



**CITY OF WATERTOWN
SITE PLAN APPLICATION
AND
SHORT ENVIRONMENTAL
ASSESSMENT FORM, PART 1**

** Provide responses for all sections. INCOMPLETE APPLICATIONS WILL NOT BE PROCESSED. Failure to submit required information by the submittal deadline will result in **not** making the agenda for the upcoming Planning Board meeting.

PROPERTY LOCATION

Proposed Project Name: Stewart's Shops #433
Tax Parcel Number: 7-6-119
Property Address: 229 North Massey St.
Existing Zoning Classification: _____

OWNER OF PROPERTY

Name: Stewart's Shops Corp.
Address: PO Box 435
Saratoga Springs, NY 12866
Telephone Number: 518-581-1201 x 4415
Fax Number: 518-581-1209

APPLICANT

Name: same as owner
Address: _____
Telephone Number: _____
Fax Number: _____
Email Address: jhaward@stewartsshops.com

ENGINEER/ARCHITECT/SURVEYOR

Name: Larry Rutland
Address: 12 Droms Rd. Ext.
Scotia, NY 12302
Telephone Number: 518-399-6560
Fax Number: _____
Email Address: _____

PROJECT DESCRIPTION

Describe project and proposed use briefly:

install 20'x90' canopy, new concrete pad,
new LED site/canopy lighting, replace
underground gasoline storage tanks.

Is proposed Action:

- New Expansion Modification/Alteration

Amount of Land Affected:

Initially: 585 Acres Ultimately: 585 Acres

Will proposed action comply with existing zoning or other existing land use restrictions?

- Yes No If no, describe briefly

What is present land use in vicinity of project?

- Residential Industrial Commercial Agriculture
 Park/Forest/Open Space Other

Describe: _____

Does project involve a permit approval, or funding, now or ultimately from any other Governmental Agency (Federal, State or Local)?

- Yes No If yes, list agency(s) and permit/approval(s)

Planning Board-site plan

Does any aspect of the project have a currently valid permit or approval?

- Yes No If yes, list agency(s) and permit/approval(s)

Planning Board-site plan

As a result of proposed project, will existing permit/approval require modification?

Yes No

Proposed number of housing units (if applicable): Na

Proposed building area: 1st Floor _____ Sq. Ft. Na
2nd Floor _____ Sq. Ft.
3rd Floor _____ Sq. Ft.
Total _____ Sq. Ft.

Area of building to be used for the boiler room, heat facilities, utility facilities and storage: Na Sq. Ft.

Number of parking spaces proposed: 12

Construction Schedule: furnished upon approval

Hours of Operation: same

Volume of traffic to be generated: Na ADT

REQUIRED DRAWINGS:

** The following drawings with the listed information **ARE REQUIRED, NOT OPTIONAL**. If the required information is not included and/or addressed, the Site Plan Application will **not** be processed.

ELECTRONIC COPY OF ENTIRE SUBMISSION (PDF preferred)

BOUNDARY & TOPOGRAPHIC SURVEY

(Depict existing features as of the date of the Site Plan Application. This Survey and Map must be performed and created by a Professional Land Surveyor licensed and currently registered to practice in the State of New York. This Survey and Map must be stamped and signed with an original seal and signature on at least one copy, the rest may be copies thereof.

All elevations are National Geodetic Vertical Datum of 1929 (NGVD29).

1' contours are shown & labeled with appropriate spot elevations.

All existing features on and within 50 feet of the subject property are shown and labeled.

All existing utilities on and within 50 feet of the subject property are shown and labeled.

All existing easements and/or right-of-ways are shown and labeled.

Existing property lines (bearings & distances), margins, acreage, zoning, existing land use, reputed owner, adjacent reputed owners & tax parcel numbers are shown and labeled.

The north arrow & graphic scale are shown.

DEMOLITION PLAN (If Applicable)

All existing features on and within 50 feet of the subject property are shown and labeled.

All items to be removed are labeled in darker text.

SITE PLAN

All proposed above ground features are depicted and clearly labeled.

All proposed features are clearly labeled "proposed".

All proposed easements & right-of-ways are shown and labeled.

- Land use, zoning, & tax parcel number are shown.
- The Plan is adequately dimensioned including radii.
- The line work & text for all proposed features is shown darker than existing features.
- All vehicular & pedestrian traffic circulation is shown including a delivery or refuse vehicle entering and exiting the property.
- Proposed parking & loading spaces including ADA accessible spaces are shown and labeled.
- Refuse Enclosure Area (Dumpster), if applicable, is shown. Section 161-19.1 of the Zoning Ordinance states, "No refuse vehicle or refuse container shall be parked or placed within 15 feet of a party line without the written consent of the adjoining owner, if the owner occupies any part of the adjoining property".
- The north arrow & graphic scale are shown.

GRADING PLAN

- All proposed below ground features including elevations & inverts are shown and labeled.
- All proposed above ground features are shown and labeled.
- The line work & text for all proposed features is shown darker than existing features.
- All proposed easements & right-of-ways are shown and labeled.
- 1' existing contours are shown dashed & labeled with appropriate spot elevations.
- 1' proposed contours are shown & labeled with appropriate spot elevations.
- All elevations are National Geodetic Vertical Datum of 1929 (NGVD29).
- Sediment & Erosion control are shown & labeled on the grading plan unless separate drawings have been provided as part of a Stormwater Pollution Prevention Plan (SWPPP).

UTILITY PLAN - *na*

- All proposed above & below ground features are shown and labeled.
- All existing above & below ground utilities including sanitary, storm water, water, electric, gas, telephone, cable, fiber optic, etc. are shown and labeled.
- All proposed easements & right-of-ways are shown and labeled.
- The Plan is adequately dimensioned including radii.
- The line work & text for all proposed features is shown darker than existing features.
- The following note has been added to the drawings stating, "All water main and service work must be coordinated with the City of Watertown Water Department. The Water Department requirements supercede all other plans and specifications provided."

LANDSCAPING PLAN - *na*

- All proposed above ground features are shown and labeled.
- All proposed trees, shrubs, and other plantings are shown and labeled.
- All proposed landscaping & text are shown darker than existing features.
- All proposed landscaping is clearly depicted, labeled and keyed to a plant schedule that includes the scientific name, common name, size, quantity, etc.
- For additional landscaping requirements where nonresidential districts and land uses abut land in any residential district, please refer to Section 310-59, Landscaping of the City's Zoning Ordinance.
- Site Plan complies with and meets acceptable guidelines set forth in Appendix A - Landscaping and Buffer Zone Guidelines (August 7, 2007).**

PHOTOMETRIC PLAN (If Applicable) *will forward*

- All proposed above ground features are shown.
- Photometric spot elevations or labeled photometric contours of the property are clearly depicted. Light spillage across all property lines shall not exceed 0.5 foot-candles.

CONSTRUCTION DETAILS & NOTES

- All details and notes necessary to adequately complete the project including, but not limited to, landscaping, curbing, catch basins, manholes, water line, pavement, sidewalks, trench, lighting, trash enclosure, etc. are provided.
- Maintenance & protection and traffic plans & notes for all required work within City streets including driveways, water laterals, sanitary laterals, storm connections, etc. are provided.
- The following note must be added to the drawings stating:
"All work to be performed within the City of Watertown margin will require sign-off from a Professional Engineer, licensed and currently registered to practice in the State of New York, that the work was built according to the approved site plan and applicable City of Watertown standards. Compaction testing will be required for all work to be performed within the City of Watertown margin and must be submitted to the City of Watertown Codes Department."

PRELIMINARY ARCHITECTURAL PLANS (If Applicable)

- Floor plan drawings, including finished floor elevations, for all buildings to be constructed are provided.
- Exterior elevations including exterior materials and colors for all buildings to be constructed are provided.
- Roof outline depicting shape, slope and direction is provided.

ENGINEERING REPORT *na*

**** The engineering report at a minimum includes the following:**

- Project location
- Project description
- Existing & proposed sanitary sewer flows & summary
- Water flows & pressure
- Storm Water Pre & Post Construction calculations & summary
- Traffic impacts
- Lighting summary
- Landscaping summary

GENERAL INFORMATION

ALL ITEMS ARE STAMPED & SIGNED WITH AN ORIGINAL SIGNATURE BY A PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR SURVEYOR LICENSED AND CURRENTLY REGISTERED TO PRACTICE IN THE STATE OF NEW YORK.

na If required, a copy of the Stormwater Pollution Prevention Plan (SWPPP) submitted to the NYSDEC will also be sent to the City of Watertown Engineering Department.

na If required, a copy of all submittals sent to the New York State Department of Environmental Conservation (NYSDEC) for the sanitary sewer extension permit will also be sent to the City of Watertown Engineering Department

na If required, a copy of all submittals sent to the New York State Department of Health (NYSDOH) will also be sent to the City of Watertown Engineering Department.

Signage will not be approved as part of this submission. It requires a sign permit from the Codes Department. See Section 310-52.2 of the Zoning Ordinance.

Plans have been collated and properly folded.

Explanation for any item not checked in the Site Plan Checklist.

items not included because site is existing.

Completed SEQR – Short Environmental Assessment Form – Part I.

*A copy of the SEQR Form can be obtained from the City of Watertown website.

SIGNATURE

I certify that the information provided above is true to the best of my knowledge.

Applicant (please print) Jennifer L. Howard
Applicant Signature Jennifer L. Howard Date: 5/17/10

PROJECT I.D. NUMBER

Appendix C

State Environmental Quality Review
SHORT ENVIRONMENTAL ASSESSMENT FORM
For UNLISTED ACTIONS Only

PART I—PROJECT INFORMATION (To be completed by Applicant or Project sponsor)

1. APPLICANT /SPONSOR <i>Stewart's Shops Corp.</i>	2. PROJECT NAME/ <i>Stewart's Shop #433</i>
3. PROJECT LOCATION: Municipality _____ County _____	
4. PRECISE LOCATION (Street address and road intersections, prominent landmarks, etc., or provide map) <i>229 North Massey St.</i>	
5. IS PROPOSED ACTION: <input type="checkbox"/> New <input type="checkbox"/> Expansion <input checked="" type="checkbox"/> Modification/alteration	
6. DESCRIBE PROJECT BRIEFLY: <i>new 20' x 90' canopy, underground gas tank replacement, lighting, concrete pad</i>	
7. AMOUNT OF LAND AFFECTED: Initially <i>.585^{1/2}</i> acres Ultimately <i>.585^{1/2}</i> acres	
8. WILL PROPOSED ACTION COMPLY WITH EXISTING ZONING OR OTHER EXISTING LAND USE RESTRICTIONS? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If No, describe briefly	
9. WHAT IS PRESENT LAND USE IN VICINITY OF PROJECT? <input type="checkbox"/> Residential <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Agriculture <input type="checkbox"/> Park/Forest/Open space <input type="checkbox"/> Other Describe:	
10. DOES ACTION INVOLVE A PERMIT APPROVAL, OR FUNDING, NOW OR ULTIMATELY FROM ANY OTHER GOVERNMENTAL AGENCY (FEDERAL, STATE OR LOCAL)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, list agency(s) and permit/approvals <i>Planning Board - site plan</i>	
11. DOES ANY ASPECT OF THE ACTION HAVE A CURRENTLY VALID PERMIT OR APPROVAL? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, list agency name and permit/approval <i>Planning Board - site plan</i>	
12. AS A RESULT OF PROPOSED ACTION WILL EXISTING PERMIT/APPROVAL REQUIRE MODIFICATION? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE TO THE BEST OF MY KNOWLEDGE	
Applicant/sponsor name: <i>Stewart's Shops Corp.</i>	Date: <i>5/17/10</i>
Signature: <i>Jennifer B Howard</i>	

If the action is in the Coastal Area, and you are a state agency, complete the Coastal Assessment Form before proceeding with this assessment

PART II—ENVIRONMENTAL ASSESSMENT (To be completed by Agency)

<p>A. DOES ACTION EXCEED ANY TYPE I THRESHOLD IN 6 NYCRR PART 617.4? If yes, coordinate the review process and use the FULL EAF.</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>B. WILL ACTION RECEIVE COORDINATED REVIEW AS PROVIDED FOR UNLISTED ACTIONS IN 6 NYCRR, PART 617.6? If No, a negative declaration may be superseded by another involved agency.</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>C. COULD ACTION RESULT IN ANY ADVERSE EFFECTS ASSOCIATED WITH THE FOLLOWING: (Answers may be handwritten, if legible)</p> <p>C1. Existing air quality, surface or groundwater quality or quantity, noise levels, existing traffic patterns, solid waste production or disposal, potential for erosion, drainage or flooding problems? Explain briefly:</p> <p>C2. Aesthetic agricultural, archaeological, historic, or other natural or cultural resources; or community or neighborhood character? Explain briefly:</p> <p>C3. Vegetation or fauna, fish, shellfish or wildlife species, significant habitats, or threatened or endangered species? Explain briefly:</p> <p>C4. A community's existing plans or goals as officially adopted, or a change in use or intensity of use of land or other natural resources? Explain briefly:</p> <p>C5. Growth, subsequent development, or related activities likely to be induced by the proposed action? Explain briefly.</p> <p>C6. Long term, short term, cumulative, or other effects not identified in C1-C5? Explain briefly.</p> <p>C7. Other Impacts (including changes in use of either quantity or type of energy)? Explain briefly.</p>
<p>D. WILL THE PROJECT HAVE AN IMPACT ON THE ENVIRONMENTAL CHARACTERISTICS THAT CAUSED THE ESTABLISHMENT OF A CEA?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>E. IS THERE, OR IS THERE LIKELY TO BE, CONTROVERSY RELATED TO POTENTIAL ADVERSE ENVIRONMENTAL IMPACTS?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, explain briefly</p>

PART III—DETERMINATION OF SIGNIFICANCE (To be completed by Agency)

INSTRUCTIONS: For each adverse effect identified above, determine whether it is substantial, large, important or otherwise significant. Each effect should be assessed in connection with its (a) setting (i.e. urban or rural); (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude. If necessary, add attachments or reference supporting materials. Ensure that explanations contain sufficient detail to show that all relevant adverse impacts have been identified and adequately addressed. If question D of Part II was checked yes, the determination and significance must evaluate the potential impact of the proposed action on the environmental characteristics of the CEA.

<p><input type="checkbox"/> Check this box if you have identified one or more potentially large or significant adverse impacts which MAY occur. Then proceed directly to the FULL EAF and/or prepare a positive declaration.</p> <p><input type="checkbox"/> Check this box if you have determined, based on the information and analysis above and any supporting documentation, that the proposed action WILL NOT result in any significant adverse environmental impacts AND provide on attachments as necessary, the reasons supporting this determination:</p>	
<p>_____ Name of Lead Agency</p>	
<p>_____ Print or Type Name of Responsible Officer in Lead Agency</p>	<p>_____ Title of Responsible Officer</p>
<p>_____ Signature of Responsible Officer in Lead Agency.</p>	<p>_____ Signature of Preparer (if different from responsible officer)</p>
<p>_____ Date</p>	

**Storm Water Calculations
Stewart's Shops Corp.
229 North Massey Street
Watertown, N.Y.
Shop # 433**

November 18, 2010

Reviewed by L.H. Rutland Jr. P.E.

INTRODUCTION

Stewart's Shops Corp. is proposing a redevelopment of the site located at 229 North Massey Street. Stewart's Shops Corp. is proposing the removal and replacement of the existing gas canopy and underground fuel storage tanks, and drainage improvements.

Site Characteristics:

Total Area: 0.708 acres

Topography: Slopes South to North

Pre-Development Area Descriptions and Discharge Points:

This section describes the pre-development (existing) storm water system. There are 4 pre-development watershed areas. Watershed 1 drains approximately 5,889 sq. ft. of roof and asphalt to the eastern side of the lot. Watershed 2 drains approximately 2,637 of roof and asphalt to a drywell in the northeast corner on the lot. Watershed 3 drains approximately 13,334 sq. ft. of asphalt and canopy to the north out to Coffeen Street. Watershed 4 drains approximately 4,638 sq. ft. of greenspace to the north out to Coffeen Street.

Post Development Area Descriptions and Discharge Points:

This section describes the proposed post-development storm water system. There are 5 post-development drainage areas. Watershed 1 is unchanged and drains approximately 5,589 sq. ft. of roof and asphalt to the eastern side of the lot. Watershed 2 drains approximately 3,479 sq. ft. of roof and asphalt into a proposed catch basin in the northeast corner that is piped to a proposed 6' diameter drywell. Watershed 3 drains approximately 8,984 sq. ft. of asphalt and canopy into 2 proposed catch basins on the north side of the lot that is piped to a proposed 6' diameter drywell. Watershed 4 drains approximately 2,249 sq. ft. of asphalt into a proposed catch basin in the northwest corner that is piped to a proposed 6' diameter drywell. Watershed 5 drains approximately 2,249 sq. ft. of greenspace to the north out to Coffeen Street.

Stewart's Shops Corp. is proposing 4 new catch basins that are tied into 3 new 6' diameter drywells as shown on the site plan. This will intercept a majority of the water before it gets to Coffeen Street. Presently approximately 2/3 of storm water sheet flows to Coffeen Street. Below you will find the Storm Water Calculations showing a comparison between the existing runoff and the proposed runoff. The Rational Formula was used for the comparison.

STORM DRAINAGE COMPUTATIONS

Assumptions:

Data taken from the NYSDEC Technical Paper 40

10 year storm = 1.50 inches per hour = Intensity

25 year storm = 2.10 inches per hour = Intensity

50 year storm = 2.10 inches per hour = Intensity

100 year storm = 2.30 inches per hour = Intensity

Rational Formula

$$Q = CIA$$

Q = Quantity

C = Coefficient of runoff

I = Intensity

A = Acreage

Runoff Coefficients:

Building = 1.0

Concrete = 1.0

Asphalt = 0.95

Green space = 0.30

10 YEAR STORM EVENT

PRE-DEVELOPMENT

Total Site Area: 0.708 acres 30,853 sq. ft.

Building
3,353 sq. ft. $Q = 1.0 \times 1.50 \times 0.077 = 0.116$ CFS

Concrete
2,680 sq. ft. $Q = 1.0 \times 1.50 \times 0.093 = 0.093$ CFS

Asphalt
16,047 sq. ft. $Q = 0.95 \times 1.50 \times 0.524 = 0.524$ CFS

Green Area
8,773 sq. ft. $Q = 0.30 \times 1.50 \times 0.090 = 0.090$ CFS

Total: 0.823 CFS

POST-DEVELOPMENT

Total Site Area: 0.708 acres 30,853 sq. ft.

Building
3,353 sq. ft. $Q = 1.0 \times 1.50 \times 0.077 = 0.116$ CFS

Concrete
3,947 sq. ft. $Q = 1.0 \times 1.50 \times 0.091 = 0.137$ CFS

Asphalt
17,223 sq. ft. $Q = 0.95 \times 1.50 \times 0.395 = 0.563$ CFS

Green Area
6,330 sq. ft. $Q = 0.30 \times 1.50 \times 0.145 = 0.065$ CFS

Total: 0.881 CFS

Post development – Predevelopment = 0.881 CFS – 0.823 CFS = 0.058 CFS x 60 sec. per min x 60 min per hour = 208 cubic feet runoff. During a 10 year storm event the proposed site development will produce 208 cubic feet more storm water than existing.

25 YEAR STORM EVENT

PRE-DEVELOPMENT

Total Site Area: 0.708 acres 30,853 sq. ft.

Building
3,353 sq. ft. $Q = 1.0 \times 2.10 \times 0.077 = 0.162$ CFS

Concrete
2,680 sq. ft. $Q = 1.0 \times 2.10 \times 0.062 = 0.130$ CFS

Asphalt
16,047 sq. ft. $Q = 0.95 \times 2.10 \times 0.368 = 0.734$ CFS

Green Area
8,773 sq. ft. $Q = 0.30 \times 2.10 \times 0.201 = 0.127$ CFS

Total: 1.153 CFS

POST-DEVELOPMENT

Total Site Area: 0.708 acres 30,853 sq. ft.

Building
3,353 sq. ft. $Q = 1.0 \times 2.10 \times 0.077 = 0.162$ CFS

Concrete
3,947 sq. ft. $Q = 1.0 \times 2.10 \times 0.091 = 0.191$ CFS

Asphalt
17,223 sq. ft. $Q = 0.95 \times 2.10 \times 0.395 = 0.788$ CFS

Green Area
6,330 sq. ft. $Q = 0.30 \times 2.10 \times 0.145 = 0.091$ CFS

Total: 1.232 CFS

Post development – Predevelopment = 1.232 CFS – 1.153 CFS = 0.011 CFS x 60 sec. per min x 60 min per hour = 284 cubic feet runoff. During a 25 year storm event the proposed site development will produce 284 cubic feet more storm water than existing.

50 YEAR STORM EVENT

PRE-DEVELOPMENT

Total Site Area: 0.708 acres 30,853 sq. ft.

Building
3,353 sq. ft. $Q = 1.0 \times 2.10 \times 0.077 = 0.162$ CFS

Concrete
2,680 sq. ft. $Q = 1.0 \times 2.10 \times 0.062 = 0.130$ CFS

Asphalt
16,047 sq. ft. $Q = 0.95 \times 2.10 \times 0.368 = 0.734$ CFS

Green Area
8,773 sq. ft. $Q = 0.30 \times 2.10 \times 0.201 = 0.127$ CFS

Total: 1.153 CFS

POST-DEVELOPMENT

Total Site Area: 0.708 acres 30,853 sq. ft.

Building
3,353 sq. ft. $Q = 1.0 \times 2.10 \times 0.077 = 0.162$ CFS

Concrete
3,947 sq. ft. $Q = 1.0 \times 2.10 \times 0.091 = 0.191$ CFS

Asphalt
17,223 sq. ft. $Q = 0.95 \times 2.10 \times 0.395 = 0.788$ CFS

Green Area
6,330 sq. ft. $Q = 0.30 \times 2.10 \times 0.145 = 0.091$ CFS

Total: 1.232 CFS

Post development – Predevelopment = 1.232 CFS – 1.153 CFS = 0.079 CFS x 60 sec. per min x 60 min per hour = 284 cubic feet runoff. During a 50 year storm event the proposed site development will produce 284 cubic feet more storm water than existing.

100 YEAR STORM EVENT

PRE-DEVELOPMENT

Total Site Area: 0.708 acres 30,853 sq. ft.

Building
3,353 sq. ft. $Q = 1.0 \times 2.30 \times 0.077 = 0.177$ CFS

Concrete
2,680 sq. ft. $Q = 1.0 \times 2.30 \times 0.062 = 0.143$ CFS

Asphalt
16,047 sq. ft. $Q = 0.95 \times 2.30 \times 0.368 = 0.804$ CFS

Green Area
8,773 sq. ft. $Q = 0.30 \times 2.30 \times 0.201 = 0.139$ CFS

Total: 1.263 CFS

POST-DEVELOPMENT

Total Site Area: 0.708 acres 30,853 sq. ft.

Building
3,353 sq. ft. $Q = 1.0 \times 2.30 \times 0.077 = 0.177$ CFS

Concrete
3,947 sq. ft. $Q = 1.0 \times 2.30 \times 0.091 = 0.209$ CFS

Asphalt
17,223 sq. ft. $Q = 0.95 \times 2.30 \times 0.395 = 0.863$ CFS

Green Area
6,330 sq. ft. $Q = 0.30 \times 2.30 \times 0.145 = 0.100$ CFS

Total: 1.349 CFS

Post development – Predevelopment = 1.349 CFS – 1.263 CFS = 0.023 CFS x 60 sec. per min x 60 min per hour = 310 cubic feet runoff. During a 100 year storm event the proposed site development will produce 310 cubic feet less storm water than existing.

STORAGE CAPACITY

Drywell Capacity:

6'ID X 4'H Precast Concrete Drywell

$$\pi 3^2 \times 4' = 113.10 \text{ CF}$$

Stone Capacity:

10'OD x 4'H Outer Stone Limits

$$\pi 5^2 \times 4' = 314.16 \text{ CF}$$

$$314.16 \text{ CF} - 113.10 \text{ CF (Drywell)} = 201.06 \text{ CF}$$

$$201.06 \times 40\% \text{ (Voids)} = 80.42 \text{ CF}$$

Total Drywell Capacity:

$$113.10 \text{ (DW)} + 80.42 \text{ (Stone)} = 193.52 \times 3 = 580.56 \text{ CF}$$

CONCLUSION

A comparison was made of the runoff volume before and after development of the site located at 229 North Massey Street, Waterworn, NY. This comparison shows that the redevelopment of the site will increase the volume of storm water generated by this site. The 3 proposed drywells will be able to receive all the existing storm water along with the additional that will be created by this project.