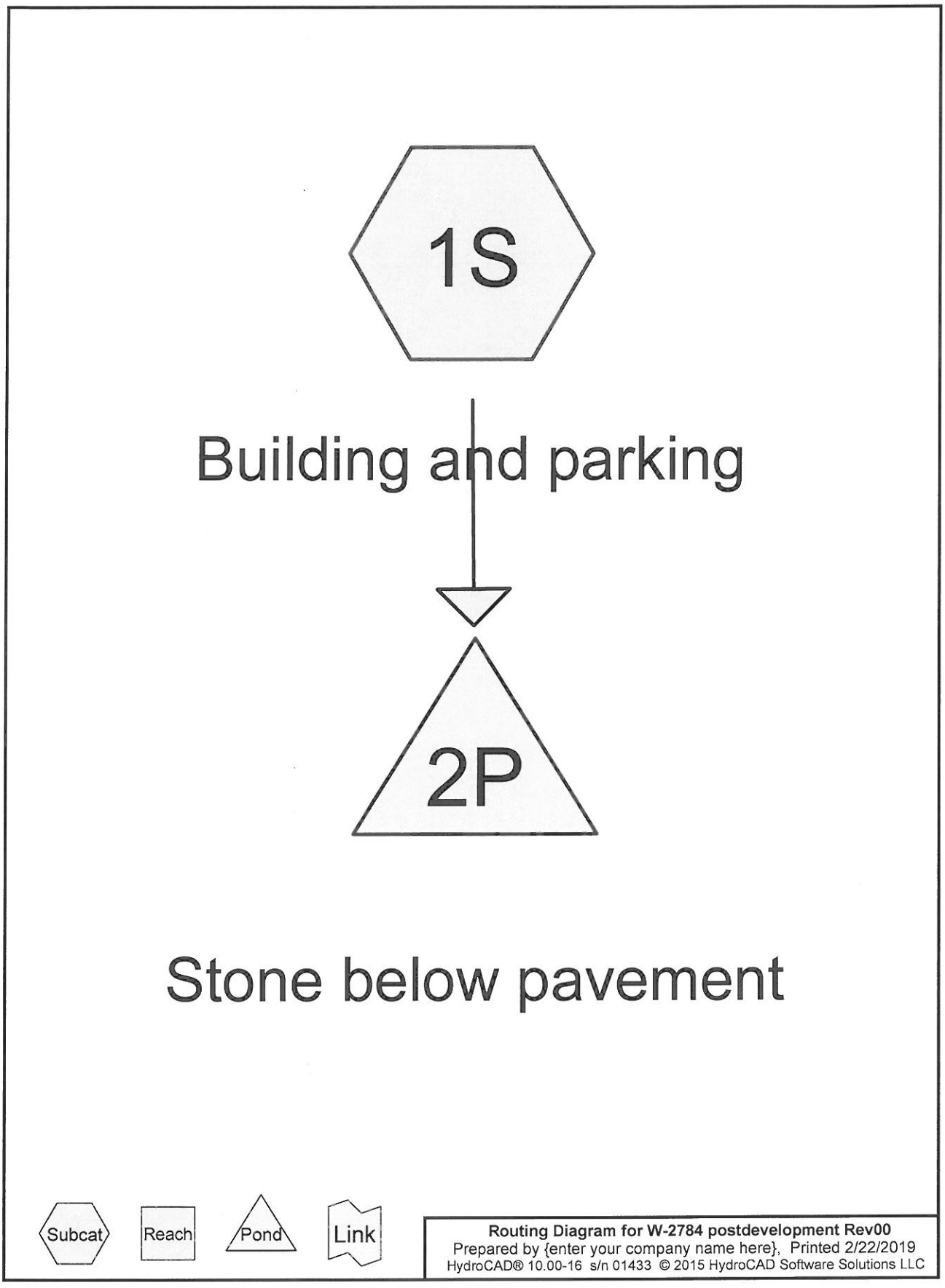
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=6.70"

Area (sf)	CN	Description
11,608	98	Roofs, HSG A
20,329	98	Paved parking, HSG A
20,057	57	Woods/grass comb., Poor, HSG A
51,994	82	Weighted Average
20,057		38.58% Pervious Area
31,937		61.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Direct entry impervious**

Subcatchment 1S: Predevelopment area




1S
Building and parking
2P
Stone below pavement
Subcat
Reach
Pond
Link
Routing Diagram for W-2784 postdevelopment Rev00
Prepared by {enter your company name here}, Printed 2/22/2019
HydroCAD® 10.00-16 s/n 01433 © 2015 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.194	98	Paved parking, HSG A (1S)
1.194	**98**	**TOTAL AREA**

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Building and parking Runoff Area=51,994 sf 100.00% Impervious Runoff Depth>2.77"
Tc=10.0 min CN=98 Runoff=3.21 cfs 0.276 af

Pond 2P: Stone below pavement Peak Elev=0.08' Storage=848 cf Inflow=3.21 cfs 0.276 af
Outflow=1.97 cfs 0.276 af

Total Runoff Area = 1.194 ac Runoff Volume = 0.276 af Average Runoff Depth = 2.77"
0.00% Pervious = 0.000 ac 100.00% Impervious = 1.194 ac

Summary for Subcatchment 1S: Building and parking

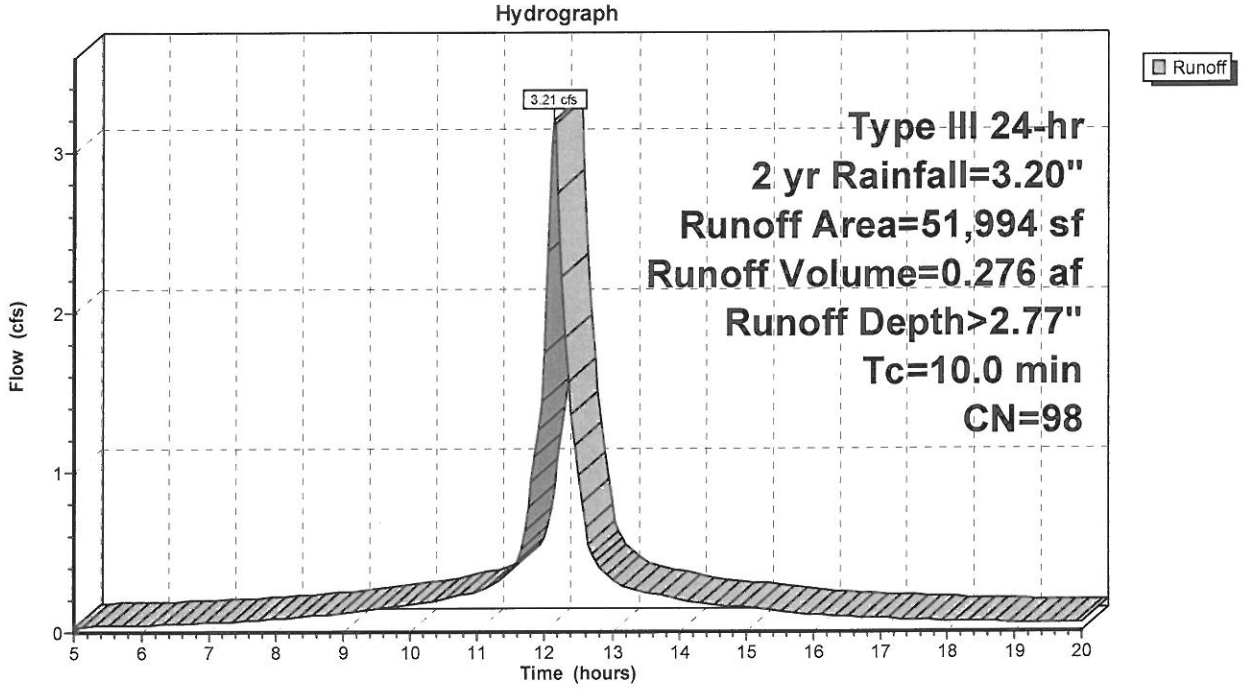
Runoff = 3.21 cfs @ 12.14 hrs, Volume= 0.276 af, Depth> 2.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.20"

Area (sf)	CN	Description
51,994	98	Paved parking, HSG A
51,994		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Building and parking



Summary for Pond 2P: Stone below pavement

Inflow Area = 1.194 ac,100.00% Impervious, Inflow Depth > 2.77" for 2 yr event
Inflow = 3.21 cfs @ 12.14 hrs, Volume= 0.276 af
Outflow = 1.97 cfs @ 12.05 hrs, Volume= 0.276 af, Atten= 39%, Lag= 0.0 min
Discarded = 1.97 cfs @ 12.05 hrs, Volume= 0.276 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.08' @ 12.28 hrs Surf.Area= 35,344 sf Storage= 848 cf

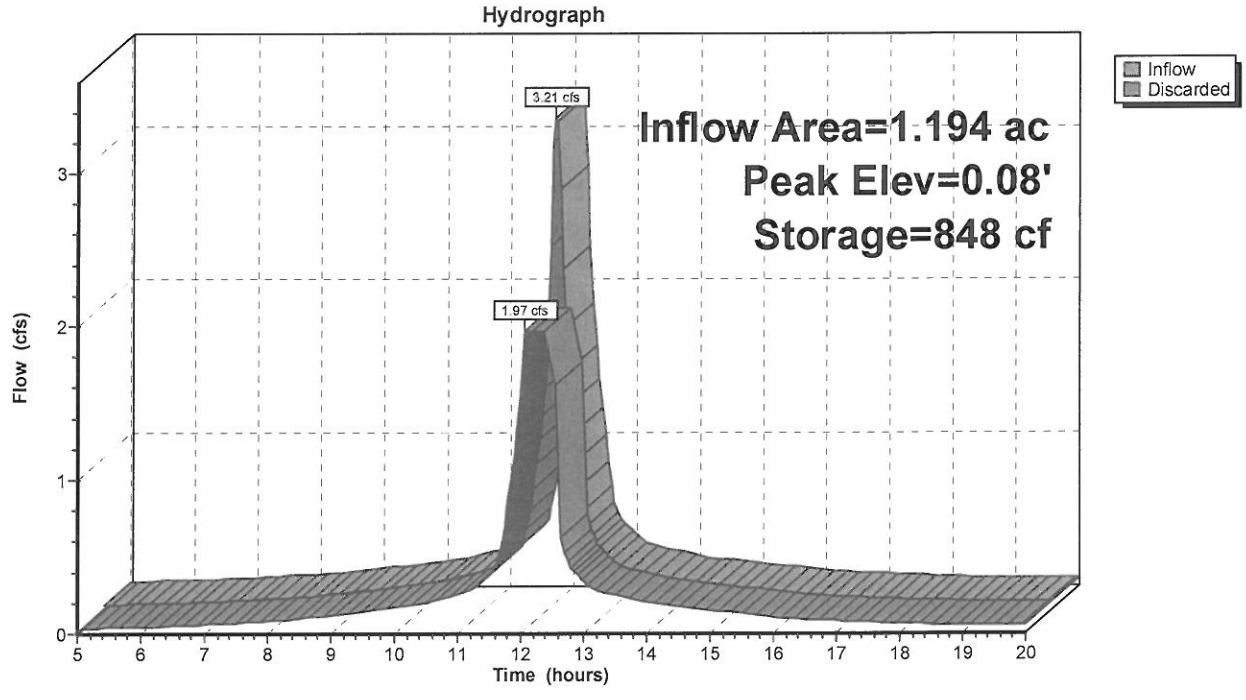
Plug-Flow detention time= 2.9 min calculated for 0.276 af (100% of inflow)
Center-of-Mass det. time= 2.6 min (744.1 - 741.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	21,206 cf	**188.00'W x 188.00'L x 2.00'H Prismatoid** 70,688 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.97 cfs @ 12.05 hrs HW=0.02' (Free Discharge)
1=Exfiltration (Exfiltration Controls 1.97 cfs)

Pond 2P: Stone below pavement



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Building and parking Runoff Area=51,994 sf 100.00% Impervious Runoff Depth>4.14"
Tc=10.0 min CN=98 Runoff=4.75 cfs 0.412 af

Pond 2P: Stone below pavement Peak Elev=0.23' Storage=2,387 cf Inflow=4.75 cfs 0.412 af
Outflow=1.97 cfs 0.412 af

Total Runoff Area = 1.194 ac Runoff Volume = 0.412 af Average Runoff Depth = 4.14"
0.00% Pervious = 0.000 ac 100.00% Impervious = 1.194 ac

Summary for Subcatchment 1S: Building and parking

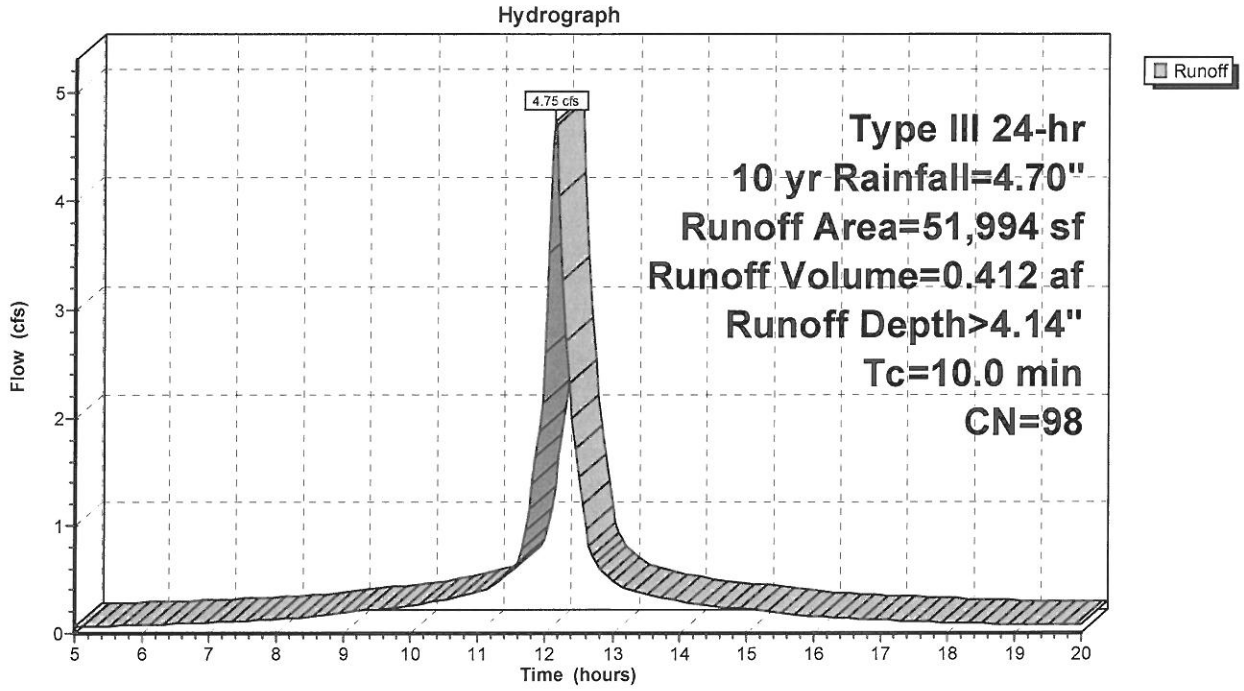
Runoff = 4.75 cfs @ 12.14 hrs, Volume= 0.412 af, Depth> 4.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=4.70"

Area (sf)	CN	Description
51,994	98	Paved parking, HSG A
51,994		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Building and parking



Summary for Pond 2P: Stone below pavement

Inflow Area = 1.194 ac,100.00% Impervious, Inflow Depth > 4.14" for 10 yr event
Inflow = 4.75 cfs @ 12.14 hrs, Volume= 0.412 af
Outflow = 1.97 cfs @ 11.95 hrs, Volume= 0.412 af, Atten= 58%, Lag= 0.0 min
Discarded = 1.97 cfs @ 11.95 hrs, Volume= 0.412 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.23' @ 12.41 hrs Surf.Area= 35,344 sf Storage= 2,387 cf

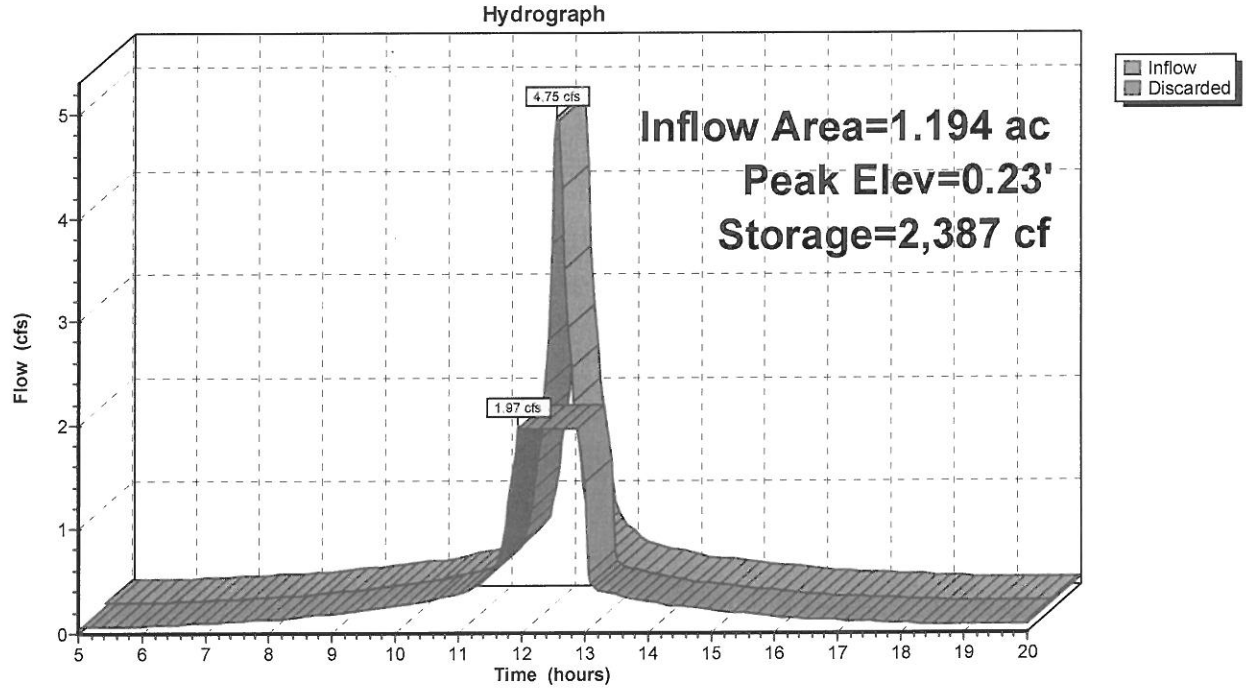
Plug-Flow detention time= 6.3 min calculated for 0.412 af (100% of inflow)
Center-of-Mass det. time= 6.0 min (744.4 - 738.4)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	21,206 cf	**188.00'W x 188.00'L x 2.00'H Prismatoid** 70,688 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.97 cfs @ 11.95 hrs HW=0.02' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 1.97 cfs)

Pond 2P: Stone below pavement



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Building and parking Runoff Area=51,994 sf 100.00% Impervious Runoff Depth>5.96"
Tc=10.0 min CN=98 Runoff=6.79 cfs 0.593 af

Pond 2P: Stone below pavement Peak Elev=0.49' Storage=5,165 cf Inflow=6.79 cfs 0.593 af
Outflow=1.97 cfs 0.593 af

Total Runoff Area = 1.194 ac Runoff Volume = 0.593 af Average Runoff Depth = 5.96"
0.00% Pervious = 0.000 ac 100.00% Impervious = 1.194 ac

Summary for Subcatchment 1S: Building and parking

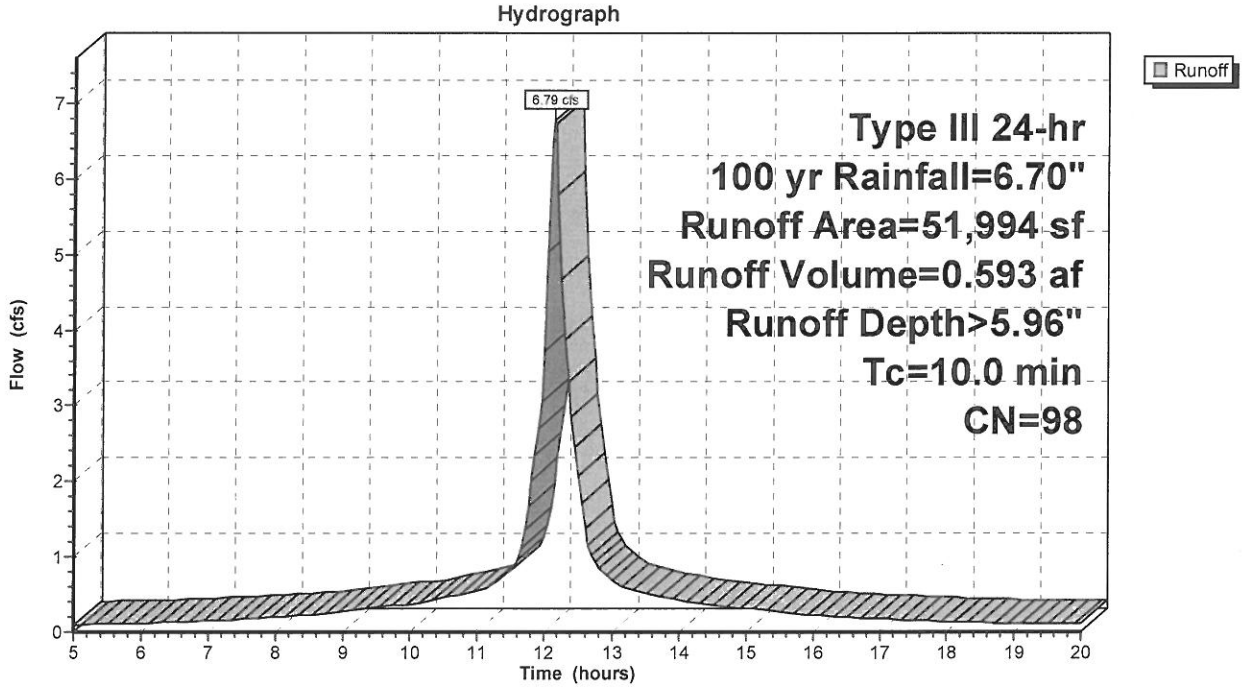
Runoff = 6.79 cfs @ 12.14 hrs, Volume= 0.593 af, Depth> 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 yr Rainfall=6.70"

Area (sf)	CN	Description
51,994	98	Paved parking, HSG A
51,994		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Building and parking



Summary for Pond 2P: Stone below pavement

Inflow Area = 1.194 ac,100.00% Impervious, Inflow Depth > 5.96" for 100 yr event
Inflow = 6.79 cfs @ 12.14 hrs, Volume= 0.593 af
Outflow = 1.97 cfs @ 11.85 hrs, Volume= 0.593 af, Atten= 71%, Lag= 0.0 min
Discarded = 1.97 cfs @ 11.85 hrs, Volume= 0.593 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 0.49' @ 12.51 hrs Surf.Area= 35,344 sf Storage= 5,165 cf

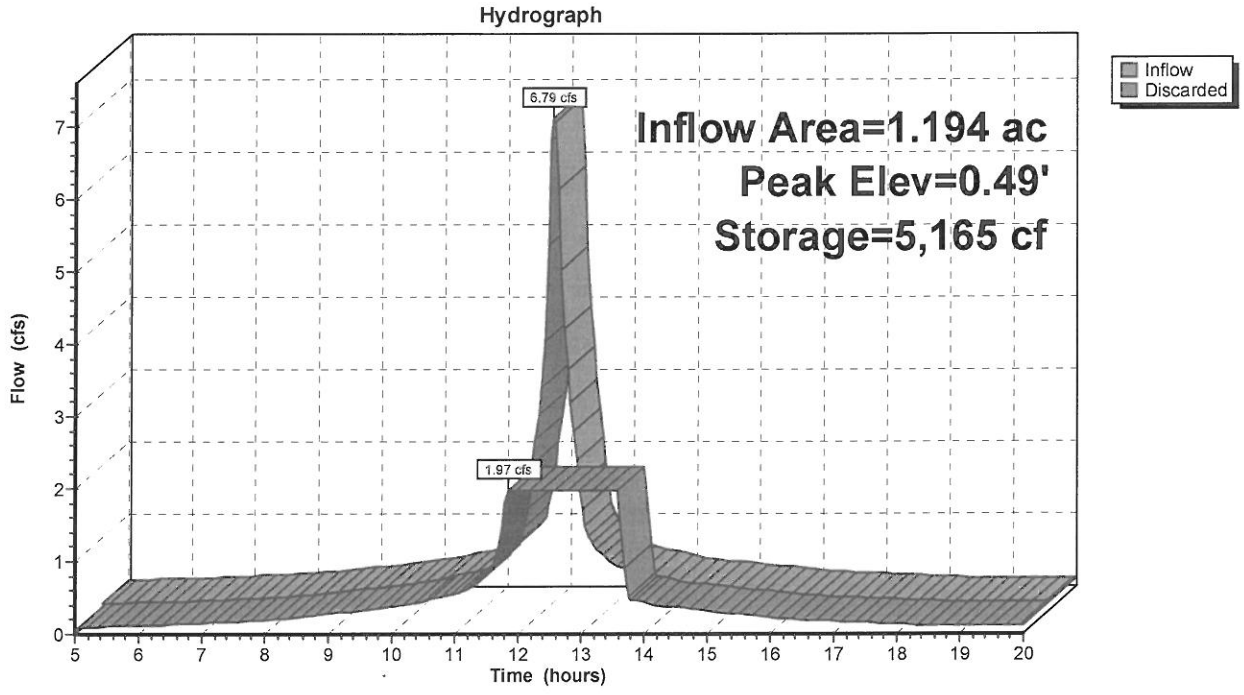
Plug-Flow detention time= 13.6 min calculated for 0.591 af (100% of inflow)
Center-of-Mass det. time= 13.2 min (749.8 - 736.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	21,206 cf	**188.00'W x 188.00'L x 2.00'H Prismatoid** 70,688 cf Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.97 cfs @ 11.85 hrs HW=0.02' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 1.97 cfs)

Pond 2P: Stone below pavement



Long Term Operation and Maintenance Plan

Appendix 5

The following shall serve as the (O&M) Plan required by Standard 9, as well as the Long-Term Pollution Prevention Plan required by Standard 4.

A. Names of Persons or Entity Responsible for Plan Compliance;

Applicant: Hyman Feldman Family Trust
1021 S. Pine Lake Road
Montgomery, Tx 77316

B. Good housekeeping practices

1. Maintain site, landscaping and vegetation.
2. Sweep and pick up litter on pavements and grounds.
3. Deliveries shall be monitored by owners or representative to ensure that if any spillage occurs, it shall be contained and cleaned up immediately.
4. Maintain pavement and curbing in good repair.

C. Requirements for routine inspections and maintenance of stormwater BMPs

1. Plans: The stormwater Operation and Maintenance Plan shall consist of all Plans, documents and all local state and federal approvals as required for the subject property.
2. Record Keeping:
   a. Maintain a log of all operation and maintenance activities for at least three years following construction, including inspections, repairs, replacement and disposal (for disposal, the log shall indicate the type of material and the disposal location);
3. Descriptions and Designs: The Best Management Practices (BMP) incorporated into the design include the following;
   a. Street Sweeping – Stipulated within the Construction Period Pollution Prevention Plan, the Long-Term Pollution Prevention Plan, and the Operation and Maintenance Plan. As the amount of TSS removal is discretionary, no credit was taken within the calculations for this BMP.
   b. Existing leaching catch basin installed to promote TSS Removal of solids and control floatable pollutants. This BMP has a design rate of 25% TSS Removal.
4. BMP Maintenance: After construction it is the responsibility of the owner to perform maintenance. The cleaning of the components of the stormwater management system shall generally be as follows:
   a. Roadway: The owner shall keep the roadway swept with a mechanical sweeper or hand swept semi-annually at a minimum.
   b. Catch Basins: Shall be cleaned by excavating, pumping or vacuuming. The sediment shall be disposed of off-site by the Owner. Inspect quarterly, remove silt when ¼ full.
5. Access Provisions: All of the components of the storm water system will be accessible by the Owner

D. Spill prevention and response plans

1. Inventory materials to be present on-site during construction.
2. Train employees and subcontractors in prevention and clean up procedures.
3. All materials stored on site will be stored in their appropriate containers under a roof.
4. Follow manufacturers recommendation for disposal of used containers.
5. Store only enough product on site to do the job.
6. On site equipment, fueling and maintenance measures:
   a. Inspect on-site vehicles and equipment daily for leaks.
   b. Conduct all vehicle and equipment maintenance and refueling in one location, away from storm drains.

c. Perform major repairs and maintenance off site.
d. Use drip pans, drip cloths or absorbent pads when replacing spent fuels.
e. Collect spent fuels and remove from site.

7. Clean up spills.
   a. Never hose down "dirty" pavement or impermeable surfaces where fluids have spilled. Use dry clean up methods (sawdust, cat litter and/or rags and absorbent pads).
   b. Sweep up dry materials immediately. Never wash them away or bury them.
   c. Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
   d. Report significant spills to the Fire Department, Conservation Commission and Board of Health.

E. Provisions for maintenance of lawns, gardens, and other landscaped areas
Use only organic fertilizer. Dispose of clippings outside of the 100 foot buffer zone to the adjacent wetland.

F. Requirements for storage and use of herbicides, and pesticides
The application of herbicides or pesticides will be done by professional certified contractor.

G. Provisions for operation and management of septic system
Site to be serviced by municipal sewer.

H. Provisions for solid waste management
1. Waste Management Plan
   a. Dumpster for trash and bulk waste collection shall be stored inside or under a roof.
   b. Recycle materials whenever possible (paper, plaster cardboard, metal cans). Separate containers for material is recommended.
   c. Do not bury waste and debris on site.
   d. Certified haulers will be hired to remove the dumpster container waste as needed. Recycling products will also be removed off site weekly.

I. Snow disposal and plowing plans relative to Wetland Resource Areas
Snow storage is adequate around the site for large storm events.

J. Winter Road Salt and/or Sand Use and Storage restrictions
No sand, salt, or chemicals for de-icing will be stored outside.

K. Porous Pavement Maintenance

New porous pavements should be inspected several times in the first few months after construction and at least annually thereafter. Inspections should be conducted after major storms to check for surface ponding that might indicate possible clogging.

It is recommended that vacuum sweeping be performed at least twice a year. In environments where larger amounts of fine materials are present, the frequency should be increased accordingly.

It is very important that sand and abrasives not be used for winter maintenance, as they will clog the pores; de-icing materials should be used instead. The University of New Hampshire's research suggests that porous asphalt retards the formation of ice on the pavement surface, so that the use of de-icing compounds may be drastically curtailed.

Porous pavement that has become clogged can be restored using large pressure washing/vacuum equipment.

If the porous pavement is damaged, it can be repaired using conventional, non-porous patching mixes, as long as the cumulative area repaired does not exceed 10 percent of the paved area.

L. Provisions for prevention of illicit discharges to the stormwater management system
The discharge into the stormwater system is not being violated, see attachment for illicit discharges compliance.

M. Training the staff or personnel involved with implementing Long-Term Pollution Prevention Plan
The owner shall develop policies and procedures for containing the illicit spilling of oils, soda, beer, paper and litter. These wastes provide a degrading of the water quality. The placement of signs and trash barrels with lids around the site would contribute to a clean water quality site condition.

N. List of Emergency contacts for implementing Long-Term Pollution Prevention Plan:

Hyman Feldman Family Trust
1021 S. Pine Lake Road
Montgomery, Tx 77316

This shall be the contact until such time as the project is sold or the roads are accepted by the Town.

New porous pavements should be inspected several times in the first few months after construction and at least annually thereafter. Inspections should be conducted after major storms to check for surface ponding that might indicate possible clogging.

It is recommended that vacuum sweeping be performed at least twice a year. In environments where larger amounts of fine materials are present, the frequency should be increased accordingly.

It is very important that sand and abrasives not be used for winter maintenance, as they will clog the pores; de-icing materials should be used instead. The University of New Hampshire's research suggests that porous asphalt retards the formation of ice on the pavement surface, so that the use of de-icing compounds may be drastically curtailed.

Porous pavement that has become clogged can be restored using large pressure washing/vacuum equipment.

If the porous pavement is damaged, it can be repaired using conventional, non-porous patching mixes, as long as the cumulative area repaired does not exceed 10 percent of the paved area.

Construction Period Pollution Prevention Plan

Appendix 6

Construction Period Pollution Prevention Plan and Erosion and Sedimentation Control.
EPA NPDES – Storm Water Pollution Prevention Plan (SWPPP)

A. Names of Persons or Entity Responsible for Plan Compliance

Applicant: Hyman Feldman Family Trust
1021 S. Pine Lake Road
Montgomery, Tx 77316

B. Construction Period Pollution Prevention Measures

1. Inventory materials to be present on-site during construction.
2. Train employees and subcontractors in prevention and clean up procedures.
3. All materials stored on site will be stored in their appropriate containers and if possible, under a roof or covered.
4. Follow manufacturer's recommendation for disposal of used containers.
5. Store only enough product on site to do the job.
6. On site equipment, fueling and maintenance measures:
   a. Inspect on-site vehicles and equipment daily for leaks.
   b. Conduct all vehicle and equipment maintenance and refueling in front of building, away from storm drains.
   c. Perform major repairs and maintenance off site.
   d. Use drip pans, drip cloths or absorbent pads when replacing spent fuels.
   e. Collect spent fuels and remove from site, per Local and State regulations.
   f. Maintain a clean construction entrance where truck traffic is frequent to reduce soil compaction constant sweeping is required and limit tracking of sediment into streets, sweeping street when silt is observed on street.
7. Stock pile materials and maintain Erosion Control around the materials where it can easily be accessed. Maintain easy access to clean up materials to include brooms, mops, rags gloves, goggles, sand, sawdust, plastic and metal trash containers.
8. Clean up spills.
   a. Never hose down "dirty" pavement or impermeable surfaces where fluids have spilled. Use dry clean up methods (sawdust, cat litter and/or rags and absorbent pads).
   b. Sweep up dry materials immediately. Never wash them away or bury them.
   c. Clean up spills on dirt areas by digging up and properly disposing of contaminated soil in a certified container and notify a certified hauler for removal.
   d. Report significant spills to the Fire Department.
9. It is the responsibility of the site superintendent or employees designated by the Applicant to inspect erosion control and repair as needed, also to inspect all on site vehicles for leaks and check all containers on site that may contain hazardous materials daily.

C. Erosion and Sedimentation Control Plan;

1. See *Site Development & Grading Plan* (sheet 3-6) prepared by Guerriere & Halnon, Inc.

D. Site Development Plans;

1. See *Site Development & Grading Plan* (sheet 3-6) prepared by Guerriere & Halnon, Inc.

E. Construction Plans

1. Construction Sequencing Plan
   a. Prior to any work on the site including tree/brush clearing, the approved limit of clearing as well as the location of the proposed erosion control devices (such as silt

fence/straw bales, etc.) must be staked on the ground under the direction of a Massachusetts registered Professional Land Surveyor.

b. Install silt fence/hay bales at locations
c. Strip off top and subsoil. Stockpile material to be reused, remove excess material from the site. Install and maintain erosion control barrier around stockpile.
d. Rough grade site
e. Install binder course of bituminous asphalt.
f. Install wearing course of asphalt, and striping (where required).
g. Maintain all erosion control devices until site is stabilized
h. The Contractor shall be responsible to schedule any required inspections of his/her work.

2. Construction Waste Management Plan
   a. Dumpster for trash and bulk waste collection shall be provided separately for construction.
   b. Recycle materials whenever possible (paper, plaster cardboard, metal cans). Separate containers for material are recommended.
   c. Segregate and provide containers for disposal options for waste.
   d. Do not bury waste and debris on site.
   e. Certified haulers will be hired to remove the dumpster container waste as needed. Recycling products will also be removed off site weekly.
   f. The sewer system is only for disposal of human waste, and substances permitted for disposal in the site sewer permit with the Town B.O.H.

F. Operation and Maintenance of Erosion and Sedimentation Controls

The operation and maintenance of sedimentation control shall be the responsibility of the contractor. The inspection and maintenance of the stormwater component shall be performed as noted below. The contractor shall have erosion control in place at all times. The contractor, based on future weather reports, shall prepare and inspect all erosion control devices; cleaning, repairing and upgrading is a priority so that the devices perform as per design. Inspect the site during rain events. Don't stay away from the site. At a minimum there should be inspection to assure the devices are not clogged or plugged, or that devices have not been destroyed or damaged during the rain event. After a storm event inspection is required to clean and repair any damage components. Immediate repair is required.

G. Inspection and Maintenance Schedules

1. Inspection must be conducted at least once every 7 days and within 24 hours of the end of a storm event 0.5 inches or greater.
2. Inspection frequency can be reduced to once a month if:
   a. The site is temporarily stabilized.
   b. Runoff is unlikely due to winter conditions, when site is covered with snow or ice.
3. Inspections must be conducted by qualified personnel, "qualified personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls and who possess the skills to assess the conditions and take measures to maintain and ensure proper operation, also to conclude if the erosion control methods selected are effective.
4. For each inspection, the inspection report must include: (See attached inspection and maintenance log)
   a. The inspection date.
   b. Names, titles of personnel making the inspection.
   c. Weather information for the period since the last inspection.
   d. Weather information at the time of the inspection.
   e. Locations of discharges of sediment from the site, if any.

f. Locations of BMP's that need to be maintained.
g. Locations where additional BMP's may be required.
h. Corrective action required or any changes to the SWPPP that may be necessary.

5. The owner, or their representative, such as the contractor, shall inspect the following in-place work;

Inspection Schedule:	
Erosion Control	Weekly
Catch Basins	Weekly
Temporary Sedimentation Traps/Basins	Weekly
Street Sweeping	Weekly

Please Note: Special inspections shall also be made after a significant rainfall event.

Maintenance Schedule	
Erosion Control Devices Failure	Immediately
Catch Basins	Sump 1/4 full of sediment
Street Sweeping	14 days minimum and prior to any significant rain event.

Please Note: Special maintenance shall also be made after a significant rainfall event.

H. Inspection and Maintenance Log Form. (Log Form Follows)

Illicit Discharge Statement

Appendix 7

Illicit Discharge Compliance Statement

It is the intent of the Applicant, Hyman Feldman Family Trust, 1021 S. Pine Lake Road Montgomery, Tx 77316 to control illicit disposal into the storm drainage system. There will be no connection to the storm water system to inadvertently direct other types of liquids, chemicals or solids into the storm drainage system. The Applicant will also promote a clean green environment by mitigating spills onto pavements; oils, soda, chemicals, pet waste, debris and litter.

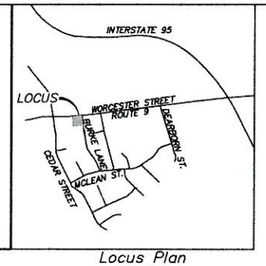
Respectfully Acknowledged,

_____

Dennis DiSchino

Drainage Plans

Appendix 8



Locus Plan
1"=500'±

FOR REGISTRY USE ONLY

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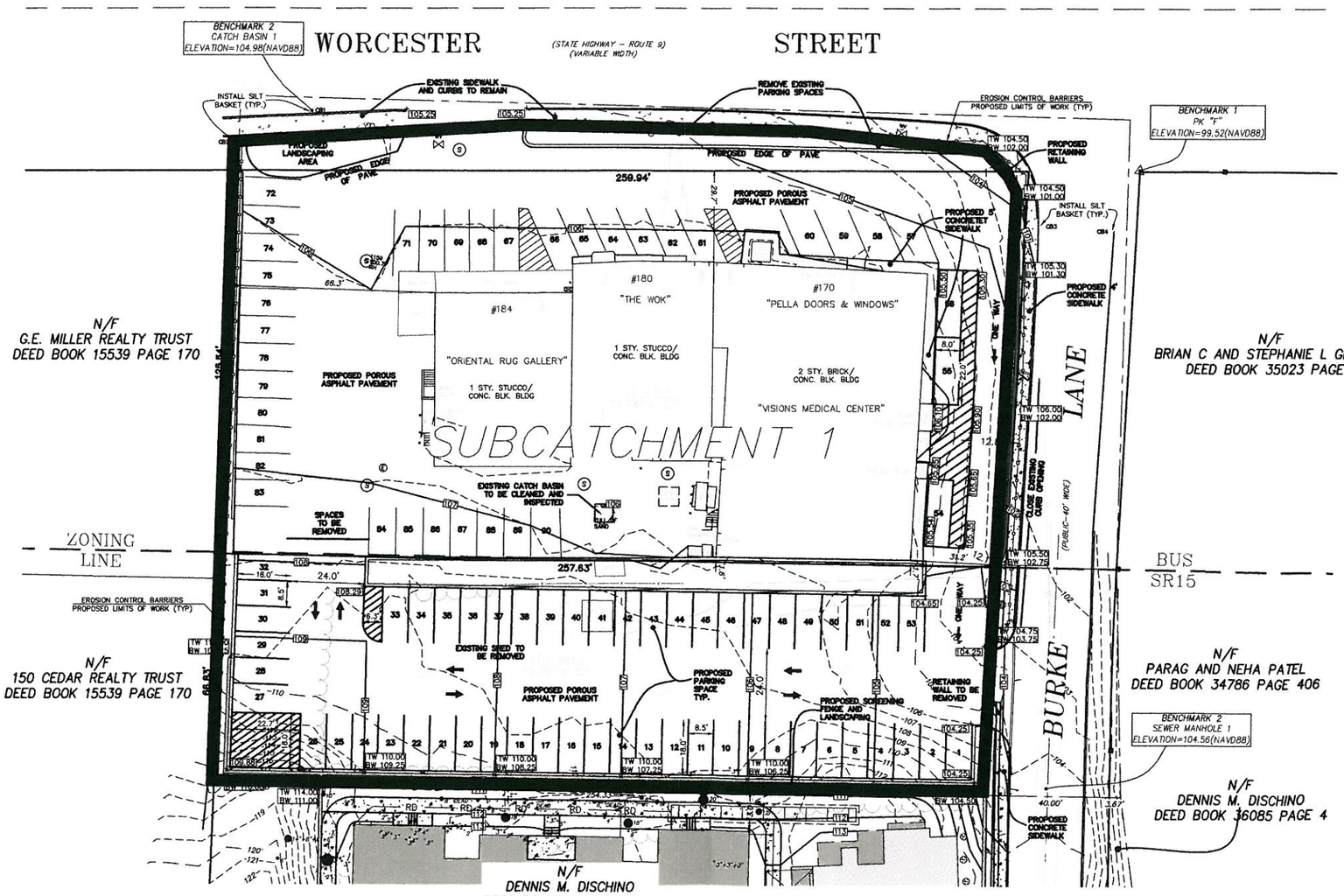

DATE: DATE:

APPROVED DATE:
PLANNING BOARD

SIGNATURE DATE:
BEING A MAJORITY

NOTES

1. CONSTRUCTION ON THIS LOT IS SUBJECT TO ANY EASEMENTS, RIGHTS-OF-WAY, RESTRICTIONS, RESERVATIONS OR OTHER LIMITATIONS WHICH MAY BE REVEALED BY AN EXAMINATION OF THE TITLE.
2. "WARNING" EXISTING UTILITY LINES INDICATED OR NOTED ON THESE DRAWINGS ARE SHOWN AS OBTAINED FROM EXISTING INFORMATION AND ARE ONLY APPROXIMATE IN LOCATION. THE CONTRACTOR SHALL TAKE CAUTION IN THESE AREAS TO AVOID DAMAGE TO EXISTING UTILITY LINES AND/OR HARM TO PERSONNEL ENGAGED IN WORKING IN THESE AREAS. CALL "DIG SAFE" 1-888-DIG-SAFE (1-888-344-7233). EXISTING LINES OTHER THAN THOSE INDICATED ON THESE DRAWINGS MAY BE ON THE SITE. THE CONTRACTOR IS WARNED TO PROCEED WITH CAUTION WITH ALL WORK, ESPECIALLY EXCAVATION WORK, AND TO MAKE ALL POSSIBLE INVESTIGATIONS AS TO POSSIBLE UNMARKED UTILITY LINES.
3. ALL ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM 88 (NAVD88). TO CONVERT TO THE TOWN OF WELLESLEY BASE DATUM, ADD 6.286' TO THE NAVD88 ELEVATION.

ASSESSORS MAP REFERENCE;
MAP 15, PARCEL 1
DEED REFERENCE:
BOOK 36085 PAGE 4
BOOK 2071 PAGE 359
PLAN REFERENCE:
PLAN 226 OF 1971

OWNER
EQUITY PARTNERS
DENNIS DISCHINO
868 WORCESTER STREET
WELLESLEY, MA.

APPLICANT
EQUITY PARTNERS
DENNIS DISCHINO
868 WORCESTER STREET
WELLESLEY, MA.

W-2784

DRAIN AREA PLAN
#170-184
WORCESTER STREET
IN
WELLESLEY, MA

00	DATE	INITIAL SUBMITTAL	INIT

GRAPHIC SCALE: 1"=20'
0 5 10 15 20 25 30 40 50 FEET
0 1 2 3 4 5 10 15 20 METERS

DATE: AUGUST 20, 2018

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SHEET 1 OF 1 | W-2784