

## TOWN OF STURBRIDGE

## PLANNING BOARD

## Permit Application

For Official Use:

Date of Receipt: ___ Received By: Date of Approval
$\qquad$ File Number: $\qquad$ Completed: $\qquad$
$\qquad$ Not Completed: $\qquad$

## Part A General Information

1. NAME OF REGISTERED OWNER Edy Wahib
Address 333 East Main Street
City Southbridge State MA Zip Code 01550
Telephone No. (774) 402-1148
Email Address Edywahib@yahoo.com
2. NAME OF APPLICANT/ AGENT__ Same as Owner
Address $\qquad$ City $\qquad$ State $\qquad$ Zip Code $\qquad$
Telephone No. $\qquad$
Email Address $\qquad$
3. MATTERS RELATED TO THE APPLICATION SHOULD BE ADDRESSED TO (check one or more):
$\boxtimes$ Owner $\boxtimes$ Applicant/Agent
4. PROOF OF OWNERSHIP ACCOMPANYING APPLICATION: (check one):
$\boxtimes \quad$ Copy of front page of deed $\quad \square \quad$ Parcel Registry

## Attached:

Deed Book 57818, Page 19
\& Deed Book 58851, Page 365

## Part B Details of Application

5. Location of Subject Property

Municipal Address: 40 Main Street, Sturbridge, MA 01566
Tract \#1 and
Lot(s): Parcel A \& Parcel B Plan: Book 438, Plan 54

Assessment Lot Number(s): 415-03913-40 and 415-03913-044
6. Is the subject property subject to any easements, rights-of-way, or other rights over adjacent properties (i.e. mutual driveway)?
$\square \quad$ Yes $\quad$ No
7. Existing use of Property: Service gas station with a car repair shop
8. Date of construction of all existing and proposed buildings and structures on the subject property:

| Services available to the subject property: | Existing | Proposed |
| :--- | :--- | :--- |
| Type of water services <br> (i.e. municipal water or private well) | Town Water | Same |
| Type of sewage disposal <br> (i.e. municipal sewage disposal or private <br> septic system) | Town Water | Same |
| Type of storm drainage <br> (i.e. sewers, ditches, swales or other means) | Street Drainage | Same |

9. Project Details

|  | Total Gross Floor Area |  | Total Gross Leasable Area |  | Number of Units |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Existing | Proposed | Existing | Proposed | Existing | Proposed |
| Industrial |  |  |  |  |  |  |
| Office |  |  |  |  |  |  |
| Commercial | $3,766.2$ sq.ft. | Same |  |  |  |  |
| Institutional |  |  |  |  | 1 | 2 |
| Residential |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Total | $3,766.2$ sq.ft. | Same |  |  |  |  |

Part C Project Narrative: Must be completed by applicant or agent
Describe the proposed project in terms of use, design elements and construction
timeframe.
Improvement at an existing service station:

$$
\text { Proposed canopy ( } 32.0^{\prime} \times 71.0^{\prime} \text { ) }
$$

Proposed 6 gas pumps

## Proposed $6.0^{\prime}$ walkway and handicap ramp

## Proposed parking

Proposed location of underground tanks
Construction timeframe: approximately 3 months

Explain how the design and layout of the development or use constitutes suitable development without detriment to the neighborhood or to the environment.
This service station existed for more than 50 years. Improvements are
being proposed to bring it up to date and to code.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Describe any special processes, mitigation measures or unique circumstances
which may have a bearing on project approval
None
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
10. Please list any technical studies or background material being submitted to support the application.

Since no grades are being proposed on the existing parking lot, a drainage analysis study was conducted in support of this application to prove that there is no change in storm run-off after the improvement.
$\qquad$
$\qquad$
11. Please indicate $(V)$ if the applicant or owner has submitted any of the following applications for all or part of the subject property and complete the following chart:

| Other Applications | Required |  | Submitted |  | File Number | Status of <br> Application |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Yes | No | Yes | No |  |  |
| Conservation Commission <br> (Notice of Intent or <br> Request for Determination) |  | X |  |  |  |  |
| DPW <br> (Curb Cut Permit) |  | X |  |  |  |  |
| DPW <br> (Street entrance, water or <br> sewer tie in) |  | X |  |  |  |  |
| Board of Health <br> (Septic, food, other) |  | X |  |  |  |  |
| Zoning Board of Appeals <br> (Special Permit, Variance) | X |  | X |  |  | $2018-4 \mathrm{SP}$ | | Approved |
| :--- |
| Board of Selectmen 24, 2018 <br> (Liquor License) |
| Other <br> (please list below) |

Other:

## SITE PLAN CHECK LIST

1. Existing Site Plan - note any non-conformance

| YES |  | ust give reason below | For Planning Board use |
| :---: | :---: | :---: | :---: |
| X | $\square$ | Locus |  |
| X |  | North arrow |  |
| X | $\square$ | Survey |  |
| X |  | Existing Structures |  |
| X | $\square$ | Existing roads and curbs |  |
| 区 |  | Contours and elevations |  |
| X | $\square$ | Abutters within 300 feet |  |
| X | $\square$ | Zone and dimensional rea |  |
| X | $\square$ | Setbacks |  |

Additional comments
No changes except for the location of the canopy and gas tanks. See Special Permit Decision of the Zoning Board of Appeals on July 24, 2018 (File \#2018-4SP).


## Additional comments

## 3. Grading

For Planning Board use
YES NO - must give reason below
$\square \quad \square \quad$ Buffer zones and distances
$\square \quad \square \quad$ Wetlands and vernal pools
$\square \quad \square \quad$ Riparian features
$\qquad$
$\square \quad \square$ Flood zones
$\qquad$
$\square \quad \square \quad$ Ground water elevations
$\square \quad \square \quad$ Siltation fencing
$\square \quad \square \quad$ Significant species type and habitat
$\square \quad \square$ Detention and Retention Basins
$\square \quad \square \quad$ Grading plan
Additional comments
No new grades are being proposed, and this property does not fall within the jurisdiction of Conservation or the jurisdiction of endangered species habitat.
4. Utilities

For Planning Board use
YES NO - must give reason below
$\square \quad \square \quad$ Water lines and connections
$\square \quad \square \quad$ Hydrants and sprinklers
$\square \quad \square$ Sewer lines and connections
$\square \quad \square \quad$ Electric and wire lines
$\square \quad \square \quad$ Drainage structures
$\square \quad \square \quad$ Oil and propane tanks
$\square \quad \square$ Snow storage area
$\square \quad \square \quad$ Public and private wells
Additional comments
No changes are being made from what has existed before.
5. Landscaping, Lighting and Signs

For Planning Board use
YES NO - must give reason below
X $\square$ Landscaping and calculations
$\square \square$ Lighting location, size, type, direction $\qquad$
$\square \quad \square \quad$ Open space as percent of lot
$\square \quad \square \quad$ Sign location size and detail
$\square \square$ Geologic features
$\square \quad \square \quad$ Dust and noise control measures
$\square \quad \square \quad$ Fencing permanent and temporary
Additional comments Improvement on landscape for existing islands and edge of parking lot. See landscape plan for details.
6. Detail Sheets

For Planning Board use
YES NO - must give reason below
$\square \quad \square \quad$ Tree planting
$\square \quad \square \quad$ Shrub planting
$\square \quad \square$ Light poles
$\square \square$ Hydrants
$\square \quad \square$ Catch basins
Man holes
Traps
Trenching


Road profiles
Curbing and Berms

7. Calculations and Studies unless waived

For Planning Board use
YES NO - must give reason below
X $\quad \square \quad$ Lot coverage
$\square \quad \square \quad$ ITE trip generation calculations
$\square \quad \square \quad$ Planting calculations and schedule
$\square \quad \square \quad$ Traffic impacts
$\square \quad \square$ Drainage calculations
$\square \quad \square \quad$ Water and sewer demands
$\square \quad \square \quad$ Hydrant pressure tests
$\square \quad \square \quad$ Water and aquifer studies
$\square \quad \square$ Other
Additional comments
Drainage analysis was conducted to prove that there will be no changes in the amount of runoff between what existed and what is being proposed.
8. Permits applied for / received from other boards, agencies or commissions Board/Agency Action or Conditions
Zoning Approval of change to pre-existing non-conforming structure
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

AUTHORIZATION (Must be signed by applicant)
I hereby request that he Town of Sturbridge Planning Board review this application for Site Plan approval, including all plans, documents and information herewith. I represent to the best of my knowledge and belief, this application is being submitted in accordance with the Site Plan Review Regulations of the Planning Board of the Town of Sturbridge.


September 10, 2018

## Date

## AUTHORIZATION (Must be signed by owner)

I am the record owner of the property for which this application is being filed and as such, I am familiar with the work proposed to be carried out on my property.

I hereby give permission for this application to be filed with the full understanding that certain restrictions may be placed on the property relative to the approval of the proposed work.

I further certify that under the penalties of perjury, I am authorized to sign this application.


September 10, 2018
Date

If someone is representing the applicant or the owner, the applicant must designate such representative below:

1. Michel El-Ashkar

Name of Representative: Ashkar Engineering
70 Washington St., Ste. 30618 Chapin Street
Address of Representative: Haverhill, MA 01832 Southbridge, MA 01550 (978) 914-6527 - office

Telephone No.: $\qquad$ (508) 764-2100 - office

Relationship of representative to owner or applicant: 1. Engineer 2. Attorney
If representing a group, corporation or other organization please attach a copy of the vote authorizing you to act on behalf of such organization for the purposes of this application.

An application will not be considered complete and will not be submitted to the Planning Board for its action until all required documentation/information has been submitted to the Town Planner and filed with the Town Clerk.

## Quitclaim Deed

Know all men by these presents that Richard E．Brogan and John J．Brogan，whom are both unmarried，with a business address of 132 Winward Lane，Bristol，Rhode Island 02809；

In Consideration paid of Seven Hundred Thousand and 00／100（\＄700，000．00） Dollars；

## Grant to Edy Wahib，

of 333 East Main Street，Southbridge，Worcester County，Massachusetts 01550；

With Quitclaim Covenants；

The land together with the buildings thereon and all privileges and appurtenances thereto belonging，located on the northerly side of Massachusetts Highway Route 131，in Sturbridge，and shown as Parcel＂A＂on plan entitled＂Plan of Land in Sturbridge，MA． Surveyed for James Brogan and Joseph Brogan，December 27，1976，Robert F．Para， Land Surveyor＂said plan being recorded with Worcester Registry of Deeds in Plan Book 438，Plan 54，and more particularly bounded and described as follows：

BEGINNING at an iron pipe on the northerly side of the Massachusetts State highway Layout of Southbridge Road，Route 131，a the southeast corner of tract herein described；

THENCE N． $56^{\circ} 08^{\prime} 52^{\prime \prime} \mathrm{W}$ ．along the northerly side of said Road a distance of 110.83 feet to a Massachusetts Highway Bound；

THENCE N． $67^{\circ} 14^{\prime} 20^{\prime \prime} \mathrm{W}$ ．along the northerly side of said Road a distance of 47.85 feet to a Worcester County Highway bound；

> Worcester Distric: HOD \#20 001
> Date: 09/29/201702:27 PM
> Cいl\# 17415017704 Doc井 00108464
> Fee: $\$ 3,192.00$ Vons: $\$ 700.000 .00$

THENCE running westerly and northerly along the easterly side of the Worcester County Highway Layout of Fiske Hill Road, on a curve to the right, having a radius of 173.63 feet and a length of 232.88 feet to a Worcester county Highway bound;

THENCE running northerly and easterly along the easterly side of the Worcester County Highway Layout of Fiske hill Road, on a curve to the right, having a radius of 40.00 feet and a length of 49.15 feet to a Worcester County Highway bound;

THENCE S. $85^{\circ} 17^{\prime}$ E. along land, now or formerly, of Joseph Brogan a distance of 113.42 feet to an iron pipe;

THENCE S. $33^{\circ} 54^{\prime}$ E. along the southerly side of Old Fiske Road, a distance of 72.99 feet to a point;

THENCE S. $26^{\circ} 37^{\prime} 46^{\prime}$ E. along the southerly side of the Old Fiske Hill Road a distance of 229.50 feet to a point;

THENCE S. $61^{\circ} 12^{\prime} 06^{\prime \prime}$ W. along land, now or formerly of Joseph Brogan, a distance of 55.49 feet to the iron pipe at the point of beginning.

TOGETHER with the right in the Grantees, their heirs, successors and assigns, to maintain and keep in repair the existing septic system in the triangular portion of the Parcel "D" as shown on the aforesaid plan southerly of the last course set forth above.

BEING a portion (PARCEL II) of the same premises conveyed to grantors in a Deed dated March 19, 1986 recorded in the Worcester District Registry of Deeds Book 9331, Page 169.
This Inctrunt Crcats NO New Bosalain

The property is not Homestead property and is not a primary residence of either of the Grantors or of the Grantor's spouses, if any, and is not subject to any Homestead rights under the Massachusetts Homestead Act, M.G.L. c.188. No person is entitled to rights under the Homestead Act.

## Executed as a Sealed Instrument this $\mathbf{2 8}^{\text {th }}$ day of September, 2017.




John J. Brogan

## COMMONWEALTH OF MASSACHUSETTS

## WORCESTER, SS

On this $28^{\text {th }}$ day of September, 2017, before me the undersigned Notary Public, personally appeared Richard E. Brogan, and proved to me through satisfactory evidence of identification, which was prior personal knowledge, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he signed it voluntarily for its stated purpose.


David J. DuPort, Notary Public My Commission Expires: Oct. 17, 2019

## Commonwealth of Massachusetts

## Worcester, SS

On this $28^{\text {th }}$ day of September, 2017, before me the undersigned Notary Public, personally appeared John J. Brogan, and proved to me through satisfactory evidence of identification, which was prior personal knowledge, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he signed it voluntarily for its stated purpose.


David J. DuFont, Notary Public
My Commission Expires: Oct. 17, 2019

[^0]
## Quitclaim Deed

Know all men by these presents that Richard E. Brogan and John J. Brogan, whom are both unmarried, with a business address of 132 Windward Lane, Bristol, Rhode Island 02809;

## In Consideration paid of Forty Thousand and $\mathbf{0 0} / \mathbf{1 0 0}(\mathbf{\$ 4 0 , 0 0 0 . 0 0 )}$ Dollars;

Grant to Edy Wahib, of 333 East Main Street, Southbridge, Worcester County, Massachusetts 01550;

With Quitclaim Covenants;
The land in Sturbridge, Massachusetts together with the buildings thereon known as 10 Old Fiske Hill Road, Sturbridge, Massachusetts as follows:

TRACT I
The land in Sturbridge, Massachusetts surveyed by Brogan Realty Trust, dated November 16, 1974 and recorded at the Worcester District Registry of Deeds in Plan Book 413, Plan 81 and more particularly bound and described as follows:

BEGINNING at an iron pipe on the northerly side of Old Fiske Hill Road at the southeast corner of tract herein described;

THENCE N. $27^{\circ} 56^{\prime}$ W. along the northerly side of Old Fisk Hill Road a distance of 224.52 feet to an iron pipe;

THENCE N. $33^{\circ} 54^{\prime}$ W. along the northerly side of said Road a distance of 43.49 feet to an iron pipe;

THENCE N. $60^{\circ} 46^{\prime}$ E. along land of Brogan Realty Trust, now or formerly, a distance of 205.59 feet to an iron pipe;

THENCE S. $39^{\circ} 31^{\prime}$ E. along land of said Brogan Realty Trust, a distance of 53.38 feet to an iron pipe;

18:067A4B
Southbridge, MA 01550-2447

THENCE S. $25^{\circ} 07^{\prime}$ E. along land of said Brogan Realty Trust a distance of 148.46 feet to an iron pipe;

THENCE S. $36^{\circ} 24^{\prime}$ W. along land of said Brogan Realty Trust, a distance of 104.31 feet to an iron pipe;

THENCE S. $50^{\circ} 47$ ' W. along land of said Brogan Realty Trust, a distance of 116.50 feet to the iron pipe at the point of beginning.

CONTAINING an area of 50,390 square feet.

## TRACT II

The land in said Sturbridge with all privileges and appurtenances thereto belonging, and shown as "Parcel B" on plan entitled "Plan of Land in Sturbridge, MA", surveyed for James Brogan and Joseph Brogan, December 27, 1976, Robert F. Para, Land Surveyor. Said plan being recorded with Worcester District Registry of Deeds in Plan Book 438, Plan 54 and more particularly bound and described as follows:

BEGINNING at a point on the southerly side of Old Fiske Hill Road at the southeast corner of tract herein described, also being the northeast corner of other land of James Brogan, now or formerly;

THENCE N. $26^{\circ} 37^{\prime} 46^{\prime \prime}$ W. along the southerly side of Old Fiske Hill Road a distance of 229.50 feet to a point;

THENCE N. $33^{\circ} 54^{\prime}$ W. along the southerly side of said Old Fiske Hill Road a distance of 72.99 feet to a point;

THENCE N. $85^{\circ} 17 \mathrm{~W}$. along land now or formerly of Joseph Brogan, a distance of 51.19 feet to an iron pipe;

THENCE S. $33^{\circ} 54^{\prime}$ E. along the northerly side of Old Fiske Hill Road, a distance of 43.49 feet to an iron pipe;

THENCE S. $26^{\circ} 37^{\prime} 46^{\prime \prime}$ E. along the northerly side of Old Fiske Hill Road a distance of 225.53 feet to an iron pipe;

THENCE N. $50^{\circ} 47^{\prime}$ E. a distance of 116.50 feet to an iron pipe;
THENCE N. $36^{\circ} 24^{\prime}$ E. a distance of 104.31 feet to an iron pipe;
THENCE N. $25^{\circ} 07^{\prime} \mathrm{W}$. a distance of 148.46 feet to an iron pipe;
THENCE N. $39^{\circ} 31^{\prime}$ W. a distance of 53.38 feet to an iron pipe;

THENCE N. $60^{\circ} 46^{\prime}$ E. a distance of 10.00 feet to an iron pipe;
THENCE S. $39^{\circ} 49^{\prime} 16^{\prime \prime}$ E. a distance of 52.69 feet to an iron pipe;
THENCE S. $25^{\circ} 27^{\prime} 09^{\prime \prime}$ E. a distance of 156.14 feet to an iron pipe;
THENCE S. $34^{\circ} 52^{\prime} 50^{\prime \prime}$ W. a distance of 112.53 feet to an iron pipe;
THENCE S. $52^{\circ} 47^{\prime} 06^{\prime \prime}$ W. a distance of 121.85 feet to an iron pipe;
THENCE S. $61^{\circ} 12^{\prime} 06^{\prime \prime} \mathrm{W}$. a distance of 40.03 to the iron pipe at the point of beginning.
Both Tracts being the premises conveyed to the grantors in deeds recorded with the Worcester District Registry of Deeds in Book 35033, Page 254, and also Book 9331, Page 169.

The property is not Homestead property and is not a primary residence of either of the Grantors or of the Grantor's spouses, if any, and is not subject to any Homestead rights under the Massachusetts Homestead Act, M.G.L. c.188. No person is entitled to rights under the Homestead Act.

## Executed as a Sealed Instrument this $\mathbf{2 5}^{\text {th }}$ day of May, 2018.



## Commonwealth of Massachusetts

## Worcester, SS

On this $25^{\text {th }}$ day of May, 2018, before me the undersigned Notary Public, personally appeared Richard E. Brogan, and proved to me through satisfactory evidence of identification, which was prior personal knowledge, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he signed it voluntarily for its stated purpose.


David J. DyPont, Notary Public
My Commission Expires: Oct. 17, 2019

## Commonwealth of Massachusetts

## Worcester, SS

On this $25^{\text {th }}$ day of May, 2018, before me the undersigned Notary Public, personally appeared John J. Brogan, and proved to me through satisfactory evidence of identification, which was prior personal knowledge, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he signed it voluntarily for its stated purpose.


My Commission Expires: Oct. 17, 2019





## (new Reach)




| REFERENCES <br> SURVEY PREPARED BY ASHKAR ENGINEERING | DATE: <br> SEPTEMBER 3, 2018 <br> ADDRESS: <br> 40 Main St. <br> Sturbridge, MA 01566 | PREPARED BY: <br> NativeTEC <br> ENVIRINMENTAL SCIENCE, CIVIL ENGINEERING, LANDSCAPE ARCHITECTURE \& ARCHITECTURE LANDSCAPE ARCHITECTURE \& ARCHITECTURE <br> 31 MUNRDE ST LYNN, MA $\square 19 \square 1$ <br> TEL 617.437 .6451 EFAX 239.236.0444 | PREPARED FOR: <br> PREPARED FOR: <br> Edy Wahib <br> 333 East Main Street <br> Southbridge, MA 04550 |
| :---: | :---: | :---: | :---: |

## STAGE-STORAGE CALCULATIONS

| Project Name: Wahib-Sturbridge | Date:: |  |
| ---: | :--- | ---: |
| Project Address: | 40 Main Street Sturbridge, MA 01566 | Strap No: |

NOTE: BLUE AND GREEN CELLS HAVE FORMULAS

|  |  |  | START ELEVATIONS |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Elevation | Impervious | Pervious | Building |  |  |  |  |  |  |
| Area Calculations |  |  | 659.00 | 659.00 | 667.00 | 664.00 |  |  |  | Total VOLUME |  |  |
| Impervious | Pervious | Building | $\begin{gathered} \hline \text { Elevation } \\ \text { NAVD } \\ 1988 \\ \hline \end{gathered}$ | $\begin{array}{\|c} \text { Impervious } \\ \left(\mathrm{ft}^{\wedge} 2\right) \end{array}$ | Pervious $\left(\mathrm{ft}^{\wedge} 2\right)$ | Building $\left(\mathrm{ft}^{\wedge} 2\right)$ | $\begin{aligned} & \text { SUM } \\ & \left(\mathrm{FT}^{\wedge} 2\right) \end{aligned}$ | Elevation Change (ft) | Volume <br> Change <br> (ft) | $\left(\mathrm{ft}^{\wedge} 3\right)$ | (ac-ft) | Elevation NAVD 1988 |
| 17538.00 | 32271.00 | 3780.00 | 700.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1920081.00 | 44.08 | 700.00 |
|  |  |  | 699.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1866492.00 | 42.85 | 699.00 |
|  |  |  | 698.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1812903.00 | 41.62 | 698.00 |
|  |  |  | 697.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1759314.00 | 40.39 | 697.00 |
|  |  |  | 696.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1705725.00 | 39.16 | 696.00 |
| 17538.00 | 32271.00 | 3780.00 | 695.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1652136.00 | 37.93 | 695.00 |
| AREA TOTALS |  |  | 694.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1598547.00 | 36.70 | 694.00 |
| WATER QUALITY | $\begin{gathered} 40065.00 \\ \hline 0.92 \\ \hline \end{gathered}$ | $\begin{aligned} & \mathrm{ft}^{\wedge} 3 \\ & \mathrm{ac}-\mathrm{ft} \end{aligned}$ | 693.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1544958.00 | 35.47 | 693.00 |
|  |  |  | 692.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1491369.00 | 34.24 | 692.00 |
|  |  |  | 691.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1437780.00 | 33.01 | 691.00 |
|  |  |  | 690.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1384191.00 | 31.78 | 690.00 |
|  |  | 689.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1330602.00 | 30.55 | 689.00 |
|  |  | 688.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1277013.00 | 29.32 | 688.00 |
|  |  | 687.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1223424.00 | 28.09 | 687.00 |
|  |  | 686.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1169835.00 | 26.86 | 686.00 |
|  |  | 685.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1116246.00 | 25.63 | 685.00 |
| Elevation incremental change (INCHES) |  |  | 12.00 | 684.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1062657.00 | 24.40 | 684.00 |
|  |  | 683.00 |  | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 1009068.00 | 23.17 | 683.00 |
| Elevation incremental change (ft) |  |  | 1.00 | 682.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 955479.00 | 21.93 | 682.00 |
|  |  | 681.00 |  | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 901890.00 | 20.70 | 681.00 |
|  |  |  | 680.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 848301.00 | 19.47 | 680.00 |
|  |  |  | 679.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 794712.00 | 18.24 | 679.00 |
|  |  |  | 678.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 741123.00 | 17.01 | 678.00 |
|  |  |  | 677.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 687534.00 | 15.78 | 677.00 |
|  |  |  | 676.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 633945.00 | 14.55 | 676.00 |
|  |  |  | 675.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 580356.00 | 13.32 | 675.00 |
|  |  |  | 674.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 526767.00 | 12.09 | 674.00 |
|  |  |  | 673.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 473178.00 | 10.86 | 673.00 |
|  |  |  | 672.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 419589.00 | 9.63 | 672.00 |
|  |  |  | 671.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 366000.00 | 8.40 | 671.00 |
|  |  |  | 670.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 312411.00 | 7.17 | 670.00 |
|  |  |  | 669.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 258822.00 | 5.94 | 669.00 |
|  |  |  | 668.00 | 17538.00 | 32271.00 | 3780.00 | 53589.00 | 1.00 | 53589.00 | 205233.00 | 4.71 | 668.00 |
|  |  |  | 667.00 | 17538.00 |  | 3780.00 | 21318.00 | 1.00 | 21318.00 | 151644.00 | 3.48 | 667.00 |
|  |  |  | 666.00 | 17538.00 |  | 3780.00 | 21318.00 | 1.00 | 21318.00 | 130326.00 | 2.99 | 666.00 |
|  |  |  | 665.00 | 17538.00 |  | 3780.00 | 21318.00 | 1.00 | 21318.00 | 109008.00 | 2.50 | 665.00 |
|  |  |  | 664.00 | 17538.00 |  |  | 17538.00 | 1.00 | 17538.00 | 87690.00 | 2.01 | 664.00 |
|  |  |  | 663.00 | 17538.00 |  |  | 17538.00 | 1.00 | 17538.00 | 70152.00 | 1.61 | 663.00 |
|  |  |  | 662.00 | 17538.00 |  |  | 17538.00 | 1.00 | 17538.00 | 52614.00 | 1.21 | 662.00 |
|  |  |  | 661.00 | 17538.00 |  |  | 17538.00 | 1.00 | 17538.00 | 35076.00 | 0.81 | 661.00 |
|  |  |  | 660.00 | 17538.00 |  |  | 17538.00 | 1.00 | 17538.00 | 17538.00 | 0.40 | 660.00 |
|  |  |  | 659.00 |  |  |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 659.00 |




## Summary for Subcatchment 1S: Site Property PRE \& POST

[49] Hint: Tc<2dt may require smaller dt
Runoff $=8.15$ cfs @ 11.93 hrs, Volume= $\quad 0.322$ af, Depth> $3.14^{\prime \prime}$
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span=5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 Y 24 HR Rainfall=7.00"


## Summary for Subcatchment 1S: Site Property PRE \& POST

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Runoff $=8.15 \mathrm{cfs} @ 11.93 \mathrm{hrs}$, Volume= $\quad 0.322$ af, Depth> $3.14^{\prime \prime}$
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs Type II 24-hr 100 Y 24 HR Rainfall=7.00"

| Area (sf) | CN | Description |
| ---: | ---: | :--- |
| 21,318 | 98 | Paved parking, HSG A |
| 0 | 89 | Urban commercial, 85\% imp, HSG A |
| 32,271 | 49 | $50-75 \%$ Grass cover, Fair, HSG A |
| 53,589 | 68 | Weighted Average |
| 32,271 |  | $60.22 \%$ Pervious Area |
| 21,318 |  | $39.78 \%$ Impervious Area |
|  |  |  |
| Tc Length Slope Velocity Capacity <br> (min) (feet) (ft/ft) (ft/sec) (cfs) |  |  |
| 2.4 | 400 | 2.80 |

## Subcatchment 1S: Site Property PRE \& POST




[^0]:    MASSACHUSETTS EXCISE TAX
    Worcester District ROD \#20 001
    Date: 05/25/2018 01:53 PM
    Ctr\# 18232804884 Doc\# 00050590
    Fee: $\$ 182.40$ Cons: $\$ 40,000.00$

