River Knoll

Draft Environmental Impact Statement

Applicant: Glenco Residential LLC
Hudson Valley Land Holdings LLC
670 White Plains Road, Suite 201
Scarsdale, NY 10583

Prepared By: AKRF, Inc.
34 South Broadway, Suite 401
White Plains, NY 10601

February 2017

Appendix A
Zoning Petition

CUDDY & FEDER LLP

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December 4, 2015

BY EMAIL (SANELLI@TOWNOFOSSINING.COM) & FEDERAL EXPRESS
Hon. Susanne Donnelly, Supervisor, and
Members of the Town Board
Town of Ossining
16 Croton Avenue
Ossining, New York 10562

Re: Application of Stony Lodge Hospital, Inc. and Glenco Group LLC
Premises: Stony Lodge Hospital, 40 Croton Dam Road, Ossining, New York

Dear Supervisor Donnelly and Members of the Town Board:

On behalf of Stony Lodge Hospital, Inc. and Glenco Group LLC, we respectfully submit its Petition to Amend the Zoning Code of the Town of Ossining and a Full Environmental Assessment Form with supplemental documentation ("EAF") in support of the proposed redevelopment of these Premises that are currently occupied by buildings comprising Stony Lodge Psychiatric Hospital.

The proposed redevelopment would involve construction of a multifamily rental community containing 169 market-rate units and 19 below-market-rate ("BMR") units to be known as "River Knoll," which has been designed to preserve significant open space, including the meadow area, along the Croton Dam Road frontage. A more detailed description of the proposed River Knoll community is set forth in the enclosed EAF and the following plans:

a. Plans prepared by Minno & Wasko, Architects and Planners, entitled "River Knoll, Town of Ossining, Westchester County, New York," dated October 2, 2015, consisting of the following sheets:
    i. Concept Site Plan, including "Development Program";
    ii. Concept Site Plan Overlay showing existing Stony Lodge Hospital buildings;

b. Plans prepared by John Meyer Consulting, entitled "River Knoll, 40 Croton Dam Road, Town of Ossining, New York" dated October 2, 2015, consisting of the following sheets:
    iii. "Site Existing Conditions Plan" (SP-1);
    iv. "Conceptual Site Layout Plan" (SP-2); and
    v. "Conceptual Site Grading Plan" (SP-3).

The Premises comprise 17.9 acres, of which 16.65 acres are within the Town of Ossining and 1.24 acres are within the Village of Ossining. The Petition addresses only the Town of Ossining portion of the Premises with the buildings and improvement located within the Town's boundaries, as well. However, the EAF considers use of the entire Premises and potential impacts arising from this development.

We respectfully request that the enclosed documentation be accepted by this Board and that the Petition and supporting materials be forwarded to the Planning Board for its consideration and recommendation back to you.

Thank you for your courtesy and consideration in this matter.

Very truly yours,

William S. Null

Enclosures

cc: Carter Pottash, M.D.; Mr. Glen Vetromile; Ms. Nanette Bourne; Mr. Joseph Sarchino; Mr. David Stolman; and Wayne Spector, Esq.

TOWN BOARD, TOWN OF OSSINING
STATE OF NEW YORK

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In the Matter of the Application of:

STONY LODGE HOSPITAL, INC.
and **GLENCO GROUP LLC** **PETITION**

For an Amendment to the Zoning Code of the Town of Ossining to:

(1) Establish a new zoning district to be known as the MF2 (Multifamily Residence 2) District; and

(2) Re-Map the Subject Premises commonly known as "Stony Lodge Hospital" situated at 51 Croton Dam Road, Ossining, New York, which Premises are designated on the Tax Assessment Map of the Town of Ossining as Section 1, Plate 4, Block 13, Lot 2 and Section 1, Plate 4-C, Block 30, Lot 1 from the R-15 (One Family Residence) District into the MF2 (Multifamily Residence 2) District.

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TO THE HONORABLE SUPERVISOR AND MEMBERS OF THE TOWN BOARD:

The Petition of STONY LODGE HOSPITAL, INC. and GLENCO GROUP LLC (collectively the "Petitioner") respectfully shows and alleges in support of Petitioner's request:

1. Ownership Information: The Petitioner includes Stony Lodge Hospital, Inc., the owner of the Premises, and Glenco Group LLC, the Contract-Vendee thereof. The Premises comprise approximately 779,182 square feet of real property, or 17.89 acres, of which 1.24 acres is situated within the Village of Ossining, which Premises have frontage on Croton Dam Road in the Town of Ossining.

2. Description of the Subject Premises & Present Mapping: The portion of the Premises wholly within the Town of Ossining is the subject of this Petition (the "Subject Premises") and is mapped in the R-15 (One Family Residence) District in accordance with the Zoning Code of the Town of Ossining (the "Zoning Code"). The Subject Premises, including the portion thereof situated in the Village of Ossining was most recently operated and known as Stony Lodge Hospital, a 61-bed, private psychiatric hospital for children and adolescents, which were opened in 1927.

3. Reasons Supporting Petition: The operation of Stony Lodge Hospital is a legally permitted use in accordance with the Zoning Code. In the almost 100 years since the opening of Stony Lodge Hospital, the properties surrounding it have been developed with single family residences. During the past century, the area has been transformed from the rural character existing when the Stony Lodge Hospital first opened to a suburban neighborhood of single family homes. Stony Lodge Hospital employed approximately 250 people and ran multiple shifts to operate the 7 day per week, 24 hours per day demands of a hospital. In addition, delivery trucks, including large multi-axle trucks, regularly serviced the Hospital to provide supplies. Police and fire department vehicles regularly were dispatched to the Premises and ambulances frequented the site for emergency transport of patients. Outside agencies also sent staff daily to coordinate care. Family members visited by car, usually in the evening and on weekends. Lastly, regional conferences were regularly held on-site including attendance by outside visitors from the County and State.

While the Stony Lodge Hospital is a legally permitted use under the Zoning Code, multi-family housing would redevelop this hilly and rocky site with a use more compatible with the surrounding community thereby:

a. Enabling more undeveloped permanent open space as the proposed, new residential community will be clustered to the center of the Premises;

b. Preserving more mature stands of trees;

c. Maintaining the scenic meadow along the entire frontage of Croton Dam Road as well as the expansive meadow on the easterly side of the Premises;

d. Allowing for the addition of sizeable new green buffer areas protecting adjacent homeowners along the northerly and southerly boundaries of the Premises;

e. Minimizing internal roadways and extensive infrastructure that would require more impervious surfaces and increased excavation, disrupting the terrain in a manner that also would necessitate tree removal; and

f. Producing a fiscally beneficial change to the Premises improving revenue generation for the Town, Village and School District.

4. Documents detailing Subject Premises: Annexed hereto are the following documents detailing the Subject Premises in connection with this proposed zoning amendment and remapping:

a. **Exhibit A** contains an excerpt of the relevant portion of the Town of Ossining

Zoning Map identifying and the showing the location of the Subject Premises (highlighted in yellow); and

b. **Exhibit B** is a survey entitled, "Survey of Property situate in the Town of Ossining Westchester County, New York," dated February 27, 2006, last revised March 15, 2006, prepared by Thomas C. Merritts Land Surveyors, P.C. showing the Subject Premises with the buildings and improvements comprising Stony Lodge Hospital.

5. Existing Mapping of Adjacent Lands: **Exhibit A** is an excerpt from the Official Zoning Map of the Town of Ossining showing the zoning classifications affecting the Subject Premises and the properties adjacent thereto, as follows:

Northerly Boundary: The properties immediately to the north of the Subject Premises are: (a) situated in the Town of Ossining, mapped in the R-7.5 (One-Family Residence) District, and improved with single-family residential uses; and (b) situated in the Village of Ossining, mapped in the S-50 (One Family Residence) District, and improved with single-family residential uses.

Southerly Boundary: The properties immediately to the south of the Subject Premises are situated in the Village of Ossining, mapped in the S-50 (One Family Residence) District, and improved with single-family residential uses.

Easterly Boundary: The properties immediately to the east of the Subject Premises are situated in the Village of Ossining, mapped in the S-50 (One Family Residence) District, and improved with single-family residential uses.

Westerly Boundary: The properties immediately to the west of the Subject Premises within the Town of Ossining are across Croton Dam Road and are mapped in the R-15 (One Family Residence) District, and improved with single-family residential uses.

6. Proposed Use of the Subject Premises: The Petitioner proposes develop a new multifamily community to be known as "River Knoll." The Stony Lodge Hospital buildings will be demolished. Thereafter, River Knoll will be constructed utilizing existing developed portions of the site with the buildings clustered to the center of the property to facilitate the substantial expansion of open space to create a generous buffer between the surrounding single-family, residential neighborhood. This new community would be comprised of 169 market-rate and 19 Affordable housing units (providing more below-market-rate (BMR) units than mandated by Article VI of the Zoning Code), totaling 188 dwelling units within four (4)

buildings. Parking for the residents of River Knoll will be provided in a combination of secured garages and at-grade spaces. Amenity space for the residents of River Knoll, will include a fitness center and swimming pool, among other things.

To illustrate the proposed River Knoll development the Petitioner has prepared a Concept Site Plan, copies of which accompany this Petition as **Exhibit C** and are incorporated herein by reference, as more particularly described below:

a. Plans prepared by Minno & Wasko, Architects and Planners, entitled "River Knoll, Town of Ossining, Westchester County, New York," dated October 2, 2015, consisting of the following sheets:
   i. Concept Site Plan, including "Development Program";
   ii. Concept Site Plan Overlay showing existing Stony Lodge Hospital buildings;

b. Plans prepared by John Meyer Consulting, entitled "River Knoll, 40 Croton Dam Road, Town of Ossining, New York" dated October 2, 2015, consisting of the following sheets:
   i. "Site Existing Conditions Plan" (SP-1);
   ii. "Conceptual Site Layout Plan" (SP-2); and
   iii. "Conceptual Site Grading Plan" (SP-3).

7. SEQR Compliance and Planning Considerations in Support of Petition: The Environmental Assessment Form ("EAF") annexed hereto as **Exhibit D**, outlines the relevant information regarding the potential environmental impacts associated with this zoning and map amendments.

We respectfully submit that the Town Board should recognize that the transition of the Subject Premises from its current institutional use would be beneficial to the surrounding community. Accordingly, this Petition proposes an amendment to the Zoning Code to permit the adaptive reuse of the property in a manner that is feasible and which protects surrounding neighborhoods and environmental resources to the maximum extent practicable. Given the substantial financial costs involved in demolishing the existing Stony Lodge Hospital improvements, this Petition proposes the adaptive reuse of the Subject Premises for multi-family housing and requests the adoption of an amendment to the Zoning Code establishing a new Multifamily Residence District that would permit a greater density of housing than the existing "MF Multifamily Residence District" set forth in the Zoning Code and exceeds the requirements of the Town's affordable housing mandate in its provision of BMR's creating

19, rather than 17 affordable apartments. Petitioner's request regarding the remapping of the Subject Premises to permit its use as a "multifamily development" is wholly consistent with the Comprehensive Plan of the Town of Ossining.

8. Proposed Zoning Code Amendments: We respectfully submit that the Zoning Code should be amended by adding the following provisions:

a. The words "MF-2 Multifamily District" shall be inserted in "§200-3. Classes of districts" to recognize the establishment of the "MF2 District," as noted by the underlined text below:

The Town of Ossining is hereby divided into the classes of districts listed below:

Symbol	**Title**
R-40	One-Family Residence District
R-30	One-Family Residence District
R-20	One-Family Residence District
R-20A	One-Family Residence District
R-15	One-Family Residence District
R-10	One-Family Residence District
R-7.5	One-Family Residence District
R-5	One-Family Residence District
MF	Multifamily District
MF-I	Multifamily-Inn District
MF-2	Multifamily District
NC	Neighborhood Commercial District
GB	General Business District
GB-1	General Business District-1
O-RB	Office-Research Business District
O-RE	Office-Research Education District
BE	Business Education District

b. A new "§200-16.A. MF2 Multifamily District" should be established as set forth below, which District shall be mapped in areas that have at least 10 acres with frontage on a collector road. This new "§200-16.A. MF2 Multifamily District" would be inserted in the Zoning Code following "§200-16. MF Multifamily District" and prior to "§200-17 NC Neighborhood Commercial District" and would read as follows:

§200-16.A. MF2 Multifamily District

In an MF2 Multifamily District, no building or premises shall be used, and no building or part of a building shall be erected or altered, which is arranged, intended or designed to be used, in whole or in part, for any uses except the following:

A. Permitted uses.

(1) Any permitted use or accessory use listed in, and as regulated in, the R-40 Residence District.

B. Uses permitted by special permit upon approval by the Board of Appeals in accordance with Article IX hereof. The following uses are permitted subject to approval by the Board of Appeals in accordance with the provisions of §200-45. These uses are subject to the requirements specified below and elsewhere in this chapter, including site plan approval by the Planning Board in accordance with §200-50 hereof.

(1) Any use so permitted in, and as regulated in, the R-10 Residence District.

C. Conditional uses permitted upon approval by the Planning Board in accordance with Article XI hereof. The following conditional uses are permitted subject to approval by the Planning Board in accordance with §200-49 hereof. These uses are subject to the requirements specified herein and elsewhere in this chapter, including site plan approval in accordance with §200-50 hereof.

(1) Multiple dwellings, subject to the following requirements:

(a) To enable and encourage flexibility of design and development of larger parcels of land in such a manner as to promote the most appropriate thereof, to facilitate the adequate and economical provision of vehicular access and utilities thereto, and to preserve the natural and scenic qualities of such lands, the Planning Board is hereby authorized, simultaneous with its review of the Site Plan in accordance with §200-50 hereof, to consider the architectural design and layout of multiple dwellings developed hereunder without regard to pre-determined, maximum lengths of buildings, established minimum distances between them.

(b) In furtherance of the flexibility set forth in §200-16.C.(1) above, it is expressly noted that the dimensional parameters otherwise applicable to MF Multifamily District developments in accordance with §200-16, shall not be applicable to MF2 Multifamily District developments.

(c) Signs, subject to the requirements of §200-28, and not more than one building identification sign of an area not greater than 14 square feet and located in the front or side yard.

(2) Row or attached dwellings, in addition to being subject to the provisions of Subsection C above, shall also be subject to the following conditions:

(a) The maximum number of dwelling units in a group of row dwellings shall be six.

(3) Additional requirements for multiple-family and row and/or attached dwellings.

(a) At least 1/3 of the net site area shall be devoted to permanent open space and/or for sites suitable for recreation.

(b) Any such construction shall be subject to the New York State Multiple Family Building Code.

c. A new "§200-22.A. MF2 Multifamily Residence District" would be added to "Chapter 200, Article IV, Bulk Regulations" and would be inserted after "§200-22. MF Multifamily Residence District and MF-I Multifamily-Inn Residence District" and before "§200-23. NC Neighborhood Commercial District, GB General Business District and GB-1 General Business District-1," which new "§200-22.A. would read as follows:

§200-22.A. MF2 Multifamily Residence District
The following bulk regulations shall apply in the MF Multifamily Residence District and the MF2 Multifamily Residence District:

Minimum Requirements	Row or Attached Dwelling	Multiple
Lot area (square feet)	10 acres	10 acres
Lot area per dwelling unit (square feet)*	4,250*	4,250*
Lot width (feet)	50	250
Lot depth (feet)	250	250
Front yard (feet)	200	200
One side yard (feet)	100	100
Both side yards (feet)	200	200
Rear yard (feet)	100	100
Livable floor area dwelling unit (square feet)	850	700 per for 1 or more bedrooms
Usable open space	50%	50%
Maximum Permitted:		

Minimum Requirements	Row or Attached Dwelling	Multiple
Building height		
Stories	3	3
Feet	50	50
Building coverage	12%	12%
* NOTE: Consistent with §200-33 hereof at least ten percent (10%) of the units shall be designated as below-market-rate (BMR) units, permitting a density bonus of 20% for sites of 10 acres or more as set forth in Article VI hereof.		

c. To consistently encourage the construction of below-market-rate (BMR) units in future developments in the MF2 District, Article VI of the Zoning Code, entitled "Affordable Housing" should be amended, as follows:

i. At §200-34 entitled "Residential density bonus; Multifamily, General Business and One-Family Residence Districts," the text should be modified, so that it reads as follows [with proposed inserted text underscored]:

§200-34. Residential density bonus; Multifamily, General Business and One-Family Residence Districts.

A. To achieve the purposes above, the approval authority shall grant a residential density bonus for multiple, row or attached dwellings constructed or rehabilitated in the MF and MF2 Districts, with 1/2 of said density bonus consisting of below-market-rate units as defined and regulated in this article. The maximum permitted density bonus shall be in accordance with the following schedule:

Size of Property (acres)	Maximum Permitted Density Bonus
10 or more	20%
More than 5 but fewer than 10	30%
Fewer than or equal to 5	40%

B. To achieve the purposes above, the approval authority shall grant a residential density bonus for multiple, row or attached dwellings constructed or rehabilitated in the GB District, with 1/2 of said density bonus consisting of below-market-rate units as defined and regulated in this article. The maximum permitted density bonus shall be in accordance with the following schedule:

Size of Property (acres)	Maximum Permitted Density Bonus
10 or more	20%
More than 5 but fewer than 10	30%

Size of Property (acres)	Maximum Permitted Density Bonus
More than 2 but fewer than 5	40%
Fewer than 2	100%

C. To achieve the purposes above, for dwelling units constructed or rehabilitated in the One-Family Residence Districts, the approval authority shall grant a residential density bonus, with 1/2 of said density bonus consisting of below-market-rate units as defined and regulated in this article. The maximum permitted density bonus shall be in accordance with the schedule in §200-34A above. To assist in achieving the density permitted, the applicant may apply to the Planning Board for a cluster development pursuant to §200-31 of this chapter.

WHEREFORE, Petitioner respectfully requests that this Petition be granted in its entirety so that the Zoning Code may be amended as aforesaid and the Subject Premises may be mapped in the MF2 District, as set forth herein.

Dated: December 4, 2015

STONY LODGE HOSPITAL, INC.

By: Carter A. Pratash, President

GLENCO GROUP LLC

BY: [signature]

EXHIBIT A

Excerpt of the Relevant Portion of the Town of Ossining Zoning Map

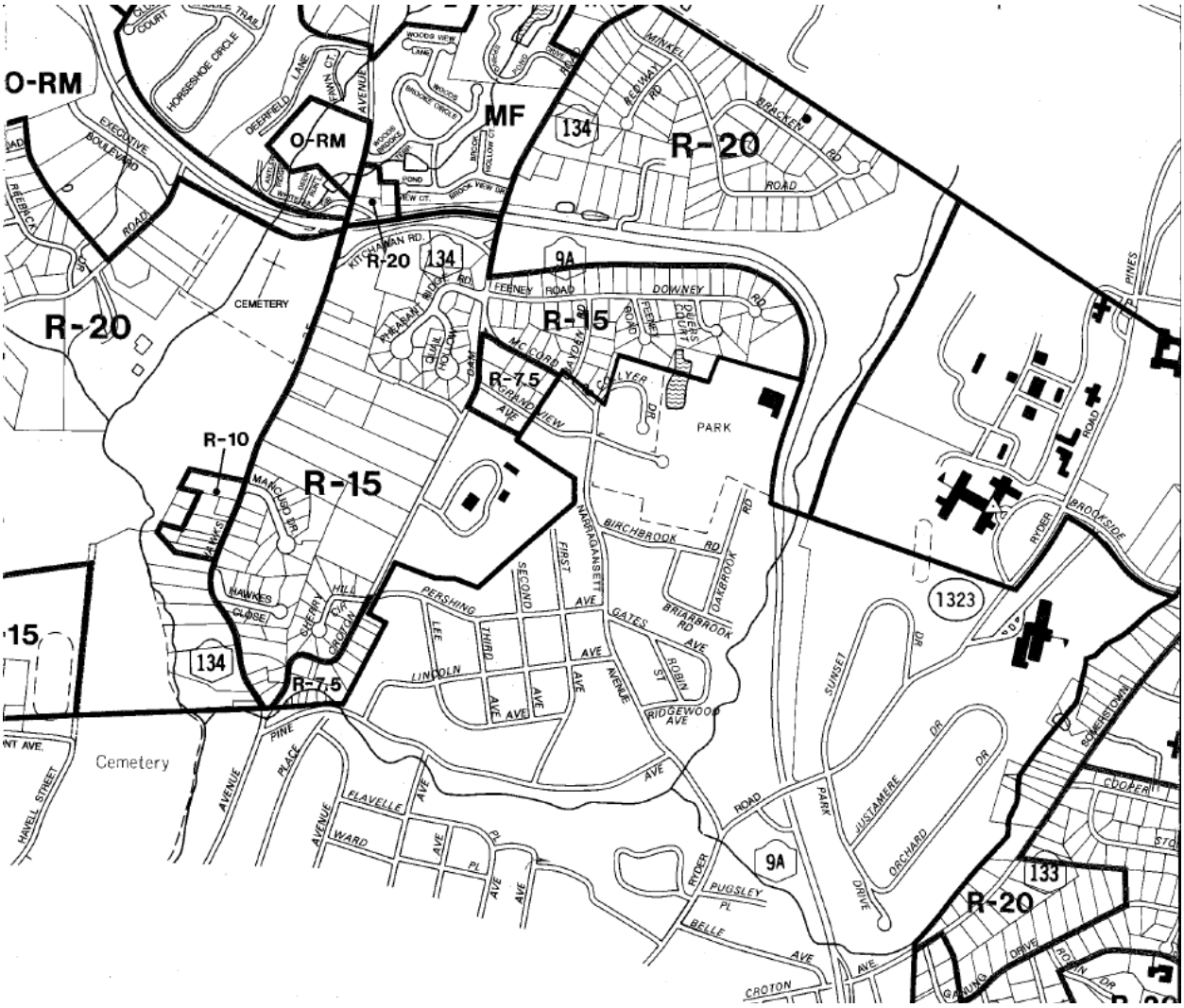

EXHIBIT B

Survey of Property

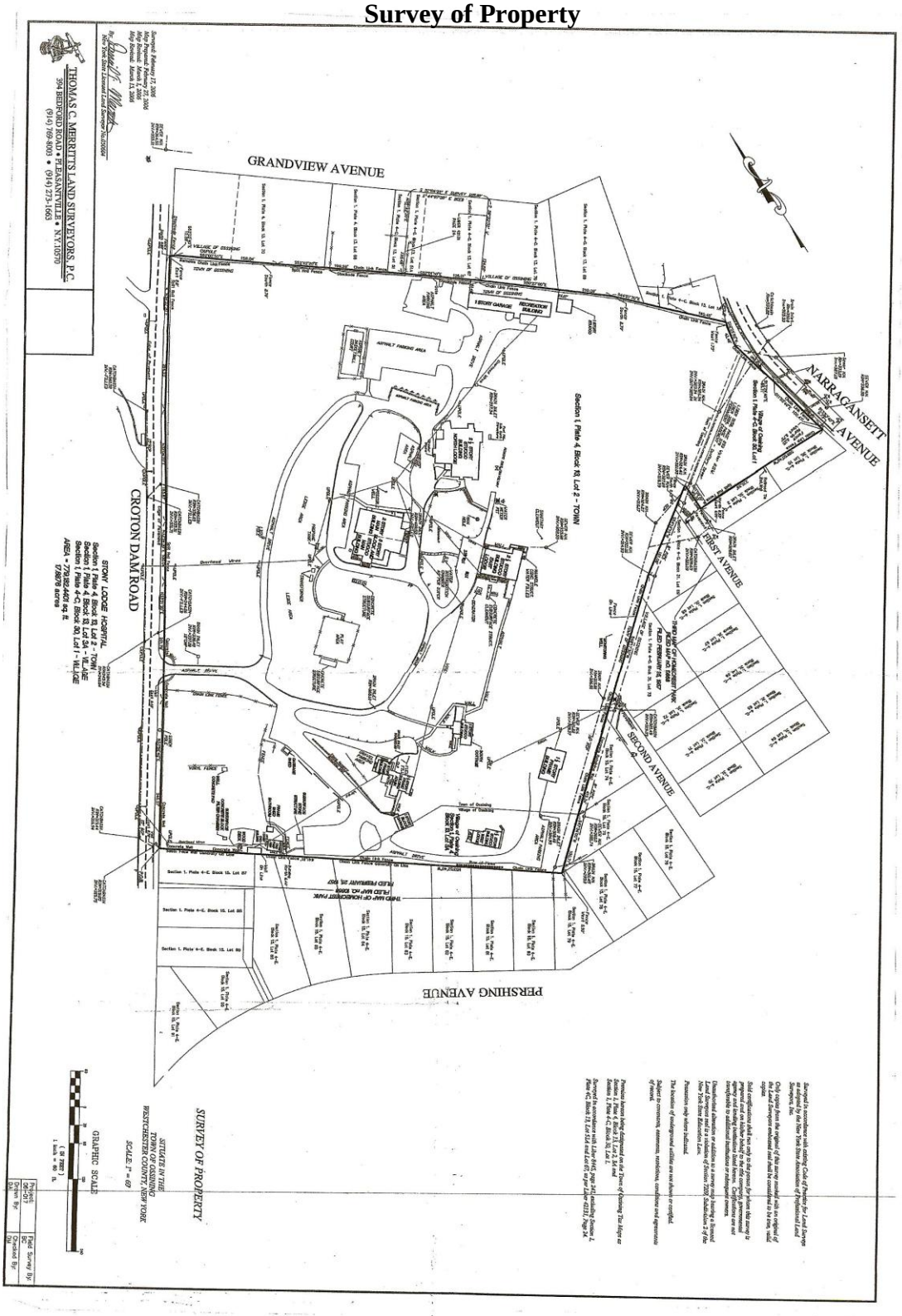

EXHIBIT C

Concept Site Plan

As Noted in this Petition the following plans are submitted in furtherance of this request to amend the Zoning Code and are incorporated herein by reference:

a. Plans prepared by Minno & Wasko, Architects and Planners, entitled "River Knoll, Town of Ossining, Westchester County, New York," dated October 2, 2015, consisting of the following sheets:

   i. Concept Site Plan, including "Development Program";

   ii. Concept Site Plan Overlay showing existing Stony Lodge Hospital buildings;

b. Plans prepared by John Meyer Consulting, entitled "River Knoll, 40 Croton Dam Road, Town of Ossining, New York" dated October 2, 2015, consisting of the following sheets:

   iii. "Site Existing Conditions Plan" (SP-1);

   iv. "Conceptual Site Layout Plan" (SP-2); and

   v. "Conceptual Site Grading Plan" (SP-3).

Appendix B
Adopted Scope

July 20, 2016

FINAL
SCOPING OUTLINE OF ISSUES TO BE ADDRESSED IN DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) RIVER KNOLL PROJECT, TOWN OF OSSINING, NY

SEQRA Classification: **Type I Action**

Lead Agency: **Town of Ossining Planning Board**

Applicant: **Glenco Group, LLC**

Public Scoping Session: **June 22, 2016**

GENERAL GUIDELINES

- The DEIS should cover all items in this Scoping Outline. It is suggested that the DEIS also conform to the format outlined in the Scope. The word "should" herein has the same meaning as "shall."

- The document should be written in the third person. The terms "we" and "our" should not be used. The Applicant's conclusions and opinions should be identified as those of "the Applicant" or "the Developer."

- Narrative discussions should be accompanied by appropriate charts, graphs, maps and diagrams whenever possible. If a particular subject matter can be most effectively described in graphic format, the narrative discussion should merely summarize and highlight the information presented graphically. All plans and maps showing the site should include adjacent homes, other neighboring uses and structures, roads, watercourses, water bodies and a legend.

- The entire document should be checked carefully to ensure consistency with respect to the information presented in the various sections.

- Environmental impacts should be described in terms which the layperson can readily understand (e.g., truck-loads of fill and cubic yards rather than just cubic yards).

- All analysis in the DEIS shall be performed by professionals in their respective fields.

- All discussions of mitigation measures should consider at least those measures mentioned in the Scoping Outline. Where reasonable and necessary, mitigation measures should be incorporated into the Proposed Action if they are not already included. For mitigation measures listed in this Scope that are not incorporated into the Proposed Action, the reason why the Applicant considers them unnecessary should be discussed in the DEIS.

- Maps in the DEIS should also be made available in shapefile format to facilitate viewing and analysis.

A. PROPOSED ACTION

Glenco Group proposes to develop the former Stony Lodge Hospital site into a 188-unit multi-family residential project. The 17.9 acre site is roughly bounded by Croton Dam Road, Pershing Avenue, Grandview Avenue, and Narragansett Avenue. The majority of the 17.9 acre site lies within the Town of Ossining (16.7 acres or 93%); 1.2 acres (7%) is within the Village of Ossining (collectively, the "Property"). The Applicant, Glenco Group, LLC, has applied to the Town Board of the Town of Ossining for approval of an amendment to the Zoning Law creating the Multi-Family Residence 2 (MF2) zoning district and applying this new zoning district to the property and referral of the application to the Town Planning Board.

The River Knoll project (the "Preferred Project" or "River Knoll"), is proposed to be 169 market-rate rental units plus 19 affordable rental units, as mandated by Article VI of the Town of Ossining's zoning code, for a total of 188 units of multi-family housing on the site of Stony Lodge Hospital – a child and adolescent psychiatric center. The hospital has been closed for many years, and is practically speaking, now defunct for this purpose.

River Knoll is proposed to repurpose the property from an institutional use to a residential use. Using an architectural design that uses Hudson Valley vernacular, River Knoll is proposed to be clustered in the center of the 18-acre site, with large green buffers around the perimeter of the site to buffer its adjacent neighbors. In doing so, the property would maintain a certain amount of permanent open space in perpetuity.

In addition, the proposed use is consistent with the policies included in the recently updated Town of Ossining Comprehensive Plan Update (2015). The Town's "Plan Update" specifically identifies the project site as appropriate for adaptive reuse and/or redevelopment to a use that would be protective of environmental resources and the surrounding residential neighborhoods.

The layout of the proposed River Knoll project was originally presented to the Town Board as 188 dwelling units (169 market-rate rental units plus 19 affordable rental units) laid out in four buildings (referred to herein as the "Original Proposed Project'). In response to comments from the Planning Board, as Lead Agency, regarding site disturbance and in an effort to reduce steep slope impacts, an alternative layout was presented to the Town Board and Planning Board that consolidated the 188 units (169 market-rate rental units plus 19 affordable rental units) into a single, compact building (referred to herein as the "Preferred Project"). The examination of potential significant adverse impacts will focus on the Preferred Project; the Original Proposed Project will not be further evaluated. The Preferred Project will be fully evaluated as the principal project rather than being considered as an alternative in Chapter V, Alternatives.

Required approvals are shown in Table 1 below:

Table 1: Required Approvals

Approval Required	**Government Entity**
Zoning Map and Text Amendments	Town Board
Sewer District Extension	Town Board
Subdivision Approval	Planning Board
Wetland Permit	Planning Board
Steep Slope Permit	Planning Board
Tree Removal Permit	Planning Board
Site Plan Approval	Planning Board
Health Department Subdivision Approval	Westchester County Health Department
New York State Department of Environmental Conservation (NYSDEC) Stormwater Permit	NYSDEC
Water Supply Approval	Village of Ossining
Highway Work Permit	NYS Department of Transportation

B. SCOPE OF ENVIRONMENTAL IMPACT STATEMENT

COVER SHEET

The cover sheet should identify:

1. Title of the document
2. Title of the proposed action
3. The location of the proposed action
4. Name, address, telephone number and contact person(s) for:
    a. The Lead Agency
    b. The applicant
    c. The preparer(s) of the DEIS

5. Date of acceptance of DEIS (to be inserted)
6. DEIS public hearing date (to be inserted)
7. End of DEIS comment period (to be inserted)

TABLE OF CONTENTS

The table of contents shall list all of the chapters of the DEIS and the corresponding page numbers, as well as lists of all exhibits, tables, and appendices, etc.

CHAPTER I: EXECUTIVE SUMMARY

The Executive Summary will outline details about the community that the Glenco Group plans to build. It will discuss the layout of the Preferred Project, as well as possible alternatives. This summary will also introduce any potential adverse impacts, along with all mitigation measures. It will also include a list of all approvals and permits required for the project.

CHAPTER II: PREFERRED PROJECT DESCRIPTION

The Preferred Project description will include:

A. Proposed Action

   1. Description of the Proposed Action.

   2. Regulations and requirements of the site's existing and proposed zoning designations.

B. Overview and Description of Site and Environs

   1. Description of the location, frontage, access, acreage, ownership and tax map designation of lot(s) involved in the Proposed Action, including the proposed future disposition of the portion of the subject property in the Village of Ossining. This should also include descriptions of surrounding properties including those in the Village of Ossining.

   2. A brief history of the site and area.

C. Description of Environmental Characteristics of the Site

   1. Steep slopes and elevations.
   2. Wetlands and wetland buffer areas, watercourse(s) and hydrology.
   3. Aesthetic resources and scenic views.

4. Flora and fauna, including but not limited to trees regulated by the Town code.
5. Potential for contamination from on-site underground fuel tanks.
6. Potential for contamination from any on-site hazardous waste.
7. Potential for contamination relating to the previous disposal of hospital and/or medical waste.

D. Describe components of the Preferred Project, including items such as potential number of market-rate and affordable dwelling units respectively, size and number of bedrooms of market-rate and affordable dwelling units respectively, amount of open space, total number of parking spaces required and provided, and nature and amount of other Preferred Project components.

E. Vehicular access and circulation of the Preferred Project.

F. Other components of Preferred Project including vegetated buffers, street trees, landscaping, lighting, roadways, sidewalks, recreation and other amenities, etc.

G. Plans for maintenance of the common elements of the Preferred Project including roads, utilities and passive open space.

H. Plans and a timeline for ongoing maintenance of all proposed mitigation for the Preferred Project.

CHAPTER III: EXISTING CONDITIONS, POTENTIAL IMPACTS AND PROPOSED MITIGATION

A. Wetlands[1]

1. Existing Conditions: All existing wetlands, watercourses and water bodies within 200 feet of the site, regardless of size, will be delineated and described in a wetland study, including functional analyses, performed by a certified Professional Wetland Scientist. The source of each wetland's hydrology will be determined to assess how the Proposed Action would alter the sources of hydrology for existing wetlands on the property. Each point of delineation should be flagged and have GPS identification. A wetland map, full report, and resultant data sheets of the site's study will be included in the DEIS. Soil borings will be taken to identify wetland and hydric soils. Hydrophytic vegetation shall also be a wetland criterion. Identification of vernal pools and ephemeral streams shall be performed

[1] Sections A through K of this chapter shall hereinafter be known as "Impact Issues."

during the Spring season, with soils free of snow and not frozen, when these would be in evidence. All work will be conducted in accordance with the Town of Ossining Wetland Law and, if applicable, the regulations of the New York State Department of Environmental Conservation (NYSDEC) and the U.S. Army Corps of Engineers (USACE). The jurisdiction of the wetlands will not be determined until wetlands have been delineated and wetland and watercourse connectivity have been established. Connectivity of existing wetlands and water courses may establish a total size warranting additional governing jurisdictions, including NYSDEC and USACE.

2. Potential Impact: All proposed disturbance to or crossing of wetlands, wetlands buffers, water courses, and watercourse buffers will be clearly identified, described and mapped. All impacts proposed will be identified, measured and evaluated, including the loss of any and all vegetative cover due to construction. Compliance of the Preferred Project with the Freshwater Wetlands chapter of the Town code will be discussed.

3. Mitigation: Wetland disturbance will be avoided as much as feasibly possible. Wetland mitigation measures will be clearly proposed, described, and as deemed necessary and approved by the Town, monitored, and maintained by the developer for a set number of years. Mitigation measures will include at least a one-to-one ratio of disturbed wetland and wetland buffers to those replaced, and will be provided, as feasible, to address any adverse impacts to the habitat or species resources. Mitigation measures will ensure a zero influx of road and lawn chemical runoff into the wetlands and wetland buffer areas, and all habitats. A full report on the scheduled long-term maintenance for mitigation measures will be presented. Ongoing maintenance and upkeep reports for any proposed mitigated wetlands should be submitted to the Town on a routine basis. Any wetland that becomes hydrologically isolated due to construction shall be considered a disturbed wetland, and therefore included in mitigation plans. All replacement plant materials for any proposed mitigation will be listed with both their common and scientific names. Native plant materials must be used with no consideration given to any listed under the NYSDEC Prohibited and Regulated Invasive Plant Law. The potential for a bridge to be constructed at each wetland and watercourse crossing shall be evaluated.

B. Soils, Topography (Steep Slopes) and Geology

1. Existing Conditions: Soil conditions and types will be identified using the USDA National Web Survey. Topography information will be attained from a professional Surveyor. The varying landscape will be discussed, and

steep slopes will be identified and mapped in accordance with the different steep slope categories described in the Ossining Town Code §167-2. These maps will be provided in the DEIS for reference. The potential presence of rock on the site shall also be discussed.

2. Potential Impact: Potential impacts to the steep slopes will be discussed in the DEIS. Grading will be carried out as to minimize runoff, potentially utilizing land swales to redirect water runoff and minimize any impacts caused by construction (where reasonable and possible). A preliminary grading plan will be provided to identify potential negative impacts to the steep slopes. The potential for, and methods of rock removal shall also be discussed. Compliance of the Preferred Project with the Steep Slope Protection chapter of the Town code will be discussed.

3. Mitigation: The developer will comply with the Town of Ossining's steep slope codes, and mitigation will be provided to any adverse impacts, as necessary. Designated soil stockpiling areas and silt fencing will be used during construction to minimize runoff and to prevent runoff into the wetlands and wetland buffer areas. Wetlands protection and the prevention of problematic runoff to the existing adjacent homes below are two important issues on this project; they will be thoroughly and adequately addressed. Blasting mitigation measures will be discussed in the DEIS.

C. Stormwater Management and Subsurface Water

1. Existing Conditions: The existing stormwater conditions will be studied and described in the DEIS. A pre-development investigative analysis will be performed at the site during the wet season, when soils are free of snow and not frozen. Deep-test holes will be excavated throughout the site, and a series of percolation tests will be performed until a constant rate of percolation is achieved. A complete study will be conducted of surface and subsurface water quality and quantity impacts on receiving wetlands, streams, ponds, and the 100-year floodplain within the watershed of which the subject area is a part. All data, logs and percolation sheets will be included in the DEIS. Known and documented drainage problems on surrounding properties shall be described. The on-site underground fuel tanks shall be addressed.

2. Potential Impact: The potential impact following the introduction of new impervious surfaces (among other things), will be outlined and discussed in the DEIS. The stormwater management system will be described, including the description and location of any applicable detention basin(s), catch basins and drainage configurations. The project site will be modeled

for the peak rates of runoff and volumes of runoff for the 1-, 10-, and 100-year Type III – 24-hour storm events in both the Pre- and Post-Developed Conditions. Pre- and post-developed watershed maps will be included in the DEIS. The potential short and long-term impact of runoff carrying fertilizers, pesticides, herbicides, fungicides, and other chemicals from lawns, roadways, other impervious surfaces, and sedimentation will also be included. The potential impact of failed erosion, sedimentation, and stormwater control waters during construction activities and post completion should also be assessed. The potential impact to groundwater on the site resulting from past activities, and/or from the demolition and construction associated with the Preferred Project, shall be addressed. Lack of adverse impact upon neighboring properties shall be demonstrated through the design of stormwater management facilities and practices which are entirely compliant with NYSDEC regulations. The potential impacts relating to the on-site underground fuel tanks shall be addressed.

3. Mitigation: A Storm Water Pollution Prevention Plan (SWPPP) which complies with the NYSDEC SPDES General Permit No. GP-0-15-002 for Stormwater Discharges from Construction Activity will be provided in the DEIS to assist with the drainage analysis and design of the mitigating practices. All peak rates of runoff in the developed condition will be *less* than those in the pre-developed condition. Detention basins will only be constructed outside of existing wetlands. Any needed mitigation regarding the on-site underground fuel tanks shall be addressed.

D. Vegetation and Wildlife

1. Existing Conditions: The existing types of vegetation, habitats and wildlife,[2] including the identification of any rare, threatened or endangered plant and animal species, will be performed by a professional Wildlife Biologist hired to perform this ground level research using the classification of the New York Natural Heritage program and included in the DEIS in descriptive and map formats. All plants and wildlife found should include their common and scientific names. All species on the U.S. Fish & Wildlife and NYSDEC rare, threatened or endangered species lists, and species on special concern lists, including all plant material, and all wildlife species known or believed to occur in Westchester County, will be identified and included in the DEIS in descriptive format. Based on these identifications, surveys for identified species should be performed, and potential impacts to

[2] Wildlife and vegetation shall include mammals, fish, insects, reptiles, amphibians, birds and plants. New York State and Federal criteria shall be utilized in this analysis.

the species and their habitats should be described. Plant identification will include both early season Spring ephemerals and later season plants for the most accurate assessment. A tree survey of the entire property will also be performed listing all Town regulated existing trees indicating their location, species and DBH.

2. Potential Impact: Any potential impacts to vegetation, habitats and wildlife will be described and evaluated. Mapping of vegetation including a tree survey will show any trees that are proposed to be removed. To address potential impacts on existing bird migration patterns, specifications for all proposed outdoor lighting should be provided. Potential light trespass of outdoor lighting onto habitats within the project area should be illustrated and included where appropriate.

3. Mitigation: Mitigation will be provided, as feasible, for any adverse impacts to the vegetative, habitats and wildlife resources. Methods of erosion mitigation, such as silt fencing, will be utilized during construction to alleviate erosion caused by loss of vegetative cover. Any proposed methods for reversing soil compaction in the Preferred Project area will be described. Plans and methods that will be employed to protect plant materials not permitted for removal, including but not limited to their complete root systems, will be described.

E. Historical and Archaeological Resources

1. Existing Conditions: Any important historical or archaeological resource, on or substantially contiguous to the site will be identified in the DEIS. The New York State Historic Preservation Office (SHPO) will be contacted to help identify any adverse impacts caused by the development of this property. Archeological and historical resources on the Preferred Project site will be analyzed via a Phase IA assessment report, followed if applicable by a Phase II assessment report. The Phase IA assessment shall be accompanied by a documented on-site inspection by the Cultural Resources expert.

2. Potential Impact: Any potential impacts to historic and archaeological resources will be identified and described.

3. Mitigation: Mitigation will be provided, as feasible, for any adverse impacts to historical and archaeological resources identified.

F. Infrastructure and Utilities

1. Existing Conditions: The locations of all existing utilities serving the project site, including any current or anticipated deficiencies, will be located and described. Any current energy usage on the site will be identified. Water service for the site will be provided by the Village of Ossining. The source of the water supply will be identified, and the number of citizens that are currently served by this water district will be presented.

2. Potential Impact: Any potential adverse impacts/additional loading on current municipal facilities will be described. Also, any sewer or water main extensions that may be needed for the development will be discussed. Any increase in energy usage, as a result of this development will be discussed.

3. Mitigation: Measures of mitigation will be provided, where possible, and any adverse impacts to existing infrastructure and utilities will be identified.

G. Land Use, Comprehensive Plan, Zoning and Community Character

1. Existing Conditions: A description will be provided for current uses of the project site and of substantially contiguous properties in the Town and Village. A discussion of the Town's Comprehensive Plan as it relates to the subject property, as well as the permitted land uses and regulations of the R-15 zone will also be included. The current state of development in the community will be discussed as well, including evaluations and photographs of existing views establishing the character of the community.

2. Potential Impact

   a. This section will discuss how the proposed use of the project site differs from the use of the adjacent properties in the Town and Village. This section will described the architectural features, intensity and scale of the Preferred Project, relative to the character of residential areas in the surrounding neighborhoods. Visual analysis (such as site sections, photographic or video simulations, 3D computer modeling, etc.) will be used to generate images of the potential visual impacts of the Preferred Project from various vantage points on the surrounding neighborhood. Google Earth imaging will be utilized in conjunction with this modeling. Potential impact should include lighting, signage and other proposed changes that may impact the surrounding neighborhood.

b. This section will discuss the affordable housing component of the Preferred Project and whether said component complies with the provisions of Article VI, Affordable Housing, of the Zoning Law.

c. This section will discuss the way(s) in which the Preferred Project addresses the reservation of parkland or the provision of money in lieu thereof (recreation fee) requirements of the Town code.

d. This section will also discuss regional planning initiatives, including Westchester County's "Patterns" and "Westchester 2025," as well as the County's plan for the development of new "affordable housing" units.

e. This section will also discuss the potential impact of the approval of the proposed MF2 zoning district, including the potential for other areas of the Town to be developed under the new zoning.

f. Discussion of any possible relevance of "spot zoning."

3. Mitigation: Mitigation measures for any adverse impacts caused by the development of this site will be discussed in this section.

H. Traffic and Transportation

1. Existing Conditions: An Engineer will prepare a Traffic Impact Study for the proposed development. An inventory of all roadways in the designated study area will be created. To determine the existing traffic conditions, turning movements and traffic, traffic counts will be performed at the intersections of:

a. Dale Avenue & Pine Avenue;
b. Croton Dam Road & Hawkes Avenue;
c. Croton Dam Road & Pershing Avenue with Cherry Hill Circle;
d. Croton Dam Road & Site Driveway;
e. Croton Dam Road & Kitchawan Station Road;
f. Croton Dam Road & NYS Route 9A;
g. Croton Dam Road & Grandview Avenue;
h. Croton Dam Road & Pheasant Ridge Road/Feeney Road; and
i. Croton Dam Road & Narragansett Avenue.

Counts will be performed at an appropriate time of year when schools are open, during appropriate weather conditions, and during the following time periods, all in accordance with accepted engineering protocols:

a. Weekday Morning – 6:00 AM to 10:00 AM;
b. Weekday Afternoon – 3:00 PM to 7:00 PM; and
c. Saturday Morning/Afternoon – 9:00 AM to 1:00 PM.

Results of the traffic counting program will be graphically illustrated for the peak hour volumes for each intersection by turning movement. The peak hours should be identified, as well as the day of the week and weather conditions on the day of the traffic count.

To determine existing and future traffic operating conditions, it will also be necessary to perform Capacity Analyses per the procedure described in the *2010 Highway Capacity Manual*. SYNCHRO modeling will be the basis for completing the analysis. A summary table of the results of this analysis will identify Levels of Service and include volume to capacity ratios, average vehicle delay and vehicle queuing by lane group/approach and overall, as needed.

Accident history is to be obtained from the applicable police department(s) for the most recent three-year period and summarized in a table format and should identify the number of accidents by location, severity, injuries, roadway conditions, type of accidents, and probable cause.

Current availability and capacity of public transportation serving the subject property will also be included in this section.

2. Future Traffic Conditions Without the Preferred Project

a. The existing traffic volumes will be expanded to reflect a future design year, which should include an appropriate growth rate and traffic related to any other planned or proposed development in the immediate vicinity of the subject property. The Applicant will contact the Town of Ossining and Village of Ossining planning and engineering departments to identify other developments. These volumes will be graphically illustrated for each intersection and time period included in the analysis.

b. Capacity analyses will be completed following the same criteria noted above for the no-build condition and following each of the requirements for the summary in a table format, as noted above.

3. Anticipated Traffic Impacts Based on Existing Roadways

a. Site traffic generation should be based on trip generation rates provided by the Institute of Transportation Engineers (ITE) and included in the most recent publication of "Trip Generation," 9th Edition, 2012. This information should be included in a table format for each of the peak hours and specify entering and exiting traffic levels.

b. For build conditions, capacity analyses will be completed and compared to the no-build condition. This comparison will provide the specifics of potential impact from the proposed development on area roadways. Results of the analyses should be provided in a table format and include all of the information noted above. Significant traffic impacts attributable to the proposed development on area roadways will be identified. Any Study Area intersections with significant traffic impacts are to be identified, with appropriate mitigation measures provided to address potential impacts. The type of improvement, responsibility and timing of each improvement should be identified. These improvements may include roadway widening, modification to traffic control, modification to pavement markings and/or traffic signal installation.

c. A mitigation plan, as necessary, should be provided describing responsibility, type of mitigation and basis for need for this mitigation. If a traffic signal is to be warranted at any location, a Traffic Signal Warrant Analysis must be provided, which follows the criteria set forth by the New York State Department of Transportation (NYSDOT). Mitigation will be recommended by the Applicant to address significant traffic impacts to area roadways.

d. Intersection sight distance analyses for each of the proposed intersections should follow criteria set forth by the American Association of State Highway and Transportation Officials (AASHTO). Intersection sight distance should be based on the 85th percentile of vehicles traveling on these roadways. The intersection sight distance should not be based on the posted speed limit, but rather on a speed study along the site's frontage.

e. A discussion of construction traffic should be provided in text and table format based on each phase of development, as necessary. The number of trucks, by size and number of employees by phase should be provided. Hours of operation for construction should be included.

f. Potential impacts to public transportation, as well as to school bus routes and stops, should be identified.

g. The potential to increase the capacity of the intersection of Croton Dam Road and Route 9A, as well as alternate mitigation, shall be discussed.

h. The traffic impact from the Preferred Project shall be compared to the impact of the traffic from the Stony Lodge Hospital when it was in operation, including with respect to accident histories.

i. The jitney service which is part of the proposal shall be factored into the traffic analysis.

j. The potential impact of increased traffic from the Preferred Project upon the safety of pedestrians and bicyclists on nearby roadways will be evaluated and discussed.

I. Community Facilities

1. Existing Conditions: The current services, service levels, and capacities of existing municipal facilities and services, such as fire and police departments, emergency services, open space and recreation, and schools will be discussed.

2. Potential Impact: Any potential impacts to community facilities will be identified and described. A comparison of projected future demand on community facilities will be prepared, comparing a fully built site scenario to an unbuilt site scenario. This will take estimated Town growth, discussions with service providers, and application of industry standards into consideration.

3. Mitigation: Mitigation should be provided, as feasible, for any adverse impacts to community services caused by the development of the proposed community.

J. Fiscal Impacts

1. Existing Conditions: Current taxes generated from the site will be identified and described. A brief discussion of the current economic status of the Town of Ossining will be presented, based on data acquired from available information.

2. Potential Impact: A projection of expected taxes generated from the proposed development will be prepared and discussed. The amount of additional tax revenues generated by construction activity resulting from the proposed community will be estimated. The costs and benefits of the proposed development will be discussed, in terms of tax revenues and increased employment opportunities as a direct result of the construction of the proposed community. Revenue generated from the residents of River Knoll will be compared to the cost of providing community facilities to the extent available from information publicly available. Governmental costs, including an analysis of service costs including but not limited to the Town of Ossining and the school district associated with providing services to the development will be identified.

3. Mitigation: Proposed mitigation measures for any identified adverse impacts will be discussed.

K. Construction Impacts

1. Existing Conditions: Describe the methods and nature of the construction of the proposed development, including site features proposed to be altered.

2. Potential Impacts:

a. Describe the anticipated schedule, as well as the days and hours of operation for the various construction phases of the proposed development.

b. Identify truck routes and truck traffic volumes associated with construction activities at the site.

c. Describe temporary air quality impacts associated with construction and construction vehicles, and truck and worker traffic related to construction activities. Also discuss the potential for adverse impacts on adjacent land uses.

d. Estimate construction noise levels and vibration levels from various pieces of construction equipment used at the site and construction traffic. Also discuss the potential for adverse impacts on adjacent land uses. Discuss potential need for rock excavation and blasting, describe the pre- and post-construction protocols for rock excavation and blasting, and discuss alternatives to blasting.

e. Discuss the potential for erosion and sedimentation, and the mitigation therefor, to occur during construction when vegetation is removed, and prior to redevelopment with buildings, paving, or new vegetation.

f. Potential impacts on wildlife or vegetation as a result of any construction activities should be described.

g. Discuss the performance and maintenance guarantees which will be in place to ensure against potential damage caused by the developer, ensuring performance by the developer, and maintenance of facilities.

h. Potential impacts relating to the on-site underground fuel tanks, any on-site hazardous waste, and the previous disposal of hospital and/or medical waste should be discussed.

3. Mitigation: Discuss measures to mitigate potential adverse impacts of construction activities. A construction management plan which discusses the mitigation measures related to the potential impacts above should be included in the DEIS.

CHAPTER IV: ADVERSE ENVIRONMENTAL IMPACTS THAT CANNOT BE AVOIDED

Describe the short- and long-term adverse environmental impacts that cannot be avoided or adequately mitigated if the Proposed Action is implemented.

CHAPTER V: ALTERNATIVES

A graphic layout shall be prepared for each alternative listed below. Each alternative will be discussed at such a level of detail sufficient to permit a comparative assessment of each Impact Issue[3] with each alternative and the Proposed Action. Summarize the comparative analysis description and evaluation in tabular format. Alternatives to be addressed in the DEIS are:

A. Conventional layout which meets all of the requirements of the R-15 zoning district, the balance of the Zoning Law, and the various chapters of the Town Code, and which respects the site's environmental constraints.

[3] "Impact Issue" is a defined term herein.

B. Clustered development based upon R-15 conventional layout density.

C. Conventional layout which meets all of the requirements of the R-5 zoning district, the balance of the Zoning Law, and the various chapters of the Town Code, and which respects the site's environmental constraints.

D. Clustered development based upon R-5 conventional layout density.

E. Townhouse and multiple dwelling developments based upon existing multi-family zone.

F. Townhouse and multiple dwelling developments at eight (8) dwelling units per acre.

G. Continued institutional use.

H. Adaptive re-use of existing buildings for residential and other non-residential uses.

I. Adaptive re-use of smaller existing residential buildings in the southeasterly part of the site, especially for affordable housing, and any zoning text amendments needed for this scenario. The potential adverse social impact(s) of segregating the affordable housing in this manner should also be discussed.

J. Alternative development with less trucking of rock and earth off-site.

K. No Action alternative. The No Action alternative discussion should evaluate the adverse or beneficial site changes that are likely to occur in the reasonably foreseeable future, in the absence of the Proposed Action.

CHAPTER VI: IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Identify natural resources that would be consumed, converted or made unavailable for future use by the Preferred Project.

CHAPTER VII: GROWTH-INDUCING IMPACTS

A. The potential for the Preferred Project to induce growth based on anticipated increases in local expenditures that would be made by new residents of the proposed community through the local purchases of goods and services should be discussed.

B. The potential for additional residential development in the Town based upon the proposed MF2 zoning should be quantitatively and qualitatively discussed.

CHAPTER VIII: EFFECTS ON THE USE AND CONSERVATION OF ENERGY RESOURCES AND SOLID WASTE MANAGEMENT

The energy sources to be used, anticipated levels of consumption, efficiency of energy consumption, and energy conservation measures are to be identified and discussed. The discussion is to include the standards of the NYS Energy Code and the NYS Energy Research and Development Authority Programs. The management of solid waste produced by the Preferred Project shall also be discussed. The DEIS will analyze the potential and feasibility for the use of alternative energy resources for heating, cooling and power, including the use of solar energy.

TECHNICAL APPENDICES SHALL INCLUDE (BUT NOT NECESSARILY BE LIMITED TO)

A. Natural Resource Studies (including wetlands, vegetation, soils, all animals including fish, terrestrial and aquatic macroinvertebrates, birds, amphibians, reptiles, etc.)

B. Storm Water Pollution Prevention Plan

C. Water and Sewer System Report(s)

D. Traffic Study

E. Phase IA and, if needed, Phase II Cultural Resource Report(s)

F. Possible study(ies) pertaining to on-site contamination

G. Construction Management Plan

H. All SEQRA Documentation (for example, Scoping Outline)

I. All official correspondence related to issues discussed in the DEIS

Appendix C
Correspondence with Town

AKRF, Inc.
Environmental Planning Consultants
34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 922-2358
fax: 914 949-7559
www.akrf.com

October 11, 2016
Captain Nick Franzoso
Ossining Volunteer Ambulance Corps
P.O. Box 523
Ossining, NY 10510

Re: Request for Information Regarding the River Knoll (n/f Stony Lodge Hospital) Project

Dear Captain Franzoso ,

AKRF, Inc. has been retained by the developer of *River Knoll* to assess the potential environmental effects of the development of a multi-family residential development consisting of 188 units of housing; ninety-six (96) 1-bedroom, and ninety-two (92) 2-bedroom units. The 17.9 acre site is located on the former Stony Lodge Hospital site on 40 Croton Dam Road. 90.5% (16.2 acres) of the site is located in the Town of Ossining, and 9.5% (1.7 ac) is located in the Village of Ossining. The development will primarily be located within the Town. No disturbance is expected within the Village of Ossining.

River Knoll will be in one building and will provide 338 parking spaces. The proposed project will have offer amenities including a pool, trails, and open space conservancy.

AKRF is currently preparing the Environmental Impact Statement (EIS) under SEQRA. Ingress and egress of the Proposed Project will be located on the already existing driveway of the Stony Lodge Hospital. For our analysis, we need to obtain information relevant to the current services provided by Ossining Volunteer Ambulance Corps to the Project Site, which is shown in the attached map. Specifically, we need to obtain the following information:

- Level of Staffing
- Anticipated response times to the Project Site
- Number and types of all service calls by the department within Ossining from 2014-2016

In addition to the above information, please provide any relevant information on anticipated changes to your department that may affect its future capacities to respond to emergencies, such as new equipment, anticipated changes in personnel or budget, or other factors that are expected to increase or decrease capacity that may be necessary due as a result of the proposed project

I would greatly appreciate a response as soon as possible. You can respond via mail or telephone to the address/telephone number above, or via e-mail to lwassen@akrf.com. Thank you in advance for your attention to this matter.

Sincerely,

Laure Wassen
Planner

AKRF, Inc.
Environmental Planning Consultants
34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-2358
fax: 914 949-7559
www.akrf.com

October 11, 2016
Kevin Sylvester, Chief of Police
Ossining Police Department
88 Spring Street
Ossining, NY 10562

Re: Request for Information Regarding the River Knoll (n/f Stony Lodge Hospital) Project

Dear Chief Burton

AKRF, Inc. has been retained by the developer of *River Knoll* to assess the potential environmental effects of the development of a multi-family residential development consisting of 188 units of housing; ninety-six (96) 1-bedroom, and ninety-two (92) 2-bedroom units. The 17.9 acre site is located on the former Stony Lodge Hospital site on 40 Croton Dam Road. 90.5% (16.2 acres) of the site is located in the Town of Ossining, and 9.5% (1.7 ac) is located in the Village of Ossining. The development will primarily be located within the Town. No disturbance is expected within the Village of Ossining.

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AKRF is currently preparing the Environmental Impact Statement (EIS) under SEQRA. Ingress and egress of the Proposed Project will be located on the already existing driveway of the Stony Lodge Hospital.

For our analysis, we need to obtain information relevant to the current services provided by the Ossining Police Department to the Project Site, which is shown in the attached map. Specifically, we need to obtain the following information:

- Level of Staffing
- Anticipated response times to the Project Site
- Number and types of all service calls by the department within Ossining from 2014-2016

In addition to the above information, please provide any relevant information on anticipated changes to your department that may affect its future capacities to respond to emergencies, such as new equipment, anticipated changes in personnel or budget, or other factors that are expected to increase or decrease capacity that may be necessary due as a result of the proposed project

I would greatly appreciate a response as soon as possible. You can respond via mail or telephone to the address/telephone number above, or via e-mail to lwassen@akrf.com. Thank you in advance for your attention to this matter.

Sincerely,

Laure Wassen
Planner

AKRF, Inc.
Environmental Planning Consultants
34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-2358
fax: 914 949-7559
www.akrf.com

October 11, 2016
Chief Matthew Scarduzio
Ossining Fire Department
21 State Street
Ossining, NY 10510

Re: Request for Information Regarding the River Knoll (n/f Stony Lodge Hospital) Project

Dear Chief Scarduzio,

AKRF, Inc. has been retained by the developer of *River Knoll* to assess the potential environmental effects of the development of a multi-family residential development consisting of 188 units of housing; ninety-six (96) 1-bedroom, and ninety-two (92) 2-bedroom units. The 17.9 acre site is located on the former Stony Lodge Hospital site on 40 Croton Dam Road. 90.5% (16.2 acres) of the site is located in the Town of Ossining, and 9.5% (1.7 ac) is located in the Village of Ossining. The development will primarily be located within the Town. No disturbance is expected within the Village of Ossining.

River Knoll will be in one building and will provide 338 parking space. The proposed project will have offer amenities including a pool, trails, and open space conservancy.

AKRF is currently preparing the Environmental Impact Statement (EIS) under SEQRA. Ingress and egress of the Proposed Project will be located on the already existing driveway of the Stony Lodge Hospital.

For our analysis, we need to obtain information relevant to the current services provided by the Ossining Fire Department to the Project Site, which is shown in the attached map. Specifically, we need to obtain the following information:

- Level of Staffing
- Anticipated response times to the Project Site
- Number and types of all service calls by the department within Ossining from 2014-2016

In addition to the above information, please provide any relevant information on anticipated changes to your department that may affect its future capacities to respond to emergencies, such as new equipment, anticipated changes in personnel or budget, or other factors that are expected to increase or decrease capacity that may be necessary due as a result of the proposed project

I would greatly appreciate a response as soon as possible. You can respond via mail or telephone to the address/telephone number above, or via e-mail to lwassen@akrf.com. Thank you in advance for your attention to this matter.

Sincerely,

Laure Wassen
Planner

AKRF

Laure Wassen <lwassen@akrf.com>

Fwd: River Knoll: Meeting w DPW and Water District [JMC Project 15064]

1 message

Nanette Bourne <nbourne@akrf.com> Fri, Nov 4, 2016 at 2:33 PM
To: Laure Wassen <lwassen@akrf.com>

fyi

Nanette H. Bourne
Senior Vice President

AKRF, Inc.
34 South Broadway
White Plains, NY 10601
914.922.2353

www.akrf.com

——— Forwarded message ———
From: **Glen Vetromile** <glen@glencogroupny.com>
Date: Fri, Nov 4, 2016 at 2:30 PM
Subject: Re: River Knoll: Meeting w DPW and Water District [JMC Project 15064]
To: "Anthony Guccione, Jr., RLA" <aguccione@jmcpllc.com>
Cc: "Joseph Sarchino, RLA" <JSarchino@jmcpllc.com>, "Null, William" <WNull@cuddyfeder.com>, Nanette Bourne <nbourne@akrf.com>, Bonnie Von Ohlsen <bvonohlsen@gmail.com>

Anthony, the proposed improvement at croton dam road and rt 134 would be repair of water lines?

Sent from my iPhone

Glen Vetromile
917-589-5550

On Nov 4, 2016, at 12:30 PM, Anthony Guccione, Jr., RLA <aguccione@jmcpllc.com> wrote:

> Glen,
>
> I spoke with Dan Ciarcia today.
>
> Regarding water, he said the arrangement the Village was pursuing to buy water from Briarcliff or New Castle unraveled. However, they found a substantial leak in a Village water main that they repaired and they have more available water as a result. He also indicated the upgrade to the water treatment plant has been authorized and should be implemented in next couple of years.

Regarding sewer, he noted the issue we discussed previously about the flat pipe at Croton Dam Road and Route 134 downstream of the site. This may be a location where an off-site improvement may be appropriate but he was not sure if this location has been an issue lately.

Dan will reach out to the guys at the Village DPW to get an update on the water and sewer and get back to me next week. I'll let you know when I hear back, but he did not seem to think there are major issues.

Sincerely,

ANTHONY GUCCIONE, JR., RLA

Associate Principal

JMC

SITE DEVELOPMENT CONSULTANTS

120 Bedford Road • Armonk, NY 10504

V 914 273-5225, x219 • F 914 273-2102

www.jmcpllc.com

SITE PLANNING | CIVIL ENGINEERING | LANDSCAPE ARCHITECTURE | TRANSPORTATION ENGINEERING | LAND SURVEYING | 3D SCANNING & MODELING

JMC PLANNING ENGINEERING LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC.

Agreement for transfer of information

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From: Glen Vetromile [mailto:glen@glencogroupny.com]
Sent: Wednesday, November 02, 2016 9:43 AM
To: Anthony Guccione, Jr., RLA <aguccione@jmcpllc.com>
Cc: Joseph Sarchino, RLA <JSarchino@jmcpllc.com>; Null, William <WNull@CUDDYFEDER.COM>; Nanette Bourne <nbourne@akrf.com>
Subject: River Knoll: Meeting w DPW and Water District

Anthony,

I think trying to get a meeting will delay things and that you should have phone conversations with Dan Ciarcia and the guys at the water district. While I'd like to participate on the calls, it is not necessary.

Thanks, Glen

AKRF

Laure Wassen <lwassen@akrf.com>

Ossining Volunteer Ambulance Corps Re: River Knoll

1 message

Nick Franzoso <nickfranzoso@gmail.com> Thu, Oct 13, 2016 at 4:52 PM
To: lwassen@akrf.com

Laure,

I am in receipt of your letter requesting information from us.

We are a combination system providing both advanced and basic emergency ambulance service to the Ossining community. We have two ambulances, one ALS and one BLS as well as a shared (between Ossining, Croton on Hudson and Briarcliff Manor,) paramedic unit staffed 24/7/365.

I would anticipate roughly 20-30 calls per year to the site all depending on patient age and health. That is an estimate based on similar developments that we service. Our response time to the site would be roughly four minutes.

Our volume for 2014 was 2776 calls, 2015 was 2907, and 2016 (first three quarters) is 2086. This volume does not include the ALS paramedic unit calls outside of the Ossining area, but does include mutual aid.

Please see the attached sheet which will give you a rough idea of the disposition of our calls in just the Ossining area.

Since the site that River Knoll is looking to develop is currently not occupied, we do anticipate seeing an increase in our operating expenses to cover the additional calls.

I hope this helps to answer your questions. If you need anything additional, please let me know.

Nick Franzoso
EMS Director
Ossining Volunteer Ambulance Corps., Inc.
8 Clinton Ave
PO Box 523
Ossining, NY 10562
o:914-941-9196
c:914-906-7154
f:914-941-3941
ossiningvac.org

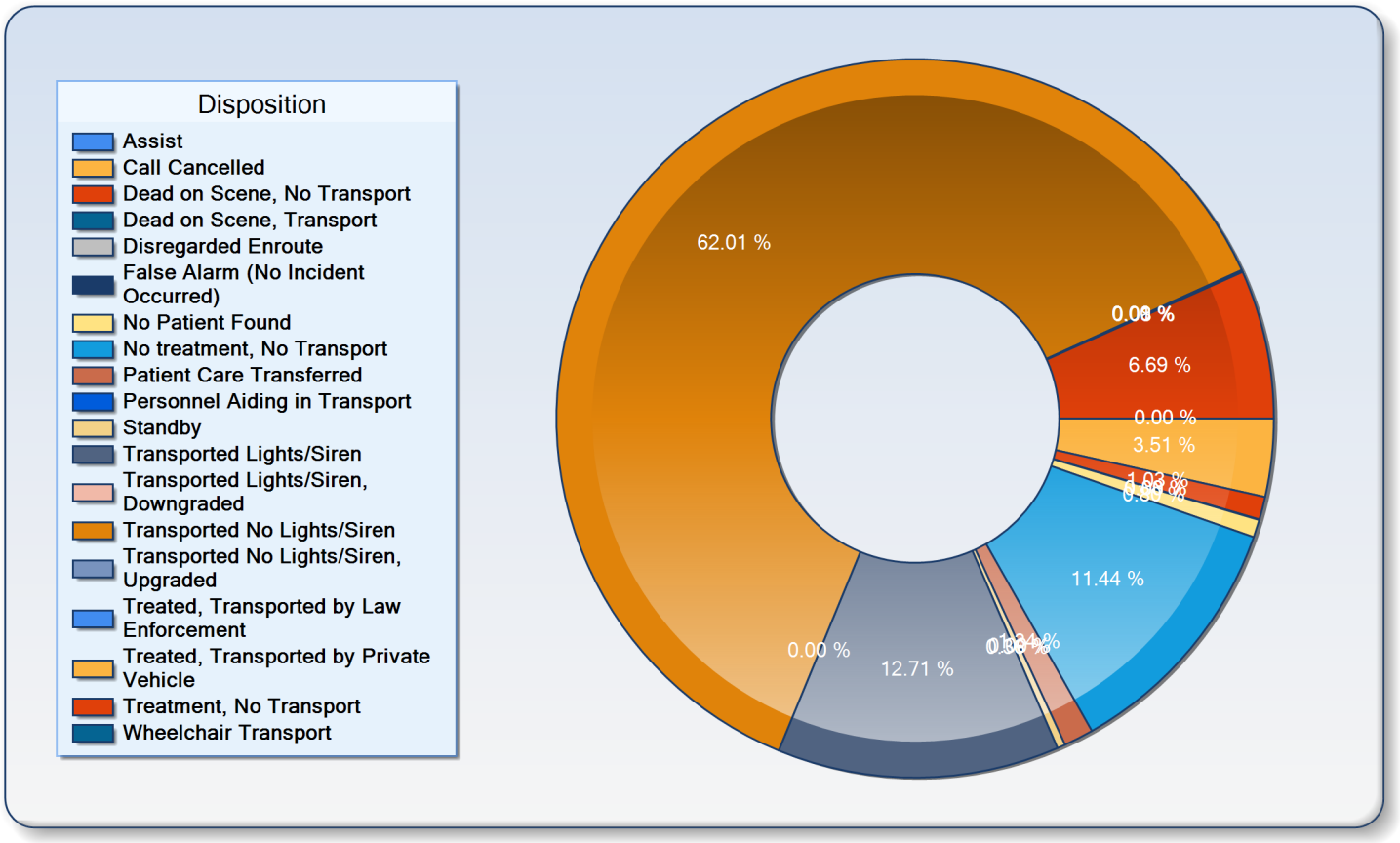
Ossining Disposition 1-1-14 to 10-1-16.pdf
249K

Ossining Volunteer Ambulance Corps

Disposition Type Breakdown

1/1/2014 to 10/1/2016

Disposition Type Breakdown		
Disposition	**Calls**	**Pct**
Assist	0	0 %
Call Cancelled	260	4 %
Dead on Scene, No Transport	76	1 %
Dead on Scene, Transport	0	0 %
Disregarded Enroute	2	0 %
False Alarm (No Incident Occurred)	0	0 %
No Patient Found	59	1 %
No treatment, No Transport	847	11 %
Patient Care Transferred	99	1 %
Personnel Aiding in Transport	0	0 %
Standby	27	0 %
Transported Lights/Siren	941	13 %
Transported Lights/Siren, Downgraded	0	0 %
Transported No Lights/Siren	4,591	62 %
Transported No Lights/Siren, Upgraded	0	0 %
Treated, Transported by Law Enforcement	1	0 %
Treated, Transported by Private Vehicle	6	0 %
Treatment, No Transport	495	7 %
Wheelchair Transport	0	0 %
Total	7,404	100%



Appendix D
Traffic Study

TRAFFIC STUDY

RIVER KNOLL

40 CROTON DAM ROAD
TOWN OF OSSINING, NEW YORK

Prepared for:

Glenco
9 Ridge Road
Bronxville, NY 10708

Prepared by:

120 Bedford Road
Armonk, NY 10504
JMC Project **15064**

Date: December 14, 2016

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I. INTRODUCTION

This Traffic Study has been prepared to assess existing conditions as well as future traffic operations in association with the proposed River Knoll redevelopment located at 40 Croton Dam Road in the Town of Ossining, NY. The location of the site is illustrated on the figures included in Appendix B.

The subject property operated as a hospital since 1927. The Stony Lodge Hospital began closing in 2012. The Applicant proposes to demolish the existing hospital and construct a new building which would provide a total of 188 apartment units, consisting of 169 market-rate rental units and 19 affordable rental units. The proposed redevelopment will include amenities for the residents such as a swimming pool, fitness center, yoga studio, club room, etc.

The property is accessed via a single driveway located along Croton Dam Road. The proposed redevelopment will reconstruct a new and widened driveway at the same location as the existing driveway.

II. EXISTING CONDITIONS

A. Existing Roadway Network

JMC performed field reconnaissance at the site and adjoining roadway network in order to gather existing conditions data. The field work included a determination of lane widths, striping, horizontal and vertical alignments, signs, traffic signal phasing and timings, speed limits, pedestrian activities, traffic flows, sidewalks, curbing, etc.

NY 9A is generally a north/south state highway which changes to an east/west roadway within the study area. In the vicinity of the subject property, NY 9A provides two travel lanes in each direction and widens at intersections to provide additional lanes. It has a posted speed limit of 40 mph and on-street parking is prohibited.

Croton Dam Road is a north/south roadway connecting to Kitchawan Road in the north and Dale Avenue in the south. It provides one travel lane in each direction. The roadway has a posted speed limit of 30 mph and parking is prohibited on both sides of the street.

Kitchawan State Road is an east/west state roadway and is also referenced as NY 134. It provides one travel lane in each direction. The roadway has a posted speed limit of 30 mph and on-street parking is prohibited.

Pheasant Ridge Road and Feeney Road have tributary roads connecting to them; however, they terminate at a dead end. Cherry Hill Circle is a dead end roadway. All three of the roadways are general east/west roadways and provide one travel lane in each direction. The roadways have a speed limit of 30 mph and on-street parking is permitted.

Narragansett Avenue is generally a north/south roadway which changes to an east/west roadway at its northern end. It connects to Croton Dam Road in the north and Ryder Road in the south. It provides one travel lane in each direction and has a 30 mph speed limit. On-street parking is prohibited along the roadway.

Pershing Avenue, Grandview Avenue and Pine Avenue are east/west roadways which connect to Narragansett Avenue in the east. Pershing Avenue and Grandview Avenue connect to Croton Dam Road in the west. Cherry Hill Drive opposes Pershing Avenue at Croton Dam Road. Pine Avenue connects to Dale Avenue is the west. They provide one travel lane in each direction. The roadways have a posted speed limit of 30 mph and parking is permitted in certain locations along the roads.

Dale Avenue and Hawkes Avenue are north/south state roadways within the study area. These roads are also referenced as NY 134. They provide one travel lane in each direction. On-street parking is prohibited along Hawkes Avenue and is permitted on one side of Dale Avenue. The roadways have a posted speed limit of 30 mph.

In order to evaluate the changes in traffic associated with the proposed redevelopment, the

following intersections have been analyzed:

1. Dale Avenue & Pine Avenue
2. Croton Dam Road & Hawkes Avenue
3. Croton Dam Road & Pershing Avenue with Cherry Hill Circle
4. Croton Dam Road & Site Driveway
5. Croton Dam Road & Grandview Avenue
6. Croton Dam Road & Narragansett Avenue
7. Croton Dam Road & Pheasant Ridge Road with Feeney Road
8. Croton Dam Road & Kitchawan State Road
9. Croton Dam Road & NY 9A

Pine Avenue intersects Dale Avenue at an unsignalized 'T' intersection. Both Dale Avenue approaches provide a single thru lane with shared turning movements. Pine Avenue provides a single travel lane with shared turning movements. Pine Avenue is controlled by a stop sign.

Croton Dam Road intersects Hawkes Avenue at a three-legged unsignalized intersection. Hawkes Avenue provides a single thru lane with shared turning movements in both directions. Croton Dam Road provides a single travel lane with shared turning movements and is stop sign controlled.

The intersection Croton Dam Road and Pershing Avenue with Cherry Hill Drive is a four-legged unsignalized intersection. Each approach provides a single travel lane with shared turning movements. The Pershing Avenue and Cherry Hill Circle are controlled by a stop sign.

The site driveway intersects Croton Dam Road at an unsignalized 'T' intersection. Both Croton Dam Road approaches provide a single thru lane with shared turning movements. The site driveway provides a single travel lane with shared turning movements. The site driveway is controlled by a stop sign.

Grandview Avenue intersects Croton Dam Road at an unsignalized 'T' intersection. Both Croton Dam Road approaches provide a single thru lane with shared turning movements. Grandview Avenue is controlled by a stop sign and provides a single travel lane with shared turning movements.

Narragansett Avenue intersects Croton Dam Road at an unsignalized intersection. Both Croton Dam Road approaches provide a single thru lane with shared turning movements. The Croton Dam Road northbound approach is controlled by a stop sign. Narragansett Avenue provides a single travel lane with shared turning movements with a short channelized left turn pocket. For the purposes of the study and to obtain capacity analyses, the intersection has been analyzed as a typical 'T' intersection with stop sign control only on the minor street (Narragansett Avenue). Additionally, due to the short left turn pocket on Narragansett Avenue, this approach was analyzed as a single lane with shared turning movements.

The intersection Croton Dam Road and Pheasant Ridge Road with Feeney Road is a four-legged unsignalized intersection. Each approach provides a single travel lane with shared turning movements. The Pheasant Ridge Road and Feeney Road are controlled by a stop sign. Pheasant Ridge Road provides a small divisional island between its egress and ingress accesses at the intersection.

Kitchawan State Road intersects Croton Dam Road at a three-legged unsignalized intersection. Croton Dam Road provides a single thru lane with shared turning movements in both directions. Kitchawan State Road provides a single travel lane with shared turning movements and is stop sign controlled.

The intersection of Croton Dam Road and NY 9A is a signalized four-legged intersection. The NY 9A eastbound approach provides a 110 foot long separate left turn lane and two thru lanes as well as a 190 foot long right turn lane. The NY 9A westbound approach provides a 150 foot long separate left turn lane and two thru lanes with shared right turning

movements. The northbound and southbound approaches provides a single travel lane with shared turning movements. The traffic signal provides a three phase operation. First, the NY 9A left turn lanes are provided the protected green indication which is then followed by the thru and right turn movements along NY 9A. The Croton Dam Road approaches are given the green indication with permissive turning movements.

B. Existing Volumes

Traffic counts were performed at the studied intersections in order to quantify and analyze existing peak hour volumes as well as to establish base conditions for projecting future operations. The counts included pedestrian activities and truck traffic.

Traffic counts were conducted from 6:00 – 10:00 AM and 3:00 – 7:00 PM on Thursday, September 29, 2016 for all the studied intersections. Additionally, all the studied intersections were counted from 9:00 AM – 1:00 PM on Saturday, October 15, 2016. The peak hour volumes occurred between 7:15-8:15 AM during the weekday morning, 4:30-5:30 PM during the weekday afternoon and 10:30-11:30 AM during the Saturday midday. The intersection traffic count data is included in Appendix C. The peak hour volumes are shown on Figures 1 thru 3 "2016 Existing Volumes". All figures are included in Appendix B.

C. Intersection Analysis Methodology

The intersections have been analyzed based on the methodologies of the 2010 Highway Capacity Manual. Information derived from the manual relative to the level of service criteria is provided below.

1. Level-of-Service Criteria for Signalized Intersections

Levels of Service (LOS) for signalized intersections are defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to

control, geometrics, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of any incidents, and when there are no other vehicles on the road. Only the portion of total delay attributed to the control facility is quantified. This delay is called control delay. Control delay includes the delays of initial deceleration, move-up time in the queue, stops, and reacceleration. In this chapter, control delay may also be referred to as signal delay. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a peak 15-minute analysis period. Delay is a complex measure and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the volume/capacity (*v/c)* ratio for the lane group in question.

LOS A describes operations with very low control delay, up to 10 seconds per vehicle. This level of services occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

LOS B describes operations which control delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good progression, short cycle lengths, or both.

LOS C describes operations with control delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from fair progression, longer cycle lengths, or both.

LOS D describes operations with control delay greater than 35 and up to 55 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high *v/c* ratios. Many vehicles stop, and the proportion of vehicles not stopping declines.

LOS E describes operations with control delay greater than 55 and up to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

LOS F describes operations with control delay in excess of 80 seconds per vehicle and/or the arrival flow rates exceed the capacity of the intersection. It will also occur at high *v/c* ratios below 1.0 with many individual cycle failures.

2. Level of Service for Unsignalized Intersections

The Levels of Service (LOS) for Two Way Stop Control (TWSC) and All Way Stop Control (AWSC) intersections are determined by the computed or measured control delay and are defined for each minor movement. LOS is not defined for the intersection as a whole for TWSC intersections. LOS criteria are presented below.

Unsignalized Level of Service Criteria	
Level of Service	**Delay Range (Seconds/Vehicle)**
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Average control delay less than 10 seconds/vehicle are defined as LOS A. Follow-up times of less than 5 seconds/vehicle have been measured when there is no conflicting traffic, so control delays of less than 10 seconds/vehicle are appropriate for low flow conditions.

The LOS criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers

expect different levels of performance from different kinds of transportation facilities. A number of driver behavior considerations combine to make delays at signalized intersections less onerous than delays at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, whereas drivers on the minor approaches to unsignalized intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at an unsignalized intersections versus that at signalized intersections. For these reasons, it is considered that the control delay threshold for any given LOS would be less for an unsignalized intersection than it would be for a signalized intersection.

D. Existing Operations

The intersection capacity analyses based on existing volumes and conditions are shown on Tables 2 through 4. The specific volume/capacity ratios, delay for average vehicle in seconds and the associated levels of service are summarized for each lane group, the approach as well as the overall intersection as applicable on Tables 2 through 4. All tables are included in Appendix A.

During the peak weekday AM hour, the overall intersection of Croton Dam Road and NY 9A operates at a level of service C. The NY 9A westbound left turn lane operates close to capacity at a level of service F while the eastbound left turn lane operates at a level of service E. The Croton Dam Road northbound approach operates at a level of service E while the southbound approach operates at a level of service F. All other movements at the studied intersections operate at a level of service C or better.

During the peak weekday PM hour, the overall intersection of Croton Dam Road and NY 9A operates at a level of service D. Both NY 9A left turn lanes operate at a level of service F. The NY 9A westbound thru and right turning movements operate over capacity and at a level of service E. The Croton Dam Road approaches operates at a level of service F. All other movements at the studied intersections operate at a level of service C or better.

During the peak Saturday midday hour, the overall intersection of Croton Dam Road and NY 9A operates at a level of service C. The NY 9A westbound left turn lane operates at a level of service F while the eastbound left turn lane operates at a level of service D. The Croton Dam Road approaches operate at a level of service D. All other movements at the studied intersections operate at a level of service C or better.

III. PROJECTED CONDITIONS

A. No-Build Volumes

In order to project future traffic increases to the year 2022, the existing volumes were increased by a general growth rate of 1% per year compounded annually. Based on discussions with the Village of Ossining's Planning Department and the Town of Ossining's Building Department, we have incorporated the traffic volumes associated with the proposed Parth Knolls, LLC residential development located at 87 Hawkes Avenue in Ossining has been incorporated in the study. The traffic volumes associated from the proposed Sunshine Children's Home & Rehabilitation Center in New Castle, the proposed Upper Westchester Muslim Society development in New Castle and the proposed Hudson Ridge Wellness Center development in Cortlandt will not generate substantial traffic volumes in the study area and have been considered as part of the general growth volumes.

Table 1 depicts the traffic volumes associated with the reoccupancy of the previous hospital use on the development property based on traffic counts conducted at the site driveway in 2006. The Hospital had 250 employees, with multiple shifts coming and going 24 hours a day. In addition, delivery trucks, including large multi-axle trucks, came daily with food and supplies, as did ambulances 24 hours a day. Family members came by car to visit, usually in the evening and weekends. Staff came by even when not working, to pick up paychecks and meet with their supervisors. Outside agencies sent staff daily to coordinate care, and job seekers visited daily weekdays and weekends in significant numbers. Vans were used to transport patients daily to outside medical specialists and emergency rooms, when

ambulances were not used. Regional conferences were regularly held on-site with outside visitors from the County and State. Federal Express and UPS came daily more than once for deliveries and pickups. By State regulation, incidents involving the patients required State reporting and police investigation, which by law required the local police to be involved and necessitated frequent trips by police cars. In summary, there was constant traffic. In addition, there have always been, and there continue to be, outpatients coming for treatment.

The reoccupancy of the hospital volumes based on the 2006 counts have been incorporated into the no-build volumes. The resulting 2022 no-build volumes represent traffic operation in 2022 without the redevelopment of the site.

During the peak weekday AM hour, the overall intersection of Croton Dam Road and NY 9A is projected to operate at a level of service D while the northbound approach is projected to increase in delay to a level of service F. All other movements at the studied intersections are projected to operate at similar levels of service during the peak weekday AM hour as experienced under existing conditions.

During the peak weekday PM hour, the overall intersection of Croton Dam Road and NY 9A is projected to operate at a level of service E while the westbound approach and thru/right lane are projected to increase in delay to a level of service F. All other movements at the studied intersections are projected to operate at similar levels of service during the peak weekday PM hour as experienced under existing conditions.

During the peak Saturday midday hour, the NY 9A eastbound left turn lane and Croton Dam Road northbound approach are projected to operate at a level of service F while the eastbound right turn lane is projected to increase in delay to a level of service B. All other movements at the studied intersections are projected to operate at the same levels of service during the peak Saturday midday hour as experienced under existing conditions.

B. Build Volumes

The projected traffic associated with the proposed 188 apartment unit redevelopment is based on vehicle trip information published by the Institute of Transportation Engineers (ITE) in its publication "Trip Generation Manual, 9th Edition." Table 1 shows the traffic volumes associated with the reoccupancy of the previous land use and the proposed land use as well as the net change in traffic volumes between them. A shuttle service is proposed as part of the redevelopment to transport residents to and from the train station. The redevelopment will result in approximately 21, 30 and 20 net additional total trips during the peak weekday AM, PM and Saturday midday hours, respectively. The primary trips for the redevelopment have been shown in the figures in Appendix B.

The primary trips were routed through the intersections based on existing traffic volumes and the roadway network. Adding the redevelopment related traffic results in 2022 Build Volumes which reflect projected volumes after the completion of the redevelopment.

IV. FINDINGS & CONCLUSION

Intersection capacity analysis computed based on the Build Volumes indicate that the intersections will operate at the same or better levels of service as projected for the No-Build Volumes with recommended improvements. Projected operations with the proposed redevelopment are shown on Tables 2 through 4.

Improvements are recommended at the intersection of NY 9A and Croton Dam Road. The improvements consist of constructing a right turn lane on both Croton Dam Road approaches. Additionally, it is recommended to reduce the existing 150 second cycle length to 110 seconds. This cycle change would improve the delay experienced by vehicles due to the long cycle length. The recommended right turns along the Croton Dam Road approaches are depicted on JMC Figure CHP-1 "Conceptual Highway Improvement Plan" which is contained within Appendix B.

Based on the above, it is the professional opinion of JMC that the development of the site with the recommended improvements will not have a significant impact on traffic operations in the study area.

Respectfully submitted,
JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC

Richard J. Pearson, PE, PTOE
Senior Associate Principal

Marc Petroro, PE
Project Manager

APPENDIX A

TABLES

TABLE 1

PROPOSED DEVELOPMENT VOLUMES

DESCRIPTION	PEAK WEEKDAY AM HOUR			PEAK WEEKDAY PM HOUR			PEAK SATURDAY MIDDAY HOUR		
	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
a. Re-occupied Hospital Driveway Trip Volumes[(1)]	30	21	51	16	44	60	16	44	60
b. Proposed 188 Unit Apartments Primary Trip Volumes (ITE Code 220)[(2)(3)]	19	77	96	79	42	121	49	49	98
c. Proposed Shuttle Bus (Jitney) v. Passenger Vehicle Trip Credit[(4)] AM=31%, PM=31%, SAT=25%	6	24	30	24	13	37	12	12	24
d. Proposed Passenger Vehicle Primary Trips (Row d = Row b - Row c)	**13**	**53**	**66**	**55**	**29**	**84**	**37**	**37**	**74**
e. Proposed Shuttle Bus Primary Trips	3	3	6	3	3	6	3	3	6
f. Net Primary Trips (Row f = Row d + Row e -Row a)	**(14)**	**35**	**21**	**42**	**(12)**	**30**	**24**	**(4)**	**20**

Notes:

(1) Re-occupied driveway volumes are generated from 2006 existing turning movement counts included in the "Due Diligence Traffic Study" prepared by Schoor Depalma Engineers and Consultants. The peak weekday PM hour volumes were utilized for the peak Saturday midday hour volumes.

(2) Trip generation is based on ITE (Institute of Transportation Engineers) Trip Generation Manual, 9th Edition.

(3) Apartment (ITE Code 220) is defined by ITE as rental dwelling units located within the same building with at least three other dwelling units.

(4) Shuttle bus (Jitney) credits are based on U.S. Census Bureau data for means of transportation to work for Ossining utilizing public transportation and carpooling.

TABLE 2

INTERSECTION OPERATIONS-PEAK WEEKDAY AM HOUR

INTERSECTION	APPROACH	LANE GROUP	2016 EXISTING			2022 NO BUILD			2022 BUILD		
			V/C(1)	DELAY(2)	LOS(3)	V/C(1)	DELAY(2)	LOS(3)	V/C(1)	DELAY(2)	LOS(3)
1. Dale Avenue & Pine Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.24	12.5	B	0.27	13.2	B	0.27	13.2	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.06	8.1	A	0.06	8.2	A	0.06	8.2	A
2. Croton Dam Road & Hawkes Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.20	11.5	B	0.22	12.0	B	0.23	12.0	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.01	8.3	A	0.01	8.4	A	0.01	8.4	A
3. Croton Dam Road & Pershing Avenue /Cherry Hill Circle (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.01	9.3	A	0.01	9.4	A	0.01	9.5	A
	WESTBOUND	LEFT/THRU /RIGHT	0.04	10.7	B	0.06	10.8	B	0.05	11.5	B
	NORTHBOUND	LEFT/THRU /RIGHT	0.00	7.5	A	0.00	7.5	A	0.00	7.5	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.00	8.2	A	0.01	8.2	A	0.03	8.3	A
4. Croton Dam Road & Site Driveway (Unsignalized)	WESTBOUND	LEFT/RIGHT	-	-	A	0.03	9.8	A	0.09	10.2	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	-	-	A	0.02	7.7	A	0.01	7.6	A
5. Croton Dam Road & Grandview Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.01	9.8	A	0.01	10.0	B	0.01	10.1	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.00	8.7	A	0.00	8.8	A	0.00	8.8	A
6. Croton Dam Road & Narragansett Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.06	9.3	A	0.07	9.4	A	0.07	9.5	A
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.10	7.9	A	0.11	8.0	A	0.11	8.1	A
7. Croton Dam Road & Pheasant Ridge Road /Feeney Road (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.03	11.0	B	0.03	11.6	B	0.03	11.6	B
	WESTBOUND	LEFT/THRU /RIGHT	0.04	11.6	B	0.04	12.1	B	0.05	12.2	B
	NORTHBOUND	LEFT/THRU /RIGHT	-	-	A	-	-	A	-	-	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.00	8.0	A	0.00	8.1	A	0.00	8.1	A
8. Croton Dam Road & Kitchawan State Road (Unsignalized)	EASTBOUND	LEFT/RIGHT	0.18	11.7	B	0.23	12.7	B	0.23	12.7	B
	NORTHBOUND	LEFT/THRU	0.01	7.7	A	0.02	7.8	A	0.02	7.8	A
	SOUTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
9. Croton Dam Road & NY 9A (Signalized)	EASTBOUND	LEFT	0.83	68.6	E	0.84	69.9	E	0.84	70.3	E
		THRU	0.90	24.2	C	0.95	30.1	C	0.95	30.8	C
		RIGHT	0.11	8.8	A	0.13	8.8	A	0.12	8.9	A
		COMPOSITE	-	25.8	C	-	31.1	C	-	31.8	C
	WESTBOUND	LEFT	0.93	223.4	F	0.96	208.2	F	1.00	186.7	F
		THRU/RIGHT	0.47	17.3	B	0.50	17.9	B	0.50	17.9	B
		COMPOSITE	-	18.4	B	-	19.3	B	-	19.9	B
	NORTHBOUND	LEFT/THRU /RIGHT	0.79	61.5	E	0.98	98.3	F	1.01	108.7	F
	SOUTHBOUND	LEFT/THRU /RIGHT	0.96	91.6	F	1.09	130.4	F	1.09	130.3	F
	INTERSECTION	COMPOSITE	-	31.9	C	-	41.4	D	-	42.8	D
9a. Croton Dam Road & NY 9A (Signalized w/ Improvements)	EASTBOUND	LEFT							0.81	55.8	E
		THRU							0.96	27.6	C
		RIGHT							0.12	7.3	A
		COMPOSITE							-	28.1	C
	WESTBOUND	LEFT		N/A			N/A		0.60	76.4	E
		THRU/RIGHT							0.50	14.4	B
		COMPOSITE							-	15.1	B
	NORTHBOUND	LEFT/THRU							0.73	50.5	D
		RIGHT							0.35	40.5	D
		COMPOSITE							-	47.6	D
	SOUTHBOUND	LEFT/THRU							0.54	42.7	D
		RIGHT							0.84	63.0	E
		COMPOSITE							-	54.0	D
	INTERSECTION	COMPOSITE							-	28.6	C

Notes:

(1) V/C represents volume/capacity ratio

(2) Delay is average seconds delay per vehicle

(3) LOS represents level of service

TABLE 3

INTERSECTION OPERATIONS-PEAK WEEKDAY PM HOUR

INTERSECTION	APPROACH	LANE GROUP	2016 EXISTING			2022 NO BUILD			2022 BUILD		
			V/C(1)	DELAY(2)	LOS(3)	V/C(1)	DELAY(2)	LOS(3)	V/C(1)	DELAY(2)	LOS(3)
1. Dale Avenue & Pine Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.20	11.3	B	0.22	11.8	B	0.22	11.8	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.03	7.9	A	0.03	8.0	A	0.03	8.0	A
2. Croton Dam Road & Hawkes Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.18	11.0	B	0.21	11.5	B	0.21	11.5	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	-	-	A	-	-	A	-	-	A
3. Croton Dam Road & Pershing Avenue /Cherry Hill Circle (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.01	9.2	A	0.01	9.3	A	0.01	9.4	A
	WESTBOUND	LEFT/THRU /RIGHT	0.03	10.3	B	0.04	10.3	B	0.04	10.5	B
	NORTHBOUND	LEFT/THRU /RIGHT	0.00	7.4	A	0.00	7.5	A	0.00	7.5	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.01	7.5	A	0.01	7.5	A	0.02	7.5	A
4. Croton Dam Road & Site Driveway (Unsignalized)	WESTBOUND	LEFT/RIGHT	-	-	A	0.06	9.4	A	0.05	10.0	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	-	-	A	0.00	7.5	A	0.04	7.6	A
5. Croton Dam Road & Grandview Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.01	9.7	A	0.01	10.0	B	0.01	10.1	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.00	7.4	A	0.00	7.5	A	0.00	7.5	A
6. Croton Dam Road & Narragansett Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.12	9.3	A	0.13	9.6	A	0.13	9.5	A
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.06	7.6	A	0.06	7.7	A	0.06	7.6	A
7. Croton Dam Road & Pheasant Ridge Road /Feeney Road (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.02	11.4	B	0.02	11.9	B	0.02	12.3	B
	WESTBOUND	LEFT/THRU /RIGHT	0.04	11.1	B	0.04	11.6	B	0.04	11.7	B
	NORTHBOUND	LEFT/THRU /RIGHT	0.00	7.6	A	0.00	7.7	A	0.00	7.8	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.01	7.9	A	0.01	8.0	A	0.01	8.0	A
8. Croton Dam Road & Kitchawan State Road (Unsignalized)	EASTBOUND	LEFT/RIGHT	0.11	11.7	B	0.14	12.6	B	0.14	12.9	B
	NORTHBOUND	LEFT/THRU	0.03	7.8	A	0.03	7.9	A	0.03	8.0	A
	SOUTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
9. Croton Dam Road & NY 9A (Signalized)	EASTBOUND	LEFT	0.86	82.6	F	0.86	85.1	F	0.86	85.1	F
		THRU	0.44	10.7	B	0.47	11.0	B	0.49	12.6	B
		RIGHT	0.13	8.1	A	0.14	8.2	A	0.15	9.4	A
		COMPOSITE	-	18.1	B	-	18.5	B	-	19.9	B
	WESTBOUND	LEFT	0.84	143.0	F	0.84	139.5	F	0.76	89.0	F
		THRU/RIGHT	1.00	57.3	E	1.08	80.2	F	1.08	80.2	F
		COMPOSITE	-	57.7	E	-	80.6	F	-	80.4	F
	NORTHBOUND	LEFT/THRU /RIGHT	0.89	88.5	F	1.29	224.0	F	1.12	155.6	F
	SOUTHBOUND	LEFT/THRU /RIGHT	0.91	87.7	F	0.97	102.3	F	0.99	108.5	F
	INTERSECTION	COMPOSITE	-	47.7	D	-	69.6	E	-	66.0	E
9a. Croton Dam Road & NY 9A (Signalized w/ Improvements)	EASTBOUND	LEFT							0.86	82.9	F
		THRU							0.47	10.0	A
		RIGHT							0.15	7.5	A
		COMPOSITE							-	17.4	B
	WESTBOUND	LEFT		N/A			N/A		0.77	81.5	F
		THRU/RIGHT							1.05	65.3	F
		COMPOSITE							-	65.6	E
	NORTHBOUND	LEFT/THRU							0.76	66.0	E
		RIGHT							0.26	50.1	D
		COMPOSITE							-	62.5	E
	SOUTHBOUND	LEFT/THRU							0.48	52.5	D
		RIGHT							0.84	78.2	E
		COMPOSITE							-	67.4	E
	INTERSECTION	COMPOSITE							-	49.0	D

Notes:

(1) V/C represents volume/capacity ratio

(2) Delay is average seconds delay per vehicle

(3) LOS represents level of service

TABLE 4

INTERSECTION OPERATIONS-PEAK SATURDAY MIDDAY HOUR

INTERSECTION	APPROACH	LANE GROUP	2016 EXISTING			2022 NO BUILD			2022 BUILD		
			V/C(1)	DELAY(2)	LOS(3)	V/C(1)	DELAY(2)	LOS(3)	V/C(1)	DELAY(2)	LOS(3)
1. Dale Avenue & Pine Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.15	11.0	B	0.17	11.4	B	0.17	11.4	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.03	7.9	A	0.04	8.0	A	0.04	8.0	A
2. Croton Dam Road & Hawkes Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.16	10.5	B	0.19	10.8	B	0.19	10.8	B
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	-	-	A	-	-	A	-	-	A
3. Croton Dam Road & Pershing Avenue /Cherry Hill Circle (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.01	9.1	A	0.02	9.2	A	0.02	9.3	A
	WESTBOUND	LEFT/THRU /RIGHT	0.01	10.3	B	0.02	9.9	A	0.02	10.2	B
	NORTHBOUND	LEFT/THRU /RIGHT	0.00	8.2	A	0.00	8.2	A	0.00	8.2	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.00	7.5	A	0.01	7.5	A	0.02	7.5	A
4. Croton Dam Road & Site Driveway (Unsignalized)	WESTBOUND	LEFT/RIGHT	-	-	A	0.05	9.2	A	0.05	9.6	A
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	-	-	A	0.00	7.4	A	0.02	7.5	A
5. Croton Dam Road & Grandview Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.02	9.3	A	0.02	9.5	A	0.02	9.6	A
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.00	7.4	A	0.00	7.5	A	0.00	7.5	A
6. Croton Dam Road & Narragansett Avenue (Unsignalized)	WESTBOUND	LEFT/RIGHT	0.10	9.1	A	0.11	9.3	A	0.11	9.3	A
	NORTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND	LEFT/THRU	0.06	7.6	A	0.06	7.7	A	0.06	7.6	A
7. Croton Dam Road & Pheasant Ridge Road /Feeney Road (Unsignalized)	EASTBOUND	LEFT/THRU /RIGHT	0.02	11.4	B	0.02	11.9	B	0.02	12.1	B
	WESTBOUND	LEFT/THRU /RIGHT	0.01	9.6	A	0.02	9.9	A	0.02	9.8	A
	NORTHBOUND	LEFT/THRU /RIGHT	0.00	7.9	A	0.00	8.0	A	0.00	8.0	A
	SOUTHBOUND	LEFT/THRU /RIGHT	0.01	7.6	A	0.01	7.7	A	0.01	7.7	A
8. Croton Dam Road & Kitchawan State Road (Unsignalized)	EASTBOUND	LEFT/RIGHT	0.12	11.3	B	0.16	12.1	B	0.16	12.2	B
	NORTHBOUND	LEFT/THRU	0.02	7.7	A	0.02	7.8	A	0.02	7.8	A
	SOUTHBOUND	THRU/RIGHT	-	-	-	-	-	-	-	-	-
9. Croton Dam Road & NY 9A (Signalized)	EASTBOUND	LEFT	0.79	54.9	D	0.81	59.1	E	0.81	59.5	E
		THRU	0.43	11.8	B	0.47	13.4	B	0.47	14.1	B
		RIGHT	0.14	9.5	A	0.15	10.7	B	0.16	11.3	B
		COMPOSITE	-	15.9	B	-	17.7	B	-	18.3	B
	WESTBOUND	LEFT	0.78	110.3	F	0.79	114.2	F	0.79	81.6	F
		THRU/RIGHT	0.77	23.3	C	0.84	29.7	C	0.84	29.3	C
		COMPOSITE	-	23.9	C	-	30.3	C	-	30.4	C
	NORTHBOUND	LEFT/THRU /RIGHT	0.65	40.3	D	0.86	60.5	E	0.79	52.4	D
	SOUTHBOUND	LEFT/THRU /RIGHT	0.78	46.7	D	0.83	54.4	D	0.84	56.0	E
	INTERSECTION	COMPOSITE	-	24.2	C	-	30.4	C	-	30.1	C
9a. Croton Dam Road & NY 9A (Signalized w/ Improvements)	EASTBOUND	LEFT							0.80	53.3	D
		THRU							0.45	10.8	B
		RIGHT							0.15	8.6	A
		COMPOSITE							-	14.8	B
	WESTBOUND	LEFT		N/A			N/A		0.58	54.2	D
		THRU/RIGHT							0.79	21.4	C
		COMPOSITE							-	22.0	C
	NORTHBOUND	LEFT/THRU							0.62	38.9	D
		RIGHT							0.28	34.7	C
		COMPOSITE							-	37.7	D
	SOUTHBOUND	LEFT/THRU							0.51	37.0	D
		RIGHT							0.62	38.7	D
		COMPOSITE							-	37.9	D
	INTERSECTION	COMPOSITE							-	22.1	C

Notes:

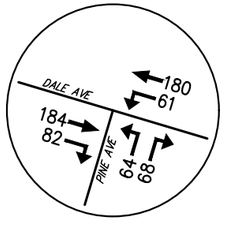
(1) V/C represents volume/capacity ratio

(2) Delay is average seconds delay per vehicle

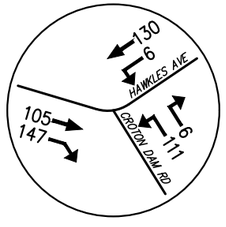
(3) LOS represents level of service

APPENDIX B

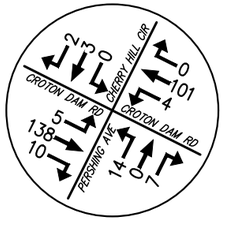
FIGURES



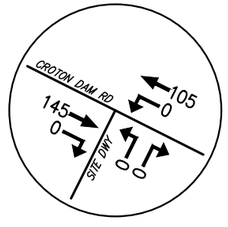
1 DALE AVENUE & PINE AVENUE



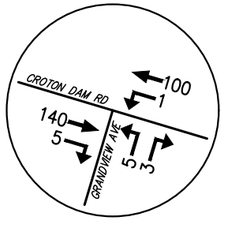
2 CROTON DAM ROAD & HAWKES AVENUE



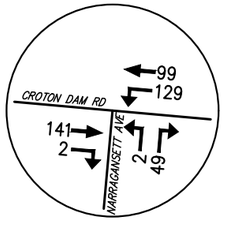
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



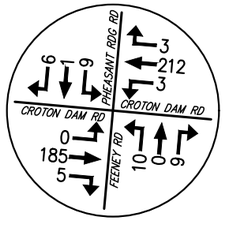
4 CROTON DAM ROAD & SITE DRIVEWAY



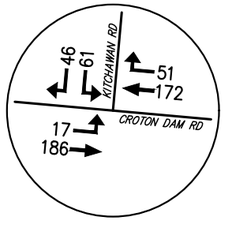
5 CROTON DAM ROAD & GRANDVIEW AVENUE



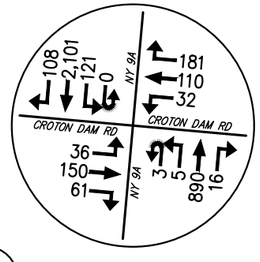
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

2016 EXISTING VOLUMES

PEAK WEEKDAY AM HOUR (7:15-8:15)

DATE: 12/2016

JMC PROJECT: 15064

SCALE: 1" = 500'

FIGURE: 01

JMC
120 BEDFORD RD
ARMONK
NY 10504
(914) 273-5225
fax 273-2102
JMCPLLC.COM

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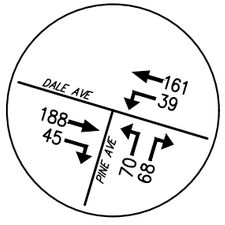
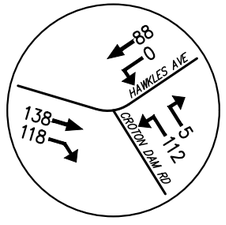
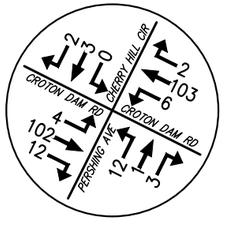
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab



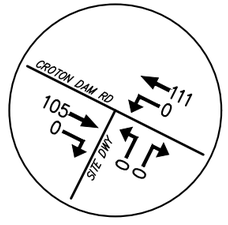
1 DALE AVENUE & PINE AVENUE



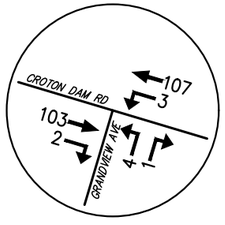
2 CROTON DAM ROAD & HAWKES AVENUE



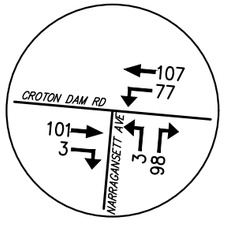
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



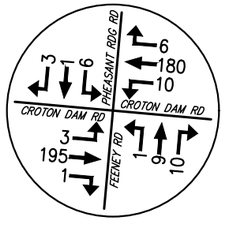
4 CROTON DAM ROAD & SITE DRIVEWAY



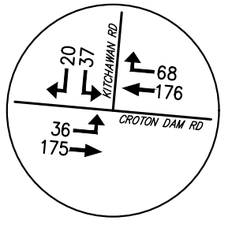
5 CROTON DAM ROAD & GRANDVIEW AVENUE



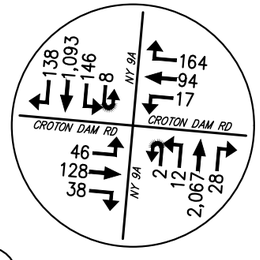
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

2016 EXISTING VOLUMES

PEAK WEEKDAY PM HOUR 4:30-5:30

DATE: 12/2016

JMC PROJECT: 15064

SCALE: 1" = 500'

FIGURE: 02

JMC
120 BEDFORD RD
ARMONK
NY 10504
(914) 273-5225
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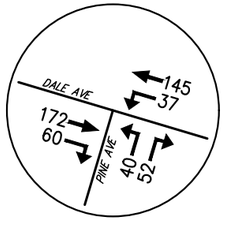
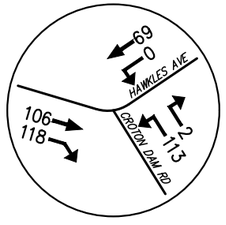
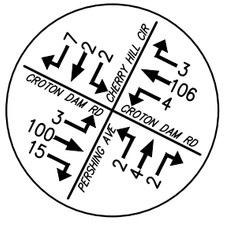
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab



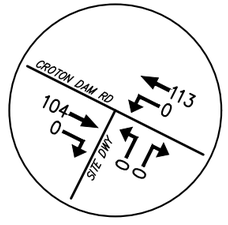
1 DALE AVENUE & PINE AVENUE



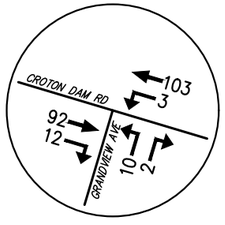
2 CROTON DAM ROAD & HAWKES AVENUE



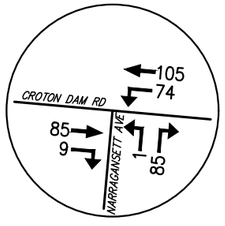
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



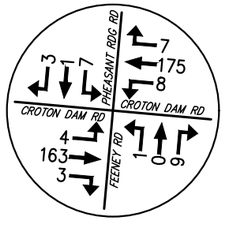
4 CROTON DAM ROAD & SITE DRIVEWAY



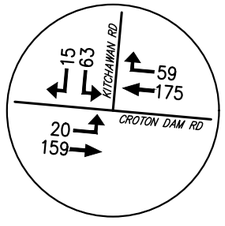
5 CROTON DAM ROAD & GRANDVIEW AVENUE



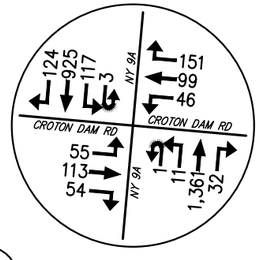
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

2016 EXISTING VOLUMES

PEAK SATURDAY MIDDAY HOUR (10:30-11:30)

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 03

120 BEDFORD RD
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NY 10504

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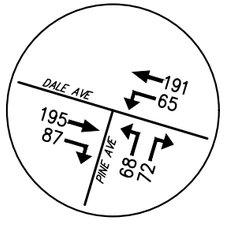
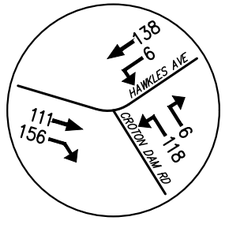
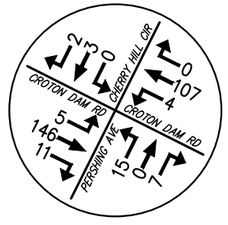
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab



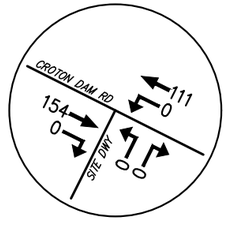
1 DALE AVENUE & PINE AVENUE



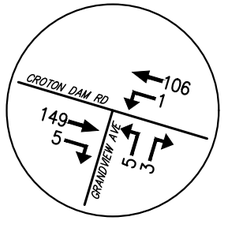
2 CROTON DAM ROAD & HAWKES AVENUE



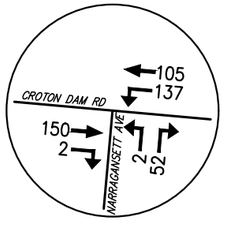
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



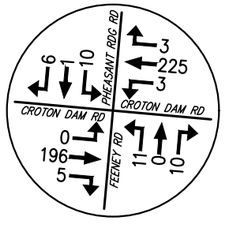
4 CROTON DAM ROAD & SITE DRIVEWAY



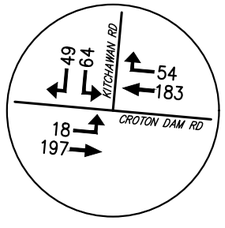
5 CROTON DAM ROAD & GRANDVIEW AVENUE



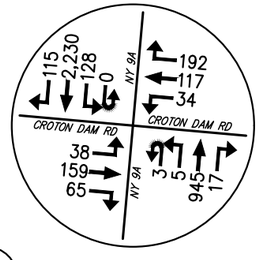
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

2022 GENERAL GROWTH VOLUMES

PEAK WEEKDAY AM HOUR

DATE: 12/2016

JMC PROJECT: 15064

SCALE: 1" = 500'

FIGURE: 04

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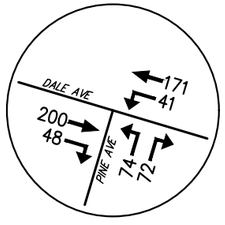
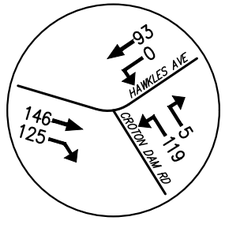
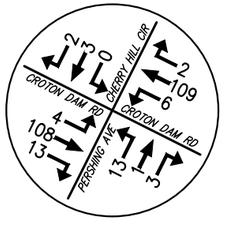
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab



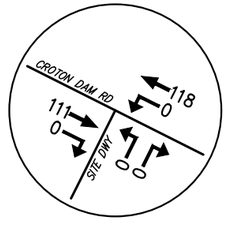
1 DALE AVENUE & PINE AVENUE



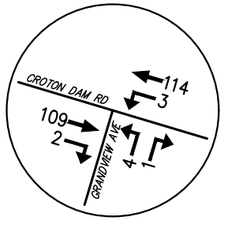
2 CROTON DAM ROAD & HAWKES AVENUE



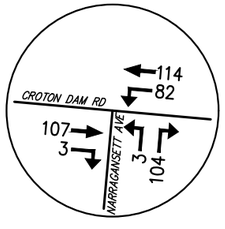
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



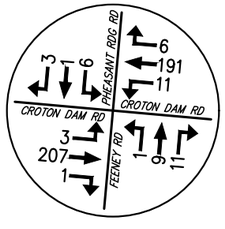
4 CROTON DAM ROAD & SITE DRIVEWAY



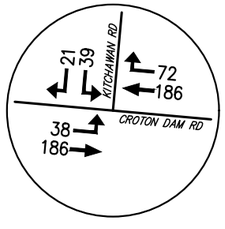
5 CROTON DAM ROAD & GRANDVIEW AVENUE



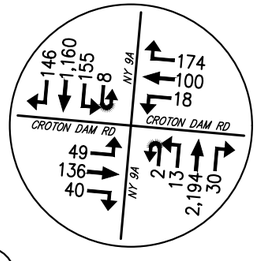
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

2022 GENERAL GROWTH VOLUMES

PEAK WEEKDAY PM HOUR

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 05

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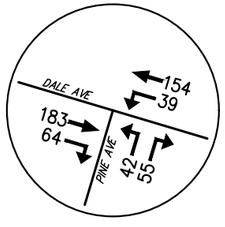
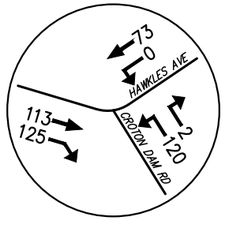
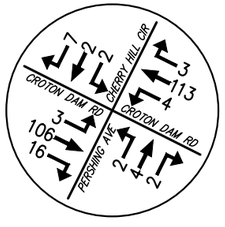
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab



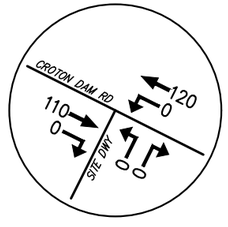
1 DALE AVENUE & PINE AVENUE



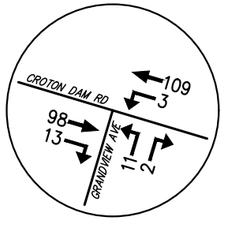
2 CROTON DAM ROAD & HAWKES AVENUE



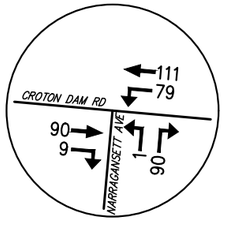
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



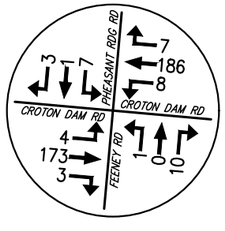
4 CROTON DAM ROAD & SITE DRIVEWAY



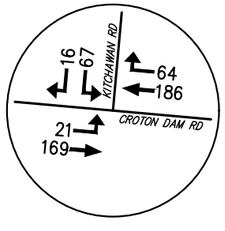
5 CROTON DAM ROAD & GRANDVIEW AVENUE



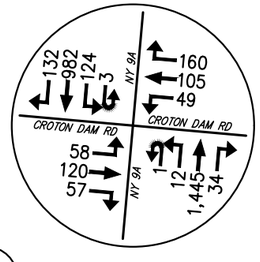
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

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TOWN OF OSSINING, NEW YORK

RIVER KNOLL

40 CROTON DAM ROAD

2022 GENERAL GROWTH VOLUMES

PEAK SATURDAY MIDDAY HOUR

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 06

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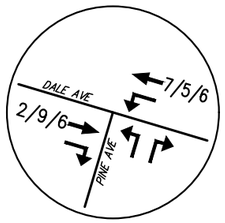
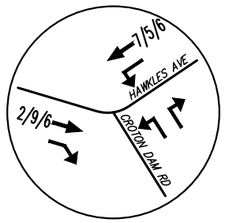
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab

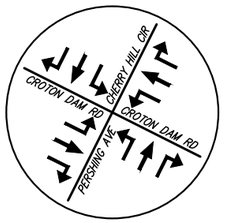
LEGEND: PEAK WEEKDAY AM HOUR / PEAK WEEKDAY PM HOUR/ PEAK SATURDAY MIDDAY HOUR



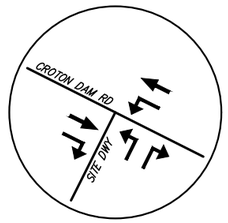
1 DALE AVENUE & PINE AVENUE



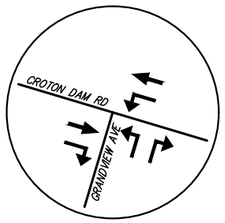
2 CROTON DAM ROAD & HAWKES AVENUE



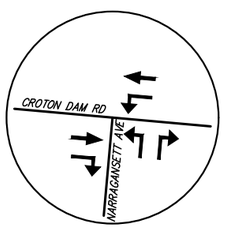
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



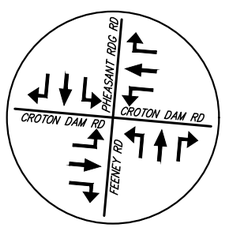
4 CROTON DAM ROAD & SITE DRIVEWAY



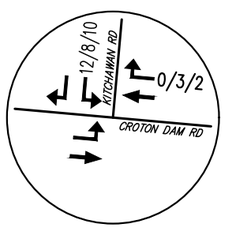
5 CROTON DAM ROAD & GRANDVIEW AVENUE



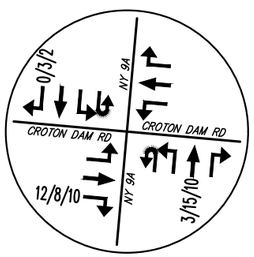
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

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TOWN OF OSSINING, NEW YORK

RIVER KNOLL

40 CROTON DAM ROAD

OTHER DEVELOPMENT VOLUMES

PARTH KNOLLS LLC

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 0

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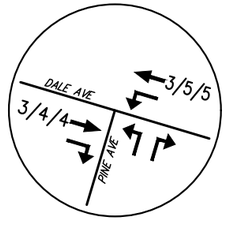
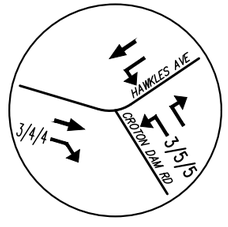
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab

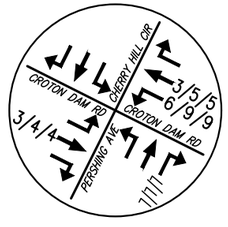
LEGEND: PEAK WEEKDAY AM HOUR / PEAK WEEKDAY PM HOUR/ PEAK SATURDAY MIDDAY HOUR



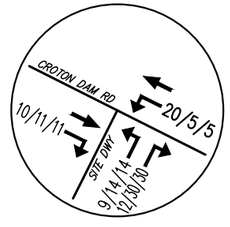
1 DALE AVENUE & PINE AVENUE



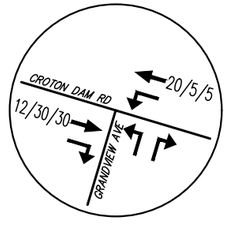
2 CROTON DAM ROAD & HAWKES AVENUE



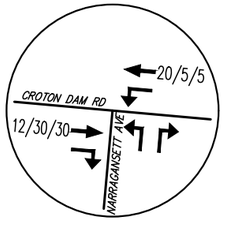
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



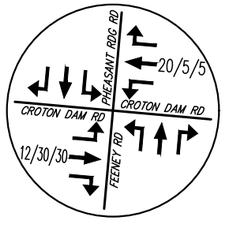
4 CROTON DAM ROAD & SITE DRIVEWAY



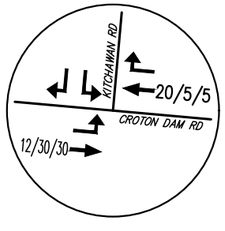
5 CROTON DAM ROAD & GRANDVIEW AVENUE



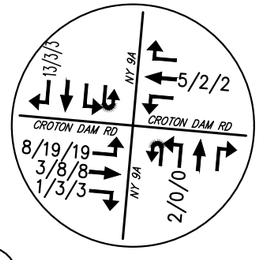
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

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TOWN OF OSSINING, NEW YORK

RIVER KNOLL

40 CROTON DAM ROAD

JMC PROJECT: 15064

SCALE: 1" = 500'

RE-OCCUPIED VOLUMES

DATE: 12/2016

FIGURE: 08

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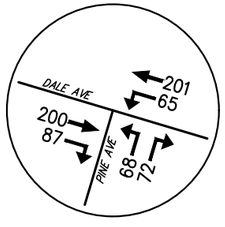
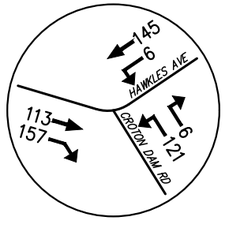
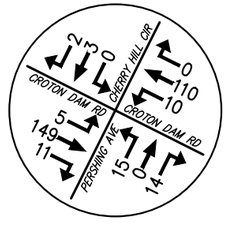
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab



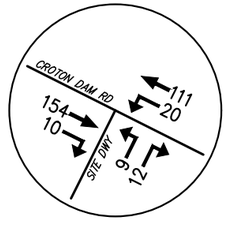
1 DALE AVENUE & PINE AVENUE



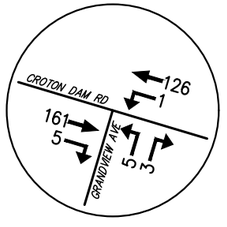
2 CROTON DAM ROAD & HAWKES AVENUE



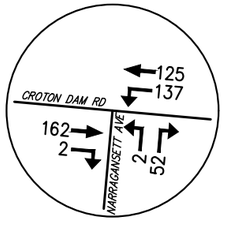
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



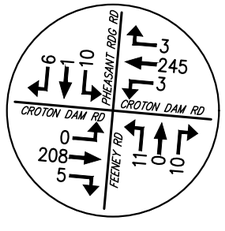
4 CROTON DAM ROAD & SITE DRIVEWAY



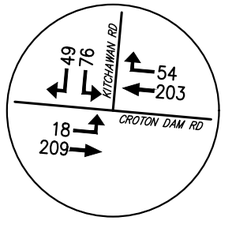
5 CROTON DAM ROAD & GRANDVIEW AVENUE



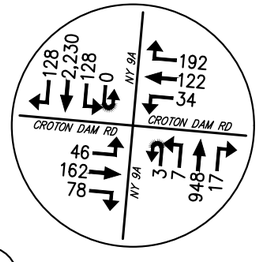
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

2022 NO □UILD VOLUMES

PEAK WEEKDAY AM HOUR

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 0□

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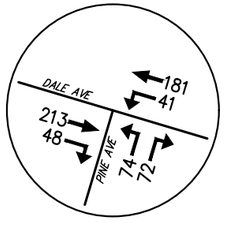
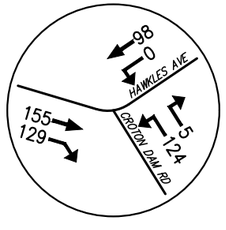
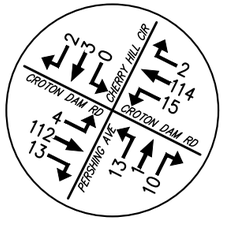
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab



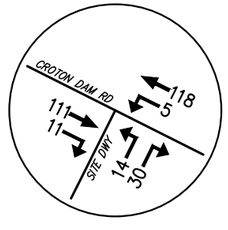
1 DALE AVENUE & PINE AVENUE



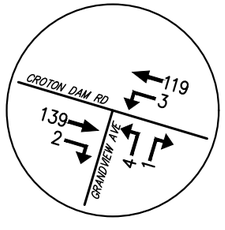
2 CROTON DAM ROAD & HAWKES AVENUE



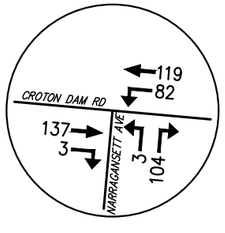
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



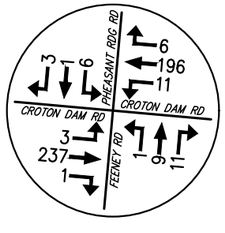
4 CROTON DAM ROAD & SITE DRIVEWAY



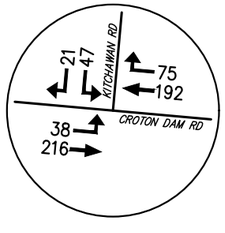
5 CROTON DAM ROAD & GRANDVIEW AVENUE



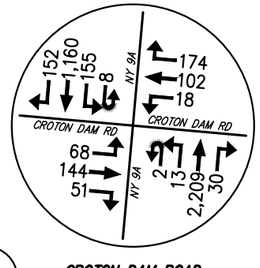
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

2022 NO □UILD VOLUMES

PEAK WEEKDAY PM HOUR

DATE: 12/2016

JMC PROJECT: 15064

SCALE: 1" = 500'

FIGURE: 10

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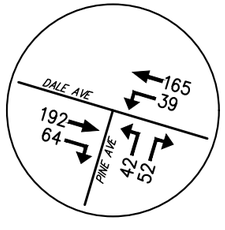
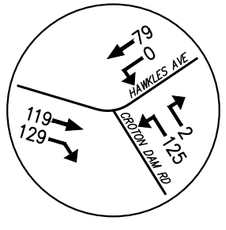
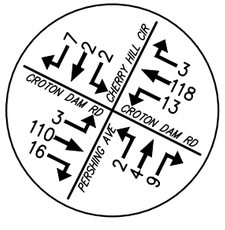
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab



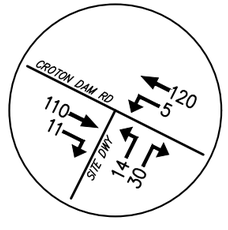
1 DALE AVENUE & PINE AVENUE



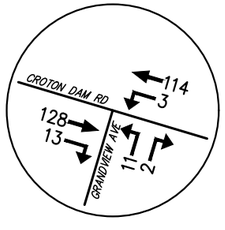
2 CROTON DAM ROAD & HAWKES AVENUE



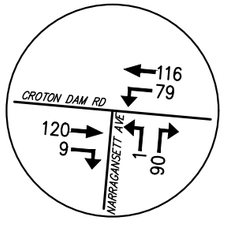
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



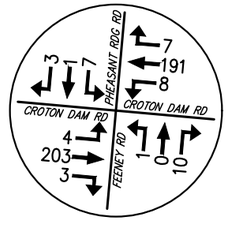
4 CROTON DAM ROAD & SITE DRIVEWAY



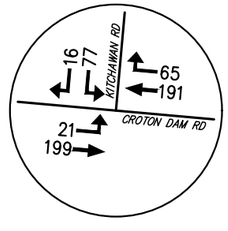
5 CROTON DAM ROAD & GRANDVIEW AVENUE



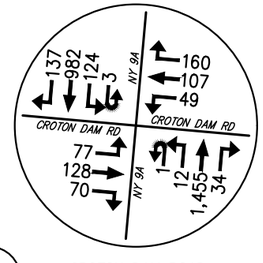
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

2022 NO □UILD VOLUMES

PEAK SATURDAY MIDDAY HOUR

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 11

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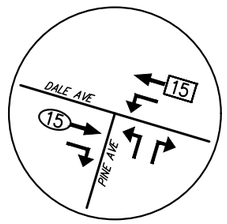
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab

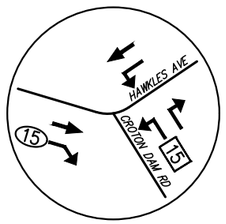
LEGEND

% ENTERING

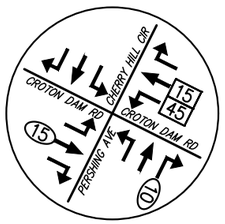
% EXITING



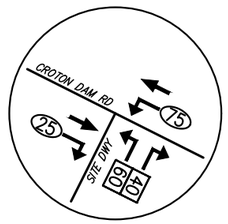
1 DALE AVENUE & PINE AVENUE



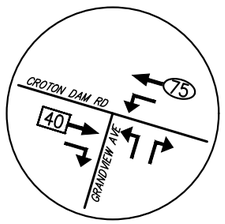
2 CROTON DAM ROAD & HAWKES AVENUE



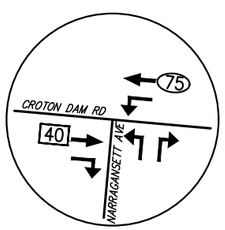
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



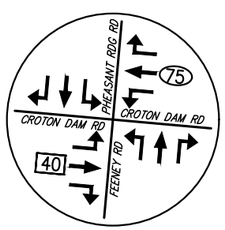
4 CROTON DAM ROAD & SITE DRIVEWAY



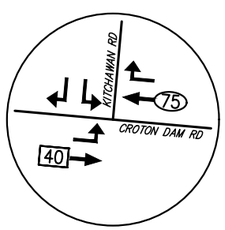
5 CROTON DAM ROAD & GRANDVIEW AVENUE



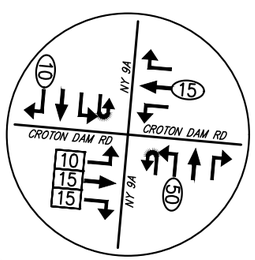
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

PASSENGER VEHICLE PRIMARY TRIP DISTRIBUTIONS

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 12

120 BEDFORD RD
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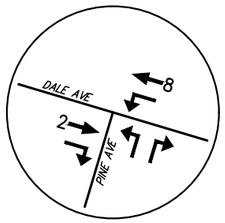
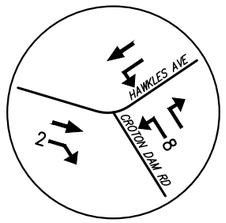
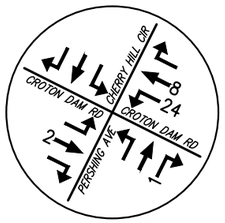


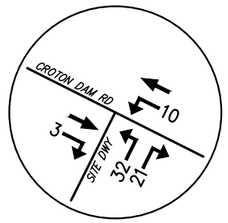
1 DALE AVENUE & PINE AVENUE



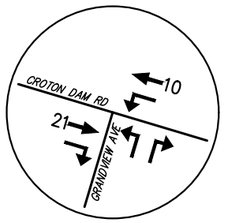
2 CROTON DAM ROAD & HAWKES AVENUE



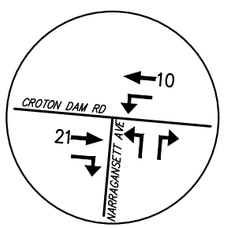
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



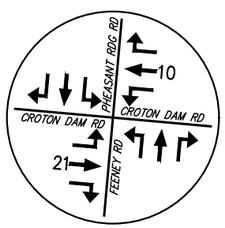
4 CROTON DAM ROAD & SITE DRIVEWAY



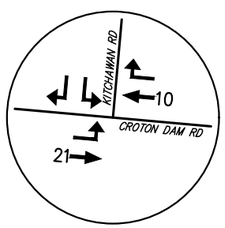
5 CROTON DAM ROAD & GRANDVIEW AVENUE



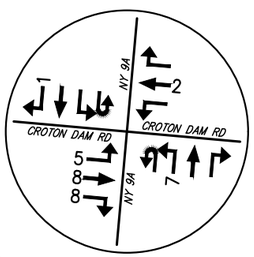
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

PASSENGER VEHICLE PRIMARY TRIP VOLUMES

PEAK WEEKDAY AM HOUR

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 13

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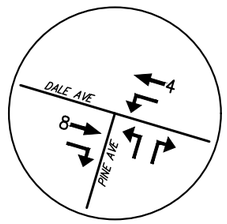
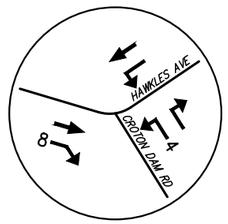
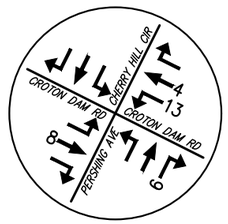


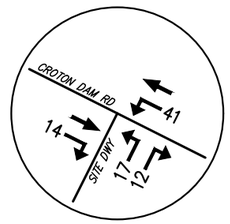
1 DALE AVENUE & PINE AVENUE



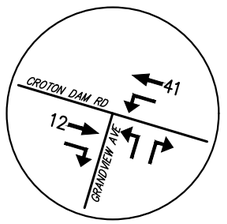
2 CROTON DAM ROAD & HAWKES AVENUE



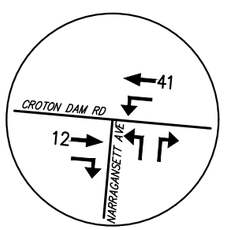
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



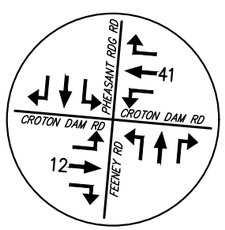
4 CROTON DAM ROAD & SITE DRIVEWAY



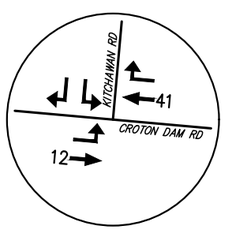
5 CROTON DAM ROAD & GRANDVIEW AVENUE



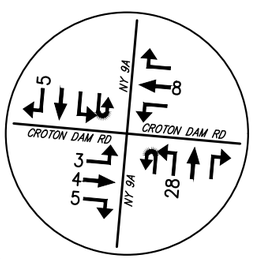
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

PASSENGER VEHICLE PRIMARY TRIP VOLUMES

PEAK WEEKDAY PM HOUR

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 14

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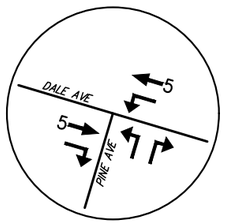
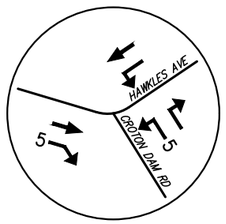
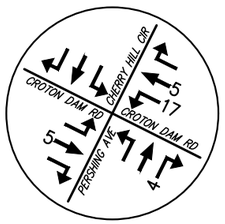


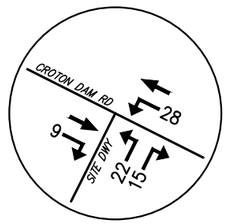
1 DALE AVENUE & PINE AVENUE



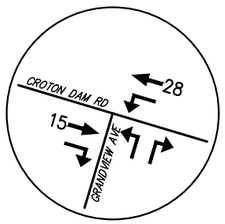
2 CROTON DAM ROAD & HAWKES AVENUE



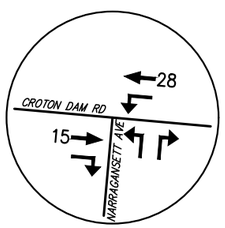
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



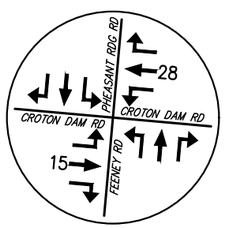
4 CROTON DAM ROAD & SITE DRIVEWAY



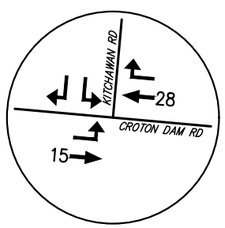
5 CROTON DAM ROAD & GRANDVIEW AVENUE



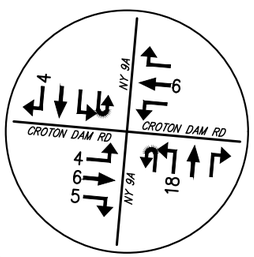
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

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RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

PASSENGER VEHICLE PRIMARY TRIP VOLUMES

PEAK SATURDAY MIDDAY HOUR

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 15

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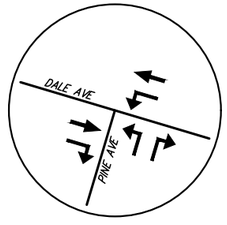
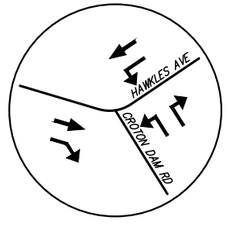
LEGEND

% ENTERING

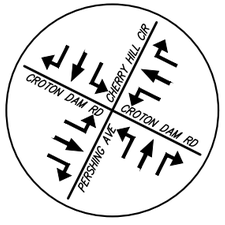
% EXITING



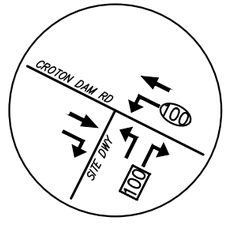
1 DALE AVENUE & PINE AVENUE



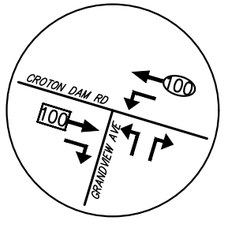
2 CROTON DAM ROAD & HAWKES AVENUE



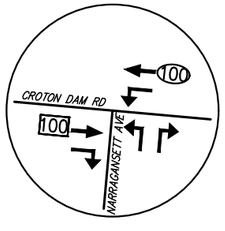
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



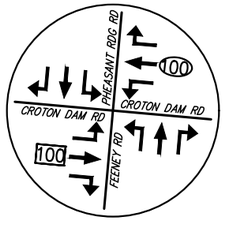
4 CROTON DAM ROAD & SITE DRIVEWAY



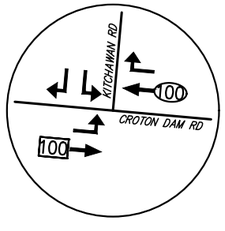
5 CROTON DAM ROAD & GRANDVIEW AVENUE



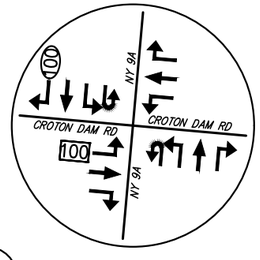
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

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TOWN OF OSSINING, NEW YORK

RIVER KNOLL

40 CROTON DAM ROAD

SHUTTLE □US PRIMARY TRIP DISTRI□UTIONS

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 16

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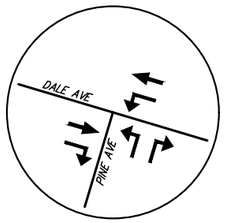
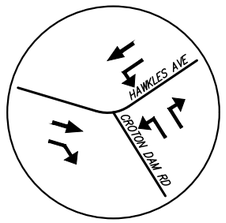
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab

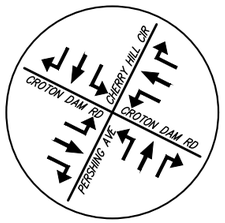
LEGEND: PEAK WEEKDAY AM HOUR / PEAK WEEKDAY PM HOUR/ PEAK SATURDAY MIDDAY HOUR



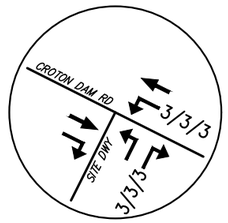
1 DALE AVENUE & PINE AVENUE



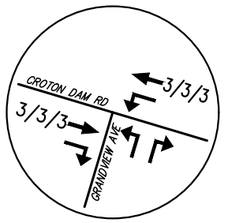
2 CROTON DAM ROAD & HAWKES AVENUE



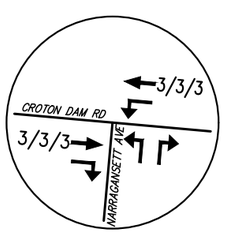
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



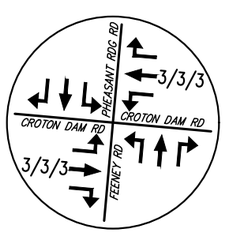
4 CROTON DAM ROAD & SITE DRIVEWAY



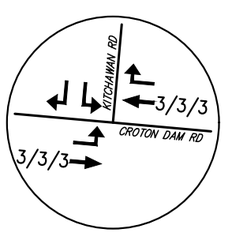
5 CROTON DAM ROAD & GRANDVIEW AVENUE



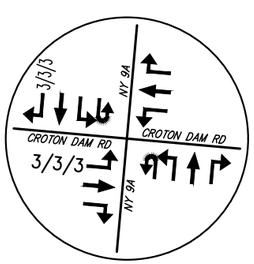
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

SHUTTLE □US PRIMARY TRIP VOLUMES

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 1□

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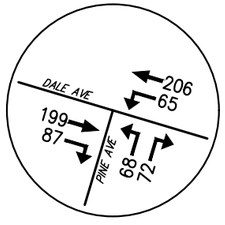
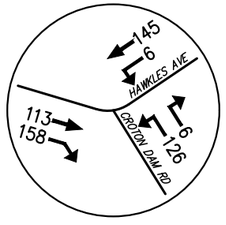
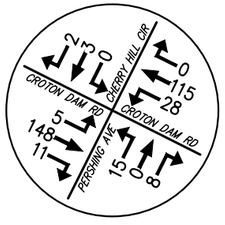
15064- TRAFFIC-FIG.dwg; UPDATED-11X17.tab



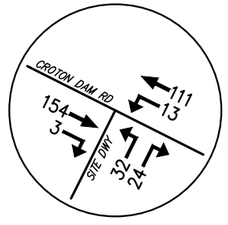
1 DALE AVENUE & PINE AVENUE



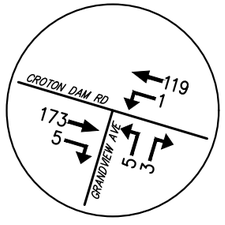
2 CROTON DAM ROAD & HAWKES AVENUE



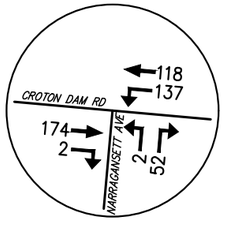
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



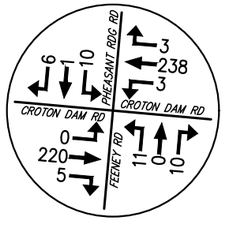
4 CROTON DAM ROAD & SITE DRIVEWAY



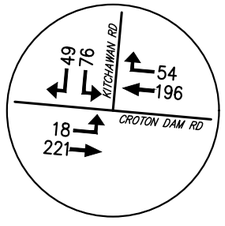
5 CROTON DAM ROAD & GRANDVIEW AVENUE



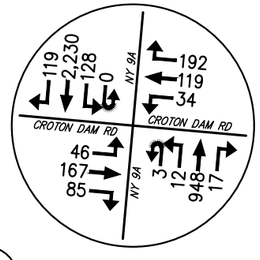
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

2022 BUILD VOLUMES

PEAK WEEKDAY AM HOUR

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 18

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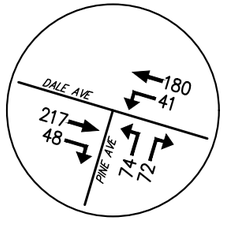
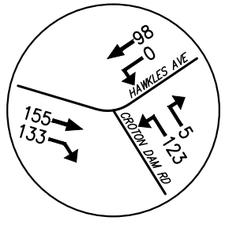
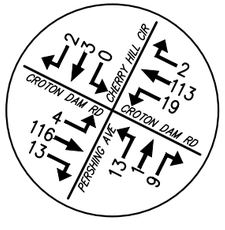
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab



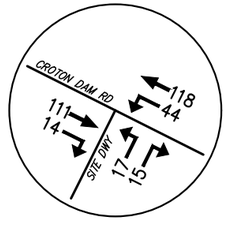
1 DALE AVENUE & PINE AVENUE



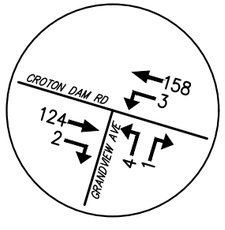
2 CROTON DAM ROAD & HAWKES AVENUE



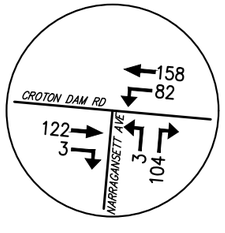
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



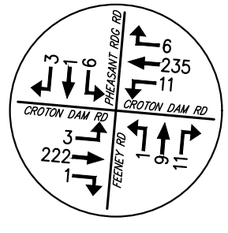
4 CROTON DAM ROAD & SITE DRIVEWAY



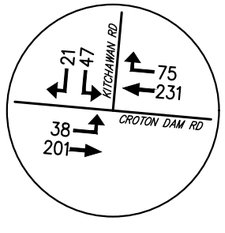
5 CROTON DAM ROAD & GRANDVIEW AVENUE



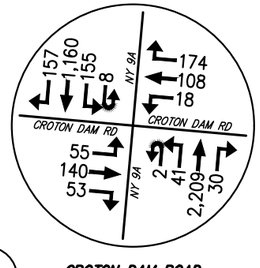
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

2022 BUILD VOLUMES

PEAK WEEKDAY PM HOUR

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 1

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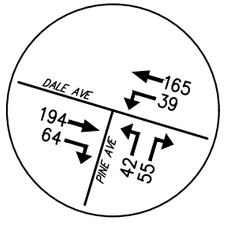
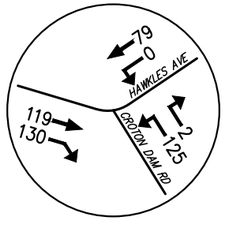
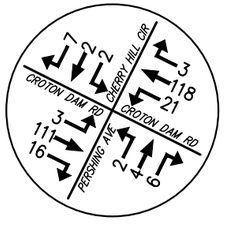
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab



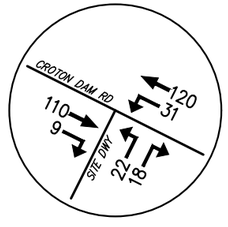
1 DALE AVENUE & PINE AVENUE



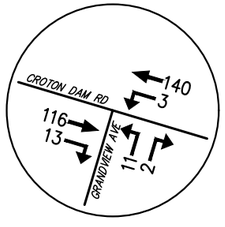
2 CROTON DAM ROAD & HAWKES AVENUE



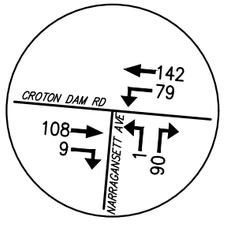
3 CROTON DAM ROAD & PERSHING AVENUE /CHERRY HILL CIRCLE



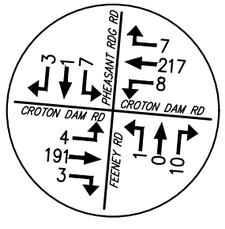
4 CROTON DAM ROAD & SITE DRIVEWAY



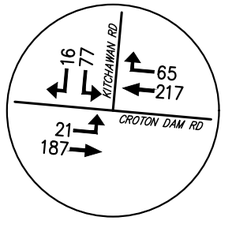
5 CROTON DAM ROAD & GRANDVIEW AVENUE



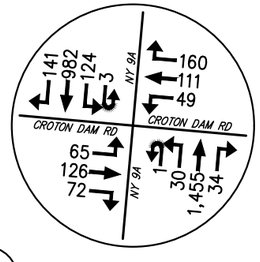
6 CROTON DAM ROAD & NARRAGANSETT AVENUE



7 CROTON DAM ROAD & PHEASANT RIDGE ROAD /FEENEY ROAD



8 CROTON DAM ROAD & KITCHAWAN STATE ROAD



9 CROTON DAM ROAD & NY 9A

RIVER KNOLL

40 CROTON DAM ROAD

TOWN OF OSSINING, NEW YORK

2022 □UILD VOLUMES

PEAK SATURDAY MIDDAY HOUR

JMC PROJECT: 15064

DATE: 12/2016

SCALE: 1" = 500'

FIGURE: 20

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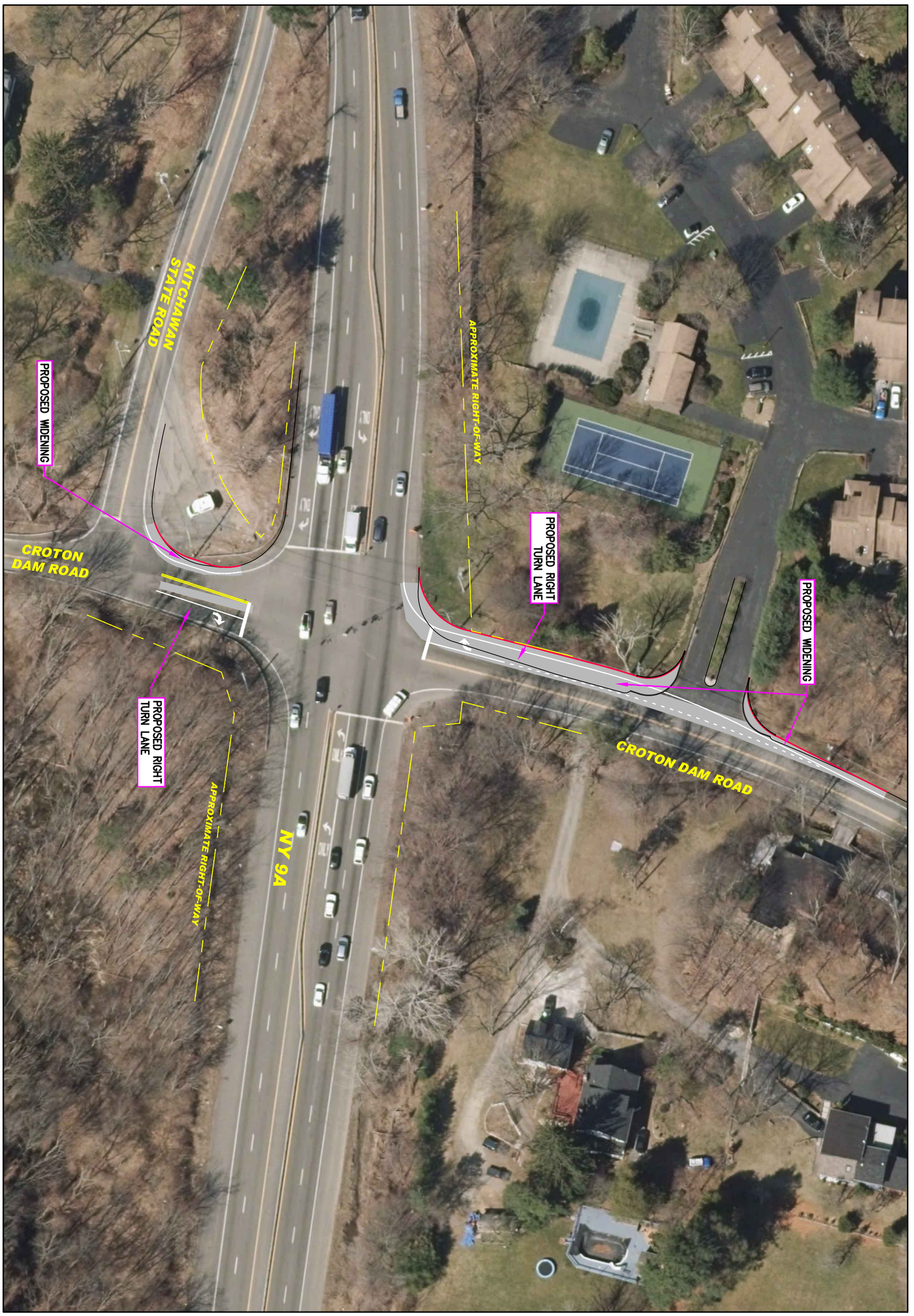
15064-TRAFFIC-FIG.dwg; UPDATED-11X17.tab



RIVER KNOLL

40 CROTON DAM ROAD — TOWN OF OSSINING, NEW YORK

CONCEPTUAL HIGHWAY IMPROVEMENT PLAN

REVISED: 12/2016
DATE: 08/30/2016

JMC PROJECT: 15064

FIGURE: CHP-1 — SCALE: 1" = 60'

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15064-CHP.dwg; FIGURE.tab

APPENDIX C

TURNING MOVEMENT COUNTS

DATE:	Weekday: 09/29/2016		JOB NO:	15064
PERIOD:	Weekday: 6-10AM & 3-7PM		NAME:	Traffic Databank
LOCATION:	Dale Avenue & Pine Avenue		INT #:	1

ENTER COUNT DATA ON THIS PAGE

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 6:15 AM	TOTAL		16	2	3		3	3	9					36						
	TRUCK																			
6:15 - 6:30 AM	TOTAL		16	4	2		6	10	23					61						
	TRUCK																			
6:30 - 6:45 AM	TOTAL		35	6	6		9	8	25					89		2			2	
	TRUCK		1																	
6:45 - 7:00 AM	TOTAL		35	10	6		5	16	34					106	3	3	1		7	
	TRUCK																			
7:00 - 7:15 AM	TOTAL		48	10	13		14	25	37					147		3			3	
	TRUCK			1				3	2											
7:15 - 7:30 AM	TOTAL		52	13	17		22	15	43					162						
	TRUCK		3	2	3		6		1											
7:30 - 7:45 AM	TOTAL		49	13	25		15	22	59					183						
	TRUCK		2		2				2											
7:45 - 8:00 AM	TOTAL		45	15	17		11	20	51					159		1			1	
	TRUCK		1	1				1	2											
8:00 - 8:15 AM	TOTAL		34	20	9		16	25	31					135						
	TRUCK		2	1																
8:15 - 8:30 AM	TOTAL		41	13	10		11	21	28					124	4	2	1		7	
	TRUCK		2																	
8:30 - 8:45 AM	TOTAL		35	10	8		13	29	35					130	5	2	4		11	
	TRUCK		5	1	1		2	1												
8:45 - 9:00 AM	TOTAL		36	12	12		14	29	24					127		5	7		12	
	TRUCK		2	1	1		1	1												
9:00 - 9:15 AM	TOTAL		33	7	11		15	19	30					115						
	TRUCK		1						2											
9:15 - 9:30 AM	TOTAL		26	10	6		10	11	25					88	1	1			2	
	TRUCK																			
9:30 - 9:45 AM	TOTAL		24	3	7		5	6	28					73	1	1	1		3	
	TRUCK		1		1				2											
9:45 - 10:00 AM	TOTAL		33	4	13		7	8	17					82		2			2	
	TRUCK				1				1											
3:00 - 3:15 PM	TOTAL		28	8	11		15	11	31					104		5	1		6	
	TRUCK		2	2	1		3		2											

3:15 - 3:30 PM	TOTAL		39	9	10		12	8	37					115	3				3	
	TRUCK		4						1											
3:30 - 3:45 PM	TOTAL		48	7	11		15	10	38					129	1	2	4		7	
	TRUCK		1				1	2	3											
3:45 - 4:00 PM	TOTAL		26	10	16		13	17	38					120		1	3		4	
	TRUCK		1		1			2	1											
4:00 - 4:15 PM	TOTAL		42	6	10		13	14	41					126		4			4	
	TRUCK		2		1				1											
4:15 - 4:30 PM	TOTAL		36	7	11		21	7	36					118		1	2		3	
	TRUCK		1						1											
4:30 - 4:45 PM	TOTAL		43	8	13		9	18	52					143	4				4	
	TRUCK							2	1											
4:45 - 5:00 PM	TOTAL		47	12	19		17	7	46					148	2	1			3	
	TRUCK			2	1				2											
5:00 - 5:15 PM	TOTAL		40	6	17		21	12	50					146	1		3		4	
	TRUCK		2				1	1	3											
5:15 - 5:30 PM	TOTAL		31	13	19		23	8	40					134			1		1	
	TRUCK		1	1					1											
5:30 - 5:45 PM	TOTAL		40	5	23		21	19	35					143		1	1		2	
	TRUCK		2						1											
5:45 - 6:00 PM	TOTAL		42	11	16		14	15	52					150	1				1	
	TRUCK		1						1											
6:00 - 6:15 PM	TOTAL		41	5	15		19	14	50					144						
	TRUCK		1		1															
6:15 - 6:30 PM	TOTAL		46	9	6		14	14	50					139	1	2			3	
	TRUCK		2																	
6:30 - 6:45 PM	TOTAL		33	2	10		9	9	43					106						
	TRUCK				1															
6:45 - 7:00 PM	TOTAL		40	7	9		13	10	45					124		1	1		2	
	TRUCK		1						1											

1:
2: Dale Ave SB - Thru
3: Dale Ave SB - Left
4: Pine Ave WB - Right
5:
6: Pine Ave WB - Left
7: Dale Ave NB - Right
8: Dale Ave NB - Thru
9:
10:
11:
12:

A: Cross Dale Ave North side of int
B: Cross Pine Ave East side of int
C: Cross Dale Ave South side of int
D:

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM
LOCATION:	Dale Avenue & Pine Avenue

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	1

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 7:00 AM	TOTAL		102	22	17		23	37	91					292	3	5	1		9	
	TRUCK		1%	0%	0%		0%	0%	0%											0.689
6:15 - 7:15 AM	TOTAL		134	30	27		34	59	119					403	3	8	1		12	
	TRUCK		1%	3%	0%		0%	5%	2%											0.685
6:30 - 7:30 AM	TOTAL		170	39	42		50	64	139					504	3	8	1		12	
	TRUCK		2%	8%	7%		12%	5%	2%											0.778
6:45 - 7:45 AM	TOTAL		184	46	61		56	78	173					598	3	6	1		10	
	TRUCK		3%	7%	8%		11%	4%	3%											0.817
7:00 - 8:00 AM	TOTAL		194	51	72		62	82	190					651		4			4	
	TRUCK		3%	8%	7%		10%	5%	4%											0.889
7:15 - 8:15 AM	TOTAL		180	61	68		64	82	184					639		1			1	
	TRUCK		4%	7%	7%		9%	1%	3%											0.873
7:30 - 8:30 AM	TOTAL		169	61	61		53	88	169					601	4	3	1		8	
	TRUCK		4%	3%	3%		0%	1%	2%											0.821
7:45 - 8:45 AM	TOTAL		155	58	44		51	95	145					548	9	5	5		19	
	TRUCK		6%	5%	2%		4%	2%	1%											0.862
8:00 - 9:00 AM	TOTAL		146	55	39		54	104	118					516	9	9	12		30	
	TRUCK		8%	5%	5%		6%	2%	0%											0.956
8:15 - 9:15 AM	TOTAL		145	42	41		53	98	117					496	9	9	12		30	
	TRUCK		7%	5%	5%		6%	2%	2%											0.954
8:30 - 9:30 AM	TOTAL		130	39	37		52	88	114					460	6	8	11		25	
	TRUCK		6%	5%	5%		6%	2%	2%											0.885
8:45 - 9:45 AM	TOTAL		119	32	36		44	65	107					403	2	7	8		17	
	TRUCK		3%	3%	6%		2%	2%	4%											0.793
9:00 - 10:00 AM	TOTAL		116	24	37		37	44	100					358	2	4	1		7	
	TRUCK		2%	0%	5%		0%	0%	5%											0.778
3:00 - 4:00 PM	TOTAL		141	34	48		55	46	144					468	4	8	8		20	
	TRUCK		6%	6%	4%		7%	9%	5%											0.907
3:15 - 4:15 PM	TOTAL		155	32	47		53	49	154					490	4	7	7		18	
	TRUCK		5%	0%	4%		2%	8%	4%											0.95
3:30 - 4:30 PM	TOTAL		152	30	48		62	48	153					493	1	8	9		18	
	TRUCK		3%	0%	4%		2%	8%	4%											0.955
3:45 - 4:45 PM	TOTAL		147	31	50		56	56	167					507	4	6	5		15	
	TRUCK		3%	0%	4%		0%	7%	2%											0.886

4:00 - 5:00 PM	TOTAL		168	33	53		60	46	175					535	6	6	2		14	
	TRUCK		2%	6%	4%		0%	4%	3%											0.904
4:15 - 5:15 PM	TOTAL		166	33	60		68	44	184					555	7	2	5		14	
	TRUCK		2%	6%	2%		1%	7%	4%											0.938
4:30 - 5:30 PM	TOTAL		161	39	68		70	45	188					571	7	1	4		12	
	TRUCK		2%	8%	1%		1%	7%	4%											0.965
4:45 - 5:45 PM	TOTAL		158	36	78		82	46	171					571	3	2	5		10	
	TRUCK		3%	8%	1%		1%	2%	4%											0.965
5:00 - 6:00 PM	TOTAL		153	35	75		79	54	177					573	2	1	5		8	
	TRUCK		4%	3%	0%		1%	2%	3%											0.955
5:15 - 6:15 PM	TOTAL		154	34	73		77	56	177					571	1	1	2		4	
	TRUCK		3%	3%	1%		0%	0%	2%											0.952
5:30 - 6:30 PM	TOTAL		169	30	60		68	62	187					576	2	3	1		6	
	TRUCK		4%	0%	2%		0%	0%	1%											0.96
5:45 - 6:45 PM	TOTAL		162	27	47		56	52	195					539	2	2			4	
	TRUCK		2%	0%	4%		0%	0%	1%											0.898
6:00 - 7:00 PM	TOTAL		160	23	40		55	47	188					513	1	3	1		5	
	TRUCK		3%	0%	5%		0%	0%	1%											0.891

1:
2: Dale Ave SB - Thru
3: Dale Ave SB - Left
4: Pine Ave WB - Right
5:
6: Pine Ave WB - Left
7: Dale Ave NB - Right
8: Dale Ave NB - Thru
9:
10:
11:
12:

A: Cross Dale Ave North side of int
B: Cross Pine Ave East side of int
C: Cross Dale Ave South side of int
D:

DATE:	Weekday: 09/29/2016		JOB NO:	15064
PERIOD:	Weekday: 6-10AM & 3-7PM		NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Dale Ave/Hawkes Ave		INT #:	2

ENTER COUNT DATA ON THIS PAGE

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 6:15 AM	TOTAL	0		13	8	2			4	0				27						
	TRUCK																			
6:15 - 6:30 AM	TOTAL	0		6	19	5			13	0				43						
	TRUCK																			
6:30 - 6:45 AM	TOTAL	0		22	21	10			18	0				71	1				1	
	TRUCK			1																
6:45 - 7:00 AM	TOTAL	2		22	25	15			26	0				90	3				3	
	TRUCK	1																		
7:00 - 7:15 AM	TOTAL	0		24	24	22			28	2				100		1			1	
	TRUCK					2			1	1										
7:15 - 7:30 AM	TOTAL	3		29	43	20			35	2				132	5				5	
	TRUCK			1	1	3			4											
7:30 - 7:45 AM	TOTAL	1		28	45	36			35	0				145	5				5	
	TRUCK			1	3	4			2											
7:45 - 8:00 AM	TOTAL	2		25	35	31			32	0				125						
	TRUCK				1				1											
8:00 - 8:15 AM	TOTAL	0		27	22	16			25	4				94	1	1			2	
	TRUCK			1	2				2	2										
8:15 - 8:30 AM	TOTAL	1		24	17	20			30	1				93						
	TRUCK			1	1	1			2	1										
8:30 - 8:45 AM	TOTAL	0		22	26	16			23	0				87						
	TRUCK			3	1				4											
8:45 - 9:00 AM	TOTAL	1		21	24	12			24	1				83						
	TRUCK			1	1				1											
9:00 - 9:15 AM	TOTAL	4		20	22	19			18	0				83						
	TRUCK			1	1															
9:15 - 9:30 AM	TOTAL	0		25	14	15			14	1				69						
	TRUCK			1					1											
9:30 - 9:45 AM	TOTAL	1		13	21	11			11	1				58						
	TRUCK				3				1											
9:45 - 10:00 AM	TOTAL	0		22	8	18			12	0				60			1		1	
	TRUCK					2														
3:00 - 3:15 PM	TOTAL	0		19	23	19			16	2				79						
	TRUCK			1		3			2	2										

3:15 - 3:30 PM	TOTAL	1		27	23	23			18	0				92			2		2	
	TRUCK			2		1			2											
3:30 - 3:45 PM	TOTAL	1		31	24	23			23	0				102						
	TRUCK				1	2			1											
3:45 - 4:00 PM	TOTAL	0		22	26	30			14	1				93						
	TRUCK				2				1	1										
4:00 - 4:15 PM	TOTAL	1		26	25	24			22	0				98						
	TRUCK			1	1	1			1											
4:15 - 4:30 PM	TOTAL	1		25	25	23			21	0				95		1			1	
	TRUCK					1			1											
4:30 - 4:45 PM	TOTAL	0		27	34	28			17	0				106						
	TRUCK				1	1			1											
4:45 - 5:00 PM	TOTAL	3		36	23	40			22	0				124			1		1	
	TRUCK	1				4			1											
5:00 - 5:15 PM	TOTAL	0		22	28	35			22	0				107		3			3	
	TRUCK					2			1											
5:15 - 5:30 PM	TOTAL	2		21	27	27			23	0				100	1				1	
	TRUCK			2																
5:30 - 5:45 PM	TOTAL	1		26	20	37			21	0				105						
	TRUCK			1		1			1											
5:45 - 6:00 PM	TOTAL	0		26	30	37			24	0				117						
	TRUCK				1				1											
6:00 - 6:15 PM	TOTAL	2		29	29	35			17	0				112						
	TRUCK			1		1			1											
6:15 - 6:30 PM	TOTAL	0		31	28	28			23	2				112						
	TRUCK			1					2											
6:30 - 6:45 PM	TOTAL	0		29	26	28			8	0				91						
	TRUCK					1														
6:45 - 7:00 PM	TOTAL	2		30	26	28			18	0				104						
	TRUCK			1	1															

1: Croton Dam Rd WB - Right
2:
3: Croton Dam Rd WB - Left
4: Dale Ave NB - Right
5: Dale Ave NB - Thru
6:
7:
8: Hawkes Ave SB - Thru
9: Hawkes Ave SB - Left
10:
11:
12:

A: Cross Croton Dam East side of Int
B: Cross Dale Ave South side of Int
C: Cross Hawkes Ave North side of Int
D:

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM
LOCATION:	Croton Dam Road & Dale Ave/Hawkes Ave

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	2

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 7:00 AM	TOTAL	2		63	73	32			61					231	4				4	
	TRUCK	50%		2%	0%	0%			0%											0.642
6:15 - 7:15 AM	TOTAL	2		74	89	52			85	2				304	4	1			5	
	TRUCK	50%		1%	0%	4%			1%	50%										0.76
6:30 - 7:30 AM	TOTAL	5		97	113	67			107	4				393	9	1			10	
	TRUCK	20%		2%	1%	7%			5%	25%										0.744
6:45 - 7:45 AM	TOTAL	6		103	137	93			124	4				467	13	1			14	
	TRUCK	17%		2%	3%	10%			6%	25%										0.805
7:00 - 8:00 AM	TOTAL	6		106	147	109			130	4				502	10	1			11	
	TRUCK	0%		2%	3%	8%			6%	25%										0.866
7:15 - 8:15 AM	TOTAL	6		109	145	103			127	6				496	11	1			12	
	TRUCK	0%		3%	5%	7%			7%	33%										0.855
7:30 - 8:30 AM	TOTAL	4		104	119	103			122	5				457	6	1			7	
	TRUCK	0%		3%	6%	5%			6%	60%										0.788
7:45 - 8:45 AM	TOTAL	3		98	100	83			110	5				399	1	1			2	
	TRUCK	0%		5%	5%	1%			8%	60%										0.798
8:00 - 9:00 AM	TOTAL	2		94	89	64			102	6				357	1	1			2	
	TRUCK	0%		6%	6%	2%			9%	50%										0.949
8:15 - 9:15 AM	TOTAL	6		87	89	67			95	2				346						
	TRUCK	0%		7%	4%	1%			7%	50%										0.93
8:30 - 9:30 AM	TOTAL	5		88	86	62			79	2				322						
	TRUCK	0%		7%	3%	0%			8%	0%										0.925
8:45 - 9:45 AM	TOTAL	6		79	81	57			67	3				293						
	TRUCK	0%		4%	6%	0%			4%	0%										0.883
9:00 - 10:00 AM	TOTAL	5		80	65	63			55	2				270			1		1	
	TRUCK	0%		3%	6%	3%			4%	0%										0.813
3:00 - 4:00 PM	TOTAL	2		99	96	95			71	3				366			2		2	
	TRUCK	0%		3%	3%	6%			8%	100%										0.897
3:15 - 4:15 PM	TOTAL	3		106	98	100			77	1				385			2		2	
	TRUCK	0%		3%	4%	4%			6%	100%										0.944
3:30 - 4:30 PM	TOTAL	3		104	100	100			80	1				388		1			1	
	TRUCK	0%		1%	4%	4%			5%	100%										0.951
3:45 - 4:45 PM	TOTAL	2		100	110	105			74	1				392		1			1	
	TRUCK	0%		1%	4%	3%			5%	100%										0.925

4:00 - 5:00 PM	TOTAL	5		114	107	115			82					423		1	1		2	
	TRUCK	20%		1%	2%	6%			5%											0.853
4:15 - 5:15 PM	TOTAL	4		110	110	126			82					432		4	1		5	
	TRUCK	25%		0%	1%	6%			5%											0.871
4:30 - 5:30 PM	TOTAL	5		106	112	130			84					437	1	3	1		5	
	TRUCK	20%		2%	1%	5%			4%											0.881
4:45 - 5:45 PM	TOTAL	6		105	98	139			88					436	1	3	1		5	
	TRUCK	17%		3%	0%	5%			3%											0.879
5:00 - 6:00 PM	TOTAL	3		95	105	136			90					429	1	3			4	
	TRUCK	0%		3%	1%	2%			3%											0.917
5:15 - 6:15 PM	TOTAL	5		102	106	136			85					434	1				1	
	TRUCK	0%		4%	1%	1%			4%											0.927
5:30 - 6:30 PM	TOTAL	3		112	107	137			85	2				446						
	TRUCK	0%		3%	1%	1%			6%	0%										0.953
5:45 - 6:45 PM	TOTAL	2		115	113	128			72	2				432						
	TRUCK	0%		2%	1%	2%			6%	0%										0.923
6:00 - 7:00 PM	TOTAL	4		119	109	119			66	2				419						
	TRUCK	0%		3%	1%	2%			5%	0%										0.935

1: Croton Dam Rd WB - Right
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A: Cross Croton Dam East side of Int
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D:

DATE:	Weekday: 09/29/2016		JOB NO:	15064
PERIOD:	Weekday: 6-10AM & 3-7PM	**ENTER COUNT DATA ON THIS PAGE**	NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Pershing Avenue/Cherry Hill Circle		INT #:	3

TIME	CLASS	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL VEHICLES	PED/BIKE MOVEMENT A	B	C	D	TOTAL PEDS /BIKE	INT. PHF
6:00 - 6:15 AM	TOTAL	0	9	0	1	0	1	0	6	0	0	0	1	18						
	TRUCK																			
6:15 - 6:30 AM	TOTAL	0	8	0	2	0	0	1	21	0	0	0	0	32						
	TRUCK																			
6:30 - 6:45 AM	TOTAL	0	22	0	0	0	1	0	20	0	1	0	0	44						
	TRUCK																			
6:45 - 7:00 AM	TOTAL	0	20	0	0	0	1	1	26	0	0	0	1	49						
	TRUCK		1																	
7:00 - 7:15 AM	TOTAL	0	21	1	0	1	0	5	20	0	0	3	0	51						
	TRUCK			1		1		1												
7:15 - 7:30 AM	TOTAL	0	18	2	0	0	1	3	38	1	0	0	0	63				4	4	
	TRUCK			2				1												
7:30 - 7:45 AM	TOTAL	0	26	0	2	0	3	2	47	1	0	1	0	82						
	TRUCK		1						3											
7:45 - 8:00 AM	TOTAL	0	20	1	2	0	2	3	28	0	1	1	0	58						
	TRUCK																			
8:00 - 8:15 AM	TOTAL	0	25	1	3	0	2	2	23	3	0	1	0	60						
	TRUCK		1						4											
8:15 - 8:30 AM	TOTAL	1	23	1	2	0	2	2	20	0	0	0	0	51						
	TRUCK		1						3											
8:30 - 8:45 AM	TOTAL	0	22	0	2	0	1	1	25	0	1	1	1	54						
	TRUCK		3		1				1											
8:45 - 9:00 AM	TOTAL	1	18	0	1	0	1	4	22	0	0	0	1	48		1			1	
	TRUCK						1		1											
9:00 - 9:15 AM	TOTAL	0	20	1	1	0	1	0	20	0	0	0	0	43						
	TRUCK		1						1											
9:15 - 9:30 AM	TOTAL	0	23	1	2	1	0	2	14	0	0	0	0	43						
	TRUCK			1					2											
9:30 - 9:45 AM	TOTAL	0	12	1	1	0	2	2	21	0	0	1	0	40						
	TRUCK							1	3											
9:45 - 10:00 AM	TOTAL	0	23	1	3	0	0	1	8	0	0	0	1	37						
	TRUCK																			
3:00 - 3:15 PM	TOTAL	0	19	2	1	1	1	3	19	1	0	0	1	48						
	TRUCK		1					1	1											

3:15 - 3:30 PM	TOTAL	0	27	1	1	0	1	3	16	1	0	1	0	51						
	TRUCK		2																	
3:30 - 3:45 PM	TOTAL	0	30	0	0	0	1	0	20	0	1	1	0	53						
	TRUCK								1											
3:45 - 4:00 PM	TOTAL	0	23	0	3	0	2	1	31	0	0	0	0	60						
	TRUCK				1				3											
4:00 - 4:15 PM	TOTAL	0	19	1	1	0	3	2	25	0	0	0	0	51						
	TRUCK						1		1											
4:15 - 4:30 PM	TOTAL	0	23	1	1	0	4	2	20	0	0	0	0	51						
	TRUCK																			
4:30 - 4:45 PM	TOTAL	0	24	0	1	0	4	2	30	1	0	0	0	62						
	TRUCK								1											
4:45 - 5:00 PM	TOTAL	1	36	4	0	1	2	3	22	1	1	1	0	72						
	TRUCK		1																	
5:00 - 5:15 PM	TOTAL	1	19	1	2	0	3	2	25	1	1	1	0	56						
	TRUCK							1												
5:15 - 5:30 PM	TOTAL	0	21	1	0	0	3	4	23	1	0	1	0	54						
	TRUCK		2																	
5:30 - 5:45 PM	TOTAL	0	26	3	1	1	2	1	20	0	0	0	0	54						
	TRUCK		1																	
5:45 - 6:00 PM	TOTAL	0	23	1	1	0	3	5	21	1	0	1	0	56						
	TRUCK								1											
6:00 - 6:15 PM	TOTAL	1	28	3	0	1	1	0	28	1	0	0	0	63						
	TRUCK		1																	
6:15 - 6:30 PM	TOTAL	0	29	0	0	1	2	2	22	1	0	0	0	57						
	TRUCK		1																	
6:30 - 6:45 PM	TOTAL	2	26	2	0	1	1	1	26	2	3	0	0	64						
	TRUCK																			
6:45 - 7:00 PM	TOTAL	0	29	2	0	0	2	5	19	1	0	0	1	59						
	TRUCK		1						1											

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3: Croton Damn SB - Left
4: Pershing WB - Right
5: Pershing WB -Thru
6: Pershing WB - Left
7: Croton Dam NB - Right
8: Croton Dam NB - Thru
9: Croton Dam NB - Left
10: Cherry Hill EB - Right
11: Cherry Hill EB - Thru
12: Cherry Hill EB - Left

A: Cross Croton North side of Int
B: Cross Pershing East side of Int
C: Cross Croton South side of Int
D: Cross Cherry Hill West side of Int

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM
LOCATION:	Croton Dam Road & Pershing Avenue/Cherry Hill Circle

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	3

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 7:00 AM	TOTAL		59		3		3	2	73		1		2	143						
	TRUCK		2%		0%		0%	0%	0%		0%		0%							0.73
6:15 - 7:15 AM	TOTAL		71	1	2	1	2	7	87		1	3	1	176						
	TRUCK		1%	100%	0%	100%	0%	14%	0%		0%	0%	0%							0.863
6:30 - 7:30 AM	TOTAL		81	3		1	3	9	104	1	1	3	1	207				4	4	
	TRUCK		1%	100%		100%	0%	22%	0%	0%	0%	0%	0%							0.821
6:45 - 7:45 AM	TOTAL		85	3	2	1	5	11	131	2		4	1	245				4	4	
	TRUCK		2%	100%	0%	100%	0%	18%	2%	0%		0%	0%							0.747
7:00 - 8:00 AM	TOTAL		85	4	4	1	6	13	133	2	1	5		254				4	4	
	TRUCK		1%	75%	0%	100%	0%	15%	2%	0%	0%	0%								0.774
7:15 - 8:15 AM	TOTAL		89	4	7		8	10	136	5	1	3		263				4	4	
	TRUCK		2%	50%	0%		0%	10%	5%	0%	0%	0%								0.802
7:30 - 8:30 AM	TOTAL	1	94	3	9		9	9	118	4	1	3		251						
	TRUCK	0%	3%	0%	0%		0%	0%	8%	0%	0%	0%								0.765
7:45 - 8:45 AM	TOTAL	1	90	3	9		7	8	96	3	2	3	1	223						
	TRUCK	0%	6%	0%	11%		0%	0%	8%	0%	0%	0%	0%							0.929
8:00 - 9:00 AM	TOTAL	2	88	2	8		6	9	90	3	1	2	2	213		1			1	
	TRUCK	0%	6%	0%	13%		17%	0%	10%	0%	0%	0%	0%							0.888
8:15 - 9:15 AM	TOTAL	2	83	2	6		5	7	87		1	1	2	196		1			1	
	TRUCK	0%	6%	0%	17%		20%	0%	7%		0%	0%	0%							0.907
8:30 - 9:30 AM	TOTAL	1	83	2	6	1	3	7	81		1	1	2	188		1			1	
	TRUCK	0%	5%	50%	17%	0%	33%	0%	6%		0%	0%	0%							0.87
8:45 - 9:45 AM	TOTAL	1	73	3	5	1	4	8	77			1	1	174		1			1	
	TRUCK	0%	1%	33%	0%	0%	25%	13%	9%			0%	0%			1			1	0.906
9:00 - 10:00 AM	TOTAL		78	4	7	1	3	5	63			1	1	163						
	TRUCK		1%	25%	0%	0%	0%	20%	10%			0%	0%							0.948
3:00 - 4:00 PM	TOTAL		99	3	5	1	5	7	86	2	1	2	1	212						
	TRUCK		3%	0%	20%	0%	0%	14%	6%	0%	0%	0%	0%							0.883
3:15 - 4:15 PM	TOTAL		99	2	5		7	6	92	1	1	2		215						
	TRUCK		2%	0%	20%		14%	0%	5%	0%	0%	0%								0.896
3:30 - 4:30 PM	TOTAL		95	2	5		10	5	96		1	1		215						
	TRUCK		0%	0%	20%		10%	0%	5%		0%	0%								0.896
3:45 - 4:45 PM	TOTAL		89	2	6		13	7	106	1				224						
	TRUCK		0%	0%	17%		8%	0%	5%	0%										0.903

4:00 - 5:00 PM	TOTAL	1	102	6	3	1	13	9	97	2	1	1		236						
	TRUCK	0%	1%	0%	0%	0%	8%	0%	2%	0%	0%	0%								0.819
4:15 - 5:15 PM	TOTAL	2	102	6	4	1	13	9	97	3	2	2		241						
	TRUCK	0%	1%	0%	0%	0%	0%	11%	1%	0%	0%	0%								0.837
4:30 - 5:30 PM	TOTAL	2	100	6	3	1	12	11	100	4	2	3		244						
	TRUCK	0%	3%	0%	0%	0%	0%	9%	1%	0%	0%	0%								0.847
4:45 - 5:45 PM	TOTAL	2	102	9	3	2	10	10	90	3	2	3		236						
	TRUCK	0%	4%	0%	0%	0%	0%	10%	0%	0%	0%	0%								0.819
5:00 - 6:00 PM	TOTAL	1	89	6	4	1	11	12	89	3	1	3		220						
	TRUCK	0%	3%	0%	0%	0%	0%	8%	1%	0%	0%	0%								0.982
5:15 - 6:15 PM	TOTAL	1	98	8	2	2	9	10	92	3		2		227						
	TRUCK	0%	4%	0%	0%	0%	0%	0%	1%	0%		0%								0.901
5:30 - 6:30 PM	TOTAL	1	106	7	2	3	8	8	91	3		1		230						
	TRUCK	0%	3%	0%	0%	0%	0%	0%	1%	0%		0%								0.913
5:45 - 6:45 PM	TOTAL	3	106	6	1	3	7	8	97	5	3	1		240						
	TRUCK	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	0%								0.938
6:00 - 7:00 PM	TOTAL	3	112	7		3	6	8	95	5	3		1	243						
	TRUCK	0%	3%	0%		0%	0%	0%	1%	0%	0%		0%							0.949

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3: Croton Damn SB - Left
4: Pershing WB - Right
5: Pershing WB -Thru
6: Pershing WB - Left
7: Croton Dam NB - Right
8: Croton Dam NB - Thru
9: Croton Dam NB - Left
10: Cherry Hill EB - Right
11: Cherry Hill EB - Thru
12: Cherry Hill EB - Left

A: Cross Croton North side of Int
B: Cross Pershing East side of Int
C: Cross Croton South side of Int
D: Cross Cherry Hill West side of Int

DATE:	Weekday: 09/29/2016		JOB NO:	15064
PERIOD:	Weekday: 6-10AM & 3-7PM		NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Site Driveway		INT #:	4

ENTER COUNT DATA ON THIS PAGE

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 6:15 AM	TOTAL	9	0		0	0		0	23					32						
	TRUCK																			
6:15 - 6:30 AM	TOTAL	20	0		0	0		0	16					36						
	TRUCK	1																		
6:30 - 6:45 AM	TOTAL	21	0		0	0		0	27					48						
	TRUCK	1																		
6:45 - 7:00 AM	TOTAL	19	0		0	0		0	20					39						
	TRUCK																			
7:00 - 7:15 AM	TOTAL	21	0		0	0		0	37					58						
	TRUCK	4																		
7:15 - 7:30 AM	TOTAL	23	0		0	0		0	46					69						
	TRUCK								3											
7:30 - 7:45 AM	TOTAL	21	0		0	0		0	36					57						
	TRUCK	1																		
7:45 - 8:00 AM	TOTAL	26	0		0	0		0	27					53						
	TRUCK								3											
8:00 - 8:15 AM	TOTAL	23	0		0	0		0	22					45						
	TRUCK	1							4											
8:15 - 8:30 AM	TOTAL	23	0		0	0		0	29					52						
	TRUCK	3							2											
8:30 - 8:45 AM	TOTAL	22	0		0	0		0	26					48						
	TRUCK	1							1											
8:45 - 9:00 AM	TOTAL	20	0		0	0		0	20					40						
	TRUCK	1																		
9:00 - 9:15 AM	TOTAL	25	0		0	0		0	16					41						
	TRUCK	2							1											
9:15 - 9:30 AM	TOTAL	12	0		0	0		0	20					32						
	TRUCK								2											
9:30 - 9:45 AM	TOTAL	24	0		0	0		0	16					40						
	TRUCK																			
9:45 - 10:00 AM	TOTAL	14	0		0	0		0	11					25						
	TRUCK								1											
3:00 - 3:15 PM	TOTAL	28	0		0	0		0	16					44						
	TRUCK	2							1											

3:15 - 3:30 PM	TOTAL	29	0		0	0		0	21					50						
	TRUCK								2											
3:30 - 3:45 PM	TOTAL	29	0		0	0		0	29					58						
	TRUCK								3											
3:45 - 4:00 PM	TOTAL	24	0		0	0		0	25					49						
	TRUCK																			
4:00 - 4:15 PM	TOTAL	23	0		0	0		0	27					50						
	TRUCK																			
4:15 - 4:30 PM	TOTAL	24	0		0	0		0	23					47						
	TRUCK								1											
4:30 - 4:45 PM	TOTAL	39	0		0	0		0	24					63						
	TRUCK	1																		
4:45 - 5:00 PM	TOTAL	26	0		0	0		0	26					52						
	TRUCK																			
5:00 - 5:15 PM	TOTAL	19	0		0	0		0	26					45						
	TRUCK	2																		
5:15 - 5:30 PM	TOTAL	29	0		0	0		0	19					48						
	TRUCK	1																		
5:30 - 5:45 PM	TOTAL	23	0		0	0		0	23					46						
	TRUCK																			
5:45 - 6:00 PM	TOTAL	32	0		0	0		0	28					60						
	TRUCK	1							1											
6:00 - 6:15 PM	TOTAL	28	0		0	0		0	20					48						
	TRUCK	1																		
6:15 - 6:30 PM	TOTAL	29	0		0	0		0	28					57						
	TRUCK																			
6:30 - 6:45 PM	TOTAL	29	0		0	0		0	24					53						
	TRUCK	1							1											
6:45 - 7:00 PM	TOTAL	28	0		0	0		0	18					46						
	TRUCK																			

1: Croton Dam SB -Thru
2: Croton Dam SB - Left
3:
4: Grandview WB - Right
5: Grandview WB - Left
6:
7: Croton Dam NB - Right
8: Croton Dam NB - Thru
9:
10:
11:
12:
A: Cross Croton North side of Int
B: Cross Grandview East side of Int
C: Cross Croton South side of Int
D:

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM
LOCATION:	Croton Dam Road & Site Driveway

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	4

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 7:00 AM	TOTAL	69							86					155						
	TRUCK	3%							0%											0.807
6:15 - 7:15 AM	TOTAL	81							100					181						
	TRUCK	7%							0%											0.78
6:30 - 7:30 AM	TOTAL	84							130					214						
	TRUCK	6%							2%											0.775
6:45 - 7:45 AM	TOTAL	84							139					223						
	TRUCK	6%							2%											0.808
7:00 - 8:00 AM	TOTAL	91							146					237						
	TRUCK	5%							4%											0.859
7:15 - 8:15 AM	TOTAL	93							131					224						
	TRUCK	2%							8%											0.812
7:30 - 8:30 AM	TOTAL	93							114					207						
	TRUCK	5%							8%											0.908
7:45 - 8:45 AM	TOTAL	94							104					198						
	TRUCK	5%							10%											0.934
8:00 - 9:00 AM	TOTAL	88							97					185						
	TRUCK	7%							7%											0.889
8:15 - 9:15 AM	TOTAL	90							91					181						
	TRUCK	8%							4%											0.87
8:30 - 9:30 AM	TOTAL	79							82					161						
	TRUCK	5%							5%											0.839
8:45 - 9:45 AM	TOTAL	81							72					153						
	TRUCK	4%							4%											0.933
9:00 - 10:00 AM	TOTAL	75							63					138						
	TRUCK	3%							6%											0.841
3:00 - 4:00 PM	TOTAL	110							91					201						
	TRUCK	2%							7%											0.866
3:15 - 4:15 PM	TOTAL	105							102					207						
	TRUCK	0%							5%											0.892
3:30 - 4:30 PM	TOTAL	100							104					204						
	TRUCK	0%							4%											0.879
3:45 - 4:45 PM	TOTAL	110							99					209						
	TRUCK	1%							1%											0.829

4:00 - 5:00 PM	TOTAL	112							100					212						
	TRUCK	1%							1%											0.841
4:15 - 5:15 PM	TOTAL	108							99					207						
	TRUCK	3%							1%											0.821
4:30 - 5:30 PM	TOTAL	113							95					208						
	TRUCK	4%							0%											0.825
4:45 - 5:45 PM	TOTAL	97							94					191						
	TRUCK	3%							0%											0.918
5:00 - 6:00 PM	TOTAL	103							96					199						
	TRUCK	4%							1%											0.829
5:15 - 6:15 PM	TOTAL	112							90					202						
	TRUCK	3%							1%											0.842
5:30 - 6:30 PM	TOTAL	112							99					211						
	TRUCK	2%							1%											0.879
5:45 - 6:45 PM	TOTAL	118							100					218						
	TRUCK	3%							2%											0.908
6:00 - 7:00 PM	TOTAL	114							90					204						
	TRUCK	2%							1%											0.895

1: Croton Dam SB -Thru
2: Croton Dam SB - Left
3:
4: Grandview WB - Right
5: Grandview WB - Left
6:
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8: Croton Dam NB - Thru
9:
10:
11:
12:
A: Cross Croton North side of Int
B: Cross Grandview East side of Int
C: Cross Croton South side of Int
D:

DATE:	Weekday: 09/29/2016		JOB NO:	15064
PERIOD:	Weekday: 6-10AM & 3-7PM	ENTER COUNT DATA ON THIS PAGE	NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Grandview Avenue		INT #:	5

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 6:15 AM	TOTAL	10	0		0	1		0	8					19						
	TRUCK																			
6:15 - 6:30 AM	TOTAL	6	0		0	0		0	23					29						
	TRUCK																			
6:30 - 6:45 AM	TOTAL	19	0		0	1		0	20					40						
	TRUCK	1																		
6:45 - 7:00 AM	TOTAL	22	0		1	1		1	25					50						
	TRUCK	1																		
7:00 - 7:15 AM	TOTAL	17	1		2	2		0	20					42						
	TRUCK					1														
7:15 - 7:30 AM	TOTAL	24	0		1	1		4	36					66						
	TRUCK	3																		
7:30 - 7:45 AM	TOTAL	22	0		1	0		0	49					72						
	TRUCK	1			1				3											
7:45 - 8:00 AM	TOTAL	20	0		1	1		2	28					52						
	TRUCK																			
8:00 - 8:15 AM	TOTAL	22	1		0	0		0	26					49						
	TRUCK	1	1						4											
8:15 - 8:30 AM	TOTAL	25	1		0	0		1	22					49						
	TRUCK	1							3											
8:30 - 8:45 AM	TOTAL	23	1		2	0		2	27					55						
	TRUCK	3			1				2											
8:45 - 9:00 AM	TOTAL	20	0		0	0		0	24					44						
	TRUCK								1											
9:00 - 9:15 AM	TOTAL	22	1		0	1		0	21					45						
	TRUCK	2																		
9:15 - 9:30 AM	TOTAL	20	0		0	1		1	16					38						
	TRUCK	1							1											
9:30 - 9:45 AM	TOTAL	13	0		0	0		1	22					36						
	TRUCK								2											
9:45 - 10:00 AM	TOTAL	24	0		1	0		0	13					38						
	TRUCK																			
3:00 - 3:15 PM	TOTAL	19	0		0	2		1	21					43						
	TRUCK	1							1											

3:15 - 3:30 PM	TOTAL	28	1		0	1		0	18					48						
	TRUCK	1				1														
3:30 - 3:45 PM	TOTAL	31	0		1	0		0	19					51						
	TRUCK								1											
3:45 - 4:00 PM	TOTAL	28	2		0	0		2	28					60						
	TRUCK							1	3											
4:00 - 4:15 PM	TOTAL	21	0		0	0		2	22					45						
	TRUCK								1											
4:15 - 4:30 PM	TOTAL	20	0		0	0		1	20					41						
	TRUCK																			
4:30 - 4:45 PM	TOTAL	28	1		0	0		1	27					57						
	TRUCK	1							1											
4:45 - 5:00 PM	TOTAL	36	1		1	2		0	24					64						
	TRUCK					1														
5:00 - 5:15 PM	TOTAL	21	1		0	0		1	25					48						
	TRUCK																			
5:15 - 5:30 PM	TOTAL	22	0		0	2		0	22					46						
	TRUCK	2																		
5:30 - 5:45 PM	TOTAL	26	2		0	0		2	19					49						
	TRUCK	1																		
5:45 - 6:00 PM	TOTAL	22	0		2	2		0	20					46						
	TRUCK								1											
6:00 - 6:15 PM	TOTAL	32	0		0	1		3	26					62						
	TRUCK	1																		
6:15 - 6:30 PM	TOTAL	27	1		2	2		0	23					55						
	TRUCK																			
6:30 - 6:45 PM	TOTAL	30	2		1	0		1	25					59						
	TRUCK																			
6:45 - 7:00 PM	TOTAL	31	1		0	0		1	20					53						
	TRUCK	1							1											

1: Croton Dam SB - Thru
2: Croton Dam SB - Left
3:
4: Grandview WB - Right
5: Grandview WB - Left
6:
7: Croton Dam NB - Right
8: Croton Dam NB - Thru
9:
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12:
A: Cross Croton Dam North side of Int
B: Cross Grandview East side of Int
C: Cross Croton Dam South side of Int
D:

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM
LOCATION:	Croton Dam Road & Grandview Avenue

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	5

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 7:00 AM	TOTAL	57			1	3		1	76					138						
	TRUCK	4%			0%	0%		0%	0%											0.69
6:15 - 7:15 AM	TOTAL	64	1		3	4		1	88					161						
	TRUCK	3%	0%		0%	25%		0%	0%											0.805
6:30 - 7:30 AM	TOTAL	82	1		4	5		5	101					198						
	TRUCK	6%	0%		0%	20%		0%	0%											0.75
6:45 - 7:45 AM	TOTAL	85	1		5	4		5	130					230						
	TRUCK	6%	0%		20%	25%		0%	2%											0.799
7:00 - 8:00 AM	TOTAL	83	1		5	4		6	133					232						
	TRUCK	5%	0%		20%	25%		0%	2%											0.806
7:15 - 8:15 AM	TOTAL	88	1		3	2		6	139					239						
	TRUCK	6%	100%		33%	0%		0%	5%											0.83
7:30 - 8:30 AM	TOTAL	89	2		2	1		3	125					222						
	TRUCK	3%	50%		50%	0%		0%	8%											0.771
7:45 - 8:45 AM	TOTAL	90	3		3	1		5	103					205						
	TRUCK	6%	33%		33%	0%		0%	9%											0.932
8:00 - 9:00 AM	TOTAL	90	3		2			3	99					197						
	TRUCK	6%	33%		50%			0%	10%											0.895
8:15 - 9:15 AM	TOTAL	90	3		2	1		3	94					193						
	TRUCK	7%	0%		50%	0%		0%	6%											0.877
8:30 - 9:30 AM	TOTAL	85	2		2	2		3	88					182						
	TRUCK	7%	0%		50%	0%		0%	5%											0.827
8:45 - 9:45 AM	TOTAL	75	1			2		2	83					163						
	TRUCK	4%	0%			0%		0%	5%											0.906
9:00 - 10:00 AM	TOTAL	79	1		1	2		2	72					157						
	TRUCK	4%	0%		0%	0%		0%	4%											0.872
3:00 - 4:00 PM	TOTAL	106	3		1	3		3	86					202						
	TRUCK	2%	0%		0%	33%		33%	6%											0.842
3:15 - 4:15 PM	TOTAL	108	3		1	1		4	87					204						
	TRUCK	1%	0%		0%	100%		25%	6%											0.85
3:30 - 4:30 PM	TOTAL	100	2		1			5	89					197						
	TRUCK	0%	0%		0%			20%	6%											0.821
3:45 - 4:45 PM	TOTAL	97	3					6	97					203						
	TRUCK	1%	0%					17%	5%											0.846

4:00 - 5:00 PM	TOTAL	105	2		1	2		4	93					207						
	TRUCK	1%	0%		0%	50%		0%	2%											0.809
4:15 - 5:15 PM	TOTAL	105	3		1	2		3	96					210						
	TRUCK	1%	0%		0%	50%		0%	1%											0.82
4:30 - 5:30 PM	TOTAL	107	3		1	4		2	98					215						
	TRUCK	3%	0%		0%	25%		0%	1%											0.84
4:45 - 5:45 PM	TOTAL	105	4		1	4		3	90					207						
	TRUCK	3%	0%		0%	25%		0%	0%											0.809
5:00 - 6:00 PM	TOTAL	91	3		2	4		3	86					189						
	TRUCK	3%	0%		0%	0%		0%	1%											0.964
5:15 - 6:15 PM	TOTAL	102	2		2	5		5	87					203						
	TRUCK	4%	0%		0%	0%		0%	1%											0.819
5:30 - 6:30 PM	TOTAL	107	3		4	5		5	88					212						
	TRUCK	2%	0%		0%	0%		0%	1%											0.855
5:45 - 6:45 PM	TOTAL	111	3		5	5		4	94					222						
	TRUCK	1%	0%		0%	0%		0%	1%											0.895
6:00 - 7:00 PM	TOTAL	120	4		3	3		5	94					229						
	TRUCK	2%	0%		0%	0%		0%	1%											0.923

1: Croton Dam SB - Thru
2: Croton Dam SB - Left
3:
4: Grandview WB - Right
5: Grandview WB - Left
6:
7: Croton Dam NB - Right
8: Croton Dam NB - Thru
9:
10:
11:
12:
A: Cross Croton Dam North side of Int
B: Cross Grandview East side of Int
C: Cross Croton Dam South side of Int
D:

DATE:	Weekday: 09/29/2016		JOB NO:	15064
PERIOD:	Weekday: 6-10AM & 3-7PM	**ENTER COUNT DATA ON THIS PAGE**	NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Narragansett Avenue		INT #:	6

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 6:15 AM	TOTAL	9	5		6	1		0	8					29						
	TRUCK	1																		
6:15 - 6:30 AM	TOTAL	6	8		6	0		1	23					44						
	TRUCK																			
6:30 - 6:45 AM	TOTAL	19	4		9	0		1	19					52						
	TRUCK	1																		
6:45 - 7:00 AM	TOTAL	22	12		8	0		1	24					67						
	TRUCK	1																		
7:00 - 7:15 AM	TOTAL	17	19		12	1		0	22					71		1			1	
	TRUCK		4																	
7:15 - 7:30 AM	TOTAL	26	28		10	0		0	37					101						
	TRUCK	3	3																	
7:30 - 7:45 AM	TOTAL	20	29		13	0		0	48					110						
	TRUCK	1	1						1											
7:45 - 8:00 AM	TOTAL	21	44		14	0		0	27					106						
	TRUCK		9																	
8:00 - 8:15 AM	TOTAL	21	28		12	1		2	26					90		3			3	
	TRUCK	2	2					2	3											
8:15 - 8:30 AM	TOTAL	25	14		11	1		2	20					73						
	TRUCK	1							3											
8:30 - 8:45 AM	TOTAL	26	16		20	0		0	29					91						
	TRUCK	3							3											
8:45 - 9:00 AM	TOTAL	19	22		15	0		1	23					80						
	TRUCK		1		1				1											
9:00 - 9:15 AM	TOTAL	22	16		10	1		0	21					70						
	TRUCK	2																		
9:15 - 9:30 AM	TOTAL	20	13		11	0		0	16					60						
	TRUCK	1	1						1											
9:30 - 9:45 AM	TOTAL	14	9		15	0		1	21					60						
	TRUCK				1				2											
9:45 - 10:00 AM	TOTAL	23	14		15	1		0	14					67						
	TRUCK																			
3:00 - 3:15 PM	TOTAL	18	15		19	0		1	18					71						
	TRUCK	1	3						1											

3:15 - 3:30 PM	TOTAL	25	21		20	0		0	18					84						
	TRUCK	1	1		1															
3:30 - 3:45 PM	TOTAL	29	18		21	0		0	19					87						
	TRUCK	1	1		2				1											
3:45 - 4:00 PM	TOTAL	29	20		19	1		0	32					101						
	TRUCK	1	1			1			3											
4:00 - 4:15 PM	TOTAL	21	21		27	0		0	22					91						
	TRUCK				2				1											
4:15 - 4:30 PM	TOTAL	21	20		20	0		1	19					81						
	TRUCK		1																	
4:30 - 4:45 PM	TOTAL	29	16		32	1		2	25					105						
	TRUCK	1			1				1											
4:45 - 5:00 PM	TOTAL	36	20		28	0		1	23					108						
	TRUCK																			
5:00 - 5:15 PM	TOTAL	22	22		16	1		0	26					87		1			1	
	TRUCK																			
5:15 - 5:30 PM	TOTAL	21	19		22	1		0	22					85						
	TRUCK	2																		
5:30 - 5:45 PM	TOTAL	28	18		25	0		1	18					90						
	TRUCK	1	1																	
5:45 - 6:00 PM	TOTAL	22	14		21	0		0	21					78						
	TRUCK								1											
6:00 - 6:15 PM	TOTAL	34	18		28	0		0	26					106						
	TRUCK	1																		
6:15 - 6:30 PM	TOTAL	31	24		19	0		3	21					98						
	TRUCK		1																	
6:30 - 6:45 PM	TOTAL	28	19		19	1		0	27					94						
	TRUCK																			
6:45 - 7:00 PM	TOTAL	34	19		13	0		0	20					86						
	TRUCK	1							1											

1: Croton Dam SB - Thru
2: Croton Dam SB - Left
3:
4: Narragansett WB- Right
5: Narragansett WB- Left
6:
7: Croton Dam NB- Right
8: Croton Dam NB- Thru
9:
10:
11:
12:
A: Cross Croton North side of Int
B: Cross Narragansett West side of Int
C: Cross Croton South side of Int
D:

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM
LOCATION:	Croton Dam Road & Narragansett Avenue

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	6

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 7:00 AM	TOTAL	56	29		29	1		3	74					192						
	TRUCK	5%	0%		0%	0%		0%	0%											0.716
6:15 - 7:15 AM	TOTAL	64	43		35	1		3	88					234		1			1	
	TRUCK	3%	9%		0%	0%		0%	0%											0.824
6:30 - 7:30 AM	TOTAL	84	63		39	1		2	102					291		1			1	
	TRUCK	6%	11%		0%	0%		0%	0%											0.72
6:45 - 7:45 AM	TOTAL	85	88		43	1		1	131					349		1			1	
	TRUCK	6%	9%		0%	0%		0%	1%											0.793
7:00 - 8:00 AM	TOTAL	84	120		49	1			134					388		1			1	
	TRUCK	5%	14%		0%	0%			1%											0.882
7:15 - 8:15 AM	TOTAL	88	129		49	1		2	138					407		3			3	
	TRUCK	7%	12%		0%	0%		100%	3%											0.925
7:30 - 8:30 AM	TOTAL	87	115		50	2		4	121					379		3			3	
	TRUCK	5%	10%		0%	0%		50%	6%											0.861
7:45 - 8:45 AM	TOTAL	93	102		57	2		4	102					360		3			3	
	TRUCK	6%	11%		0%	0%		50%	9%											0.849
8:00 - 9:00 AM	TOTAL	91	80		58	2		5	98					334		3			3	
	TRUCK	7%	4%		2%	0%		40%	10%											0.918
8:15 - 9:15 AM	TOTAL	92	68		56	2		3	93					314						
	TRUCK	7%	1%		2%	0%		0%	8%											0.863
8:30 - 9:30 AM	TOTAL	87	67		56	1		1	89					301						
	TRUCK	7%	3%		2%	0%		0%	6%											0.827
8:45 - 9:45 AM	TOTAL	75	60		51	1		2	81					270						
	TRUCK	4%	3%		4%	0%		0%	5%											0.844
9:00 - 10:00 AM	TOTAL	79	52		51	2		1	72					257						
	TRUCK	4%	2%		2%	0%		0%	4%											0.918
3:00 - 4:00 PM	TOTAL	101	74		79	1		1	87					343						
	TRUCK	4%	8%		4%	100%		0%	6%											0.849
3:15 - 4:15 PM	TOTAL	104	80		87	1			91					363						
	TRUCK	3%	4%		6%	100%			5%											0.899
3:30 - 4:30 PM	TOTAL	100	79		87	1		1	92					360						
	TRUCK	2%	4%		5%	100%		0%	5%											0.891
3:45 - 4:45 PM	TOTAL	100	77		98	2		3	98					378						
	TRUCK	2%	3%		3%	50%		0%	5%											0.9

4:00 - 5:00 PM	TOTAL	107	77		107	1		4	89					385						
	TRUCK	1%	1%		3%	0%		0%	2%											0.891
4:15 - 5:15 PM	TOTAL	108	78		96	2		4	93					381		1			1	
	TRUCK	1%	1%		1%	0%		0%	1%											0.882
4:30 - 5:30 PM	TOTAL	108	77		98	3		3	96					385		1			1	
	TRUCK	3%	0%		1%	0%		0%	1%											0.891
4:45 - 5:45 PM	TOTAL	107	79		91	2		2	89					370		1			1	
	TRUCK	3%	1%		0%	0%		0%	0%											0.856
5:00 - 6:00 PM	TOTAL	93	73		84	2		1	87					340		1			1	
	TRUCK	3%	1%		0%	0%		0%	1%											0.944
5:15 - 6:15 PM	TOTAL	105	69		96	1		1	87					359						
	TRUCK	4%	1%		0%	0%		0%	1%											0.847
5:30 - 6:30 PM	TOTAL	115	74		93			4	86					372						
	TRUCK	2%	3%		0%			0%	1%											0.877
5:45 - 6:45 PM	TOTAL	115	75		87	1		3	95					376						
	TRUCK	1%	1%		0%	0%		0%	1%											0.887
6:00 - 7:00 PM	TOTAL	127	80		79	1		3	94					384						
	TRUCK	2%	1%		0%	0%		0%	1%											0.906

1: Croton Dam SB - Thru
2: Croton Dam SB - Left
3:
4: Narragansett WB- Right
5: Narragansett WB- Left
6:
7: Croton Dam NB- Right
8: Croton Dam NB- Thru
9:
10:
11:
12:
A: Cross Croton North side of Int
B: Cross Narragansett West side of Int
C: Cross Croton South side of Int
D:

DATE:	Weekday: 09/29/2016		JOB NO:	15064
PERIOD:	Weekday: 6-10AM & 3-7PM	ENTER COUNT DATA ON THIS PAGE	NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Pheasant Ridge Road/Feeney Road		INT #:	7

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 6:15 AM	TOTAL	0	13	1	1	0	2	0	16	0	1	0	2	36						
	TRUCK																			
6:15 - 6:30 AM	TOTAL	0	12	0	1	0	1	0	28	0	0	0	0	42						
	TRUCK																			
6:30 - 6:45 AM	TOTAL	0	22	0	2	0	1	0	28	0	1	0	1	55						
	TRUCK		1																	
6:45 - 7:00 AM	TOTAL	0	35	0	3	0	0	0	33	0	0	0	0	71		1			1	
	TRUCK		3						1											
7:00 - 7:15 AM	TOTAL	1	37	1	3	0	1	0	37	0	0	0	2	82						
	TRUCK		2	1																
7:15 - 7:30 AM	TOTAL	0	46	0	4	0	3	1	45	0	1	0	2	102						
	TRUCK		2				2													
7:30 - 7:45 AM	TOTAL	0	54	0	1	0	1	0	60	0	0	0	1	117						
	TRUCK		1						3											
7:45 - 8:00 AM	TOTAL	2	59	2	3	0	1	1	44	0	2	0	4	118						
	TRUCK		6	1																
8:00 - 8:15 AM	TOTAL	1	43	1	1	0	3	2	31	0	2	1	2	87		3			3	
	TRUCK		2		1		2		3											
8:15 - 8:30 AM	TOTAL	0	40	2	1	1	0	1	35	0	2	0	1	83						
	TRUCK		1	1				1	2											
8:30 - 8:45 AM	TOTAL	1	37	2	3	0	0	0	47	1	2	0	0	93						
	TRUCK		3						3											
8:45 - 9:00 AM	TOTAL	0	40	0	2	0	0	0	36	1	2	0	1	82						
	TRUCK		2						2											
9:00 - 9:15 AM	TOTAL	0	36	1	3	0	0	0	31	0	0	0	2	73						
	TRUCK		3																	
9:15 - 9:30 AM	TOTAL	1	30	2	1	0	0	0	26	0	2	0	1	63						
	TRUCK		2						1											
9:30 - 9:45 AM	TOTAL	0	24	1	5	0	1	1	34	0	0	0	2	68						
	TRUCK								3											
9:45 - 10:00 AM	TOTAL	1	42	0	1	0	1	0	27	3	0	0	2	77						
	TRUCK																			
3:00 - 3:15 PM	TOTAL	2	32	4	0	0	0	1	38	1	2	0	2	82						
	TRUCK		4					1												

3:15 - 3:30 PM	TOTAL	1	48	4	2	0	1	0	37	0	0	0	0	93					
	TRUCK		2						2										
3:30 - 3:45 PM	TOTAL	1	44	0	1	0	0	0	37	0	4	0	0	87					
	TRUCK				1				2										
3:45 - 4:00 PM	TOTAL	0	55	1	0	1	1	2	48	3	1	1	0	113	1				1
	TRUCK		2				1		4										
4:00 - 4:15 PM	TOTAL	0	35	2	0	0	0	0	48	1	0	0	1	87	1				1
	TRUCK		1						2										
4:15 - 4:30 PM	TOTAL	2	47	3	3	0	1	0	37	1	0	0	0	94					
	TRUCK																		
4:30 - 4:45 PM	TOTAL	0	44	1	3	1	0	1	61	0	2	0	2	115					
	TRUCK			1		1			2		1								
4:45 - 5:00 PM	TOTAL	1	58	2	0	0	1	1	45	0	0	1	3	112					
	TRUCK																		
5:00 - 5:15 PM	TOTAL	3	38	2	3	0	0	1	39	0	0	0	0	86					
	TRUCK			1	1														
5:15 - 5:30 PM	TOTAL	2	37	5	3	0	1	0	45	1	1	0	1	96					
	TRUCK		3																
5:30 - 5:45 PM	TOTAL	2	45	2	2	0	1	0	40	0	1	0	0	93					
	TRUCK		1																
5:45 - 6:00 PM	TOTAL	2	36	3	2	0	0	0	44	0	3	0	0	90					
	TRUCK								1										
6:00 - 6:15 PM	TOTAL	0	54	2	1	0	0	1	46	5	0	0	0	109	2				2
	TRUCK		1																
6:15 - 6:30 PM	TOTAL	3	48	1	3	0	1	2	42	0	0	0	0	100					
	TRUCK		1																
6:30 - 6:45 PM	TOTAL	0	51	5	3	1	1	1	40	5	0	0	0	107	1				1
	TRUCK																		
6:45 - 7:00 PM	TOTAL	3	46	4	2	0	2	0	31	0	2	0	0	90					
	TRUCK		1						1										

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3: Croton Dam SB - Left
4: Feeney WB - Right
5: Feeney WB - Thru
6: Feeney WB - Left
7: Croton Dam NB - Right
8: Croton Dam NB - Thru
9: Croton Dam NB - Left
10: Pheasant Ridge - Right
11: Pheasant Ridge - Thru
12: Pheasant Ridge - Left

A: Cross Croton North side of Int
B: Cross Feeney East side of Int
C: Cross Croton South side of Int
D: Cross Pheasant West side of Int

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM
LOCATION:	Croton Dam Road & Pheasant Ridge Road/Feeney Road

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	7

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 7:00 AM	TOTAL		82	1	7		4		105		2		3	204		1			1	
	TRUCK		5%	0%	0%		0%		1%		0%		0%							0.718
6:15 - 7:15 AM	TOTAL	1	106	1	9		3		126		1		3	250		1			1	
	TRUCK	0%	6%	100%	0%		0%		1%		0%		0%							0.762
6:30 - 7:30 AM	TOTAL	1	140	1	12		5	1	143		2		5	310		1			1	
	TRUCK	0%	6%	100%	0%		40%	0%	1%		0%		0%							0.76
6:45 - 7:45 AM	TOTAL	1	172	1	11		5	1	175		1		5	372		1			1	
	TRUCK	0%	5%	100%	0%		40%	0%	2%		0%		0%							0.795
7:00 - 8:00 AM	TOTAL	3	196	3	11		6	2	186		3		9	419						
	TRUCK	0%	6%	67%	0%		33%	0%	2%		0%		0%							0.888
7:15 - 8:15 AM	TOTAL	3	202	3	9		8	4	180		5	1	9	424		3			3	
	TRUCK	0%	5%	33%	11%		50%	0%	3%		0%	0%	0%							0.898
7:30 - 8:30 AM	TOTAL	3	196	5	6	1	5	4	170		6	1	8	405		3			3	
	TRUCK	0%	5%	40%	17%	0%	40%	25%	5%		0%	0%	0%							0.858
7:45 - 8:45 AM	TOTAL	4	179	7	8	1	4	4	157	1	8	1	7	381		3			3	
	TRUCK	0%	7%	29%	13%	0%	50%	25%	5%	0%	0%	0%	0%							0.807
8:00 - 9:00 AM	TOTAL	2	160	5	7	1	3	3	149	2	8	1	4	345		3			3	
	TRUCK	0%	5%	20%	14%	0%	67%	33%	7%	0%	0%	0%	0%							0.927
8:15 - 9:15 AM	TOTAL	1	153	5	9	1		1	149	2	6		4	331						
	TRUCK	0%	6%	20%	0%	0%		100%	5%	0%	0%		0%							0.89
8:30 - 9:30 AM	TOTAL	2	143	5	9				140	2	6		4	311						
	TRUCK	0%	7%	0%	0%				4%	0%	0%		0%							0.836
8:45 - 9:45 AM	TOTAL	1	130	4	11		1	1	127	1	4		6	286						
	TRUCK	0%	5%	0%	0%		0%	0%	5%	0%	0%		0%							0.872
9:00 - 10:00 AM	TOTAL	2	132	4	10		2	1	118	3	2		7	281						
	TRUCK	0%	4%	0%	0%		0%	0%	3%	0%	0%		0%							0.912
3:00 - 4:00 PM	TOTAL	4	179	9	3	1	2	3	160	4	7	1	2	375	1				1	
	TRUCK	0%	4%	0%	33%	0%	50%	33%	5%	0%	0%	0%	0%							0.83
3:15 - 4:15 PM	TOTAL	2	182	7	3	1	2	2	170	4	5	1	1	380	2				2	
	TRUCK	0%	3%	0%	33%	0%	50%	0%	6%	0%	0%	0%	0%							0.841
3:30 - 4:30 PM	TOTAL	3	181	6	4	1	2	2	170	5	5	1	1	381	2				2	
	TRUCK	0%	2%	0%	25%	0%	50%	0%	5%	0%	0%	0%	0%							0.843
3:45 - 4:45 PM	TOTAL	2	181	7	6	2	2	3	194	5	3	1	3	409	2				2	
	TRUCK	0%	2%	14%	0%	50%	50%	0%	4%	0%	33%	0%	0%							0.889

4:00 - 5:00 PM	TOTAL	3	184	8	6	1	2	2	191	2	2	1	6	408	1				1	
	TRUCK	0%	1%	13%	0%	100%	0%	0%	2%	0%	50%	0%	0%							0.887
4:15 - 5:15 PM	TOTAL	6	187	8	9	1	2	3	182	1	2	1	5	407						
	TRUCK	0%	0%	25%	11%	100%	0%	0%	1%	0%	50%	0%	0%							0.885
4:30 - 5:30 PM	TOTAL	6	177	10	9	1	2	3	190	1	3	1	6	409						
	TRUCK	0%	2%	20%	11%	100%	0%	0%	1%	0%	33%	0%	0%							0.889
4:45 - 5:45 PM	TOTAL	8	178	11	8		3	2	169	1	2	1	4	387						
	TRUCK	0%	2%	9%	13%		0%	0%	0%	0%	0%	0%	0%							0.864
5:00 - 6:00 PM	TOTAL	9	156	12	10		2	1	168	1	5		1	365						
	TRUCK	0%	3%	8%	10%		0%	0%	1%	0%	0%		0%							0.951
5:15 - 6:15 PM	TOTAL	6	172	12	8		2	1	175	6	5		1	388	2				2	
	TRUCK	0%	3%	0%	0%		0%	0%	1%	0%	0%		0%							0.89
5:30 - 6:30 PM	TOTAL	7	183	8	8		2	3	172	5	4			392	2				2	
	TRUCK	0%	2%	0%	0%		0%	0%	1%	0%	0%									0.899
5:45 - 6:45 PM	TOTAL	5	189	11	9	1	2	4	172	10	3			406	3				3	
	TRUCK	0%	1%	0%	0%	0%	0%	0%	1%	0%	0%									0.931
6:00 - 7:00 PM	TOTAL	6	199	12	9	1	4	4	159	10	2			406	3				3	
	TRUCK	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%									0.931

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3: Croton Dam SB - Left
4: Feeney WB - Right
5: Feeney WB - Thru
6: Feeney WB - Left
7: Croton Dam NB - Right
8: Croton Dam NB - Thru
9: Croton Dam NB - Left
10: Pheasant Ridge - Right
11: Pheasant Ridge - Thru
12: Pheasant Ridge - Left

A: Cross Croton North side of Int
B: Cross Feeney East side of Int
C: Cross Croton South side of Int
D: Cross Pheasant West side of Int

DATE:	Weekday: 09/29/2016		JOB NO:	15064
PERIOD:	Weekday: 6-10AM & 3-7PM	**ENTER COUNT DATA ON THIS PAGE**	NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Kitchawan State Road (NY 134)		INT #:	8

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 6:15 AM	TOTAL	2	14		17	2		0	6					41						
	TRUCK																			
6:15 - 6:30 AM	TOTAL	7	11		27	2		3	12					62						
	TRUCK																			
6:30 - 6:45 AM	TOTAL	14	21		28	3		0	23					89						
	TRUCK		1																	
6:45 - 7:00 AM	TOTAL	13	30		31	2		5	21					102						
	TRUCK		1		1			2												
7:00 - 7:15 AM	TOTAL	17	30		38	6		8	21					120						
	TRUCK	1	1					2												
7:15 - 7:30 AM	TOTAL	16	38		46	5		9	20					134						
	TRUCK		2						1											
7:30 - 7:45 AM	TOTAL	11	49		57	3		6	14					140						
	TRUCK	3	1		3				1											
7:45 - 8:00 AM	TOTAL	12	41		49	2		21	19					144						
	TRUCK	2	5					1	1											
8:00 - 8:15 AM	TOTAL	12	37		31	5		7	8					100						
	TRUCK	1	1		4			1												
8:15 - 8:30 AM	TOTAL	16	38		30	5		4	15					108						
	TRUCK	3	2		2															
8:30 - 8:45 AM	TOTAL	12	32		43	5		8	21					121						
	TRUCK	3	3		3				2											
8:45 - 9:00 AM	TOTAL	11	37		41	2		4	13					108						
	TRUCK				1	1		1												
9:00 - 9:15 AM	TOTAL	8	35		30	6		3	12					94						
	TRUCK		4		1															
9:15 - 9:30 AM	TOTAL	5	29		25	3		3	19					84						
	TRUCK		1		1				2											
9:30 - 9:45 AM	TOTAL	11	24		37	4		2	11					89						
	TRUCK	2			3															
9:45 - 10:00 AM	TOTAL	11	39		27	3		3	16					99						
	TRUCK								1											
3:00 - 3:15 PM	TOTAL	16	36		37	4		1	17					111						
	TRUCK	1	6					1	2											

3:15 - 3:30 PM	TOTAL	17	45		35	5		7	13					122						
	TRUCK	4	1		1	1		1												
3:30 - 3:45 PM	TOTAL	15	42		29	9		2	13					110						
	TRUCK	2	1		3	1														
3:45 - 4:00 PM	TOTAL	15	50		36	8		5	12					126						
	TRUCK	1			3			2	3											
4:00 - 4:15 PM	TOTAL	15	32		41	12		6	10					116						
	TRUCK				3			1	2											
4:15 - 4:30 PM	TOTAL	22	44		33	8		7	11					125						
	TRUCK	1																		
4:30 - 4:45 PM	TOTAL	25	41		50	13		5	6					140						
	TRUCK				2			1												
4:45 - 5:00 PM	TOTAL	15	53		38	9		7	11					133						
	TRUCK							2												
5:00 - 5:15 PM	TOTAL	18	42		38	3		1	9					111						
	TRUCK	1	1		1															
5:15 - 5:30 PM	TOTAL	10	38		42	10		6	11					117						
	TRUCK	1	2					1												
5:30 - 5:45 PM	TOTAL	14	47		35	9		2	8					115						
	TRUCK	1	1																	
5:45 - 6:00 PM	TOTAL	19	41		40	7		1	7					115						
	TRUCK				1															
6:00 - 6:15 PM	TOTAL	19	52		36	11		5	13					136						
	TRUCK	1	1																	
6:15 - 6:30 PM	TOTAL	20	47		35	7		4	13					126						
	TRUCK	2	1																	
6:30 - 6:45 PM	TOTAL	11	57		41	3		1	10					123						
	TRUCK																			
6:45 - 7:00 PM	TOTAL	17	50		31	4		2	9					113						
	TRUCK		1		1															

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3:
4: Croton Dam NB- Thru
5: Croton Damn NB, Left
6:
7: Kitchawan State EB- Right
8: Kitchawan State EB- Left
9:
10:
11:
12:
A: Cross Croton North side of Int
B: Cross Croton South side of Int
C: Cross Kitchawan West side of Int
D:

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM
LOCATION:	Croton Dam Road & Kitchawan State Road (NY 134)

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	8

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 7:00 AM	TOTAL	36	76		103	9		8	62					294						
	TRUCK	0%	3%		1%	0%		25%	0%											0.721
6:15 - 7:15 AM	TOTAL	51	92		124	13		16	77					373						
	TRUCK	2%	3%		1%	0%		25%	0%											0.777
6:30 - 7:30 AM	TOTAL	60	119		143	16		22	85					445						
	TRUCK	2%	4%		1%	0%		18%	1%											0.83
6:45 - 7:45 AM	TOTAL	57	147		172	16		28	76					496						
	TRUCK	7%	3%		2%	0%		14%	3%											0.886
7:00 - 8:00 AM	TOTAL	56	158		190	16		44	74					538						
	TRUCK	11%	6%		2%	0%		7%	4%											0.934
7:15 - 8:15 AM	TOTAL	51	165		183	15		43	61					518						
	TRUCK	12%	5%		4%	0%		5%	5%											0.899
7:30 - 8:30 AM	TOTAL	51	165		167	15		38	56					492						
	TRUCK	18%	5%		5%	0%		5%	4%											0.854
7:45 - 8:45 AM	TOTAL	52	148		153	17		40	63					473						
	TRUCK	17%	7%		6%	0%		5%	5%											0.821
8:00 - 9:00 AM	TOTAL	51	144		145	17		23	57					437						
	TRUCK	14%	4%		7%	6%		9%	4%											0.903
8:15 - 9:15 AM	TOTAL	47	142		144	18		19	61					431						
	TRUCK	13%	6%		5%	6%		5%	3%											0.89
8:30 - 9:30 AM	TOTAL	36	133		139	16		18	65					407						
	TRUCK	8%	6%		4%	6%		6%	6%											0.841
8:45 - 9:45 AM	TOTAL	35	125		133	15		12	55					375						
	TRUCK	6%	4%		5%	7%		8%	4%											0.868
9:00 - 10:00 AM	TOTAL	35	127		119	16		11	58					366						
	TRUCK	6%	4%		4%	0%		0%	5%											0.924
3:00 - 4:00 PM	TOTAL	63	173		137	26		15	55					469						
	TRUCK	13%	5%		5%	8%		27%	9%											0.931
3:15 - 4:15 PM	TOTAL	62	169		141	34		20	48					474						
	TRUCK	11%	1%		7%	6%		20%	10%											0.94
3:30 - 4:30 PM	TOTAL	67	168		139	37		20	46					477						
	TRUCK	6%	1%		6%	3%		15%	11%											0.946
3:45 - 4:45 PM	TOTAL	77	167		160	41		23	39					507						
	TRUCK	3%	0%		5%	0%		17%	13%											0.905

4:00 - 5:00 PM	TOTAL	77	170		162	42		25	38					514						
	TRUCK	1%	0%		3%	0%		16%	5%											0.918
4:15 - 5:15 PM	TOTAL	80	180		159	33		20	37					509						
	TRUCK	3%	1%		2%	0%		15%	0%											0.909
4:30 - 5:30 PM	TOTAL	68	174		168	35		19	37					501						
	TRUCK	3%	2%		2%	0%		21%	0%											0.895
4:45 - 5:45 PM	TOTAL	57	180		153	31		16	39					476						
	TRUCK	5%	2%		1%	0%		19%	0%											0.895
5:00 - 6:00 PM	TOTAL	61	168		155	29		10	35					458						
	TRUCK	5%	2%		1%	0%		10%	0%											0.979
5:15 - 6:15 PM	TOTAL	62	178		153	37		14	39					483						
	TRUCK	5%	2%		1%	0%		7%	0%											0.888
5:30 - 6:30 PM	TOTAL	72	187		146	34		12	41					492						
	TRUCK	6%	2%		1%	0%		0%	0%											0.904
5:45 - 6:45 PM	TOTAL	69	197		152	28		11	43					500						
	TRUCK	4%	1%		1%	0%		0%	0%											0.919
6:00 - 7:00 PM	TOTAL	67	206		143	25		12	45					498						
	TRUCK	4%	1%		1%	0%		0%	0%											0.915

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3:
4: Croton Dam NB- Thru
5: Croton Damn NB, Left
6:
7: Kitchawan State EB- Right
8: Kitchawan State EB- Left
9:
10:
11:
12:

A: Cross Croton North side of Int
B: Cross Croton South side of Int
C: Cross Kitchawan West side of Int
D:

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM

PEAK HOUR CALCULATIONS - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank

TIME	CLASS	TOTAL INT. 1	TOTAL INT. 2	TOTAL INT. 3	TOTAL INT. 4	TOTAL INT. 5	TOTAL INT. 6	TOTAL INT. 7	TOTAL INT. 8	Sub-Total Int. 1 - 8
6:00 - 7:00 AM	TOTAL	292	231	143	155	138	192	204	294	1,649
6:15 - 7:15 AM	TOTAL	403	304	176	181	161	234	250	373	2,082
6:30 - 7:30 AM	TOTAL	504	393	207	214	198	291	310	445	2,562
6:45 - 7:45 AM	TOTAL	598	467	245	223	230	349	372	496	2,980
7:00 - 8:00 AM	TOTAL	651	502	254	237	232	388	419	538	3,221
7:15 - 8:15 AM	TOTAL	639	496	263	224	239	407	424	518	3,210
7:30 - 8:30 AM	TOTAL	601	457	251	207	222	379	405	492	3,014
7:45 - 8:45 AM	TOTAL	548	399	223	198	205	360	381	473	2,787
8:00 - 9:00 AM	TOTAL	516	357	213	185	197	334	345	437	2,584
8:15 - 9:15 AM	TOTAL	496	346	196	181	193	314	331	431	2,488
8:30 - 9:30 AM	TOTAL	460	322	188	161	182	301	311	407	2,332
8:45 - 9:45 AM	TOTAL	403	293	174	153	163	270	286	375	2,117
9:00 - 10:00 AM	TOTAL	358	270	163	138	157	257	281	366	1,990
3:00 - 4:00 PM	TOTAL	468	366	212	201	202	343	375	469	2,636
3:15 - 4:15 PM	TOTAL	490	385	215	207	204	363	380	474	2,718
3:30 - 4:30 PM	TOTAL	493	388	215	204	197	360	381	477	2,715
3:45 - 4:45 PM	TOTAL	507	392	224	209	203	378	409	507	2,829

4:00 - 5:00 PM	TOTAL	535	423	236	212	207	385	408	514	2,920
4:15 - 5:15 PM	TOTAL	555	432	241	207	210	381	407	509	2,942
4:30 - 5:30 PM	TOTAL	571	437	244	208	215	385	409	501	2,970
4:45 - 5:45 PM	TOTAL	571	436	236	191	207	370	387	476	2,874
5:00 - 6:00 PM	TOTAL	573	429	220	199	189	340	365	458	2,773
5:15 - 6:15 PM	TOTAL	571	434	227	202	203	359	388	483	2,867
5:30 - 6:30 PM	TOTAL	576	446	230	211	212	372	392	492	2,931
5:45 - 6:45 PM	TOTAL	539	432	240	218	222	376	406	500	2,933
6:00 - 7:00 PM	TOTAL	513	419	243	204	229	384	406	498	2,896

DATE:	Weekday: 09/29/2016		JOB NO:	15064
PERIOD:	Weekday: 6-10AM & 3-7PM	ENTER COUNT DATA ON THIS PAGE	NAME:	Traffic Databank
LOCATION:	Croton Dam Road & NY 9A (Sheet A)		INT #:	9A

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 6:15 AM	TOTAL	16	4	6		0	74	0	1					101						
	TRUCK						9													
6:15 - 6:30 AM	TOTAL	20	13	10		2	112	0	1					158						
	TRUCK	1					11													
6:30 - 6:45 AM	TOTAL	31	24	7		4	183	0	1					250						
	TRUCK					1	21													
6:45 - 7:00 AM	TOTAL	40	34	8		5	210	1	1					299						
	TRUCK	1				3	16	1												
7:00 - 7:15 AM	TOTAL	37	27	10		2	185	2	3					266						
	TRUCK	4	1			1	29	1												
7:15 - 7:30 AM	TOTAL	46	35	5		1	197	0	0					284						
	TRUCK	2	1				19													
7:30 - 7:45 AM	TOTAL	40	27	7		4	253	1	1					333						
	TRUCK	3	3			1	22		1											
7:45 - 8:00 AM	TOTAL	47	25	8		6	226	2	1					315						
	TRUCK	4	2				13	1												
8:00 - 8:15 AM	TOTAL	48	17	12		5	214	1	1					298						
	TRUCK	3	1			1	27													
8:15 - 8:30 AM	TOTAL	36	26	6		4	202	1	1					276						
	TRUCK	2	3				16													
8:30 - 8:45 AM	TOTAL	35	31	11		6	180	4	2					269						
	TRUCK	2	4				21	2												
8:45 - 9:00 AM	TOTAL	40	29	9		5	218	3	0					304						
	TRUCK	3		2			20													
9:00 - 9:15 AM	TOTAL	33	28	13		8	196	0	1					279						
	TRUCK	3	2	1		1	20													
9:15 - 9:30 AM	TOTAL	30	21	9		5	176	1	0					242						
	TRUCK		1			1	18													
9:30 - 9:45 AM	TOTAL	18	18	21		5	172	1	1					236						
	TRUCK	2	1				20													
9:45 - 10:00 AM	TOTAL	28	30	10		9	195	1	2					275						
	TRUCK	4				1	23													
3:00 - 3:15 PM	TOTAL	34	22	4		10	387	5	1					463						
	TRUCK	2	3				21													

3:15 - 3:30 PM	TOTAL	31	24	6		6	399	5	1					472						
	TRUCK	3	4	1			23													
3:30 - 3:45 PM	TOTAL	37	28	5		10	392	2	0					474						
	TRUCK	1					19													
3:45 - 4:00 PM	TOTAL	36	18	11		14	448	5	0					532						
	TRUCK	1				2	20													
4:00 - 4:15 PM	TOTAL	46	19	4		9	510	4	0					592						
	TRUCK	2					25													
4:15 - 4:30 PM	TOTAL	39	24	3		9	533	7	1					616						
	TRUCK	2				2	16													
4:30 - 4:45 PM	TOTAL	39	26	4		4	506	2	0					581						
	TRUCK	3		1			21													
4:45 - 5:00 PM	TOTAL	42	33	6		5	514	3	2					605						
	TRUCK	2					10													
5:00 - 5:15 PM	TOTAL	38	18	6		7	519	3	0					591						
	TRUCK	1	1				11													
5:15 - 5:30 PM	TOTAL	45	17	1		12	528	4	0					607						
	TRUCK	4	2				16													
5:30 - 5:45 PM	TOTAL	43	24	6		4	543	5	1					626						
	TRUCK	3					10													
5:45 - 6:00 PM	TOTAL	42	24	3		12	509	4	1					595						
	TRUCK	1		1			8		1											
6:00 - 6:15 PM	TOTAL	46	27	2		10	443	3	2					533						
	TRUCK						10													
6:15 - 6:30 PM	TOTAL	40	35	4		5	448	5	1					538						
	TRUCK		1				3													
6:30 - 6:45 PM	TOTAL	35	18	8		14	413	8	0					496						
	TRUCK	1					4													
6:45 - 7:00 PM	TOTAL	23	27	3		9	367	7	0					436						
	TRUCK						4													

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3: Croton Dam SB - Left
4:
5: NY 9A WB- Right
6: NY 9A WB- Thru
7: NY 9A WB- Left
8: NY 9A WB- U-Turn
9:
10:
11:
12:

A: Cross Croton North side of Int
B: Cross NY 9A East side of Int
C: Cross Croton South side of Int
D: Cross NY 9A West side of Int

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM
LOCATION:	Croton Dam Road & NY 9A (Sheet A)

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	9A

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 7:00 AM	TOTAL	107	75	31		11	579	1	4					808						
	TRUCK	2%	0%	0%		36%	10%	100%	0%											0.821
6:15 - 7:15 AM	TOTAL	128	98	35		13	690	3	6					973						
	TRUCK	5%	1%	0%		38%	11%	67%	0%											0.899
6:30 - 7:30 AM	TOTAL	154	120	30		12	775	3	5					1,099						
	TRUCK	5%	2%	0%		42%	11%	67%	0%											0.953
6:45 - 7:45 AM	TOTAL	163	123	30		12	845	4	5					1,182						
	TRUCK	6%	4%	0%		42%	10%	50%	20%											0.972
7:00 - 8:00 AM	TOTAL	170	114	30		13	861	5	5					1,198						
	TRUCK	8%	6%	0%		15%	10%	40%	20%											0.972
7:15 - 8:15 AM	TOTAL	181	104	32		16	890	4	3					1,230						
	TRUCK	7%	7%	0%		13%	9%	25%	33%											0.987
7:30 - 8:30 AM	TOTAL	171	95	33		19	895	5	4					1,222						
	TRUCK	7%	9%	0%		11%	9%	20%	25%											0.971
7:45 - 8:45 AM	TOTAL	166	99	37		21	822	8	5					1,158						
	TRUCK	7%	10%	0%		5%	9%	38%	0%											0.935
8:00 - 9:00 AM	TOTAL	159	103	38		20	814	9	4					1,147						
	TRUCK	6%	8%	5%		5%	10%	22%	0%											0.917
8:15 - 9:15 AM	TOTAL	144	114	39		23	796	8	4					1,128						
	TRUCK	7%	8%	8%		4%	10%	25%	0%											0.897
8:30 - 9:30 AM	TOTAL	138	109	42		24	770	8	3					1,094						
	TRUCK	6%	6%	7%		8%	10%	25%	0%											0.93
8:45 - 9:45 AM	TOTAL	121	96	52		23	762	5	2					1,061						
	TRUCK	7%	4%	6%		9%	10%	0%	0%											0.946
9:00 - 10:00 AM	TOTAL	109	97	53		27	739	3	4					1,032						
	TRUCK	8%	4%	2%		11%	11%	0%	0%											0.923
3:00 - 4:00 PM	TOTAL	138	92	26		40	1,626	17	2					1,941						
	TRUCK	5%	8%	4%		5%	5%	0%	0%											0.931
3:15 - 4:15 PM	TOTAL	150	89	26		39	1,749	16	1					2,070						
	TRUCK	5%	4%	4%		5%	5%	0%	0%											0.981
3:30 - 4:30 PM	TOTAL	158	89	23		42	1,883	18	1					2,214						
	TRUCK	4%	0%	0%		10%	4%	0%	0%											0.938
3:45 - 4:45 PM	TOTAL	160	87	22		36	1,997	18	1					2,321						
	TRUCK	5%	0%	5%		11%	4%	0%	0%											0.969

4:00 - 5:00 PM	TOTAL	166	102	17		27	2,063	16	3					2,394							
	TRUCK	5%	0%	6%		7%	3%	0%	0%												0.98
4:15 - 5:15 PM	TOTAL	158	101	19		25	2,072	15	3					2,393							
	TRUCK	5%	1%	5%		8%	3%	0%	0%												0.974
4:30 - 5:30 PM	TOTAL	164	94	17		28	2,067	12	2					2,384							
	TRUCK	6%	3%	6%		0%	3%	0%	0%												0.969
4:45 - 5:45 PM	TOTAL	168	92	19		28	2,104	15	3					2,429							
	TRUCK	6%	3%	0%		0%	2%	0%	0%												0.966
5:00 - 6:00 PM	TOTAL	168	83	16		35	2,099	16	2					2,419							
	TRUCK	5%	4%	6%		0%	2%	0%	50%												0.953
5:15 - 6:15 PM	TOTAL	176	92	12		38	2,023	16	4					2,361							
	TRUCK	5%	2%	8%		0%	2%	0%	25%												0.954
5:30 - 6:30 PM	TOTAL	171	110	15		31	1,943	17	5					2,292							
	TRUCK	2%	1%	7%		0%	2%	0%	20%												0.939
5:45 - 6:45 PM	TOTAL	163	104	17		41	1,813	20	4					2,162							
	TRUCK	1%	1%	6%		0%	1%	0%	25%												0.956
6:00 - 7:00 PM	TOTAL	144	107	17		38	1,671	23	3					2,003							
	TRUCK	1%	1%	0%		0%	1%	0%	0%												0.931

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3: Croton Dam SB - Left
4:
5: NY 9A WB- Right
6: NY 9A WB- Thru
7: NY 9A WB- Left
8: NY 9A WB- U-Turn
9:
10:
11:
12:

A: Cross Croton North side of Int
B: Cross NY 9A East side of Int
C: Cross Croton South side of Int
D: Cross NY 9A West side of Int

DATE:	Weekday: 09/29/2016		JOB NO:	15064
PERIOD:	Weekday: 6-10AM & 3-7PM	ENTER COUNT DATA ON THIS PAGE	NAME:	Traffic Databank
LOCATION:	Croton Dam Road & NY 9A (Sheet B)		INT #:	9B

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 6:15 AM	TOTAL	7	7	2		10	430	12	0					468						
	TRUCK						20													
6:15 - 6:30 AM	TOTAL	26	13	5		4	525	12	0					585						
	TRUCK						19	1												
6:30 - 6:45 AM	TOTAL	28	20	5		8	557	22	0					640						
	TRUCK					1	16	1												
6:45 - 7:00 AM	TOTAL	20	23	5		13	585	19	0					665						
	TRUCK						29	1												
7:00 - 7:15 AM	TOTAL	21	29	7		11	519	16	0					603						
	TRUCK						26													
7:15 - 7:30 AM	TOTAL	21	39	7		21	554	26	0					668						
	TRUCK		1			1	19	1												
7:30 - 7:45 AM	TOTAL	15	47	6		23	518	20	0					629						
	TRUCK		4			1	27	2												
7:45 - 8:00 AM	TOTAL	19	37	13		31	514	34	0					648						
	TRUCK		1			5	34	5												
8:00 - 8:15 AM	TOTAL	5	25	10		32	515	41	0					628						
	TRUCK		3			3	25	5												
8:15 - 8:30 AM	TOTAL	18	20	6		21	510	38	0					613						
	TRUCK		2			1	24	4												
8:30 - 8:45 AM	TOTAL	15	30	17		15	440	37	0					554						
	TRUCK	1	3	1			18	3												
8:45 - 9:00 AM	TOTAL	18	28	10		14	353	31	0					454						
	TRUCK			1			15	4												
9:00 - 9:15 AM	TOTAL	12	17	12		16	355	28	1					441						
	TRUCK					1	19	2												
9:15 - 9:30 AM	TOTAL	17	19	9		13	430	30	0					518						
	TRUCK	2				1	17	2												
9:30 - 9:45 AM	TOTAL	19	25	6		16	308	27	0					401						
	TRUCK		4			1	15	2												
9:45 - 10:00 AM	TOTAL	16	14	15		14	337	18	0					414						
	TRUCK		1				23	5												
3:00 - 3:15 PM	TOTAL	24	17	10		27	253	34	0					365						
	TRUCK	1	1			1	23	2												

3:15 - 3:30 PM	TOTAL	13	23	15		30	294	21	2					398						
	TRUCK		1			1	25													
3:30 - 3:45 PM	TOTAL	12	22	8		32	284	41	0					399						
	TRUCK	1	2			1	18	3												
3:45 - 4:00 PM	TOTAL	7	32	8		41	287	37	0					412						
	TRUCK	2	2			2	8	1												
4:00 - 4:15 PM	TOTAL	8	29	11		24	304	48	1					425						
	TRUCK	3	3				10	2												
4:15 - 4:30 PM	TOTAL	9	26	10		32	262	25	0					364						
	TRUCK					2	12													
4:30 - 4:45 PM	TOTAL	9	30	16		37	289	34	3					418						
	TRUCK	1	1				12	2												
4:45 - 5:00 PM	TOTAL	12	25	15		38	266	26	3					385						
	TRUCK						9	2												
5:00 - 5:15 PM	TOTAL	8	31	6		38	307	43	1					434						
	TRUCK	1				1	5													
5:15 - 5:30 PM	TOTAL	8	36	6		27	231	43	1					352						
	TRUCK					1	10													
5:30 - 5:45 PM	TOTAL	8	18	14		32	257	33	0					362						
	TRUCK					3	9													
5:45 - 6:00 PM	TOTAL	11	23	18		29	206	52	0					339						
	TRUCK		2				4													
6:00 - 6:15 PM	TOTAL	11	26	13		40	231	34	1					356						
	TRUCK					2	5	1												
6:15 - 6:30 PM	TOTAL	9	24	13		33	240	43	0					362						
	TRUCK					2	1													
6:30 - 6:45 PM	TOTAL	12	27	13		42	213	44	0					351						
	TRUCK						6													
6:45 - 7:00 PM	TOTAL	8	25	10		31	181	25	0					280						
	TRUCK		1			1	6	1												

1: Croton Dam NB - Right
2: Croton Dam NB - Thru
3: Croton Dam NB - Left
4:
5: NY 9A EB- Right
6: NY 9A EB- Thru
7: NY 9A EB - Left
8: NY 9A EB - U-Turn
9:
10:
11:
12:

A:
B:
C:
D:

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM
LOCATION:	Croton Dam Road & NY 9A (Sheet B)

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	9B

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
6:00 - 7:00 AM	TOTAL	81	63	17		35	2,097	65						2,358						-
	TRUCK	0%	0%	0%		3%	4%	5%												
6:15 - 7:15 AM	TOTAL	95	85	22		36	2,186	69						2,493						-
	TRUCK	0%	0%	0%		3%	4%	4%												
6:30 - 7:30 AM	TOTAL	90	111	24		53	2,215	83						2,576						-
	TRUCK	0%	1%	0%		4%	4%	4%												
6:45 - 7:45 AM	TOTAL	77	138	25		68	2,176	81						2,565						-
	TRUCK	0%	4%	0%		3%	5%	5%												
7:00 - 8:00 AM	TOTAL	76	152	33		86	2,105	96						2,548						-
	TRUCK	0%	4%	0%		8%	5%	8%												
7:15 - 8:15 AM	TOTAL	60	148	36		107	2,101	121						2,573						-
	TRUCK	0%	6%	0%		9%	5%	11%												
7:30 - 8:30 AM	TOTAL	57	129	35		107	2,057	133						2,518						-
	TRUCK	0%	8%	0%		9%	5%	12%												
7:45 - 8:45 AM	TOTAL	57	112	46		99	1,979	150						2,443						-
	TRUCK	2%	8%	2%		9%	5%	11%												
8:00 - 9:00 AM	TOTAL	56	103	43		82	1,818	147						2,249						-
	TRUCK	2%	8%	5%		5%	5%	11%												
8:15 - 9:15 AM	TOTAL	63	95	45		66	1,658	134	1					2,062						-
	TRUCK	2%	5%	4%		3%	5%	10%	0%											
8:30 - 9:30 AM	TOTAL	62	94	48		58	1,578	126	1					1,967						-
	TRUCK	5%	3%	4%		3%	4%	9%	0%											
8:45 - 9:45 AM	TOTAL	66	89	37		59	1,446	116	1					1,814						-
	TRUCK	3%	4%	3%		5%	5%	9%	0%											
9:00 - 10:00 AM	TOTAL	64	75	42		59	1,430	103	1					1,774						-
	TRUCK	3%	7%	0%		5%	5%	11%	0%											
3:00 - 4:00 PM	TOTAL	56	94	41		130	1,118	133	2					1,574						-
	TRUCK	7%	6%	0%		4%	7%	5%	0%											
3:15 - 4:15 PM	TOTAL	40	106	42		127	1,169	147	3					1,634						-
	TRUCK	15%	8%	0%		3%	5%	4%	0%											
3:30 - 4:30 PM	TOTAL	36	109	37		129	1,137	151	1					1,600						-
	TRUCK	17%	6%	0%		4%	4%	4%	0%											
3:45 - 4:45 PM	TOTAL	33	117	45		134	1,142	144	4					1,619						-
	TRUCK	18%	5%	0%		3%	4%	3%	0%											

4:00 - 5:00 PM	TOTAL	38	110	52		131	1,121	133	7					1,592							-
	TRUCK	11%	4%	0%		2%	4%	5%	0%												
4:15 - 5:15 PM	TOTAL	38	112	47		145	1,124	128	7					1,601							-
	TRUCK	5%	1%	0%		2%	3%	3%	0%												
4:30 - 5:30 PM	TOTAL	37	122	43		140	1,093	146	8					1,589							-
	TRUCK	5%	1%	0%		1%	3%	3%	0%												
4:45 - 5:45 PM	TOTAL	36	110	41		135	1,061	145	5					1,533							-
	TRUCK	3%	0%	0%		4%	3%	1%	0%												
5:00 - 6:00 PM	TOTAL	35	108	44		126	1,001	171	2					1,487							-
	TRUCK	3%	2%	0%		4%	3%	0%	0%												
5:15 - 6:15 PM	TOTAL	38	103	51		128	925	162	2					1,409							-
	TRUCK	0%	2%	0%		5%	3%	1%	0%												
5:30 - 6:30 PM	TOTAL	39	91	58		134	934	162	1					1,419							-
	TRUCK	0%	2%	0%		5%	2%	1%	0%												
5:45 - 6:45 PM	TOTAL	43	100	57		144	890	173	1					1,408							-
	TRUCK	0%	2%	0%		3%	2%	1%	0%												
6:00 - 7:00 PM	TOTAL	40	102	49		146	865	146	1					1,349							-
	TRUCK	0%	1%	0%		3%	2%	1%	0%												

1: Croton Dam NB - Right
2: Croton Dam NB - Thru
3: Croton Dam NB - Left
4:
5: NY 9A EB- Right
6: NY 9A EB- Thru
7: NY 9A EB - Left
8: NY 9A EB - U-Turn
9:
10:
11:
12:

A:
B:
C:
D:

DATE:	Weekday: 09/29/2016
PERIOD:	Weekday: 6-10AM & 3-7PM

PEAK HOUR CALCULATIONS - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank

TIME	CLASS	Sub-Total Int. 1 - 8	TOTAL INT. 9A	TOTAL INT. 9B	Sub-Total Int. 9	TOTAL
6:00 - 7:00 AM	TOTAL	1,649	808	2,358	3,166	4,815
6:15 - 7:15 AM	TOTAL	2,082	973	2,493	3,466	5,548
6:30 - 7:30 AM	TOTAL	2,562	1,099	2,576	3,675	6,237
6:45 - 7:45 AM	TOTAL	2,980	1,182	2,565	3,747	6,727
7:00 - 8:00 AM	TOTAL	3,221	1,198	2,548	3,746	6,967
7:15 - 8:15 AM	TOTAL	3,210	1,230	2,573	3,803	7,013
7:30 - 8:30 AM	TOTAL	3,014	1,222	2,518	3,740	6,754
7:45 - 8:45 AM	TOTAL	2,787	1,158	2,443	3,601	6,388
8:00 - 9:00 AM	TOTAL	2,584	1,147	2,249	3,396	5,980
8:15 - 9:15 AM	TOTAL	2,488	1,128	2,062	3,190	5,678
8:30 - 9:30 AM	TOTAL	2,332	1,094	1,967	3,061	5,393
8:45 - 9:45 AM	TOTAL	2,117	1,061	1,814	2,875	4,992
9:00 - 10:00 AM	TOTAL	1,990	1,032	1,774	2,806	4,796
3:00 - 4:00 PM	TOTAL	2,636	1,941	1,574	3,515	6,151
3:15 - 4:15 PM	TOTAL	2,718	2,070	1,634	3,704	6,422
3:30 - 4:30 PM	TOTAL	2,715	2,214	1,600	3,814	6,529
3:45 - 4:45 PM	TOTAL	2,829	2,321	1,619	3,940	6,769

4:00 - 5:00 PM	TOTAL	2,920	2,394	1,592	3,986	6,906
4:15 - 5:15 PM	TOTAL	2,942	2,393	1,601	3,994	6,936
4:30 - 5:30 PM	TOTAL	2,970	2,384	1,589	3,973	6,943
4:45 - 5:45 PM	TOTAL	2,874	2,429	1,533	3,962	6,836
5:00 - 6:00 PM	TOTAL	2,773	2,419	1,487	3,906	6,679
5:15 - 6:15 PM	TOTAL	2,867	2,361	1,409	3,770	6,637
5:30 - 6:30 PM	TOTAL	2,931	2,292	1,419	3,711	6,642
5:45 - 6:45 PM	TOTAL	2,933	2,162	1,408	3,570	6,503
6:00 - 7:00 PM	TOTAL	2,896	2,003	1,349	3,352	6,248

DATE:	Saturday: 10/15/2016		JOB NO:	15064
PERIOD:	Saturday: 9AM-1PM		NAME:	Traffic Databank
LOCATION:	Dale Avenue & Pine Avenue		INT #:	1

ENTER COUNT DATA ON THIS PAGE

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 9:15 AM	TOTAL	33	8		12	13		11	36					113						
	TRUCK																			
9:15 - 9:30 AM	TOTAL	31	9		14	9		16	46					125			2		2	
	TRUCK								2											
9:30 - 9:45 AM	TOTAL	22	6		8	8		12	23					79		1	1		2	
	TRUCK								1											
9:45 - 10:00 AM	TOTAL	43	8		14	16		9	36					126						
	TRUCK	1																		
10:00 - 10:15 AM	TOTAL	41	9		10	12		11	39					122						
	TRUCK	1																		
10:15 - 10:30 AM	TOTAL	36	9		13	10		9	32					109			1		1	
	TRUCK	2							1											
10:30 - 10:45 AM	TOTAL	38	14		11	7		30	50					150						
	TRUCK	1							1											
10:45 - 11:00 AM	TOTAL	31	11		12	12		10	44					120		1			1	
	TRUCK				1				1											
11:00 - 11:15 AM	TOTAL	43	5		16	12		9	35					120	1	1			2	
	TRUCK								3											
11:15 - 11:30 AM	TOTAL	32	7		13	9		11	43					115		1	1		2	
	TRUCK								1											
11:30 - 11:45 AM	TOTAL	44	7		7	11		9	47					125	1				1	
	TRUCK	2							1											
11:45 - 12:00 PM	TOTAL	36	8		15	7		13	45					124						
	TRUCK								2											
12:00 - 12:15 PM	TOTAL	42	9		11	14		17	32					125	1	2	2		5	
	TRUCK	1																		
12:15 - 12:30 PM	TOTAL	31	6		20	18		13	31					119	2				2	
	TRUCK	1			2	1			1											
12:30 - 12:45 PM	TOTAL	35	8		11	14		12	36					116		2			2	
	TRUCK					1			1											
12:45 - 1:00 PM	TOTAL	33	8		15	7		15	47					125	2				2	
	TRUCK	1	1			1														

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM
LOCATION:	Dale Avenue & Pine Avenue

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	1

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 10:00 AM	TOTAL	129	31		48	46		48	141					443		1	3		4	
	TRUCK	1%	0%		0%	0%		0%	2%											0.879
9:15 - 10:15 AM	TOTAL	137	32		46	45		48	144					452		1	3		4	
	TRUCK	1%	0%		0%	0%		0%	2%											0.897
9:30 - 10:30 AM	TOTAL	142	32		45	46		41	130					436		1	2		3	
	TRUCK	3%	0%		0%	0%		0%	2%											0.865
9:45 - 10:45 AM	TOTAL	158	40		48	45		59	157					507			1		1	
	TRUCK	3%	0%		0%	0%		0%	1%											0.845
10:00 - 11:00 AM	TOTAL	146	43		46	41		60	165					501		1	1		2	
	TRUCK	3%	0%		2%	0%		0%	2%											0.835
10:15 - 11:15 AM	TOTAL	148	39		52	41		58	161					499	1	2	1		4	
	TRUCK	2%	0%		2%	0%		0%	4%											0.832
10:30 - 11:30 AM	TOTAL	144	37		52	40		60	172					505	1	3	1		5	
	TRUCK	1%	0%		2%	0%		0%	3%											0.842
10:45 - 11:45 AM	TOTAL	150	30		48	44		39	169					480	2	3	1		6	
	TRUCK	1%	0%		2%	0%		0%	4%											0.96
11:00 - 12:00 AM	TOTAL	155	27		51	39		42	170					484	2	2	1		5	
	TRUCK	1%	0%		0%	0%		0%	4%											0.968
11:15 - 12:15 AM	TOTAL	154	31		46	41		50	167					489	2	3	3		8	
	TRUCK	2%	0%		0%	0%		0%	2%											0.978
11:30 - 12:30 AM	TOTAL	153	30		53	50		52	155					493	4	2	2		8	
	TRUCK	3%	0%		4%	2%		0%	3%											0.986
11:45 - 12:45 PM	TOTAL	144	31		57	53		55	144					484	3	4	2		9	
	TRUCK	1%	0%		4%	4%		0%	3%											0.968
12:00 - 1:00 PM	TOTAL	141	31		57	53		57	146					485	5	4	2		11	
	TRUCK	2%	3%		4%	6%		0%	1%											0.97

1: Dale Ave SB- Thru
2: Dale Ave SB - Left
3:
4: Pine Ave WB- Right
5: Pine Ave WB- Left
6:
7: Dale Ave NB - Right
8: Dale Ave NB - Thru
9:
10:
11:
12:

A: Cross Dale Ave North side of int
B: Cross Pine Ave East side of int
C: Cross Dale Ave South side of int
D:

DATE:	Saturday: 10/15/2016		JOB NO:	15064
PERIOD:	Saturday: 9AM-1PM	**ENTER COUNT DATA ON THIS PAGE**	NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Dale Ave/Hawkes Ave		INT #:	2

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 9:15 AM	TOTAL	0	24		27	17		13	0					81						
	TRUCK																			
9:15 - 9:30 AM	TOTAL	0	28		32	28		13	1					102						
	TRUCK				1	1														
9:30 - 9:45 AM	TOTAL	1	17		11	20		8	0					57						
	TRUCK					1														
9:45 - 10:00 AM	TOTAL	1	29		32	18		21	0					101						
	TRUCK																			
10:00 - 10:15 AM	TOTAL	1	15		23	26		33	0					98						
	TRUCK																			
10:15 - 10:30 AM	TOTAL	0	21		26	21		24	0					92						
	TRUCK							1												
10:30 - 10:45 AM	TOTAL	1	33		30	30		16	0					110						
	TRUCK																			
10:45 - 11:00 AM	TOTAL	0	23		31	22		17	0					93						
	TRUCK				1															
11:00 - 11:15 AM	TOTAL	0	29		23	27		17	0					96						
	TRUCK					1														
11:15 - 11:30 AM	TOTAL	1	24		29	22		15	0					91						
	TRUCK					1														
11:30 - 11:45 AM	TOTAL	0	30		22	30		17	0					99		1			1	
	TRUCK		1		1			1												
11:45 - 12:00 PM	TOTAL	1	21		32	26		20	0					100						
	TRUCK				1	1														
12:00 - 12:15 PM	TOTAL	4	17		19	24		32	0					96						
	TRUCK		1																	
12:15 - 12:30 PM	TOTAL	0	23		20	31		12	0					86						
	TRUCK					1														
12:30 - 12:45 PM	TOTAL	3	28		25	22		15	1					94						
	TRUCK																			
12:45 - 1:00 PM	TOTAL	2	24		28	33		14	0					101						
	TRUCK		1					1												

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM
LOCATION:	Croton Dam Road & Dale Ave/Hawkes Ave

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	2

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 10:00 AM	TOTAL	2	98		102	83		55	1					341						
	TRUCK	0%	0%		1%	2%		0%	0%											0.836
9:15 - 10:15 AM	TOTAL	3	89		98	92		75	1					358						
	TRUCK	0%	0%		1%	2%		0%	0%											0.877
9:30 - 10:30 AM	TOTAL	3	82		92	85		86						348						
	TRUCK	0%	0%		0%	1%		1%												0.861
9:45 - 10:45 AM	TOTAL	3	98		111	95		94						401						
	TRUCK	0%	0%		0%	0%		1%												0.911
10:00 - 11:00 AM	TOTAL	2	92		110	99		90						393						
	TRUCK	0%	0%		1%	0%		1%												0.893
10:15 - 11:15 AM	TOTAL	1	106		110	100		74						391						
	TRUCK	0%	0%		1%	1%		1%												0.889
10:30 - 11:30 AM	TOTAL	2	109		113	101		65						390						
	TRUCK	0%	0%		1%	2%		0%												0.886
10:45 - 11:45 AM	TOTAL	1	106		105	101		66						379		1			1	
	TRUCK	0%	1%		2%	2%		2%												0.957
11:00 - 12:00 AM	TOTAL	2	104		106	105		69						386		1			1	
	TRUCK	0%	1%		2%	3%		1%												0.965
11:15 - 12:15 AM	TOTAL	6	92		102	102		84						386		1			1	
	TRUCK	0%	2%		2%	2%		1%												0.965
11:30 - 12:30 AM	TOTAL	5	91		93	111		81						381		1			1	
	TRUCK	0%	2%		2%	2%		1%												0.953
11:45 - 12:45 PM	TOTAL	8	89		96	103		79	1					376						
	TRUCK	0%	1%		1%	2%		0%	0%											0.94
12:00 - 1:00 PM	TOTAL	9	92		92	110		73	1					377						
	TRUCK	0%	2%		0%	1%		1%	0%											0.933

1: Croton Dam Rd WB - Right
2: Croton Dam Rd WB- Thru
3:
4: Dale Ave NB - Thru
5: Dale Ave NB - Left
6:
7: Hawkes Ave SB- Right
8: Hawkes Ave SB - Left
9:
10:
11:
12:

A: Cross Croton Dam East side of Int
B: Cross Dale Ave South side of Int
C: Cross Hawkes Ave North side of Int
D:

DATE:	Saturday: 10/15/2016		JOB NO:	15064
PERIOD:	Saturday: 9AM-1PM		NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Pershing Avenue/Cherry Hill Circle		INT #:	3

ENTER COUNT DATA ON THIS PAGE

TIME	CLASS	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL VEHICLES	PED/BIKE MOVEMENT A	B	C	D	TOTAL PEDS /BIKE	INT. PHF
9:00 - 9:15 AM	TOTAL	2	25	2	3	0	1	3	22	1	0	1	0	60						
	TRUCK																			
9:15 - 9:30 AM	TOTAL	1	24	1	1	0	2	1	30	1	0	1	1	63						
	TRUCK								1											
9:30 - 9:45 AM	TOTAL	0	16	0	0	1	1	0	12	0	0	1	1	32						
	TRUCK																			
9:45 - 10:00 AM	TOTAL	0	27	1	1	1	3	3	28	0	0	0	0	64						
	TRUCK																			
10:00 - 10:15 AM	TOTAL	0	15	1	1	1	0	1	20	0	0	1	1	41						
	TRUCK								1											
10:15 - 10:30 AM	TOTAL	2	19	4	1	0	2	0	24	0	0	1	1	54						
	TRUCK								1				1							
10:30 - 10:45 AM	TOTAL	2	30	1	2	2	0	3	27	0	1	1	1	70						
	TRUCK												1							
10:45 - 11:00 AM	TOTAL	0	19	2	0	0	0	5	26	1	2	1	1	57						
	TRUCK									1										
11:00 - 11:15 AM	TOTAL	0	32	0	0	0	1	3	20	1	0	0	0	57						
	TRUCK								1											
11:15 - 11:30 AM	TOTAL	1	20	1	1	2	1	3	24	1	2	0	0	56	2				2	
	TRUCK									1										
11:30 - 11:45 AM	TOTAL	0	28	1	0	0	1	1	23	1	3	0	0	58						
	TRUCK										1									
11:45 - 12:00 PM	TOTAL	0	21	0	0	0	3	2	24	1	0	0	1	52		1			1	
	TRUCK																			
12:00 - 12:15 PM	TOTAL	0	16	1	1	0	2	0	18	1	1	0	2	42						
	TRUCK		1	1																
12:15 - 12:30 PM	TOTAL	2	20	0	1	0	1	5	15	1	1	1	0	47						
	TRUCK																			
12:30 - 12:45 PM	TOTAL	0	29	2	3	0	1	6	19	2	1	0	0	63						
	TRUCK																			
12:45 - 1:00 PM	TOTAL	1	23	1	2	0	1	2	21	1	0	2	2	56						
	TRUCK		1																	

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM
LOCATION:	Croton Dam Road & Pershing Avenue/Cherry Hill Circle

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	3

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 10:00 AM	TOTAL	3	92	4	5	2	7	7	92	2		3	2	219						
	TRUCK	0%	0%	0%	0%	0%	0%	0%	1%	0%		0%	0%							0.855
9:15 - 10:15 AM	TOTAL	1	82	3	3	3	6	5	90	1		3	3	200						
	TRUCK	0%	0%	0%	0%	0%	0%	0%	2%	0%		0%	0%							0.781
9:30 - 10:30 AM	TOTAL	2	77	6	3	3	6	4	84			3	3	191						
	TRUCK	0%	0%	0%	0%	0%	0%	0%	2%			0%	33%							0.746
9:45 - 10:45 AM	TOTAL	4	91	7	5	4	5	7	99		1	3	3	229						
	TRUCK	0%	0%	0%	0%	0%	0%	0%	2%		0%	0%	67%							0.818
10:00 - 11:00 AM	TOTAL	4	83	8	4	3	2	9	97	1	3	4	4	222						
	TRUCK	0%	0%	0%	0%	0%	0%	0%	2%	100%	0%	0%	50%							0.793
10:15 - 11:15 AM	TOTAL	4	100	7	3	2	3	11	97	2	3	3	3	238						
	TRUCK	0%	0%	0%	0%	0%	0%	0%	2%	50%	0%	0%	67%							0.85
10:30 - 11:30 AM	TOTAL	3	101	4	3	4	2	14	97	3	5	2	2	240	2				2	
	TRUCK	0%	0%	0%	0%	0%	0%	0%	1%	67%	0%	0%	50%							0.857
10:45 - 11:45 AM	TOTAL	1	99	4	1	2	3	12	93	4	7	1	1	228	2				2	
	TRUCK	0%	0%	0%	0%	0%	0%	0%	1%	50%	14%	0%	0%							0.983
11:00 - 12:00 AM	TOTAL	1	101	2	1	2	6	9	91	4	5		1	223	2	1			3	
	TRUCK	0%	0%	0%	0%	0%	0%	0%	1%	25%	20%		0%							0.961
11:15 - 12:15 AM	TOTAL	1	85	3	2	2	7	6	89	4	6		3	208	2	1			3	
	TRUCK	0%	1%	33%	0%	0%	0%	0%	0%	25%	17%		0%							0.897
11:30 - 12:30 AM	TOTAL	2	85	2	2		7	8	80	4	5	1	3	199		1			1	
	TRUCK	0%	1%	50%	0%		0%	0%	0%	0%	20%	0%	0%							0.858
11:45 - 12:45 PM	TOTAL	2	86	3	5		7	13	76	5	3	1	3	204		1			1	
	TRUCK	0%	1%	33%	0%		0%	0%	0%	0%	0%	0%	0%							0.81
12:00 - 1:00 PM	TOTAL	3	88	4	7		5	13	73	5	3	3	4	208						
	TRUCK	0%	2%	25%	0%		0%	0%	0%	0%	0%	0%	0%							0.825

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3: Croton Damn SB - Left
4: Pershing WB - Right
5: Pershing WB -Thru
6: Pershing WB - Left
7: Croton Dam NB - Right
8: Croton Dam NB - Thru
9: Croton Dam NB - Left
10: Cherry Hill EB - Right
11: Cherry Hill EB - Thru
12: Cherry Hill EB - Left

A: Cross Croton North side of Int
B: Cross Pershing East side of Int
C: Cross Croton South side of Int
D: Cross Cherry Hill West side of Int

DATE:	Saturday: 10/15/2016		JOB NO:	15064
PERIOD:	Saturday: 9AM-1PM		NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Site Driveway		INT #:	4

ENTER COUNT DATA ON THIS PAGE

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 9:15 AM	TOTAL	27	0		0	0		0	25					52						
	TRUCK	1																		
9:15 - 9:30 AM	TOTAL	27	0		0	0		0	30					57						
	TRUCK								1											
9:30 - 9:45 AM	TOTAL	18	0		0	1		0	16					35						
	TRUCK																			
9:45 - 10:00 AM	TOTAL	27	0		0	0		0	31					58						
	TRUCK								2											
10:00 - 10:15 AM	TOTAL	13	0		0	0		0	21					34						
	TRUCK																			
10:15 - 10:30 AM	TOTAL	28	0		0	0		0	29					57						
	TRUCK	1							2											
10:30 - 10:45 AM	TOTAL	29	0		0	0		0	25					54		1			1	
	TRUCK								1											
10:45 - 11:00 AM	TOTAL	27	0		0	0		1	25					53						
	TRUCK								1											
11:00 - 11:15 AM	TOTAL	29	0		0	0		0	22					51						
	TRUCK	1																		
11:15 - 11:30 AM	TOTAL	25	0		0	0		0	28					53						
	TRUCK																			
11:30 - 11:45 AM	TOTAL	26	0		0	0		0	23					49						
	TRUCK																			
11:45 - 12:00 PM	TOTAL	19	0		0	0		0	24					43						
	TRUCK																			
12:00 - 12:15 PM	TOTAL	16	0		0	0		0	25					41						
	TRUCK	2																		
12:15 - 12:30 PM	TOTAL	24	0		0	0		0	14					38						
	TRUCK																			
12:30 - 12:45 PM	TOTAL	29	0		1	0		0	21					51						
	TRUCK																			
12:45 - 1:00 PM	TOTAL	25	0		1	0		0	24					50						
	TRUCK	1																		

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM
LOCATION:	Croton Dam Road & Site Driveway

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	4

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 10:00 AM	TOTAL	99				1			102					202						
	TRUCK	1%				0%			3%											0.871
9:15 - 10:15 AM	TOTAL	85				1			98					184						
	TRUCK	0%				0%			3%											0.793
9:30 - 10:30 AM	TOTAL	86				1			97					184						
	TRUCK	1%				0%			4%											0.793
9:45 - 10:45 AM	TOTAL	97							106					203		1			1	
	TRUCK	1%							5%											0.875
10:00 - 11:00 AM	TOTAL	97						1	100					198		1			1	
	TRUCK	1%						0%	4%											0.868
10:15 - 11:15 AM	TOTAL	113						1	101					215		1			1	
	TRUCK	2%						0%	4%											0.943
10:30 - 11:30 AM	TOTAL	110						1	100					211		1			1	
	TRUCK	1%						0%	2%											0.977
10:45 - 11:45 AM	TOTAL	107						1	98					206						
	TRUCK	1%						0%	1%											0.972
11:00 - 12:00 AM	TOTAL	99							97					196						
	TRUCK	1%							0%											0.925
11:15 - 12:15 AM	TOTAL	86							100					186						
	TRUCK	2%							0%											0.877
11:30 - 12:30 AM	TOTAL	85							86					171						
	TRUCK	2%							0%											0.872
11:45 - 12:45 PM	TOTAL	88			1				84					173						
	TRUCK	2%			0%				0%											0.848
12:00 - 1:00 PM	TOTAL	94			2				84					180						
	TRUCK	3%			0%				0%											0.882

1: Croton Dam SB -Thru
2: Croton Dam SB - Left
3:
4: Site Driveway WB - Right
5: Site Driveway WB- Left
6:
7: Croton Dam NB - Right
8: Croton Dam NB - Thru
9:
10:
11:
12:

A: Cross Croton North side of Int
B: Cross Site Driveway East side of Int
C: Cross Croton South side of Int
D:

DATE:	Saturday: 10/15/2016		JOB NO:	15064
PERIOD:	Saturday: 9AM-1PM		NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Grandview Avenue		INT #:	5

ENTER COUNT DATA ON THIS PAGE

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 9:15 AM	TOTAL	25	1		2	3		5	22					58						
	TRUCK	1							1											
9:15 - 9:30 AM	TOTAL	24	0		1	2		4	28					59						
	TRUCK								1											
9:30 - 9:45 AM	TOTAL	14	1		1	2		1	13					32						
	TRUCK								2											
9:45 - 10:00 AM	TOTAL	25	0		1	3		2	27					58						
	TRUCK																			
10:00 - 10:15 AM	TOTAL	11	1		0	2		1	22					37						
	TRUCK																			
10:15 - 10:30 AM	TOTAL	22	2		1	4		3	23					55						
	TRUCK								1											
10:30 - 10:45 AM	TOTAL	29	0		0	2		3	23					57		1			1	
	TRUCK	1							1											
10:45 - 11:00 AM	TOTAL	23	1		0	3		2	25					54						
	TRUCK							1												
11:00 - 11:15 AM	TOTAL	28	1		0	1		2	21					53						
	TRUCK								1											
11:15 - 11:30 AM	TOTAL	22	1		2	3		4	20					52						
	TRUCK																			
11:30 - 11:45 AM	TOTAL	27	0		0	0		0	24					51						
	TRUCK																			
11:45 - 12:00 PM	TOTAL	19	1		1	0		2	26					49						
	TRUCK																			
12:00 - 12:15 PM	TOTAL	18	0		0	1		5	16					40						
	TRUCK	2																		
12:15 - 12:30 PM	TOTAL	20	2		2	4		2	13					43						
	TRUCK																			
12:30 - 12:45 PM	TOTAL	28	0		0	1		3	21					53						
	TRUCK																			
12:45 - 1:00 PM	TOTAL	26	0		1	0		1	25					53						
	TRUCK																			

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM
LOCATION:	Croton Dam Road & Grandview Avenue

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	5

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 10:00 AM	TOTAL	88	2		5	10		12	90					207						
	TRUCK	1%	0%		0%	0%		0%	4%											0.877
9:15 - 10:15 AM	TOTAL	74	2		3	9		8	90					186						
	TRUCK	0%	0%		0%	0%		0%	3%											0.788
9:30 - 10:30 AM	TOTAL	72	4		3	11		7	85					182						
	TRUCK	0%	0%		0%	0%		0%	4%											0.784
9:45 - 10:45 AM	TOTAL	87	3		2	11		9	95					207		1			1	
	TRUCK	1%	0%		0%	0%		0%	2%											0.892
10:00 - 11:00 AM	TOTAL	85	4		1	11		9	93					203		1			1	
	TRUCK	1%	0%		0%	0%		11%	2%											0.89
10:15 - 11:15 AM	TOTAL	102	4		1	10		10	92					219		1			1	
	TRUCK	1%	0%		0%	0%		10%	3%											0.961
10:30 - 11:30 AM	TOTAL	102	3		2	9		11	89					216		1			1	
	TRUCK	1%	0%		0%	0%		9%	2%											0.947
10:45 - 11:45 AM	TOTAL	100	3		2	7		8	90					210						
	TRUCK	0%	0%		0%	0%		13%	1%											0.972
11:00 - 12:00 AM	TOTAL	96	3		3	4		8	91					205						
	TRUCK	0%	0%		0%	0%		0%	1%											0.967
11:15 - 12:15 AM	TOTAL	86	2		3	4		11	86					192						
	TRUCK	2%	0%		0%	0%		0%	0%											0.923
11:30 - 12:30 AM	TOTAL	84	3		3	5		9	79					183						
	TRUCK	2%	0%		0%	0%		0%	0%											0.897
11:45 - 12:45 PM	TOTAL	85	3		3	6		12	76					185						
	TRUCK	2%	0%		0%	0%		0%	0%											0.873
12:00 - 1:00 PM	TOTAL	92	2		3	6		11	75					189						
	TRUCK	2%	0%		0%	0%		0%	0%											0.892

1: Croton Dam SB - Thru
2: Croton Dam SB - Left
3:
4: Grandview WB - Right
5: Grandview WB - Left
6:
7: Croton Dam NB - Right
8: Croton Dam NB - Thru
9:
10:
11:
12:

A: Cross Croton Dam North side of Int
B: Cross Grandview East side of Int
C: Cross Croton Dam South side of Int
D:

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM
LOCATION:	Croton Dam Road & Narragansett Avenue

ENTER COUNT DATA ON THIS PAGE

JOB NO:	15064
NAME:	Traffic Databank
INT #:	6

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 9:15 AM	TOTAL	26	21		14	0		4	17					82						
	TRUCK																			
9:15 - 9:30 AM	TOTAL	24	15		22	0		2	26					89						
	TRUCK								1											
9:30 - 9:45 AM	TOTAL	17	22		22	0		0	17					78						
	TRUCK																			
9:45 - 10:00 AM	TOTAL	22	11		31	1		3	25					93						
	TRUCK																			
10:00 - 10:15 AM	TOTAL	13	17		11	2		0	23					66						
	TRUCK																			
10:15 - 10:30 AM	TOTAL	22	9		17	0		2	19					69						
	TRUCK		1																	
10:30 - 10:45 AM	TOTAL	29	21		18	0		4	15					87		1			1	
	TRUCK																			
10:45 - 11:00 AM	TOTAL	21	15		26	1		2	28					93						
	TRUCK		1																	
11:00 - 11:15 AM	TOTAL	28	23		23	0		1	21					96						
	TRUCK		1		1															
11:15 - 11:30 AM	TOTAL	21	15		18	0		1	17					72						
	TRUCK																			
11:30 - 11:45 AM	TOTAL	27	26		18	2		3	19					95						
	TRUCK		1																	
11:45 - 12:00 PM	TOTAL	20	24		16	0		1	27					88						
	TRUCK																			
12:00 - 12:15 PM	TOTAL	15	18		24	1		0	17					75						
	TRUCK	2			1															
12:15 - 12:30 PM	TOTAL	22	23		22	0		1	14					82						
	TRUCK		2																	
12:30 - 12:45 PM	TOTAL	30	20		22	1		0	20					93						
	TRUCK				2															
12:45 - 1:00 PM	TOTAL	24	30		17	2		3	24					100						
	TRUCK	1	1																	

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM
LOCATION:	Croton Dam Road & Narragansett Avenue

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	6

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 10:00 AM	TOTAL	89	69		89	1		9	85					342						
	TRUCK	0%	0%		0%	0%		0%	1%											0.919
9:15 - 10:15 AM	TOTAL	76	65		86	3		5	91					326						
	TRUCK	0%	0%		0%	0%		0%	1%											0.876
9:30 - 10:30 AM	TOTAL	74	59		81	3		5	84					306						
	TRUCK	0%	2%		0%	0%		0%	0%											0.823
9:45 - 10:45 AM	TOTAL	86	58		77	3		9	82					315		1			1	
	TRUCK	0%	2%		0%	0%		0%	0%											0.847
10:00 - 11:00 AM	TOTAL	85	62		72	3		8	85					315		1			1	
	TRUCK	0%	3%		0%	0%		0%	0%											0.847
10:15 - 11:15 AM	TOTAL	100	68		84	1		9	83					345		1			1	
	TRUCK	0%	4%		1%	0%		0%	0%											0.898
10:30 - 11:30 AM	TOTAL	99	74		85	1		8	81					348		1			1	
	TRUCK	0%	3%		1%	0%		0%	0%											0.906
10:45 - 11:45 AM	TOTAL	97	79		85	3		7	85					356						
	TRUCK	0%	4%		1%	0%		0%	0%											0.927
11:00 - 12:00 AM	TOTAL	96	88		75	2		6	84					351						
	TRUCK	0%	2%		1%	0%		0%	0%											0.914
11:15 - 12:15 AM	TOTAL	83	83		76	3		5	80					330						
	TRUCK	2%	1%		1%	0%		0%	0%											0.868
11:30 - 12:30 AM	TOTAL	84	91		80	3		5	77					340						
	TRUCK	2%	3%		1%	0%		0%	0%											0.895
11:45 - 12:45 PM	TOTAL	87	85		84	2		2	78					338						
	TRUCK	2%	2%		4%	0%		0%	0%											0.909
12:00 - 1:00 PM	TOTAL	91	91		85	4		4	75					350						
	TRUCK	3%	3%		4%	0%		0%	0%											0.875

1: Croton Dam SB - Thru
2: Croton Dam SB - Left
3:
4: Narragansett WB - Right
5: Narragansett WB- Left
6:
7: Croton Dam NB- Right
8: Croton Dam NB- Thru
9:
10:
11:
12:

A: Cross Croton North side of Int
B: Cross Narragansett West side of Int
C: Cross Croton South side of Int
D:

DATE:	Saturday: 10/15/2016		JOB NO:	15064
PERIOD:	Saturday: 9AM-1PM		NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Pheasant Ridge Road/Feeney Road		INT #:	7

ENTER COUNT DATA ON THIS PAGE

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 9:15 AM	TOTAL	0	49	3	2	0	0	1	32	1	1	0	0	89						
	TRUCK		1																	
9:15 - 9:30 AM	TOTAL	0	37	0	0	0	1	0	50	0	0	0	1	89			1		1	
	TRUCK								1											
9:30 - 9:45 AM	TOTAL	2	36	2	4	0	0	1	37	1	0	0	5	88						
	TRUCK				1				1											
9:45 - 10:00 AM	TOTAL	2	34	2	3	0	0	0	51	1	1	0	2	96						
	TRUCK																			
10:00 - 10:15 AM	TOTAL	1	27	3	3	0	0	0	35	0	0	0	1	70						
	TRUCK								1											
10:15 - 10:30 AM	TOTAL	1	29	1	4	0	0	1	36	1	0	0	1	74						
	TRUCK		1						2											
10:30 - 10:45 AM	TOTAL	2	50	1	5	0	0	0	35	0	0	1	0	94						
	TRUCK	1			1				1			1								
10:45 - 11:00 AM	TOTAL	0	39	1	2	0	0	0	48	0	0	0	1	91						
	TRUCK		1																	
11:00 - 11:15 AM	TOTAL	3	48	3	1	0	0	2	40	3	3	0	4	107						
	TRUCK								2	1	1									
11:15 - 11:30 AM	TOTAL	2	38	3	1	0	1	1	36	1	0	0	2	85						
	TRUCK		1						2											
11:30 - 11:45 AM	TOTAL	1	42	2	4	0	2	2	34	1	0	0	0	88						
	TRUCK		1																	
11:45 - 12:00 PM	TOTAL	0	44	3	2	1	0	1	40	0	0	0	1	92						
	TRUCK			1																
12:00 - 12:15 PM	TOTAL	1	35	3	3	0	0	1	39	2	1	0	1	86						
	TRUCK		3						1											
12:15 - 12:30 PM	TOTAL	2	40	0	3	0	0	1	31	1	0	0	2	80		1			1	
	TRUCK		2		1															
12:30 - 12:45 PM	TOTAL	1	46	1	2	0	0	3	42	0	2	0	3	100						
	TRUCK								1											
12:45 - 1:00 PM	TOTAL	0	55	1	3	0	0	1	36	0	1	0	1	98	2				2	
	TRUCK		2																	

DATE:	Saturday: 10/15/2016	JOB NO:	15064
PERIOD:	Saturday: 9AM-1PM	NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Pheasant Ridge Road/Feeney Road	INT #:	7

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 10:00 AM	TOTAL	4	156	7	9		1	2	170	3	2		8	362			1		1	
	TRUCK	0%	1%	0%	11%		0%	0%	1%	0%	0%		0%							0.943
9:15 - 10:15 AM	TOTAL	5	134	7	10		1	1	173	2	1		9	343			1		1	
	TRUCK	0%	0%	0%	10%		0%	0%	2%	0%	0%		0%							0.893
9:30 - 10:30 AM	TOTAL	6	126	8	14			2	159	3	1		9	328						
	TRUCK	0%	1%	0%	7%			0%	3%	0%	0%		0%							0.854
9:45 - 10:45 AM	TOTAL	6	140	7	15			1	157	2	1	1	4	334						
	TRUCK	17%	1%	0%	7%			0%	3%	0%	0%	100%	0%							0.87
10:00 - 11:00 AM	TOTAL	4	145	6	14			1	154	1		1	3	329						
	TRUCK	25%	1%	0%	7%			0%	3%	0%		100%	0%							0.875
10:15 - 11:15 AM	TOTAL	6	166	6	12			3	159	4	3	1	6	366						
	TRUCK	17%	1%	0%	8%			0%	3%	25%	33%	100%	0%							0.855
10:30 - 11:30 AM	TOTAL	7	175	8	9		1	3	159	4	3	1	7	377						
	TRUCK	14%	1%	0%	11%		0%	0%	3%	25%	33%	100%	0%							0.881
10:45 - 11:45 AM	TOTAL	6	167	9	8		3	5	158	5	3		7	371						
	TRUCK	0%	2%	0%	0%		0%	0%	3%	20%	33%		0%							0.867
11:00 - 12:00 AM	TOTAL	6	172	11	8	1	3	6	150	5	3		7	372						
	TRUCK	0%	1%	9%	0%	0%	0%	0%	3%	20%	33%		0%							0.869
11:15 - 12:15 AM	TOTAL	4	159	11	10	1	3	5	149	4	1		4	351						
	TRUCK	0%	3%	9%	0%	0%	0%	0%	2%	0%	0%		0%							0.954
11:30 - 12:30 AM	TOTAL	4	161	8	12	1	2	5	144	4	1		4	346		1			1	
	TRUCK	0%	4%	13%	8%	0%	0%	0%	1%	0%	0%		0%							0.94
11:45 - 12:45 PM	TOTAL	4	165	7	10	1		6	152	3	3		7	358		1			1	
	TRUCK	0%	3%	14%	10%	0%		0%	1%	0%	0%		0%							0.895
12:00 - 1:00 PM	TOTAL	4	176	5	11			6	148	3	4		7	364	2	1			3	
	TRUCK	0%	4%	0%	9%			0%	1%	0%	0%		0%							0.91

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3: Croton Dam SB - Left
4: Feeney WB - Right
5: Feeney WB - Thru
6: Feeney WB - Left
7: Croton Dam NB - Right
8: Croton Dam NB - Thru
9: Croton Dam NB - Left
10: Pheasant Ridge - Right
11: Pheasant Ridge - Thru
12: Pheasant Ridge - Left

A: Cross Croton North side of Int
B: Cross Feeney East side of Int
C: Cross Croton South side of Int
D: Cross Pheasant West side of Int

DATE:	Saturday: 10/15/2016		JOB NO:	15064
PERIOD:	Saturday: 9AM-1PM		NAME:	Traffic Databank
LOCATION:	Croton Dam Road & Kitchawan State Road (NY 134)		INT #:	8

ENTER COUNT DATA ON THIS PAGE

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 9:15 AM	TOTAL	12	47		35	6		5	14					119						
	TRUCK	3	1																	
9:15 - 9:30 AM	TOTAL	8	35		44	9		2	16					114						
	TRUCK				1															
9:30 - 9:45 AM	TOTAL	11	32		35	6		8	12					104						
	TRUCK				1															
9:45 - 10:00 AM	TOTAL	14	30		53	7		6	15					125						
	TRUCK				1															
10:00 - 10:15 AM	TOTAL	29	29		39	3		3	11					114						
	TRUCK	1																		
10:15 - 10:30 AM	TOTAL	14	32		28	5		1	16					96						
	TRUCK		1		2															
10:30 - 10:45 AM	TOTAL	15	48		39	5		5	15					127						
	TRUCK	1			2															
10:45 - 11:00 AM	TOTAL	17	34		49	5		1	17					123						
	TRUCK		2		2															
11:00 - 11:15 AM	TOTAL	14	52		42	4		3	9					124						
	TRUCK				1															
11:15 - 11:30 AM	TOTAL	13	41		32	7		7	22					122						
	TRUCK		1		2															
11:30 - 11:45 AM	TOTAL	16	42		33	6		3	20					120						
	TRUCK	1	1		1															
11:45 - 12:00 PM	TOTAL	18	43		41	2		3	22					129						
	TRUCK		1																	
12:00 - 12:15 PM	TOTAL	21	34		35	5		2	32					129						
	TRUCK		2			1														
12:15 - 12:30 PM	TOTAL	9	30		29	7		10	14					99		1			1	
	TRUCK		1		1															
12:30 - 12:45 PM	TOTAL	16	46		39	7		3	23					134						
	TRUCK		1		1															
12:45 - 1:00 PM	TOTAL	15	53		35	8		2	16					129						
	TRUCK	1	2																	

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM
LOCATION:	Croton Dam Road & Kitchawan State Road (NY 134)

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	8

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 10:00 AM	TOTAL	45	144		167	28		21	57					462						
	TRUCK	7%	1%		2%	0%		0%	0%											0.924
9:15 - 10:15 AM	TOTAL	62	126		171	25		19	54					457						
	TRUCK	2%	0%		2%	0%		0%	0%											0.914
9:30 - 10:30 AM	TOTAL	68	123		155	21		18	54					439						
	TRUCK	1%	1%		3%	0%		0%	0%											0.878
9:45 - 10:45 AM	TOTAL	72	139		159	20		15	57					462						
	TRUCK	3%	1%		3%	0%		0%	0%											0.909
10:00 - 11:00 AM	TOTAL	75	143		155	18		10	59					460						
	TRUCK	3%	2%		4%	0%		0%	0%											0.906
10:15 - 11:15 AM	TOTAL	60	166		158	19		10	57					470						
	TRUCK	2%	2%		4%	0%		0%	0%											0.925
10:30 - 11:30 AM	TOTAL	59	175		162	21		16	63					496						
	TRUCK	2%	2%		4%	0%		0%	0%											0.976
10:45 - 11:45 AM	TOTAL	60	169		156	22		14	68					489						
	TRUCK	2%	2%		4%	0%		0%	0%											0.986
11:00 - 12:00 AM	TOTAL	61	178		148	19		16	73					495						
	TRUCK	2%	2%		3%	0%		0%	0%											0.959
11:15 - 12:15 AM	TOTAL	68	160		141	20		15	96					500						
	TRUCK	1%	3%		2%	5%		0%	0%											0.969
11:30 - 12:30 AM	TOTAL	64	149		138	20		18	88					477		1			1	
	TRUCK	2%	3%		1%	5%		0%	0%											0.924
11:45 - 12:45 PM	TOTAL	64	153		144	21		18	91					491		1			1	
	TRUCK	0%	3%		1%	5%		0%	0%											0.916
12:00 - 1:00 PM	TOTAL	61	163		138	27		17	85					491		1			1	
	TRUCK	2%	4%		1%	4%		0%	0%											0.916

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3:
4: Croton Dam NB - Thru
5: Croton Dam NB- Left
6:
7: Kitchawan State EB- Right
8: Kitchawan State EB- Right
9:
10:
11:
12:

A: Cross Croton North side of Int
B: Cross Croton South side of Int
C: Cross Kitchawan West side of Int
D:

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM

PEAK HOUR CALCULATIONS - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank

TIME	CLASS	TOTAL INT. 1	TOTAL INT. 2	TOTAL INT. 3	TOTAL INT. 4	TOTAL INT. 5	TOTAL INT. 6	TOTAL INT. 7	TOTAL INT. 8	Sub-Total Int. 1 - 8
9:00 - 10:00 AM	TOTAL	443	341	219	202	207	342	362	462	2,578
9:15 - 10:15 AM	TOTAL	452	358	200	184	186	326	343	457	2,506
9:30 - 10:30 AM	TOTAL	436	348	191	184	182	306	328	439	2,414
9:45 - 10:45 AM	TOTAL	507	401	229	203	207	315	334	462	2,658
10:00 - 11:00 AM	TOTAL	501	393	222	198	203	315	329	460	2,621
10:15 - 11:15 AM	TOTAL	499	391	238	215	219	345	366	470	2,743
10:30 - 11:30 AM	TOTAL	505	390	240	211	216	348	377	496	2,783
10:45 - 11:45 AM	TOTAL	480	379	228	206	210	356	371	489	2,719
11:00 - 12:00 AM	TOTAL	484	386	223	196	205	351	372	495	2,712
11:15 - 12:15 AM	TOTAL	489	386	208	186	192	330	351	500	2,642
11:30 - 12:30 AM	TOTAL	493	381	199	171	183	340	346	477	2,590
11:45 - 12:45 PM	TOTAL	484	376	204	173	185	338	358	491	2,609
12:00 - 1:00 PM	TOTAL	485	377	208	180	189	350	364	491	2,644

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM
LOCATION:	Croton Dam Road & NY 9A (Sheet A)

ENTER COUNT DATA ON THIS PAGE

JOB NO:	15064
NAME:	Traffic Databank
INT #:	9A

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 9:15 AM	TOTAL	32	25	8		9	257	6	0					337						
	TRUCK	4		1			7													
9:15 - 9:30 AM	TOTAL	35	19	5		7	270	2	0					338		1			1	
	TRUCK	2	1				11													
9:30 - 9:45 AM	TOTAL	36	14	12		10	264	8	0					344						
	TRUCK					2	4													
9:45 - 10:00 AM	TOTAL	37	20	9		7	316	4	0					393						
	TRUCK	2	1				9													
10:00 - 10:15 AM	TOTAL	33	15	11		5	290	7	0					361						
	TRUCK						7													
10:15 - 10:30 AM	TOTAL	44	23	9		8	305	4	0					393						
	TRUCK	2					10													
10:30 - 10:45 AM	TOTAL	35	29	9		4	335	3	1					416						
	TRUCK	1					9													
10:45 - 11:00 AM	TOTAL	51	16	14		7	339	5	0					432						
	TRUCK	1					11													
11:00 - 11:15 AM	TOTAL	29	27	12		11	342	1	0					422						
	TRUCK						5													
11:15 - 11:30 AM	TOTAL	36	22	11		10	345	3	0					427						
	TRUCK	1		1			10													
11:30 - 11:45 AM	TOTAL	36	22	6		10	356	8	0					438						
	TRUCK	1	1				8													
11:45 - 12:00 PM	TOTAL	45	17	3		12	331	10	0					418						
	TRUCK						7													
12:00 - 12:15 PM	TOTAL	42	21	1		11	357	5	0					437						
	TRUCK		1				5													
12:15 - 12:30 PM	TOTAL	52	12	10		6	334	5	0					419						
	TRUCK						7													
12:30 - 12:45 PM	TOTAL	30	25	7		16	339	4	0					421						
	TRUCK	2				1	17													
12:45 - 1:00 PM	TOTAL	42	28	4		7	310	5	0					396		1			1	
	TRUCK	1	3				12													

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM
LOCATION:	Croton Dam Road & NY 9A (Sheet A)

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	9A

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 10:00 AM	TOTAL	140	78	34		33	1,107	20						1,412		1			1	
	TRUCK	6%	3%	3%		6%	3%	0%												0.946
9:15 - 10:15 AM	TOTAL	141	68	37		29	1,140	21						1,436		1			1	
	TRUCK	3%	3%	0%		7%	3%	0%												0.955
9:30 - 10:30 AM	TOTAL	150	72	41		30	1,175	23						1,491						
	TRUCK	3%	1%	0%		7%	3%	0%												0.96
9:45 - 10:45 AM	TOTAL	149	87	38		24	1,246	18	1					1,563						
	TRUCK	3%	1%	0%		0%	3%	0%	0%											0.952
10:00 - 11:00 AM	TOTAL	163	83	43		24	1,269	19	1					1,602						
	TRUCK	2%	0%	0%		0%	3%	0%	0%											0.92
10:15 - 11:15 AM	TOTAL	159	95	44		30	1,321	13	1					1,663						
	TRUCK	3%	0%	0%		0%	3%	0%	0%											0.945
10:30 - 11:30 AM	TOTAL	151	94	46		32	1,361	12	1					1,697						
	TRUCK	2%	0%	2%		0%	3%	0%	0%											0.968
10:45 - 11:45 AM	TOTAL	152	87	43		38	1,382	17						1,719						
	TRUCK	2%	1%	2%		0%	2%	0%												0.98
11:00 - 12:00 AM	TOTAL	146	88	32		43	1,374	22						1,705						
	TRUCK	1%	1%	3%		0%	2%	0%												0.975
11:15 - 12:15 AM	TOTAL	159	82	21		43	1,389	26						1,720						
	TRUCK	1%	2%	5%		0%	2%	0%												0.975
11:30 - 12:30 AM	TOTAL	175	72	20		39	1,378	28						1,712						
	TRUCK	1%	3%	0%		0%	2%	0%												0.976
11:45 - 12:45 PM	TOTAL	169	75	21		45	1,361	24						1,695						
	TRUCK	1%	1%	0%		2%	3%	0%												0.98
12:00 - 1:00 PM	TOTAL	166	86	22		40	1,340	19						1,673		1			1	
	TRUCK	2%	5%	0%		3%	3%	0%												0.973

1: Croton Dam SB - Right
2: Croton Dam SB - Thru
3: Croton Dam SB - Left
4:
5: NY 9A WB - Right
6: NY 9A WB - Thru
7: NY 9A WB - Left
8: NY 9A WB - U-Turn
9:
10:
11:
12:

A: Cross Croton North side of Int
B: Cross NY 9A East side of Int
C:
D:

DATE:	Saturday: 10/15/2016		JOB NO:	15064
PERIOD:	Saturday: 9AM-1PM		NAME:	Traffic Databank
LOCATION:	Croton Dam Road & NY 9A (Sheet B)		INT #:	9B

ENTER COUNT DATA ON THIS PAGE

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 9:15 AM	TOTAL	17	15	10		27	228	20	0					317						
	TRUCK			1		3	7													
9:15 - 9:30 AM	TOTAL	18	33	10		23	240	23	0					347						
	TRUCK		1				10													
9:30 - 9:45 AM	TOTAL	10	22	10		21	222	22	0					307						
	TRUCK		2	1			5													
9:45 - 10:00 AM	TOTAL	11	32	22		23	210	24	0					322						
	TRUCK					1	4													
10:00 - 10:15 AM	TOTAL	9	22	12		26	230	20	0					319						
	TRUCK			1			5													
10:15 - 10:30 AM	TOTAL	13	24	10		17	211	31	0					306						
	TRUCK					1	5	1												
10:30 - 10:45 AM	TOTAL	13	22	12		33	223	25	2					330						
	TRUCK			1		1	4	1												
10:45 - 11:00 AM	TOTAL	18	31	20		28	229	34	1					361						
	TRUCK					1	7													
11:00 - 11:15 AM	TOTAL	8	27	9		33	229	31	0					337						
	TRUCK		1				5													
11:15 - 11:30 AM	TOTAL	13	28	10		25	244	27	0					347						
	TRUCK		1	1		1	6	1												
11:30 - 11:45 AM	TOTAL	18	25	11		28	251	24	2					359						
	TRUCK		1	1		1	6													
11:45 - 12:00 PM	TOTAL	19	31	14		31	263	28	0					386						
	TRUCK					1	9													
12:00 - 12:15 PM	TOTAL	23	31	13		24	271	19	1					382						
	TRUCK					1	4													
12:15 - 12:30 PM	TOTAL	15	12	14		21	262	33	1					358						
	TRUCK	1				2	5	1												
12:30 - 12:45 PM	TOTAL	18	27	13		27	264	40	1					390						
	TRUCK		1				6	1												
12:45 - 1:00 PM	TOTAL	18	23	12		38	261	30	1					383						
	TRUCK						5	2												

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM
LOCATION:	Croton Dam Road & NY 9A (Sheet B)

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank
INT #:	9B

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
9:00 - 10:00 AM	TOTAL	56	102	52		94	900	89						1,293						-
	TRUCK	0%	3%	4%		4%	3%	0%												
9:15 - 10:15 AM	TOTAL	48	109	54		93	902	89						1,295						-
	TRUCK	0%	3%	4%		1%	3%	0%												
9:30 - 10:30 AM	TOTAL	43	100	54		87	873	97						1,254						-
	TRUCK	0%	2%	4%		2%	2%	1%												
9:45 - 10:45 AM	TOTAL	46	100	56		99	874	100	2					1,277						-
	TRUCK	0%	0%	4%		3%	2%	2%	0%											
10:00 - 11:00 AM	TOTAL	53	99	54		104	893	110	3					1,316						-
	TRUCK	0%	0%	4%		3%	2%	2%	0%											
10:15 - 11:15 AM	TOTAL	52	104	51		111	892	121	3					1,334						-
	TRUCK	0%	1%	2%		3%	2%	2%	0%											
10:30 - 11:30 AM	TOTAL	52	108	51		119	925	117	3					1,375						-
	TRUCK	0%	2%	4%		3%	2%	2%	0%											
10:45 - 11:45 AM	TOTAL	57	111	50		114	953	116	3					1,404						-
	TRUCK	0%	3%	4%		3%	3%	1%	0%											
11:00 - 12:00 AM	TOTAL	58	111	44		117	987	110	2					1,429						-
	TRUCK	0%	3%	5%		3%	3%	1%	0%											
11:15 - 12:15 AM	TOTAL	73	115	48		108	1,029	98	3					1,474						-
	TRUCK	0%	2%	4%		4%	2%	1%	0%											
11:30 - 12:30 AM	TOTAL	75	99	52		104	1,047	104	4					1,485						-
	TRUCK	1%	1%	2%		5%	2%	1%	0%											
11:45 - 12:45 PM	TOTAL	75	101	54		103	1,060	120	3					1,516						-
	TRUCK	1%	1%	0%		4%	2%	2%	0%											
12:00 - 1:00 PM	TOTAL	74	93	52		110	1,058	122	4					1,513						-
	TRUCK	1%	1%	0%		3%	2%	3%	0%											

1: Croton Dam NB - Right
2: Croton Dam NB - Thru
3: Croton Dam NB - Left
4:
5: NY 9A EB - Right
6: NY 9A EB - Thru
7: NY 9A EB - Left
8: NY 9A EB - U-Turn
9:
10:
11:
12:

A: Cross Croton South side of Int
B: Cross NY 9A West side of Int
C:
D:

DATE:	Saturday: 10/15/2016
PERIOD:	Saturday: 9AM-1PM

PEAK HOUR CALCULATIONS - DO NOT EDIT THIS SHEET

JOB NO:	15064
NAME:	Traffic Databank

TIME	CLASS	Sub-Total Int. 1 - 8	TOTAL INT. 9A	TOTAL INT. 9B	Sub-Total Int. 9	TOTAL
9:00 - 10:00 AM	TOTAL	2,578	1,412	1,293	2,705	5,283
9:15 - 10:15 AM	TOTAL	2,506	1,436	1,295	2,731	5,237
9:30 - 10:30 AM	TOTAL	2,414	1,491	1,254	2,745	5,159
9:45 - 10:45 AM	TOTAL	2,658	1,563	1,277	2,840	5,498
10:00 - 11:00 AM	TOTAL	2,621	1,602	1,316	2,918	5,539
10:15 - 11:15 AM	TOTAL	2,743	1,663	1,334	2,997	5,740
10:30 - 11:30 AM	TOTAL	2,783	1,697	1,375	3,072	5,855
10:45 - 11:45 AM	TOTAL	2,719	1,719	1,404	3,123	5,842
11:00 - 12:00 AM	TOTAL	2,712	1,705	1,429	3,134	5,846
11:15 - 12:15 AM	TOTAL	2,642	1,720	1,474	3,194	5,836
11:30 - 12:30 AM	TOTAL	2,590	1,712	1,485	3,197	5,787
11:45 - 12:45 PM	TOTAL	2,609	1,695	1,516	3,211	5,820
12:00 - 1:00 PM	TOTAL	2,644	1,673	1,513	3,186	5,830

APPENDIX D

CAPACITY ANALYSES

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	64	68	184	82	61	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	10	10	10	10
Grade (%)	-6%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.931		0.958			
Flt Protected	0.976					0.988
Satd. Flow (prot)	1489	0	1684	0	0	1441
Flt Permitted	0.976					0.988
Satd. Flow (perm)	1489	0	1684	0	0	1441
Link Speed (mph)	30		30			30
Link Distance (ft)	477		315			163
Travel Time (s)	10.8		7.2			3.7
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	9%	7%	3%	1%	7%	4%
Parking (#/hr)	5	5				5
Adj. Flow (vph)	74	78	211	94	70	207
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	0	305	0	0	277
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	13		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.10	0.92	1.07	1.07	1.11	1.32
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	64	68	184	82	61	180
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-3	-	-	3
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	9	7	3	1	7	4
Mvmt Flow	74	78	211	94	70	207

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	606	260	0	0	306	0
Stage 1	259	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Critical Hdwy	5.29	5.67	-	-	4.17	-
Critical Hdwy Stg 1	4.29	-	-	-	-	-
Critical Hdwy Stg 2	4.29	-	-	-	-	-
Follow-up Hdwy	3.581	3.363	-	-	2.263	-
Pot Cap-1 Maneuver	549	801	-	-	1227	-
Stage 1	838	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	513	800	-	-	1226	-
Mov Cap-2 Maneuver	513	-	-	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	734	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	629	1226	-
HCM Lane V/C Ratio	-	-	0.241	0.057	-
HCM Control Delay (s)	-	-	12.5	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.2	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	111	6	105	147	6	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	10	10
Grade (%)	-5%		-3%			-5%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.993		0.921			
Flt Protected	0.955					0.998
Satd. Flow (prot)	1796	0	1558	0	0	1677
Flt Permitted	0.955					0.998
Satd. Flow (perm)	1796	0	1558	0	0	1677
Link Speed (mph)	30		30			30
Link Distance (ft)	231		163			286
Travel Time (s)	5.3		3.7			6.5
Confl. Peds. (#/hr)	1			11	11	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	3%	0%	7%	6%	33%	7%
Adj. Flow (vph)	129	7	122	171	7	151
Shared Lane Traffic (%)						
Lane Group Flow (vph)	136	0	293	0	0	158
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.07	1.07	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

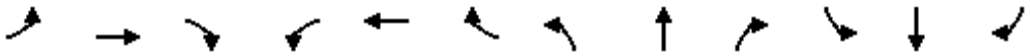
Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	111	6	105	147	6	130
Conflicting Peds, #/hr	1	0	0	11	11	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	-3	-	-	-5
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	0	7	6	33	7
Mvmt Flow	129	7	122	171	7	151

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	374	220	0	0	294	0
Stage 1	209	-	-	-	-	-
Stage 2	165	-	-	-	-	-
Critical Hdwy	5.43	5.7	-	-	4.43	-
Critical Hdwy Stg 1	4.43	-	-	-	-	-
Critical Hdwy Stg 2	4.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	-	-	2.497	-
Pot Cap-1 Maneuver	693	850	-	-	1110	-
Stage 1	873	-	-	-	-	-
Stage 2	902	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	682	843	-	-	1102	-
Mov Cap-2 Maneuver	682	-	-	-	-	-
Stage 1	872	-	-	-	-	-
Stage 2	889	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	689	1102	-
HCM Lane V/C Ratio	-	-	0.197	0.006	-
HCM Control Delay (s)	-	-	11.5	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	3	2	14	0	7	5	138	10	4	101	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	13	13	13	11	11	11	11	11	11
Grade (%)		-15%			1%			4%			-4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.955			0.955			0.991				
Flt Protected					0.968			0.998			0.998	
Satd. Flow (prot)	0	1877	0	0	1500	0	0	1693	0	0	1801	0
Flt Permitted					0.968			0.998			0.998	
Satd. Flow (perm)	0	1877	0	0	1500	0	0	1693	0	0	1801	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			414			330			747	
Travel Time (s)		4.0			9.4			7.5			17.0	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	0%	8%	0%	0%	0%	5%	10%	50%	2%	0%
Parking (#/hr)	5	5	5	5	5	5						
Adj. Flow (vph)	0	4	3	18	0	9	6	173	13	5	126	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	27	0	0	190	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.80	0.96	0.80	0.96	1.15	0.96	1.07	1.07	1.07	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	3	2	14	0	7	5	138	10	4	101	0
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	0	0	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-15	-	-	1	-	-	4	-	-	-4	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	8	0	0	0	5	10	50	2	0
Mvmt Flow	0	4	2	18	0	9	6	172	12	5	126	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	332	334	130	330	327	183	126	0	0	185	0	0
Stage 1	136	136	-	191	191	-	-	-	-	-	-	-
Stage 2	196	198	-	139	136	-	-	-	-	-	-	-
Critical Hdwy	4.1	3.5	4.7	7.38	6.7	6.3	4.1	-	-	4.6	-	-
Critical Hdwy Stg 1	3.1	2.5	-	6.38	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	3.1	2.5	-	6.38	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.572	4	3.3	2.2	-	-	2.65	-	-
Pot Cap-1 Maneuver	825	779	977	601	584	860	1473	-	-	1147	-	-
Stage 1	977	882	-	789	738	-	-	-	-	-	-	-
Stage 2	954	874	-	843	782	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	808	771	974	591	578	857	1468	-	-	1143	-	-
Mov Cap-2 Maneuver	808	771	-	591	578	-	-	-	-	-	-	-
Stage 1	972	878	-	785	734	-	-	-	-	-	-	-
Stage 2	937	870	-	831	778	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	10.7	0.2	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1468	-	-	841	659	1143	-	-
HCM Lane V/C Ratio	0.004	-	-	0.007	0.04	0.004	-	-
HCM Control Delay (s)	7.5	0	-	9.3	10.7	8.2	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	145	0	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-5%		7%			-7%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1818	0	1641	0	0	1864
Flt Permitted						
Satd. Flow (perm)	1818	0	1641	0	0	1864
Link Speed (mph)	30		30			30
Link Distance (ft)	188		747			845
Travel Time (s)	4.3		17.0			19.2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	8%	0%	0%	2%
Adj. Flow (vph)	0	0	179	0	0	130
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	179	0	0	130
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.09	1.09	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	0	145	0	0	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	7	-	-	-7
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	8	0	0	2
Mvmt Flow	0	0	179	0	0	130

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	309	179	0	0	179	0
Stage 1	179	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	749	891	-	-	1409	-
Stage 1	900	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	749	891	-	-	1409	-
Mov Cap-2 Maneuver	749	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	934	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1409	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	3	140	5	1	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11
Grade (%)	-6%		-4%			6%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.946		0.995			
Flt Protected	0.971					
Satd. Flow (prot)	1501	0	1778	0	0	1668
Flt Permitted	0.971					
Satd. Flow (perm)	1501	0	1778	0	0	1668
Link Speed (mph)	30		30			30
Link Distance (ft)	525		845			363
Travel Time (s)	11.9		19.2			8.3
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	33%	0%	5%	0%	100%	6%
Adj. Flow (vph)	6	4	169	6	1	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	175	0	0	121
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.96	0.96	1.02	1.02	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	3	140	5	1	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	6
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	33	0	5	0	100	6
Mvmt Flow	6	4	169	6	1	120

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	295	172	0	0	175	0
Stage 1	172	-	-	-	-	-
Stage 2	123	-	-	-	-	-
Critical Hdwy	5.53	5.6	-	-	5.1	-
Critical Hdwy Stg 1	4.53	-	-	-	-	-
Critical Hdwy Stg 2	4.53	-	-	-	-	-
Follow-up Hdwy	3.797	3.3	-	-	3.1	-
Pot Cap-1 Maneuver	701	902	-	-	976	-
Stage 1	835	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	700	902	-	-	976	-
Mov Cap-2 Maneuver	700	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	865	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	764	976	-
HCM Lane V/C Ratio	-	-	0.013	0.001	-
HCM Control Delay (s)	-	-	9.8	8.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	49	141	2	129	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-6%		-4%			4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.870		0.998			
Flt Protected	0.998					0.972
Satd. Flow (prot)	1643	0	1793	0	0	1593
Flt Permitted	0.998					0.972
Satd. Flow (perm)	1643	0	1793	0	0	1593
Link Speed (mph)	30		30			30
Link Distance (ft)	590		363			252
Travel Time (s)	13.4		8.3			5.7
Confl. Peds. (#/hr)				3	3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	3%	100%	12%	7%
Adj. Flow (vph)	2	53	152	2	139	106
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	0	154	0	0	245
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

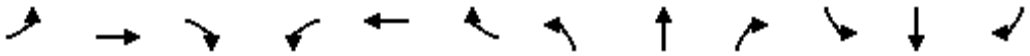
Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	2	49	141	2	129	99
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	4
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	3	100	12	7
Mvmt Flow	2	53	152	2	139	106

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	537	156	0	0	154	0
Stage 1	153	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Critical Hdwy	5.2	5.6	-	-	4.22	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.308	-
Pot Cap-1 Maneuver	608	919	-	-	1368	-
Stage 1	926	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	541	917	-	-	1365	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	700	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	4.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	893	1365	-
HCM Lane V/C Ratio	-	-	0.061	0.102	-
HCM Control Delay (s)	-	-	9.3	7.9	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.3	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	1	6	10	0	9	0	185	5	3	212	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-2%			-1%			-2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.947			0.936			0.996			0.998	
Flt Protected		0.973			0.974						0.999	
Satd. Flow (prot)	0	1945	0	0	1457	0	0	1795	0	0	1722	0
Flt Permitted		0.973			0.974						0.999	
Satd. Flow (perm)	0	1945	0	0	1457	0	0	1795	0	0	1722	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		289			365			252			311	
Travel Time (s)		6.6			8.3			5.7			7.1	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	50%	0%	11%	0%	3%	0%	33%	5%	0%
Adj. Flow (vph)	10	1	7	11	0	10	0	206	6	3	236	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	21	0	0	212	0	0	242	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			0			0			0	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.87	0.87	0.87	0.88	0.88	0.88	1.03	1.03	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

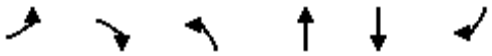
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	1	6	10	0	9	0	185	5	3	212	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-1	-	-	-2	-	-	2	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	50	0	11	0	3	0	33	5	0
Mvmt Flow	10	1	7	11	0	10	0	206	6	3	236	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	457	455	240	456	454	211	239	0	0	211	0	0
Stage 1	244	244	-	208	208	-	-	-	-	-	-	-
Stage 2	213	211	-	248	246	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6	7.4	6.3	6.21	4.1	-	-	4.43	-	-
Critical Hdwy Stg 1	5.7	5.1	-	6.4	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	6.4	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.95	4	3.399	2.2	-	-	2.497	-	-
Pot Cap-1 Maneuver	544	530	815	454	518	812	1340	-	-	1195	-	-
Stage 1	785	727	-	704	742	-	-	-	-	-	-	-
Stage 2	813	749	-	670	716	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	535	528	813	447	516	810	1337	-	-	1192	-	-
Mov Cap-2 Maneuver	535	528	-	447	516	-	-	-	-	-	-	-
Stage 1	785	725	-	704	742	-	-	-	-	-	-	-
Stage 2	801	749	-	660	714	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	11.6	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1337	-	-	613	567	1192	-	-
HCM Lane V/C Ratio	-	-	-	0.029	0.037	0.003	-	-
HCM Control Delay (s)	0	-	-	11	11.6	8	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	61	46	17	186	172	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	-2%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.942				0.969	
Flt Protected	0.972			0.996		
Satd. Flow (prot)	1618	0	0	1765	1727	0
Flt Permitted	0.972			0.996		
Satd. Flow (perm)	1618	0	0	1765	1727	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	990			311	161	
Travel Time (s)	19.3			7.1	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	4%	5%	12%
Adj. Flow (vph)	68	51	19	207	191	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	119	0	0	226	248	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	61	46	17	186	172	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	0	4	5	12
Mvmt Flow	68	51	19	207	191	57

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	463	219	248	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	244	-	-	-	-	-
Critical Hdwy	6.05	6.05	4.1	-	-	-
Critical Hdwy Stg 1	5.05	-	-	-	-	-
Critical Hdwy Stg 2	5.05	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.2	-	-	-
Pot Cap-1 Maneuver	581	823	1330	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	572	823	1330	-	-	-
Mov Cap-2 Maneuver	572	-	-	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	798	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1330	-	658	-	-
HCM Lane V/C Ratio	0.014	-	0.181	-	-
HCM Control Delay (s)	7.7	0	11.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	121	2101	108	3	5	890	16	36	150	61	32	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	11	11	11	13	13	13	11	11
Grade (%)		-2%				1%			0%			-4%
Storage Length (ft)	110		190		150		0	0		0	0	
Storage Lanes	1		1		1		0	0		0	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.997			0.967			0.924
Flt Protected	0.950				0.950				0.993			0.995
Satd. Flow (prot)	1588	3533	1447	0	1356	3341	0	0	1819	0	0	1620
Flt Permitted	0.950				0.950				0.692			0.863
Satd. Flow (perm)	1588	3533	1447	0	1356	3341	0	0	1268	0	0	1405
Right Turn on Red			No				Yes			No		
Satd. Flow (RTOR)						2						
Link Speed (mph)		40				40			30			30
Link Distance (ft)		1697				1673			161			419
Travel Time (s)		28.9				28.5			3.7			9.5
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	11%	5%	9%	33%	25%	9%	13%	0%	6%	0%	0%	7%
Adj. Flow (vph)	122	2122	109	3	5	899	16	36	152	62	32	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	122	2122	109	0	8	915	0	0	250	0	0	326
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		11				11			0			0
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	1.01	1.05	1.05	1.05	0.96	0.96	0.96	1.02	1.02
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	2	2	2	1	2	2		1	2		1	2
Detector Template				Left				Left			Left	
Leading Detector (ft)	83	83	83	20	83	83		20	83		20	83
Trailing Detector (ft)	-5	-5	-5	0	-5	-5		0	-5		0	-5
Detector 1 Position(ft)	-5	-5	-5	0	-5	-5		0	-5		0	-5
Detector 1 Size(ft)	40	40	40	20	40	40		20	40		20	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0		0.0	3.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0		0.0	4.0
Detector 2 Position(ft)	43	43	43		43	43			43			43
Detector 2 Size(ft)	40	40	40		40	40			40			40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0		0.0	0.0			0.0			0.0
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Perm	NA		Perm	NA

Lane Group	SBR
Lane Configurations	
Volume (vph)	181
Ideal Flow (vphpl)	1900
Lane Width (ft)	11
Grade (%)	
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.99
Heavy Vehicles (%)	7%
Adj. Flow (vph)	183
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.02
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Protected Phases	5	2		1	1	6			8			4
Permitted Phases			2					8			4	
Detector Phase	5	2	2	1	1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	3.0	10.0		5.0	5.0		5.0	5.0
Minimum Split (s)	10.0	17.0	17.0	10.0	10.0	17.0		11.0	11.0		11.0	11.0
Total Split (s)	27.0	92.0	92.0	27.0	27.0	92.0		31.0	31.0		31.0	31.0
Total Split (%)	18.0%	61.3%	61.3%	18.0%	18.0%	61.3%		20.7%	20.7%		20.7%	20.7%
Maximum Green (s)	20.0	85.0	85.0	20.0	20.0	85.0		25.0	25.0		25.0	25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0			0.0			0.0
Total Lost Time (s)	7.0	7.0	7.0		7.0	7.0			6.0			6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	Min	Min	None	None	Min		None	None		None	None
v/c Ratio	0.67	0.89	0.11		0.12	0.52			1.00			1.17
Control Delay	71.3	23.2	8.3		62.5	21.1			106.1			152.1
Queue Delay	0.0	0.0	0.0		0.0	0.0			0.0			0.0
Total Delay	71.3	23.2	8.3		62.5	21.1			106.1			152.1
Queue Length 50th (ft)	94	591	26		6	234			199			~303
Queue Length 95th (ft)	172	#1090	66		26	314			#429			#564
Internal Link Dist (ft)		1617				1593			81			339
Turn Bay Length (ft)	110		190		150							
Base Capacity (vph)	252	2388	977		215	2259			251			279
Starvation Cap Reductn	0	0	0		0	0			0			0
Spillback Cap Reductn	0	0	0		0	0			0			0
Storage Cap Reductn	0	0	0		0	0			0			0
Reduced v/c Ratio	0.48	0.89	0.11		0.04	0.41			1.00			1.17

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 126
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A

Lane Group	SBR
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (veh/h)	121	2101	108	3	5	890	16	36	150	61	32	110
Number	5	2	12		1	6	16	3	8	18	7	4
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1729	1828	1761		1477	1733	1890	1976	1906	1976	1938	1823
Adj Flow Rate, veh/h	122	2122	109		5	899	16	36	152	62	32	111
Adj No. of Lanes	1	2	1		1	2	0	0	1	0	0	1
Peak Hour Factor	0.99	0.99	0.99		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	11	5	9		25	9	9	6	6	6	7	7
Cap, veh/h	147	2359	966		5	1901	34	59	188	71	51	115
Arrive On Green	0.09	0.65	0.65		0.00	0.56	0.56	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1647	3655	1496		1407	3395	60	136	966	363	104	588
Grp Volume(v), veh/h	122	2122	109		5	459	456	250	0	0	326	0
Grp Sat Flow(s),veh/h/ln	1647	1828	1496		1407	1733	1723	1465	0	0	1576	0
Q Serve(g_s), s	9.3	63.0	3.6		0.5	20.3	20.3	0.0	0.0	0.0	4.3	0.0
Cycle Q Clear(g_c), s	9.3	63.0	3.6		0.5	20.3	20.3	20.7	0.0	0.0	25.0	0.0
Prop In Lane	1.00		1.00		1.00		0.04	0.14		0.25	0.10	
Lane Grp Cap(c), veh/h	147	2359	966		5	970	964	318	0	0	338	0
V/C Ratio(X)	0.83	0.90	0.11		0.93	0.47	0.47	0.79	0.00	0.00	0.96	0.00
Avail Cap(c_a), veh/h	257	2422	992		219	1148	1141	318	0	0	338	0
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	57.4	19.2	8.7		63.9	16.9	16.9	49.2	0.0	0.0	52.2	0.0
Incr Delay (d2), s/veh	11.1	5.0	0.1		159.5	0.4	0.4	12.4	0.0	0.0	39.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	33.2	1.5		0.4	9.8	9.7	9.6	0.0	0.0	15.2	0.0
LnGrp Delay(d),s/veh	68.6	24.2	8.8		223.4	17.3	17.3	61.5	0.0	0.0	91.6	0.0
LnGrp LOS	E	C	A		F	B	B	E			F	
Approach Vol, veh/h		2353				920			250			326
Approach Delay, s/veh		25.8				18.4			61.5			91.6
Approach LOS		C				B			E			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	89.8		31.0	18.5	78.8		31.0
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	20.0	85.0		25.0	20.0	85.0		25.0
Max Q Clear Time (g_c+I1), s	2.5	65.0		27.0	11.3	22.3		22.7
Green Ext Time (p_c), s	0.0	17.8		0.0	0.3	45.7		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	31.9
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Volume (veh/h)	181
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1938
Adj Flow Rate, veh/h	183
Adj No. of Lanes	0
Peak Hour Factor	0.99
Percent Heavy Veh, %	7
Cap, veh/h	172
Arrive On Green	0.19
Sat Flow, veh/h	885
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.56
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	70	68	188	45	39	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	10	10	10	10
Grade (%)	-6%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.933		0.974			
Flt Protected	0.975					0.990
Satd. Flow (prot)	1594	0	1676	0	0	1467
Flt Permitted	0.975					0.990
Satd. Flow (perm)	1594	0	1676	0	0	1467
Link Speed (mph)	30		30			30
Link Distance (ft)	477		315			163
Travel Time (s)	10.8		7.2			3.7
Confl. Peds. (#/hr)	4	7		1	1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	7%	8%	2%
Parking (#/hr)	5	5				5
Adj. Flow (vph)	72	70	194	46	40	166
Shared Lane Traffic (%)						
Lane Group Flow (vph)	142	0	240	0	0	206
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	13		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.10	0.92	1.07	1.07	1.11	1.32
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

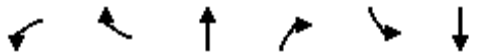
Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	70	68	188	45	39	161
Conflicting Peds, #/hr	4	7	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-3	-	-	3
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	4	7	8	2
Mvmt Flow	72	70	194	46	40	166

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	470	225	0	0	247	0
Stage 1	224	-	-	-	-	-
Stage 2	246	-	-	-	-	-
Critical Hdwy	5.21	5.61	-	-	4.18	-
Critical Hdwy Stg 1	4.21	-	-	-	-	-
Critical Hdwy Stg 2	4.21	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.272	-
Pot Cap-1 Maneuver	648	848	-	-	1285	-
Stage 1	879	-	-	-	-	-
Stage 2	865	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	622	842	-	-	1284	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	714	1284	-
HCM Lane V/C Ratio	-	-	0.199	0.031	-
HCM Control Delay (s)	-	-	11.3	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	112	5	138	118	0	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	10	10
Grade (%)	-5%		-3%			-5%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994		0.938			
Flt Protected	0.954					
Satd. Flow (prot)	1796	0	1637	0	0	1748
Flt Permitted	0.954					
Satd. Flow (perm)	1796	0	1637	0	0	1748
Link Speed (mph)	30		30			30
Link Distance (ft)	231		163			286
Travel Time (s)	5.3		3.7			6.5
Confl. Peds. (#/hr)	3	1		1	1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	20%	5%	1%	0%	4%
Adj. Flow (vph)	127	6	157	134	0	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	133	0	291	0	0	100
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.07	1.07	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

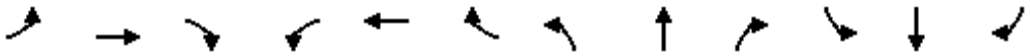
Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	112	5	138	118	0	88
Conflicting Peds, #/hr	3	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	-3	-	-	-5
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	20	5	1	0	4
Mvmt Flow	127	6	157	134	0	100

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	327	228	0	0	294	0
Stage 1	227	-	-	-	-	-
Stage 2	100	-	-	-	-	-
Critical Hdwy	5.42	5.9	-	-	4.1	-
Critical Hdwy Stg 1	4.42	-	-	-	-	-
Critical Hdwy Stg 2	4.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.48	-	-	2.2	-
Pot Cap-1 Maneuver	731	793	-	-	1279	-
Stage 1	863	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	729	790	-	-	1278	-
Mov Cap-2 Maneuver	729	-	-	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	949	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	731	1278	-
HCM Lane V/C Ratio	-	-	0.182	-	-
HCM Control Delay (s)	-	-	11	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	3	2	12	1	3	4	102	12	6	103	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	13	13	13	11	11	11	11	11	11
Grade (%)		-15%			1%			4%			-4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.972			0.986			0.998	
Flt Protected					0.964			0.998			0.997	
Satd. Flow (prot)	0	1877	0	0	1602	0	0	1740	0	0	1813	0
Flt Permitted					0.964			0.998			0.997	
Satd. Flow (perm)	0	1877	0	0	1602	0	0	1740	0	0	1813	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			414			330			747	
Travel Time (s)		4.0			9.4			7.5			17.0	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	9%	0%	3%	0%
Parking (#/hr)	5	5	5	5	5	5						
Adj. Flow (vph)	0	4	2	14	1	4	5	120	14	7	121	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	19	0	0	139	0	0	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.80	0.96	0.80	0.96	1.15	0.96	1.07	1.07	1.07	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	3	2	12	1	3	4	102	12	6	103	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-15	-	-	1	-	-	4	-	-	-4	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	1	9	0	3	0
Mvmt Flow	0	4	2	14	1	4	5	120	14	7	121	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	275	280	122	275	274	127	124	0	0	134	0	0
Stage 1	136	136	-	136	136	-	-	-	-	-	-	-
Stage 2	139	144	-	139	138	-	-	-	-	-	-	-
Critical Hdwy	4.1	3.5	4.7	7.3	6.7	6.3	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	3.1	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	3.1	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	857	798	983	671	627	925	1475	-	-	1463	-	-
Stage 1	977	882	-	866	782	-	-	-	-	-	-	-
Stage 2	976	881	-	862	780	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	847	791	983	663	621	925	1475	-	-	1463	-	-
Mov Cap-2 Maneuver	847	791	-	663	621	-	-	-	-	-	-	-
Stage 1	973	878	-	863	779	-	-	-	-	-	-	-
Stage 2	967	877	-	852	776	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	10.3	0.3	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1475	-	-	858	697	1463	-	-
HCM Lane V/C Ratio	0.003	-	-	0.007	0.027	0.005	-	-
HCM Control Delay (s)	7.4	0	-	9.2	10.3	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	105	0	0	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-5%		7%			-7%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1818	0	1772	0	0	1828
Flt Permitted						
Satd. Flow (perm)	1818	0	1772	0	0	1828
Link Speed (mph)	30		30			30
Link Distance (ft)	188		747			845
Travel Time (s)	4.3		17.0			19.2
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	0	0	127	0	0	134
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	127	0	0	134
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.09	1.09	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	0	105	0	0	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	7	-	-	-7
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	4
Mvmt Flow	0	0	127	0	0	134

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	261	127	0	0	127	0
Stage 1	127	-	-	-	-	-
Stage 2	134	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	787	945	-	-	1472	-
Stage 1	936	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	787	945	-	-	1472	-
Mov Cap-2 Maneuver	787	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	931	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1472	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	1	103	2	3	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11
Grade (%)	-6%		-4%			6%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977		0.998			
Flt Protected	0.960					0.998
Satd. Flow (prot)	1519	0	1851	0	0	1728
Flt Permitted	0.960					0.998
Satd. Flow (perm)	1519	0	1851	0	0	1728
Link Speed (mph)	30		30			30
Link Distance (ft)	525		845			363
Travel Time (s)	11.9		19.2			8.3
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	25%	0%	1%	0%	0%	3%
Adj. Flow (vph)	5	1	123	2	4	127
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	125	0	0	131
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.96	0.96	1.02	1.02	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	4	1	103	2	3	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	6
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	25	0	1	0	0	3
Mvmt Flow	5	1	123	2	4	127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	259	124	0	0	125	0
Stage 1	124	-	-	-	-	-
Stage 2	135	-	-	-	-	-
Critical Hdwy	5.45	5.6	-	-	4.1	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.725	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	744	952	-	-	1474	-
Stage 1	883	-	-	-	-	-
Stage 2	876	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	742	952	-	-	1474	-
Mov Cap-2 Maneuver	742	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	873	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	776	1474	-
HCM Lane V/C Ratio	-	-	0.008	0.002	-
HCM Control Delay (s)	-	-	9.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	3	98	101	3	77	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-6%		-4%			4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.869		0.997			
Flt Protected	0.999					0.979
Satd. Flow (prot)	1626	0	1850	0	0	1732
Flt Permitted	0.999					0.979
Satd. Flow (perm)	1626	0	1850	0	0	1732
Link Speed (mph)	30		30			30
Link Distance (ft)	590		363			252
Travel Time (s)	13.4		8.3			5.7
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	3	110	113	3	87	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	116	0	0	207
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

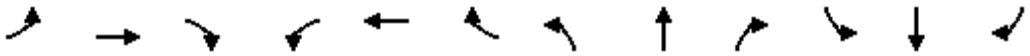
Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	3	98	101	3	77	107
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	4
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	1	1	0	0	3
Mvmt Flow	3	110	113	3	87	120

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	408	116	0	0	117	0
Stage 1	115	-	-	-	-	-
Stage 2	293	-	-	-	-	-
Critical Hdwy	5.2	5.61	-	-	4.1	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.2	-
Pot Cap-1 Maneuver	691	957	-	-	1484	-
Stage 1	951	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	647	956	-	-	1483	-
Mov Cap-2 Maneuver	647	-	-	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	3.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	943	1483	-
HCM Lane V/C Ratio	-	-	0.12	0.058	-
HCM Control Delay (s)	-	-	9.3	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1	3	1	9	10	3	195	1	10	180	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-2%			-1%			-2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.932			0.999			0.996	
Flt Protected		0.969			0.998			0.999			0.998	
Satd. Flow (prot)	0	1807	0	0	1775	0	0	1833	0	0	1758	0
Flt Permitted		0.969			0.998			0.999			0.998	
Satd. Flow (perm)	0	1807	0	0	1775	0	0	1833	0	0	1758	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		289			365			252			311	
Travel Time (s)		6.6			8.3			5.7			7.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	33%	100%	0%	11%	0%	1%	0%	20%	2%	0%
Adj. Flow (vph)	7	1	3	1	10	11	3	219	1	11	202	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	22	0	0	223	0	0	220	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			0			0			0	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.87	0.87	0.87	0.88	0.88	0.88	1.03	1.03	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

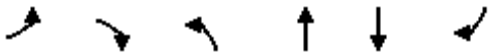
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	1	3	1	9	10	3	195	1	10	180	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-1	-	-	-2	-	-	2	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	33	100	0	11	0	1	0	20	2	0
Mvmt Flow	7	1	3	1	10	11	3	219	1	11	202	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	465	455	206	456	457	220	209	0	0	220	0	0
Stage 1	228	228	-	226	226	-	-	-	-	-	-	-
Stage 2	237	227	-	230	231	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6.33	7.9	6.3	6.21	4.1	-	-	4.3	-	-
Critical Hdwy Stg 1	5.7	5.1	-	6.9	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	6.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.597	4.4	4	3.399	2.2	-	-	2.38	-	-
Pot Cap-1 Maneuver	538	530	771	392	516	803	1374	-	-	1250	-	-
Stage 1	799	738	-	607	730	-	-	-	-	-	-	-
Stage 2	791	738	-	604	726	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	518	524	771	386	510	803	1374	-	-	1250	-	-
Mov Cap-2 Maneuver	518	524	-	386	510	-	-	-	-	-	-	-
Stage 1	797	731	-	606	729	-	-	-	-	-	-	-
Stage 2	768	737	-	594	719	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	11.1	0.1	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1374	-	-	575	612	1250	-	-
HCM Lane V/C Ratio	0.002	-	-	0.02	0.037	0.009	-	-
HCM Control Delay (s)	7.6	0	-	11.4	11.1	7.9	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	37	20	36	175	176	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	-2%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.953				0.962	
Flt Protected	0.968			0.992		
Satd. Flow (prot)	1594	0	0	1792	1787	0
Flt Permitted	0.968			0.992		
Satd. Flow (perm)	1594	0	0	1792	1787	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	990			311	161	
Travel Time (s)	19.3			7.1	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	21%	0%	2%	2%	3%
Adj. Flow (vph)	41	22	40	194	196	76
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	0	234	272	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

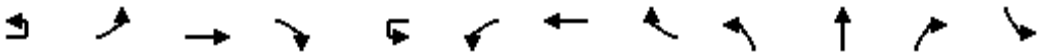
Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	37	20	36	175	176	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	21	0	2	2	3
Mvmt Flow	41	22	40	194	196	76

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	507	233	271	0	-	0
Stage 1	233	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Critical Hdwy	6	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.489	2.2	-	-	-
Pot Cap-1 Maneuver	560	771	1304	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	541	771	1304	-	-	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	774	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1304	-	604	-	-
HCM Lane V/C Ratio	0.031	-	0.105	-	-
HCM Control Delay (s)	7.8	0	11.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	8	146	1093	138	2	12	2067	28	46	128	38	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	12	11	11	11	13	13	13	11
Grade (%)			-2%				1%			0%		
Storage Length (ft)		110		190		150		0	0		0	0
Storage Lanes		1		1		1		0	0		0	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	*1.00	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.998			0.976		
Flt Protected		0.950				0.950				0.989		
Satd. Flow (prot)	0	1713	3602	1561	0	1736	3543	0	0	1867	0	0
Flt Permitted		0.950				0.950				0.493		
Satd. Flow (perm)	0	1713	3602	1561	0	1736	3543	0	0	931	0	0
Right Turn on Red				No				Yes			No	
Satd. Flow (RTOR)							2					
Link Speed (mph)			40				40			30		
Link Distance (ft)			1697				1673			161		
Travel Time (s)			28.9				28.5			3.7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	3%	1%	0%	0%	3%	0%	0%	1%	5%	6%
Adj. Flow (vph)	8	151	1127	142	2	12	2131	29	47	132	39	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	159	1127	142	0	14	2160	0	0	218	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)			11				11			0		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	0.99	1.03	1.03	1.03	1.01	1.05	1.05	1.05	0.96	0.96	0.96	1.02
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Number of Detectors	1	2	2	2	1	2	2		1	2		1
Detector Template	Left				Left				Left			Left
Leading Detector (ft)	20	83	83	83	20	83	83		20	83		20
Trailing Detector (ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Position(ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Size(ft)	20	40	40	40	20	40	40		20	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0		0.0
Detector 2 Position(ft)		43	43	43		43	43			43		
Detector 2 Size(ft)		40	40	40		40	40			40		
Detector 2 Type		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA		Perm

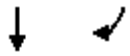
Lane Group	SBT	SBR
Lane Configurations		
Volume (vph)	94	164
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	11	11
Grade (%)	-4%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.920	
Flt Protected	0.997	
Satd. Flow (prot)	1637	0
Flt Permitted	0.934	
Satd. Flow (perm)	1533	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	30	
Link Distance (ft)	419	
Travel Time (s)	9.5	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	3%	6%
Adj. Flow (vph)	97	169
Shared Lane Traffic (%)		
Lane Group Flow (vph)	284	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	0	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.02	1.02
Turning Speed (mph)		9
Number of Detectors	2	
Detector Template		
Leading Detector (ft)	83	
Trailing Detector (ft)	-5	
Detector 1 Position(ft)	-5	
Detector 1 Size(ft)	40	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	3.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	4.0	
Detector 2 Position(ft)	43	
Detector 2 Size(ft)	40	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	2	1	1	6		8	8		4
Switch Phase												
Minimum Initial (s)	3.0	3.0	10.0	10.0	3.0	3.0	10.0		5.0	5.0		5.0
Minimum Split (s)	10.0	10.0	17.0	17.0	10.0	10.0	17.0		11.0	11.0		11.0
Total Split (s)	27.0	27.0	92.0	92.0	27.0	27.0	92.0		31.0	31.0		31.0
Total Split (%)	18.0%	18.0%	61.3%	61.3%	18.0%	18.0%	61.3%		20.7%	20.7%		20.7%
Maximum Green (s)	20.0	20.0	85.0	85.0	20.0	20.0	85.0		25.0	25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Total Lost Time (s)		7.0	7.0	7.0		7.0	7.0			6.0		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Recall Mode	None	None	Min	Min	None	None	Min		None	None		None
v/c Ratio		0.78	0.45	0.13		0.17	1.06			1.39		
Control Delay		88.6	11.0	8.6		72.9	68.3			252.0		
Queue Delay		0.0	0.0	0.0		0.0	0.0			0.0		
Total Delay		88.6	11.0	8.6		72.9	68.3			252.0		
Queue Length 50th (ft)		151	182	35		13	~1163			~283		
Queue Length 95th (ft)		#245	320	82		38	#1299			#457		
Internal Link Dist (ft)			1617				1593			81		
Turn Bay Length (ft)		110		190		150						
Base Capacity (vph)		232	2528	1095		235	2041			157		
Starvation Cap Reductn		0	0	0		0	0			0		
Spillback Cap Reductn		0	0	0		0	0			0		
Storage Cap Reductn		0	0	0		0	0			0		
Reduced v/c Ratio		0.69	0.45	0.13		0.06	1.06			1.39		

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 147.6
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A



Lane Group	SBT	SBR
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	11.0	
Total Split (s)	31.0	
Total Split (%)	20.7%	
Maximum Green (s)	25.0	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	None	
v/c Ratio	1.10	
Control Delay	139.1	
Queue Delay	0.0	
Total Delay	139.1	
Queue Length 50th (ft)	~314	
Queue Length 95th (ft)	#508	
Internal Link Dist (ft)	339	
Turn Bay Length (ft)		
Base Capacity (vph)	259	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	1.10	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (veh/h)	8	146	1093	138	2	12	2067	28	46	128	38	17
Number		5	2	12		1	6	16	3	8	18	7
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1866	1863	1900		1890	1836	1890	1976	1947	1976	1938
Adj Flow Rate, veh/h		151	1127	142		12	2131	29	47	132	39	18
Adj No. of Lanes		1	2	1		1	2	0	0	1	0	0
Peak Hour Factor		0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		3	3	1		0	3	3	1	1	1	3
Cap, veh/h		176	2535	1099		14	2129	29	63	144	39	37
Arrive On Green		0.10	0.68	0.68		0.01	0.59	0.59	0.17	0.17	0.17	0.17
Sat Flow, veh/h		1777	3726	1615		1800	3615	49	188	833	222	61
Grp Volume(v), veh/h		151	1127	142		12	1080	1080	218	0	0	284
Grp Sat Flow(s),veh/h/ln		1777	1863	1615		1800	1836	1827	1243	0	0	1657
Q Serve(g_s), s		12.1	20.0	4.4		1.0	84.7	85.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s		12.1	20.0	4.4		1.0	84.7	85.0	25.0	0.0	0.0	24.7
Prop In Lane		1.00		1.00		1.00		0.03	0.22		0.18	0.06
Lane Grp Cap(c), veh/h		176	2535	1099		14	1081	1076	246	0	0	314
V/C Ratio(X)		0.86	0.44	0.13		0.84	1.00	1.00	0.89	0.00	0.00	0.91
Avail Cap(c_a), veh/h		246	2535	1099		250	1081	1076	246	0	0	314
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		64.0	10.6	8.1		71.5	29.6	29.7	58.6	0.0	0.0	59.5
Incr Delay (d2), s/veh		18.6	0.1	0.1		71.5	27.0	28.3	29.9	0.0	0.0	28.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		6.8	10.2	2.0		0.8	50.7	51.2	10.7	0.0	0.0	13.7
LnGrp Delay(d),s/veh		82.6	10.7	8.1		143.0	56.6	57.9	88.5	0.0	0.0	87.7
LnGrp LOS		F	B	A		F	E	F	F			F
Approach Vol, veh/h			1420				2172			218		
Approach Delay, s/veh			18.1				57.7			88.5		
Approach LOS			B				E			F		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	105.2		31.0	21.3	92.0		31.0
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	20.0	85.0		25.0	20.0	85.0		25.0
Max Q Clear Time (g_c+I1), s	3.0	22.0		26.7	14.1	87.0		27.0
Green Ext Time (p_c), s	0.0	50.5		0.0	0.3	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.7
HCM 2010 LOS	D

Notes

User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Volume (veh/h)	94	164
Number	4	14
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1846	1938
Adj Flow Rate, veh/h	97	169
Adj No. of Lanes	1	0
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	3	3
Cap, veh/h	106	171
Arrive On Green	0.17	0.17
Sat Flow, veh/h	610	986
Grp Volume(v), veh/h	0	0
Grp Sat Flow(s),veh/h/ln	0	0
Q Serve(g_s), s	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0
Prop In Lane		0.60
Lane Grp Cap(c), veh/h	0	0
V/C Ratio(X)	0.00	0.00
Avail Cap(c_a), veh/h	0	0
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0
LnGrp LOS		
Approach Vol, veh/h	284	
Approach Delay, s/veh	87.7	
Approach LOS	F	
Timer		

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	40	52	172	60	37	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	10	10	10	10
Grade (%)	-6%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.924		0.965			
Flt Protected	0.979					0.990
Satd. Flow (prot)	1809	0	1699	0	0	1501
Flt Permitted	0.979					0.990
Satd. Flow (perm)	1809	0	1699	0	0	1501
Link Speed (mph)	30		30			30
Link Distance (ft)	477		315			163
Travel Time (s)	10.8		7.2			3.7
Confl. Peds. (#/hr)	1	1		3	3	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	2%	3%	0%	0%	1%
Parking (#/hr)		5				5
Adj. Flow (vph)	48	62	205	71	44	173
Shared Lane Traffic (%)						
Lane Group Flow (vph)	110	0	276	0	0	217
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	13		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.07	1.07	1.11	1.32
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	40	52	172	60	37	145
Conflicting Peds, #/hr	1	1	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-3	-	-	3
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	2	3	0	0	1
Mvmt Flow	48	62	205	71	44	173

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	502	244	0	0	277	0
Stage 1	241	-	-	-	-	-
Stage 2	261	-	-	-	-	-
Critical Hdwy	5.2	5.62	-	-	4.1	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.2	-
Pot Cap-1 Maneuver	630	828	-	-	1298	-
Stage 1	871	-	-	-	-	-
Stage 2	859	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	604	826	-	-	1295	-
Mov Cap-2 Maneuver	604	-	-	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	825	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	712	1295	-
HCM Lane V/C Ratio	-	-	0.154	0.034	-
HCM Control Delay (s)	-	-	11	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	113	2	106	118	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	10	10
Grade (%)	-5%		-3%			-5%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998		0.929			
Flt Protected	0.953					
Satd. Flow (prot)	1852	0	1648	0	0	1818
Flt Permitted	0.953					
Satd. Flow (perm)	1852	0	1648	0	0	1818
Link Speed (mph)	30		30			30
Link Distance (ft)	231		163			286
Travel Time (s)	5.3		3.7			6.5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	2%	1%	0%	0%
Adj. Flow (vph)	127	2	119	133	0	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	252	0	0	78
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.07	1.07	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

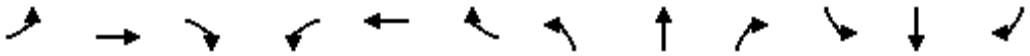
Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	113	2	106	118	0	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	-3	-	-	-5
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	2	1	0	0
Mvmt Flow	127	2	119	133	0	78

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	263	185	0	0	252	0
Stage 1	185	-	-	-	-	-
Stage 2	78	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	786	885	-	-	1325	-
Stage 1	896	-	-	-	-	-
Stage 2	971	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	786	885	-	-	1325	-
Mov Cap-2 Maneuver	786	-	-	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	971	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	788	1325	-
HCM Lane V/C Ratio	-	-	0.164	-	-
HCM Control Delay (s)	-	-	10.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2	7	2	4	2	3	100	15	4	106	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	13	13	13	11	11	11	11	11	11
Grade (%)		-15%			1%			4%			-4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.910			0.970			0.983			0.997	
Flt Protected		0.992			0.989			0.999			0.998	
Satd. Flow (prot)	0	1638	0	0	1640	0	0	1727	0	0	1864	0
Flt Permitted		0.992			0.989			0.999			0.998	
Satd. Flow (perm)	0	1638	0	0	1640	0	0	1727	0	0	1864	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			414			330			747	
Travel Time (s)		4.0			9.4			7.5			17.0	
Confl. Peds. (#/hr)	2					2						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	50%	0%	0%	0%	0%	0%	67%	1%	0%	0%	0%	0%
Parking (#/hr)	5	5	5	5	5	5						
Adj. Flow (vph)	2	2	8	2	5	2	3	116	17	5	123	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	9	0	0	136	0	0	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.80	0.96	0.80	0.96	1.15	0.96	1.07	1.07	1.07	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	2	7	2	4	2	3	100	15	4	106	3
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-15	-	-	1	-	-	4	-	-	-4	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	50	0	0	0	0	0	67	1	0	0	0	0
Mvmt Flow	2	2	8	2	5	2	3	116	17	5	123	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	273	279	127	276	272	127	129	0	0	136	0	0
Stage 1	136	136	-	134	134	-	-	-	-	-	-	-
Stage 2	137	143	-	142	138	-	-	-	-	-	-	-
Critical Hdwy	4.6	3.5	4.7	7.3	6.7	6.3	4.77	-	-	4.1	-	-
Critical Hdwy Stg 1	3.6	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	3.6	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4	3.3	3.5	4	3.3	2.803	-	-	2.2	-	-
Pot Cap-1 Maneuver	744	798	979	670	629	925	1138	-	-	1461	-	-
Stage 1	856	882	-	868	783	-	-	-	-	-	-	-
Stage 2	856	881	-	859	780	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	732	789	977	658	622	923	1138	-	-	1461	-	-
Mov Cap-2 Maneuver	732	789	-	658	622	-	-	-	-	-	-	-
Stage 1	852	877	-	864	779	-	-	-	-	-	-	-
Stage 2	846	877	-	846	775	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	10.3	0.2	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1138	-	-	885	687	1461	-	-
HCM Lane V/C Ratio	0.003	-	-	0.014	0.014	0.003	-	-
HCM Control Delay (s)	8.2	0	-	9.1	10.3	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	0	104	0	0	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-5%		7%			-7%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1818	0	1738	0	0	1882
Flt Permitted						
Satd. Flow (perm)	1818	0	1738	0	0	1882
Link Speed (mph)	30		30			30
Link Distance (ft)	188		747			845
Travel Time (s)	4.3		17.0			19.2
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	2%	0%	0%	1%
Adj. Flow (vph)	0	0	106	0	0	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	106	0	0	115
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.09	1.09	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

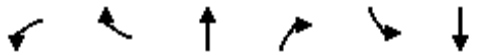
Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	0	104	0	0	113
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	7	-	-	-7
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	0	0	106	0	0	115

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	221	107	0	0	106	0
Stage 1	106	-	-	-	-	-
Stage 2	115	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	821	967	-	-	1498	-
Stage 1	951	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	820	966	-	-	1497	-
Mov Cap-2 Maneuver	820	-	-	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	944	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1497	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	10	2	92	12	3	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11
Grade (%)	-6%		-4%			6%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.979		0.984			
Flt Protected	0.959					0.999
Satd. Flow (prot)	1837	0	1793	0	0	1763
Flt Permitted	0.959					0.999
Satd. Flow (perm)	1837	0	1793	0	0	1763
Link Speed (mph)	30		30			30
Link Distance (ft)	525		845			363
Travel Time (s)	11.9		19.2			8.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	2%	9%	0%	1%
Adj. Flow (vph)	11	2	97	13	3	108
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	110	0	0	111
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.96	0.96	1.02	1.02	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	10	2	92	12	3	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	6
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	9	0	1
Mvmt Flow	11	2	97	13	3	108

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	218	103	0	0	109	0
Stage 1	103	-	-	-	-	-
Stage 2	115	-	-	-	-	-
Critical Hdwy	5.2	5.6	-	-	4.1	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	833	974	-	-	1494	-
Stage 1	959	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	831	974	-	-	1494	-
Mov Cap-2 Maneuver	831	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	949	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	852	1494	-
HCM Lane V/C Ratio	-	-	0.015	0.002	-
HCM Control Delay (s)	-	-	9.3	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	85	85	9	74	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-6%		-4%			4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.866		0.987			
Flt Protected	0.999					0.980
Satd. Flow (prot)	1637	0	1832	0	0	1742
Flt Permitted	0.999					0.980
Satd. Flow (perm)	1637	0	1832	0	0	1742
Link Speed (mph)	30		30			30
Link Distance (ft)	590		363			252
Travel Time (s)	13.4		8.3			5.7
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%
Adj. Flow (vph)	1	93	93	10	81	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	103	0	0	196
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

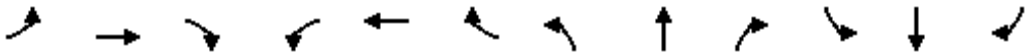
Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	85	85	9	74	105
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	4
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	1	0	3	0
Mvmt Flow	1	93	93	10	81	115

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	376	99	0	0	103	0
Stage 1	98	-	-	-	-	-
Stage 2	278	-	-	-	-	-
Critical Hdwy	5.2	5.6	-	-	4.13	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227	-
Pot Cap-1 Maneuver	713	978	-	-	1483	-
Stage 1	962	-	-	-	-	-
Stage 2	849	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	671	977	-	-	1482	-
Mov Cap-2 Maneuver	671	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	799	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	3.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	972	1482	-
HCM Lane V/C Ratio	-	-	0.097	0.055	-
HCM Control Delay (s)	-	-	9.1	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1	3	1	0	9	4	163	3	8	175	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-2%			-1%			-2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966			0.877			0.998			0.995	
Flt Protected		0.968			0.995			0.999			0.998	
Satd. Flow (prot)	0	1628	0	0	1666	0	0	1787	0	0	1780	0
Flt Permitted		0.968			0.995			0.999			0.998	
Satd. Flow (perm)	0	1628	0	0	1666	0	0	1787	0	0	1780	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		289			365			252			311	
Travel Time (s)		6.6			8.3			5.7			7.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	7%	100%	33%	0%	0%	11%	25%	3%	0%	0%	1%	14%
Adj. Flow (vph)	8	1	3	1	0	10	5	185	3	9	199	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	11	0	0	193	0	0	216	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			0			0			0	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.87	0.87	0.87	0.88	0.88	0.88	1.03	1.03	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

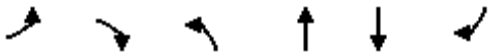
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	1	3	1	0	9	4	163	3	8	175	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-1	-	-	-2	-	-	2	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	7	100	33	0	0	11	25	3	0	0	1	14
Mvmt Flow	8	1	3	1	0	10	5	185	3	9	199	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	422	419	203	419	421	187	207	0	0	189	0	0
Stage 1	221	221	-	196	196	-	-	-	-	-	-	-
Stage 2	201	198	-	223	225	-	-	-	-	-	-	-
Critical Hdwy	6.77	7.1	6.33	6.9	6.3	6.21	4.35	-	-	4.1	-	-
Critical Hdwy Stg 1	5.77	6.1	-	5.9	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.77	6.1	-	5.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.9	3.597	3.5	4	3.399	2.425	-	-	2.2	-	-
Pot Cap-1 Maneuver	559	422	774	561	539	837	1238	-	-	1397	-	-
Stage 1	789	585	-	819	751	-	-	-	-	-	-	-
Stage 2	807	599	-	794	730	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	547	417	774	552	533	837	1238	-	-	1397	-	-
Mov Cap-2 Maneuver	547	417	-	552	533	-	-	-	-	-	-	-
Stage 1	785	581	-	815	747	-	-	-	-	-	-	-
Stage 2	793	596	-	783	725	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	9.6	0.2	0.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1238	-	-	577	796	1397	-	-
HCM Lane V/C Ratio	0.004	-	-	0.022	0.014	0.007	-	-
HCM Control Delay (s)	7.9	0	-	11.4	9.6	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	63	15	20	159	175	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	-2%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.974				0.966	
Flt Protected	0.961			0.995		
Satd. Flow (prot)	1736	0	0	1765	1799	0
Flt Permitted	0.961			0.995		
Satd. Flow (perm)	1736	0	0	1765	1799	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	990			311	161	
Travel Time (s)	19.3			7.1	3.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	4%	2%	2%
Adj. Flow (vph)	64	15	20	162	179	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	0	182	239	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	63	15	20	159	175	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	4	2	2
Mvmt Flow	64	15	20	162	179	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	412	209	239	0	-	0
Stage 1	209	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Critical Hdwy	6	6	4.1	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	628	846	1340	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	618	846	1340	-	-	-
Mov Cap-2 Maneuver	618	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	841	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1340	-	652	-	-
HCM Lane V/C Ratio	0.015	-	0.122	-	-
HCM Control Delay (s)	7.7	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

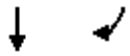
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	3	117	925	124	1	11	1361	32	55	113	54	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	12	11	11	11	13	13	13	11
Grade (%)			-2%				1%			0%		
Storage Length (ft)		110		190		150		0	0		0	0
Storage Lanes		1		1		1		0	0		0	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	*1.00	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.997			0.967		
Flt Protected		0.950				0.950				0.988		
Satd. Flow (prot)	0	1729	3637	1531	0	1736	3540	0	0	1839	0	0
Flt Permitted		0.950				0.950				0.673		
Satd. Flow (perm)	0	1729	3637	1531	0	1736	3540	0	0	1253	0	0
Right Turn on Red				No				Yes			No	
Satd. Flow (RTOR)							3					
Link Speed (mph)			40				40			30		
Link Distance (ft)			1697				1673			161		
Travel Time (s)			28.9				28.5			3.7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	2%	3%	0%	0%	3%	0%	4%	2%	0%	2%
Adj. Flow (vph)	3	121	954	128	1	11	1403	33	57	116	56	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	954	128	0	12	1436	0	0	229	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)			11				11			0		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	0.99	1.03	1.03	1.03	1.01	1.05	1.05	1.05	0.96	0.96	0.96	1.02
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Number of Detectors	1	2	2	2	1	2	2		1	2		1
Detector Template	Left				Left				Left			Left
Leading Detector (ft)	20	83	83	83	20	83	83		20	83		20
Trailing Detector (ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Position(ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Size(ft)	20	40	40	40	20	40	40		20	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0		0.0
Detector 2 Position(ft)		43	43	43		43	43			43		
Detector 2 Size(ft)		40	40	40		40	40			40		
Detector 2 Type		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA		Perm

Lane Group	SBT	SBR
Lane Configurations		
Volume (vph)	99	151
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	11	11
Grade (%)	-4%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.931	
Flt Protected	0.992	
Satd. Flow (prot)	1707	0
Flt Permitted	0.866	
Satd. Flow (perm)	1491	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	30	
Link Distance (ft)	419	
Travel Time (s)	9.5	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	0%	2%
Adj. Flow (vph)	102	156
Shared Lane Traffic (%)		
Lane Group Flow (vph)	305	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	0	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.02	1.02
Turning Speed (mph)		9
Number of Detectors	2	
Detector Template		
Leading Detector (ft)	83	
Trailing Detector (ft)	-5	
Detector 1 Position(ft)	-5	
Detector 1 Size(ft)	40	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	3.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	4.0	
Detector 2 Position(ft)	43	
Detector 2 Size(ft)	40	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	2	1	1	6		8	8		4
Switch Phase												
Minimum Initial (s)	3.0	3.0	10.0	10.0	3.0	3.0	10.0		5.0	5.0		5.0
Minimum Split (s)	10.0	10.0	17.0	17.0	10.0	10.0	17.0		11.0	11.0		11.0
Total Split (s)	22.0	22.0	67.0	67.0	22.0	22.0	67.0		31.0	31.0		31.0
Total Split (%)	18.3%	18.3%	55.8%	55.8%	18.3%	18.3%	55.8%		25.8%	25.8%		25.8%
Maximum Green (s)	15.0	15.0	60.0	60.0	15.0	15.0	60.0		25.0	25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Total Lost Time (s)		7.0	7.0	7.0		7.0	7.0			6.0		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Recall Mode	None	None	Min	Min	None	None	Min		None	None		None
v/c Ratio		0.64	0.44	0.14		0.12	0.86			0.79		
Control Delay		63.4	13.3	11.0		55.2	32.0			62.4		
Queue Delay		0.0	0.0	0.0		0.0	0.0			0.0		
Total Delay		63.4	13.3	11.0		55.2	32.0			62.4		
Queue Length 50th (ft)		87	144	31		8	439			159		
Queue Length 95th (ft)		157	260	78		29	546			#320		
Internal Link Dist (ft)			1617				1593			81		
Turn Bay Length (ft)		110		190		150						
Base Capacity (vph)		240	2244	944		241	1970			290		
Starvation Cap Reductn		0	0	0		0	0			0		
Spillback Cap Reductn		0	0	0		0	0			0		
Storage Cap Reductn		0	0	0		0	0			0		
Reduced v/c Ratio		0.52	0.43	0.14		0.05	0.73			0.79		

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 109.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
* User Entered Value	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A



Lane Group	SBT	SBR
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	11.0	
Total Split (s)	31.0	
Total Split (%)	25.8%	
Maximum Green (s)	25.0	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	None	
v/c Ratio	0.88	
Control Delay	69.9	
Queue Delay	0.0	
Total Delay	69.9	
Queue Length 50th (ft)	218	
Queue Length 95th (ft)	#420	
Internal Link Dist (ft)	339	
Turn Bay Length (ft)		
Base Capacity (vph)	345	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.88	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (veh/h)	3	117	925	124	1	11	1361	32	55	113	54	46
Number		5	2	12		1	6	16	3	8	18	7
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1882	1881	1863		1890	1837	1890	1976	1937	1976	1938
Adj Flow Rate, veh/h		121	954	128		11	1403	33	57	116	56	47
Adj No. of Lanes		1	2	1		1	2	0	0	1	0	0
Peak Hour Factor		0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		2	2	3		0	3	3	2	2	2	0
Cap, veh/h		152	2209	930		14	1823	43	99	177	75	79
Arrive On Green		0.09	0.59	0.59		0.01	0.51	0.51	0.21	0.21	0.21	0.21
Sat Flow, veh/h		1793	3763	1584		1800	3575	84	264	843	358	185
Grp Volume(v), veh/h		121	954	128		11	720	716	229	0	0	305
Grp Sat Flow(s),veh/h/ln		1793	1881	1584		1800	1837	1822	1465	0	0	1665
Q Serve(g_s), s		6.8	14.3	3.7		0.6	32.3	32.4	0.0	0.0	0.0	3.1
Cycle Q Clear(g_c), s		6.8	14.3	3.7		0.6	32.3	32.4	14.9	0.0	0.0	18.0
Prop In Lane		1.00		1.00		1.00		0.05	0.25		0.24	0.15
Lane Grp Cap(c), veh/h		152	2209	930		14	937	929	351	0	0	389
V/C Ratio(X)		0.79	0.43	0.14		0.78	0.77	0.77	0.65	0.00	0.00	0.78
Avail Cap(c_a), veh/h		263	2209	930		264	1078	1069	407	0	0	446
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		45.9	11.7	9.5		50.6	20.2	20.2	37.3	0.0	0.0	39.0
Incr Delay (d2), s/veh		9.0	0.1	0.1		59.7	3.0	3.0	3.0	0.0	0.0	7.8
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		3.7	7.5	1.6		0.5	17.0	17.1	6.3	0.0	0.0	9.1
LnGrp Delay(d),s/veh		54.9	11.8	9.5		110.3	23.2	23.3	40.3	0.0	0.0	46.7
LnGrp LOS		D	B	A		F	C	C	D			D
Approach Vol, veh/h			1203				1447			229		
Approach Delay, s/veh			15.9				23.9			40.3		
Approach LOS			B				C			D		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	67.0		27.4	15.7	59.2		27.4
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	15.0	60.0		25.0	15.0	60.0		25.0
Max Q Clear Time (g_c+I1), s	2.6	16.3		20.0	8.8	34.4		16.9
Green Ext Time (p_c), s	0.0	24.9		1.4	0.2	17.7		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Volume (veh/h)	99	151
Number	4	14
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1913	1938
Adj Flow Rate, veh/h	102	156
Adj No. of Lanes	1	0
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	0	0
Cap, veh/h	132	178
Arrive On Green	0.21	0.21
Sat Flow, veh/h	628	852
Grp Volume(v), veh/h	0	0
Grp Sat Flow(s),veh/h/ln	0	0
Q Serve(g_s), s	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0
Prop In Lane		0.51
Lane Grp Cap(c), veh/h	0	0
V/C Ratio(X)	0.00	0.00
Avail Cap(c_a), veh/h	0	0
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0
LnGrp LOS		
Approach Vol, veh/h	305	
Approach Delay, s/veh	46.7	
Approach LOS	D	
Timer		

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	68	72	200	87	65	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	10	10	10	10
Grade (%)	-6%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.930		0.959			
Flt Protected	0.976					0.988
Satd. Flow (prot)	1488	0	1686	0	0	1442
Flt Permitted	0.976					0.988
Satd. Flow (perm)	1488	0	1686	0	0	1442
Link Speed (mph)	30		30			30
Link Distance (ft)	477		315			163
Travel Time (s)	10.8		7.2			3.7
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	9%	7%	3%	1%	7%	4%
Parking (#/hr)	5	5				5
Adj. Flow (vph)	78	83	230	100	75	231
Shared Lane Traffic (%)						
Lane Group Flow (vph)	161	0	330	0	0	306
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	13		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.10	0.92	1.07	1.07	1.11	1.32
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	68	72	200	87	65	201
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-3	-	-	3
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	9	7	3	1	7	4
Mvmt Flow	78	83	230	100	75	231

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	660	281	0	0	330	0
Stage 1	280	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Critical Hdwy	5.29	5.67	-	-	4.17	-
Critical Hdwy Stg 1	4.29	-	-	-	-	-
Critical Hdwy Stg 2	4.29	-	-	-	-	-
Follow-up Hdwy	3.581	3.363	-	-	2.263	-
Pot Cap-1 Maneuver	520	782	-	-	1202	-
Stage 1	825	-	-	-	-	-
Stage 2	768	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	482	781	-	-	1201	-
Mov Cap-2 Maneuver	482	-	-	-	-	-
Stage 1	825	-	-	-	-	-
Stage 2	712	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	600	1201	-
HCM Lane V/C Ratio	-	-	0.268	0.062	-
HCM Control Delay (s)	-	-	13.2	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	121	6	113	159	6	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	10	10
Grade (%)	-5%		-3%			-5%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994		0.921			
Flt Protected	0.955					0.998
Satd. Flow (prot)	1797	0	1558	0	0	1679
Flt Permitted	0.955					0.998
Satd. Flow (perm)	1797	0	1558	0	0	1679
Link Speed (mph)	30		30			30
Link Distance (ft)	231		163			286
Travel Time (s)	5.3		3.7			6.5
Confl. Peds. (#/hr)	1			11	11	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	3%	0%	7%	6%	33%	7%
Adj. Flow (vph)	141	7	131	185	7	169
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	316	0	0	176
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.07	1.07	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

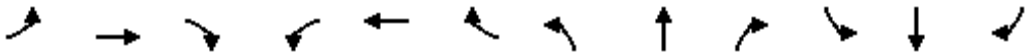
Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	121	6	113	159	6	145
Conflicting Peds, #/hr	1	0	0	11	11	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	-3	-	-	-5
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	0	7	6	33	7
Mvmt Flow	141	7	131	185	7	169

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	408	236	0	0	317	0
Stage 1	225	-	-	-	-	-
Stage 2	183	-	-	-	-	-
Critical Hdwy	5.43	5.7	-	-	4.43	-
Critical Hdwy Stg 1	4.43	-	-	-	-	-
Critical Hdwy Stg 2	4.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	-	-	2.497	-
Pot Cap-1 Maneuver	669	835	-	-	1087	-
Stage 1	862	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	659	828	-	-	1079	-
Mov Cap-2 Maneuver	659	-	-	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	877	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	665	1079	-
HCM Lane V/C Ratio	-	-	0.222	0.006	-
HCM Control Delay (s)	-	-	12	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	3	2	15	0	14	5	149	11	10	110	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	13	13	13	11	11	11	11	11	11
Grade (%)		-15%			1%			4%			-4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.955			0.934			0.991				
Flt Protected					0.975			0.999			0.996	
Satd. Flow (prot)	0	1877	0	0	1495	0	0	1694	0	0	1763	0
Flt Permitted					0.975			0.999			0.996	
Satd. Flow (perm)	0	1877	0	0	1495	0	0	1694	0	0	1763	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			414			330			747	
Travel Time (s)		4.0			9.4			7.5			17.0	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	0%	8%	0%	0%	0%	5%	10%	50%	2%	0%
Parking (#/hr)	5	5	5	5	5	5						
Adj. Flow (vph)	0	4	3	19	0	18	6	186	14	13	138	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	37	0	0	206	0	0	150	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.80	0.96	0.80	0.96	1.15	0.96	1.07	1.07	1.07	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	3	2	15	0	14	5	149	11	10	110	0
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	0	0	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-15	-	-	1	-	-	4	-	-	-4	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	8	0	0	0	5	10	50	2	0
Mvmt Flow	0	4	2	19	0	18	6	186	14	12	138	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	377	376	142	372	369	197	138	0	0	200	0	0
Stage 1	163	163	-	206	206	-	-	-	-	-	-	-
Stage 2	214	213	-	166	163	-	-	-	-	-	-	-
Critical Hdwy	4.1	3.5	4.7	7.38	6.7	6.3	4.1	-	-	4.6	-	-
Critical Hdwy Stg 1	3.1	2.5	-	6.38	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	3.1	2.5	-	6.38	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.572	4	3.3	2.2	-	-	2.65	-	-
Pot Cap-1 Maneuver	800	764	967	562	552	845	1458	-	-	1131	-	-
Stage 1	967	879	-	774	727	-	-	-	-	-	-	-
Stage 2	948	872	-	815	760	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	771	751	964	550	543	842	1454	-	-	1128	-	-
Mov Cap-2 Maneuver	771	751	-	550	543	-	-	-	-	-	-	-
Stage 1	962	868	-	770	723	-	-	-	-	-	-	-
Stage 2	921	868	-	797	751	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	10.8	0.2	0.7
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1454	-	-	824	661	1128	-	-
HCM Lane V/C Ratio	0.004	-	-	0.008	0.055	0.011	-	-
HCM Control Delay (s)	7.5	0	-	9.4	10.8	8.2	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	9	12	154	10	20	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-5%		7%			-7%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.922		0.992			
Flt Protected	0.979					0.992
Satd. Flow (prot)	1641	0	1635	0	0	1854
Flt Permitted	0.979					0.992
Satd. Flow (perm)	1641	0	1635	0	0	1854
Link Speed (mph)	30		30			30
Link Distance (ft)	188		747			845
Travel Time (s)	4.3		17.0			19.2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	8%	0%	0%	2%
Adj. Flow (vph)	11	15	190	12	25	137
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	202	0	0	162
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.09	1.09	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	9	12	154	10	20	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	7	-	-	-7
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	8	0	0	2
Mvmt Flow	11	15	190	12	25	137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	382	196	0	0	202	0
Stage 1	196	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	694	874	-	-	1382	-
Stage 1	889	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	680	874	-	-	1382	-
Mov Cap-2 Maneuver	680	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	878	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	779	1382	-
HCM Lane V/C Ratio	-	-	0.033	0.018	-
HCM Control Delay (s)	-	-	9.8	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	3	161	5	1	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11
Grade (%)	-6%		-4%			6%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.946		0.996			
Flt Protected	0.971					
Satd. Flow (prot)	1501	0	1780	0	0	1671
Flt Permitted	0.971					
Satd. Flow (perm)	1501	0	1780	0	0	1671
Link Speed (mph)	30		30			30
Link Distance (ft)	525		845			363
Travel Time (s)	11.9		19.2			8.3
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	33%	0%	5%	0%	100%	6%
Adj. Flow (vph)	6	4	194	6	1	152
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	200	0	0	153
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.96	0.96	1.02	1.02	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	3	161	5	1	126
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	6
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	33	0	5	0	100	6
Mvmt Flow	6	4	194	6	1	152

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	351	197	0	0	200	0
Stage 1	197	-	-	-	-	-
Stage 2	154	-	-	-	-	-
Critical Hdwy	5.53	5.6	-	-	5.1	-
Critical Hdwy Stg 1	4.53	-	-	-	-	-
Critical Hdwy Stg 2	4.53	-	-	-	-	-
Follow-up Hdwy	3.797	3.3	-	-	3.1	-
Pot Cap-1 Maneuver	662	878	-	-	952	-
Stage 1	819	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	661	878	-	-	952	-
Mov Cap-2 Maneuver	661	-	-	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	845	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	729	952	-
HCM Lane V/C Ratio	-	-	0.013	0.001	-
HCM Control Delay (s)	-	-	10	8.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	52	162	2	137	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-6%		-4%			4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.870		0.998			
Flt Protected	0.998					0.975
Satd. Flow (prot)	1643	0	1796	0	0	1601
Flt Permitted	0.998					0.975
Satd. Flow (perm)	1643	0	1796	0	0	1601
Link Speed (mph)	30		30			30
Link Distance (ft)	590		363			252
Travel Time (s)	13.4		8.3			5.7
Confl. Peds. (#/hr)				3	3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	3%	100%	12%	7%
Adj. Flow (vph)	2	56	174	2	147	134
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	176	0	0	281
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

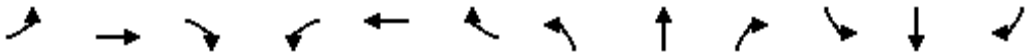
Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	2	52	162	2	137	125
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	4
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	3	100	12	7
Mvmt Flow	2	56	174	2	147	134

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	604	178	0	0	176	0
Stage 1	175	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	5.2	5.6	-	-	4.22	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.308	-
Pot Cap-1 Maneuver	568	896	-	-	1342	-
Stage 1	912	-	-	-	-	-
Stage 2	763	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	499	894	-	-	1339	-
Mov Cap-2 Maneuver	499	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	671	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	4.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	869	1339	-
HCM Lane V/C Ratio	-	-	0.067	0.11	-
HCM Control Delay (s)	-	-	9.4	8	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.4	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1	6	11	0	10	0	208	5	3	245	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-2%			-1%			-2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.950			0.935			0.997			0.999	
Flt Protected		0.972			0.975						0.999	
Satd. Flow (prot)	0	1949	0	0	1458	0	0	1797	0	0	1724	0
Flt Permitted		0.972			0.975						0.999	
Satd. Flow (perm)	0	1949	0	0	1458	0	0	1797	0	0	1724	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		289			365			252			311	
Travel Time (s)		6.6			8.3			5.7			7.1	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	50%	0%	11%	0%	3%	0%	33%	5%	0%
Adj. Flow (vph)	11	1	7	12	0	11	0	231	6	3	272	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	23	0	0	237	0	0	278	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			0			0			0	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.87	0.87	0.87	0.88	0.88	0.88	1.03	1.03	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

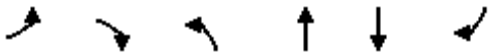
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	1	6	11	0	10	0	208	5	3	245	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-1	-	-	-2	-	-	2	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	50	0	11	0	3	0	33	5	0
Mvmt Flow	11	1	7	12	0	11	0	231	6	3	272	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	520	518	277	518	516	237	276	0	0	237	0	0
Stage 1	281	281	-	234	234	-	-	-	-	-	-	-
Stage 2	239	237	-	284	282	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6	7.4	6.3	6.21	4.1	-	-	4.43	-	-
Critical Hdwy Stg 1	5.7	5.1	-	6.4	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	6.4	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.95	4	3.399	2.2	-	-	2.497	-	-
Pot Cap-1 Maneuver	498	492	779	412	479	785	1299	-	-	1168	-	-
Stage 1	753	704	-	682	724	-	-	-	-	-	-	-
Stage 2	790	732	-	640	692	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	489	491	777	406	478	783	1296	-	-	1165	-	-
Mov Cap-2 Maneuver	489	491	-	406	478	-	-	-	-	-	-	-
Stage 1	753	702	-	682	724	-	-	-	-	-	-	-
Stage 2	777	732	-	630	690	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	12.1	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1296	-	-	563	527	1165	-	-
HCM Lane V/C Ratio	-	-	-	0.034	0.044	0.003	-	-
HCM Control Delay (s)	0	-	-	11.6	12.1	8.1	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	76	49	18	209	203	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	-2%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.947				0.972	
Flt Protected	0.970			0.996		
Satd. Flow (prot)	1623	0	0	1764	1735	0
Flt Permitted	0.970			0.996		
Satd. Flow (perm)	1623	0	0	1764	1735	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	990			311	161	
Travel Time (s)	19.3			7.1	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	4%	5%	12%
Adj. Flow (vph)	84	54	20	232	226	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	0	0	252	286	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	76	49	18	209	203	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	0	4	5	12
Mvmt Flow	84	54	20	232	226	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	528	256	286	0	-	0
Stage 1	256	-	-	-	-	-
Stage 2	272	-	-	-	-	-
Critical Hdwy	6.05	6.05	4.1	-	-	-
Critical Hdwy Stg 1	5.05	-	-	-	-	-
Critical Hdwy Stg 2	5.05	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.2	-	-	-
Pot Cap-1 Maneuver	536	786	1288	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	526	786	1288	-	-	-
Mov Cap-2 Maneuver	526	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	776	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1288	-	604	-	-
HCM Lane V/C Ratio	0.016	-	0.23	-	-
HCM Control Delay (s)	7.8	0	12.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	128	2230	128	3	7	948	17	46	162	78	34	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	11	11	11	13	13	13	11	11
Grade (%)		-2%				1%			0%			-4%
Storage Length (ft)	110		190		150		0	0		0	0	
Storage Lanes	1		1		1		0	0		0	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.997			0.963			0.925
Flt Protected	0.950				0.950				0.992			0.995
Satd. Flow (prot)	1588	3533	1447	0	1363	3341	0	0	1814	0	0	1622
Flt Permitted	0.950				0.950				0.605			0.832
Satd. Flow (perm)	1588	3533	1447	0	1363	3341	0	0	1106	0	0	1356
Right Turn on Red			No				Yes			No		
Satd. Flow (RTOR)						2						
Link Speed (mph)		40				40			30			30
Link Distance (ft)		1697				1673			161			419
Travel Time (s)		28.9				28.5			3.7			9.5
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	11%	5%	9%	33%	25%	9%	13%	0%	6%	0%	0%	7%
Adj. Flow (vph)	129	2253	129	3	7	958	17	46	164	79	34	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	129	2253	129	0	10	975	0	0	289	0	0	351
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		11				11			0			0
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	1.01	1.05	1.05	1.05	0.96	0.96	0.96	1.02	1.02
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	2	2	2	1	2	2		1	2		1	2
Detector Template				Left				Left			Left	
Leading Detector (ft)	83	83	83	20	83	83		20	83		20	83
Trailing Detector (ft)	-5	-5	-5	0	-5	-5		0	-5		0	-5
Detector 1 Position(ft)	-5	-5	-5	0	-5	-5		0	-5		0	-5
Detector 1 Size(ft)	40	40	40	20	40	40		20	40		20	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0		0.0	3.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0		0.0	4.0
Detector 2 Position(ft)	43	43	43		43	43			43			43
Detector 2 Size(ft)	40	40	40		40	40			40			40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0		0.0	0.0			0.0			0.0
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Perm	NA		Perm	NA

Lane Group	SBR
Lane Configurations	
Volume (vph)	192
Ideal Flow (vphpl)	1900
Lane Width (ft)	11
Grade (%)	
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.99
Heavy Vehicles (%)	7%
Adj. Flow (vph)	194
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.02
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Protected Phases	5	2		1	1	6			8			4
Permitted Phases			2					8			4	
Detector Phase	5	2	2	1	1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	3.0	10.0		5.0	5.0		5.0	5.0
Minimum Split (s)	10.0	17.0	17.0	10.0	10.0	17.0		11.0	11.0		11.0	11.0
Total Split (s)	27.0	92.0	92.0	27.0	27.0	92.0		31.0	31.0		31.0	31.0
Total Split (%)	18.0%	61.3%	61.3%	18.0%	18.0%	61.3%		20.7%	20.7%		20.7%	20.7%
Maximum Green (s)	20.0	85.0	85.0	20.0	20.0	85.0		25.0	25.0		25.0	25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0			0.0			0.0
Total Lost Time (s)	7.0	7.0	7.0		7.0	7.0			6.0			6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	Min	Min	None	None	Min		None	None		None	None
v/c Ratio	0.69	0.94	0.13		0.14	0.56			1.32			1.30
Control Delay	72.2	28.6	8.5		63.1	22.0			212.1			202.2
Queue Delay	0.0	0.0	0.0		0.0	0.0			0.0			0.0
Total Delay	72.2	28.6	8.5		63.1	22.0			212.1			202.2
Queue Length 50th (ft)	99	691	32		8	258			~292			~353
Queue Length 95th (ft)	181	#1216	77		29	342			#540			#625
Internal Link Dist (ft)		1617				1593			81			339
Turn Bay Length (ft)	110		190		150							
Base Capacity (vph)	252	2386	977		216	2257			219			269
Starvation Cap Reductn	0	0	0		0	0			0			0
Spillback Cap Reductn	0	0	0		0	0			0			0
Storage Cap Reductn	0	0	0		0	0			0			0
Reduced v/c Ratio	0.51	0.94	0.13		0.05	0.43			1.32			1.30

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 126.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A

Lane Group	SBR
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (veh/h)	128	2230	128	3	7	948	17	46	162	78	34	122
Number	5	2	12		1	6	16	3	8	18	7	4
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1729	1828	1761		1484	1733	1890	1976	1911	1976	1938	1823
Adj Flow Rate, veh/h	129	2253	129		7	958	17	46	164	79	34	123
Adj No. of Lanes	1	2	1		1	2	0	0	1	0	0	1
Peak Hour Factor	0.99	0.99	0.99		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	11	5	9		25	9	9	6	6	6	7	7
Cap, veh/h	154	2373	972		7	1904	34	62	163	72	49	111
Arrive On Green	0.09	0.65	0.65		0.01	0.56	0.56	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1647	3655	1496		1413	3396	60	154	846	376	99	579
Grp Volume(v), veh/h	129	2253	129		7	489	486	289	0	0	351	0
Grp Sat Flow(s),veh/h/ln	1647	1828	1496		1413	1733	1723	1376	0	0	1517	0
Q Serve(g_s), s	10.0	73.4	4.3		0.6	22.5	22.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.0	73.4	4.3		0.6	22.5	22.5	25.0	0.0	0.0	25.0	0.0
Prop In Lane	1.00		1.00		1.00		0.03	0.16		0.27	0.10	
Lane Grp Cap(c), veh/h	154	2373	972		7	972	966	296	0	0	322	0
V/C Ratio(X)	0.84	0.95	0.13		0.96	0.50	0.50	0.98	0.00	0.00	1.09	0.00
Avail Cap(c_a), veh/h	253	2386	977		217	1131	1124	296	0	0	322	0
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	58.0	20.9	8.8		64.8	17.5	17.5	52.8	0.0	0.0	53.5	0.0
Incr Delay (d2), s/veh	11.9	9.2	0.1		143.5	0.4	0.4	45.4	0.0	0.0	76.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	39.7	1.8		0.5	10.8	10.8	14.1	0.0	0.0	18.4	0.0
LnGrp Delay(d),s/veh	69.9	30.1	8.8		208.2	17.9	17.9	98.3	0.0	0.0	130.4	0.0
LnGrp LOS	E	C	A		F	B	B	F			F	
Approach Vol, veh/h		2511				982			289			351
Approach Delay, s/veh		31.1				19.3			98.3			130.4
Approach LOS		C				B			F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.7	91.6		31.0	19.2	80.0		31.0
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	20.0	85.0		25.0	20.0	85.0		25.0
Max Q Clear Time (g_c+I1), s	2.6	75.4		27.0	12.0	24.5		27.0
Green Ext Time (p_c), s	0.0	9.2		0.0	0.3	48.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Notes

User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Volume (veh/h)	192
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1938
Adj Flow Rate, veh/h	194
Adj No. of Lanes	0
Peak Hour Factor	0.99
Percent Heavy Veh, %	7
Cap, veh/h	161
Arrive On Green	0.19
Sat Flow, veh/h	839
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.55
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	74	72	213	48	41	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	10	10	10	10
Grade (%)	-6%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.933		0.975			
Flt Protected	0.975					0.991
Satd. Flow (prot)	1594	0	1679	0	0	1469
Flt Permitted	0.975					0.991
Satd. Flow (perm)	1594	0	1679	0	0	1469
Link Speed (mph)	30		30			30
Link Distance (ft)	477		315			163
Travel Time (s)	10.8		7.2			3.7
Confl. Peds. (#/hr)	4	7		1	1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	7%	8%	2%
Parking (#/hr)	5	5				5
Adj. Flow (vph)	76	74	220	49	42	187
Shared Lane Traffic (%)						
Lane Group Flow (vph)	150	0	269	0	0	229
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	13		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.10	0.92	1.07	1.07	1.11	1.32
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	74	72	213	48	41	181
Conflicting Peds, #/hr	4	7	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-3	-	-	3
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	4	7	8	2
Mvmt Flow	76	74	220	49	42	187

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	522	252	0	0	276	0
Stage 1	251	-	-	-	-	-
Stage 2	271	-	-	-	-	-
Critical Hdwy	5.21	5.61	-	-	4.18	-
Critical Hdwy Stg 1	4.21	-	-	-	-	-
Critical Hdwy Stg 2	4.21	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.272	-
Pot Cap-1 Maneuver	615	823	-	-	1253	-
Stage 1	862	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	588	817	-	-	1252	-
Mov Cap-2 Maneuver	588	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	818	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	682	1252	-
HCM Lane V/C Ratio	-	-	0.221	0.034	-
HCM Control Delay (s)	-	-	11.8	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	124	5	155	129	0	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	10	10
Grade (%)	-5%		-3%			-5%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994		0.939			
Flt Protected	0.954					
Satd. Flow (prot)	1798	0	1638	0	0	1748
Flt Permitted	0.954					
Satd. Flow (perm)	1798	0	1638	0	0	1748
Link Speed (mph)	30		30			30
Link Distance (ft)	231		163			286
Travel Time (s)	5.3		3.7			6.5
Confl. Peds. (#/hr)	3	1		1	1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	20%	5%	1%	0%	4%
Adj. Flow (vph)	141	6	176	147	0	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	147	0	323	0	0	111
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.07	1.07	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

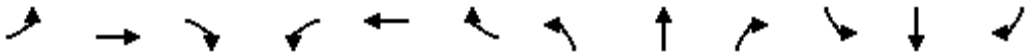
Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	124	5	155	129	0	98
Conflicting Peds, #/hr	3	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	-3	-	-	-5
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	20	5	1	0	4
Mvmt Flow	141	6	176	147	0	111

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	363	253	0	0	326	0
Stage 1	252	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	5.42	5.9	-	-	4.1	-
Critical Hdwy Stg 1	4.42	-	-	-	-	-
Critical Hdwy Stg 2	4.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.48	-	-	2.2	-
Pot Cap-1 Maneuver	704	770	-	-	1245	-
Stage 1	847	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	702	768	-	-	1244	-
Mov Cap-2 Maneuver	702	-	-	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	704	1244	-
HCM Lane V/C Ratio	-	-	0.208	-	-
HCM Control Delay (s)	-	-	11.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	3	2	13	1	10	4	112	13	15	114	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	13	13	13	11	11	11	11	11	11
Grade (%)		-15%			1%			4%			-4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.942			0.987			0.998	
Flt Protected					0.974			0.998			0.994	
Satd. Flow (prot)	0	1877	0	0	1568	0	0	1742	0	0	1811	0
Flt Permitted					0.974			0.998			0.994	
Satd. Flow (perm)	0	1877	0	0	1568	0	0	1742	0	0	1811	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			414			330			747	
Travel Time (s)		4.0			9.4			7.5			17.0	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	9%	0%	3%	0%
Parking (#/hr)	5	5	5	5	5	5						
Adj. Flow (vph)	0	4	2	15	1	12	5	132	15	18	134	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	28	0	0	152	0	0	154	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.80	0.96	0.80	0.96	1.15	0.96	1.07	1.07	1.07	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	3	2	13	1	10	4	112	13	15	114	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-15	-	-	1	-	-	4	-	-	-4	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	1	9	0	3	0
Mvmt Flow	0	4	2	15	1	12	5	132	15	18	134	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	326	327	135	323	321	139	136	0	0	147	0	0
Stage 1	171	171	-	149	149	-	-	-	-	-	-	-
Stage 2	155	156	-	174	172	-	-	-	-	-	-	-
Critical Hdwy	4.1	3.5	4.7	7.3	6.7	6.3	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	3.1	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	3.1	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	828	781	972	623	589	911	1461	-	-	1447	-	-
Stage 1	964	878	-	851	771	-	-	-	-	-	-	-
Stage 2	970	880	-	825	753	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	805	768	972	611	579	911	1461	-	-	1447	-	-
Mov Cap-2 Maneuver	805	768	-	611	579	-	-	-	-	-	-	-
Stage 1	960	867	-	848	768	-	-	-	-	-	-	-
Stage 2	952	876	-	809	743	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	10.3	0.2	0.9
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1461	-	-	838	706	1447	-	-
HCM Lane V/C Ratio	0.003	-	-	0.007	0.04	0.012	-	-
HCM Control Delay (s)	7.5	0	-	9.3	10.3	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	14	30	111	11	5	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-5%		7%			-7%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.908		0.988			
Flt Protected	0.984					0.998
Satd. Flow (prot)	1624	0	1751	0	0	1827
Flt Permitted	0.984					0.998
Satd. Flow (perm)	1624	0	1751	0	0	1827
Link Speed (mph)	30		30			30
Link Distance (ft)	188		747			845
Travel Time (s)	4.3		17.0			19.2
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	17	36	134	13	6	142
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	0	147	0	0	148
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.09	1.09	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	14	30	111	11	5	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	7	-	-	-7
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	4
Mvmt Flow	17	36	134	13	6	142

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	294	140	0	0	147	0
Stage 1	140	-	-	-	-	-
Stage 2	154	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	761	931	-	-	1447	-
Stage 1	927	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	757	931	-	-	1447	-
Mov Cap-2 Maneuver	757	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	912	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	868	1447	-
HCM Lane V/C Ratio	-	-	0.061	0.004	-
HCM Control Delay (s)	-	-	9.4	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	1	139	2	3	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11
Grade (%)	-6%		-4%			6%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977		0.998			
Flt Protected	0.960					0.999
Satd. Flow (prot)	1519	0	1851	0	0	1729
Flt Permitted	0.960					0.999
Satd. Flow (perm)	1519	0	1851	0	0	1729
Link Speed (mph)	30		30			30
Link Distance (ft)	525		845			363
Travel Time (s)	11.9		19.2			8.3
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	25%	0%	1%	0%	0%	3%
Adj. Flow (vph)	5	1	165	2	4	142
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	167	0	0	146
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.96	0.96	1.02	1.02	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	4	1	139	2	3	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	6
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	25	0	1	0	0	3
Mvmt Flow	5	1	165	2	4	142

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	316	167	0	0	168	0
Stage 1	167	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	5.45	5.6	-	-	4.1	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.725	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	702	907	-	-	1422	-
Stage 1	856	-	-	-	-	-
Stage 2	867	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	700	907	-	-	1422	-
Mov Cap-2 Maneuver	700	-	-	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	864	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	733	1422	-
HCM Lane V/C Ratio	-	-	0.008	0.003	-
HCM Control Delay (s)	-	-	10	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	3	104	137	3	82	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-6%		-4%			4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.868		0.997			
Flt Protected	0.999					0.980
Satd. Flow (prot)	1625	0	1850	0	0	1733
Flt Permitted	0.999					0.980
Satd. Flow (perm)	1625	0	1850	0	0	1733
Link Speed (mph)	30		30			30
Link Distance (ft)	590		363			252
Travel Time (s)	13.4		8.3			5.7
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	3	117	154	3	92	134
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	157	0	0	226
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

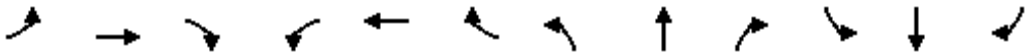
Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	3	104	137	3	82	119
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	4
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	1	1	0	0	3
Mvmt Flow	3	117	154	3	92	134

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	474	157	0	0	157	0
Stage 1	156	-	-	-	-	-
Stage 2	318	-	-	-	-	-
Critical Hdwy	5.2	5.61	-	-	4.1	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.2	-
Pot Cap-1 Maneuver	647	915	-	-	1435	-
Stage 1	924	-	-	-	-	-
Stage 2	825	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	602	914	-	-	1434	-
Mov Cap-2 Maneuver	602	-	-	-	-	-
Stage 1	924	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	3.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	901	1434	-
HCM Lane V/C Ratio	-	-	0.133	0.064	-
HCM Control Delay (s)	-	-	9.6	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1	3	1	9	11	3	237	1	11	196	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-2%			-1%			-2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.930			0.999			0.996	
Flt Protected		0.969			0.998			0.999			0.997	
Satd. Flow (prot)	0	1807	0	0	1771	0	0	1833	0	0	1756	0
Flt Permitted		0.969			0.998			0.999			0.997	
Satd. Flow (perm)	0	1807	0	0	1771	0	0	1833	0	0	1756	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		289			365			252			311	
Travel Time (s)		6.6			8.3			5.7			7.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	33%	100%	0%	11%	0%	1%	0%	20%	2%	0%
Adj. Flow (vph)	7	1	3	1	10	12	3	266	1	12	220	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	23	0	0	270	0	0	239	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			0			0			0	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.87	0.87	0.87	0.88	0.88	0.88	1.03	1.03	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

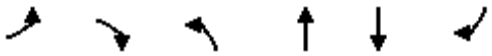
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	1	3	1	9	11	3	237	1	11	196	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-1	-	-	-2	-	-	2	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	33	100	0	11	0	1	0	20	2	0
Mvmt Flow	7	1	3	1	10	12	3	266	1	12	220	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	533	522	224	525	526	267	227	0	0	267	0	0
Stage 1	248	248	-	274	274	-	-	-	-	-	-	-
Stage 2	285	274	-	251	252	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6.33	7.9	6.3	6.21	4.1	-	-	4.3	-	-
Critical Hdwy Stg 1	5.7	5.1	-	6.9	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	6.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.597	4.4	4	3.399	2.2	-	-	2.38	-	-
Pot Cap-1 Maneuver	489	490	753	350	473	756	1353	-	-	1199	-	-
Stage 1	782	725	-	569	697	-	-	-	-	-	-	-
Stage 2	750	708	-	587	712	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	468	483	753	344	466	756	1353	-	-	1199	-	-
Mov Cap-2 Maneuver	468	483	-	344	466	-	-	-	-	-	-	-
Stage 1	780	717	-	567	695	-	-	-	-	-	-	-
Stage 2	725	706	-	577	704	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.9	11.6	0.1	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1353	-	-	530	571	1199	-	-
HCM Lane V/C Ratio	0.002	-	-	0.021	0.041	0.01	-	-
HCM Control Delay (s)	7.7	0	-	11.9	11.6	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	47	21	38	216	192	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	-2%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.959				0.962	
Flt Protected	0.966			0.993		
Satd. Flow (prot)	1615	0	0	1793	1787	0
Flt Permitted	0.966			0.993		
Satd. Flow (perm)	1615	0	0	1793	1787	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	990			311	161	
Travel Time (s)	19.3			7.1	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	21%	0%	2%	2%	3%
Adj. Flow (vph)	52	23	42	240	213	83
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	0	282	296	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	47	21	38	216	192	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	21	0	2	2	3
Mvmt Flow	52	23	42	240	213	83

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	579	255	297	0	-	0
Stage 1	255	-	-	-	-	-
Stage 2	324	-	-	-	-	-
Critical Hdwy	6	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.489	2.2	-	-	-
Pot Cap-1 Maneuver	512	750	1276	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	493	750	1276	-	-	-
Mov Cap-2 Maneuver	493	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	736	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1276	-	551	-	-
HCM Lane V/C Ratio	0.033	-	0.137	-	-
HCM Control Delay (s)	7.9	0	12.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	8	155	1160	152	2	13	2209	30	68	144	51	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	12	11	11	11	13	13	13	11
Grade (%)			-2%				1%			0%		
Storage Length (ft)		110		190		150		0	0		0	0
Storage Lanes		1		1		1		0	0		0	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	*1.00	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.998			0.974		
Flt Protected		0.950				0.950				0.987		
Satd. Flow (prot)	0	1713	3602	1561	0	1736	3543	0	0	1859	0	0
Flt Permitted		0.950				0.950				0.393		
Satd. Flow (perm)	0	1713	3602	1561	0	1736	3543	0	0	740	0	0
Right Turn on Red				No				Yes			No	
Satd. Flow (RTOR)							2					
Link Speed (mph)			40				40			30		
Link Distance (ft)			1697				1673			161		
Travel Time (s)			28.9				28.5			3.7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	3%	1%	0%	0%	3%	0%	0%	1%	5%	6%
Adj. Flow (vph)	8	160	1196	157	2	13	2277	31	70	148	53	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	168	1196	157	0	15	2308	0	0	271	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)			11				11			0		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	0.99	1.03	1.03	1.03	1.01	1.05	1.05	1.05	0.96	0.96	0.96	1.02
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Number of Detectors	1	2	2	2	1	2	2		1	2		1
Detector Template	Left				Left				Left			Left
Leading Detector (ft)	20	83	83	83	20	83	83		20	83		20
Trailing Detector (ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Position(ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Size(ft)	20	40	40	40	20	40	40		20	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0		0.0
Detector 2 Position(ft)		43	43	43		43	43			43		
Detector 2 Size(ft)		40	40	40		40	40			40		
Detector 2 Type		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA		Perm

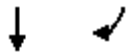
Lane Group	SBT	SBR
Lane Configurations		
Volume (vph)	102	174
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	11	11
Grade (%)	-4%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.920	
Flt Protected	0.997	
Satd. Flow (prot)	1637	0
Flt Permitted	0.915	
Satd. Flow (perm)	1502	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	30	
Link Distance (ft)	419	
Travel Time (s)	9.5	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	3%	6%
Adj. Flow (vph)	105	179
Shared Lane Traffic (%)		
Lane Group Flow (vph)	303	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	0	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.02	1.02
Turning Speed (mph)		9
Number of Detectors	2	
Detector Template		
Leading Detector (ft)	83	
Trailing Detector (ft)	-5	
Detector 1 Position(ft)	-5	
Detector 1 Size(ft)	40	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	3.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	4.0	
Detector 2 Position(ft)	43	
Detector 2 Size(ft)	40	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	2	1	1	6		8	8		4
Switch Phase												
Minimum Initial (s)	3.0	3.0	10.0	10.0	3.0	3.0	10.0		5.0	5.0		5.0
Minimum Split (s)	10.0	10.0	17.0	17.0	10.0	10.0	17.0		11.0	11.0		11.0
Total Split (s)	27.0	27.0	92.0	92.0	27.0	27.0	92.0		31.0	31.0		31.0
Total Split (%)	18.0%	18.0%	61.3%	61.3%	18.0%	18.0%	61.3%		20.7%	20.7%		20.7%
Maximum Green (s)	20.0	20.0	85.0	85.0	20.0	20.0	85.0		25.0	25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Total Lost Time (s)		7.0	7.0	7.0		7.0	7.0			6.0		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Recall Mode	None	None	Min	Min	None	None	Min		None	None		None
v/c Ratio		0.81	0.47	0.14		0.19	1.13			2.17		
Control Delay		90.7	11.4	8.7		73.2	97.9			582.1		
Queue Delay		0.0	0.0	0.0		0.0	0.0			0.0		
Total Delay		90.7	11.4	8.7		73.2	97.9			582.1		
Queue Length 50th (ft)		160	199	39		14	~1326			~425		
Queue Length 95th (ft)		#265	350	91		39	#1447			#613		
Internal Link Dist (ft)			1617				1593			81		
Turn Bay Length (ft)		110		190		150						
Base Capacity (vph)		231	2530	1096		234	2034			125		
Starvation Cap Reductn		0	0	0		0	0			0		
Spillback Cap Reductn		0	0	0		0	0			0		
Storage Cap Reductn		0	0	0		0	0			0		
Reduced v/c Ratio		0.73	0.47	0.14		0.06	1.13			2.17		

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 148.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A



Lane Group	SBT	SBR
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	11.0	
Total Split (s)	31.0	
Total Split (%)	20.7%	
Maximum Green (s)	25.0	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	None	
v/c Ratio	1.20	
Control Delay	171.2	
Queue Delay	0.0	
Total Delay	171.2	
Queue Length 50th (ft)	~361	
Queue Length 95th (ft)	#555	
Internal Link Dist (ft)	339	
Turn Bay Length (ft)		
Base Capacity (vph)	253	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	1.20	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (veh/h)	8	155	1160	152	2	13	2209	30	68	144	51	18
Number		5	2	12		1	6	16	3	8	18	7
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1866	1863	1900		1890	1836	1890	1976	1946	1976	1938
Adj Flow Rate, veh/h		160	1196	157		13	2277	31	70	148	53	19
Adj No. of Lanes		1	2	1		1	2	0	0	1	0	0
Peak Hour Factor		0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		3	3	1		0	3	3	1	1	1	3
Cap, veh/h		185	2539	1100		15	2117	29	68	107	35	37
Arrive On Green		0.10	0.68	0.68		0.01	0.59	0.59	0.17	0.17	0.17	0.17
Sat Flow, veh/h		1777	3726	1615		1800	3615	49	213	619	202	62
Grp Volume(v), veh/h		160	1196	157		13	1154	1154	271	0	0	303
Grp Sat Flow(s),veh/h/ln		1777	1863	1615		1800	1836	1827	1034	0	0	1667
Q Serve(g_s), s		12.9	21.9	5.0		1.0	85.0	85.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s		12.9	21.9	5.0		1.0	85.0	85.0	25.0	0.0	0.0	25.0
Prop In Lane		1.00		1.00		1.00		0.03	0.26		0.20	0.06
Lane Grp Cap(c), veh/h		185	2539	1100		15	1076	1070	209	0	0	314
V/C Ratio(X)		0.86	0.47	0.14		0.84	1.07	1.08	1.29	0.00	0.00	0.97
Avail Cap(c_a), veh/h		245	2539	1100		248	1076	1070	209	0	0	314
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		64.0	10.9	8.2		71.8	30.1	30.1	60.9	0.0	0.0	60.7
Incr Delay (d2), s/veh		21.1	0.1	0.1		67.7	49.2	51.1	163.1	0.0	0.0	41.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		7.4	11.2	2.2		0.8	57.4	57.7	17.9	0.0	0.0	15.7
LnGrp Delay(d),s/veh		85.1	11.0	8.2		139.5	79.3	81.1	224.0	0.0	0.0	102.3
LnGrp LOS		F	B	A		F	F	F	F			F
Approach Vol, veh/h			1513				2321			271		
Approach Delay, s/veh			18.5				80.6			224.0		
Approach LOS			B				F			F		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	105.9		31.0	22.1	92.0		31.0
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	20.0	85.0		25.0	20.0	85.0		25.0
Max Q Clear Time (g_c+I1), s	3.0	23.9		27.0	14.9	87.0		27.0
Green Ext Time (p_c), s	0.0	52.8		0.0	0.3	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.6
HCM 2010 LOS	E

Notes

User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Volume (veh/h)	102	174
Number	4	14
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1846	1938
Adj Flow Rate, veh/h	105	179
Adj No. of Lanes	1	0
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	3	3
Cap, veh/h	107	170
Arrive On Green	0.17	0.17
Sat Flow, veh/h	620	985
Grp Volume(v), veh/h	0	0
Grp Sat Flow(s),veh/h/ln	0	0
Q Serve(g_s), s	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0
Prop In Lane		0.59
Lane Grp Cap(c), veh/h	0	0
V/C Ratio(X)	0.00	0.00
Avail Cap(c_a), veh/h	0	0
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0
LnGrp LOS		
Approach Vol, veh/h	303	
Approach Delay, s/veh	102.3	
Approach LOS	F	
Timer		

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	42	55	192	64	39	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	10	10	10	10
Grade (%)	-6%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.924		0.966			
Flt Protected	0.979					0.991
Satd. Flow (prot)	1809	0	1700	0	0	1502
Flt Permitted	0.979					0.991
Satd. Flow (perm)	1809	0	1700	0	0	1502
Link Speed (mph)	30		30			30
Link Distance (ft)	477		315			163
Travel Time (s)	10.8		7.2			3.7
Confl. Peds. (#/hr)	1	1		3	3	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	2%	3%	0%	0%	1%
Parking (#/hr)		5				5
Adj. Flow (vph)	50	65	229	76	46	196
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	0	305	0	0	242
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	13		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.07	1.07	1.11	1.32
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	42	55	192	64	39	165
Conflicting Peds, #/hr	1	1	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-3	-	-	3
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	2	3	0	0	1
Mvmt Flow	50	65	229	76	46	196

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	557	271	0	0	306	0
Stage 1	268	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Critical Hdwy	5.2	5.62	-	-	4.1	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.2	-
Pot Cap-1 Maneuver	596	803	-	-	1266	-
Stage 1	855	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	570	801	-	-	1263	-
Mov Cap-2 Maneuver	570	-	-	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	806	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	681	1263	-
HCM Lane V/C Ratio	-	-	0.17	0.037	-
HCM Control Delay (s)	-	-	11.4	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	125	2	119	129	0	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	10	10
Grade (%)	-5%		-3%			-5%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998		0.930			
Flt Protected	0.953					
Satd. Flow (prot)	1852	0	1650	0	0	1818
Flt Permitted	0.953					
Satd. Flow (perm)	1852	0	1650	0	0	1818
Link Speed (mph)	30		30			30
Link Distance (ft)	231		163			286
Travel Time (s)	5.3		3.7			6.5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	2%	1%	0%	0%
Adj. Flow (vph)	140	2	134	145	0	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	142	0	279	0	0	89
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.07	1.07	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

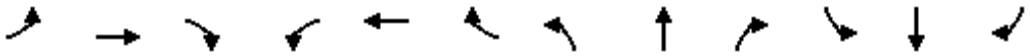
Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	125	2	119	129	0	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	-3	-	-	-5
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	2	1	0	0
Mvmt Flow	140	2	134	145	0	89

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	295	206	0	0	279	0
Stage 1	206	-	-	-	-	-
Stage 2	89	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	760	864	-	-	1295	-
Stage 1	882	-	-	-	-	-
Stage 2	963	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	760	864	-	-	1295	-
Mov Cap-2 Maneuver	760	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	761	1295	-
HCM Lane V/C Ratio	-	-	0.188	-	-
HCM Control Delay (s)	-	-	10.8	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2	7	2	4	9	3	110	16	13	118	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	13	13	13	11	11	11	11	11	11
Grade (%)		-15%			1%			4%			-4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.910			0.921			0.983			0.997	
Flt Protected		0.992			0.994			0.999			0.995	
Satd. Flow (prot)	0	1638	0	0	1565	0	0	1730	0	0	1858	0
Flt Permitted		0.992			0.994			0.999			0.995	
Satd. Flow (perm)	0	1638	0	0	1565	0	0	1730	0	0	1858	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			414			330			747	
Travel Time (s)		4.0			9.4			7.5			17.0	
Confl. Peds. (#/hr)	2					2						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	50%	0%	0%	0%	0%	0%	67%	1%	0%	0%	0%	0%
Parking (#/hr)	5	5	5	5	5	5						
Adj. Flow (vph)	2	2	8	2	5	10	3	128	19	15	137	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	17	0	0	150	0	0	155	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.80	0.96	0.80	0.96	1.15	0.96	1.07	1.07	1.07	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	2	7	2	4	9	3	110	16	13	118	3
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-15	-	-	1	-	-	4	-	-	-4	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	50	0	0	0	0	0	67	1	0	0	0	0
Mvmt Flow	2	2	8	2	5	10	3	128	19	15	137	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	325	326	141	322	319	139	143	0	0	149	0	0
Stage 1	171	171	-	146	146	-	-	-	-	-	-	-
Stage 2	154	155	-	176	173	-	-	-	-	-	-	-
Critical Hdwy	4.6	3.5	4.7	7.3	6.7	6.3	4.77	-	-	4.1	-	-
Critical Hdwy Stg 1	3.6	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	3.6	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4	3.3	3.5	4	3.3	2.803	-	-	2.2	-	-
Pot Cap-1 Maneuver	715	781	967	624	590	911	1123	-	-	1445	-	-
Stage 1	842	878	-	855	774	-	-	-	-	-	-	-
Stage 2	849	880	-	822	752	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	694	767	965	610	579	909	1123	-	-	1445	-	-
Mov Cap-2 Maneuver	694	767	-	610	579	-	-	-	-	-	-	-
Stage 1	838	867	-	851	770	-	-	-	-	-	-	-
Stage 2	832	876	-	804	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	9.9	0.2	0.7
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1123	-	-	863	747	1445	-	-
HCM Lane V/C Ratio	0.003	-	-	0.015	0.023	0.01	-	-
HCM Control Delay (s)	8.2	0	-	9.2	9.9	7.5	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	14	30	110	11	5	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-5%		7%			-7%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.907		0.988			
Flt Protected	0.985					0.998
Satd. Flow (prot)	1624	0	1720	0	0	1879
Flt Permitted	0.985					0.998
Satd. Flow (perm)	1624	0	1720	0	0	1879
Link Speed (mph)	30		30			30
Link Distance (ft)	188		747			845
Travel Time (s)	4.3		17.0			19.2
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	2%	0%	0%	1%
Adj. Flow (vph)	14	31	112	11	5	122
Shared Lane Traffic (%)						
Lane Group Flow (vph)	45	0	123	0	0	127
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.09	1.09	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	14	30	110	11	5	120
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	7	-	-	-7
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	14	31	112	11	5	122

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	251	119	0	0	123	0
Stage 1	118	-	-	-	-	-
Stage 2	133	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	795	954	-	-	1477	-
Stage 1	942	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	791	953	-	-	1476	-
Mov Cap-2 Maneuver	791	-	-	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	928	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	895	1476	-
HCM Lane V/C Ratio	-	-	0.05	0.003	-
HCM Control Delay (s)	-	-	9.2	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	11	2	128	13	3	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11
Grade (%)	-6%		-4%			6%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981		0.987			
Flt Protected	0.959					0.999
Satd. Flow (prot)	1841	0	1801	0	0	1763
Flt Permitted	0.959					0.999
Satd. Flow (perm)	1841	0	1801	0	0	1763
Link Speed (mph)	30		30			30
Link Distance (ft)	525		845			363
Travel Time (s)	11.9		19.2			8.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	2%	9%	0%	1%
Adj. Flow (vph)	12	2	135	14	3	120
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	149	0	0	123
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.96	0.96	1.02	1.02	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	11	2	128	13	3	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	6
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	9	0	1
Mvmt Flow	12	2	135	14	3	120

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	268	142	0	0	148	0
Stage 1	142	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Critical Hdwy	5.2	5.6	-	-	4.1	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	793	933	-	-	1446	-
Stage 1	933	-	-	-	-	-
Stage 2	943	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	791	933	-	-	1446	-
Mov Cap-2 Maneuver	791	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	810	1446	-
HCM Lane V/C Ratio	-	-	0.017	0.002	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	90	120	9	79	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-6%		-4%			4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.866		0.990			
Flt Protected						0.980
Satd. Flow (prot)	1638	0	1838	0	0	1743
Flt Permitted						0.980
Satd. Flow (perm)	1638	0	1838	0	0	1743
Link Speed (mph)	30		30			30
Link Distance (ft)	590		363			252
Travel Time (s)	13.4		8.3			5.7
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%
Adj. Flow (vph)	1	99	132	10	87	127
Shared Lane Traffic (%)						
Lane Group Flow (vph)	100	0	142	0	0	214
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

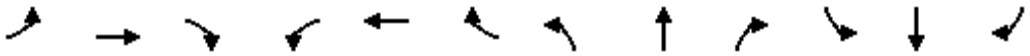
Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	90	120	9	79	116
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	4
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	1	0	3	0
Mvmt Flow	1	99	132	10	87	127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	438	138	0	0	142	0
Stage 1	137	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	5.2	5.6	-	-	4.13	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227	-
Pot Cap-1 Maneuver	671	937	-	-	1435	-
Stage 1	936	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	627	936	-	-	1434	-
Mov Cap-2 Maneuver	627	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	780	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	3.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	931	1434	-
HCM Lane V/C Ratio	-	-	0.107	0.061	-
HCM Control Delay (s)	-	-	9.3	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1	3	1	0	10	4	203	3	8	191	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-2%			-1%			-2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966			0.876			0.998			0.995	
Flt Protected		0.968			0.996			0.999			0.998	
Satd. Flow (prot)	0	1628	0	0	1665	0	0	1788	0	0	1781	0
Flt Permitted		0.968			0.996			0.999			0.998	
Satd. Flow (perm)	0	1628	0	0	1665	0	0	1788	0	0	1781	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		289			365			252			311	
Travel Time (s)		6.6			8.3			5.7			7.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	7%	100%	33%	0%	0%	11%	25%	3%	0%	0%	1%	14%
Adj. Flow (vph)	8	1	3	1	0	11	5	231	3	9	217	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	12	0	0	239	0	0	234	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			0			0			0	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.87	0.87	0.87	0.88	0.88	0.88	1.03	1.03	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

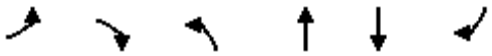
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	1	3	1	0	10	4	203	3	8	191	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-1	-	-	-2	-	-	2	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	7	100	33	0	0	11	25	3	0	0	1	14
Mvmt Flow	8	1	3	1	0	11	5	231	3	9	217	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	486	482	221	482	484	232	225	0	0	234	0	0
Stage 1	239	239	-	241	241	-	-	-	-	-	-	-
Stage 2	247	243	-	241	243	-	-	-	-	-	-	-
Critical Hdwy	6.77	7.1	6.33	6.9	6.3	6.21	4.35	-	-	4.1	-	-
Critical Hdwy Stg 1	5.77	6.1	-	5.9	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.77	6.1	-	5.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.9	3.597	3.5	4	3.399	2.425	-	-	2.2	-	-
Pot Cap-1 Maneuver	510	387	756	511	499	790	1219	-	-	1345	-	-
Stage 1	774	574	-	777	719	-	-	-	-	-	-	-
Stage 2	767	572	-	777	718	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	498	382	756	503	493	790	1219	-	-	1345	-	-
Mov Cap-2 Maneuver	498	382	-	503	493	-	-	-	-	-	-	-
Stage 1	770	569	-	773	715	-	-	-	-	-	-	-
Stage 2	752	569	-	766	712	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.9	9.9	0.2	0.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1219	-	-	533	751	1345	-	-
HCM Lane V/C Ratio	0.004	-	-	0.023	0.017	0.007	-	-
HCM Control Delay (s)	8	0	-	11.9	9.9	7.7	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	77	16	21	199	191	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	-2%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.966	
Flt Protected	0.960			0.995		
Satd. Flow (prot)	1740	0	0	1764	1799	0
Flt Permitted	0.960			0.995		
Satd. Flow (perm)	1740	0	0	1764	1799	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	990			311	161	
Travel Time (s)	19.3			7.1	3.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	4%	2%	2%
Adj. Flow (vph)	79	16	21	203	195	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	95	0	0	224	261	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

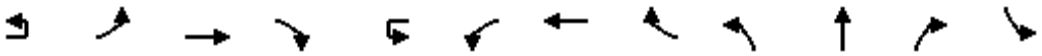
Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	77	16	21	199	191	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	4	2	2
Mvmt Flow	79	16	21	203	195	66

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	474	228	261	0	-	0
Stage 1	228	-	-	-	-	-
Stage 2	246	-	-	-	-	-
Critical Hdwy	6	6	4.1	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	583	827	1315	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	573	827	1315	-	-	-
Mov Cap-2 Maneuver	573	-	-	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	807	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1315	-	605	-	-
HCM Lane V/C Ratio	0.016	-	0.157	-	-
HCM Control Delay (s)	7.8	0	12.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	3	124	982	137	1	12	1455	34	77	128	70	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	12	11	11	11	13	13	13	11
Grade (%)			-2%				1%			0%		
Storage Length (ft)		110		190		150		0	0		0	0
Storage Lanes		1		1		1		0	0		0	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	*1.00	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.997			0.966		
Flt Protected		0.950				0.950				0.986		
Satd. Flow (prot)	0	1729	3637	1531	0	1736	3540	0	0	1832	0	0
Flt Permitted		0.950				0.950				0.579		
Satd. Flow (perm)	0	1729	3637	1531	0	1736	3540	0	0	1076	0	0
Right Turn on Red				No				Yes			No	
Satd. Flow (RTOR)							3					
Link Speed (mph)			40				40			30		
Link Distance (ft)			1697				1673			161		
Travel Time (s)			28.9				28.5			3.7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	2%	3%	0%	0%	3%	0%	4%	2%	0%	2%
Adj. Flow (vph)	3	128	1012	141	1	12	1500	35	79	132	72	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	131	1012	141	0	13	1535	0	0	283	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)			11				11			0		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	0.99	1.03	1.03	1.03	1.01	1.05	1.05	1.05	0.96	0.96	0.96	1.02
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Number of Detectors	1	2	2	2	1	2	2		1	2		1
Detector Template	Left				Left				Left			Left
Leading Detector (ft)	20	83	83	83	20	83	83		20	83		20
Trailing Detector (ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Position(ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Size(ft)	20	40	40	40	20	40	40		20	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0		0.0
Detector 2 Position(ft)		43	43	43		43	43			43		
Detector 2 Size(ft)		40	40	40		40	40			40		
Detector 2 Type		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA		Perm

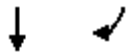
Lane Group	SBT	SBR
Lane Configurations		
Volume (vph)	107	160
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	11	11
Grade (%)	-4%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.932	
Flt Protected	0.992	
Satd. Flow (prot)	1709	0
Flt Permitted	0.821	
Satd. Flow (perm)	1415	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	30	
Link Distance (ft)	419	
Travel Time (s)	9.5	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	0%	2%
Adj. Flow (vph)	110	165
Shared Lane Traffic (%)		
Lane Group Flow (vph)	326	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	0	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.02	1.02
Turning Speed (mph)		9
Number of Detectors	2	
Detector Template		
Leading Detector (ft)	83	
Trailing Detector (ft)	-5	
Detector 1 Position(ft)	-5	
Detector 1 Size(ft)	40	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	3.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	4.0	
Detector 2 Position(ft)	43	
Detector 2 Size(ft)	40	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	2	1	1	6		8	8		4
Switch Phase												
Minimum Initial (s)	3.0	3.0	10.0	10.0	3.0	3.0	10.0		5.0	5.0		5.0
Minimum Split (s)	10.0	10.0	17.0	17.0	10.0	10.0	17.0		11.0	11.0		11.0
Total Split (s)	22.0	22.0	67.0	67.0	22.0	22.0	67.0		31.0	31.0		31.0
Total Split (%)	18.3%	18.3%	55.8%	55.8%	18.3%	18.3%	55.8%		25.8%	25.8%		25.8%
Maximum Green (s)	15.0	15.0	60.0	60.0	15.0	15.0	60.0		25.0	25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Total Lost Time (s)		7.0	7.0	7.0		7.0	7.0			6.0		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Recall Mode	None	None	Min	Min	None	None	Min		None	None		None
v/c Ratio		0.67	0.45	0.15		0.13	0.89			1.18		
Control Delay		66.7	13.3	11.0		56.1	34.2			155.9		
Queue Delay		0.0	0.0	0.0		0.0	0.0			0.0		
Total Delay		66.7	13.3	11.0		56.1	34.2			155.9		
Queue Length 50th (ft)		98	156	35		10	501			~273		
Queue Length 95th (ft)		165	282	85		31	611			#451		
Internal Link Dist (ft)			1617				1593			81		
Turn Bay Length (ft)		110		190		150						
Base Capacity (vph)		231	2245	945		232	1897			240		
Starvation Cap Reductn		0	0	0		0	0			0		
Spillback Cap Reductn		0	0	0		0	0			0		
Storage Cap Reductn		0	0	0		0	0			0		
Reduced v/c Ratio		0.57	0.45	0.15		0.06	0.81			1.18		

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 112.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A



Lane Group	SBT	SBR
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	11.0	
Total Split (s)	31.0	
Total Split (%)	25.8%	
Maximum Green (s)	25.0	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	None	
v/c Ratio	1.03	
Control Delay	104.6	
Queue Delay	0.0	
Total Delay	104.6	
Queue Length 50th (ft)	~285	
Queue Length 95th (ft)	#472	
Internal Link Dist (ft)	339	
Turn Bay Length (ft)		
Base Capacity (vph)	315	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	1.03	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (veh/h)	3	124	982	137	1	12	1455	34	77	128	70	49
Number		5	2	12		1	6	16	3	8	18	7
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1882	1881	1863		1890	1837	1890	1976	1936	1976	1938
Adj Flow Rate, veh/h		128	1012	141		12	1500	35	79	132	72	51
Adj No. of Lanes		1	2	1		1	2	0	0	1	0	0
Peak Hour Factor		0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		2	2	3		0	3	3	2	2	2	0
Cap, veh/h		159	2176	916		15	1781	42	105	152	73	78
Arrive On Green		0.09	0.58	0.58		0.01	0.50	0.50	0.23	0.23	0.23	0.23
Sat Flow, veh/h		1793	3763	1584		1800	3575	83	275	661	319	175
Grp Volume(v), veh/h		128	1012	141		12	770	765	283	0	0	326
Grp Sat Flow(s),veh/h/ln		1793	1881	1584		1800	1837	1822	1255	0	0	1544
Q Serve(g_s), s		7.6	16.9	4.5		0.7	39.4	39.6	2.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s		7.6	16.9	4.5		0.7	39.4	39.6	24.6	0.0	0.0	22.4
Prop In Lane		1.00		1.00		1.00		0.05	0.28		0.25	0.16
Lane Grp Cap(c), veh/h		159	2176	916		15	915	908	331	0	0	393
V/C Ratio(X)		0.81	0.47	0.15		0.79	0.84	0.84	0.86	0.00	0.00	0.83
Avail Cap(c_a), veh/h		247	2176	916		248	1012	1004	331	0	0	393
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		48.7	13.2	10.6		53.9	23.6	23.6	41.2	0.0	0.0	40.5
Incr Delay (d2), s/veh		10.4	0.2	0.1		60.3	6.0	6.2	19.3	0.0	0.0	13.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.2	8.8	2.0		0.6	21.4	21.3	10.2	0.0	0.0	11.0
LnGrp Delay(d),s/veh		59.1	13.4	10.7		114.2	29.6	29.8	60.5	0.0	0.0	54.4
LnGrp LOS		E	B	B		F	C	C	E			D
Approach Vol, veh/h			1281				1547			283		
Approach Delay, s/veh			17.7				30.3			60.5		
Approach LOS			B				C			E		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	70.0		31.0	16.6	61.2		31.0
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	15.0	60.0		25.0	15.0	60.0		25.0
Max Q Clear Time (g_c+I1), s	2.7	18.9		24.4	9.6	41.6		26.6
Green Ext Time (p_c), s	0.0	26.4		0.3	0.2	12.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.4
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Volume (veh/h)	107	160
Number	4	14
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1913	1938
Adj Flow Rate, veh/h	110	165
Adj No. of Lanes	1	0
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	0	0
Cap, veh/h	135	179
Arrive On Green	0.23	0.23
Sat Flow, veh/h	588	781
Grp Volume(v), veh/h	0	0
Grp Sat Flow(s),veh/h/ln	0	0
Q Serve(g_s), s	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0
Prop In Lane		0.51
Lane Grp Cap(c), veh/h	0	0
V/C Ratio(X)	0.00	0.00
Avail Cap(c_a), veh/h	0	0
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0
LnGrp LOS		
Approach Vol, veh/h	326	
Approach Delay, s/veh	54.4	
Approach LOS	D	
Timer		

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	68	72	199	87	65	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	10	10	10	10
Grade (%)	-6%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.930		0.959			
Flt Protected	0.976					0.988
Satd. Flow (prot)	1488	0	1686	0	0	1442
Flt Permitted	0.976					0.988
Satd. Flow (perm)	1488	0	1686	0	0	1442
Link Speed (mph)	30		30			30
Link Distance (ft)	477		315			163
Travel Time (s)	10.8		7.2			3.7
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	9%	7%	3%	1%	7%	4%
Parking (#/hr)	5	5				5
Adj. Flow (vph)	78	83	229	100	75	237
Shared Lane Traffic (%)						
Lane Group Flow (vph)	161	0	329	0	0	312
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	13		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.10	0.92	1.07	1.07	1.11	1.32
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

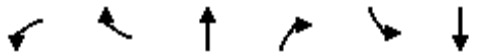
Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	68	72	199	87	65	206
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-3	-	-	3
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	9	7	3	1	7	4
Mvmt Flow	78	83	229	100	75	237

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	665	280	0	0	329	0
Stage 1	279	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Critical Hdwy	5.29	5.67	-	-	4.17	-
Critical Hdwy Stg 1	4.29	-	-	-	-	-
Critical Hdwy Stg 2	4.29	-	-	-	-	-
Follow-up Hdwy	3.581	3.363	-	-	2.263	-
Pot Cap-1 Maneuver	517	783	-	-	1203	-
Stage 1	826	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	479	782	-	-	1202	-
Mov Cap-2 Maneuver	479	-	-	-	-	-
Stage 1	826	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	598	1202	-
HCM Lane V/C Ratio	-	-	0.269	0.062	-
HCM Control Delay (s)	-	-	13.2	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	126	6	113	158	6	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	10	10
Grade (%)	-5%		-3%			-5%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994		0.921			
Flt Protected	0.954					0.998
Satd. Flow (prot)	1795	0	1558	0	0	1679
Flt Permitted	0.954					0.998
Satd. Flow (perm)	1795	0	1558	0	0	1679
Link Speed (mph)	30		30			30
Link Distance (ft)	231		163			286
Travel Time (s)	5.3		3.7			6.5
Confl. Peds. (#/hr)	1			11	11	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	3%	0%	7%	6%	33%	7%
Adj. Flow (vph)	147	7	131	184	7	169
Shared Lane Traffic (%)						
Lane Group Flow (vph)	154	0	315	0	0	176
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.07	1.07	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

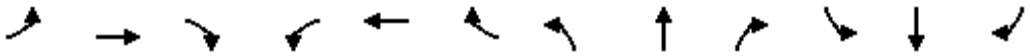
Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	126	6	113	158	6	145
Conflicting Peds, #/hr	1	0	0	11	11	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	-3	-	-	-5
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	0	7	6	33	7
Mvmt Flow	147	7	131	184	7	169

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	407	235	0	0	316	0
Stage 1	224	-	-	-	-	-
Stage 2	183	-	-	-	-	-
Critical Hdwy	5.43	5.7	-	-	4.43	-
Critical Hdwy Stg 1	4.43	-	-	-	-	-
Critical Hdwy Stg 2	4.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.3	-	-	2.497	-
Pot Cap-1 Maneuver	670	836	-	-	1088	-
Stage 1	863	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	660	829	-	-	1080	-
Mov Cap-2 Maneuver	660	-	-	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	877	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	666	1080	-
HCM Lane V/C Ratio	-	-	0.23	0.006	-
HCM Control Delay (s)	-	-	12	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	3	2	15	0	8	5	148	11	28	115	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	13	13	13	11	11	11	11	11	11
Grade (%)		-15%			1%			4%			-4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.955			0.953			0.991				
Flt Protected					0.968			0.999			0.990	
Satd. Flow (prot)	0	1877	0	0	1498	0	0	1694	0	0	1665	0
Flt Permitted					0.968			0.999			0.990	
Satd. Flow (perm)	0	1877	0	0	1498	0	0	1694	0	0	1665	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			414			330			747	
Travel Time (s)		4.0			9.4			7.5			17.0	
Confl. Peds. (#/hr)							4					4
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	0%	8%	0%	0%	0%	5%	10%	50%	2%	0%
Parking (#/hr)	5	5	5	5	5	5						
Adj. Flow (vph)	0	4	3	19	0	10	6	185	14	35	144	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	29	0	0	205	0	0	179	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.80	0.96	0.80	0.96	1.15	0.96	1.07	1.07	1.07	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	3	2	15	0	8	5	148	11	28	115	0
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	0	0	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-15	-	-	1	-	-	4	-	-	-4	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	8	0	0	0	5	10	50	2	0
Mvmt Flow	0	4	2	19	0	10	6	185	14	35	144	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	423	425	148	421	418	196	144	0	0	199	0	0
Stage 1	214	214	-	204	204	-	-	-	-	-	-	-
Stage 2	209	211	-	217	214	-	-	-	-	-	-	-
Critical Hdwy	4.1	3.5	4.7	7.38	6.7	6.3	4.1	-	-	4.6	-	-
Critical Hdwy Stg 1	3.1	2.5	-	6.38	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	3.1	2.5	-	6.38	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.572	4	3.3	2.2	-	-	2.65	-	-
Pot Cap-1 Maneuver	775	747	962	520	517	846	1451	-	-	1133	-	-
Stage 1	948	872	-	776	728	-	-	-	-	-	-	-
Stage 2	949	872	-	763	721	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	741	718	959	500	497	843	1447	-	-	1130	-	-
Mov Cap-2 Maneuver	741	718	-	500	497	-	-	-	-	-	-	-
Stage 1	943	842	-	772	724	-	-	-	-	-	-	-
Stage 2	930	868	-	730	696	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	11.5	0.2	1.6
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1447	-	-	798	582	1130	-	-
HCM Lane V/C Ratio	0.004	-	-	0.008	0.049	0.031	-	-
HCM Control Delay (s)	7.5	0	-	9.5	11.5	8.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	32	24	154	3	13	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-5%		7%			-7%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.942		0.997			
Flt Protected	0.972					0.995
Satd. Flow (prot)	1664	0	1639	0	0	1858
Flt Permitted	0.972					0.995
Satd. Flow (perm)	1664	0	1639	0	0	1858
Link Speed (mph)	30		30			30
Link Distance (ft)	188		747			845
Travel Time (s)	4.3		17.0			19.2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	8%	0%	0%	2%
Adj. Flow (vph)	40	30	190	4	16	137
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	194	0	0	153
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.09	1.09	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	32	24	154	3	13	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	7	-	-	-7
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	8	0	0	2
Mvmt Flow	40	30	190	4	16	137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	361	192	0	0	194	0
Stage 1	192	-	-	-	-	-
Stage 2	169	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	710	878	-	-	1391	-
Stage 1	892	-	-	-	-	-
Stage 2	907	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	701	878	-	-	1391	-
Mov Cap-2 Maneuver	701	-	-	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	767	1391	-
HCM Lane V/C Ratio	-	-	0.09	0.012	-
HCM Control Delay (s)	-	-	10.2	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	5	3	173	5	1	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11
Grade (%)	-6%		-4%			6%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.946		0.996			
Flt Protected	0.971					
Satd. Flow (prot)	1501	0	1779	0	0	1670
Flt Permitted	0.971					
Satd. Flow (perm)	1501	0	1779	0	0	1670
Link Speed (mph)	30		30			30
Link Distance (ft)	525		845			363
Travel Time (s)	11.9		19.2			8.3
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	33%	0%	5%	0%	100%	6%
Adj. Flow (vph)	6	4	208	6	1	143
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	214	0	0	144
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.96	0.96	1.02	1.02	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	5	3	173	5	1	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	6
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	33	0	5	0	100	6
Mvmt Flow	6	4	208	6	1	143

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	357	211	0	0	214	0
Stage 1	211	-	-	-	-	-
Stage 2	146	-	-	-	-	-
Critical Hdwy	5.53	5.6	-	-	5.1	-
Critical Hdwy Stg 1	4.53	-	-	-	-	-
Critical Hdwy Stg 2	4.53	-	-	-	-	-
Follow-up Hdwy	3.797	3.3	-	-	3.1	-
Pot Cap-1 Maneuver	658	864	-	-	939	-
Stage 1	811	-	-	-	-	-
Stage 2	851	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	657	864	-	-	939	-
Mov Cap-2 Maneuver	657	-	-	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	850	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	722	939	-
HCM Lane V/C Ratio	-	-	0.013	0.001	-
HCM Control Delay (s)	-	-	10.1	8.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	52	174	2	137	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-6%		-4%			4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.870		0.999			
Flt Protected	0.998					0.974
Satd. Flow (prot)	1643	0	1799	0	0	1598
Flt Permitted	0.998					0.974
Satd. Flow (perm)	1643	0	1799	0	0	1598
Link Speed (mph)	30		30			30
Link Distance (ft)	590		363			252
Travel Time (s)	13.4		8.3			5.7
Confl. Peds. (#/hr)				3	3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	3%	100%	12%	7%
Adj. Flow (vph)	2	56	187	2	147	127
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	189	0	0	274
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

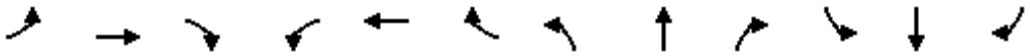
Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	2	52	174	2	137	118
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	4
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	3	100	12	7
Mvmt Flow	2	56	187	2	147	127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	610	191	0	0	189	0
Stage 1	188	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Critical Hdwy	5.2	5.6	-	-	4.22	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.308	-
Pot Cap-1 Maneuver	565	884	-	-	1327	-
Stage 1	904	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	497	882	-	-	1324	-
Mov Cap-2 Maneuver	497	-	-	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	673	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	4.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	857	1324	-
HCM Lane V/C Ratio	-	-	0.068	0.111	-
HCM Control Delay (s)	-	-	9.5	8.1	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.4	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	1	6	11	0	10	0	220	5	3	238	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-2%			-1%			-2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.947			0.935			0.997			0.998	
Flt Protected		0.973			0.975						0.999	
Satd. Flow (prot)	0	1945	0	0	1458	0	0	1797	0	0	1722	0
Flt Permitted		0.973			0.975						0.999	
Satd. Flow (perm)	0	1945	0	0	1458	0	0	1797	0	0	1722	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		289			365			252			311	
Travel Time (s)		6.6			8.3			5.7			7.1	
Confl. Peds. (#/hr)									3	3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	50%	0%	11%	0%	3%	0%	33%	5%	0%
Adj. Flow (vph)	10	1	7	12	0	11	0	244	6	3	264	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	23	0	0	250	0	0	270	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			0			0			0	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.87	0.87	0.87	0.88	0.88	0.88	1.03	1.03	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

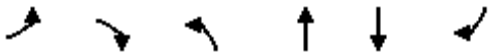
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	9	1	6	11	0	10	0	220	5	3	238	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-1	-	-	-2	-	-	2	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	50	0	11	0	3	0	33	5	0
Mvmt Flow	10	1	7	12	0	11	0	244	6	3	264	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	526	523	269	524	521	250	268	0	0	250	0	0
Stage 1	273	273	-	247	247	-	-	-	-	-	-	-
Stage 2	253	250	-	277	274	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6	7.4	6.3	6.21	4.1	-	-	4.43	-	-
Critical Hdwy Stg 1	5.7	5.1	-	6.4	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	6.4	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.95	4	3.399	2.2	-	-	2.497	-	-
Pot Cap-1 Maneuver	494	489	786	408	476	773	1307	-	-	1154	-	-
Stage 1	760	709	-	671	715	-	-	-	-	-	-	-
Stage 2	777	723	-	646	697	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	485	488	784	402	475	771	1304	-	-	1151	-	-
Mov Cap-2 Maneuver	485	488	-	402	475	-	-	-	-	-	-	-
Stage 1	760	707	-	671	715	-	-	-	-	-	-	-
Stage 2	764	723	-	636	695	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	12.2	0	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1304	-	-	566	521	1151	-	-
HCM Lane V/C Ratio	-	-	-	0.031	0.045	0.003	-	-
HCM Control Delay (s)	0	-	-	11.6	12.2	8.1	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	76	49	18	221	196	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	-2%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.947				0.971	
Flt Protected	0.970			0.996		
Satd. Flow (prot)	1623	0	0	1764	1732	0
Flt Permitted	0.970			0.996		
Satd. Flow (perm)	1623	0	0	1764	1732	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	990			311	161	
Travel Time (s)	19.3			7.1	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	4%	5%	12%
Adj. Flow (vph)	84	54	20	246	218	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	0	0	266	278	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	76	49	18	221	196	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	0	4	5	12
Mvmt Flow	84	54	20	246	218	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	534	248	278	0	-	0
Stage 1	248	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Critical Hdwy	6.05	6.05	4.1	-	-	-
Critical Hdwy Stg 1	5.05	-	-	-	-	-
Critical Hdwy Stg 2	5.05	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	2.2	-	-	-
Pot Cap-1 Maneuver	532	794	1296	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	522	794	1296	-	-	-
Mov Cap-2 Maneuver	522	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	766	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1296	-	603	-	-
HCM Lane V/C Ratio	0.015	-	0.23	-	-
HCM Control Delay (s)	7.8	0	12.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	128	2230	119	3	12	948	17	46	167	85	34	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	11	11	11	13	13	13	11	11
Grade (%)		-2%				1%			0%			-4%
Storage Length (ft)	110		190		150		0	0		0	0	
Storage Lanes	1		1		1		0	0		0	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.997			0.961			0.925
Flt Protected	0.950				0.950				0.992			0.995
Satd. Flow (prot)	1588	3533	1447	0	1371	3341	0	0	1811	0	0	1622
Flt Permitted	0.950				0.950				0.609			0.813
Satd. Flow (perm)	1588	3533	1447	0	1371	3341	0	0	1112	0	0	1325
Right Turn on Red			No				Yes			No		
Satd. Flow (RTOR)						2						
Link Speed (mph)		40				40			30			30
Link Distance (ft)		1697				1673			161			419
Travel Time (s)		28.9				28.5			3.7			9.5
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	11%	5%	9%	33%	25%	9%	13%	0%	6%	0%	0%	7%
Adj. Flow (vph)	129	2253	120	3	12	958	17	46	169	86	34	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	129	2253	120	0	15	975	0	0	301	0	0	348
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		11				11			0			0
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	1.01	1.05	1.05	1.05	0.96	0.96	0.96	1.02	1.02
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	2	2	2	1	2	2		1	2		1	2
Detector Template				Left				Left			Left	
Leading Detector (ft)	83	83	83	20	83	83		20	83		20	83
Trailing Detector (ft)	-5	-5	-5	0	-5	-5		0	-5		0	-5
Detector 1 Position(ft)	-5	-5	-5	0	-5	-5		0	-5		0	-5
Detector 1 Size(ft)	40	40	40	20	40	40		20	40		20	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0		0.0	3.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0		0.0	4.0
Detector 2 Position(ft)	43	43	43		43	43			43			43
Detector 2 Size(ft)	40	40	40		40	40			40			40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0		0.0	0.0			0.0			0.0
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Perm	NA		Perm	NA

Lane Group	SBR
Lane Configurations	
Volume (vph)	192
Ideal Flow (vphpl)	1900
Lane Width (ft)	11
Grade (%)	
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.99
Heavy Vehicles (%)	7%
Adj. Flow (vph)	194
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.02
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Protected Phases	5	2		1	1	6			8			4
Permitted Phases			2					8			4	
Detector Phase	5	2	2	1	1	6		8	8		4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	3.0	10.0		5.0	5.0		5.0	5.0
Minimum Split (s)	10.0	17.0	17.0	10.0	10.0	17.0		11.0	11.0		11.0	11.0
Total Split (s)	27.0	92.0	92.0	27.0	27.0	92.0		31.0	31.0		31.0	31.0
Total Split (%)	18.0%	61.3%	61.3%	18.0%	18.0%	61.3%		20.7%	20.7%		20.7%	20.7%
Maximum Green (s)	20.0	85.0	85.0	20.0	20.0	85.0		25.0	25.0		25.0	25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0			0.0			0.0
Total Lost Time (s)	7.0	7.0	7.0		7.0	7.0			6.0			6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Recall Mode	None	Min	Min	None	None	Min		None	None		None	None
v/c Ratio	0.69	0.97	0.13		0.20	0.55			1.39			1.35
Control Delay	74.5	34.1	9.7		66.7	21.6			242.8			223.0
Queue Delay	0.0	0.0	0.0		0.0	0.0			0.0			0.0
Total Delay	74.5	34.1	9.7		66.7	21.6			242.8			223.0
Queue Length 50th (ft)	99	691	29		12	258			~311			~353
Queue Length 95th (ft)	182	#1230	74		37	341			#567			#631
Internal Link Dist (ft)		1617				1593			81			339
Turn Bay Length (ft)	110		190		150							
Base Capacity (vph)	246	2331	954		212	2204			216			257
Starvation Cap Reductn	0	0	0		0	0			0			0
Spillback Cap Reductn	0	0	0		0	0			0			0
Storage Cap Reductn	0	0	0		0	0			0			0
Reduced v/c Ratio	0.52	0.97	0.13		0.07	0.44			1.39			1.35

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 129.3
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A

Lane Group	SBR
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (veh/h)	128	2230	119	3	12	948	17	46	167	85	34	119
Number	5	2	12		1	6	16	3	8	18	7	4
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1729	1828	1761		1493	1733	1890	1976	1912	1976	1938	1823
Adj Flow Rate, veh/h	129	2253	120		12	958	17	46	169	86	34	120
Adj No. of Lanes	1	2	1		1	2	0	0	1	0	0	1
Peak Hour Factor	0.99	0.99	0.99		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	11	5	9		25	9	9	6	6	6	7	7
Cap, veh/h	154	2366	969		12	1909	34	60	161	76	49	109
Arrive On Green	0.09	0.65	0.65		0.01	0.56	0.56	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1647	3655	1496		1422	3396	60	150	843	397	100	569
Grp Volume(v), veh/h	129	2253	120		12	489	486	301	0	0	348	0
Grp Sat Flow(s),veh/h/ln	1647	1828	1496		1422	1733	1723	1389	0	0	1511	0
Q Serve(g_s), s	10.1	74.1	4.0		1.1	22.5	22.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.1	74.1	4.0		1.1	22.5	22.5	25.0	0.0	0.0	25.0	0.0
Prop In Lane	1.00		1.00		1.00		0.03	0.15		0.29	0.10	
Lane Grp Cap(c), veh/h	154	2366	969		12	974	968	298	0	0	319	0
V/C Ratio(X)	0.84	0.95	0.12		1.00	0.50	0.50	1.01	0.00	0.00	1.09	0.00
Avail Cap(c_a), veh/h	252	2377	973		218	1127	1120	298	0	0	319	0
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	58.2	21.2	8.8		64.8	17.5	17.5	53.4	0.0	0.0	53.7	0.0
Incr Delay (d2), s/veh	12.1	9.6	0.1		121.9	0.4	0.4	55.2	0.0	0.0	76.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	40.1	1.7		0.8	10.8	10.8	15.2	0.0	0.0	18.2	0.0
LnGrp Delay(d),s/veh	70.3	30.8	8.9		186.7	17.9	17.9	108.7	0.0	0.0	130.3	0.0
LnGrp LOS	E	C	A		F	B	B	F			F	
Approach Vol, veh/h		2502				987			301			348
Approach Delay, s/veh		31.8				19.9			108.7			130.3
Approach LOS		C				B			F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	91.6		31.0	19.2	80.5		31.0
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	20.0	85.0		25.0	20.0	85.0		25.0
Max Q Clear Time (g_c+I1), s	3.1	76.1		27.0	12.1	24.5		27.0
Green Ext Time (p_c), s	0.0	8.5		0.0	0.3	48.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D

Notes

User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Volume (veh/h)	192
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1938
Adj Flow Rate, veh/h	194
Adj No. of Lanes	0
Peak Hour Factor	0.99
Percent Heavy Veh, %	7
Cap, veh/h	161
Arrive On Green	0.19
Sat Flow, veh/h	842
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.56
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.0
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	74	72	217	48	41	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	10	10	10	10
Grade (%)	-6%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.933		0.976			
Flt Protected	0.975					0.991
Satd. Flow (prot)	1594	0	1680	0	0	1469
Flt Permitted	0.975					0.991
Satd. Flow (perm)	1594	0	1680	0	0	1469
Link Speed (mph)	30		30			30
Link Distance (ft)	477		315			163
Travel Time (s)	10.8		7.2			3.7
Confl. Peds. (#/hr)	4	7		1	1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	7%	8%	2%
Parking (#/hr)	5	5				5
Adj. Flow (vph)	76	74	224	49	42	186
Shared Lane Traffic (%)						
Lane Group Flow (vph)	150	0	273	0	0	228
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	13		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.10	0.92	1.07	1.07	1.11	1.32
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	74	72	217	48	41	180
Conflicting Peds, #/hr	4	7	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-3	-	-	3
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	4	7	8	2
Mvmt Flow	76	74	224	49	42	186

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	525	256	0	0	280	0
Stage 1	255	-	-	-	-	-
Stage 2	270	-	-	-	-	-
Critical Hdwy	5.21	5.61	-	-	4.18	-
Critical Hdwy Stg 1	4.21	-	-	-	-	-
Critical Hdwy Stg 2	4.21	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.272	-
Pot Cap-1 Maneuver	613	819	-	-	1249	-
Stage 1	860	-	-	-	-	-
Stage 2	851	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	586	813	-	-	1248	-
Mov Cap-2 Maneuver	586	-	-	-	-	-
Stage 1	855	-	-	-	-	-
Stage 2	818	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	680	1248	-
HCM Lane V/C Ratio	-	-	0.221	0.034	-
HCM Control Delay (s)	-	-	11.8	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	123	5	155	133	0	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	10	10
Grade (%)	-5%		-3%			-5%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994		0.938			
Flt Protected	0.954					
Satd. Flow (prot)	1798	0	1637	0	0	1748
Flt Permitted	0.954					
Satd. Flow (perm)	1798	0	1637	0	0	1748
Link Speed (mph)	30		30			30
Link Distance (ft)	231		163			286
Travel Time (s)	5.3		3.7			6.5
Confl. Peds. (#/hr)	3	1		1	1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	2%	20%	5%	1%	0%	4%
Adj. Flow (vph)	140	6	176	151	0	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	146	0	327	0	0	111
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.07	1.07	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

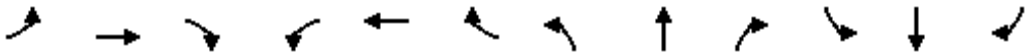
Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	123	5	155	133	0	98
Conflicting Peds, #/hr	3	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	-3	-	-	-5
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	20	5	1	0	4
Mvmt Flow	140	6	176	151	0	111

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	366	256	0	0	330	0
Stage 1	255	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	5.42	5.9	-	-	4.1	-
Critical Hdwy Stg 1	4.42	-	-	-	-	-
Critical Hdwy Stg 2	4.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.48	-	-	2.2	-
Pot Cap-1 Maneuver	702	768	-	-	1241	-
Stage 1	845	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	700	766	-	-	1240	-
Mov Cap-2 Maneuver	700	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	702	1240	-
HCM Lane V/C Ratio	-	-	0.207	-	-
HCM Control Delay (s)	-	-	11.5	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	3	2	13	1	9	4	116	13	19	113	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	13	13	13	11	11	11	11	11	11
Grade (%)		-15%			1%			4%			-4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.945			0.987			0.998	
Flt Protected					0.973			0.998			0.993	
Satd. Flow (prot)	0	1877	0	0	1572	0	0	1743	0	0	1811	0
Flt Permitted					0.973			0.998			0.993	
Satd. Flow (perm)	0	1877	0	0	1572	0	0	1743	0	0	1811	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			414			330			747	
Travel Time (s)		4.0			9.4			7.5			17.0	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	9%	0%	3%	0%
Parking (#/hr)	5	5	5	5	5	5						
Adj. Flow (vph)	0	4	2	15	1	11	5	136	15	22	133	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	27	0	0	156	0	0	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.80	0.96	0.80	0.96	1.15	0.96	1.07	1.07	1.07	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	3	2	13	1	9	4	116	13	19	113	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-15	-	-	1	-	-	4	-	-	-4	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	1	9	0	3	0
Mvmt Flow	0	4	2	15	1	11	5	136	15	22	133	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	338	340	134	336	334	144	135	0	0	152	0	0
Stage 1	179	179	-	154	154	-	-	-	-	-	-	-
Stage 2	159	161	-	182	180	-	-	-	-	-	-	-
Critical Hdwy	4.1	3.5	4.7	7.3	6.7	6.3	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	3.1	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	3.1	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	821	776	973	610	579	905	1462	-	-	1441	-	-
Stage 1	961	876	-	846	767	-	-	-	-	-	-	-
Stage 2	968	879	-	816	747	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	797	760	973	597	567	905	1462	-	-	1441	-	-
Mov Cap-2 Maneuver	797	760	-	597	567	-	-	-	-	-	-	-
Stage 1	957	861	-	843	764	-	-	-	-	-	-	-
Stage 2	951	875	-	797	734	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	10.5	0.2	1.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1462	-	-	833	687	1441	-	-
HCM Lane V/C Ratio	0.003	-	-	0.007	0.039	0.016	-	-
HCM Control Delay (s)	7.5	0	-	9.4	10.5	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	17	15	111	14	44	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-5%		7%			-7%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.936		0.985			
Flt Protected	0.974					0.987
Satd. Flow (prot)	1657	0	1746	0	0	1823
Flt Permitted	0.974					0.987
Satd. Flow (perm)	1657	0	1746	0	0	1823
Link Speed (mph)	30		30			30
Link Distance (ft)	188		747			845
Travel Time (s)	4.3		17.0			19.2
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	20	18	134	17	53	142
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	151	0	0	195
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.09	1.09	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	17	15	111	14	44	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	7	-	-	-7
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	4
Mvmt Flow	20	18	134	17	53	142

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	390	142	0	0	151	0
Stage 1	142	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	689	929	-	-	1442	-
Stage 1	926	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	661	929	-	-	1442	-
Mov Cap-2 Maneuver	661	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	821	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	764	1442	-
HCM Lane V/C Ratio	-	-	0.05	0.037	-
HCM Control Delay (s)	-	-	10	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	4	1	124	2	3	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11
Grade (%)	-6%		-4%			6%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977		0.998			
Flt Protected	0.960					0.999
Satd. Flow (prot)	1519	0	1851	0	0	1729
Flt Permitted	0.960					0.999
Satd. Flow (perm)	1519	0	1851	0	0	1729
Link Speed (mph)	30		30			30
Link Distance (ft)	525		845			363
Travel Time (s)	11.9		19.2			8.3
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	25%	0%	1%	0%	0%	3%
Adj. Flow (vph)	5	1	148	2	4	188
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	150	0	0	192
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.96	0.96	1.02	1.02	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	4	1	124	2	3	158
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	6
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	25	0	1	0	0	3
Mvmt Flow	5	1	148	2	4	188

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	344	149	0	0	150	0
Stage 1	149	-	-	-	-	-
Stage 2	195	-	-	-	-	-
Critical Hdwy	5.45	5.6	-	-	4.1	-
Critical Hdwy Stg 1	4.45	-	-	-	-	-
Critical Hdwy Stg 2	4.45	-	-	-	-	-
Follow-up Hdwy	3.725	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	682	926	-	-	1444	-
Stage 1	867	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	680	926	-	-	1444	-
Mov Cap-2 Maneuver	680	-	-	-	-	-
Stage 1	867	-	-	-	-	-
Stage 2	836	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	718	1444	-
HCM Lane V/C Ratio	-	-	0.008	0.002	-
HCM Control Delay (s)	-	-	10.1	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	3	104	122	3	82	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-6%		-4%			4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.868		0.997			
Flt Protected	0.999					0.983
Satd. Flow (prot)	1625	0	1850	0	0	1735
Flt Permitted	0.999					0.983
Satd. Flow (perm)	1625	0	1850	0	0	1735
Link Speed (mph)	30		30			30
Link Distance (ft)	590		363			252
Travel Time (s)	13.4		8.3			5.7
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	3	117	137	3	92	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	140	0	0	270
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

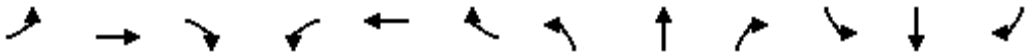
Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	3	104	122	3	82	158
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	4
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	1	1	0	0	3
Mvmt Flow	3	117	137	3	92	178

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	501	140	0	0	140	0
Stage 1	139	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Critical Hdwy	5.2	5.61	-	-	4.1	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.2	-
Pot Cap-1 Maneuver	630	932	-	-	1456	-
Stage 1	935	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	585	931	-	-	1455	-
Mov Cap-2 Maneuver	585	-	-	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	743	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	2.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	916	1455	-
HCM Lane V/C Ratio	-	-	0.131	0.063	-
HCM Control Delay (s)	-	-	9.5	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1	3	1	9	11	3	222	1	11	235	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-2%			-1%			-2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963			0.930			0.999			0.997	
Flt Protected		0.969			0.998			0.999			0.998	
Satd. Flow (prot)	0	1807	0	0	1771	0	0	1833	0	0	1761	0
Flt Permitted		0.969			0.998			0.999			0.998	
Satd. Flow (perm)	0	1807	0	0	1771	0	0	1833	0	0	1761	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		289			365			252			311	
Travel Time (s)		6.6			8.3			5.7			7.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	33%	100%	0%	11%	0%	1%	0%	20%	2%	0%
Adj. Flow (vph)	7	1	3	1	10	12	3	249	1	12	264	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	23	0	0	253	0	0	283	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			0			0			0	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.87	0.87	0.87	0.88	0.88	0.88	1.03	1.03	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

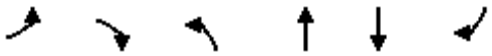
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	1	3	1	9	11	3	222	1	11	235	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-1	-	-	-2	-	-	2	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	33	100	0	11	0	1	0	20	2	0
Mvmt Flow	7	1	3	1	10	12	3	249	1	12	264	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	560	549	267	551	553	250	271	0	0	251	0	0
Stage 1	292	292	-	257	257	-	-	-	-	-	-	-
Stage 2	268	257	-	294	296	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6.33	7.9	6.3	6.21	4.1	-	-	4.3	-	-
Critical Hdwy Stg 1	5.7	5.1	-	6.9	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	6.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.597	4.4	4	3.399	2.2	-	-	2.38	-	-
Pot Cap-1 Maneuver	470	474	713	336	458	773	1304	-	-	1216	-	-
Stage 1	744	697	-	583	709	-	-	-	-	-	-	-
Stage 2	764	719	-	554	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	449	467	713	330	451	773	1304	-	-	1216	-	-
Mov Cap-2 Maneuver	449	467	-	330	451	-	-	-	-	-	-	-
Stage 1	742	689	-	581	707	-	-	-	-	-	-	-
Stage 2	739	717	-	544	675	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	11.7	0.1	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1304	-	-	507	564	1216	-	-
HCM Lane V/C Ratio	0.003	-	-	0.022	0.042	0.01	-	-
HCM Control Delay (s)	7.8	0	-	12.3	11.7	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	47	21	38	201	231	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	-2%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.959				0.967	
Flt Protected	0.966			0.992		
Satd. Flow (prot)	1615	0	0	1792	1797	0
Flt Permitted	0.966			0.992		
Satd. Flow (perm)	1615	0	0	1792	1797	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	990			311	161	
Travel Time (s)	19.3			7.1	3.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	21%	0%	2%	2%	3%
Adj. Flow (vph)	52	23	42	223	257	83
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	0	265	340	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	47	21	38	201	231	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	21	0	2	2	3
Mvmt Flow	52	23	42	223	257	83

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	606	298	340	0	-	0
Stage 1	298	-	-	-	-	-
Stage 2	308	-	-	-	-	-
Critical Hdwy	6	6.21	4.1	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.489	2.2	-	-	-
Pot Cap-1 Maneuver	496	710	1230	-	-	-
Stage 1	783	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	477	710	1230	-	-	-
Mov Cap-2 Maneuver	477	-	-	-	-	-
Stage 1	783	-	-	-	-	-
Stage 2	746	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1230	-	531	-	-
HCM Lane V/C Ratio	0.034	-	0.142	-	-
HCM Control Delay (s)	8	0	12.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	8	155	1160	157	2	41	2209	30	55	140	53	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	12	11	11	11	13	13	13	11
Grade (%)			-2%				1%			0%		
Storage Length (ft)		110		190		150		0	0		0	0
Storage Lanes		1		1		1		0	0		0	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	*1.00	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.998			0.971		
Flt Protected		0.950				0.950				0.989		
Satd. Flow (prot)	0	1713	3602	1561	0	1736	3543	0	0	1855	0	0
Flt Permitted		0.950				0.950				0.427		
Satd. Flow (perm)	0	1713	3602	1561	0	1736	3543	0	0	801	0	0
Right Turn on Red				No				Yes			No	
Satd. Flow (RTOR)							2					
Link Speed (mph)			40				40			30		
Link Distance (ft)			1697				1673			161		
Travel Time (s)			28.9				28.5			3.7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	3%	1%	0%	0%	3%	0%	0%	1%	5%	6%
Adj. Flow (vph)	8	160	1196	162	2	42	2277	31	57	144	55	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	168	1196	162	0	44	2308	0	0	256	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)			11				11			0		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	0.99	1.03	1.03	1.03	1.01	1.05	1.05	1.05	0.96	0.96	0.96	1.02
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Number of Detectors	1	2	2	2	1	2	2		1	2		1
Detector Template	Left				Left				Left			Left
Leading Detector (ft)	20	83	83	83	20	83	83		20	83		20
Trailing Detector (ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Position(ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Size(ft)	20	40	40	40	20	40	40		20	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0		0.0
Detector 2 Position(ft)		43	43	43		43	43			43		
Detector 2 Size(ft)		40	40	40		40	40			40		
Detector 2 Type		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA		Perm

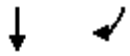
Lane Group	SBT	SBR
Lane Configurations		
Volume (vph)	108	174
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	11	11
Grade (%)	-4%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.922	
Flt Protected	0.997	
Satd. Flow (prot)	1641	0
Flt Permitted	0.918	
Satd. Flow (perm)	1511	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	30	
Link Distance (ft)	419	
Travel Time (s)	9.5	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	3%	6%
Adj. Flow (vph)	111	179
Shared Lane Traffic (%)		
Lane Group Flow (vph)	309	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	0	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.02	1.02
Turning Speed (mph)		9
Number of Detectors	2	
Detector Template		
Leading Detector (ft)	83	
Trailing Detector (ft)	-5	
Detector 1 Position(ft)	-5	
Detector 1 Size(ft)	40	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	3.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	4.0	
Detector 2 Position(ft)	43	
Detector 2 Size(ft)	40	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	2	1	1	6		8	8		4
Switch Phase												
Minimum Initial (s)	3.0	3.0	10.0	10.0	3.0	3.0	10.0		5.0	5.0		5.0
Minimum Split (s)	10.0	10.0	17.0	17.0	10.0	10.0	17.0		11.0	11.0		11.0
Total Split (s)	27.0	27.0	92.0	92.0	27.0	27.0	92.0		31.0	31.0		31.0
Total Split (%)	18.0%	18.0%	61.3%	61.3%	18.0%	18.0%	61.3%		20.7%	20.7%		20.7%
Maximum Green (s)	20.0	20.0	85.0	85.0	20.0	20.0	85.0		25.0	25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Total Lost Time (s)		7.0	7.0	7.0		7.0	7.0			6.0		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Recall Mode	None	None	Min	Min	None	None	Min		None	None		None
v/c Ratio		0.81	0.51	0.16		0.41	1.13			1.90		
Control Delay		90.7	15.2	11.5		77.9	97.9			464.3		
Queue Delay		0.0	0.0	0.0		0.0	0.0			0.0		
Total Delay		90.7	15.2	11.5		77.9	97.9			464.3		
Queue Length 50th (ft)		160	300	61		42	~1326			~384		
Queue Length 95th (ft)		#265	378	102		83	#1447			#569		
Internal Link Dist (ft)			1617				1593			81		
Turn Bay Length (ft)		110		190		150						
Base Capacity (vph)		231	2346	1016		234	2034			135		
Starvation Cap Reductn		0	0	0		0	0			0		
Spillback Cap Reductn		0	0	0		0	0			0		
Storage Cap Reductn		0	0	0		0	0			0		
Reduced v/c Ratio		0.73	0.51	0.16		0.19	1.13			1.90		

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 148.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A



Lane Group	SBT	SBR
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	11.0	
Total Split (s)	31.0	
Total Split (%)	20.7%	
Maximum Green (s)	25.0	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	None	
v/c Ratio	1.22	
Control Delay	177.2	
Queue Delay	0.0	
Total Delay	177.2	
Queue Length 50th (ft)	~371	
Queue Length 95th (ft)	#568	
Internal Link Dist (ft)	339	
Turn Bay Length (ft)		
Base Capacity (vph)	254	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	1.22	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (veh/h)	8	155	1160	157	2	41	2209	30	55	140	53	18
Number		5	2	12		1	6	16	3	8	18	7
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1866	1863	1900		1890	1836	1890	1976	1944	1976	1938
Adj Flow Rate, veh/h		160	1196	162		42	2277	31	57	144	55	19
Adj No. of Lanes		1	2	1		1	2	0	0	1	0	0
Peak Hour Factor		0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		3	3	1		0	3	3	1	1	1	3
Cap, veh/h		185	2457	1065		55	2117	29	63	123	43	37
Arrive On Green		0.10	0.66	0.66		0.03	0.59	0.59	0.17	0.17	0.17	0.17
Sat Flow, veh/h		1777	3726	1615		1800	3615	49	192	713	248	61
Grp Volume(v), veh/h		160	1196	162		42	1154	1154	256	0	0	309
Grp Sat Flow(s),veh/h/ln		1777	1863	1615		1800	1836	1827	1153	0	0	1662
Q Serve(g_s), s		12.9	23.4	5.5		3.4	85.0	85.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s		12.9	23.4	5.5		3.4	85.0	85.0	25.0	0.0	0.0	25.0
Prop In Lane		1.00		1.00		1.00		0.03	0.22		0.21	0.06
Lane Grp Cap(c), veh/h		185	2457	1065		55	1076	1070	229	0	0	313
V/C Ratio(X)		0.86	0.49	0.15		0.76	1.07	1.08	1.12	0.00	0.00	0.99
Avail Cap(c_a), veh/h		245	2457	1065		248	1076	1070	229	0	0	313
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		64.0	12.4	9.4		69.8	30.1	30.1	60.7	0.0	0.0	60.9
Incr Delay (d2), s/veh		21.1	0.2	0.1		19.2	49.2	51.1	95.0	0.0	0.0	47.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		7.4	12.0	2.4		2.0	57.4	57.7	15.2	0.0	0.0	16.5
LnGrp Delay(d),s/veh		85.1	12.6	9.4		89.0	79.3	81.1	155.6	0.0	0.0	108.5
LnGrp LOS		F	B	A		F	F	F	F			F
Approach Vol, veh/h			1518				2350			256		
Approach Delay, s/veh			19.9				80.4			155.6		
Approach LOS			B				F			F		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.4	102.7		31.0	22.1	92.0		31.0
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	20.0	85.0		25.0	20.0	85.0		25.0
Max Q Clear Time (g_c+I1), s	5.4	25.4		27.0	14.9	87.0		27.0
Green Ext Time (p_c), s	0.1	51.7		0.0	0.3	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.0
HCM 2010 LOS	E

Notes

User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Volume (veh/h)	108	174
Number	4	14
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1847	1938
Adj Flow Rate, veh/h	111	179
Adj No. of Lanes	1	0
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	3	3
Cap, veh/h	110	166
Arrive On Green	0.17	0.17
Sat Flow, veh/h	639	963
Grp Volume(v), veh/h	0	0
Grp Sat Flow(s),veh/h/ln	0	0
Q Serve(g_s), s	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0
Prop In Lane		0.58
Lane Grp Cap(c), veh/h	0	0
V/C Ratio(X)	0.00	0.00
Avail Cap(c_a), veh/h	0	0
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0
LnGrp LOS		
Approach Vol, veh/h	309	
Approach Delay, s/veh	108.5	
Approach LOS	F	
Timer		

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	42	55	194	64	39	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	10	10	10	10
Grade (%)	-6%		-3%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.924		0.967			
Flt Protected	0.979					0.991
Satd. Flow (prot)	1809	0	1702	0	0	1502
Flt Permitted	0.979					0.991
Satd. Flow (perm)	1809	0	1702	0	0	1502
Link Speed (mph)	30		30			30
Link Distance (ft)	477		315			163
Travel Time (s)	10.8		7.2			3.7
Confl. Peds. (#/hr)	1	1		3	3	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	2%	3%	0%	0%	1%
Parking (#/hr)		5				5
Adj. Flow (vph)	50	65	231	76	46	196
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	0	307	0	0	242
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	13		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.07	1.07	1.11	1.32
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	42	55	194	64	39	165
Conflicting Peds, #/hr	1	1	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-3	-	-	3
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	2	3	0	0	1
Mvmt Flow	50	65	231	76	46	196

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	559	273	0	0	308	0
Stage 1	270	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Critical Hdwy	5.2	5.62	-	-	4.1	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.2	-
Pot Cap-1 Maneuver	595	801	-	-	1264	-
Stage 1	853	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	569	799	-	-	1261	-
Mov Cap-2 Maneuver	569	-	-	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	806	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	680	1261	-
HCM Lane V/C Ratio	-	-	0.17	0.037	-
HCM Control Delay (s)	-	-	11.4	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	125	2	119	130	0	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	10	10	10
Grade (%)	-5%		-3%			-5%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998		0.930			
Flt Protected	0.953					
Satd. Flow (prot)	1852	0	1650	0	0	1818
Flt Permitted	0.953					
Satd. Flow (perm)	1852	0	1650	0	0	1818
Link Speed (mph)	30		30			30
Link Distance (ft)	231		163			286
Travel Time (s)	5.3		3.7			6.5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	2%	1%	0%	0%
Adj. Flow (vph)	140	2	134	146	0	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	142	0	280	0	0	89
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.07	1.07	1.06	1.06
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

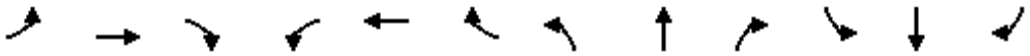
Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	125	2	119	130	0	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	-3	-	-	-5
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	2	1	0	0
Mvmt Flow	140	2	134	146	0	89

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	296	207	0	0	280	0
Stage 1	207	-	-	-	-	-
Stage 2	89	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	759	863	-	-	1294	-
Stage 1	882	-	-	-	-	-
Stage 2	963	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	759	863	-	-	1294	-
Mov Cap-2 Maneuver	759	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	760	1294	-
HCM Lane V/C Ratio	-	-	0.188	-	-
HCM Control Delay (s)	-	-	10.8	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	2	7	2	4	6	3	111	16	21	118	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	13	13	13	11	11	11	11	11	11
Grade (%)		-15%			1%			4%			-4%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.910			0.932			0.983			0.998	
Flt Protected		0.992			0.993			0.999			0.993	
Satd. Flow (prot)	0	1638	0	0	1582	0	0	1730	0	0	1857	0
Flt Permitted		0.992			0.993			0.999			0.993	
Satd. Flow (perm)	0	1638	0	0	1582	0	0	1730	0	0	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			414			330			747	
Travel Time (s)		4.0			9.4			7.5			17.0	
Confl. Peds. (#/hr)	2					2						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	50%	0%	0%	0%	0%	0%	67%	1%	0%	0%	0%	0%
Parking (#/hr)	5	5	5	5	5	5						
Adj. Flow (vph)	2	2	8	2	5	7	3	129	19	24	137	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	14	0	0	151	0	0	164	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.80	0.96	0.80	0.96	1.15	0.96	1.07	1.07	1.07	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	2	7	2	4	6	3	111	16	21	118	3
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-15	-	-	1	-	-	4	-	-	-4	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	50	0	0	0	0	0	67	1	0	0	0	0
Mvmt Flow	2	2	8	2	5	7	3	129	19	24	137	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	343	347	141	342	339	140	143	0	0	150	0	0
Stage 1	190	190	-	147	147	-	-	-	-	-	-	-
Stage 2	153	157	-	195	192	-	-	-	-	-	-	-
Critical Hdwy	4.6	3.5	4.7	7.3	6.7	6.3	4.77	-	-	4.1	-	-
Critical Hdwy Stg 1	3.6	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	3.6	2.5	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4	3.3	3.5	4	3.3	2.803	-	-	2.2	-	-
Pot Cap-1 Maneuver	706	774	967	604	575	910	1123	-	-	1444	-	-
Stage 1	835	875	-	853	773	-	-	-	-	-	-	-
Stage 2	850	879	-	803	737	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	684	755	965	587	561	908	1123	-	-	1444	-	-
Mov Cap-2 Maneuver	684	755	-	587	561	-	-	-	-	-	-	-
Stage 1	831	857	-	849	769	-	-	-	-	-	-	-
Stage 2	836	875	-	780	722	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	10.2	0.2	1.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1123	-	-	858	700	1444	-	-
HCM Lane V/C Ratio	0.003	-	-	0.015	0.02	0.017	-	-
HCM Control Delay (s)	8.2	0	-	9.3	10.2	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	22	18	110	9	31	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	11	11	11	11
Grade (%)	-5%		7%			-7%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.939		0.990			
Flt Protected	0.973					0.990
Satd. Flow (prot)	1661	0	1723	0	0	1867
Flt Permitted	0.973					0.990
Satd. Flow (perm)	1661	0	1723	0	0	1867
Link Speed (mph)	30		30			30
Link Distance (ft)	188		747			845
Travel Time (s)	4.3		17.0			19.2
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	2%	0%	0%	1%
Adj. Flow (vph)	22	18	112	9	32	122
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	121	0	0	154
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	10		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.09	1.09	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	22	18	110	9	31	120
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-5	-	7	-	-	-7
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	22	18	112	9	32	122

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	303	118	0	0	121	0
Stage 1	117	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Critical Hdwy	5.4	5.7	-	-	4.1	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	754	955	-	-	1479	-
Stage 1	943	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	736	954	-	-	1478	-
Mov Cap-2 Maneuver	736	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	875	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	1.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	820	1478	-
HCM Lane V/C Ratio	-	-	0.05	0.021	-
HCM Control Delay (s)	-	-	9.6	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	11	2	116	13	3	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	11	11	11
Grade (%)	-6%		-4%			6%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981		0.986			
Flt Protected	0.959					0.999
Satd. Flow (prot)	1841	0	1798	0	0	1763
Flt Permitted	0.959					0.999
Satd. Flow (perm)	1841	0	1798	0	0	1763
Link Speed (mph)	30		30			30
Link Distance (ft)	525		845			363
Travel Time (s)	11.9		19.2			8.3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	2%	9%	0%	1%
Adj. Flow (vph)	12	2	122	14	3	147
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	136	0	0	150
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.96	0.96	1.02	1.02	1.09	1.09
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	11	2	116	13	3	140
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	6
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	9	0	1
Mvmt Flow	12	2	122	14	3	147

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	283	129	0	0	136	0
Stage 1	129	-	-	-	-	-
Stage 2	154	-	-	-	-	-
Critical Hdwy	5.2	5.6	-	-	4.1	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	782	946	-	-	1461	-
Stage 1	942	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	780	946	-	-	1461	-
Mov Cap-2 Maneuver	780	-	-	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	923	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	802	1461	-
HCM Lane V/C Ratio	-	-	0.017	0.002	-
HCM Control Delay (s)	-	-	9.6	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	90	108	9	79	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-6%		-4%			4%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.866		0.990			
Flt Protected						0.982
Satd. Flow (prot)	1638	0	1838	0	0	1749
Flt Permitted						0.982
Satd. Flow (perm)	1638	0	1838	0	0	1749
Link Speed (mph)	30		30			30
Link Distance (ft)	590		363			252
Travel Time (s)	13.4		8.3			5.7
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	1%	0%	3%	0%
Adj. Flow (vph)	1	99	119	10	87	156
Shared Lane Traffic (%)						
Lane Group Flow (vph)	100	0	129	0	0	243
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.02	1.02	1.07	1.07
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

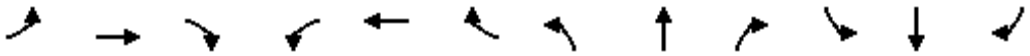
Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	90	108	9	79	142
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-6	-	-4	-	-	4
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	1	0	3	0
Mvmt Flow	1	99	119	10	87	156

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	454	125	0	0	129	0
Stage 1	124	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Critical Hdwy	5.2	5.6	-	-	4.13	-
Critical Hdwy Stg 1	4.2	-	-	-	-	-
Critical Hdwy Stg 2	4.2	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227	-
Pot Cap-1 Maneuver	660	951	-	-	1451	-
Stage 1	945	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	616	950	-	-	1450	-
Mov Cap-2 Maneuver	616	-	-	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	763	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	2.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	944	1450	-
HCM Lane V/C Ratio	-	-	0.106	0.06	-
HCM Control Delay (s)	-	-	9.3	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1	3	1	0	9	4	191	3	8	217	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	15	15	15	11	11	11	11	11	11
Grade (%)		-2%			-1%			-2%			2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966			0.877			0.998			0.996	
Flt Protected		0.968			0.995			0.999			0.998	
Satd. Flow (prot)	0	1628	0	0	1666	0	0	1788	0	0	1783	0
Flt Permitted		0.968			0.995			0.999			0.998	
Satd. Flow (perm)	0	1628	0	0	1666	0	0	1788	0	0	1783	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		289			365			252			311	
Travel Time (s)		6.6			8.3			5.7			7.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	7%	100%	33%	0%	0%	11%	25%	3%	0%	0%	1%	14%
Adj. Flow (vph)	8	1	3	1	0	10	5	217	3	9	247	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	11	0	0	225	0	0	264	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		15			0			0			0	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.87	0.87	0.87	0.88	0.88	0.88	1.03	1.03	1.03	1.06	1.06	1.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

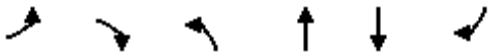
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	1	3	1	0	9	4	191	3	8	217	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	-1	-	-	-2	-	-	2	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	7	100	33	0	0	11	25	3	0	0	1	14
Mvmt Flow	8	1	3	1	0	10	5	217	3	9	247	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	502	499	251	499	501	219	255	0	0	220	0	0
Stage 1	269	269	-	228	228	-	-	-	-	-	-	-
Stage 2	233	230	-	271	273	-	-	-	-	-	-	-
Critical Hdwy	6.77	7.1	6.33	6.9	6.3	6.21	4.35	-	-	4.1	-	-
Critical Hdwy Stg 1	5.77	6.1	-	5.9	5.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.77	6.1	-	5.9	5.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.9	3.597	3.5	4	3.399	2.425	-	-	2.2	-	-
Pot Cap-1 Maneuver	499	378	728	499	488	804	1187	-	-	1361	-	-
Stage 1	748	556	-	789	728	-	-	-	-	-	-	-
Stage 2	779	580	-	750	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	488	373	728	491	482	804	1187	-	-	1361	-	-
Mov Cap-2 Maneuver	488	373	-	491	482	-	-	-	-	-	-	-
Stage 1	744	552	-	785	724	-	-	-	-	-	-	-
Stage 2	765	577	-	739	692	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	9.8	0.2	0.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1187	-	-	520	756	1361	-	-
HCM Lane V/C Ratio	0.004	-	-	0.024	0.015	0.007	-	-
HCM Control Delay (s)	8	0	-	12.1	9.8	7.7	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	77	16	21	187	217	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	-2%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.969	
Flt Protected	0.960			0.995		
Satd. Flow (prot)	1740	0	0	1764	1805	0
Flt Permitted	0.960			0.995		
Satd. Flow (perm)	1740	0	0	1764	1805	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	990			311	161	
Travel Time (s)	19.3			7.1	3.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	4%	2%	2%
Adj. Flow (vph)	79	16	21	191	221	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	95	0	0	212	287	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.03	1.03	1.04	1.04	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

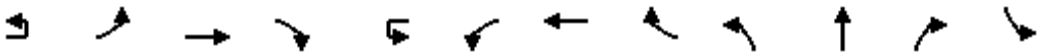
Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	77	16	21	187	217	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	4	2	2
Mvmt Flow	79	16	21	191	221	66

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	489	255	288	0	-	0
Stage 1	255	-	-	-	-	-
Stage 2	234	-	-	-	-	-
Critical Hdwy	6	6	4.1	-	-	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	572	800	1286	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	831	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	562	800	1286	-	-	-
Mov Cap-2 Maneuver	562	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	816	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1286	-	592	-	-
HCM Lane V/C Ratio	0.017	-	0.16	-	-
HCM Control Delay (s)	7.8	0	12.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	3	124	982	141	1	30	1455	34	65	126	72	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	12	11	11	11	13	13	13	11
Grade (%)			-2%				1%			0%		
Storage Length (ft)		110		190		150		0	0		0	0
Storage Lanes		1		1		1		0	0		0	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	*1.00	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.997			0.963		
Flt Protected		0.950				0.950				0.988		
Satd. Flow (prot)	0	1729	3637	1531	0	1736	3540	0	0	1832	0	0
Flt Permitted		0.950				0.950				0.612		
Satd. Flow (perm)	0	1729	3637	1531	0	1736	3540	0	0	1135	0	0
Right Turn on Red				No				Yes			No	
Satd. Flow (RTOR)							3					
Link Speed (mph)			40				40			30		
Link Distance (ft)			1697				1673			161		
Travel Time (s)			28.9				28.5			3.7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	2%	3%	0%	0%	3%	0%	4%	2%	0%	2%
Adj. Flow (vph)	3	128	1012	145	1	31	1500	35	67	130	74	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	131	1012	145	0	32	1535	0	0	271	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)			11				11			0		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	0.99	1.03	1.03	1.03	1.01	1.05	1.05	1.05	0.96	0.96	0.96	1.02
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Number of Detectors	1	2	2	2	1	2	2		1	2		1
Detector Template	Left				Left				Left			Left
Leading Detector (ft)	20	83	83	83	20	83	83		20	83		20
Trailing Detector (ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Position(ft)	0	-5	-5	-5	0	-5	-5		0	-5		0
Detector 1 Size(ft)	20	40	40	40	20	40	40		20	40		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0		0.0
Detector 2 Position(ft)		43	43	43		43	43			43		
Detector 2 Size(ft)		40	40	40		40	40			40		
Detector 2 Type		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA		Perm

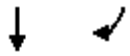
Lane Group	SBT	SBR
Lane Configurations		
Volume (vph)	111	160
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	11	11
Grade (%)	-4%	
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.932	
Flt Protected	0.992	
Satd. Flow (prot)	1710	0
Flt Permitted	0.823	
Satd. Flow (perm)	1418	0
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	30	
Link Distance (ft)	419	
Travel Time (s)	9.5	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	0%	2%
Adj. Flow (vph)	114	165
Shared Lane Traffic (%)		
Lane Group Flow (vph)	330	0
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	0	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.02	1.02
Turning Speed (mph)		9
Number of Detectors	2	
Detector Template		
Leading Detector (ft)	83	
Trailing Detector (ft)	-5	
Detector 1 Position(ft)	-5	
Detector 1 Size(ft)	40	
Detector 1 Type	Cl+Ex	
Detector 1 Channel		
Detector 1 Extend (s)	3.0	
Detector 1 Queue (s)	0.0	
Detector 1 Delay (s)	4.0	
Detector 2 Position(ft)	43	
Detector 2 Size(ft)	40	
Detector 2 Type	Cl+Ex	
Detector 2 Channel		
Detector 2 Extend (s)	0.0	
Turn Type	NA	

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	2	1	1	6		8	8		4
Switch Phase												
Minimum Initial (s)	3.0	3.0	10.0	10.0	3.0	3.0	10.0		5.0	5.0		5.0
Minimum Split (s)	10.0	10.0	17.0	17.0	10.0	10.0	17.0		11.0	11.0		11.0
Total Split (s)	22.0	22.0	67.0	67.0	22.0	22.0	67.0		31.0	31.0		31.0
Total Split (%)	18.3%	18.3%	55.8%	55.8%	18.3%	18.3%	55.8%		25.8%	25.8%		25.8%
Maximum Green (s)	15.0	15.0	60.0	60.0	15.0	15.0	60.0		25.0	25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0			0.0		
Total Lost Time (s)		7.0	7.0	7.0		7.0	7.0			6.0		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Recall Mode	None	None	Min	Min	None	None	Min		None	None		None
v/c Ratio		0.67	0.48	0.16		0.27	0.89			1.07		
Control Delay		66.7	15.6	12.9		57.8	34.2			120.8		
Queue Delay		0.0	0.0	0.0		0.0	0.0			0.0		
Total Delay		66.7	15.6	12.9		57.8	34.2			120.8		
Queue Length 50th (ft)		98	227	52		24	501			~244		
Queue Length 95th (ft)		165	295	92		56	611			#417		
Internal Link Dist (ft)			1617				1593			81		
Turn Bay Length (ft)		110		190		150						
Base Capacity (vph)		231	2131	897		232	1897			253		
Starvation Cap Reductn		0	0	0		0	0			0		
Spillback Cap Reductn		0	0	0		0	0			0		
Storage Cap Reductn		0	0	0		0	0			0		
Reduced v/c Ratio		0.57	0.47	0.16		0.14	0.81			1.07		

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 112.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A



Lane Group	SBT	SBR
Protected Phases	4	
Permitted Phases		
Detector Phase	4	
Switch Phase		
Minimum Initial (s)	5.0	
Minimum Split (s)	11.0	
Total Split (s)	31.0	
Total Split (%)	25.8%	
Maximum Green (s)	25.0	
Yellow Time (s)	4.0	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.0	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	None	
v/c Ratio	1.04	
Control Delay	107.1	
Queue Delay	0.0	
Total Delay	107.1	
Queue Length 50th (ft)	~291	
Queue Length 95th (ft)	#479	
Internal Link Dist (ft)	339	
Turn Bay Length (ft)		
Base Capacity (vph)	316	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	1.04	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (veh/h)	3	124	982	141	1	30	1455	34	65	126	72	49
Number		5	2	12		1	6	16	3	8	18	7
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1882	1881	1863		1890	1837	1890	1976	1938	1976	1938
Adj Flow Rate, veh/h		128	1012	145		31	1500	35	67	130	74	51
Adj No. of Lanes		1	2	1		1	2	0	0	1	0	0
Peak Hour Factor		0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		2	2	3		0	3	3	2	2	2	0
Cap, veh/h		158	2136	899		39	1792	42	97	163	82	78
Arrive On Green		0.09	0.57	0.57		0.02	0.50	0.50	0.23	0.23	0.23	0.23
Sat Flow, veh/h		1793	3763	1584		1800	3575	83	244	715	360	175
Grp Volume(v), veh/h		128	1012	145		31	770	765	271	0	0	330
Grp Sat Flow(s),veh/h/ln		1793	1881	1584		1800	1837	1822	1319	0	0	1558
Q Serve(g_s), s		7.7	17.4	4.8		1.9	39.3	39.5	0.0	0.0	0.0	0.5
Cycle Q Clear(g_c), s		7.7	17.4	4.8		1.9	39.3	39.5	22.3	0.0	0.0	22.8
Prop In Lane		1.00		1.00		1.00		0.05	0.25		0.27	0.15
Lane Grp Cap(c), veh/h		158	2136	899		39	921	913	341	0	0	393
V/C Ratio(X)		0.81	0.47	0.16		0.79	0.84	0.84	0.79	0.00	0.00	0.84
Avail Cap(c_a), veh/h		246	2136	899		247	1008	1000	343	0	0	394
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		48.9	14.0	11.2		53.2	23.4	23.5	40.3	0.0	0.0	41.1
Incr Delay (d2), s/veh		10.6	0.2	0.1		28.4	5.8	6.0	12.1	0.0	0.0	14.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		4.3	9.0	2.1		1.2	21.4	21.3	9.1	0.0	0.0	11.4
LnGrp Delay(d),s/veh		59.5	14.1	11.3		81.6	29.2	29.4	52.4	0.0	0.0	56.0
LnGrp LOS		E	B	B		F	C	C	D			E
Approach Vol, veh/h			1285				1566			271		
Approach Delay, s/veh			18.3				30.4			52.4		
Approach LOS			B				C			D		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.4	69.1		30.9	16.7	61.8		30.9
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	15.0	60.0		25.0	15.0	60.0		25.0
Max Q Clear Time (g_c+I1), s	3.9	19.4		24.8	9.7	41.5		24.3
Green Ext Time (p_c), s	0.0	26.2		0.1	0.2	13.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.1
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Volume (veh/h)	111	160
Number	4	14
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1913	1938
Adj Flow Rate, veh/h	114	165
Adj No. of Lanes	1	0
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	0	0
Cap, veh/h	137	177
Arrive On Green	0.23	0.23
Sat Flow, veh/h	604	779
Grp Volume(v), veh/h	0	0
Grp Sat Flow(s),veh/h/ln	0	0
Q Serve(g_s), s	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0
Prop In Lane		0.50
Lane Grp Cap(c), veh/h	0	0
V/C Ratio(X)	0.00	0.00
Avail Cap(c_a), veh/h	0	0
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0
LnGrp LOS		
Approach Vol, veh/h	330	
Approach Delay, s/veh	56.0	
Approach LOS	E	
Timer		

Two Way Analysis cannot be performed on Signalized Intersection.

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	128	2230	119	3	12	948	17	46	167	85	34	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	11	11	11	11	11	11	11	11
Grade (%)		-2%				1%			0%			-4%
Storage Length (ft)	110		190		150		0	0		0	0	
Storage Lanes	1		1		1		0	0		1	0	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.997				0.850		
Flt Protected	0.950				0.950				0.989			0.989
Satd. Flow (prot)	1588	3533	1447	0	1371	3341	0	0	1735	1561	0	1757
Flt Permitted	0.950				0.950				0.758			0.618
Satd. Flow (perm)	1588	3533	1447	0	1371	3341	0	0	1329	1561	0	1098
Right Turn on Red			No				Yes			No		
Satd. Flow (RTOR)						2						
Link Speed (mph)		40				40			30			30
Link Distance (ft)		1697				1673			161			419
Travel Time (s)		28.9				28.5			3.7			9.5
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	11%	5%	9%	33%	25%	9%	13%	0%	6%	0%	0%	7%
Adj. Flow (vph)	129	2253	120	3	12	958	17	46	169	86	34	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	129	2253	120	0	15	975	0	0	215	86	0	154
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		11				11			0			0
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.03	1.03	1.03	1.01	1.05	1.05	1.05	1.04	1.04	1.04	1.02	1.02
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	2	2	2	1	2	2		1	2	2	1	2
Detector Template				Left				Left			Left	
Leading Detector (ft)	83	83	83	20	83	83		20	83	83	20	83
Trailing Detector (ft)	-5	-5	-5	0	-5	-5		0	-5	-5	0	-5
Detector 1 Position(ft)	-5	-5	-5	0	-5	-5		0	-5	-5	0	-5
Detector 1 Size(ft)	40	40	40	20	40	40		20	40	40	20	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0	0.0	0.0	3.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0	0.0	0.0	4.0
Detector 2 Position(ft)	43	43	43		43	43			43	43		43
Detector 2 Size(ft)	40	40	40		40	40			40	40		40
Detector 2 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0	0.0		0.0	0.0			0.0	0.0		0.0
Turn Type	Prot	NA	Perm	Prot	Prot	NA		Perm	NA	Perm	Perm	NA

Lane Group	SBR
Lane Configurations	
Volume (vph)	192
Ideal Flow (vphpl)	1900
Lane Width (ft)	11
Grade (%)	
Storage Length (ft)	200
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1488
Flt Permitted	
Satd. Flow (perm)	1488
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.99
Heavy Vehicles (%)	7%
Adj. Flow (vph)	194
Shared Lane Traffic (%)	
Lane Group Flow (vph)	194
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.02
Turning Speed (mph)	9
Number of Detectors	2
Detector Template	
Leading Detector (ft)	83
Trailing Detector (ft)	-5
Detector 1 Position(ft)	-5
Detector 1 Size(ft)	40
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	43
Detector 2 Size(ft)	40
Detector 2 Type	Cl+Ex
Detector 2 Channel	
Detector 2 Extend (s)	0.0
Turn Type	Perm

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Protected Phases	5	2		1	1	6			8			4
Permitted Phases			2					8		8	4	
Detector Phase	5	2	2	1	1	6		8	8	8	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.0	17.0	17.0	12.0	12.0	17.0		11.0	11.0	11.0	11.0	11.0
Total Split (s)	24.0	75.0	75.0	12.0	12.0	63.0		23.0	23.0	23.0	23.0	23.0
Total Split (%)	21.8%	68.2%	68.2%	10.9%	10.9%	57.3%		20.9%	20.9%	20.9%	20.9%	20.9%
Maximum Green (s)	17.0	68.0	68.0	5.0	5.0	56.0		17.0	17.0	17.0	17.0	17.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0			0.0	0.0		0.0
Total Lost Time (s)	7.0	7.0	7.0		7.0	7.0			6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	None	Min		None	None	None	None	None
v/c Ratio	0.64	0.96	0.12		0.23	0.57			0.98	0.33		0.85
Control Delay	57.5	29.3	7.7		57.9	19.2			100.2	43.6		80.6
Queue Delay	0.0	0.0	0.0		0.0	0.0			0.0	0.0		0.0
Total Delay	57.5	29.3	7.7		57.9	19.2			100.2	43.6		80.6
Queue Length 50th (ft)	77	519	22		9	211			134	48		93
Queue Length 95th (ft)	148	#985	58		33	288			#317	105		#234
Internal Link Dist (ft)		1617				1593			81			339
Turn Bay Length (ft)	110		190		150							
Base Capacity (vph)	263	2344	960		66	1830			220	258		182
Starvation Cap Reductn	0	0	0		0	0			0	0		0
Spillback Cap Reductn	0	0	0		0	0			0	0		0
Storage Cap Reductn	0	0	0		0	0			0	0		0
Reduced v/c Ratio	0.49	0.96	0.13		0.23	0.53			0.98	0.33		0.85

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 102.8	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
* User Entered Value	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A

Lane Group	SBR
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	11.0
Total Split (s)	23.0
Total Split (%)	20.9%
Maximum Green (s)	17.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
v/c Ratio	0.79
Control Delay	65.5
Queue Delay	0.0
Total Delay	65.5
Queue Length 50th (ft)	116
Queue Length 95th (ft)	#262
Internal Link Dist (ft)	
Turn Bay Length (ft)	200
Base Capacity (vph)	246
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.79

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (veh/h)	128	2230	119	3	12	948	17	46	167	85	34	119
Number	5	2	12		1	6	16	3	8	18	7	4
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1729	1828	1761		1493	1733	1890	1900	1814	1900	1938	1838
Adj Flow Rate, veh/h	129	2253	120		12	958	17	46	169	86	34	120
Adj No. of Lanes	1	2	1		1	2	0	0	1	1	0	1
Peak Hour Factor	0.99	0.99	0.99		0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	11	5	9		25	9	9	6	6	0	7	7
Cap, veh/h	158	2351	962		20	1905	34	84	212	243	79	209
Arrive On Green	0.10	0.64	0.64		0.01	0.56	0.56	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1647	3655	1496		1422	3396	60	278	1406	1615	241	1387
Grp Volume(v), veh/h	129	2253	120		12	489	486	215	0	86	154	0
Grp Sat Flow(s),veh/h/ln	1647	1828	1496		1422	1733	1723	1684	0	1615	1628	0
Q Serve(g_s), s	8.0	59.7	3.2		0.9	17.9	17.9	3.9	0.0	5.0	0.0	0.0
Cycle Q Clear(g_c), s	8.0	59.7	3.2		0.9	17.9	17.9	12.9	0.0	5.0	8.9	0.0
Prop In Lane	1.00		1.00		1.00		0.03	0.21		1.00	0.22	
Lane Grp Cap(c), veh/h	158	2351	962		20	972	966	296	0	243	287	0
V/C Ratio(X)	0.81	0.96	0.12		0.60	0.50	0.50	0.73	0.00	0.35	0.54	0.00
Avail Cap(c_a), veh/h	269	2389	978		68	972	966	317	0	264	308	0
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.1	17.3	7.2		51.0	14.0	14.0	42.9	0.0	39.6	41.1	0.0
Incr Delay (d2), s/veh	9.7	10.4	0.1		25.4	0.4	0.4	7.6	0.0	0.9	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	33.1	1.3		0.5	8.7	8.6	6.7	0.0	2.3	4.3	0.0
LnGrp Delay(d),s/veh	55.8	27.6	7.3		76.4	14.4	14.4	50.5	0.0	40.5	42.7	0.0
LnGrp LOS	E	C	A		E	B	B	D		D	D	
Approach Vol, veh/h		2502				987			301			348
Approach Delay, s/veh		28.1				15.1			47.6			54.0
Approach LOS		C				B			D			D

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.5	73.9		21.7	17.0	65.4		21.7
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	5.0	68.0		17.0	17.0	56.0		17.0
Max Q Clear Time (g_c+I1), s	2.9	61.7		14.7	10.0	19.9		14.9
Green Ext Time (p_c), s	0.0	5.2		0.8	0.3	31.2		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Volume (veh/h)	192
Number	14
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1811
Adj Flow Rate, veh/h	194
Adj No. of Lanes	1
Peak Hour Factor	0.99
Percent Heavy Veh, %	7
Cap, veh/h	232
Arrive On Green	0.15
Sat Flow, veh/h	1540
Grp Volume(v), veh/h	194
Grp Sat Flow(s),veh/h/ln	1540
Q Serve(g_s), s	12.7
Cycle Q Clear(g_c), s	12.7
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	232
V/C Ratio(X)	0.84
Avail Cap(c_a), veh/h	252
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	42.9
Incr Delay (d2), s/veh	20.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	6.7
LnGrp Delay(d),s/veh	63.0
LnGrp LOS	E
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	8	155	1160	157	2	41	2209	30	55	140	53	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	12	11	11	11	11	11	11	11
Grade (%)			-2%				1%			0%		
Storage Length (ft)		110		190		150		0	0		0	0
Storage Lanes		1		1		1		0	0		1	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	*1.00	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.998				0.850	
Flt Protected		0.950				0.950				0.986		
Satd. Flow (prot)	0	1713	3602	1561	0	1736	3543	0	0	1798	1487	0
Flt Permitted		0.950				0.950				0.726		
Satd. Flow (perm)	0	1713	3602	1561	0	1736	3543	0	0	1324	1487	0
Right Turn on Red				No				Yes			No	
Satd. Flow (RTOR)							2					
Link Speed (mph)			40				40			30		
Link Distance (ft)			1697				1673			161		
Travel Time (s)			28.9				28.5			3.7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	3%	1%	0%	0%	3%	0%	0%	1%	5%	6%
Adj. Flow (vph)	8	160	1196	162	2	42	2277	31	57	144	55	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	168	1196	162	0	44	2308	0	0	201	55	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)			11				11			0		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	0.99	1.03	1.03	1.03	1.01	1.05	1.05	1.05	1.04	1.04	1.04	1.02
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Number of Detectors	1	2	2	2	1	2	2		1	2	2	1
Detector Template	Left				Left				Left			Left
Leading Detector (ft)	20	83	83	83	20	83	83		20	83	83	20
Trailing Detector (ft)	0	-5	-5	-5	0	-5	-5		0	-5	-5	0
Detector 1 Position(ft)	0	-5	-5	-5	0	-5	-5		0	-5	-5	0
Detector 1 Size(ft)	20	40	40	40	20	40	40		20	40	40	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0	0.0	0.0
Detector 2 Position(ft)		43	43	43		43	43			43	43	
Detector 2 Size(ft)		40	40	40		40	40			40	40	
Detector 2 Type		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA	Perm	Perm

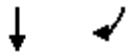
Lane Group	SBT	SBR
Lane Configurations		
Volume (vph)	108	174
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	11	11
Grade (%)	-4%	
Storage Length (ft)		200
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt		0.850
Flt Protected	0.993	
Satd. Flow (prot)	1798	1502
Flt Permitted	0.666	
Satd. Flow (perm)	1206	1502
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	30	
Link Distance (ft)	419	
Travel Time (s)	9.5	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	3%	6%
Adj. Flow (vph)	111	179
Shared Lane Traffic (%)		
Lane Group Flow (vph)	130	179
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	0	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.02	1.02
Turning Speed (mph)		9
Number of Detectors	2	2
Detector Template		
Leading Detector (ft)	83	83
Trailing Detector (ft)	-5	-5
Detector 1 Position(ft)	-5	-5
Detector 1 Size(ft)	40	40
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	3.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	4.0	0.0
Detector 2 Position(ft)	43	43
Detector 2 Size(ft)	40	40
Detector 2 Type	Cl+Ex	Cl+Ex
Detector 2 Channel		
Detector 2 Extend (s)	0.0	0.0
Turn Type	NA	Perm

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					8		8	4
Detector Phase	5	5	2	2	1	1	6		8	8	8	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0	5.0	5.0
Minimum Split (s)	12.0	12.0	17.0	17.0	12.0	12.0	17.0		11.0	11.0	11.0	11.0
Total Split (s)	22.0	22.0	90.0	90.0	16.0	16.0	84.0		24.0	24.0	24.0	24.0
Total Split (%)	16.9%	16.9%	69.2%	69.2%	12.3%	12.3%	64.6%		18.5%	18.5%	18.5%	18.5%
Maximum Green (s)	15.0	15.0	83.0	83.0	9.0	9.0	77.0		18.0	18.0	18.0	18.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Lost Time (s)		7.0	7.0	7.0		7.0	7.0			6.0	6.0	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	None	None	Min		None	None	None	None
v/c Ratio		0.87	0.50	0.16		0.42	1.10			1.09	0.27	
Control Delay		95.1	12.4	9.4		70.1	78.2			145.2	54.0	
Queue Delay		0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay		95.1	12.4	9.4		70.1	78.2			145.2	54.0	
Queue Length 50th (ft)		141	254	51		36	~1104			~191	42	
Queue Length 95th (ft)		#268	306	83		77	#1232			#351	85	
Internal Link Dist (ft)			1617				1593			81		
Turn Bay Length (ft)		110		190		150						
Base Capacity (vph)		198	2395	1038		120	2105			184	206	
Starvation Cap Reductn		0	0	0		0	0			0	0	
Spillback Cap Reductn		0	0	0		0	0			0	0	
Storage Cap Reductn		0	0	0		0	0			0	0	
Reduced v/c Ratio		0.85	0.50	0.16		0.37	1.10			1.09	0.27	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 129.6
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A



Lane Group	SBT	SBR
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	11.0	11.0
Total Split (s)	24.0	24.0
Total Split (%)	18.5%	18.5%
Maximum Green (s)	18.0	18.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
v/c Ratio	0.78	0.86
Control Delay	84.2	89.7
Queue Delay	0.0	0.0
Total Delay	84.2	89.7
Queue Length 50th (ft)	107	150
Queue Length 95th (ft)	#215	#284
Internal Link Dist (ft)	339	
Turn Bay Length (ft)		200
Base Capacity (vph)	167	208
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.78	0.86

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (veh/h)	8	155	1160	157	2	41	2209	30	55	140	53	18
Number		5	2	12		1	6	16	3	8	18	7
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1866	1863	1900		1890	1836	1890	1900	1886	1810	1938
Adj Flow Rate, veh/h		160	1196	162		42	2277	31	57	144	55	19
Adj No. of Lanes		1	2	1		1	2	0	0	1	1	0
Peak Hour Factor		0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		3	3	1		0	3	3	1	1	5	3
Cap, veh/h		186	2522	1093		55	2177	30	92	171	210	52
Arrive On Green		0.10	0.68	0.68		0.03	0.60	0.60	0.14	0.14	0.14	0.14
Sat Flow, veh/h		1777	3726	1615		1800	3615	49	409	1255	1538	147
Grp Volume(v), veh/h		160	1196	162		42	1154	1154	201	0	55	130
Grp Sat Flow(s),veh/h/ln		1777	1863	1615		1800	1836	1827	1665	0	1538	1757
Q Serve(g_s), s		11.3	19.5	4.6		3.0	77.0	77.0	6.8	0.0	4.1	0.0
Cycle Q Clear(g_c), s		11.3	19.5	4.6		3.0	77.0	77.0	15.2	0.0	4.1	8.4
Prop In Lane		1.00		1.00		1.00		0.03	0.28		1.00	0.15
Lane Grp Cap(c), veh/h		186	2522	1093		55	1106	1101	263	0	210	272
V/C Ratio(X)		0.86	0.47	0.15		0.77	1.04	1.05	0.76	0.00	0.26	0.48
Avail Cap(c_a), veh/h		208	2522	1093		127	1106	1101	271	0	217	280
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh		56.3	9.8	7.4		61.5	25.4	25.4	54.1	0.0	49.4	51.2
Incr Delay (d2), s/veh		26.6	0.1	0.1		20.0	39.1	40.7	11.8	0.0	0.7	1.3
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		6.9	10.0	2.0		1.8	50.7	51.0	7.8	0.0	1.8	4.4
LnGrp Delay(d),s/veh		82.9	10.0	7.5		81.5	64.5	66.1	66.0	0.0	50.1	52.5
LnGrp LOS		F	A	A		F	F	F	E		D	D
Approach Vol, veh/h			1518				2350			256		
Approach Delay, s/veh			17.4				65.6			62.5		
Approach LOS			B				E			E		

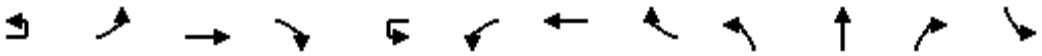
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	93.5		23.5	20.4	84.0		23.5
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	9.0	83.0		18.0	15.0	77.0		18.0
Max Q Clear Time (g_c+I1), s	5.0	21.5		16.4	13.3	79.0		17.2
Green Ext Time (p_c), s	0.0	53.1		0.5	0.1	0.0		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	49.0
HCM 2010 LOS	D

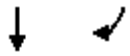
Notes

User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Volume (veh/h)	108	174
Number	4	14
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1874	1828
Adj Flow Rate, veh/h	111	179
Adj No. of Lanes	1	1
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	3	6
Cap, veh/h	220	212
Arrive On Green	0.14	0.14
Sat Flow, veh/h	1610	1554
Grp Volume(v), veh/h	0	179
Grp Sat Flow(s),veh/h/ln	0	1554
Q Serve(g_s), s	0.0	14.4
Cycle Q Clear(g_c), s	0.0	14.4
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	0	212
V/C Ratio(X)	0.00	0.84
Avail Cap(c_a), veh/h	0	219
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.00	1.00
Uniform Delay (d), s/veh	0.0	53.9
Incr Delay (d2), s/veh	0.0	24.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.6
LnGrp Delay(d),s/veh	0.0	78.2
LnGrp LOS		E
Approach Vol, veh/h	309	
Approach Delay, s/veh	67.4	
Approach LOS	E	
Timer		



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (vph)	3	124	982	141	1	30	1455	34	65	126	72	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	12	11	11	11	11	11	11	11
Grade (%)			-2%				1%			0%		
Storage Length (ft)		110		190		150		0	0		0	0
Storage Lanes		1		1		1		0	0		1	0
Taper Length (ft)		25				25			25			25
Lane Util. Factor	*1.00	1.00	*1.00	1.00	*1.00	1.00	*1.00	*1.00	1.00	1.00	1.00	1.00
Frt				0.850			0.997				0.850	
Flt Protected		0.950				0.950				0.983		
Satd. Flow (prot)	0	1729	3637	1531	0	1736	3540	0	0	1758	1561	0
Flt Permitted		0.950				0.950				0.718		
Satd. Flow (perm)	0	1729	3637	1531	0	1736	3540	0	0	1284	1561	0
Right Turn on Red				No				Yes			No	
Satd. Flow (RTOR)							3					
Link Speed (mph)			40				40			30		
Link Distance (ft)			1697				1673			161		
Travel Time (s)			28.9				28.5			3.7		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	2%	3%	0%	0%	3%	0%	4%	2%	0%	2%
Adj. Flow (vph)	3	128	1012	145	1	31	1500	35	67	130	74	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	131	1012	145	0	32	1535	0	0	197	74	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left
Median Width(ft)			11				11			0		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	0.99	1.03	1.03	1.03	1.01	1.05	1.05	1.05	1.04	1.04	1.04	1.02
Turning Speed (mph)	9	15		9	9	15		9	15		9	15
Number of Detectors	1	2	2	2	1	2	2		1	2	2	1
Detector Template	Left				Left				Left			Left
Leading Detector (ft)	20	83	83	83	20	83	83		20	83	83	20
Trailing Detector (ft)	0	-5	-5	-5	0	-5	-5		0	-5	-5	0
Detector 1 Position(ft)	0	-5	-5	-5	0	-5	-5		0	-5	-5	0
Detector 1 Size(ft)	20	40	40	40	20	40	40		20	40	40	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	3.0	3.0	0.0	2.0	3.0		0.0	3.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.0	0.0	0.0
Detector 2 Position(ft)		43	43	43		43	43			43	43	
Detector 2 Size(ft)		40	40	40		40	40			40	40	
Detector 2 Type		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA		Perm	NA	Perm	Perm



Lane Group	SBT	SBR
Lane Configurations		
Volume (vph)	111	160
Ideal Flow (vphpl)	1900	1900
Lane Width (ft)	11	11
Grade (%)	-4%	
Storage Length (ft)		200
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt		0.850
Flt Protected	0.985	
Satd. Flow (prot)	1834	1561
Flt Permitted	0.667	
Satd. Flow (perm)	1242	1561
Right Turn on Red		No
Satd. Flow (RTOR)		
Link Speed (mph)	30	
Link Distance (ft)	419	
Travel Time (s)	9.5	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	0%	2%
Adj. Flow (vph)	114	165
Shared Lane Traffic (%)		
Lane Group Flow (vph)	165	165
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	0	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.02	1.02
Turning Speed (mph)		9
Number of Detectors	2	2
Detector Template		
Leading Detector (ft)	83	83
Trailing Detector (ft)	-5	-5
Detector 1 Position(ft)	-5	-5
Detector 1 Size(ft)	40	40
Detector 1 Type	Cl+Ex	Cl+Ex
Detector 1 Channel		
Detector 1 Extend (s)	3.0	0.0
Detector 1 Queue (s)	0.0	0.0
Detector 1 Delay (s)	4.0	0.0
Detector 2 Position(ft)	43	43
Detector 2 Size(ft)	40	40
Detector 2 Type	Cl+Ex	Cl+Ex
Detector 2 Channel		
Detector 2 Extend (s)	0.0	0.0
Turn Type	NA	Perm

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases				2					8		8	4
Detector Phase	5	5	2	2	1	1	6		8	8	8	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0		5.0	5.0	5.0	5.0
Minimum Split (s)	12.0	12.0	17.0	17.0	12.0	12.0	17.0		11.0	11.0	11.0	11.0
Total Split (s)	19.0	19.0	67.0	67.0	13.0	13.0	61.0		30.0	30.0	30.0	30.0
Total Split (%)	17.3%	17.3%	60.9%	60.9%	11.8%	11.8%	55.5%		27.3%	27.3%	27.3%	27.3%
Maximum Green (s)	12.0	12.0	60.0	60.0	6.0	6.0	54.0		24.0	24.0	24.0	24.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Lost Time (s)		7.0	7.0	7.0		7.0	7.0			6.0	6.0	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	None	None	Min		None	None	None	None
v/c Ratio		0.68	0.46	0.16		0.31	0.88			0.79	0.25	
Control Delay		64.2	13.4	11.5		57.4	30.7			63.0	38.0	
Queue Delay		0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay		64.2	13.4	11.5		57.4	30.7			63.0	38.0	
Queue Length 50th (ft)		88	201	46		22	445			129	43	
Queue Length 95th (ft)		#178	267	84		55	576			#230	85	
Internal Link Dist (ft)			1617				1593			81		
Turn Bay Length (ft)		110		190		150						
Base Capacity (vph)		212	2281	960		106	1955			315	382	
Starvation Cap Reductn		0	0	0		0	0			0	0	
Spillback Cap Reductn		0	0	0		0	0			0	0	
Storage Cap Reductn		0	0	0		0	0			0	0	
Reduced v/c Ratio		0.62	0.44	0.15		0.30	0.79			0.63	0.19	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 99.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Croton Dam Rd & NYS Route 9A

Lane Group	SBT	SBR
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	11.0	11.0
Total Split (s)	30.0	30.0
Total Split (%)	27.3%	27.3%
Maximum Green (s)	24.0	24.0
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Recall Mode	None	None
v/c Ratio	0.69	0.55
Control Delay	54.5	45.0
Queue Delay	0.0	0.0
Total Delay	54.5	45.0
Queue Length 50th (ft)	106	103
Queue Length 95th (ft)	180	171
Internal Link Dist (ft)	339	
Turn Bay Length (ft)		200
Base Capacity (vph)	304	382
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.54	0.43

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Volume (veh/h)	3	124	982	141	1	30	1455	34	65	126	72	49
Number		5	2	12		1	6	16	3	8	18	7
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1882	1881	1863		1890	1837	1890	1900	1850	1900	1938
Adj Flow Rate, veh/h		128	1012	145		31	1500	35	67	130	74	51
Adj No. of Lanes		1	2	1		1	2	0	0	1	1	0
Peak Hour Factor		0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		2	2	3		0	3	3	2	2	0	0
Cap, veh/h		161	2227	937		53	1901	44	128	190	265	115
Arrive On Green		0.09	0.59	0.59		0.03	0.53	0.53	0.16	0.16	0.16	0.16
Sat Flow, veh/h		1793	3763	1584		1800	3575	83	465	1159	1615	395
Grp Volume(v), veh/h		128	1012	145		31	770	765	197	0	74	165
Grp Sat Flow(s),veh/h/ln		1793	1881	1584		1800	1837	1822	1624	0	1615	1683
Q Serve(g_s), s		6.5	14.0	3.8		1.6	31.4	31.6	2.4	0.0	3.7	0.0
Cycle Q Clear(g_c), s		6.5	14.0	3.8		1.6	31.4	31.6	10.7	0.0	3.7	8.3
Prop In Lane		1.00		1.00		1.00		0.05	0.34		1.00	0.31
Lane Grp Cap(c), veh/h		161	2227	937		53	977	969	318	0	265	326
V/C Ratio(X)		0.80	0.45	0.15		0.58	0.79	0.79	0.62	0.00	0.28	0.51
Avail Cap(c_a), veh/h		231	2425	1021		116	1065	1057	468	0	416	484
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh		41.6	10.6	8.5		44.6	17.6	17.6	36.9	0.0	34.1	35.8
Incr Delay (d2), s/veh		11.7	0.1	0.1		9.6	3.7	3.8	2.0	0.0	0.6	1.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		3.8	7.2	1.7		0.9	16.8	16.8	5.0	0.0	1.7	4.1
LnGrp Delay(d),s/veh		53.3	10.8	8.6		54.2	21.3	21.4	38.9	0.0	34.7	37.0
LnGrp LOS		D	B	A		D	C	C	D		C	D
Approach Vol, veh/h			1285				1566			271		
Approach Delay, s/veh			14.8				22.0			37.7		
Approach LOS			B				C			D		

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.8	62.1		21.2	15.3	56.5		21.2
Change Period (Y+Rc), s	7.0	7.0		6.0	7.0	7.0		6.0
Max Green Setting (Gmax), s	6.0	60.0		24.0	12.0	54.0		24.0
Max Q Clear Time (g_c+I1), s	3.6	16.0		10.9	8.5	33.6		12.7
Green Ext Time (p_c), s	0.0	27.6		2.8	0.1	15.9		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Volume (veh/h)	111	160
Number	4	14
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1926	1900
Adj Flow Rate, veh/h	114	165
Adj No. of Lanes	1	1
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	0	2
Cap, veh/h	211	265
Arrive On Green	0.16	0.16
Sat Flow, veh/h	1288	1615
Grp Volume(v), veh/h	0	165
Grp Sat Flow(s),veh/h/ln	0	1615
Q Serve(g_s), s	0.0	8.9
Cycle Q Clear(g_c), s	0.0	8.9
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	0	265
V/C Ratio(X)	0.00	0.62
Avail Cap(c_a), veh/h	0	416
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	0.00	1.00
Uniform Delay (d), s/veh	0.0	36.3
Incr Delay (d2), s/veh	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1
LnGrp Delay(d),s/veh	0.0	38.7
LnGrp LOS		D
Approach Vol, veh/h	330	
Approach Delay, s/veh	37.9	
Approach LOS	D	
Timer		

Appendix E
Agreement between the OUFSD and the Project Sponsor

GLENCO GROUP

October 10, 2016

Ms. Ileana Ortiz
District Clerk
Ossining Union Free School District
400 Executive Boulevard
Ossining, NY 10562

Re: River Knoll – Revised Agreement Between the Ossining Union Free School District and Glenco Group, LLC

Dear Ileana,

I enclosed one copy of the fully executed Agreement between the School and Glenco. I've retained the second original for my records. Many thanks for facilitating this and we look forward to working with you going forward!

Sincerely,

Glen Vetromile

670 White Plains Road, Suite 201, Scarsdale, NY 10583
glen@glencogroupny.com 917-589-5550

OSSINING UNION FREE SCHOOL DISTRICT

400 Executive Blvd. · Ossining, New York 10562-4599
Tel: (914) 941-7700 ▪ Fax: (914) 941-2794
www.OssiningUFSD.org

October 5, 2016

Mr. Glen Vetromile
Glenco Group LLC
670 White Plains Road
Scarsdale, NY 10583

Re: River Knoll - Revised Agreement Between the Ossining Union Free School District and Glenco Group, LLC

Dear Mr. Vetromile,

Enclosed for your signature please find **two (2) original** revised Agreements between the Ossining Union Free School District and Glenco Group, LLC. Both originals have been signed by our Board President.

Please sign both copies, retain one for your records and mail one fully executed original to my attention in the self-addressed, post-paid envelope enclosed for your convenience.

Thank you!

Sincerely,

Ileana Ortiz
District Clerk

AGREEMENT BY AND BETWEEN
OSSINING UNION FREE SCHOOL DISTRICT
AND GLENCO GROUP, LLC

This **AGREEMENT** made as of September 29, 2016, by and between the **OSSINING UNION FREE SCHOOL DISTRICT** (the "School District" or "District"), located at 400 Executive Blvd, Ossining, New York 10562, and **GLENCO GROUP, LLC** (hereinafter referred to interchangeably as the "Donor") located at 670 White Plains Road, Scarsdale, New York 10583.

WHEREAS, the Donor is the Contract-Vendee of certain real property (the "Premises") comprising approximately 17.9 acres, of which 16.65 acres are within the Town of Ossining and 1.24 acres are within the Village of Ossining, which Premises are commonly known as Stony Lodge Hospital, 40 Croton Dam Road, Ossining, New York; and

WHEREAS, on December 7, 2015, the Donor submitted to the Town Board of the Town of Ossining a Petition and an Environmental Assessment Form ("EAF") in accordance with the New York State Environmental Quality Review Act (Article 8 of the New York State Environmental Conservation Law and the rules and regulations promulgated thereunder at 6 NYCRR, Part 617) (collectively "SEQRA") together with conceptual Site Plans and architectural details (collectively the "Donor's Application") requesting the Amendment of the Zoning Ordinance of the Town of Ossining to permit the redevelopment of the Premises as a multi-family development with 169 market-rate rental apartment units, 19 affordable rental apartment units and appurtenant parking and amenities substantially as detailed in Donor's Application (collectively the "Project")[1]; and

WHEREAS, the Project will include families with children; and

WHEREAS, the EAF includes, among other things, analyses regarding "School Generation Rates for Nearby Developments" and "Comparison of School-Age Multipliers and Estimated Students;" and

WHEREAS, the School District is aware that the Town of Ossining has yet to review or act upon the Donor's Application, which remains subject to the Town of Ossining's consideration in accordance with the Code of the Town of Ossining (the "Town Code") and SEQRA, among

---

[1]A detailed description of the Project is set forth in the Petition and EAF, which incorporate the following plans by reference (copies of which Petition and EAF, including the plans, the School District has received and considered):

a. Plans prepared by Minno & Wasko, Architects and Planners, entitled "River Knoll, Town of Ossining, Westchester County, New York," dated October 2, 2015, consisting of the following sheets:
   i. Concept Site Plan, including "Development Program";
   ii. Concept Site Plan Overlay showing existing Stony Lodge Hospital buildings;

b. Plans prepared by John Meyer Consulting, entitled "River Knoll, 40 Croton Dam Road, Town of Ossining, New York" dated October 2, 2015, consisting of the following sheets:
   i. "Site Existing Conditions Plan" (SP-1);
   ii. "Conceptual Site Layout Plan" (SP-2); and
   iii. "Conceptual Site Grading Plan" (SP-3).

other things; and

WHEREAS, based upon the information set forth in the Donor's Application, including but not limited to the EAF, the School District has independently assessed the likely numbers of school children to be generated by this Project; and

WHEREAS, based thereon the School District has determined that the Project will generate school-age students anticipated to attend public school within the School District and that there will be a financial impact to the School District as a result thereof; and

WHEREAS, the School District recognizes that if and when the Project were to be constructed and occupied, real estate taxes payable to the School District would annually pay the costs of servicing the students to be generated by the Project; and

WHEREAS, despite the anticipated generation of increased real estate taxes that will assist in managing the budgetary needs of the District on an annual basis, there would be a direct financial impact to the School District by reason of the Project; and

WHEREAS, based upon its independent assessment of the Project, the School District has determined that it would require a mitigation payment of Three Hundred Fifty Thousand Dollars ($350,000.00) to mitigate the impact of the Project to the District to the maximum extent practicable and the funds shall be used to address capital needs in the District; and

WHEREAS, based upon discussions between the District and Donor, the Donor voluntarily has agreed to donate to the School District the sum of Three Hundred Fifty Thousand Dollars ($350,000.00) (the "District Donation"), which District Donation would only be due if and when the Town of Ossining determined to approve Project substantially as described in the Donor's Application and expressly including 169 market-rate rental apartments and 19 rental affordable housing units (following compliance with the requirements of the Town Code and SEQRA, among other things); and

WHEREAS, by entering into this Agreement the School District and the Donor hereby desire to confirm their agreement regarding the above-referenced District Donation.

NOW THEREFORE, under this Agreement, the School District accepts the donation from the Donor, as set forth below:

1. The above-referenced WHEREAS clauses are incorporated herein by reference as if they were repeated verbatim at this Paragraph 1.
2. Subject to the Town of Ossining (and any other governmental entity or regulated entity having jurisdiction over the Project) approving the Donor's Application in order to permit the redevelopment of the Premises as a multi-family development with 169 market-rate rental apartment units, 19 affordable rental apartment units and appurtenant parking and amenities substantially as detailed therein Donor's Application, as well as any and all approvals necessary to connect and complete installation and/or improvements required to facilitate the Project such as utilities, roadways, and environmental permits (collectively the "Project Approvals"), Donor shall pay the District Donation in accordance with the following payment schedule:
    a. Assuming the Project Approvals, on or before December 31, 2017 the sum of $175,000 for general use by the School District;

b. Assuming the Project Approvals, on or before December 31, 2018 the sum of $175,000 for general use by the School District.

3. The School District hereby agrees that the sum comprising the District Donation is a sufficient, adequate and appropriate mitigation payment to comprise full and complete offset of any and all impacts to the District arising out of, or in connection with the Project.

4. In order to become effective, this Agreement shall be reviewed, considered and approved by the adoption by the School District of a written Resolution at a duly noticed public meeting conducted in the regular course of its business and the filing of such determination or decision by the School District all in accordance with applicable laws, rules and regulations established by the State of New York for the School District.

5. This Agreement shall not become binding upon execution hereof by an authorized officer of each party.

6. Notwithstanding the foregoing, Donor shall have no obligation to tender the District Donation unless and until the Project Approvals have been issued and, if the Project Approvals are appealed, then the timing for the payment of any portion of the District Donation shall await the sustaining the Project Approvals by a final, non-appealable order of a court of competent jurisdiction.

7. This Agreement constitutes the full and complete understanding between the School District and Donor and supersedes all prior written and oral agreements, commitments or understandings with respect to the donation to be made by Donor.

8. The provisions of this Agreement may only be waived, modified, or changed by an amendment in writing signed by both parties.

9. No failure by either party to insist upon any performance of the other party's obligation under this Agreement shall constitute a waiver of such obligation or a waiver of future obligations under this Agreement.

10. This Agreement shall be governed in all respects by the laws of the State of New York.

IN WITNESS WHEREOF, the undersigned hereby acknowledge that they have read and fully understand the foregoing Agreement and, further, that they agree to each of the terms and conditions contained herein and this Agreement is executed by its duly authorized officer.

GLENCO GROUP, LLC		**OSSINING UNION FREE SCHOOL DISTRICT**	
By:		By:	
Dated:	10/10/16	Dated:	9/29/16

Appendix F
Phase I ESA

SCHOOR DEPALMA
Engineers and Consultants

060075501

ENVIRONMENTAL SITE ASSESSMENT

Of:

Stony Lodge Hospital
40 Croton Dam Road
Block 13, Lot 2
Town of Ossining
Westchester County, New York

For:

K. Hovnanian Companies Northeast, Inc.
110 Fieldcrest Avenue
Edison, NJ 08818

Prepared By:

SCHOOR DEPALMA
Justin Corporate Center
200 State Highway Nine
P.O. Box 900
Manalapan, New Jersey 07726-0900

March 2006

Neil Jiorle
Vice President

Steven Maravelias

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1.0 Introduction

Schoor DePalma Inc. (SD) has performed a Phase I Environmental Site Assessment (ESA) of Stony Lodge Hospital in the Town of Ossining, Westchester County, New York (herein referred to as the "subject property" or "property"). SD prepared this ESA for the exclusive benefit and use of K. Hovnanian Companies Northeast, Inc. Section 5.0 contains a summary of the findings and conclusions of this ESA.

SD derived the findings presented within this ESA report from the following sources: records review of reasonably ascertainable and practically reviewable sources, site reconnaissance (a visit to the property), and interviews with knowledgeable parties. Any exceptions to (or deletions from) this practice are described in Sections 1.2, 1.3, and 6.0 of this report.

1.1 Purpose

SD conducted this ESA at the request of K. Hovnanain Companies Northeast, Inc. The purpose of this ESA is to identify, to the extent feasible pursuant to this process, recognized environmental conditions (RECs) in connection with the subject property.

RECs are defined by the ASTM International (ASTM) as "... the presence or likely presence of any hazardous substances or petroleum products on the property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into the structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

1.2 Methodology Used and Limiting Conditions

SD performed this ESA pursuant to the guidelines specified in the Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E 1527-00, published by the ASTM.

1.3 Limitations and Exceptions of this Assessment

The RECs identified in this ESA report are limited to those SD identified in the records reviews, site reconnaissance, and interviews that are documented within. This ESA did not include an inspection of subsurface conditions, or any intrusive testing or sampling (e.g., air, water, soil and building materials).

2.0 Subject Area Description

2.1 Location and Legal Description

The subject property lies along 40 Croton Dam Road in the Town of Ossining, Westchester County, New York. The property is designated as Block 13, Lot 2 by the Town of Ossining for tax purposes. Figure 1 (Appendix A) displays the approximate location of the property on a portion of the USGS 7.5 minute Quadrangle. Figure 2 (Appendix A) displays the boundaries of the property on the Town of Ossining Tax Map. Figure 3 (Appendix A) displays the Aerial Location Map of the subject property.

2.2 Subject Property and Vicinity Characteristics

The subject property is approximately 16.20 acres in size and consists of Stony Lodge Hospital and several associated buildings.

The majority of the surrounding subject area consists of residential and commercial development, with scattered undeveloped woodlands. Residential structures occupy adjacent properties.

2.3 Current and Past Uses of the Subject Property

The subject property currently and historically consisted of a psychiatric hospital and several associated buildings. See Section 4 for details pertaining to subject property characteristics and current use.

3.0 Records Review

3.1 Standard Environmental Record Sources

The ASTM Phase I ESA process includes the review of select Federal and State environmental record sources in order to evaluate the potential existence of RECs either on the subject property or within specified distances from the property. ASTM has established search radii for each of these standard environmental record sources. Table 1 is a list of the Federal and State environmental record sources that SD reviewed as part of this ESA. Also included in Table 1 are the approximate minimum search distances for each record source.

Table 1 – Standard Environmental Record Sources

Source	Approximate Minimum Search Distance
USEPA National Priorities List (NPL) Agency Data Release Date: 7/01/05	1.00 miles
USEPA Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List Agency Data Release Date: 9/19/05	0.5 miles
USEPA CERCLIS No Further Remedial Action Planned List Agency Data Release Date: 8/22/05	Subject Property and Adjoining Properties
USEPA Resource Conservation and Recovery Information System (RCRIS) CORRACTS Treatment, Storage, and Disposal (TSD) Facilities (i.e. TSD Facilities under corrective action by RCRA) List Agency Data Release Date: 10/13/05	1.00 miles
USEPA non-CORRACTS RCRIS TSD List Agency Data Release Date: 10/14/05	0.50 miles
USEPA RCRIS Large and Small Generators List Agency Data Release Date: 10/14/05	0.25 mile
USEPA Emergency Response Notification System (ERNS) Agency Data Release Date: 12/31/04	Subject Property and Adjoining Properties
Inactive Hazardous Waste Disposal Sites in New York State (SHWS) database Agency Data Release Date: 8/22/05	1.00 miles
Petroleum Bulk Storage (PBS) Database Agency Data Release Date: 1/01/02	Subject Property and Adjoining Properties
Spills Information Database (LTANKS) database Agency Data Release Date: 10/06/05	0.50 miles
Listing of Leaking Storage Tanks (HIST LTANKS) Agency Data Release Date: 1/01/02	0.50 miles

SD performed this records review utilizing a computer database search report (Appendix B) prepared by Environmental Data Resources, Inc. (EDR). The star on the Topographic Map, Overview Map, and Detail Map of the database report marks the approximate location of the subject property. This report keys the surrounding sites on the ASTM-specified databases to the inclusive Overview Map and Detail Map. SD notes that some of the sites may be listed in more than one (1) database. Further, EDR may have been unable to plot certain sites due to incomplete information, resulting in a list of "unplottable" sites.

The subject property was identified in the EDR database search report.

1. Stony Lodge Hospital, Inc.
Croton Dam Road
Ossining, New York

The EDR report states that this site is listed in the Aboveground Storage Tank (AST) and Underground Storage Tank (UST) databases. According to the information provided by EDR the site was issued Petroleum Bulk Storage# 3-507024. Three (3) 275 gallon ASTs containing #2 fuel oil were administratively closed in 2001. One (1) 275 gallon diesel AST was administratively closed in 2001. Additionally, three (3) 275 gallon ASTs remain in service. No leaks or spills were reported. In addition, the subject property is listed in the UST database. According to the information provided by EDR, One (1) 1,500, one (1) 3,000, and one (1) 2,000 gallon #2 fuel oil USTs were closed in place. Two (2) 550 gallon and one (1) 1,000 gallon USTs were administratively closed in 2001. Additionally, two (2) 550 gallon, three (3) 1,800 gallon and one (1) 1,000 gallon #2 fuel oil USTs remain in service.

The EDR report lists nineteen (19) separate sites within ASTM search distances; several of these sites were reported in one or more databases. All nineteen (19) sites have been eliminated from consideration as potential environmental threats to the subject property based on their topographic position relative to the subject property, and/or the status of the associated listing. According to information provided in the EDR report, there are no surrounding sites located at equal or higher elevation or adjacent to the subject property.

The EDR report listed thirty nine (39) "unplottable" or "orphan" sites, which, due to insufficient location information, could not be mapped. SD was unable to determine the location of the orphan sites with respect to the subject property based on the information provided in the EDR report. SD did not observe any of the orphan sites adjacent to the subject property during our site reconnaissance.

3.2 Additional Environmental Record Sources

Pursuant to the Freedom of Information Act (FOIA) and the Open Public Records Act (OPRA), SD submitted information requests for the subject property to the following agencies on March 9, 2006:

- Unites States Environmental Protection Agency (USEPA);
- New York State Department of Environmental Conservation (NYSDEC) Office of the Records Custodian;
- County of Westchester
- Town of Ossining

Copies of all information requests and any pertinent information obtained as a result of each request are included in Appendix C.

SD received a letter from the USEPA dated March 16, 2006 indicating receipt of the request. SD had not received any information from the USEPA at the time this report was prepared. In the event that USEPA transmits any information of environmental significance it will be forwarded to the client upon receipt.

SD received a letter from the NYSDEC indicating that no information was available regarding the subject property.

SD had not received any information from the County of Westchester at the time this report was prepared. In the event that The County of Westchester transmits any information of environmental significance it will be forwarded to the client upon receipt.

SD had not received any information from the Town of Ossining at the time this report was prepared. In the event that The Town of Ossining transmits any information of environmental significance it will be forwarded to the client upon receipt.

3.3 Standard Historical Sources

ASTM E 1527 provides eight (8) standard sources from which the history of the subject property/area may be established. These sources include the following:

1. Aerial Photographs;
2. Fire Insurance Maps;
3. Property Tax Files;
4. Recorded Land Title Records;
5. USGS 7.5 Minute Topographic Maps;
6. Local Street Directories;
7. Building/Engineering Department Records; and
8. Zoning/Land Use Records

The following subsections document SD's research of these Standard Historical Sources.

3.3.1 Aerial Photographs

SD reviewed a series of historical aerial photographs provided by EDR depicting site conditions in 1953, 1964, 1974, 1989 and 1994. Copies of historical aerial photographs obtained from EDR are provided in Appendix D. In addition, SD prepared a site map utilizing "New York State Interactive Mapping Gateway" Color Infrared Digital Imagery depicting site conditions in 2002 (http://www.nysgis.state.ny.us/gateway/mg/) (Figure 3, Appendix A). The following bulleted items provide SD's interpretation of key highlights presented on these aerial photographs.

- 1953 (Black and White, 1"= 750') – The subject property is observed along Croton Dam Road. Improved roadways are located on the subject property. Approximately seven buildings seem apparent on the subject property. Residential developments are located in the vicinity of the subject property. A pool is located in the southwest portion of the subject property. The northwest and eastern portions of the site are vacant land.

- 1964 (Black and White, 1"= 750') – The subject property is observed along Croton Dam Road. Improved roadways are located on the subject property. Approximately seven buildings seem apparent on the subject property. Additional residential developments are located in the vicinity of the subject property. A pool is located in the southwest portion of the subject property. The northwest and eastern portions of the site are vacant land.

- 1974 (Black and White, 1"=750') – No significant changes are observed to the subject from the previous aerial photograph. A majority of the vicinity appears wooded.

- 1989 (Black and White, 1"= 833') – Assessment of this aerial is not possible due to poor photographic quality.

- 1994 (Black and White, 1"= 833') – Assessment of this aerial is not possible due to poor photographic quality.

- 2002 (Color, 1"=400') – The subject property is observed along Croton Dam Road. Stony Brook Hospital and several other associated buildings are located on the subject property. It appears as though eight (8) buildings are located on the subject property, with some smaller storage sheds located in the southwest corner of the subject property. Residential developments are located in the vicinity of the subject property. A baseball field is located to the northeast of the subject property.

3.3.2 Fire Insurance Maps

SD researched the availability of Sanborn Fire Insurance Maps (Sanborn Maps) for the subject area with EDR. Sanborn Map coverage was available for the subject area in 1931, 1942, 1949, and 1971. Appendix E contains a copy of the Sanborn Map search confirmation. The following bulleted items provide SD's interpretation of key highlights presented on these Sanborn Maps.

- 1931 (Black and White, 1"=120') – The subject property is observed north of Pershing Avenue. The majority subject property is observed as vacant land. Several residential properties are observed surrounding the subject property to the south and east.

- 1942 (Black and White, 1"=120') – The subject property is observed along Croton Dam Road (Dale Avenue). The subject property is owned by Berdarn Realty Company Inc. Stony Lodge is located on the subject property with a circular roadway around the structure. Several unidentified structures are located within the subject property.

- 1949 (Black and White, 1"=120') – This Sanborn does not show a detailed view of the property. Additional residential development is observed surrounding the subject property.

- 1971 (Black and White, 1"=120') – This Sanborn does not show a detailed view of the property. Additional residential development is observed surrounding the subject property.

3.3.3 Property Tax Files

Review of property records provided by Real Quest indicates that the subject property is comprised of lot 2.

The following tables provide a summary of ownership history provided by Real Quest for parcels that comprised the subject property. Copies of property records are provided in Appendix C.

Table 2 - Property Ownership Information –Lot 2		
Grantor	Grantee	Date
SMA Realty Corp	Stony Lodge Hospital	May 1989

3.3.4 Recorded Land Title Records

See Section 3.4.3 for information pertaining to subject property ownership history.

3.3.5 USGS 7.5 Minute Topographic Map(s)

SD obtained four (4) historical topographic maps of the subject property from EDR. Copies of the historical topographic maps are included in Appendix F. Table 4 provides a summary of these topographic maps.

Table 4 – Summary of Topographic Maps			
Date	Quad Map	Scale	Series
1902	Tarrytown	1:62,500	15 Minute
1943	Ossining	1:31,680	7.5 Minute
1967	Ossining	1:24,000	7.5 Minute
1967-1979*	Ossining	1:24,000	7.5 Minute
* Photo Revised			

The following bulleted items provide SD's interpretation of key highlights presented on these historical topographic maps.

- 1902 – The subject property is observed east of the Hudson River. One (1) structure is observed on the subject property. A small creek is observed running on the subject property along the southeastern border. Several structures are observed in the vicinity of the subject property. The Central and Hudson River Railroad is located to the east of the subject property.

- 1947– A small improved circular road is located on the subject property. A total of four structures are apparent on the subject property. Significant development is observed to the south and west of the subject property. Saint Augustine Cemetery is observed to the west of the property.

- 1967- A small improved circular road is located on the subject property. A total of six structures are now apparent on the subject property. Croton Dam Road is located to the west of the subject property. Significant development is observed to the south and west of the subject property. Saint Augustine Cemetery is observed to the west of the property. Veterans Memorial Park is located to the east.

- 1967-1979- A small improved circular road is located on the subject property. A total of seven structures are now apparent on the subject property. Croton Dam Road is located to the west of the subject property. Saint Augustine Cemetery is observed to the west of the property. Veterans Memorial Park is located to the east.

3.3.6 Local Street Directories/MacRae's Industrial Directories

SD requested a search of City Directory files from EDR for the address of 40 Croton Dam Road on March 9, 2006. The City Directory Search Report indicated that the subject property address was not listed within the City Directories database. 22, 24 Croton Dam Road was listed as residences in 1970, 1975, 1980, 1985, 1990, 1995, 2000, and 2005. Additionally, VS Construction Corp. was listed in the City Directory at 37 Croton Dam Road. Conte Landscaping is listed at 45 Croton Dam Road, while Megabrokers realty is listed at 49 Croton Dam Road. SD did not obtain a MacRae's Industrial Directory Report for the subject property because none of the other historic record sources indicated development for an industrial use, and it is unlikely that such a search report would provide any pertinent information with respect to the subject property. Copies of the City Directory Search Report are provided in Appendix G.

3.3.7 Other Historical Sources

Stony Lodge Hospital, Inc. provided Documents

Stony Lodge Hospital provided several documents regarding the onsite monitoring well, and quarterly sampling results for the well. These documents are included in Appendix C of this report.

The NYSDEC document signed by John O'Mara indicates that one well was to be placed downgradient from the USTs that were closed in place. Three different sampling events were performed in February, July and November of 1993. February and November results were non-detect (N/D) for all parameters, while July results indicated an elevated concentration of toluene [40.3 parts per billion (ppb)], benzene (2.8 ppb), and xylene (1.8 ppb).

4.0 Site Inspection

SD conducted the site inspection for this ESA on March 14, 2006. John Parykasz, the building superintendent for Stony Lodge Hospital, accompanied SD for the majority of the site inspection. The following subsections provide a summary of the on site conditions that are pertinent to this ESA. Site inspection photographs are included in Appendix H of this report.

4.1 Improvements and Other Features

The subject property was accessed from Croton Dam Road in the western portion of the site. Eight (8) buildings a garage and several small storage sheds are located on the subject property. No natural gas is used anywhere on the property. Several storm sewer catch basins are located throughout the property along the improved driveways. The buildings are serviced by sanitary sewer and do not utilize a septic system. The following paragraphs detail the feature of the buildings:

Administration Building

This two-story building contains a pharmacy and office space. The building is located in the southern portion of the subject property. One (1) 550 gallon UST containing #2 heating oil is located in the vicinity of the building, which fuels the furnace located in the boiler room.

Maintenance Building

This building is located in the southeastern portion of the subject property contains maintenance supplies and an upstairs sleeping area for the workers. Two (2)-275 gallon ASTs are located in the vicinity of the building. One of the ASTs is staged over soil and contains #2 heating oil which is used to fuel the furnace, while the other is staged on concrete and contains diesel fuel used to fuel machines and lawn care equipment. Several cabinets were located on the ground floor of this building that stored paints, supplies, and various maintenance equipment. Several empty propane cylinders were also located in the vicinity of this building.

West Lodge

This two story building contains office space and is utilized for the storage of office supplies. The master MSDS book is located in this building. The building is located in the southern portion of the subject property. One (1) 550 gallon UST, containing #2 heating oil is located in the vicinity of the building, which is used to fuel the furnace located in the boiler room. Propane is used for hot water.

Garage

This one story building contains lawn care machinery and a small tractor. The building is located in the southern portion of the subject property. The garage has a concrete floor which was observed to be of sound integrity. The garage is serviced by electric.

South Cottage

This two story building contains office space. The building is located in the southern portion of the subject property. One (1) 1,000 gallon UST, containing #2 heating oil is located in the vicinity of the building. Propane is used for hot water.

East Lodge

This building has the capacity to hold sixteen (16) patients. A propane tank is used for this building's emergency generator, while a 2,000 gallon UST, containing #2 heating oil is used to fuel the furnace. One approximately 2,000 gallon #2 heating oil UST was abandoned in place near this building.

North Lodge

This building has the capacity to hold twenty-four (24) patients and eight adult units, which are not currently in use. A propane tank is used for this buildings generator, while a 2,000 gallon UST containing #2 heating oil is used to fuel the furnace. One (1) approximately 2,000 gallon #2 heating oil UST was abandoned in place near this building.

Main Building

This building has the capacity to hold thirteen (13) patients. A propane tank is used for this buildings generator, while a 2,000 gallon UST containing #2 heating oil is used to fuel the furnace. One (1) approximately 2,000 gallon #2 heating oil UST was abandoned in place near this building.

Recreation Building

This building contains a laundry room, an art room, some offices, and one small storage room. The boiler room contains one (1)-275 gallon #2 heating oil AST. This building also has 8 propane tanks associated with it, which are located behind the building.

Sheds

Several small sheds and old pool storage structures are located in the southwestern portion of the property. The sheds were locked and SD was unable to gain access to these structures. Mr. Parykasz indicated that these structures were used historically as pool storage sheds, but were also used to store files after the pool was removed.

4.2 Hazardous Substances and Petroleum Products

The heating fuel source for the buildings is typically propane and #2 fuel heating oil contained in an either ASTs or USTs. SD observed the ASTs to be in relatively good condition. No indication of release was observed in any of the boiler rooms.

4.3 Aboveground Storage Tanks (AST)

Three (3) active 275 gallon ASTs were observed on the subject property during the site reconnaissance. The ASTs appeared to be in good condition and no evidence of staining was observed near the ASTs. See Section 4.1 for a more detailed description of these ASTs.

4.4 Underground Storage Tanks (UST)

Six (6) active USTs and three (3) inactive USTs that have been abandoned in place are present on the subject property. See Section 4.1 for a detailed description of the USTs.

4.5 Indications of Polychlorinated Biphenyls

Transformers and other types of electrical equipment have historically utilized dielectric fluid containing polychlorinated biphenyl compounds (PCBs). SD observed one (1) pad mounted transformer near the main building on the subject property during the March 14, 2006 site inspection. The transformer appeared to be well maintained and in good condition. There was no evidence of stressed vegetation or staining visible on the ground surface in vicinity of the transformers that would be indicative of a past release of PCBs.

4.6 Indications of Solid Waste Disposal

One (1) area of solid waste disposal was observed on the subject property during the March 14, 2006 site reconnaissance. This area was north of East Lodge and west of North Lodge. SD observed a large pile of mostly vegetative debris on the side of the hill. The pile was rather deep and appeared to be only vegetative debris. John Parykasz and Kevin Czipo, Executive Director, indicated that to their knowledge only vegetative debris had been dumped at this location, however if any other dumping had occurred on the property this would be the location.

4.7 Boiler Rooms

Boiler/furnace rooms were located in each building described in section 4.1, except for the garage and small storage sheds. The boiler rooms contained furnaces and hot water heaters. The furnaces were fueled by #2 heating oil while the hot water heaters were typically fueled with either propane or #2 heating oil. In each building, the boiler room floors were made of concrete and were of sound integrity with no indication of staining observed.

5.0 Findings and Conclusions

SD has performed an ESA in conformance with the scope and limitations of ASTM Practice E 1527-00 for the subject property designated as Block 13m, Lot 2 in the Town of Ossining, Westchester County, New York. Any exceptions to or deletions from this practice are described in Sections 1.2, 1.3, and 6.0 of this report. The subject property was identified in environmental database report lists. This assessment has revealed no evidence of RECs in connection with the subject property, except for the following.

- **Underground Storage Tanks (REC-1)** – USTs have existed and currently exist at the subject property. Six (6) active USTs and three (3) USTs that have been abandoned in place are present on the subject property. Additional investigation is warranted.

- **Waste Piles (REC-2)**- One (1) area of solid waste disposal was observed on the subject property during the March 14, 2006 site reconnaissance. This area was north of East Lodge and west of North Lodge. SD observed a large pile of mostly vegetative debris on the side of the hill. The pile was rather deep and appeared to be only vegetative debris. John Parykasz and Kevin Czipo, Executive Director, indicated that to their knowledge only vegetative debris had been dumped at this location, but if any other dumping had occurred on the property this would be the location. Additional investigation is warranted.

6.0 General Limitations

The Environmental Assessment activities and the preparation of this Report were conducted in accordance with practices and procedures generally accepted in the consulting engineering field. The information contained in this Report is further qualified as follows:

1. SD assumes no responsibility for matters of a legal nature affecting the subject property inspected or the title thereto.

2. Any sketch appearing in or attached to the inspection Report, or any statement of dimensions, capacities, quantities or distances, are approximate and are included to assist the reader in visualizing the subject property. SD made no survey of the subject property.

3. Employees of SD are not required to give testimony or appear in court because of having made the inspection with reference to the subject property in question, unless arrangements have been previously made therefore.

4. This Report is not intended to have any direct effect on the value of the subject property inspected but simply to provide a visual Environmental Assessment solely for the benefit of the Principal Parties.

5. Information, estimates and opinions furnished to SD and contained in the report, were obtained from sources considered reliable and believed to be true and correct. However, SD has made no independent investigation as to such matters and undertakes no responsibility for the accuracy of such items. No other warranty is given or implied by this Report.

6. The Report is solely for the benefit and personal use of the Principal Parties, and is subject to and issued in connection with the Proposal and the Terms and Conditions attached thereto. The data reported and findings, observations, and conclusions expressed in the Report are limited by the Scope of Work.

NO PROPERTY CORNERS SET BY CONTRACTUAL AGREEMENT

THIS SURVEY MAKES NO REPRESENTATION AS TO THE EXISTENCE OR NON-EXISTENCE OF FRESH WATER INLAND WETLANDS.

FIGURE 1
STONY LODGE
BLOCK 13, LOT 2
40 CROTON DAM ROAD
TOWN OF OSSINING, WESTCHESTER COUNTY, NY

U.S.G.S. TOPOGRAPHIC MAP

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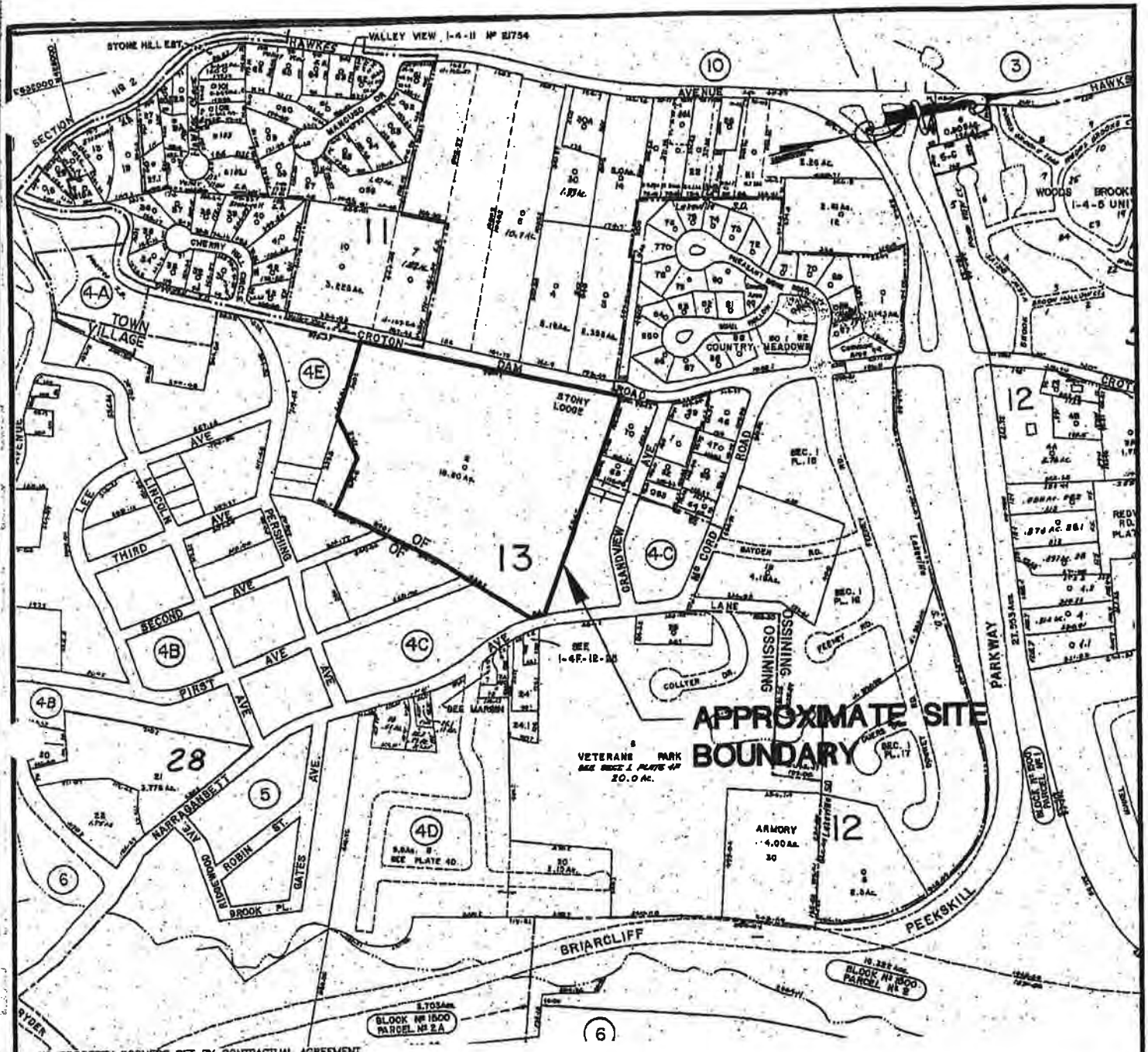
DATE	REVISIONS	ORDER NO.

SCALE	DATE	DRAWN BY	DES. BY	FILE NO.	CHECKED BY
N.T.S	03/10/06	SVJ	SM	060075501	NJ



NO PROPERTY CORNERS SET BY CONTRACTUAL AGREEMENT

THIS SURVEY MAKES NO REPRESENTATION AS TO THE EXISTENCE OR NON-EXISTENCE OF FRESH WATER INLAND WETLANDS.

FIGURE 2
STONY LODGE
BLOCK 13, LOT 2
40 CROTON DAM ROAD
TOWN OF OSSINING, WESTCHESTER COUNTY, NY

TAX MAP

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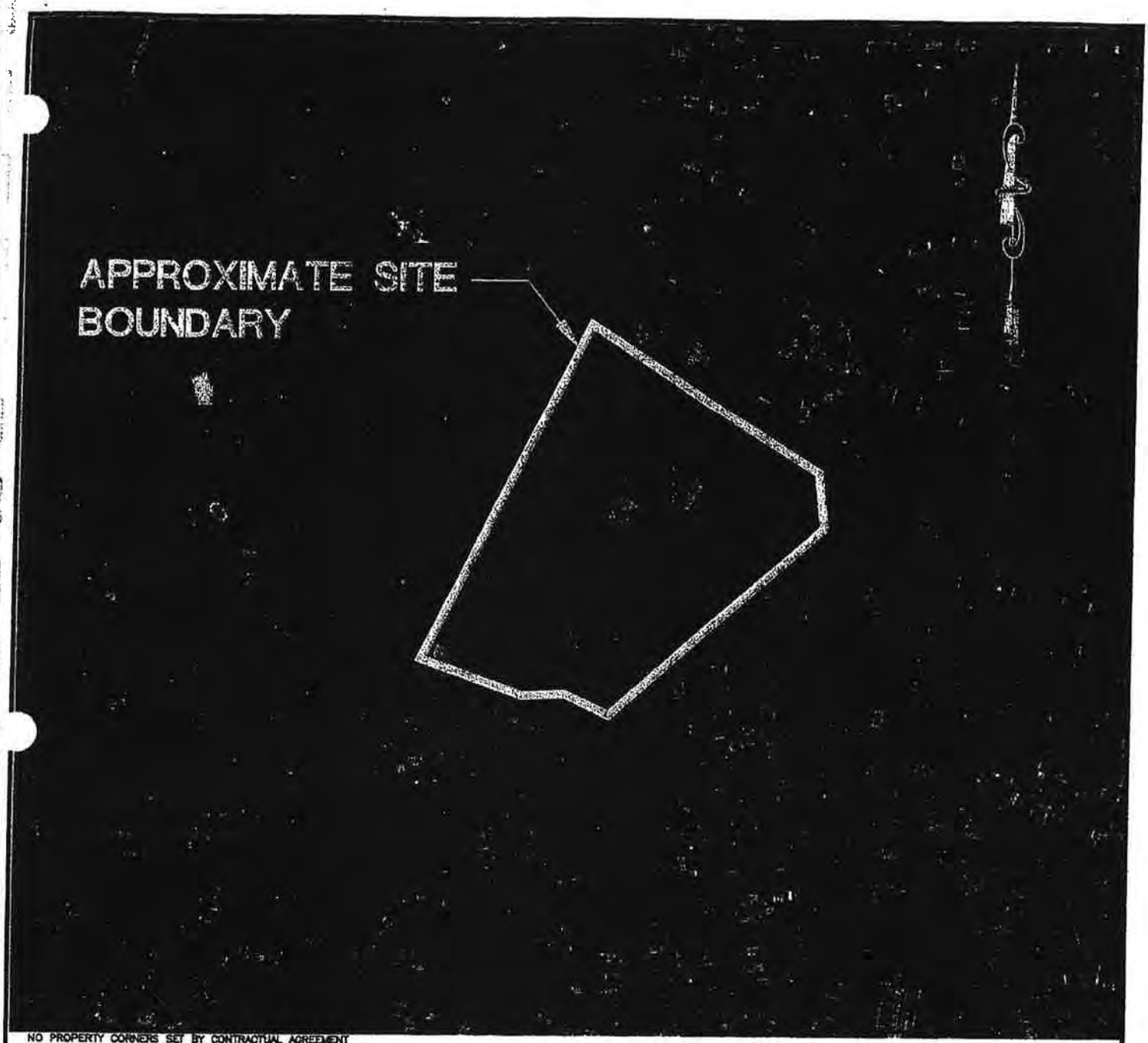

NO PROPERTY CORNERS SET BY CONTRACTUAL AGREEMENT

THIS SURVEY MAKES NO REPRESENTATION AS TO THE EXISTENCE OR NON-EXISTENCE OF FRESH WATER INLAND WETLANDS.

FIGURE 3
STONY LODGE
BLOCK 13, LOT 2
40 CROTON DAM ROAD
TOWN OF OSSINING, WESTCHESTER COUNTY, NY

AERIAL LOCATION MAP

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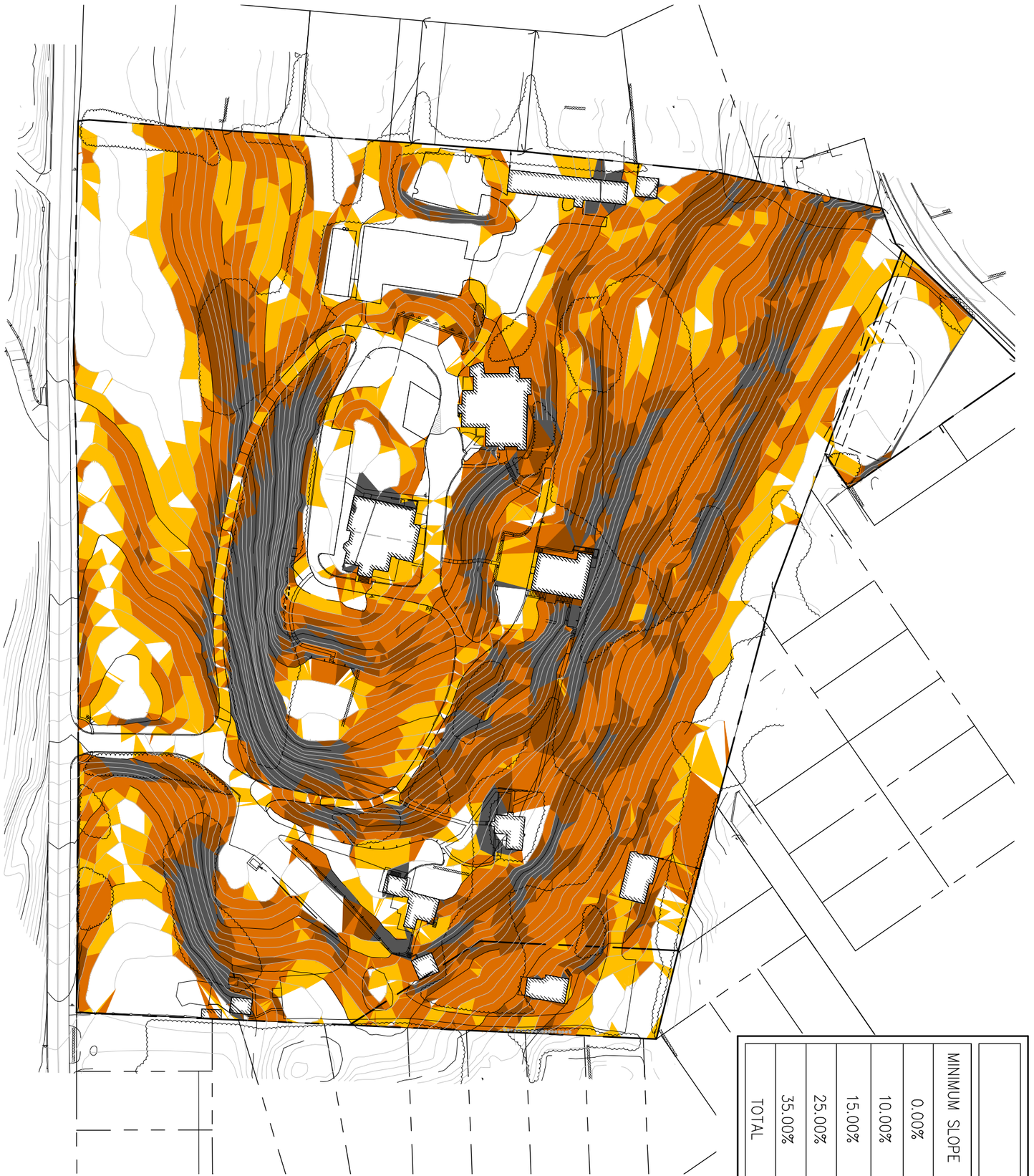

SLOPES TABLE

COLOR	AREA (SF/ACRES)	MAXIMUM SLOPE	MINIMUM SLOPE
	215,652/5.0	10.00%	0.00%
	121,080/2.8	15.00%	10.00%
	242,867/5.5	25.00%	15.00%
	122,749/2.8	35.00%	25.00%
	76,834/1.8	VERTICAL	35.00%
	779,182/17.9		TOTAL

RIVER KNOLL

40 CROTON DAM ROAD — TOWN OF OSSINING, NEW YORK

SLOPE ANALYSIS FIGURE

DATE: 10/22/2015 — JMC PROJECT: 15064

FIGURE: FIG-1 — SCALE: 1" = 120'

120 BEDFORD RD
ARMONK
NY 10504

(914) 273-5225
fax 273-2102

JMCPLLC.COM

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15064-BASE.dwg; SLOPE.tab

SCHOOR DEPALMA
Engineers and Consultants

March 9, 2006

MaryAnn Roberts, *Town Clerk*
16 Croton Avenue
Ossining, NY 10562
Phone: (914) 762-8428
fax (914) 762-7710
townclerk@townofossining.com

RE: Phase I Environmental Site Assessment
Stony Lodge Hospital
40 Croton Dam Road
Block 13, Lot 2
Town of Ossining, Westchester County, NY
Our Project Number 060075501

Dear MaryAnn Roberts,

Pursuant to the Freedom of Information Act (FOIA) dealing with the examination and duplication of records maintained by public agencies, Schoor DePalma (SD) requests that your office provide any and all applicable information related to the disclosure of known or suspected, past or present, environmental concerns for the above-referenced site. The information disclosed for the subject site should include, but not be limited to, hazardous substances, underground storage tank (UST) systems, areas of fill, records of historical enforcement actions, investigations involving soil and/or groundwater quality/contamination, and the overall environmental quality of the site. Available records will be reviewed to assist with the preparation of a Phase I Environmental Site Assessment for the subject property. A map is enclosed to assist in locating the property.

Please contact me (smaravel@schoordepalma.com or 732-577-9000 ext.1051) at your earliest convenience with the availability of any records or with any questions that you might have. I thank you in advance for your prompt attention to this matter.

Very truly yours,

SCHOOR DEPALMA INC.

Steven Maravelias

n:\project\2006\0600755\01\sar\requests\town of ossining.doc

SCHOOR DEPALMA
Engineers and Consultants

March 9, 2006

Office of the Westchester County Clerk
110 Dr. Martin Luther King Jr.Blvd
White Plains, New York 10601
email: cclerk@westchestergov.com
Phone: (914) 995-3080 Fax: (914) 995-4030

RE: Public Records Review Request
Phase I Environmental Site Assessment
Stony Lodge Hospital
40 Croton Dam Road
Block 13, Lot 2
Town of Ossining, Westchester County, NY
Our Project Number 060075501

Dear Westchester County Clerk,

Pursuant to the Freedom of Information Act (FOIA) dealing with the examination and duplication of records maintained by public agencies, Schoor DePalma (SD) requests that your office provide any and all applicable information related to the disclosure of known or suspected, past or present, environmental concerns for the above-referenced site. The information disclosed for the subject site should include, but not be limited to, hazardous substances, underground storage tank (UST) systems, areas of fill, records of historical enforcement actions, investigations involving soil and/or groundwater quality/contamination, and the overall environmental quality of the site. Available records will be reviewed to assist with the preparation of a Phase I Environmental Site Assessment for the subject property. A tax map is enclosed to assist in locating the property.

Please contact me (smaravel@schoordepalma.com or 732-577-9000 ext.1051) at your earliest convenience with the availability of any records or with any questions that you might have. I thank you in advance for your prompt attention to this matter.

Very truly yours,

SCHOOR DEPALMA INC.

Steven Maravelias

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Stony Lodge Hospital

Tank Information for Petoleum Bulk Storage

Tank Number	Location	Capacity	Notes
001	Maintenance	275	above-ground
002	Maintenance	275	above-ground
003	Main Bldg.	1800	buried
004	North Lodge	1800	buried
005	East Lodge	1800	buried
006	South Cottage	1000	buried
007	Administration	550	buried
008	West Lodge	550	buried
009	Recreation	275	above-ground

TOTAL UST STORAGE CAPACITY = 7,500 **EXEMPT FROM EPA SPCC REQUIREMENTS**

TOTAL AST STORAGE CAPACITY = 825 **EXEMPT FROM EPA SPCC REQUIREMENTS**

SPCC= oil spill prevention, control, and countermeasure

New York State Department of Environmental Conservation
Region 3
21 South Putt Corners Road
New Paltz, NY 12561-1696
914-255-5453

THOMAS C. JORLING
COMMISSIONER

Carter,
This is the proposal we discussed last week. We really have no choice - In reality, it's a hell of a lot cheaper than digging the tanks up.
STN

September 16, 1992

ANTHONY NESTER
NESBRO CORPORATION
PO BOX 1339
PEEKSKILL NY 10566

Re: Stony Lodge Hospital
Croton Dam Road, Tank Closures

Dear Mr. Nester:

Based upon your submitted lab data of September 9, 1992, this Department agrees that, based on site logistics and the Department's human health guidance values for soil, it is appropriate to close the tanks in place. The Department is requiring that at least one monitoring well be placed downgradient and sampled quarterly for at least two quarters. The analysis should be EPA 8021 and 8270 and those results submitted to this Department.

Very truly yours,

John K. O'Mara, P.E.
Environmental Engineer II
Region 3

JKO/by

cc: File
Doshna/Wadsworth/PBS File
T. Ghiosay

STN
CC C3'PA
10/8/92

NESBRO CORPORATION

September 29, 1992

Stony Lodge Hospital, Inc.
Croton Dam Road
Ossining, New York 10562
Attn: Mr. Kent Hilliard

Re: Budget for NYSDEC required Monitoring Well.

Dear Kent:

As per our discussion of September 25, 1992, regarding a budgetary cost projection for compliance with the N.Y.S.D.E.C. monitoring well requirements (see attached letter).

GENERAL:
The installation of the monitoring well will require a topographic survey of the site, to determine the best location for the well. The site plan, well design, and testing schedule, must be approved by the State before we can commence work.

TOPOGRAPHIC SURVEY:
In an effort to reduce the survey cost, I contacted Mr. W.A.Slater L.S,(the surveyor of record) to update the survey with spot elevations. Mr. Slater stated that a revised survey would cost about $50,000.00; and when asked for a copy of the existing survey, he said that his policy is NOT to sell copies.
I also met with my surveyor Mr.D. Donnelly, L.S, to review the project requirements, and feasibility of utilizing the old survey copy. Mr. Donnelly suggested that we trace the existing survey map and transfer the new field data to the copy. He also feels that the most cost effective way to accomplish this is on a hourly rate, with a not to exceed cost of $1200.00.

PROPOSED WELL DESIGN:
The drawing for the proposed well has been completed, and is available for use in obtaining price quotations. The design is base on your statement that the lower field groundwater table, is within fifteen (15) feet of grade. Please understand that NYSDEC approval of this design is required. The proposed well configuration will require the following materials:

1-10 foot length of 4" PVC schedule 40 (0.20 screen threaded) pipe.
1-10 foot length of 4" PVC schedule 40 Well Riser (threaded) pipe.
1-3 foot length of 6" PVC well sleeve.
1-6" PVC sleeve cap
1-4" PVC threaded well base.

NESBRO CORPORATION

September 29, 1992

Stony Lodge Hospital, Inc.
Re: Budget for NYSDEC required Monitoring Well.

PROPOSED WELL DESIGN:(CONT.)
1-4" PVC threaded well adapter.(top).
1-4" PVC threaded well plug.
3- CuYds of Gravel

THE PROJECTED COST FOR THE ABOVE ITEMS IS: $350.00

WELL INSTALLATION:
The actual installation of the well can be accomplished in two ways, the first is with a drill rig, and the second is with a backhoe. I think the backhoe will be the most cost effective. I spoke with Gene, from G-T-R Enterprises, and he feel that a budget between $700.00 to $900.00 will cover the equipment and labor to place the well. The materials are not included.

THE ESTIMATED COST FOR THE ABOVE: $800.00

NESBRO SERVICES:
Nesbro shall provide the following services:
1) Proposed Well drawing (complete 09/28/92)
2) Coordinate and oversee survey field team.
3) Coordinate and oversee well installation
4) Documentation of well installation, for attachment to the Tank Closure Report.
5) Prepare well testing schedule and procedures for submittal.
6) Submittal of Site Plan, Well design, and test schedule for NYSDEC approval.

THE ESTIMATED COST FOR THE ABOVE: $ 800.00

TESTING PROGRAM REQUIREMENTS:
Testing of the well must be conducted for at least two (2) quarters, following NYSDEC well sampling protocol, as follows:

A) Prior to sampling, the well must be purged by bailing 3-5 volumes of water present in the well.
B) If free product is found in the monitoring well, the incident must be reported to the NYSDEC within two (2) hours.
C) The sample of groundwater, shall be tested by a NYS Department of Health Certified Laboratory. The test method shall be EPA 8021 and EPA 8070.
D) The results of each analysis must be submitted to the NYSDEC.
E)(*) Copies of all test data will be included in the Tank Closure Report.

(*) NOT PART OF NYSDEC PROTOCOL

P.O. BOX 1339, PEEKSKILL, N.Y. 10566
(914) 739•1341 • FAX (914) 739•2756

NESBRO CORPORATION

September 29, 1992

Stony Lodge Hospital, Inc.
Re: Budget for NYSDEC required Monitoring Well.

TESTING PROGRAM COSTS:
The projected cost of the testing program is as follows:

1) Purging of well, by testing laboratory (Est @ 5 hrs.) $225.00
2) Laboratory Cost for EPA 8021: $ 195.00
3) Laboratory cost for EPA 8070: $ 500.00

PROJECT COST PER QUARTER SAMPLE: $920.00
TOTAL SAMPLING COST (TWO (2) QUARTER SAMPLES): $ 1,840.00

SUMMARY:
The projected budget for the entire project, assuming one (1) well and NO additional testing is: $5,000.00

As always, we are available to answer any questions you may have regarding this phase of the closure project. Please understand that we can not procrastinate with this project; all data should be submitted to the State within 30 days. I await you reply to proceed.

Very truly yours,

NESBRO CORPORATION

Anthony H. Nester
President

AHN:sn
Attachments (2)

OK
AHN
10/8/92

P.O. BOX 1339, PEEKSKILL, N.Y. 10566
(914) 739•1341 • FAX (914) 739•2756

NESBRO CORPORATION
P.O.BOX 1339
PEEKSKILL, NY 10566-1339

BILL NUMBER: 1110

DATE: 02/24/93

PAGE: 1

PO: KENT

BILL TO:

STONY LODGE HOSPITAL, INC.
CROTON DAM ROAD
OSSINING, NY 10562

QTY	DESCRIPTION	PRICE	TAX	CHARGE
1	NYSDEC WELL MONITORING PHASE-1 PRICE AS QUOTED LABOR:.....$225.00 TEST (EPA #8021).....$195.00 TEST (EPA #8070).....$500.00 NEXT SAMPLE SCHEDULED 5/93 WELL CLEAN (LAB DATA ATTACHED)	920.00	0.00	920.00

NESBRO CORPORATION
* FOR ALL YOUR PETROLEUM STORAGE NEEDS *
TELEPHONE NO: 914-739-1341
FAX NO: 914-739-2756

TAX	.00
TOTAL	920.00

ATLANTIC
Petroleum Services, Inc.

Inspections of Quality

P.O. Box 030317
Phone (718) 720-8700

Mariner's Harbor
Fax (718) 720-1405

New York, 10303-0001
Telex: 141032 / ATPETROL

QUARTERLY GROUNDWATER MONITORING REPORT

LIENT	:	NESBRO CORPORATION
LOCATION	:	STONY LODGE HOSPITAL, CROTON DAM ROAD, OSSINING, NEW YORK
ILE No.	:	93003
ATE	:	JANUARY 29, 1993 SAMPLED BY : J.M.L.
MONITORING WELL ID No.	:	SITE WELL No. 1
ELL CASING HEIGHT ROM GRADE STEEL/PVC	:	1.25
* EPTH TO GW/PROD FROM TOC	:	3.25
TO BOTTOM (WELL DEPTH)	:	11.72
AMOUNT OF FLOATING MMISCIBLE LAYER (FT)	:	NONE
HICKNESS OF WATER (FT)	:	8.47
NTERNAL DIAMETER OF ASING	:	.33
OLUME OF WATER IN WELL GALLONS)	:	5.55
VOLUME OF WATER PURGED ROM WELL (GALLONS)	:	20.00
TIME MEASURED	:	1500
ECOVERY ABILITY	:	EXCELLENT

1ST TEST

OTES:
TOC is top of PVC well casing.
All measurements to +/- .01 Feet.

ATLANTIC
Petroleum Services, Inc.

Inspections of Quality

P.O. Box 317 — Mariner's Harbor — New York, 10303-0001
Phone (718) 720-8700 — Fax (718) 720-1405 — Telex: 141032 / ATPETROL

CERTIFICATE OF ANALYSIS

CLIENT : NESBRO CORPORATION

MATERIAL : STONY LODGE HOSPITAL
SITE WELL #1 LIQUID

A.P.S. FILE No : 93003

SAMPLE DRAWN : 01-29-93
SAMPLE RECEIVED: 02-01-93
SAMPLE TESTED : 02-17-93

N.Y.S. ELAP LAB ID No. 10750 / 10058

EPA 8270 SW - 1	RESULTS mmg/l (ppb)	EPA 8270 SW - 1	RESULTS mmg/l (ppb)
Acenaphthene	N/D	Di-N-Butylphthalete	N/D
Acenaphthylene	N/D	1,3 -Dichlorobenzene	N/D
Anthracene	N/D	1,2 -Dichlorobenzene	N/D
Aldrin	N/D	1,4 -Dichlorobenzene	N/D
Benzo (A) Anthracene	N/D	3,3 -Dichlorobenzene	N/D
Benzo (B) Fluroanthene	N/D	Dieldrin	N/D
Benzo (K) Fluroanthene	N/D	Diethyl Phthalate	N/D
Benzo (A) Pyrene	N/D	Dimethyl Phthalate	N/D
Benzo (Ghi) Perylene	N/D	2,4 -Dinitrotoluene	N/D
Benzyl Butyl Phthalate	N/D	2,6 -Dinitrotoluene	N/D
BHC (C.A.S. 319-85-7)	N/D	Di-N-Octylphthalate	N/D
BHC (C.A.S. 319-86-8)	N/D	Endosulphan Sulfate	N/D
Bis (2-Chloroethyl) Ether	N/D	Endrin Aldehyde	N/D
Bis (2-Chloroethyl) Methane	N/D	Fluroanthene	N/D
Bis (2-Ethylhexyl) Phthalate	N/D	Fluorene	N/D
Bis (2-Chloroisopropyl)	N/D	Heptachlor	N/D
4- Bromophenyl Phenyl Ether	N/D	Heptachlor Epoxide	N/D
Chlordane	N/D	Hexachlorobenzene	N/D
2- Chloronaphthaele	N/D	Hexachlorobutadiene	N/D
4- Chlorophenyl Phenyl	N/D	Hexachloroethane	N/D
Chrysene	N/D	Indeno (1,2,3-Cd)Pyrene	N/D
4,4' - DDD	N/D	Isophorone	N/D
4,4' - DDE	N/D	Napthalene	N/D
4,4' - DDT	N/D	Ether	N/D
Dibenzo (A,H) Anthracene	N/D	Nitrobenzene	N/D

N/D = Indicates less than 1 part per billion or below detection limit.

ATLANTIC PETROLEUM SERVICES, INC.

JAMES EGAN
Laboratory Director

Description of the sample material tested is as indicated by our client. This certificate covers only those chemical components and physical properties for which tests were requested. No liability is assumed for anything not tested and reported.

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CERTIFICATE OF ANALYSIS

CLIENT : NESBRO CORPORATION

MATERIAL : STONY LODGE HOSPITAL
SITE WELL #1 LIQUID

A.P.S. FILE No : 93003

SAMPLE DRAWN : 01-29-93
SAMPLE RECEIVED: 02-01-93
SAMPLE TESTED : 02-17-93

N.Y.S. ELAP LAB ID No. 10750 / 10058

EPA 8270

SW - 1	RESULTS mmg/l (ppb)
Nitrobenzene	N/D
N-Nitrosis-N-Propylamine	N/D
Phenanthrene	N/D
Pyrine	N/D
Toxaphene	N/D
2,4-Trichlorobenzene	N/D
nzidine	N/D
Endosulfan I	N/D
Endosulfan II	N/D
Endrin	N/D
Hexachlorocylopentadiene	N/D
N-Nitrosodimethylamine	N/D
N-Nitrosodiphenylamine	N/D

N/D - Indicates less than 1 part per billion or below detection limit.

ATLANTIC PETROLEUM SERVICES, INC.

James Egan

JAMES EGAN
Laboratory Director

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CERTIFICATE OF ANALYSIS

CLIENT : NESBRO CORPORATION

MATERIAL : STONE LODGE HOSPITAL
SITE WELL #1 LIQUID

A.P.S. FILE No. : 93003

SAMPLE DRAWN : 01-29-93
SAMPLE RECEIVED : 02-01-93
SAMPLE TESTED : 02-17-93

N.Y.S. ELAP LAB ID No. 10750/10058

EPA 8021 SAMPLE SW - 1	RESULTS ug/L	EPA 8021 SAMPLE SW - 1	RESULTS ug/L
Methylene Chloride	N/D	Ethylbenzene	N/D
1,1-Dichloroethylene	N/D	Toluene	N/D
1,1-Dichloroethane	N/D		
Trans-1,2-Dichloroethylene	N/D	Bromomethane	N/D
Chloroform	N/D	Chloromethane	N/D
1,2-Dichloroethane	N/D	Trichloro-Flouromethane	N/D
1,1,1-Trichloroethane	N/D	Bromobenzene	N/D
Carbon Tetrachloride	N/D	Bromochloromethane	N/D
Vinyl Chloride	N/D	SecButylbenzene	N/D
1,1,2-Trichloroethane	N/D	TertButylbenzene	N/D
1,2-bromochloroethane	N/D	Chloroethane	N/D
Bromoform	N/D	2-Chlorotoluene	N/D
Tetrachloroethane	N/D	4-Chlorotoluene	N/D
Cis-1,2-Dichloroethylene	N/D	Chloroethylethylether	N/D
Benzene	N/D	Cis-1,3-Dichloropropene	N/D
Chlorobenzene	N/D	Dibromomethane	N/D
1,3-Dichlorobenzene	N/D	Trans-1,3-Dichloropropene	N/D
1,4-Dichlorobenzene	N/D		
1,2-Dichlorobenzene	N/D	Dichlorodifluoromethane	N/D
Bromodichloromethane	N/D	N-Butylbenzene	N/D

N/D = Indicates less than 1 part per billion or below detection limit.

ATLANTIC PETROLEUM SERVICES, INC.

James Egan

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Laboratory Director

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New York, 10303-0001
Telex: 141032 / ATPETROL

CERTIFICATE OF ANALYSIS

CLIENT	:	NESBRO CORPORATION
MATERIAL	:	STONE LODGE HOSPITAL SITE WELL #1 LIQUID
A.T.S. FILE No.	:	93003
SAMPLE DRAWN	:	01-29-93
SAMPLE RECEIVED	:	02-01-93
SAMPLE TESTED	:	02-17-93

U.S. ELAP LAB ID No. 10750/10058

EPA 8021	RESULTS
SAMPLE SW - 1	ug/L
1,2-Dichloropropane	N/D
1,3-Dichloropropane	N/D
2,2-Dichloropropane	N/D
1-Dichloropropene	N/D
Hexachlorobutadiene	N/D
Isopropylbenzene	N/D
p-Isopropylbenzene	N/D
Naphthalene	N/D
n-Propylbenzene	N/D
Styrene	N/D
1,1,1,2-Tetrachloroethane	N/D
1,1,2,2-Tetrachloroethane	N/D
1,2,3-Trichlorobenzene	N/D
1,2,4-Trichlorobenzene	N/D
Trichloroethene	N/D
1,2,3-Trichloropropane	N/D
1,2,4-Trimethylbenzene	N/D
1,3,5-Trimethylbenzene	N/D
m-Xylene	N/D
o-Xylene	N/D
p-Xylene	N/D

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ATLANTIC PETROLEUM SERVICES, INC.

James Egan

JAMES EGAN
Laboratory Director

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RO CORPORATION
BOX 1339
KILL, NY 10566-1339

BILL NUMBER: 1139

DATE: 07/08/93

PAGE: 1

PO: KENT

BILL TO:

STONY LODGE HOSPITAL, INC.
CROTON DAM ROAD
OSSINING, NY 10562

QTY	DESCRIPTION	PRICE	TAX	CHARGE
1	NYSDEC WELL MONITORING PHASE-2 PRICE AS QUOTED LABOR:.....$225.00 TEST (EPA #8021).....$195.00 TEST (EPA # 8070).....$500.00 THIS CONCLUDES THE NYSDEC WELL MONITORING REQUIREMENTS. IF THE STATE REQUIRES ADDITIONAL TESTING, I WILL CALL YOU. INSTALLATION & CLOSURE PLAN WI WILL FOLLOW WITHIN 30 DAYS.	920.00	0.00	920.00
			TAX	0.00
			TOTAL	920.00

NESBRO CORPORATION
* FOR ALL YOUR PETROLEUM STORAGE NEEDS *
TELEPHONE NO: 914-739-1341
FAX NO: 914-739-2756

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Mariner's Harbor
Fax (718) 720-1405

New York, 10303-0001
Telex: 141032 / ATPETROL

QUARTERLY GROUNDWATER MONITORING REPORT

CLIENT : NESBRO CORPORATION

LOCATION : STONY LODGE HOSPITAL, CROTON DAM ROAD, OSSINING, NEW YORK

FILE No. : 93056

DATE : JULY 07, 1993 SAMPLED BY : J.M.L.

MONITORING WELL ID No. : SITE WELL No. 1

WELL CASING HEIGHT FROM GRADE STEEL/PVC	:	1.21
* DEPTH TO GW/PROD FROM TOC	:	8.16
TOC TO BOTTOM (WELL DEPTH):		11.58
UNT OF FLOATING MISCIBLE LAYER (FT)	:	NONE
THICKNESS OF WATER (FT)	:	3.42
INTERNAL DIAMETER OF CASING	:	.33
VOLUME OF WATER IN WELL (GALLONS)	:	7.63
VOLUME OF WATER PURGED FROM WELL (GALLONS)	:	23.00
TEMPERATURE °F.	:	59.9
pH	:	6.8
TIME MEASURED	:	1400
RECOVERY ABILITY	:	GOOD

LAST TEST

NOTES:
* TOC is top of PVC well casing.
All measurements to +/- .01 Feet.

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Mariner's Harbor
Fax (718) 720-1405

New York, 10303-0001
Telex: 141032 / ATPETROL

CERTIFICATE OF ANALYSIS

CLIENT : NESBRO CORPORATION

MATERIAL : STONY LODGE HOSPITAL
SITE WELL #1 LIQUID

A.P.S. FILE No : 93056

SAMPLE DRAWN : 07-07-93
SAMPLE RECEIVED: 07-09-93
SAMPLE TESTED : 07-09 / 08-03-93

N.Y.S. ELAP LAB ID No. 10750 / 10058

EPA 8270 SW - 1	RESULTS mmg/l (ppb)	EPA 8270 SW - 1	RESULTS mmg/l (ppb)
Acenaphthene	N/D	Di-N-Butylphthalete	N/D
Acenaphthylene	N/D	1,3 -Dichlorobenzene	N/D
Anthracene	N/D	1,2 -Dichlorobenzene	N/D
Aldrin	N/D	1,4 -Dichlorobenzene	N/D
Benzo (A) Anthracene	N/D	3,3 -Dichlorobenzene	N/D
Benzo (B) Pluroanthene	N/D	Dieldrin	N/D
Benzo (K) Pluroanthene	N/D	Diethyl Phthalate	N/D
Benzo (A) Pyrene	N/D	Dimethyl Phthalate	N/D
Benzo (Ghi) Perylene	N/D	2,4 -Dinitrotoluene	N/D
Benzyl Butyl Phthalate	N/D	2,6 -Dinitrotoluene	N/D
BHC (C.A.S. 319-85-7)	N/D	Di-N-Octylphthalate	N/D
BHC (C.A.S. 319-86-8)	N/D	Endosulphan Sulfate	N/D
Bis (2-Chloroethyl) Ether	N/D	Endrin Aldehyde	N/D
Bis (2-Chloroethyl) Methane	N/D	Fluroanthene	N/D
Bis (2-Ethylhexyl) Phthalate	N/D	Fluorene	N/D
Bis (2-Chloroisopropyl)	N/D	Heptachlor	N/D
4- Bromophenyl Phenyl Ether	N/D	Heptachlor Epoxide	N/D
Chlordane	N/D	Hexachlorobenzene	N/D
2- Chloronaphthaele	N/D	Hexachlorobutadiene	N/D
4- Chlorophenyl Phenyl	N/D	Hexachloroethane	N/D
Chrysene	N/D	Indeno (1,2,3-Cd)Pyrene	N/D
4,4' - DDD	N/D	Isophorone	N/D
4,4' - DDE	N/D	Napthalene	N/D
4,4' - DDT	N/D	Ether	N/D
Dibenzo (A,H) Anthracene	N/D	Nitrobenzene	N/D

N/D = Indicates less than 1 part per billion or below detection limit.

ATLANTIC PETROLEUM SERVICES, INC.

James Egan

JAMES EGAN
Laboratory Director

Description of the sample material tested is as indicated by our client. This certificate covers only those chemical components and physical properties for which tests were requested. No liability is assumed for anything not tested and reported.

United States Customs Approved

ATLANTIC
Petroleum Services, Inc.

Inspections of Quality

P.O. Box 317
Phone (718) 720-8700

Mariner's Harbor
Fax (718) 720-1405

New York, 10303-0001
Telex: 141032 / ATPETROL

CERTIFICATE OF ANALYSIS

CLIENT : NESBRO CORPORATION

MATERIAL : STONY LODGE HOSPITAL
SITE WELL #1 LIQUID

A.P.S. FILE No : 93056

SAMPLE DRAWN : 07-07-93
SAMPLE RECEIVED: 07-09-93
SAMPLE TESTED : 07-07 / 08-03-93

N.Y.S. ELAP LAB ID No. 10750 / 10058

EPA 8270

LAB - 1	RESULTS mmg/l (ppb)
Nitrobenzene	N/D
N-Nitrosis-N-Propylamine	N/D
Phenanthrene	N/D
Pyrine	N/D
Toluphene	N/D
1,2,4-Trichlorobenzene	N/D
Dibenzidine	N/D
Endosulfan I	N/D
Endosulfan II	N/D
Endrin	N/D
Hexachlorocylopentadiene	N/D
N-Nitrosodimethylamine	N/D
N-Nitrosodiphenylamine	N/D

N/D - Indicates less than 1 part per billion or below detection limit.

ATLANTIC PETROLEUM SERVICES, INC.

JAMES EGAN
Laboratory Director

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ATLANTIC
Petroleum Services, Inc.

Inspections of Quality

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. hone (718) 720-8700

Mariner's Harbor
Fax (718) 720-1405

New York, 10303-0001
Telex: 141032 / ATPETROL

CERTIFICATE OF ANALYSIS

C IENT	:	NESBRO CORPORATION
MATERIAL	:	STONY LODGE HOSPITAL SITE WELL #1 LIQUID
A P.S. FILE No.	:	93056
SAMPLE DRAWN	:	07-07-93
S MPLE RECEIVED	:	07-09-93
S MPLE TESTED	:	07-09 / 08-03-93

N Y.S. ELAP LAB ID No. 10750/10058

EPA 8021 SAMPLE SW - 1	RESULTS ug/L	EPA 8021 SAMPLE SW - 1	RESULTS ug/L
M thylene Chloride	N/D	Ethylbenzene	N/D
1,1-Dichloroethylene	N/D	Toluene	40.3
1,1-Dichloroethane	N/D		
I -1,2-Dichloroethylene	N/D	Bromomethane	N/D
C oform	N/D	Chloromethane	N/D
1,2-Dichloroethane	N/D	Trichloro-Flouromethane	N/D
1 1,1-Trichloroethane	N/D	Bromobenzene	N/D
C rbon Tetrachloride	N/D	Bromochloromethane	N/D
Vinyl Chloride	N/D	SecButylbenzene	N/D
1,1,2-Trichloroethane	N/D	TertButylbenzene	N/D
D bromochloroethane	N/D	Chloroethane	N/D
E omoform	N/D	2-Chlorotoluene	N/D
Tetrachloroethane	N/D	4-Chlorotoluene	N/D
C s-1,2-Dichloroethylene	N/D	Chloroethylethylether	N/D
E nzene	2.8	Cis-1,3-Dichloropropene	N/D
Chlorobenzene	N/D	Dibromomethane	N/D
O-Dichlorobenzene	N/D	Trans-1,3-Dichloropropene	N/D
M Dichlorobenzene	N/D		
P Dichlorobenzene	N/D	Dichlorodifluoromethane	N/D
Bromodichloromethane	N/D	N-Butylbenzene	N/D

N D = Indicates less than 1 part per billion or below detection limit.

ATLANTIC PETROLEUM SERVICES, INC.

James Egan

JAMES EGAN
Laboratory Director

Description of the sample material tested is as indicated by our client. This certificate covers only those chemical components and physical properties for which tests were requested. No liability is assumed for anything not tested and reported.

United States Customs Approved

ATLANTIC
Petroleum Services, Inc.

Inspections of Quality

P.O. Box 317
Phone (718) 720-8700

Mariner's Harbor
Fax (718) 720-1405

New York, 10303-0001
Telex: 141032 / ATPETROL

CERTIFICATE OF ANALYSIS

CLIENT : NESBRO CORPORATION

MATERIAL : STONY LODGE HOSPITAL
SITE WELL #1 LIQUID

A.P.S. FILE No. : 93056

SAMPLE DRAWN : 07-07-93
SAMPLE RECEIVED : 07-09-93
SAMPLE TESTED : 07-09 / 08-03-93

N.Y.S. ELAP LAB ID No. 10750/10058

EPA 8021	RESULTS
SAMPLE SW - 1	ug/L
1,2-Dichloropropane	N/D
1,3-Dichloropropane	N/D
2,2-Dichloropropane	N/D
1,1-Dichloropropene	N/D
Hexachlorobutadiene	N/D
Isopropylbenzene	N/D
P-Isopropylbenzene	N/D
Naphthalene	N/D
N-Propylbenzene	N/D
Styrene	N/D
1,1,1,2-Tetrachloroethane	N/D
1,1,2,2-Tetrachloroethane	N/D
1,2,3-Trichlorobenzene	N/D
1,2,4-Trichlorobenzene	N/D
Trichloroethene	N/D
1,2,3-Trichloropropane	N/D
1,2,4-Trimethylbenzene	N/D
1,3,5-Trimethylbenzene	N/D
Xylene	1.80 — ?

N/D = Indicates less than 1 part per billion or below detection limit.

ATLANTIC PETROLEUM SERVICES, INC.

James Egan
JAMES EGAN
Laboratory Director

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) CORPORATION
X 1339
ILL, NY 10566-1339

BILL NUMBER: 1161

DATE: 11/29/93

PAGE: 1

PO: 092293

BILL TO:

STONY LODGE HOSPITAL, INC.
CROTON DAM ROAD
OSSINING, NY 10562

QTY	DESCRIPTION	PRICE	TAX	CHARGE
	NYSDEC WELL MONITORING RETEST			
1	HR. PRICE AS QUOTED LABOR:.....$225.00 TEST (EPA #8021).....$195.00 TEST (EPA #8070).....$500.00 TEST RESULTS ATTACHED..... INSTALLATION & CLOSURE REPORTS TO FOLLOW WITHIN 30 DAYS....	920.00	0.00	920.00

NESBRO CORPORATION
* FOR ALL YOUR PETROLEUM STORAGE NEEDS *
TELEPHONE NO: 914-739-1341
FAX NO: 914-739-2756

TAX	0.00
TOTAL	920.00

ATLANTIC
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Fax (718) 720-1405

New York, 10303-0001
Telex: 141032 / ATPETROL

CERTIFICATE OF ANALYSIS

CLIENT : NESBRO CORPORATION

MATERIAL : STONY LODGE HOSPITAL
SITE WELL #1 LIQUID

A.P.S. FILE No. : 93095

SAMPLE DRAWN : 10-07-93
SAMPLE RECEIVED : 10-07-93
SAMPLE TESTED : 10-07 / 13-93

N.Y.S. ELAP LAB ID No. 10750/10058

EPA 8021 SAMPLE SW - 1	RESULTS ug/L	EPA 8021 SAMPLE SW - 1	RESULTS ug/L
Methylene Chloride	N/D	Ethylbenzene	N/D
1,1-Dichloroethylene	N/D	Toluene	N/D
1,1-Dichloroethane	N/D		
Trans-1,2-Dichloroethylene	N/D	Bromomethane	N/D
Chloroform	N/D	Chloromethane	N/D
1,2-Dichloroethane	N/D	Trichloro-Flouromethane	N/D
1,1,1-Trichloroethane	N/D	Bromobenzene	N/D
Carbon Tetrachloride	N/D	Bromochloromethane	N/D
Vinyl Chloride	N/D	SecButylbenzene	N/D
1,1,2-Trichloroethane	N/D	TertButylbenzene	N/D
Dibromochloroethane	N/D	Chloroethane	N/D
Bromoform	N/D	2-Chlorotoluene	N/D
Tetrachloroethane	N/D	4-Chlorotoluene	N/D
Cis-1,2-Dichloroethylene	N/D	Chloroethylethylether	N/D
Benzene	N/D	Cis-1,3-Dichloropropene	N/D
Chlorobenzene	N/D	Dibromomethane	N/D
O-Dichlorobenzene	N/D	Trans-1,3-Dichloropropene	N/D
M-Dichlorobenzene	N/D		
P-Dichlorobenzene	N/D	Dichlorodifluoromethane	N/D
Bromodichloromethane	N/D	N-Butylbenzene	N/D

N/D = Indicates less than 1 part per billion or below detection limit.

ATLANTIC PETROLEUM SERVICES, INC.

JAMES EGAN
Laboratory Director

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SAMPLE RECEIVED : 10-07-93
SAMPLE TESTED : 10-07 / 13-93

N.Y.S. ELAP LAB ID No. 10750/10058

EPA 8021	RESULTS
SAMPLE SW - 1	ug/L
1,2-Dichloropropane	N/D
1,3-Dichloropropane	N/D
2-Dichloropropane	N/D
-Dichloropropene	N/D
Hexachlorobutadiene	N/D
Isopropylbenzene	N/D
P-Isopropylbenzene	N/D
Naphthalene	N/D
N-Propylbenzene	N/D
Styrene	N/D
1,1,1,2-Tetrachloroethane	N/D
1,1,2,2-Tetrachloroethane	N/D
1,2,3-Trichlorobenzene	N/D
1,2,4-Trichlorobenzene	N/D
Trichloroethene	N/D
1,2,3-Trichloropropane	N/D
1,2,4-Trimethylbenzene	N/D
1,3,5-Trimethylbenzene	N/D
Xylene	N/D

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CLIENT : NESBRO CORPORATION

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SITE WELL #1 LIQUID

A.P.S. FILE No : 93095

SAMPLE DRAWN : 10-07-93
SAMPLE RECEIVED: 10-07-93
SAMPLE TESTED : 10-07 / 13-93

N.Y.S. ELAP LAB ID No. 10750 / 10058

EPA 8270 SW - 1	RESULTS mmg/l (ppb)	EPA 8270 SW - 1	RESULTS mmg/l (ppb)
Acenaphthene	N/D	Di-N-Butylphthalete	N/D
Acenaphthylene	N/D	1,3 -Dichlorobenzene	N/D
Anthracene	N/D	1,2 -Dichlorobenzene	N/D
Aldrin	N/D	1,4 -Dichlorobenzene	N/D
Benzo (A) Anthracene	N/D	3,3 -Dichlorobenzene	N/D
enzo (B) Fluroanthene	N/D	Dieldrin	N/D
Benzo (K) Fluroanthene	N/D	Diethyl Phthalate	N/D
Benzo (A) Pyrene	N/D	Dimethyl Phthalate	N/D
Benzo (Ghi) Perylene	N/D	2,4 -Dinitrotoluene	N/D
Benzyl Butyl Phthalate	N/D	2,6 -Dinitrotoluene	N/D
BHC (C.A.S. 319-85-7)	N/D	Di-N-Octylphthalate	N/D
BHC (C.A.S. 319-86-8)	N/D	Endosulphan Sulfate	N/D
Bis (2-Chloroethyl) Ether	N/D	Endrin Aldehyde	N/D
Bis (2-Chloroethyl) Methane	N/D	Fluroanthene	N/D
Bis (2-Ethylhexyl) Phthalate	N/D	Fluorene	N/D
Bis (2-Chloroisopropyl)	N/D	Heptachlor	N/D
4- Bromophenyl Phenyl Ether	N/D	Heptachlor Epoxide	N/D
Chlordane	N/D	Hexachlorobenzene	N/D
2- Chloronaphthaele	N/D	Hexachlorobutadiene	N/D
4- Chlorophenyl Phenyl	N/D	Hexachloroethane	N/D
Chrysene	N/D	Indeno (1,2,3-Cd)Pyrene	N/D
4,4' - DDD	N/D	Isophorone	N/D
4,4' - DDE	N/D	Napthalene	N/D
4,4' - DDT	N/D	Ether	N/D
Dibenzo (A,H) Anthracene	N/D	Nitrobenzene	N/D

N/D = Indicates less than 1 part per billion or below detection limit.

ATLANTIC PETROLEUM SERVICES, INC.

JAMES EGAN
Laboratory Director

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ATLANTIC
Petroleum Services, Inc.

Inspections of Quality

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Phone (718) 720-8700

Mariner's Harbor
Fax (718) 720-1405

New York, 10303-0001
Telex: 141032 / ATPETROL

COPY

CERTIFICATE OF ANALYSIS

CLIENT : NESBRO CORPORATION

MATERIAL : STONY LODGE HOSPITAL
SITE WELL #1 LIQUID

A.P.S. FILE No : 93095

SAMPLE DRAWN : 10-07-93
SAMPLE RECEIVED: 10-07-93
SAMPLE TESTED : 10-07 / 13-93

N.Y.S. ELAP LAB ID No. 10750 / 10058

EPA 8270

SW - 1	RESULTS mmg/l (ppb)
Nitrobenzene	N/D
N-Nitrosis-N-Propylamine	N/D
Phenanthrene	N/D
Pyrine	N/D
Toxaphene	N/D
1,2,4-Trichlorobenzene	N/D
Benzidine	N/D
Endosulfan I	N/D
Endosulfan II	N/D
Endrin	N/D
Hexachlorocylopentadiene	N/D
N-Nitrosodimethylamine	N/D
N-Nitrosodiphenylamine	N/D

N/D - Indicates less than 1 part per billion or below detection limit.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2, 290 Broadway, 26th Floor
New York, NY 10007
212-637-3668
212-637-5046 (fax)
Calderon.Wanda@epa.gov

March 16, 2006

Mr. Steven Maravelias
Schoor DePalma
200 State Highway Nine
Manalapan, NJ, 07726
United States

RE: Request No: 02-RIN-00932-06

Dear Mr. Maravelias,

This is to acknowledge receipt of your Freedom of Information Act (FOIA), 5 U.S.C. 552, request dated March 09, 2006 and received in this office on March 09, 2006, for records related to:

Stony Lodge Hospital @ 40 Croton Dam Road in Westchester County, NY

The program(s) office(s) that have been assigned this request will be responding to you directly. The Agency has twenty (20) working days to respond to your request, except when you have agreed to an alternate due date or unusual circumstances exist that would require an extension of time under 5 U.S.C. 552 (a) (6) (B).

Include your FOIA request number in all subsequent communications with respect to this assignment. Additionally, for faster processing you may provide your email address. Thank you.

Respectfully,

Wanda Calderon
FOIA Specialist

U.S. Environmental Protection Agency

Agency Freedom of Information Office

Online Request Form

CAUTION: Any information you submit is not secure, and could be observed by a third party.

Electronic FOIA requests should contain the following information:

FOIA Office for your request	R2 States: NJ, NY, PR, VI
Name	Steven Maravelias
Company/Organization	Schoor DePalma
Type of Requestor	Other
Mailing Address	200 State Highway Nine
City	Manalapan
State	NJ
ZIP Code	07726
E-Mail Address	smaravel@schoordepalma.com
Phone Number	732-577-9000 ext. 1051
Fax Number	732-577-8168

Please provide the full and complete name(s) of the site(s)/facility(ies) you are inquiring about with the complete address(es).

```
Stony Lodge Hospital
40 Croton Dam Road
Block 13, Lot 2
Town of Ossining, Westchester
County, NY
```

Many facilities are regulated under more than one federal environmental law (CAA, CWA, TSCA, RCRA, SUPR, FIFRA.) Please provide any information which will enable the agency to perform a more comprehensive record search.

```
Schoor DePalma (SD) requests that
your office provide any and all
applicable information related to
the disclosure of known or
suspected, past or present,
```

Select amount you are willing to reimburse the agency for fees incurred which exceed $25.00

- ○ $25-$50
- ○ $50-$100
- ◉ Other:

You will be informed if the estimated costs will exceed this limit.

Send Reset

U.S. Environmental Protection Agency

Agency Freedom of Information Office

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Thank You

Thank you for your inquiry to EPA's FOIA Web Site.

This is to acknowledge receipt of your e-mail.

EDR™ Environmental
Data Resources Inc

EDR Historical Topographic Map Report

Stony Lodge
40 Croton Dam Road
Town of Ossining, NY 10562

Inquiry Number: 1629994.4

March 09, 2006

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Form-TWC

EDR® Environmental
Data Resources Inc

"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Steven Maravelias
Schoor Depalma
200 Route 9 North
Manalapan, NJ 07726

Customer Project: 060075501
014172TWC 732-577-9000

Order Date: 3/9/2006 **Completion Date:** 3/9/2006
Inquiry #: 1629994.3s
P.O. #: NA
Site Name: Stony Lodge
Address: 40 Croton Dam Road
City/State: Town of Ossining, NY 10562
Cross Streets:

Based on client-supplied information, fire insurance maps for the following years were identified

1931 - 1 Map
1942 - 1 Map
1949 - 1 Map
1971 - 1 Map

Limited Permission to Photocopy Total Maps: 4

choor Depalma (the client) is permitted to make up to THREE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

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_SER'S GUIDE

This User's Guide provides guidelines for accessing Sanborn Map® images and for transferring them to your Word Processor.

'ing Sanborn Maps

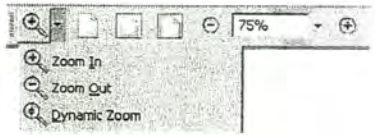
.nborn Maps document historical property use by displaying property information through words, abbreviations, and map symbols. The Sanborn Map Key provides information to help interpret the symbols and abbreviations used on Sanborn Maps. The Key is available from EDR's Web Site at: http://www.edrnet.com/reports/samples/key.pdf

Organization of Electronic Sanborn Image File

Sanborn Map Report, listing years of coverage
User's Guide

- Oldest Sanborn Map Image
- Most recent Sanborn Map Image

ıavigating the Electronic Sanborn Image File



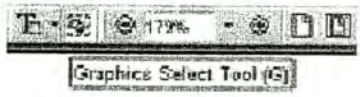
1. Open file on screen.
2. Identify TP (Target Property) on the most recent map.
3. Find TP on older printed images.
4. Using Acrobat® Reader®, zoom to 250% in order to view more clearly. (200-250% is the approximate equivalent scale of hardcopy Sanborn Maps.)
   A. On the menu bar, click "View" and then "Zoom to..."
   B. Or, use the magnifying tool and drag a box around the TP

rinting a Sanborn Map From the Electonic File

- EDR recommends printing images at 300 dpi (300 dpi prints faster than 600 dpi)
- To print only the TP area, cut and paste from Acrobat to your word processor application.

Acrobat Versions 6 and 7

1. Go to the menu bar
2. Click the "Select Tool"
3. Draw a box around the area selected
4. "Right click" on your mouse
5. Select "Copy Image to Clipboard"
6. Go to Word Processor such as Microsoft Word, paste and print.

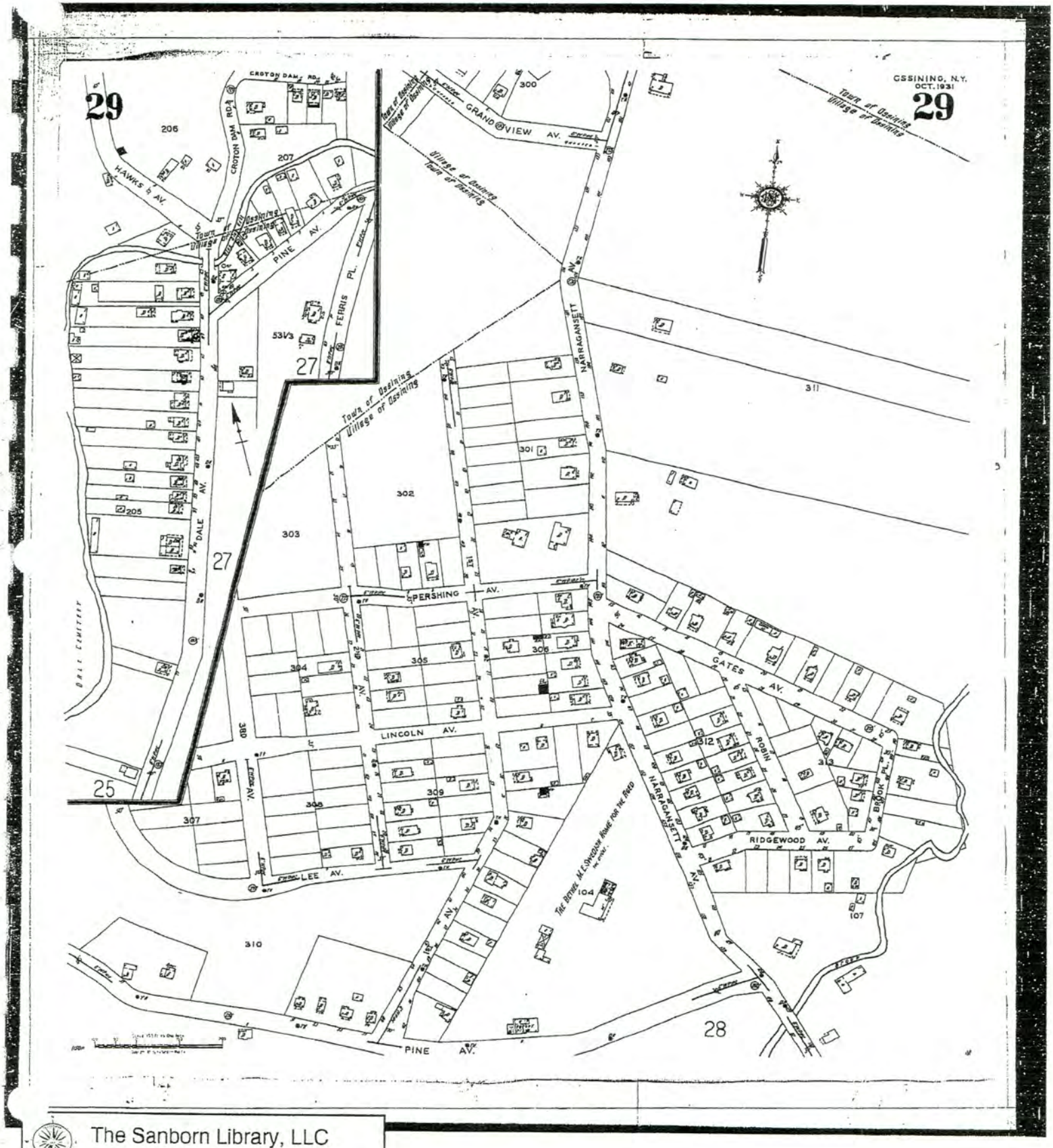


Acrobat Version 5

1. Go to the menu bar
2. Click the "Graphics Select Tool"
3. Draw a box around the area selected
4. Go to "Menu"
5. Highlight "Edit"
6. Highlight "Copy"
7. Go to Word Processor such as Microsoft Word, paste and print.

mportant Information about Email Delivery of Electronic Sanborn Map Images

- Images are grouped intro one file, up to 2MB.
- In cases where in excess of 6-7 map years are available, the file size typically exceeds 2MB. In these cases, you will receive multiple files, labeled as "1 of 3", "2 of 3", etc. including all available map years. Due to file size limitations, certain ISPs, including AOL, may occasionally delay or decline to deliver files. Please contact your ISP to identify their specific file size limitations.



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Year EDR Research Associate

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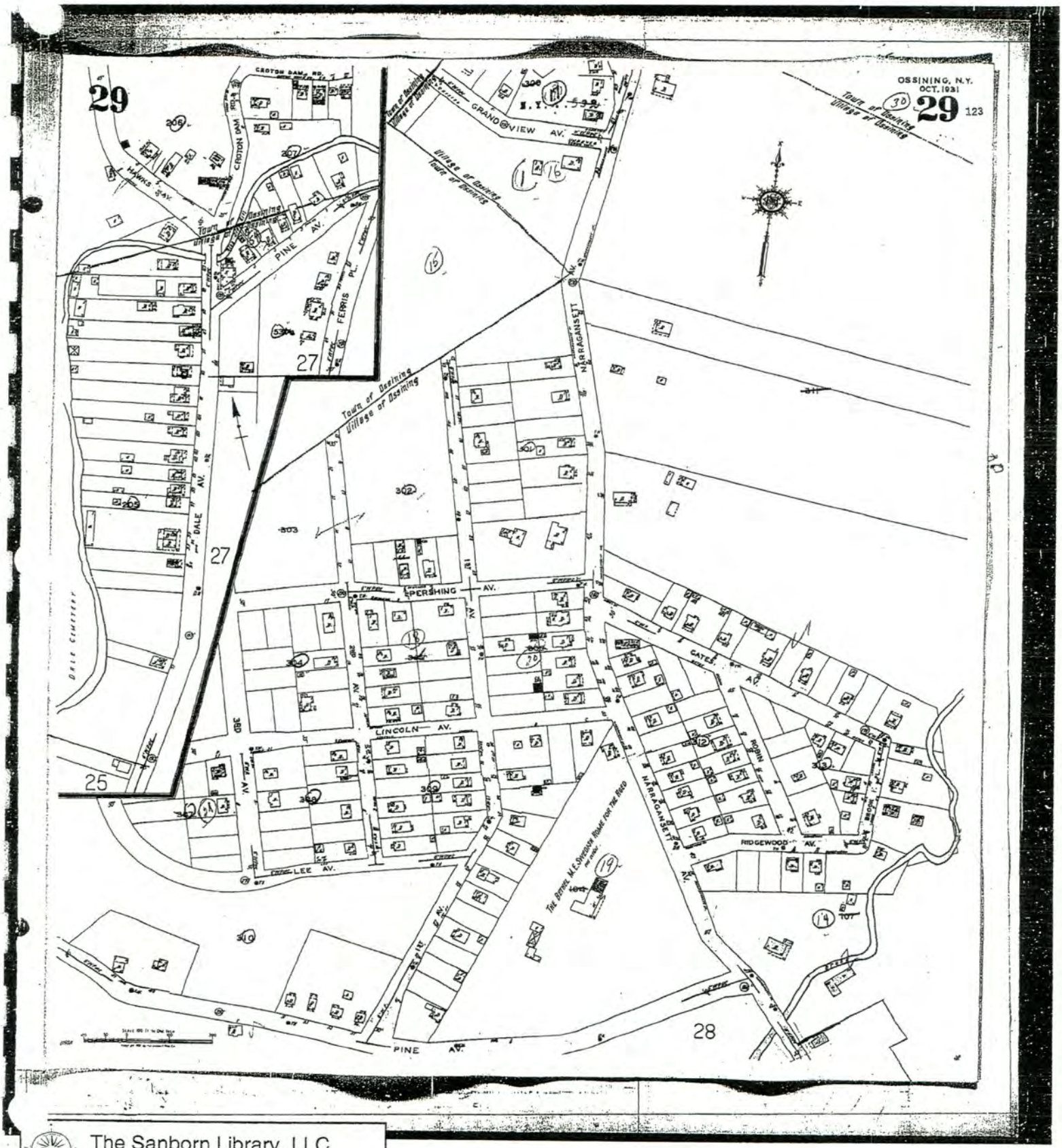

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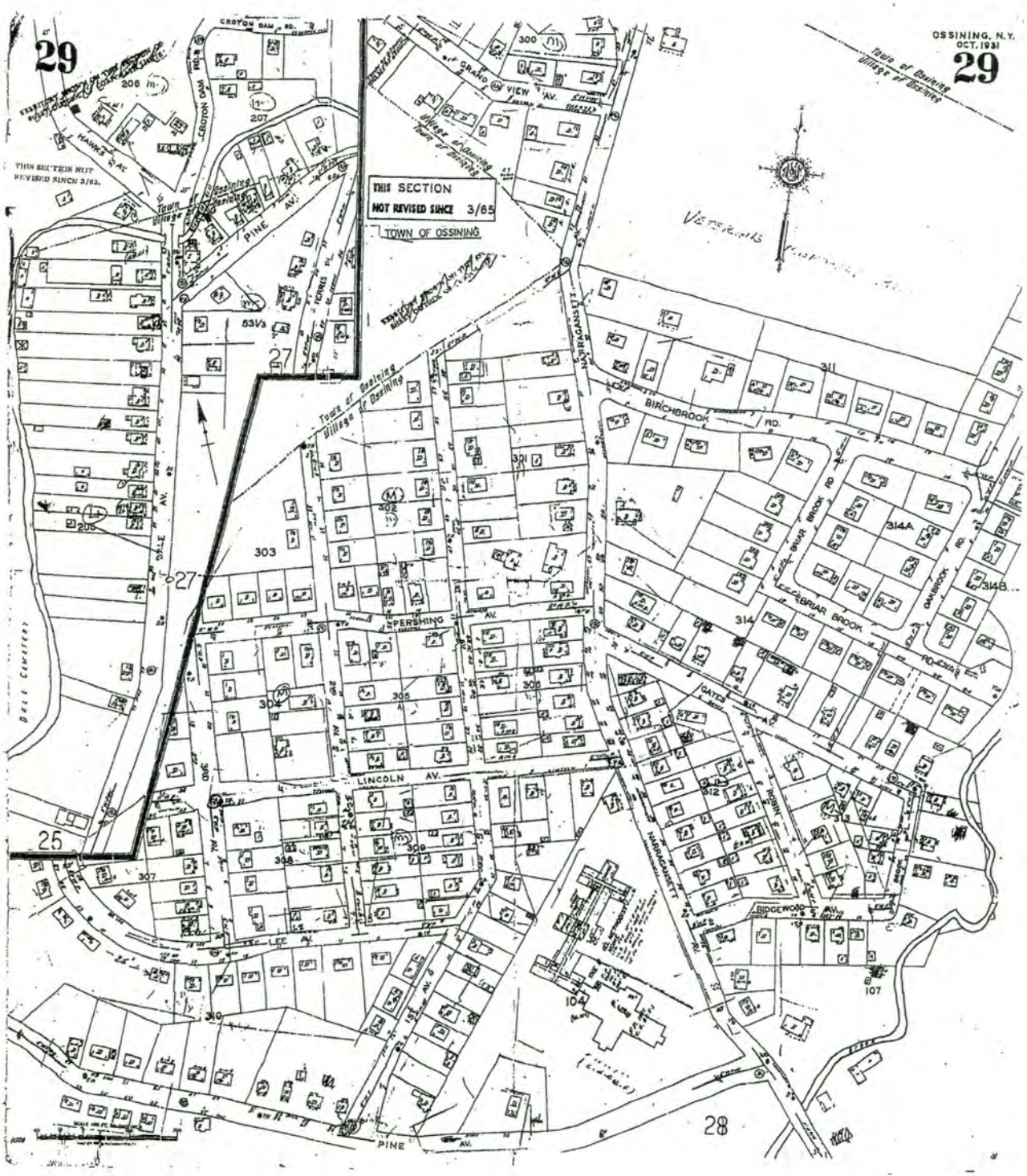

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EDR Historical Topographic Map Report

Environmental Data Resources, Inc.'s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property, and its surrounding area, resulting from past activities. ASTM E 1527-00, Section 7.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. The ASTM standard requires a review of *reasonably ascertainable standard historical sources. Reasonably ascertainable is defined as information that is publicly available, obtainable from a source with reasonable time and cost constraints, and practically reviewable.* To meet the prior use requirements of ASTM E 1527-00, Section 7.3.4, the following *standard historical sources* may be used: aerial photographs, city directories, fire insurance maps, topographic maps, property tax files, land title records (although these cannot be the sole historical source consulted), building department records, or zoning/and use records. ASTM E 1527-00 requires *"All obvious uses of the property shall be identified from the present, back to the property's obvious first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historical sources as are necessary, and that are reasonably ascertainable and likely to be useful."* (ASTM E 1527-00, Section 7.3.2 page 12.)

EDR's Historical Topographic Map Report includes a search of available public and private color historical topographic map collections.

Topographic Maps

A topographic map (topo) is a color coded line-and-symbol representation of natural and selected artificial features plotted to a scale. Topos show the shape, elevation, and development of the terrain in precise detail by using contour lines and color coded symbols. Many features are shown by lines that may be straight, curved, solid, dashed, dotted, or in any combination. The colors of the lines usually indicate similar classes of information. For example, topographic contours (brown); lakes, streams, irrigation ditches, etc. (blue); land grids and important roads (red); secondary roads and trails, railroads, boundaries, etc. (black); and features that have been updated using aerial photography, but not field verified, such as disturbed land areas (e.g., gravel pits) and newly developed water bodies (purple).

For more than a century, the USGS has been creating and revising topographic maps for the entire country at a variety of scales. There are about 60,000 U.S. Geological Survey (USGS) produced topo maps covering the United States. Each map covers a specific quadrangle (quad) defined as a four-sided area bounded by latitude and longitude. Historical topographic maps are a valuable historical resource for documenting the prior use of a property and its surrounding area, and due to their frequent availability can be particularly helpful when other standard historical sources (such as city directories, fire insurance maps, or aerial photographs) are not reasonably ascertainable.

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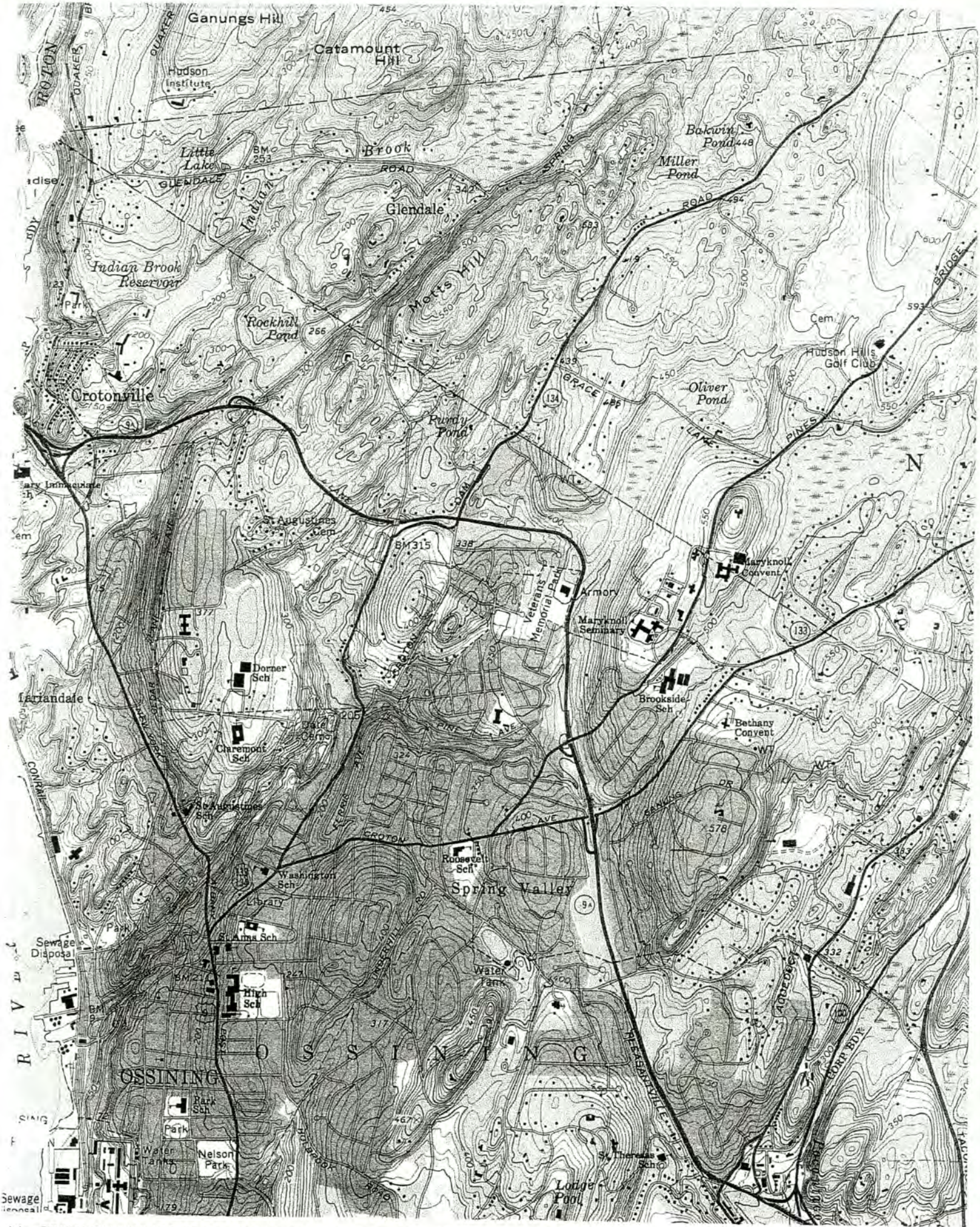

EDR INQUIRY# 1629994.4 TARGET QUAD: OSSINING PhotoRevised: 1967-1979 Series: 7.5' Scale: 1:24,000

EDR INQUIRY# 1629994.4 TARGET QUAD: OSSINING YEAR: 1967 Series: 7.5' Scale: 1:24,000

EDR INQUIRY# 1629994.4 TARGET QUAD: OSSINING YEAR: 1943 Series: 7.5' Scale: 1:31,680

EDR INQUIRY# 1629994.4 TARGET QUAD: TARRYTOWN YEAR: 1902 Series: 15' Scale: 1:62,500

NYS Department of Environmental Conservation
Office of Media Relations
625 Broadway, Albany, New York 12233-1016
18) 402-8000 (518) 402-2209 (Fax)

RE
MAR 24 2006
SCHOOR DEPALMA INC.

Denise M. Sheehan
Commissioner

FOIL Request No. 06-395
3/20/2006

Mr. Steve Maravelias
Schoor DePalma, Inc.
Justin Corporate Center 200 St. Highway Nine
Manalapan, NJ 07726-0900

Dear Mr. Maravelias:

This is to acknowledge receipt of your Freedom of Information Law request seeking records regarding: **Stony Ledge Hospital, 40 Croton Dam Road, Ossining, NY**

I have referred your request to the following Records Custodian(s) / Freedom of Information Law Coordinator(s) who may possess the records you are requesting:

Mr. Michael Knipfing - Region 3
21 South Putt Corners Road
New Paltz, NY 12561-1696 (845) 256-3052

You may expect a response to your request by **4/17/2006.**

If I can be of further assistance, please contact me at(518) 402-8000 . Refer to request number **06-395** , if you write or call.

Sincerely,

Ruth L. Earl
Records Access Officer

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials, Region 3
South Putt Corners Road, New Paltz, New York 12561-1696
Phone: (845) 256-3134 • **FAX:** (845) 255-3414
Website: www.dec.state.ny.us

Denise M. Sheehan
Commissioner

RECEIVED
MAR 2 0 2006
SCHOOR DEPALMA INC.

March 15, 2006

RE: FOIL #206-3/06

Steve Maravelias
Schoor Depalma Engineers & Consultants
Justin Corporate Center
200 State Highway Nine
PO Box 900
Manalapan NJ 07726

Dear Steve Maravelias:

This is in response to your FOIL request received March 13, 2006 for files for Stony Lodge Hospital located at 40 Croton Dam Road, Town of Ossining, Westchester County.

☑ After a diligent search, no records could be located for the names and/or addresses you provided in the Region 3 Solid Waste files. Solid Waste Files are filed by Town and facility name.

☐ Region 3 Solid Waste records are available for review and/or copying. Please contact Brenda Bubenicek at (845) 256-3021 to make arrangements to obtain access to the records.

☐ Enclosed are copies of the records you requested.

☐ You will receive a separate bill from DEC for these copies.

Please note there are approximately 0 Inches of records responsive to this request. This may require a deposit if you wish to have all of the records copied without first reviewing the records. Please inform us of how you wish to proceed.

Sincerely,

Lee E. Reiff
Region 3
Solid Waste Program

cc: B. Bubenicek

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 290 Broadway
New York, NY 10007

RECEIVED
MAR 2 7 2006
SCHOOR DEPALMA INC.

March 16, 2006

Mr. Steven Maravelias
Schoor DePalma
200 State Highway Nine
Manalapan, NJ, 07726
United States

Re: Freedom of Information Request No. **02-RIN-00932-06**
Dated: March 09, 2006
Subject: Stony Lodge Hospital @ 40 Croton Dam Road in Westchester County, NY

Dear Mr. Maravelias:

Your request to the United States Environmental Protection Agency Region II Office for information has been referred to this office for a response. All records, held by this office are generally identified by the name of the facility involved, rather than by the name of the property owner, address, or geographic description. Without the name of the specific facilities currently or formerly operating on a specific property, we cannot search our files for the information in which you may be interested. You may receive information from other program areas within this Regional Office.

Please note that the presence or absence of any Environmental Protection Agency information on this site provides no assurance that the site is free from contamination by toxic substances or is otherwise free from any environmental problems.

You can retrieve the environmental profile of a facility, including information regarding toxic chemical releases, water permit, hazardous waste handling processes, Superfund status, and air emissions from the EPA's web page. The address is http://www.epa.gov /enviro.

If you consider this response to be a denial, you may submit a written appeal to HQ FOIA OPERATIONS STAFF, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460. The appeal must be made in writing, and must be received within 30 calendar days of the date of this response to receive consideration. The Agency will not consider appeals received after the 30-day limit. The appeal should be marked "Freedom of Information Act Appeal", and should reference the Freedom of Information Request Number of this response.

Sincerely yours,

Patrick J Harvey, Chief
Compliance Assistance and Program Support Branch

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 3
South Putt Corners Road, New Paltz, New York 12561-1620
Phone: (845) 256-3054 • **FAX:** (845) 255-3042
Website: www.dec.state

Denise M. Sheehan
Commissioner

March 23, 2006

STEVE MARAVELIAS
SCHOOR DEPALMA ENGINEERS & CONSULTANTS
JUSTIN CORPORATE CENTER
200 STATE HIGHWAY NINE
PO BOX 900
MANALAPAN NJ 07726

RE: FOIL #206-03/06
Stony Lodge Hospital, 40 Croton Dam Rd., Ossining, Westchester Co.

Dear Mr. Maravellas:

The program noted below has reviewed your request for the above referenced records under New York State's Freedom of Information Law (FOIL). Please note that most of our records are filed by number under the names of individuals or corporations. We have no way of locating or retrieving records if they are filed under names or addresses other than those you have provided. If no records have been located, this does not necessarily mean, and should not be interpreted to mean that there have never been any violations, complaints, claims, investigations or inquiries involving those names or addresses. We cannot make any representations as to whether there are or have been any such violations, complaints, claims, investigations or inquiries.

☒ After a diligent search, no records could be located in the Region 3 Environmental Permits office for the names and/or addresses you provided.

☐ Records are available for review and/or copying. Please contact the FOIL Secretary at (845) 256-3021 to schedule an appointment to review the records. There is no charge to review records or for copies of seven or fewer pages. By law, copy charges will not exceed 25 cents per page or the actual cost of copying. Photographs, maps, oversized documents, videotapes or audio tapes generally cost more than 25 cents per page to copy. You may be required to pay a deposit prior to copies being made and/or to pay all copy charges prior to copies being sent.

Very truly yours,

Laurie Lawrence

Laurie Lawrence
Environmental Permits
Region 3

cc: Records Access Office

SCHOOR DEPALMA
Engineers and Consultants

March 9, 2006

Records Access Officer
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1016
(518) 402-8000

RE: Phase I Environmental Site Assessment
Stony Lodge Hospital
40 Croton Dam Road
Block 13, Lot 2
Town of Ossining, Westchester County, NY
Our Project Number 060075501

Dear Records Access Officer:

Pursuant to the Freedom of Information Act (FOIA) dealing with the examination and duplication of records maintained by public agencies, Schoor DePalma requests that your office provide any and all applicable information related to the disclosure of known or suspected, past or present, environmental concerns for the above-referenced site. The information disclosed for the referenced site shall include, but not be limited to, inspection reports, permit applications, permits issued, correspondence between facility and applicant, compliance documents, complaints, reports of monitoring data, geographical information and facility contact persons for air quality, waste management, water management, underground storage tanks, radiation protection, environmental cleanup, water supply management and CERCLA. In addition, our request includes any information regarding hazardous substances, areas of fill, records of historical enforcement actions, investigations involving soil and/or groundwater quality or contamination, and the overall environmental quality of the parcels. A map is enclosed to assist in locating the property.

Please contact me (smaravel@schoordepalma.com or 732-577-9000 ext.1051) at your earliest convenience with the availability of any records or with any questions that you might have. I thank you in advance for your prompt attention to this matter.

Very truly yours,

SCHOOR DEPALMA INC.

Steve Maravelias

n:\project\2006\0600755\01\sar\requests\ny state dep.doc

Appendix G

EDR City Directory Abstract

OFFICE SUPPLIES – ALL DEPARTMENTS

HAZARDOUS CHEMICAL INVENTORY

PRODUCT NAME

[redacted] Out

[redacted] Toner Black (Canon)

[redacted] Toner (Ricoh)

[redacted]

[redacted] Degrease Cleaner

MAINTENANCE DEPARTMENT

HAZARDOUS CHEMICAL INVENTORY

ADHESIVES / SEALANTS

PRODUCT NAME

USG Joint Compound

Durham's Rock Hard Water Putty

GE 5000 Silicone Rubber Sealant

Contech PL200 Multi-Purpose Adhesive

PL 400

PL Premium Adhesive

Liquid Nails

FlameSeal

MAINTENANCE DEPARTMENT

HAZARDOUS CHEMICAL INVENTORY

AUTOMOTIVE

PRODUCT NAME

Master Mechanic Antifreeze & Coolant

Hi Temp Starting Fluid

WD -40

Master Mechanic Two-Cycle

Engine Brite Heavy Duty Engine Cleaner

HOUSEKEEPING DEPARTMENT

CHEMICAL INVENTORY

LAUNDRY PRODUCTS

Bleach

Chlorox 2 Color Safe Bleach

Laundri Perma Brite NP

Laundri Prep

Mikro-Quat (for IC use in Housekeeping Laundry)

Solid Soft Plus

Solid Stainaway

Solid Ultra Surge NP

Windfresh (Powdered Laundry Detergent)

HOUSEKEEPING DEPARTMENT

CHEMICAL INVENTORY

FLOOR PRODUCTS (continued)

Regain

New Life Spray Buff

Masterpiece Penetrating Wax Stripper

Valley No Rinse Stripper

NC Pine Quat Disinfectant

Valley Mint Disinfectant

Quick Draw 230

OTHER PRODUCTS

Champion Flying Insect Killer

Sani-Fresh Gentle Lotion Cleanser

HOUSEKEEPING DEPARTMENT

CHEMICAL INVENTORY

CLEANING PRODUCTS

Mikro-Quat

Foaming Cleanser with Chlorine Bleach

Glass Class – Concentrate

Winda Shine

Chlorox Clean-Up Cleaner With Bleach – Spray Formula

Professional Lysol Brand Disinfectant Spray

Netcare Lemon Cleaner Disinfectant

Furniture Polish #257

Festival Lemon Furniture

FLOOR PRODUCTS

All Purpose Spot Lifter

Metalist Floor Sealer

Metalist Floor Finish

Rugbee Foam Shampoo

Resolve Procare General Purpose Spot Cleaner

Resolve Procare Carpet & Room Deodorizer – All Scents

DIETARY DEPARTMENT

CHEMICAL INVENTORY

CLEANING PRODUCTS

Brite Shine Stainless Steel Cleaner #239

Ind/Com Stainless Steel Cleaner (water based)

Sani-fresh Ultra-Kind Clear Gentle Wash

Bleach

Professional Line Dawn

Easy-Off Oven Cleaner (regular)

Kool-Klene

Bacterial Digestant

Shurguard Plus (also known as; Mixmate H)

Emerald-Brite

All Purpose Cleaner/Degreaser (also known as: Mixmate B)

Reduce Slip Floor Cleaner (also known as Mixmate E)

Prime Plus

Potassium Carbonate Liquid (fire suppression system)

Liquid Detergent (G's Best Dish Soap)

Urnex Urn & Brewer Cleaner

1. All USTs have been removed w/ certificates of completion on file.
2. All that remains are six small ASTs that are in good condition and have been checked.

Stony Lodge Hospital, Inc.
Tank Information for Petroleum Bulk Storage

Tank Number	Location	Capacity (Gal.)	Notes/Comments	Installed	Previous Tank	
001	Maintenance	275	Above Ground on Legs outside Building ok	??	none known	exist 1.
002	Maintenance	275	Above Ground on Legs outside Building ok (believe this has Diesel Fuel not oil)	??	none known	exist 2.
003	Main Bld	3000	Under Ground - Closed in Place - 04/92 ok (Copies of Certificate of Closure on File)	n/a		
003-1	Main Bld	1800	UnderGround - ~~Active~~ Remove abd. Tank Certificate of Closure on file	Apr-92	(Replaced # 003 above)	12/15 removed
004	North Lodge	1500	Underground - Removed - 04/92 ✓ (Copies of Certificate of Closure on File)	n/a		
004-1	North Lodge	1800	Underground - ~~Active~~ Removed 12/15 Certificate of Closure on File	Apr-92	(Replaced # 004 above)	
005	East Lodge	2000	Under Ground - Closed in Place - 04/92 (Copies of Certificate of Closure on File) ok	n/a		
005-1	East Lodge	1800	Underground - Active Removed 12/15 Certificate of Closure on file.	Apr-92	(Replaced # 005 above)	
006	South Cottage	1000	Underground - Removed 10/09 (by Elite Environmental & Tank Testing) ok	n/a		
006-1	South Cottage	275	Above Ground - Basement of Building ok (not being used)	Oct-09	(Replaced # 006 above)	3.
007	Administration	550	Underground - Removed 10/09 (by Elite Environmental & Tank Testing) ok	n/a		
007-1	Administration	275	Above Ground - outside building ok	Oct-09	(Replaced # 007 above)	4.

Stony Lodge Hospital, Inc.
Tank Information for Petroleum Bulk Storage

Tank Number	Location	Capacity (Gal.)	Notes/Comments	Installed	Previous Tank
008	West Lodge	550	Removed Tank 10/09 ok (by Elite Environmental & Tank Testing)	n/a	
008-1	West Lodge	275	Above Ground - Basement of Building ok (inactive)	Oct-09	(Replaced # 008 above)
009	Recreation	275	Above Ground in Building oil ok (installed by Palisades)	May-02	1st oil tank Previously just Propane

5.

6.

Appendix G
Wetland delineation

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stony Lodge Hospital City/County: Ossining/Westchester Sampling Date: 9/14/15

Applicant/Owner: Glenco Ossining, LLC State: NY Sampling Point: Upland A

Investigator(s): Jesse Moore Section, Township, Range: Ossining

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): slope Slope (%):

Subregion (LRR or MLRA): LRR R Lat: N 41.177220 Long: W 73.844945 Datum:

Soil Map Unit Name: LcB – Leicester loam, 3 to 8 percent slopes, stony NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No	**Is the Sampled Area within a Wetland?**	**Yes** **No** X
Hydric Soil Present?	Yes	No X	If yes, optional Wetland Site ID:	
Wetland Hydrology Present?	Yes	No X		

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No	Depth (inches):
Water Table Present?	Yes	No	Depth (inches):
Saturation Present?	Yes	No	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Upland A

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Robinia pseudoacacia*	8	Y	FACU
2.			
4.			
5.			
6.			
7.			
	8	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
Juglans nigra	15	Y	FACU
2. *Rosa multiflora*	10	Y	FACU
Morus alba	1	N	FACU
4.			
5.			
6.			
7.			
	26	=Total Cover	
Herb Stratum (Plot Size: 3.28' x 3.28')			
1. *Microstegium vimineum*	90	Y	FAC
2. *Ampelopsis brevipedunculata*	40	Y	UPL
3. *Symphyotrichum dumosum*	4	N	FAC
4.			
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	134	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. *Ampelopsis brevipedunculata*	40	Y	UPL
2.			
3.			
4.			
	40	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.67 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is >50%

___ 3 – Prevalence Index is #3.0[1]

___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Upland A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 4/3	100					Loam	
16-18	10YR 4/3	70					Loam	
	10YR 7/6	30						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Stony Lodge Hospital City/County: Ossining/Westchester Sampling Date: 9/14/15

Applicant/Owner: Glenco Ossining, LLC State: NY Sampling Point: Wetland A

Investigator(s): Jesse Moore Section, Township, Range: Ossining

Landform (hillslope, terrace, etc.): Depression at toe of slope Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR or MLRA): LRR R Lat: N 41.177220 Long: W 73.844945 Datum:

Soil Map Unit Name: LcB – Leicester loam, 3 to 8 percent slopes, stony NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** **Yes** X **No**
Hydric Soil Present?	Yes X	No	If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes X	No	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No	Depth (inches):
Water Table Present?	Yes	No	Depth (inches):
Saturation Present?	Yes X	No	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: The soil was saturated at the surface.

VEGETATION – Use scientific names of plants. Sampling Point: Wetland A

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
2.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot Size: 3.28' x 3.28')			
1. *Acorus calamus*	65	Y	OBL
2. *Symphyotrichum novi-belgii*	3	N	FACW
3. *Persicaria sagittata*	1	N	OBL
4.			
5.			
6.			
7.			
8.			
9..			
10.			
11.			
12.			
	69	=Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by	
OBL species		x1=	
FACW species		x2=	
FAC species		x3=	
FACU species		x4=	
UPL species		x5=	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 – Rapid Test for Hydrophytic Vegetation
- X 2 – Dominance Test is >50%
- ___ 3 – Prevalence Index is #3.0[1]
- ___ 4 – Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and creater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: Wetland A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR 2/2	93	5YR 4/6	7	C	PL	Loam	Saturated, fibric organic matter
3-8	10YR 3/1	97	%YR 4/6	3	C	M	Clayey loam	
8-18	10YR 3/1	100					Clayey loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (s7) (**LRR, MLRA, 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR, K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Field Observations:
Type: Saturation
Depth (inches): 0

Hydric Soil Present? **Yes** X **No**

Remarks:

Appendix H
SWPPP

STORMWATER POLLUTION PREVENTION PLAN

RIVER KNOLL

40 CROTON DAM ROAD
TOWN OF OSSINING, NY

Applicant: **GLENCO GROUP, LLC**
670 White Plains Road
Suite 201
Contact: Scarsdale, NY10583
Phone: Glen Vetromile
(914) 472-4521

Prepared by:

JMC Project 15064

Dated: 12/22/2016

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B.	Proposed Hydrologic Calculations
C.	NYSDEC Stormwater Sizing Calculations
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E.	Temporary Erosion and Sediment Control and Permanent Stormwater Practice Operation and Maintenance and Management Inspection Checklists
F.	Stormwater Practice Construction Inspection Checklist
G.	Contractor Certification
H.	Drawings DA-1 "Existing Drainage Area Map" DA-2 "Proposed Drainage Area Map"

REFERENCED DRAWINGS FOR SWPPP DESIGN AND DETAILS

JMC, PLLC SITE PLANS

Dwg. No.	Title	Rev. No./Date
SP-2	"Existing Conditions Plan"	12/22/2016
SP-3	"Layout Plan"	12/22/2016
SP-4	"Grading Plan"	12/22/2016
SP-5	"Utilities Plan"	12/22/2016

I. INTRODUCTION

This Stormwater Pollution Prevention Plan has been prepared for the 17.89 acre River Knoll residential development, located in the Town and Village of Ossining**,** Westchester County New York (hereinafter referred to as the "Site"). The site is bounded by Croton Dam Road to the west and residential properties to the north, south and east. The development has been designed in accordance with the following:

- Requirements of the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-15-002, effective January 29, 2015.
- Chapter 168 "Stormwater Management and Sediment and Erosion Control" of the Town of Ossining Code.

Glenco Group, LLC proposes to construct a three story 180 unit residential building at the former Stony Lodge Psychiatric Hospital property. The proposed development will include the demolition of existing buildings and driveways and construct a three story 180 unit building with associated driveways, retaining walls, surface parking areas, two stories of underground parking and landscaping. The proposed development will require the use of two infiltration basins, stormwater planters and a micropool extended detention basin to mitigate the stormwater runoff from the site.

II. STORMWATER MANAGEMENT PLANNING

In order to be eligible for coverage under the NYSDEC SPDES General Permit No. GP-0-15-002 for Stormwater Discharges from Construction Activities, the Stormwater Pollution Prevention Plan (SWPPP) includes stormwater management practices (SMP's) from the publication "New York State Stormwater Management Design Manual," last revised January 2015.

A Stormwater Pollution Prevention Plan has been prepared for this project because it is a construction activity that involves:

- A construction activity that involves soil disturbances of five (5) or more acres of land.

The proposed stormwater facilities have been designed such that the quantity and quality of stormwater runoff during and after construction are not adversely altered or are enhanced when compared to pre-development conditions.

Based on the GIS information provided by the website of the New York State Office of Parks, Recreation and Historic Places (OPRHP), the site does not contain, nor is it immediately adjacent to any properties listed on the State or National Register of Historic Places.

The applicant has provided additional information to the OPRHP and has agreed to engage in continuing discussions with the OPRHP as the project moves forward with the input of OPRHP.

The Five Step Process for Stormwater Site Planning and Practice Selection

Stormwater management using green infrastructure is summarized in the five step process described below. The five step process was adhered to when developing this SWPPP. Information is provided in this SWPPP which documents compliance with the required process as follows:

Step 1: Site Planning

Implement planning practices that protect natural resources and utilize the hydrology of the site. Strong consideration must be given to reducing impervious cover to aid in the preservation of natural resources including protecting natural areas, avoiding sensitive areas and minimizing grading and soil disturbance.

Step 2: Determine Water Quality Treatment Volume (WQv)

Determine the required WQv for the site based on the site layout, impervious areas and sub-catchments. This initial calculation of WQv will have to be revised after green infrastructure techniques are applied. The following method has been used to calculate the WQv.

- **90% Rule -** According to the New York State Stormwater Design Manual, Section 4.1, the water quality volume is determined from the 90% rule. The method is based on 90% of the average annual stormwater runoff volume which must be provided due to impervious surfaces. The Water Quality Volume (denoted as the WQv) is designed to improve water quality sizing to capture and treat 90% of the average annual stormwater runoff volume. The WQv is directly related to the amount of impervious cover created at a site. The average rainfall storm depth for 90% of storms in New York State in one year is used to calculate a volume of runoff. The rainfall depth depends on the location of the site within the state. From this depth of rainfall, the required water quality volume is calculated.

The project is a redevelopment and therefore will comply with the strategies outlined within Chapter 9: Redevelopment Projects of the Design Manual. There are different options to control water quality depending on the redevelopment.

Since the redevelopment results in the creation of additional impervious area, Water Quality Treatment Option II will be utilized which requires treatment for 25% of the existing impervious area, plus 100% of the additional, new impervious area.

The plan proposes that a minimum of 25% of the water quality volume (WQv) from the disturbed area is captured and treated by the implementation of standard practices. When utilizing structural stormwater management practices, these practices should be targeted to treat areas with the greatest pollutant generation potential (e.g. parking areas, service stations, etc).

The NYSDEC Redevelopment Standards include specific criteria for the implementation of surface water quality improvements. A combination of standard and non-standard practices are proposed and all facilities will treat the required water quality volume from the entire contributing area. Therefore, Water Quality Treatment Options II & III will be utilized. According to Option III of the Redevelopment Standards, alternative or non-standard practices such as manufactured treatment devices are acceptable if they treat 75% of the water quality volume from the disturbed areas as well as any additional runoff directed to the practice. According to Option II, standard practices such as subsurface infiltration systems can be sized to treat the water quality volume generated from 25% of the existing impervious area plus 100% of the new impervious area. Green practices such as green roofs and porous pavement can be used towards credit in meeting the water quality volume requirements.

Proposed standard SMP's will effectively treat 100% of the Water Quality Volume (Wqv) for all existing and new impervious areas and the proposed alternative SMP will treat a portion of the redevelopment area.

Step 3: Runoff Reduction Volumes (RRv) by Applying Green Infrastructure Techniques and Standard SMP's

RRv is not required for this project since it is a redevelopment.

Step 4: Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

Apply the standard SMP's to meet additional water quality volume requirements that cannot be addressed by applying the green infrastructure techniques. The standard SMP's with RRv capacity must be implemented to verify that the RRv requirement has been met.

- **Infiltration Practices –** A subsurface infiltration system is proposed to treat and retain runoff from the site. This practice is located in an area where the groundwater elevation is acceptable to provide the required separation. According to Section 3.6 of the Design

Manual, 90% of the WQv provided by an Infiltration Practice can be applied towards meeting the RRv criteria.

Step 5: Apply Volume and Peak Rate Control Practices to Meet Water Quantity Requirements

The Channel Protection Volume (CPv), Overbank Flood Control (Qp) and Extreme Flood Control (Qf) must be met for the plan to be completed. This is accomplished by using practices such as infiltration basins, dry detention basins, etc. to meet water quantity requirements. The following standards must be met:

1. **Stream Channel Protection (CPv)**

   Stream Channel Protection Volume Requirements (CPv) are designed to protect stream channels from erosion. In New York State this goal is accomplished by providing 24-hour extended detention of the one-year, 24-hour storm event, remained from runoff reduction. Reduction of runoff for meeting stream channel protection objectives, where site conditions allow, is encouraged and the volume reduction achieved through green infrastructure can be deducted from CPv. Trout waters may be exempted from the 24-hour ED requirement, with only 12 hours of extended detention required to meet this criterion. Detention time may be calculated using either a center of mass method or plug flow calculation method.

   - CPv is not required because reduction of the entire CPv volume is achieved at a site through green infrastructure or infiltration systems.

2. **Overbank Flood (Qp) which is the 10 year storm.**

   Overbank control requires storage to attenuate the post development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates.

The overbank flood control requirement (Qp) does not apply in certain conditions, including:

- The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams.

- A downstream analysis reveals that overbank control is not needed.

- If redevelopment results in no increase in impervious area or changes to hydrology that increase the discharge rate from the site, the ten year criteria does not apply.

3. Extreme Storm (Qf) which is the 100 year storm.

100 Year Control requires storage to attenuate the post development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates.

The 100-year storm control requirement can be waived if:

- The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams.

- Development is prohibited within the ultimate 100-year floodplain

- A downstream analysis reveals that 100-year control is not needed.

- If redevelopment results in no increase in impervious area or changes to hydrology that increase the discharge rate from the site the hundred-year criteria does not apply.

Based on the foregoing, this project is eligible for coverage under NYSDEC SPDES General Permit No. GP-0-15-002.

III. STUDY METHODOLOGY

Runoff rates were calculated based upon the standards set forth by the United States Department of Agriculture Natural Resources Conservation Service Technical Release 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986. The methodology set forth in TR-55 considers a multitude of characteristics for watershed areas including soil types, soil permeability, vegetative cover, time of concentration, topography, rainfall intensity, ponding areas, etc.

The 1, 10, 100 year storm recurrence intervals were reviewed in the design of the stormwater management facilities (see Appendices A & B Existing/Proposed Hydrologic Calculations).

Anticipated drainage conditions were analyzed taking into account the rate of runoff which will result from the construction of buildings, parking areas and other impervious surfaces associated with the site development.

Base Data and Design Criteria

For the stormwater management analysis, the following base information and methodology were used:

1. The site drainage patterns and outfall facilities were reviewed by JMC personnel for the purpose of gathering background data and confirming existing mapping of the watershed areas.

2. An Existing Drainage Area Map was developed from the topographical survey. The drainage area map reflects the existing conditions within and around the project area.

3. A Proposed Drainage Area Map was developed from the proposed grading design superimposed over the topographical survey. The drainage area map reflects the proposed

conditions within the project area and the existing conditions to remain in the surrounding area.

4. The United States Department of Agriculture (USDA) Web Soil Survey of the site available on its website at http://websoilsurvey.nrcd.usda.gov.

5. Soil Survey of Putnam and Westchester Counties, 1994.

6. The United States Department of Agriculture Natural Resources Conservation Service Technical Report No. 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986.

The time of concentration was calculated using the methods described in Chapter 3 of TR-55, Second Edition, June 1986. Manning's kinematics wave equation was used to determine the travel time of sheet flow. The 2-year 24 hour precipitation amount of 3.41 inches was used in the equation for all storm events. The travel time for shallow concentrated flow was computed using Figure 3-1 and Table 3-1 of TR-55. Manning's Equation was used to determine the travel time for channel reaches.

7. All hydrologic calculations were performed with the Bentley PondPack software package version 10.0.

8. The New York State Stormwater Management Design Manual, revised January 2015.

9. New York Standards and Specifications for Erosion and Sediment Control, November 2016.

10. The storm flows for the 1, 10, & 100 year recurrence interval storms were analyzed for the total watershed areas. The Type III distribution design storm for a 24 hour duration was used and the mass rainfall for each design storm was taken from the Extreme Precipitation in New York & New England developed by the Natural Resource Conservation Service (NRCS) and the Northeast Regional Climate Center (NRCC) as follows:

24 Hour Rainfall Amounts

Design Storm Recurrence Interval	Inches of Rainfall
1 Year	**2.78**
10 Year	**5.14**
100 Year	**9.30**

http://precip.eas.cornell.edu/

IV. EXISTING CONDITIONS

The existing conditions of the project site consists of the vacant stony lodge psychiatric facility, which contains existing buildings, driveways, grass and wooded areas. Stormwater from the site flows southwest to existing storm sewer structures that lead off site. After stormwater runoff exits the project site, it flows to existing stormwater conveyance systems in Pershing Avenue.

The following natural features, conservation areas, resource areas and drainage patterns of the project site have been identified and utilized to develop Drawing DA-1 "Existing Drainage Area Map" which is included in Appendix H:

- Vegetative cover
- Critical areas
- Topography (contour lines, existing flow paths, steep slopes, etc.)
- Soil (hydrologic soil groups, highly erodible soils, etc.)
- Bedrock, significant geology features

Based on the USDA web soil survey, all on-site soils are well drained and belong to hydrological group**(s)** B, C and D**.** The soil types, boundaries and drainage areas/designations are depicted on Drawing DA-1 within Appendix H.

Two (2) separate Design Points (1 through 2) were identified for comparing peak rates of runoff in existing and proposed conditions. Two (2) separate drainage areas were identified in existing

conditions based on the existing drainage divides at the site. The numbers included in the name of each drainage area correspond to the Design Point they drain towards.

The following is a description of each of the drainage areas analyzed in the existing conditions analysis:

Existing Drainage Area 1 is the western portion of the site and discharges to Design Point 1, which is an existing catch basin located in Pershing Avenue. Existing Drainage Area 1 consists of the following sub-drainage areas:

Existing Drainage Area 1A (EDA-1A) is 2.63 acres in size and is located in the north corner of the site adjacent to Croton Dam Road. This area consists of parking areas, driveways, woods and grassed areas. This drainage area initially drains north west towards an existing depression which acts as a small detention pond and drains south adjacent to croton dam road towards design point one. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 69 and 14.3 minutes, respectively. Refer to Drawing DA-1 in Appendix H.

Existing Drainage Area 1B (EDA-1B) is 2.34 acres and consist of a portion of the main building, an asphalt parking area, asphalt drives, woods and grass. Runoff from EA-1B flows overland to a depression to the north of the site driveway. The runoff is collected by a drain inlet in the depression and conveyed in a 12" corrugated metal pipe (CMP) to EDA-1C.
The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 74 and 11.4 minutes, respectively. Refer to Drawing DA-1 in Appendix H.

Existing Drainage Area 1C (EDA-1C) is 2.88 acres and consists of a portion of the main building, a 2 story frame building, asphalt drives, a gravel parking area, a few utility buildings, woods and grass. Runoff from EDA-1C flows overland to a depression at the southeast corner of the site. The depression discharges through an existing pipe that extends through the neighboring properties and into the existing catch basin in Pershing Avenue. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 75 and 8.8 minutes, respectively. Refer to Drawing DA-1 in Appendix H.

Existing Drainage Area 2 is the eastern portion of the site and discharges to Design Point 2, which is an existing structure in the southernmost corner of the site. Existing Drainage Area 2 consists of the following sub-drainage areas:

Existing Drainage Area 2A (EDA-2A) is 2.98 acres and consists of a garage and recreation building, a portion of the North Lodge, asphalt parking areas, asphalt drives, woods and grass. Runoff from EDA-2 flows overland to a wetland in the Village of Ossining. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 69 and 5.9 minutes, respectively. Refer to Drawing DA-1 in Appendix H.

Existing Drainage Area 2B (EDA-2B) is 5.79 acres and consists of a portion of the North Lodge, the East Lodge, the West Lodge, the South Cottage, the Administration Building, a garage, a 1 ½ story frame building, asphalt walks and drives, woods and grass. Runoff from EDA-2B flows overland to a swale along the rear property line. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 67 and 12.1 minutes, respectively. Refer to Drawing DA-1 in Appendix H.

Existing Drainage Area 3 (EDA-3) is 0.64 acres and consists of a play area, an asphalt drive, woods and grass. Runoff from EDA-3 flows overland out to Croton Dam Road. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 80 and 7.8 minutes, respectively. Refer to Drawing DA-1 in Appendix H.

The peak rates of runoff to the design points from the drainage areas for each storm are shown in the table below:

Table 1
Summary of Peak Rates of Runoff in Existing Conditions
(Cubic Feet per Second)

Storm Recurrence Interval	DP-1	DP-2	DP-3
1 year	1.72	3.20	0.67
10 year	5.43	15.33	1.89
100 year	9.92	42.12	4.19

V. PROPOSED CONDITIONS

The proposed improvements consist of the 180-unit residential building, associated sidewalks, parking lot, driveway, subsurface parking garage and landscaped areas. The proposed on-site stormwater runoff from the impervious surfaces including building rooftops, driveway, parking areas and sidewalks will be collected and conveyed by drainage manholes and catch basins to a network of high density polyethylene (HDPE) drain pipe installed underground with discharge to proposed infiltration basins and a micropool extended detention basin.

The proposed drainage improvements include standard and green infrastructure stormwater practices, such as infiltration basins with forebays and stormwater planters. The vegetated practices and overland discharges provide multiple opportunities for water quality enhancement and infiltration in addition to the proposed stormwater management practices.

This section describes the design and analysis of the proposed conditions used to demonstrate that the SWPPP meets the requirements of the General Permit.

The Five Step Process For Stormwater Site Planning and Practice Selection

Step 1: Site Planning

The following practices and site features were incorporated in the site design:

- Forest, vegetative cover – The maximum amount of forest and vegetative cover has been maintained and/or provided.
- Topography (contour lines, existing flow paths, steep slopes, etc.) has been maintained or disturbed to the minimum extent practicable.
- Soil (hydrologic soil groups, highly erodible soils, etc.)
- Bedrock, significant geology features have been accounted for.

Step 2: Determine Water Quality Treatment Volume (WQv)

This initial calculation of WQv must be revised after green infrastructure techniques are applied. The following method has been used to calculate the WQv.

90% Rule - According to the New York State Stormwater Design Manual, Section 4.1, the water quality volume is determined by the 90% rule. The method is based on 90% of the average annual stormwater runoff volume which must be provided due to impervious surfaces. The WQv is directly related to the amount of impervious cover created at a site. The rainfall depth depends on the location of the site within the state. From this depth of rainfall, the required water quality volume is calculated.

Step 3: Runoff Reduction Volumes (RRv) by Applying Green Infrastructure Techniques and Standard SMP's

Handling of the Runoff Reduction Volume (RRv) is required for the project since it is new development. As permitted in the NYS Stormwater Design Manual, green infrastructure techniques and standard stormwater management practices with RRv capacity can be credited towards the required WQv discussed above when implemented in accordance with the Manual.

Green infrastructure techniques are grouped into two categories:

- Practices resulting in a reduction of contributing area such as preservation/restoration of conservation areas, tree planting, riparian buffers, etc.
- Practices resulting in a reduction of contributing volume such as vegetated swales, pervious pavers, bioretention systems and infiltration systems.

Apply a combination of green infrastructure techniques and standard SMPs with RRv capacity to provide 100% of the WQv calculated in Step 2. If the RRv calculated in this step is greater than or equal to the WQv in Step 2, the RRv requirement has been met and Step 4 can be skipped. If the RRv provided cannot meet or exceed 100% of the WQv, the project must, at a minimum, reduce a percentage of the runoff from impervious areas to be constructed on the Site which is

referred to as the Minimum RRv. The percent reduction is based on the Hydrologic Soil Group(s) (HSG) of the Site and is defined as Specific Reduction Factor.

The following green infrastructure techniques and practices are provided in the Design Manual:

- **Stormwater Planters**
  - This practice filters runoff from portions of building rooftops. Small drainage areas, less than 15,000 square feet can be collected by gutters and roof drain leaders and discharged into stormwater planters that will filter or infiltrate the smaller storms and then discharge the higher storms through risers/standpipes directly into the underground storm pipes to the proposed stormwater management basins. Stormwater Planters act as small basins that treat stormwater as it flows through plant material and a soil matrix and is discharged to the storm drain system. Rooftop runoff from the proposed buildings are treated in other green practices more suitable for the proposed site conditions.
- **Standard Practices with RRv Capacity**
  - **Infiltration Basins –** Two infiltration systems are proposed to treat and retain runoff from the rooftop of the proposed building, parking areas, driveways and sidewalks. These practices are located in areas where the existing groundwater was identified at a lower depth.

The Minimum RRv capacity required must be provided by green infrastructure techniques or standard practices to verify that the RRv requirement has been met. The RRv that is provided by the green infrastructure techniques can then be subtracted from the Total Required WQv that must be provided by the SMP's.

<u>Step 4: Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume</u>

The standard SMP's must be designed to meet additional water quality volume requirements that cannot be addressed by applying the green infrastructure techniques by themselves. The standard SMP's proposed are:

- Ponds

  Wet Extended Detention Ponds (P-3)

  Description

  Pond that treats a portion of the Water Quality Volume by detaining storm flows above a permanent pool for a specified minimum detention time.

  Each Wet Extended Detention Pond has a forebay for pretreatment, an aquatic bench and a permanent pool for treatment, a 12 foot wide maintenance access path, 4 foot horizontal to 1 foot vertical side slopes for added safety and ease for maintenance and outlet control structures to slowly release the water quantity storms to reduce the peak flow rates and provide channel protection.

Step 5: Apply Volume and Peak Rate Control Practices to Meet Water Quantity Requirements

All practices exceed the required elements of SMP criteria as outlined in Chapter 6 of the NYS Stormwater Management Design Manual. A summary of each category is provided below.

1. Feasibility – Ponds are designed based upon unique physical environmental considerations noted in the NYS Stormwater Management Design Manual (NYSSMDM) Table 7.2 "Physical Feasibility Matrix".

2. Conveyance – The design conveys runoff to the designed pond in a manner that is safe, minimizes erosion and disruption to natural drainage channel and promotes filtering and infiltration.

3. Pretreatment – All pond provide pretreatment in accordance with NYSSMDM design guidelines.

4. Treatment Geometry – The plan provides water quality treatment in accordance with NYSSMDM guidelines noted Table 6.1 "Water Quality Volume Distributing in Pond Design".

5. Environmental/Landscaping –Extensive landscaping has been provided for each proposed practice to enhance pollutant removal and provide aesthetic enhancement to the property.

6. Maintenance – Maintenance for the environment practices has been provided and is detain the SWPPP Report as required. Maintenance access is provided in the design plans.

Tables 1 and 2 below summarize the WQv and RRv required for both design points on the property:

Table 1

Design Point #1 WQv / RRv Calculations Summary – See Appendix C	
Initial Required WQv	15,619 c.f.
Adjusted Required WQv (Redevelopment)	12,000 c.f. (No credit taken)
Minimum RRv Required	3,672 c.f.
RRv Provided	16,399 c.f.
Net WQv Required	0 c.f.

Table 2

Design Point #2 WQv / RRv Calculations Summary – See Appendix C	
Initial Required WQv	6,633 c.f.
Adjusted Required WQv (Area Practice)	5,922 c.f.
Minimum RRv Required	1,587 c.f.
RRv Provided	1,851 c.f.
Net WQv Required	4,776 c.f.

In order to determine the post-development rates of runoff generated on-site, the following drainage areas were analyzed in the post-development conditions. These areas are graphically depicted on Drawing DA-2 "Proposed Drainage Area Map" located in Appendix H.

Two (2) separate Design Points were identified for comparing peak rates of runoff in existing and proposed conditions. Similarly, two separate drainage areas were identified in proposed conditions based on the proposed drainage divides at the site. The numbers included in the name of each drainage area correspond to the Design Point they drain towards.

The following is a description of each of the drainage areas analyzed in the proposed conditions analysis.

Proposed Drainage Area 1 is the western portion of the site and discharges to Design Point 1, which is an existing catch basin located in Pershing Avenue. Proposed Drainage Area 1 consists of the following sub-drainage areas:

Proposed Drainage Area 1A (PDA-1A) is 4.55 acres and consists of a portion of the proposed building, driveways, parking areas, grass areas landscaping and infiltration basin 1A. Runoff from the building roof and parking areas will be collected by roof drain leaders and drain inlets and conveyed in pipes to infiltration basin 1A, which will be constructed in the location of the existing depression. An infiltration rate of two inches per hour was used for Basin 1A. The outflow from the infiltration basin will be conveyed to PDA-1B. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 80 and 10.1 minutes, respectively.

Proposed Drainage Area 1B (PDA-1B) is 3.61 acres and consists of a portion of the proposed building, asphalt parking areas, asphalt drives, pool area, landscaping, woods and grass. Runoff from PDA-1B will be collected by roof drain leaders and drain inlets and conveyed in pipes to a proposed infiltration basin to be constructed in the location of the existing depression to the north of the site driveway. An infiltration rate of four inches per hour was used for Basin 1B. The outflow from the infiltration basin will be conveyed to PDA-1C. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 73 and 8.0 minutes, respectively.

Proposed Drainage Area 1C (PDA-1C) is 2.27 acres and consists of landscaping, woods, grass and a portion of the proposed driveway. The portion of the proposed driveway that drains to this area is in the same location of the existing driveway and is considered redeveloped area. Therefore, the driveway will be treated with a Contech CDS Unit, which is a NYSDEC approved alternative practice. Runoff from PDA-1C will flow overland to a depression located south of the site driveway. The outflow from the depression will be conveyed to a proposed series of pipes located in croton dam road and then discharge into an existing catch basin in Pershing Avenue. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 80 and 10.1 minutes, respectively.

Proposed Drainage Area 2 is the eastern portion of the site and discharges to Design Point 2, which is an existing structure in the southernmost corner of the site. Proposed Drainage Area 2 consists of the following sub-drainage areas:

Proposed Drainage Area 2A (PDA-2A) is 1.66 acres and consists of landscaping, woods and grass. Runoff from PDA-2A flows overland to the wetland in the northeast corner of the site, as in existing conditions. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 63 and 10.7 minutes, respectively.

Proposed Drainage Area 2A (PDA-2B) is 5.20 acres and consists of a portion of the proposed building, asphalt parking areas, asphalt drives, landscaping, woods and grass. Runoff from PDA-2B will be collected by roof drain leaders and drain inlets and conveyed in pipes to a proposed micropool extended detention pond, to be constructed in the location of the existing depression in the southernmost corner of the site. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 70 and 7.6 minutes, respectively. Refer to Drawing DA-2 in Appendix H.

The peak rates of runoff to the design point of each of the analyzed drainage areas for each storm are shown on the table below:

Table 3
Summary of Proposed Peak Rates of Runoff in Proposed Conditions
(Cubic Feet per Second)

Storm Recurrence Interval	DP-1	DP-2
1 year	0.64	0.32
10 year	3.08	11.65
100 year	6.23	33.58

The reductions in peak rates of runoff from proposed to existing conditions are shown on the table below:

Table 4
Percent Reductions in Peak Rates of Runoff (Existing vs. Proposed Conditions)
(Cubic Feet per Second)

Design Point	Storm Recurrence Frequency (Years)	Existing Peak Runoff Rate (cfs)	Proposed Peak Runoff Rate (cfs)	Percent Reduction (%)
1	1 year	1.72	0.64	63
	10 year	5.43	3.08	43
	100 year	9.92	6.23	37
2	1 year	3.20	0.32	90
	10 year	15.33	11.65	24
	100 year	42.12	33.58	20

As demonstrated in Table 4, the proposed stormwater improvements will result in significant reductions of peak rates of runoff for all storms and design points analyzed.

VI. SOIL EROSION & SEDIMENT CONTROL

A potential impact of the proposed development on any soils or slopes will be that of erosion and transport of sediment during construction. An Erosion and Sediment Control Management Program will be established for the proposed development, beginning at the start of construction and continuing throughout its course, as outlined in the "New York State Standards and

Specifications for Erosion and Sediment Control," dated November 2016. A continuing maintenance program will be implemented for the control of sediment transport and erosion control after construction and throughout the useful life of the project.

The Operator shall have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify that the appropriate erosion and sediment controls, as shown on the Sediment & Erosion Control Plans, have been adequately installed to ensure overall preparedness of the site for the commencement of construction. In addition, the Operator shall have a qualified professional conduct one site inspection at least every seven calendar days and at least two site inspections every seven calendar days when greater than five acres of soil is disturbed at any one time.

Prior to the commencement of construction activity, the owner or operator must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The owner or operator shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the trained contractor. The owner or operator shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed.
The owner or operator shall have each of the contractors and subcontractors identified above sign a copy of the certification statement provided in Appendix H before they commence any construction activity.

Soil Description

As provided by the United States Department of Agriculture, Soil Conservation Service "Web Soil Survey," soil classifications which exist on the subject site are described below.

Soils are placed into four hydrologic groups: A, B, C, and D. In the definitions of the classes, infiltration rate is the rate at which water enters the soil at the surface and is controlled by the surface conditions. Transmission rate is the rate at which water moves in the soil and is controlled by soil properties. Definitions of the classes are as follows:

A. (Low runoff potential). The soils have a high infiltration rate even when thoroughly wetted. They chiefly consist of deep, well drained to excessively drained sands or gravels. They have a high rate of water transmission.

B. The soils have a moderate infiltration rate when thoroughly wetted. They chiefly are moderately deep to deep, moderately well drained to well drained soils that have moderately fine to moderately coarse textures. They have a moderate rate of water transmission.

C. The soils have a slow infiltration rate when thoroughly wetted. They chiefly have a layer that impedes downward movement of water or have moderately fine to fine texture. They have a slow rate of water transmission.

D. (High runoff potential). The soils have a very slow infiltration rate when thoroughly wetted. They chiefly consist of clay soils that have a high swelling potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. They have a very slow rate of water transmission.

A soil's tendency to erode is also described in the USDA web soil survey. The ratings in this interpretation indicate the hazard of soil loss from unsurfaced areas. The ratings are based on soil erosion factor K, slope, and content of rock fragments. The hazard is described as "slight," "moderate," or "SEVERE." A rating of "slight" indicates that little or no erosion is likely; "moderate" indicates that some erosion is likely, that the temporarily unsurfaced / unstabilized during construction may require occasional maintenance, and that simple erosion-control measures are needed; and "SEVERE" indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that erosion-control measures are needed.

Per the Soil Survey, the following soils listed below are present at the site. Following this list is a detailed description of each soil type found on the property:

SYM.	HYDRO. SOIL GROUP	DESCRIPTION
ChE	**B**	**Charlton Loam, 25-35% slopes**
CsD	**B**	**Chatfield Charlton , very rocky**
HrF	**D**	**Hollis-Rock Outcrop Complex, very steep**
CrC	**B**	**Charlton Chatfield complex**
LcB	**A/D**	**Leicester Loam, 3-8% slopes**
PnD	**C**	**Paxton Fine Sandy Loam, 15-25% slopes**

On-Site Pollution Prevention

There are temporary pollution prevention measures used to control litter and construction debris on site, such as:

- Silt Fence
- Sediment Traps
- Silt Sack
- Excavated Drop Inlet Protection

There will be inlet protection provided for all storm drains and inlets with the use of curb gutter inlet protection structures and stone & block drop inlet protection, which keep silt, sediment and construction litter and debris out of the on-site stormwater drainage system.

Temporary Control Measures

Temporary control measures and facilities will include silt fences, interceptor swales, stabilized construction entrances, temporary seeding, mulching and sediment traps.

Throughout the construction of the proposed redevelopment, temporary control facilities will be implemented to control on-site erosion and sediment transfer. Interceptor swales, if required, will be used to direct stormwater runoff to temporary sediment traps for settlement. The sediment traps

will be constructed as part of this project will serve as temporary sediment basins to remove sediment and pollutants from the stormwater runoff produced during construction. Descriptions of the temporary sediment & erosion controls that will be used during the development of the site including silt fence, stabilized construction entrance, seeding, mulching and inlet protection are as follows:

1. Silt Fence is constructed using a geotextile fabric. The fence will be either 18 inches or 30 inches high. The height of the fence can be increased in the event of placing these devices on uncompacted fills or extremely loose undisturbed soils. The fences will not be placed in areas which receive concentrated flows such as ditches, swales and channels nor will the filter fabric material be placed across the entrance to pipes, culverts, spillway structures, sediment traps or basins.

2. Stabilized Construction Entrance consists of AASHTO No. 1 rock. The rock entrance will be a minimum of 50 feet in length by 20 feet in width by 8 inches in depth.

3. Seeding will be used to create a vegetative surface to stabilize disturbed earth until at least 70% of the disturbed area has a perennial vegetative cover. This amount is required to adequately function as a sediment and erosion control facility. Grass lining will also be used to line temporary channels and the surrounding disturbed areas.

4. Mulching is used as an anchor for seeding and disturbed areas to reduce soil loss due to storm events. These areas will be mulched with straw at a rate of 3 tons per acre such that the mulch forms a continuous blanket. Mulch must be placed after seeding or within 48 hours after seeding is completed.

5. Inlet Protection will be provided for all stormwater basins and inlets with the use of curb & gutter inlet protection and stone & block inlet protection structures, which will keep silt, sediment and construction debris out of the storm system. Existing structures within existing paved areas will be protected using “Silt Sacks” inside the structures.

6. Erosion Control Matting will be utilized on slopes and within swales, where applicable, to provide stabilization in advance of vegetation being established. Such matting will be biodegradable to facilitate long term growth of vegetation in swales, on slopes and within stormwater management facilities.

7. Sediments Traps will be used with the permanent SMP's until their contributing areas are stabilized.

The contractor shall be responsible for maintaining the temporary sediment and erosion control measures throughout construction. This maintenance will include, but not be limited to, the following tasks:

1. For dust control purposes, moisten all exposed graded areas with water at least twice a day in those areas where soil is exposed and cannot be planted with a temporary cover due to construction operations or the season (December through March).

2. Inspection of erosion and sediment control measures shall be performed at the end of each construction day and immediately following each rainfall event. All required repairs shall be immediately executed by the contractor.

3. Sediment deposits shall be removed when they reach approximately ⅓ the height of the silt fence. All such sediment shall be properly disposed of in fill areas on the site, as directed by the Owner's Field Representative. Fill shall be protected following disposal with mulch, temporary and/or permanent vegetation and be completely circumscribed on the downhill side by silt fence.

4. Rake all exposed areas parallel to the slope during earthwork operations.

5. Following final grading, the disturbed area shall be stabilized with a permanent surface treatment (i.e. turf grass, pavement or sidewalk). During rough grading, areas which are not to be disturbed for fourteen or more days shall be stabilized with the temporary seed mixture, as

defined on the plans. Seed all piles of dirt in exposed soil areas that will not receive a permanent surface treatment.

Concrete Material and Equipment Management

Concrete washouts shall be used to contain concrete and liquids when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery. The washout facilities consolidate solid for easier disposal and prevent runoff of liquids. The wash water is alkaline and contains high levels of chromium, which can leach into the ground and contaminate groundwater. It can also migrate to a storm drain, which can increase the pH of area waters and harm aquatic life. Solids that are improperly disposed of can clog storm drain pipes and cause flooding. Installing concrete washout facilities not only prevents pollution but also is a matter of good housekeeping at your construction site.

Prefabricated concrete washout containers can be delivered to the site to provide maintenance and disposal of materials. Regular pick-ups of solid and liquid waste materials will be necessary. To prevent leaks on the job site, ensure that prefabricated washout containers are watertight. A self installed concrete washout facility can be utilized although they are much less reliable than prefabricated containers and are prone to leaks. There are many design options for the washout, but they are preferably built below-grade to prevent breaches and reduce the likelihood of runoff. Above-grade structures can also be used if they are sized and constructed correctly and are diligently maintained. One of the most common problems with self-installed concrete washout facilities is that they can leak or be breached as a result of constant use, therefore the contractor shall be sure to use quality materials and inspect the facilities on a daily basis.

Washouts must be sized to handle solids, wash water, and rainfall to prevent overflow. Concrete Washout Systems, Inc. estimates that 7 gallons of wash water are used to wash one truck chute and 50 gallons are used to wash out the hopper of a concrete pump truck.

For larger sites, a below-grade washout should be at least 10 feet wide and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 12-

inches of freeboard must be provided. The pit must be lined with plastic sheeting of at least 10-mil thickness without holes or tears to prevent leaching of liquids into the ground. Concrete wash water should never be placed in a pit that is connected to the storm drain system or that drains to nearby waterways.

An above-grade washout can be constructed at least 10 feet wide by 10 feet long and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 4-inches of freeboard must be provided. The washout structures can be constructed with staked straw bales or sandbags double-or triple lined with plastic sheeting of at least 10-mil thickness without holes or tears.

Concrete washout facilities shall not be located within 50 feet of storm drains, open ditches, or water bodies and should be placed in locations that allow for convenient access for concrete trucks. The contractor shall check all concrete washout facilities daily to determine if they have been filled to 75 percent capacity, which is when materials need to be removed. Both above-and below-ground self-installed washouts should be inspected daily to ensure that plastic linings are intact and sidewalls have not been damaged by construction activities. Prefabricated washout containers should be inspected daily as well as to ensure the container is not leaking or nearing 75 percent capacity. Inspectors should also note whether the facilities are being used regularly. Additional signage for washouts may be needed in more convenient locations if concrete truck operators are not utilizing them.

The washout structures must be drained or covered prior to predicted rainstorms to prevent overflows. Hardened solids either whole or broken must be removed and then they may be reused onsite or hauled away for recycling.

Once materials are removed from the concrete washout, a new structure must be built or excavated, or if the previous structure is still intact, inspect it for signs of weakening or damage and make any necessary repairs. Line the structure with new plastic that is free of holes or tears and replace signage if necessary. It is very important that new plastic be used after every cleaning because pumps and concrete removal equipment can damage the existing liner.

Construction Site Chemical Control

The purpose of this management measure is to prevent the generation of nonpoint source pollution from construction sites due to improper handling and usage of nutrients and toxic substances, and to prevent the movement of toxic substances from the construction site.

Many potential pollutants other than sediment are associated with construction activities. These pollutants include pesticides; fertilizers used for vegetative stabilization; petrochemicals; construction chemicals such as concrete products, sealers, and paints; wash water associated with these products; paper; wood; garbage; and sanitary waste.

Disposal of excess pesticides and pesticide-related wastes should conform to registered label directions for the disposal and storage of pesticides and pesticide containers set forth in applicable Federal, State and local regulations that govern their usage, handling, storage, and disposal.

Pesticides should be disposed of through either a licensed waste management firm or a treatment, storage and disposal (TSD) facility. Containers should be triple-rinsed before disposal, and rinse waters should be reused as product.
Other practices include setting aside a locked storage area, tightly closing lids, storing in a cool, dry place, checking containers periodically for leaks or deterioration, maintaining a list of products in storage, using plastic sheeting to line the storage areas, and notifying neighboring property owners prior to spraying.

When storing petroleum products, follow these guidelines:

- Create a shelter around the area with cover and wind protection;
- Line the storage area with a double layer of plastic sheeting or similar material;
- Create an impervious berm around the perimeter with a capacity of 110 percent greater than that of the largest container;
- Clearly label all products;

- Keep tanks off the ground; and
- Keep lids securely fastened.

Post spill procedure information and have persons trained in spill handling on site or on call at all times. Materials for cleaning up spills should be kept on site and easily available. Spills should be cleaned up immediately and the contaminated material properly disposed of. Maintain and wash equipment and machinery in confined areas specifically designed to control runoff.

Thinners or solvents should not be discharged into sanitary or storm systems when cleaning machinery. Use alternative methods for cleaning larger equipment parts, such as high-pressure, high-temperature water washes, or steam cleaning. Equipment-washing detergents can be used, and wash water may be discharged into sanitary sewers if solids are removed from the solution first. (This practice should be verified with the local sewer authority.) Small parts can be cleaned with degreasing solvents, which can then be reused or recycled.

Solid Waste Management and Portable Sanitary Management

The purpose of this management measure is to prevent the potential for solid waste such as construction debris, trash, etc. from construction sites due to improper handling and storage. Debris and litter should be removed periodically from the BMP's and surrounding areas to prevent clogging of pipes and structures. All construction material shall be stored in designated staging areas. Roll-off containers shall be placed on site and all empty containers, construction debris and litter shall be placed in the containers.

Portable sanitary units may be utilized on-site or bathrooms will be provided within construction trailers. A sanitation removal company will be hired to pump/remove any sanitary waste. In the event that portable sanitary units are used and then cleaned after being emptied, the rinse water may not be disposed of to the storm drain system. It shall be contained for later disposal if it can't be disposed of on-site. Remove paper and trash before cleaning the portable sanitary units. The portable sanitary units shall be located away from the storm drain system if possible. Provide over

head cover for wash areas if possible. Maintain spill response material and equipment on site to eliminate the potential for contaminants and wash water from entering the storm drain system.

Permanent Control Measures and Facilities for Long Term Protection

Towards the completion of construction, permanent sediment and erosion control measures will be developed for long term erosion protection. The following permanent control measures and facilities have been proposed to be implemented for the project:

1. Infiltration Basins will be used to treat the runoff volume generated from the developed area and provide improvement to water quality control. The proposed basins will provide water quality for 90% of the average annual stormwater runoff volume. The water quality volume will be retained and higher storms will be released gradually. Refer to the water quality volume calculations, in Appendix C.

2. Wet Extended Detention Pond (NYS DEC Standard Practice P-3) will be used to treat the runoff volume generated from the developed area and provide improvement to water quality control. The proposed basins will provide water quality for 90% of the average annual stormwater runoff volume. The stormwater will be detained and released gradually. The extended detention time will enable sediment and various pollutants to settle out. Refer to "Water Quality Volume Calculations," in Appendix C.

3. Stormwater Planters are proposed at various locations around the proposed walls to collect and filter runoff from portions of the building rooftops. Small drainage areas, less than 15,000 square feet will be collected by gutters and roof drain leaders and discharged into stormwater planters that will infiltrate the smaller storms and then discharge the higher storms through risers/standpipes directly into the underground storm pipes to the proposed stormwater management basins. Stormwater Planters act as small basins that treat stormwater as it flows through plant material and a soil matrix and is discharged to the storm drain system. These practices are elevated above the existing grade, surrounded by a concrete wall and consist of a reservoir with a depth of 12 inches, grass/landscaping with a layer of mulch, 12 inches of sandy loam topsoil and a sand/gravel layer a minimum of 24 inches wide that extends down to

the native soil. Filtration through these layers will enable removal of pollutants and sediment generated by the rooftop and other small impervious areas. Refer to Appendix C for the Runoff Reduction and Water Quality Volume Sizing Calculations.

4. Catch Basins will be used to remove some of the coarse sand and grit sediment before entering the drainage system. Each catch basin will be constructed with an 18 inch deep sump.

5. Rip-Rap Energy Dissipators At discharge points from the stormwater drainage system into the stormwater management basins, rip-rap pads consisting of angular rocks will be placed to dissipate velocity and reduce the risk of erosion. The rip-rap pads will be 10 feet wide by 10 feet long.

6. Seeding of at least 70% perennial vegetative cover will be used to produce a permanent uniform erosion resistant surface. The seeded areas will be mulched with straw at a rate of 2 tons per acre such that the mulch forms a continuous blanket.

Specifications for Soil Restoration

Prior to the final stabilization of the disturbed areas, soil restoration will be required for all vegetated areas to recover the original properties and porosity of the soil. Soil Restoration Requirements are provided on Table 7 below:

Table 7
Soil Restoration Requirements

Type of Soil Disturbance	Soil Restoration Requirement		Comments/Examples
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only – no change in grade	HSG A&B	HSG C&D	Protect area from any ongoing construction activities
	apply 6 inches of topsoil	Aerate* and apply 6 inches of topsoil	
Areas of cut or fill	HSG A&B	HSG C&D	Clearing and grubbing
	Aerate and apply 6 inches	Apply full Soil Restoration**	

	of topsoil	
Heavy traffic areas on site (especially) in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)	Apply full Soil Restoration (decompaction and compost enhancement)	
Areas where Runoff Reduction and/or Infiltration practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.	Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area.
Redevelopment projects	Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.	

* Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.

** Per "Deep Ripping and De-compaction, DEC 2008."

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following full soil restoration steps applied:

1. Apply 3 inches of compost over subsoil.

2. Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor-mounted disc, or tiller, mixing, and circulating air and compost into subsoils.

3. Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site.

Specifications for Final Stabilization of Graded Areas

Final stabilization of graded areas consists of the placement of topsoil and installation of landscaping (unless the area is to be paved, or a building is to be constructed in the location). Topsoil is to be spread as soon as grading operations are completed. Topsoil is to be placed to a minimum depth of six inches on all embankments, planting areas and seeding/sod areas. The subgrade is to be scarified to a depth of two inches to provide a bond of the topsoil with the subsoil. Topsoil is to be raked to an even surface and cleared of all debris, roots, stones and other unsatisfactory material.

Planting operations shall be conducted under favorable weather conditions as follows:

- Permanent Lawns - April 15 (provided soil is frost-free and not excessively moist) to May 15; August 15 to October 15.
- Temporary Lawn Seeding - if outside of the time periods noted above, the areas shall be seeded immediately on completion of topsoil operations with annual ryegrass (Italian rye) at a rate of six pounds per 1,000 square feet. Temporary lawn installation is permitted provided the soil is frost-free and not excessively moist. The permanent lawn is to be installed the next planting season.

On slopes with a grade of 3 horizontal to 1 vertical or greater, and in swales, a geotextile netting or mat shall be installed for stabilization purposes as shown on the Plans. Seeded areas are to be mulched with straw or hay at an application rate of 70-90 pounds per 1,000 s.f. Straw or hay mulch must be spread uniformly and anchored immediately after spreading to prevent wind blowing. Mulches must be inspected periodically and in particular after rainstorms to check for erosion. If erosion is observed, additional mulch must be applied. Netting shall be inspected after rainstorms for dislocation or failure; any damage shall be repaired immediately.

All denuded surfaces which will be exposed for a period of over two months or more shall be temporarily hydroseeded with (a) perennial ryegrass at a rate of 40 lbs per acre (1.0 lb per 1000 square feet); (b) Certified "Aroostook" winter rye (cereal rye) @ 100 lb per acre (2.5 lb/1000 s.f.) to be used in the months of October and November.

Permanent turfgrass cover is to consist of a seed mixture as follows:

(a) Sunny sites

Kentucky Bluegrass	2.0-2.6 pounds/1000 square feet
Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	0.4-0.6 pounds/1000 square feet

(b) Shady sites

Kentucky Bluegrass	0.8-1.0 pounds/1000 square feet
Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	2.6-3.3 pounds/1000 square feet

All plant materials shall comply with the standards of the American Association Of Nurserymen with respect to height and caliper as described in its publication American Standard for Nursery Stock, latest edition.

VII. CONSTRUCTION PHASE AND POST-CONSTRUCTION MAINTENANCE

During the construction phase and following construction of the project, a number of maintenance measures will be taken with respect to the site maintenance. Measures to be taken included the following:

1. During Construction

A comprehensive sediment and erosion control plan will be in place during the construction period. Maintenance measures for sediment and erosion controls will include:

A qualified professional acceptable to the municipality will be hired by the owner or operator to monitor the installation and maintenance of the sediment and erosion control plans. The qualified professional shall report directly to the Engineering Consultant and shall be responsible for ensuring compliance with the design of the sediment and erosion control plans.

The qualified professional so hired will inspect all sediment and erosion control measures at least every seven calendar days. In the event that there has been a variance with the design of the sediment and erosion control measures so that the ability of the measures to adequately perform the intended function is lessened or compromised and/or the facilities are not adequately maintained, the qualified professional shall be required to report such variance to the Engineering Consultant within 48 hours and shall be empowered to order immediate repairs to the sediment and erosion control measures.

The qualified professional will also be responsible for observing the adequacy of the vegetation growth (trees, shrubs, groundcovers and turfgrasses) in newly graded areas and for ordering additional plantings in the event that the established plant materials do not adequately protect the ground surface from erosion.

2. Following Construction

Site maintenance activities on the property will include:

- Grounds maintenance, including mowing of lawns;
- Planting of trees, shrubs and groundcovers; pruning of trees and shrubs;
- Application of fertilizer and herbicides;
- Maintenance of stormwater management area;

Grounds maintenance on the site will be performed by landscaping contractor.

Fertilizer is typically applied twice in the year - once in the spring and once in the fall. The application of fertilizer is usually necessary to maintain healthy lawn growth due to competition for nutrients with trees and shrubs and since the clippings are often removed. It is not recommended that fertilizer be applied during the summer. It is at this time that lawns are typically dormant.

Fertilizers come in three basic types: (1) Organic; (2) Soluble synthetic and (3) Slow release.

Organic fertilizers are derived from plant or animal waste. Since they are heavier and bulkier than other fertilizers, it is necessary to apply a much greater amount at one time. Soluble synthetic fertilizers are predictable with determining the exact impact on a lawn. However more applications are necessary since their effect is often short term. Slow release fertilizers have a high percentage of nitrogen so quantities that need be handled at one time are smaller. Slow release fertilizers will be utilized by the project.

A complete fertilizer contains all three of the primary nutrients - nitrogen (N), phosphorus (P) and potassium in the form of potash (K). Typically, a 3-1-2 ratio of nutrients (N-P-K) is used for lawn applications.

Fertilizer shall be applied by the landscape contractor in accordance with the manufacturer's instructions. The application of fertilizer does require some skill on the part of the operator. Should there be a spill of fertilizer, the landscape contractor shall be required to scrape or vacuum it up. The area will then be watered in accordance with the manufacturer's instructions to ensure that the fertilizer becomes soluble and available to plants and does not run off.

Glenco Group, LLC will be responsible for the long-term operation and maintenance of the permanent stormwater management practices. The permanent stormwater management practices shall be maintained in accordance with the Maintenance Inspection Checklists provided in Appendix E.

VIII. CONCLUSION

This Stormwater Pollution Prevention Plan has been prepared to describe the project's pre and post-development stormwater management improvements and its sediment and erosion control improvements to be utilized during construction. The proposed permanent improvements and the interim improvements to be utilized during construction have been designed in accordance with the requirements of the:

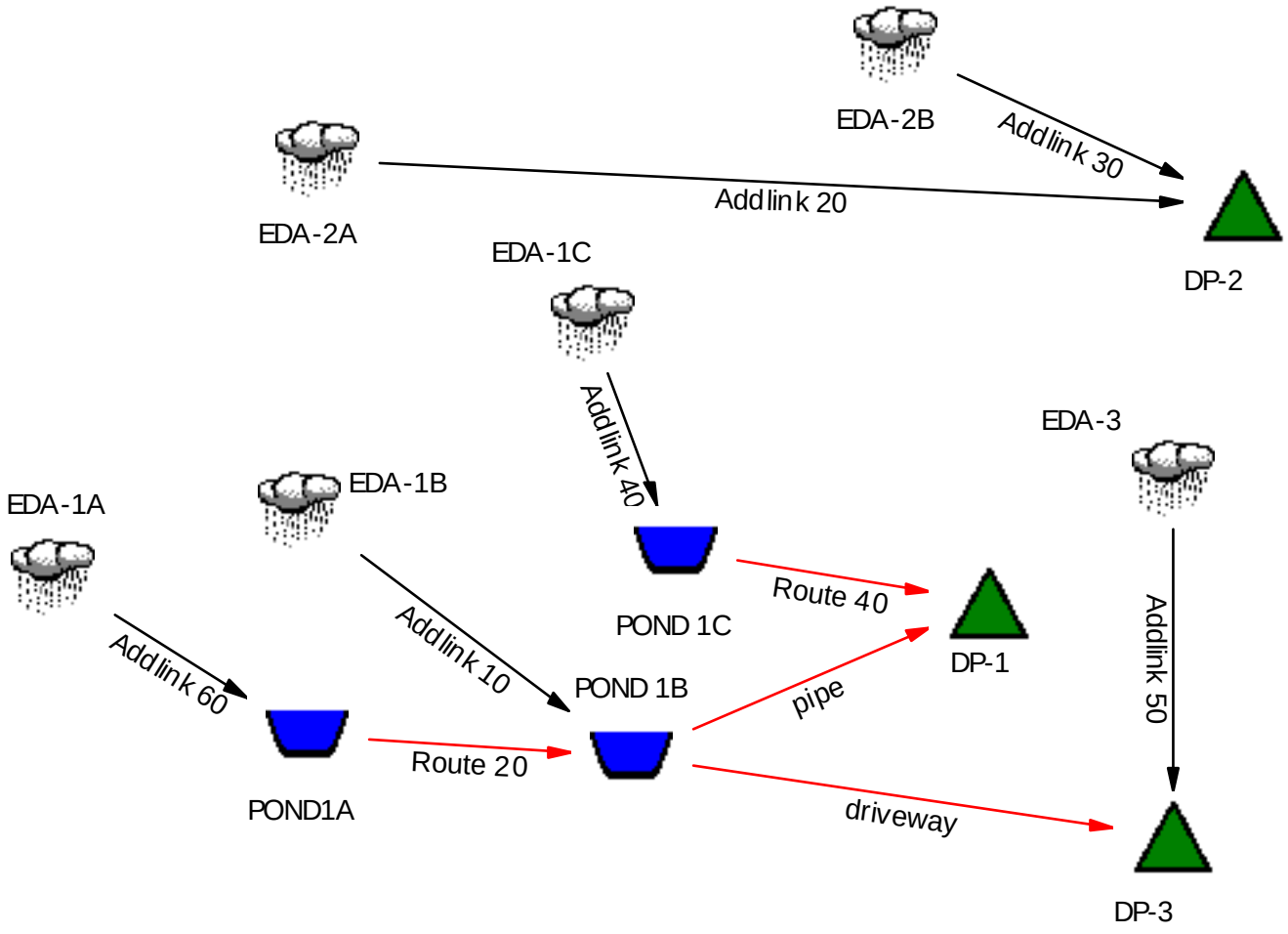
- New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-15-002, effective January 29, 2015.
- Chapter 168 "Stormwater Management and Sediment and Erosion Control" of the Town of Ossining Code.
- New York State Stormwater Management Design Manual, revised January 2016.

The project employs a variety of practices to enhance stormwater quality and reduce peak rates of runoff associated with the proposed improvements. These measures include Infiltration basins, a wet extended detention pond and stormwater planters. These improvements will also mitigate runoff volumes from the proposed improvements as runoff volumes will be slightly reduced or maintained in all the analyzed storms.

Based on the foregoing, it is our professional opinion that the proposed improvements will provide water quantity and quality enhancements which exceed the above mentioned requirements and are not anticipated to have any adverse impacts to the site or any surrounding areas.

APPENDIX A

EXISTING HYDROLOGIC CALCULATIONS


EDA-2B
Addlink 30
EDA-2A
Addlink 20
DP-2
EDA-1C
Addlink 40
EDA-3
EDA-1A
EDA-1B
Addlink 60
Addlink 10
POND 1C
Route 40
DP-1
Addlink 50
POND 1B
pipe
Route 20
POND1A
driveway
DP-3

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EDA-2B..... Tc Calcs 3.07

EDA-3..... Tc Calcs 3.08

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********** RUNOFF HYDROGRAPHS **********

EDA-1A..... 1
Unit Hyd. (HYG output) 5.01

EDA-1A..... 10
Unit Hyd. (HYG output) 5.03

EDA-1A..... 100
Unit Hyd. (HYG output) 5.05

EDA-1B..... 1
Unit Hyd. (HYG output) 5.07

EDA-1B..... 10
Unit Hyd. (HYG output) 5.09

EDA-1B..... 100
Unit Hyd. (HYG output) 5.11

EDA-1C..... 1
Unit Hyd. (HYG output) 5.13

EDA-1C..... 10
Unit Hyd. (HYG output) 5.15

EDA-1C..... 100
Unit Hyd. (HYG output) 5.17

EDA-2A..... 1
Unit Hyd. (HYG output) 5.19

EDA-2A..... 10
Unit Hyd. (HYG output) 5.21

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Unit Hyd. (HYG output) 5.23

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EDA-3..... 100
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********** HYG ADDITION **********

DP-1..... 1
Node: Addition Summary 6.01

DP-1..... 10
Node: Addition Summary 6.05

DP-1..... 100
Node: Addition Summary 6.10

DP-2..... 1
Node: Addition Summary 6.15

DP-2..... 10
Node: Addition Summary 6.18

DP-2..... 100
Node: Addition Summary 6.21

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POND 1B OUT 1
Pond Routed HYG (total out) 9.06

POND 1B OUT 10
Pond Routed HYG (total out) 9.08

POND 1B OUT 100
Pond Routed HYG (total out) 9.10

POND 1C..... Pond E-V-Q Table 9.13

POND 1C OUT 1
Pond Routed HYG (total out) 9.16

POND 1C OUT 10
Pond Routed HYG (total out) 9.19

POND 1C OUT 100
Pond Routed HYG (total out) 9.23

Table of Contents (continued)

POND1A..... Pond E-V-Q Table 9.27

POND1A OUT 1
Pond Routed HYG (total out) 9.28

POND1A OUT 10
Pond Routed HYG (total out) 9.30

POND1A OUT 100
Pond Routed HYG (total out) 9.32

MASTER DESIGN STORM SUMMARY

Network Storm Collection: OSSINING-JMC

Return Event	Total Depth in	Rainfall Type	RNF ID
1	2.7800	Synthetic Curve	TypeIII 24hr
10	5.1400	Synthetic Curve	TypeIII 24hr
100	9.3000	Synthetic Curve	TypeIII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
*DP-1	JCT	1	14297		12.2500	1.72		
*DP-1	JCT	10	58526		12.2500	5.43		
*DP-1	JCT	100	158593		12.5500	9.92		
*DP-2	JCT	1	16029		12.1500	3.20		
*DP-2	JCT	10	62024		12.1500	15.33		
*DP-2	JCT	100	168373		12.1500	42.12		
*DP-3	JCT	1	2534		12.1000	.67		
*DP-3	JCT	10	7026		12.1000	1.89		
*DP-3	JCT	100	17775		12.1000	4.19		
EDA-1A	AREA	1	5310		12.2000	1.03		
EDA-1A	AREA	10	19694		12.2000	4.59		
EDA-1A	AREA	100	52342		12.2000	12.31		
EDA-1B	AREA	1	6564		12.1500	1.52		
EDA-1B	AREA	10	21061		12.1500	5.30		
EDA-1B	AREA	100	51904		12.1500	12.98		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
EDA-1C	AREA	1	8586		12.1500	2.17		
EDA-1C	AREA	10	26841		12.1500	7.09		
EDA-1C	AREA	100	65221		12.1000	16.91		
EDA-2A	AREA	1	6017		12.1000	1.42		
EDA-2A	AREA	10	22317		12.1000	6.24		
EDA-2A	AREA	100	59313		12.1000	16.64		
EDA-2B	AREA	1	10012		12.2000	1.91		
EDA-2B	AREA	10	39707		12.1500	9.59		
EDA-2B	AREA	100	109060		12.1500	27.23		
EDA-3	AREA	1	2534		12.1000	.67		
EDA-3	AREA	10	7026		12.1000	1.89		
EDA-3	AREA	100	15969		12.1000	4.19		
POND 1B	IN POND	1	6564		12.1500	1.52		
POND 1B	IN POND	10	32538		12.1500	5.30		
POND 1B	IN POND	100	96030		12.2000	21.26		
+POND 1B	OUT POND	1	5778		12.2500	1.41	338.59	1073
+POND 1B	OUT POND	10	31752		12.2500	4.23	338.94	1944
+POND 1B	OUT POND	100	95243		12.5500	11.12	342.14	19856
POND 1C	IN POND	1	8586		12.1500	2.17		
POND 1C	IN POND	10	26841		12.1500	7.09		
POND 1C	IN POND	100	65221		12.1000	16.91		
POND 1C	OUT POND	1	8520		12.6000	.52	314.50	2962
POND 1C	OUT POND	10	26775		12.7000	1.24	315.49	10949
POND 1C	OUT POND	100	65155		13.0500	1.58	317.39	31800
POND1A	IN POND	1	5310		12.2000	1.03		
POND1A	IN POND	10	19694		12.2000	4.59		
POND1A	IN POND	100	52342		12.2000	12.31		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
POND1A	OUT POND	1	0		11.7000	.00	364.50	5307
POND1A	OUT POND	10	11477		12.9000	.86	364.78	9427
POND1A	OUT POND	100	44125		12.3000	10.45	365.06	14065

Title... Project Date: 9/30/2015
Project Engineer: BD
Project Title: RIVER KNOLL
Project Comments:

DESIGN STORMS SUMMARY

Design Storm File,ID = OSSINING-JMC

Storm Tag Name = 1

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 1 yr
Total Rainfall Depth= 2.7800 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 10

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.1400 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 9.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = OSSINING-JMC

Storm Tag Name = 1

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 1 yr
Total Rainfall Depth= 2.7800 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 10

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.1400 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 9.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.0110
Hydraulic Length	10.00 ft
2yr, 24hr P	3.4100 in
Slope	.058330 ft/ft
Avg.Velocity	1.37 ft/sec

Segment #1 Time: .0020 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.2400
Hydraulic Length	27.00 ft
2yr, 24hr P	3.4100 in
Slope	.105260 ft/ft
Avg.Velocity	.18 ft/sec

Segment #2 Time: .0416 hrs

Segment #3: Tc: TR-55 Sheet

Mannings n	.4000
Hydraulic Length	105.00 ft
2yr, 24hr P	3.4100 in
Slope	.104760 ft/ft
Avg.Velocity	.16 ft/sec

Segment #3 Time: .1859 hrs

Segment #4: Tc: TR-55 Shallow

Hydraulic Length 199.00 ft
Slope .135670 ft/ft
Unpaved

Avg.Velocity 5.94 ft/sec

Segment #4 Time: .0093 hrs

Total Tc: .2388 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.2400	
Hydraulic Length	150.00	ft
2yr, 24hr P	3.4100	in
Slope	.097000	ft/ft
Avg.Velocity	.25	ft/sec

Segment #1 Time: .1695 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	294.00	ft
Slope	.057850	ft/ft
Unpaved		
Avg.Velocity	3.88	ft/sec

Segment #2 Time: .0210 hrs

==========
Total Tc: .1905 hrs
==========

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.0110
Hydraulic Length	17.00 ft
2yr, 24hr P	3.4100 in
Slope	.176470 ft/ft
Avg.Velocity	2.38 ft/sec

Segment #1 Time: .0020 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.2400
Hydraulic Length	133.00 ft
2yr, 24hr P	3.4100 in
Slope	.195488 ft/ft
Avg.Velocity	.32 ft/sec

Segment #2 Time: .1163 hrs

Segment #3: Tc: TR-55 Shallow

Hydraulic Length	104.00 ft
Slope	.105769 ft/ft
Paved	
Avg.Velocity	6.61 ft/sec

Segment #3 Time: .0044 hrs

Segment #4: Tc: TR-55 Shallow

Hydraulic Length 53.00 ft
Slope .264150 ft/ft
Unpaved

Avg.Velocity 8.29 ft/sec

Segment #4 Time: .0018 hrs

Segment #5: Tc: TR-55 Shallow

Hydraulic Length 107.00 ft
Slope .028037 ft/ft
Paved

Avg.Velocity 3.40 ft/sec

Segment #5 Time: .0087 hrs

Segment #6: Tc: TR-55 Shallow

Hydraulic Length 297.00 ft
Slope .117845 ft/ft
Unpaved

Avg.Velocity 5.54 ft/sec

Segment #6 Time: .0149 hrs

==========
Total Tc: .1480 hrs
==========

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.0110
Hydraulic Length	100.00 ft
2yr, 24hr P	3.4100 in
Slope	.080000 ft/ft
Avg.Velocity	2.47 ft/sec

Segment #1 Time: .0112 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.4000
Hydraulic Length	50.00 ft
2yr, 24hr P	3.4100 in
Slope	.250000 ft/ft
Avg.Velocity	.19 ft/sec

Segment #2 Time: .0725 hrs

Segment #3: Tc: TR-55 Shallow

Hydraulic Length	359.00 ft
Slope	.194000 ft/ft
Unpaved	
Avg.Velocity	7.11 ft/sec

Segment #3 Time: .0140 hrs

==========
Total Tc: .0978 hrs
==========

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.4000	
Hydraulic Length	150.00	ft
2yr, 24hr P	3.4100	in
Slope	.273330	ft/ft
Avg.Velocity	.25	ft/sec

Segment #1 Time: .1685 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	765.00	ft
Slope	.161600	ft/ft
Unpaved		
Avg.Velocity	6.49	ft/sec

Segment #2 Time: .0328 hrs

==========
Total Tc: .2013 hrs
==========

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.0110
Hydraulic Length	28.00 ft
2yr, 24hr P	3.4100 in
Slope	.142850 ft/ft
Avg.Velocity	2.42 ft/sec

Segment #1 Time: .0032 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.2400
Hydraulic Length	122.00 ft
2yr, 24hr P	3.4100 in
Slope	.191800 ft/ft
Avg.Velocity	.31 ft/sec

Segment #2 Time: .1094 hrs

Segment #3: Tc: TR-55 Shallow

Hydraulic Length	117.00 ft
Slope	.287170 ft/ft
Unpaved	
Avg.Velocity	8.65 ft/sec

Segment #3 Time: .0038 hrs

Segment #4: Tc: TR-55 Shallow

Hydraulic Length 238.00 ft
Slope .060500 ft/ft
Paved

Avg.Velocity 5.00 ft/sec

Segment #4 Time: .0132 hrs

Total Tc: .1296 hrs

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
IMPERVIOUS	98	.318			98.00
LAWN B	61	1.327			61.00
LAWN D	80	.280			80.00
WOODS B	55	.309			55.00
WOODS D	77	.400			77.00
COMPOSITE AREA & WEIGHTED CN --->		2.634			69.21 (69)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	Impervious Adjustment %UC	Adjusted CN
IMPERVIOUS	98	.237			98.00
LAWN B	61	.940			61.00
LAWN D	80	.695			80.00
WOODS D	77	.471			77.00
COMPOSITE AREA & WEIGHTED CN --->		2.343			73.59 (74)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	Impervious Adjustment %UC	Adjusted CN
IMPERVIOUS	98	.648			98.00
LAWN B	61	.856			61.00
LAWN C	74	.884			74.00
LAWN D	80	.040			80.00
WOODS B	55	.065			55.00
WOODS C	70	.385			70.00
WOODS D	77	.007			77.00
COMPOSITE AREA & WEIGHTED CN --->		2.885			74.66 (75)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	Impervious Adjustment %UC	Adjusted CN
IMPERVIOUS	98	.586			98.00
LAWN B	61	1.611			61.00
LAWN D	80	.249			80.00
WOODS B	55	.539			55.00
COMPOSITE AREA & WEIGHTED CN --->		2.985			68.77 (69)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
IMPERVIOUS	98	.826			98.00
LAWN B	61	2.300			61.00
LAWN C	74	.474			74.00
LAWN D	80	.118			80.00
WOODS B	55	1.610			55.00
WOODS C	70	.372			70.00
WOODS D	77	.053			77.00
COMPOSITE AREA & WEIGHTED CN --->		5.753			66.82 (67)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
IMPERVIOUS	98	.167			98.00
LAWN B	61	.166			61.00
LAWN D	80	.309			80.00
COMPOSITE AREA & WEIGHTED CN --->		.642			79.77 (80)

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 24.0000 hrs Rain Depth = 2.7800 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-1A 1
Tc = .2388 hrs
Drainage Area = 2.634 acres Runoff CN= 69
Calc.Increment= .03184 hrs Out.Incr.= .0500 hrs
HYG Volume = 5310 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
11.6500	.00	.00	.01	.02	.05
11.9000	.09	.17	.29	.49	.72
12.1500	.92	1.03	1.02	.96	.88
12.4000	.81	.74	.66	.57	.49
12.6500	.42	.37	.33	.31	.29
12.9000	.27	.26	.25	.23	.22
13.1500	.21	.21	.20	.20	.20
13.4000	.19	.19	.19	.18	.18
13.6500	.18	.18	.17	.17	.17
13.9000	.17	.16	.16	.16	.15
14.1500	.15	.15	.15	.15	.14
14.4000	.14	.14	.14	.14	.14
14.6500	.14	.13	.13	.13	.13
14.9000	.13	.13	.13	.12	.12
15.1500	.12	.12	.12	.12	.11
15.4000	.11	.11	.11	.11	.11
15.6500	.11	.10	.10	.10	.10
15.9000	.10	.09	.09	.09	.09
16.1500	.09	.09	.09	.09	.08
16.4000	.08	.08	.08	.08	.08
16.6500	.08	.08	.08	.08	.08
16.9000	.08	.08	.07	.07	.07
17.1500	.07	.07	.07	.07	.07
17.4000	.07	.07	.07	.07	.07
17.6500	.06	.06	.06	.06	.06
17.9000	.06	.06	.06	.06	.06
18.1500	.06	.06	.06	.06	.05
18.4000	.05	.05	.05	.05	.05
18.6500	.05	.05	.05	.05	.05
18.9000	.05	.05	.05	.05	.05

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
19.1500	.05	.05	.05	.05	.05
19.4000	.05	.05	.05	.05	.05
19.6500	.05	.05	.05	.05	.05
19.9000	.05	.05	.05	.05	.05
20.1500	.05	.05	.05	.05	.05
20.4000	.05	.05	.05	.05	.05
20.6500	.04	.04	.04	.04	.04
20.9000	.04	.04	.04	.04	.04
21.1500	.04	.04	.04	.04	.04
21.4000	.04	.04	.04	.04	.04
21.6500	.04	.04	.04	.04	.04
21.9000	.04	.04	.04	.04	.04
22.1500	.04	.04	.04	.04	.04
22.4000	.04	.04	.04	.04	.04
22.6500	.04	.04	.04	.04	.04
22.9000	.04	.04	.04	.04	.04
23.1500	.04	.04	.04	.04	.03
23.4000	.03	.03	.03	.03	.03
23.6500	.03	.03	.03	.03	.03
23.9000	.03	.03	.03	.03	.03
24.1500	.02	.01	.01	.00	.00
24.4000	.00	.00			

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1400 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-1A 10
Tc = .2388 hrs
Drainage Area = 2.634 acres Runoff CN= 69
Calc.Increment= .03184 hrs Out.Incr.= .0500 hrs
HYG Volume = 19694 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
9.8000	.00	.00	.00	.01	.01
10.0500	.01	.02	.02	.02	.03
10.3000	.03	.04	.04	.05	.05
10.5500	.06	.06	.07	.08	.08
10.8000	.09	.10	.10	.11	.12
11.0500	.13	.14	.15	.16	.18
11.3000	.19	.21	.23	.26	.28
11.5500	.31	.36	.43	.53	.67
11.8000	.85	1.06	1.32	1.68	2.26
12.0500	3.06	3.88	4.45	4.59	4.29
12.3000	3.84	3.39	3.02	2.66	2.32
12.5500	1.98	1.69	1.43	1.24	1.10
12.8000	1.00	.93	.88	.83	.78
13.0500	.74	.71	.68	.66	.64
13.3000	.62	.61	.60	.59	.58
13.5500	.57	.56	.55	.54	.53
13.8000	.52	.51	.50	.49	.48
14.0500	.47	.46	.46	.45	.44
14.3000	.44	.43	.43	.42	.42
14.5500	.41	.41	.40	.40	.39
14.8000	.39	.38	.38	.37	.37
15.0500	.36	.36	.35	.35	.34
15.3000	.34	.33	.33	.32	.32
15.5500	.31	.31	.30	.30	.29
15.8000	.29	.28	.28	.27	.27
16.0500	.26	.26	.25	.25	.25
16.3000	.24	.24	.24	.24	.23
16.5500	.23	.23	.23	.22	.22
16.8000	.22	.22	.22	.21	.21
17.0500	.21	.21	.20	.20	.20

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
17.3000	.20	.19	.19	.19	.19
17.5500	.19	.18	.18	.18	.18
17.8000	.17	.17	.17	.17	.16
18.0500	.16	.16	.16	.16	.16
18.3000	.15	.15	.15	.15	.15
18.5500	.15	.15	.15	.15	.15
18.8000	.15	.15	.15	.15	.14
19.0500	.14	.14	.14	.14	.14
19.3000	.14	.14	.14	.14	.14
19.5500	.14	.14	.14	.13	.13
19.8000	.13	.13	.13	.13	.13
20.0500	.13	.13	.13	.13	.13
20.3000	.13	.13	.13	.13	.12
20.5500	.12	.12	.12	.12	.12
20.8000	.12	.12	.12	.12	.12
21.0500	.12	.12	.12	.12	.12
21.3000	.12	.12	.12	.11	.11
21.5500	.11	.11	.11	.11	.11
21.8000	.11	.11	.11	.11	.11
22.0500	.11	.11	.11	.11	.11
22.3000	.11	.11	.10	.10	.10
22.5500	.10	.10	.10	.10	.10
22.8000	.10	.10	.10	.10	.10
23.0500	.10	.10	.10	.10	.10
23.3000	.10	.09	.09	.09	.09
23.5500	.09	.09	.09	.09	.09
23.8000	.09	.09	.09	.09	.09
24.0500	.08	.07	.05	.03	.02
24.3000	.01	.01	.00	.00	.00
24.5500	.00				

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 9.3000 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-1A 100
Tc = .2388 hrs
Drainage Area = 2.634 acres Runoff CN= 69
Calc.Increment= .03184 hrs Out.Incr.= .0500 hrs
HYG Volume = 52342 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
7.4000	.00	.00	.00	.01	.01
7.6500	.01	.01	.02	.02	.02
7.9000	.02	.03	.03	.03	.04
8.1500	.04	.05	.05	.05	.06
8.4000	.06	.07	.07	.08	.08
8.6500	.09	.10	.10	.11	.11
8.9000	.12	.13	.14	.14	.15
9.1500	.16	.17	.17	.18	.19
9.4000	.20	.21	.22	.23	.23
9.6500	.24	.25	.26	.27	.28
9.9000	.29	.30	.32	.33	.34
10.1500	.35	.37	.38	.40	.41
10.4000	.43	.45	.47	.49	.50
10.6500	.52	.54	.57	.59	.61
10.9000	.63	.65	.68	.70	.73
11.1500	.76	.81	.86	.92	.98
11.4000	1.04	1.11	1.19	1.28	1.43
11.6500	1.67	2.02	2.48	3.04	3.67
11.9000	4.38	5.37	6.93	9.00	11.01
12.1500	12.26	12.31	11.28	9.91	8.63
12.4000	7.57	6.60	5.69	4.84	4.08
12.6500	3.45	2.97	2.63	2.38	2.21
12.9000	2.07	1.95	1.84	1.74	1.66
13.1500	1.58	1.53	1.48	1.45	1.42
13.4000	1.39	1.36	1.34	1.32	1.29
13.6500	1.27	1.24	1.22	1.20	1.17
13.9000	1.15	1.13	1.10	1.08	1.06
14.1500	1.04	1.02	1.01	.99	.98
14.4000	.97	.96	.94	.93	.92
14.6500	.91	.90	.89	.88	.86

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
14.9000	.85	.84	.83	.82	.81
15.1500	.79	.78	.77	.76	.75
15.4000	.74	.72	.71	.70	.69
15.6500	.68	.67	.65	.64	.63
15.9000	.62	.61	.59	.58	.57
16.1500	.56	.55	.55	.54	.53
16.4000	.53	.52	.52	.51	.51
16.6500	.50	.50	.49	.49	.48
16.9000	.48	.47	.47	.46	.46
17.1500	.45	.45	.44	.44	.43
17.4000	.42	.42	.41	.41	.40
17.6500	.40	.39	.39	.38	.38
17.9000	.37	.37	.36	.36	.35
18.1500	.35	.34	.34	.34	.34
18.4000	.34	.33	.33	.33	.33
18.6500	.33	.33	.32	.32	.32
18.9000	.32	.32	.32	.32	.31
19.1500	.31	.31	.31	.31	.31
19.4000	.30	.30	.30	.30	.30
19.6500	.30	.29	.29	.29	.29
19.9000	.29	.29	.29	.28	.28
20.1500	.28	.28	.28	.28	.28
20.4000	.27	.27	.27	.27	.27
20.6500	.27	.27	.27	.26	.26
20.9000	.26	.26	.26	.26	.26
21.1500	.26	.26	.25	.25	.25
21.4000	.25	.25	.25	.25	.25
21.6500	.24	.24	.24	.24	.24
21.9000	.24	.24	.24	.24	.23
22.1500	.23	.23	.23	.23	.23
22.4000	.23	.23	.22	.22	.22
22.6500	.22	.22	.22	.22	.22
22.9000	.22	.21	.21	.21	.21
23.1500	.21	.21	.21	.21	.20
23.4000	.20	.20	.20	.20	.20
23.6500	.20	.20	.20	.19	.19
23.9000	.19	.19	.19	.18	.15
24.1500	.11	.07	.04	.03	.02
24.4000	.01	.01	.00	.00	.00

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 24.0000 hrs Rain Depth = 2.7800 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-1B 1
Tc = .1905 hrs
Drainage Area = 2.343 acres Runoff CN= 74
Calc.Increment= .02540 hrs Out.Incr.= .0500 hrs
HYG Volume = 6564 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
11.1500	.00	.00	.01	.01	.01
11.4000	.02	.02	.03	.04	.05
11.6500	.07	.10	.14	.19	.26
11.9000	.35	.48	.72	1.04	1.33
12.1500	1.52	1.49	1.34	1.18	1.06
12.4000	.94	.83	.72	.61	.51
12.6500	.44	.39	.36	.33	.32
12.9000	.30	.29	.27	.26	.25
13.1500	.24	.23	.23	.22	.22
13.4000	.22	.21	.21	.21	.21
13.6500	.20	.20	.20	.19	.19
13.9000	.18	.18	.18	.17	.17
14.1500	.17	.17	.16	.16	.16
14.4000	.16	.16	.16	.15	.15
14.6500	.15	.15	.15	.15	.14
14.9000	.14	.14	.14	.14	.14
15.1500	.13	.13	.13	.13	.13
15.4000	.12	.12	.12	.12	.12
15.6500	.11	.11	.11	.11	.11
15.9000	.10	.10	.10	.10	.10
16.1500	.10	.09	.09	.09	.09
16.4000	.09	.09	.09	.09	.09
16.6500	.09	.09	.09	.08	.08
16.9000	.08	.08	.08	.08	.08
17.1500	.08	.08	.08	.08	.07
17.4000	.07	.07	.07	.07	.07
17.6500	.07	.07	.07	.07	.07
17.9000	.06	.06	.06	.06	.06
18.1500	.06	.06	.06	.06	.06
18.4000	.06	.06	.06	.06	.06

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
18.6500	.06	.06	.06	.06	.06
18.9000	.06	.06	.06	.06	.06
19.1500	.06	.06	.05	.05	.05
19.4000	.05	.05	.05	.05	.05
19.6500	.05	.05	.05	.05	.05
19.9000	.05	.05	.05	.05	.05
20.1500	.05	.05	.05	.05	.05
20.4000	.05	.05	.05	.05	.05
20.6500	.05	.05	.05	.05	.05
20.9000	.05	.05	.05	.05	.05
21.1500	.05	.05	.05	.05	.05
21.4000	.05	.05	.04	.04	.04
21.6500	.04	.04	.04	.04	.04
21.9000	.04	.04	.04	.04	.04
22.1500	.04	.04	.04	.04	.04
22.4000	.04	.04	.04	.04	.04
22.6500	.04	.04	.04	.04	.04
22.9000	.04	.04	.04	.04	.04
23.1500	.04	.04	.04	.04	.04
23.4000	.04	.04	.04	.04	.04
23.6500	.04	.04	.04	.04	.04
23.9000	.03	.03	.03	.03	.02
24.1500	.01	.01	.00	.00	.00
24.4000	.00				

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1400 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-1B 10
Tc = .1905 hrs
Drainage Area = 2.343 acres Runoff CN= 74
Calc.Increment= .02540 hrs Out.Incr.= .0500 hrs
HYG Volume = 21061 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
8.8500	.00	.00	.00	.00	.01
9.1000	.01	.01	.01	.02	.02
9.3500	.02	.03	.03	.03	.04
9.6000	.04	.04	.05	.05	.05
9.8500	.06	.06	.06	.07	.07
10.1000	.08	.08	.09	.09	.10
10.3500	.11	.11	.12	.13	.13
10.6000	.14	.15	.15	.16	.17
10.8500	.18	.19	.20	.21	.22
11.1000	.23	.24	.26	.28	.30
11.3500	.33	.35	.38	.41	.45
11.6000	.52	.63	.79	.99	1.23
11.8500	1.49	1.80	2.27	3.11	4.11
12.1000	4.93	5.30	5.01	4.36	3.73
12.3500	3.26	2.85	2.48	2.11	1.78
12.6000	1.48	1.26	1.10	1.01	.94
12.8500	.88	.84	.80	.76	.72
13.1000	.69	.66	.64	.63	.62
13.3500	.60	.59	.58	.57	.56
13.6000	.56	.55	.54	.53	.52
13.8500	.51	.50	.49	.48	.47
14.1000	.46	.45	.44	.44	.43
14.3500	.43	.42	.42	.41	.41
14.6000	.40	.40	.39	.39	.38
14.8500	.38	.37	.37	.36	.36
15.1000	.35	.35	.34	.34	.33
15.3500	.33	.32	.32	.31	.31
15.6000	.30	.30	.29	.29	.28
15.8500	.28	.27	.26	.26	.25
16.1000	.25	.25	.24	.24	.24

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
16.3500	.24	.23	.23	.23	.23
16.6000	.22	.22	.22	.22	.21
16.8500	.21	.21	.21	.21	.20
17.1000	.20	.20	.20	.19	.19
17.3500	.19	.19	.19	.18	.18
17.6000	.18	.18	.17	.17	.17
17.8500	.17	.16	.16	.16	.16
18.1000	.16	.15	.15	.15	.15
18.3500	.15	.15	.15	.15	.15
18.6000	.15	.15	.15	.14	.14
18.8500	.14	.14	.14	.14	.14
19.1000	.14	.14	.14	.14	.14
19.3500	.14	.14	.13	.13	.13
19.6000	.13	.13	.13	.13	.13
19.8500	.13	.13	.13	.13	.13
20.1000	.13	.13	.12	.12	.12
20.3500	.12	.12	.12	.12	.12
20.6000	.12	.12	.12	.12	.12
20.8500	.12	.12	.12	.12	.12
21.1000	.12	.11	.11	.11	.11
21.3500	.11	.11	.11	.11	.11
21.6000	.11	.11	.11	.11	.11
21.8500	.11	.11	.11	.11	.11
22.1000	.10	.10	.10	.10	.10
22.3500	.10	.10	.10	.10	.10
22.6000	.10	.10	.10	.10	.10
22.8500	.10	.10	.10	.10	.09
23.1000	.09	.09	.09	.09	.09
23.3500	.09	.09	.09	.09	.09
23.6000	.09	.09	.09	.09	.09
23.8500	.09	.09	.08	.08	.08
24.1000	.06	.04	.02	.01	.01
24.3500	.00	.00	.00		

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 9.3000 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-1B 100
Tc = .1905 hrs
Drainage Area = 2.343 acres Runoff CN= 74
Calc.Increment= .02540 hrs Out.Incr.= .0500 hrs
HYG Volume = 51904 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
6.3500	.00	.00	.00	.01	.01
6.6000	.01	.01	.01	.01	.02
6.8500	.02	.02	.02	.03	.03
7.1000	.03	.03	.04	.04	.04
7.3500	.05	.05	.05	.05	.06
7.6000	.06	.06	.07	.07	.07
7.8500	.08	.08	.09	.09	.09
8.1000	.10	.10	.11	.11	.12
8.3500	.12	.13	.13	.14	.15
8.6000	.15	.16	.17	.17	.18
8.8500	.19	.20	.21	.21	.22
9.1000	.23	.24	.25	.26	.26
9.3500	.27	.28	.29	.30	.31
9.6000	.32	.33	.34	.35	.36
9.8500	.37	.38	.39	.41	.42
10.1000	.43	.44	.46	.48	.49
10.3500	.51	.53	.55	.57	.59
10.6000	.61	.63	.65	.67	.69
10.8500	.71	.74	.76	.78	.81
11.1000	.84	.88	.93	.99	1.06
11.3500	1.12	1.20	1.27	1.35	1.46
11.6000	1.66	1.97	2.42	2.97	3.61
11.8500	4.30	5.07	6.21	8.24	10.56
12.1000	12.35	12.98	12.05	10.33	8.72
12.3500	7.54	6.53	5.63	4.77	3.98
12.6000	3.31	2.79	2.44	2.23	2.07
12.8500	1.95	1.84	1.75	1.66	1.58
13.1000	1.50	1.45	1.40	1.37	1.34
13.3500	1.31	1.29	1.27	1.25	1.22
13.6000	1.20	1.18	1.16	1.13	1.11

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
13.8500	1.09	1.07	1.04	1.02	1.00
14.1000	.98	.96	.95	.93	.92
14.3500	.91	.90	.89	.88	.87
14.6000	.86	.85	.83	.82	.81
14.8500	.80	.79	.78	.77	.76
15.1000	.75	.74	.73	.71	.70
15.3500	.69	.68	.67	.66	.65
15.6000	.64	.63	.61	.60	.59
15.8500	.58	.57	.56	.55	.54
16.1000	.53	.52	.51	.51	.50
16.3500	.49	.49	.48	.48	.48
16.6000	.47	.47	.46	.46	.45
16.8500	.45	.44	.44	.43	.43
17.1000	.42	.42	.41	.41	.40
17.3500	.40	.39	.39	.38	.38
17.6000	.37	.37	.36	.36	.35
17.8500	.35	.34	.34	.33	.33
18.1000	.32	.32	.32	.32	.31
18.3500	.31	.31	.31	.31	.31
18.6000	.31	.30	.30	.30	.30
18.8500	.30	.30	.30	.29	.29
19.1000	.29	.29	.29	.29	.28
19.3500	.28	.28	.28	.28	.28
19.6000	.28	.27	.27	.27	.27
19.8500	.27	.27	.27	.26	.26
20.1000	.26	.26	.26	.26	.26
20.3500	.26	.25	.25	.25	.25
20.6000	.25	.25	.25	.25	.25
20.8500	.24	.24	.24	.24	.24
21.1000	.24	.24	.24	.24	.23
21.3500	.23	.23	.23	.23	.23
21.6000	.23	.23	.23	.22	.22
21.8500	.22	.22	.22	.22	.22
22.1000	.22	.22	.21	.21	.21
22.3500	.21	.21	.21	.21	.21
22.6000	.21	.21	.20	.20	.20
22.8500	.20	.20	.20	.20	.20
23.1000	.19	.19	.19	.19	.19
23.3500	.19	.19	.19	.19	.18
23.6000	.18	.18	.18	.18	.18
23.8500	.18	.18	.18	.17	.16
24.1000	.12	.07	.04	.02	.01
24.3500	.01	.00	.00	.00	

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 24.0000 hrs Rain Depth = 2.7800 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-1C 1
Tc = .1480 hrs
Drainage Area = 2.885 acres Runoff CN= 75
Calc.Increment= .01974 hrs Out.Incr.= .0500 hrs
HYG Volume = 8586 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
10.9500	.00	.00	.01	.01	.01
11.2000	.02	.02	.03	.04	.04
11.4500	.05	.06	.08	.10	.13
11.7000	.18	.25	.34	.44	.56
11.9500	.79	1.22	1.68	2.04	2.17
12.2000	1.93	1.63	1.43	1.28	1.13
12.4500	.99	.83	.70	.58	.50
12.7000	.46	.43	.41	.39	.37
12.9500	.36	.34	.33	.31	.30
13.2000	.30	.29	.29	.28	.28
13.4500	.27	.27	.27	.26	.26
13.7000	.25	.25	.24	.24	.23
13.9500	.23	.23	.22	.22	.21
14.2000	.21	.21	.21	.20	.20
14.4500	.20	.20	.20	.19	.19
14.7000	.19	.19	.19	.18	.18
14.9500	.18	.18	.17	.17	.17
15.2000	.17	.16	.16	.16	.16
15.4500	.15	.15	.15	.15	.15
15.7000	.14	.14	.14	.14	.13
15.9500	.13	.13	.13	.12	.12
16.2000	.12	.12	.12	.12	.12
16.4500	.11	.11	.11	.11	.11
16.7000	.11	.11	.11	.11	.10
16.9500	.10	.10	.10	.10	.10
17.2000	.10	.10	.10	.09	.09
17.4500	.09	.09	.09	.09	.09
17.7000	.09	.09	.08	.08	.08
17.9500	.08	.08	.08	.08	.08
18.2000	.08	.08	.08	.08	.08

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
18.4500	.08	.07	.07	.07	.07
18.7000	.07	.07	.07	.07	.07
18.9500	.07	.07	.07	.07	.07
19.2000	.07	.07	.07	.07	.07
19.4500	.07	.07	.07	.07	.07
19.7000	.07	.07	.07	.07	.07
19.9500	.07	.06	.06	.06	.06
20.2000	.06	.06	.06	.06	.06
20.4500	.06	.06	.06	.06	.06
20.7000	.06	.06	.06	.06	.06
20.9500	.06	.06	.06	.06	.06
21.2000	.06	.06	.06	.06	.06
21.4500	.06	.06	.06	.06	.06
21.7000	.06	.06	.06	.06	.05
21.9500	.05	.05	.05	.05	.05
22.2000	.05	.05	.05	.05	.05
22.4500	.05	.05	.05	.05	.05
22.7000	.05	.05	.05	.05	.05
22.9500	.05	.05	.05	.05	.05
23.2000	.05	.05	.05	.05	.05
23.4500	.05	.05	.05	.05	.05
23.7000	.05	.05	.04	.04	.04
23.9500	.04	.04	.04	.02	.01
24.2000	.00	.00	.00		

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1400 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-1C 10
Tc = .1480 hrs
Drainage Area = 2.885 acres Runoff CN= 75
Calc.Increment= .01974 hrs Out.Incr.= .0500 hrs
HYG Volume = 26841 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
8.6000	.00	.00	.00	.00	.01
8.8500	.01	.01	.02	.02	.02
9.1000	.03	.03	.03	.04	.04
9.3500	.04	.05	.05	.06	.06
9.6000	.07	.07	.07	.08	.08
9.8500	.09	.09	.10	.10	.11
10.1000	.12	.12	.13	.14	.15
10.3500	.15	.16	.17	.18	.19
10.6000	.20	.21	.22	.23	.24
10.8500	.25	.26	.27	.29	.30
11.1000	.32	.34	.37	.39	.43
11.3500	.46	.49	.53	.57	.63
11.6000	.75	.92	1.17	1.46	1.81
11.8500	2.17	2.59	3.33	4.77	6.12
12.1000	6.98	7.09	6.08	5.00	4.27
12.3500	3.74	3.25	2.81	2.34	1.95
12.6000	1.62	1.39	1.26	1.18	1.12
12.8500	1.07	1.02	.97	.92	.88
13.1000	.84	.81	.79	.78	.76
13.3500	.75	.74	.73	.71	.70
13.6000	.69	.68	.66	.65	.64
13.8500	.63	.61	.60	.59	.58
14.1000	.57	.56	.55	.54	.54
14.3500	.53	.52	.52	.51	.51
14.6000	.50	.49	.49	.48	.48
14.8500	.47	.46	.46	.45	.44
15.1000	.44	.43	.42	.42	.41
15.3500	.41	.40	.39	.39	.38
15.6000	.37	.37	.36	.35	.35
15.8500	.34	.33	.33	.32	.32

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
16.1000	.31	.31	.30	.30	.30
16.3500	.29	.29	.29	.28	.28
16.6000	.28	.28	.27	.27	.27
16.8500	.26	.26	.26	.26	.25
17.1000	.25	.25	.24	.24	.24
17.3500	.24	.23	.23	.23	.22
17.6000	.22	.22	.22	.21	.21
17.8500	.21	.20	.20	.20	.20
18.1000	.19	.19	.19	.19	.19
18.3500	.19	.19	.19	.18	.18
18.6000	.18	.18	.18	.18	.18
18.8500	.18	.18	.18	.18	.18
19.1000	.17	.17	.17	.17	.17
19.3500	.17	.17	.17	.17	.17
19.6000	.17	.17	.16	.16	.16
19.8500	.16	.16	.16	.16	.16
20.1000	.16	.16	.16	.16	.15
20.3500	.15	.15	.15	.15	.15
20.6000	.15	.15	.15	.15	.15
20.8500	.15	.15	.15	.15	.15
21.1000	.14	.14	.14	.14	.14
21.3500	.14	.14	.14	.14	.14
21.6000	.14	.14	.14	.14	.14
21.8500	.13	.13	.13	.13	.13
22.1000	.13	.13	.13	.13	.13
22.3500	.13	.13	.13	.13	.12
22.6000	.12	.12	.12	.12	.12
22.8500	.12	.12	.12	.12	.12
23.1000	.12	.12	.12	.12	.11
23.3500	.11	.11	.11	.11	.11
23.6000	.11	.11	.11	.11	.11
23.8500	.11	.11	.11	.11	.09
24.1000	.06	.03	.01	.00	.00
24.3500	.00				

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 9.3000 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-1C 100
Tc = .1480 hrs
Drainage Area = 2.885 acres Runoff CN= 75
Calc.Increment= .01974 hrs Out.Incr.= .0500 hrs
HYG Volume = 65221 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
6.0500	.00	.00	.00	.00	.01
6.3000	.01	.01	.01	.02	.02
6.5500	.02	.02	.03	.03	.03
6.8000	.03	.04	.04	.04	.05
7.0500	.05	.05	.06	.06	.06
7.3000	.07	.07	.08	.08	.08
7.5500	.09	.09	.10	.10	.11
7.8000	.11	.11	.12	.12	.13
8.0500	.13	.14	.15	.15	.16
8.3000	.17	.17	.18	.19	.20
8.5500	.21	.22	.22	.23	.24
8.8000	.25	.26	.27	.28	.29
9.0500	.30	.31	.33	.34	.35
9.3000	.36	.37	.38	.39	.41
9.5500	.42	.43	.44	.46	.47
9.8000	.48	.50	.51	.53	.54
10.0500	.55	.57	.59	.61	.63
10.3000	.66	.68	.70	.73	.75
10.5500	.78	.80	.83	.86	.88
10.8000	.91	.94	.97	1.00	1.03
11.0500	1.06	1.11	1.17	1.24	1.32
11.3000	1.41	1.49	1.59	1.68	1.78
11.5500	1.95	2.29	2.76	3.46	4.23
11.8000	5.12	6.01	7.02	8.78	12.21
12.0500	15.22	16.91	16.81	14.19	11.51
12.3000	9.71	8.43	7.27	6.24	5.19
12.5500	4.29	3.56	3.05	2.76	2.58
12.8000	2.44	2.32	2.21	2.10	1.99
13.0500	1.89	1.81	1.75	1.71	1.67
13.3000	1.64	1.61	1.58	1.56	1.53

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
13.5500	1.50	1.47	1.45	1.42	1.39
13.8000	1.36	1.34	1.31	1.28	1.25
14.0500	1.22	1.20	1.18	1.16	1.15
14.3000	1.14	1.12	1.11	1.10	1.08
14.5500	1.07	1.05	1.04	1.03	1.01
14.8000	1.00	.99	.97	.96	.95
15.0500	.93	.92	.91	.89	.88
15.3000	.86	.85	.84	.82	.81
15.5500	.80	.78	.77	.75	.74
15.8000	.73	.71	.70	.68	.67
16.0500	.66	.65	.64	.63	.62
16.3000	.62	.61	.60	.60	.59
16.5500	.59	.58	.57	.57	.56
16.8000	.56	.55	.54	.54	.53
17.0500	.52	.52	.51	.51	.50
17.3000	.49	.49	.48	.48	.47
17.5500	.46	.46	.45	.45	.44
17.8000	.43	.43	.42	.42	.41
18.0500	.40	.40	.39	.39	.39
18.3000	.39	.39	.38	.38	.38
18.5500	.38	.38	.38	.37	.37
18.8000	.37	.37	.37	.36	.36
19.0500	.36	.36	.36	.36	.35
19.3000	.35	.35	.35	.35	.34
19.5500	.34	.34	.34	.34	.34
19.8000	.33	.33	.33	.33	.33
20.0500	.33	.32	.32	.32	.32
20.3000	.32	.32	.31	.31	.31
20.5500	.31	.31	.31	.31	.30
20.8000	.30	.30	.30	.30	.30
21.0500	.30	.30	.29	.29	.29
21.3000	.29	.29	.29	.29	.28
21.5500	.28	.28	.28	.28	.28
21.8000	.28	.28	.27	.27	.27
22.0500	.27	.27	.27	.27	.26
22.3000	.26	.26	.26	.26	.26
22.5500	.26	.25	.25	.25	.25
22.8000	.25	.25	.25	.24	.24
23.0500	.24	.24	.24	.24	.24
23.3000	.23	.23	.23	.23	.23
23.5500	.23	.23	.22	.22	.22
23.8000	.22	.22	.22	.22	.21
24.0500	.19	.12	.05	.02	.01
24.3000	.00	.00	.00		

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 24.0000 hrs Rain Depth = 2.7800 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-2A 1
Tc = .0978 hrs
Drainage Area = 2.985 acres Runoff CN= 69
Calc.Increment= .01304 hrs Out.Incr.= .0500 hrs
HYG Volume = 6017 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
11.6500	.00	.01	.03	.08	.15
11.9000	.25	.45	.83	1.15	1.42
12.1500	1.42	1.13	1.00	.90	.83
12.4000	.73	.64	.52	.44	.37
12.6500	.34	.32	.31	.30	.29
12.9000	.27	.26	.25	.24	.23
13.1500	.23	.22	.22	.22	.21
13.4000	.21	.21	.21	.20	.20
13.6500	.20	.19	.19	.19	.18
13.9000	.18	.18	.17	.17	.17
14.1500	.17	.16	.16	.16	.16
14.4000	.16	.16	.16	.15	.15
14.6500	.15	.15	.15	.15	.14
14.9000	.14	.14	.14	.14	.14
15.1500	.13	.13	.13	.13	.13
15.4000	.12	.12	.12	.12	.12
15.6500	.11	.11	.11	.11	.11
15.9000	.10	.10	.10	.10	.10
16.1500	.10	.10	.10	.09	.09
16.4000	.09	.09	.09	.09	.09
16.6500	.09	.09	.09	.09	.09
16.9000	.08	.08	.08	.08	.08
17.1500	.08	.08	.08	.08	.08
17.4000	.08	.07	.07	.07	.07
17.6500	.07	.07	.07	.07	.07
17.9000	.07	.07	.06	.06	.06
18.1500	.06	.06	.06	.06	.06
18.4000	.06	.06	.06	.06	.06
18.6500	.06	.06	.06	.06	.06
18.9000	.06	.06	.06	.06	.06

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
19.1500	.06	.06	.06	.06	.06
19.4000	.06	.06	.06	.06	.06
19.6500	.05	.05	.05	.05	.05
19.9000	.05	.05	.05	.05	.05
20.1500	.05	.05	.05	.05	.05
20.4000	.05	.05	.05	.05	.05
20.6500	.05	.05	.05	.05	.05
20.9000	.05	.05	.05	.05	.05
21.1500	.05	.05	.05	.05	.05
21.4000	.05	.05	.05	.05	.05
21.6500	.05	.05	.05	.05	.05
21.9000	.05	.05	.04	.04	.04
22.1500	.04	.04	.04	.04	.04
22.4000	.04	.04	.04	.04	.04
22.6500	.04	.04	.04	.04	.04
22.9000	.04	.04	.04	.04	.04
23.1500	.04	.04	.04	.04	.04
23.4000	.04	.04	.04	.04	.04
23.6500	.04	.04	.04	.04	.04
23.9000	.04	.04	.04	.03	.01
24.1500	.00	.00			

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1400 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-2A 10
Tc = .0978 hrs
Drainage Area = 2.985 acres Runoff CN= 69
Calc.Increment= .01304 hrs Out.Incr.= .0500 hrs
HYG Volume = 22317 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
9.7500	.00	.00	.01	.01	.01
10.0000	.02	.02	.03	.03	.04
10.2500	.04	.05	.05	.06	.07
10.5000	.07	.08	.09	.10	.10
10.7500	.11	.12	.13	.14	.15
11.0000	.16	.17	.18	.20	.22
11.2500	.24	.27	.29	.32	.35
11.5000	.38	.45	.56	.72	.95
11.7500	1.19	1.49	1.80	2.19	3.15
12.0000	4.74	5.65	6.24	5.74	4.34
12.2500	3.68	3.22	2.89	2.49	2.15
12.5000	1.73	1.46	1.21	1.10	1.04
12.7500	.99	.95	.91	.87	.83
13.0000	.78	.75	.72	.71	.69
13.2500	.68	.67	.66	.65	.64
13.5000	.63	.62	.61	.60	.59
13.7500	.58	.57	.56	.54	.53
14.0000	.52	.51	.50	.50	.49
14.2500	.49	.48	.48	.47	.47
14.5000	.46	.45	.45	.44	.44
14.7500	.43	.43	.42	.42	.41
15.0000	.41	.40	.39	.39	.38
15.2500	.38	.37	.37	.36	.35
15.5000	.35	.34	.34	.33	.32
15.7500	.32	.31	.31	.30	.30
16.0000	.29	.28	.28	.28	.27
16.2500	.27	.27	.27	.26	.26
16.5000	.26	.26	.25	.25	.25
16.7500	.25	.24	.24	.24	.24
17.0000	.23	.23	.23	.23	.22

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
17.2500	.22	.22	.22	.21	.21
17.5000	.21	.20	.20	.20	.20
17.7500	.19	.19	.19	.19	.18
18.0000	.18	.18	.18	.18	.17
18.2500	.17	.17	.17	.17	.17
18.5000	.17	.17	.17	.17	.17
18.7500	.17	.17	.16	.16	.16
19.0000	.16	.16	.16	.16	.16
19.2500	.16	.16	.16	.16	.16
19.5000	.15	.15	.15	.15	.15
19.7500	.15	.15	.15	.15	.15
20.0000	.15	.15	.14	.14	.14
20.2500	.14	.14	.14	.14	.14
20.5000	.14	.14	.14	.14	.14
20.7500	.14	.14	.14	.14	.13
21.0000	.13	.13	.13	.13	.13
21.2500	.13	.13	.13	.13	.13
21.5000	.13	.13	.13	.13	.13
21.7500	.13	.13	.12	.12	.12
22.0000	.12	.12	.12	.12	.12
22.2500	.12	.12	.12	.12	.12
22.5000	.12	.12	.12	.11	.11
22.7500	.11	.11	.11	.11	.11
23.0000	.11	.11	.11	.11	.11
23.2500	.11	.11	.11	.11	.10
23.5000	.10	.10	.10	.10	.10
23.7500	.10	.10	.10	.10	.10
24.0000	.10	.07	.02	.01	.00
24.2500	.00				

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 9.3000 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-2A 100
Tc = .0978 hrs
Drainage Area = 2.985 acres Runoff CN= 69
Calc.Increment= .01304 hrs Out.Incr.= .0500 hrs
HYG Volume = 59313 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
7.3500	.00	.00	.01	.01	.01
7.6000	.01	.02	.02	.03	.03
7.8500	.03	.04	.04	.04	.05
8.1000	.05	.06	.06	.07	.07
8.3500	.08	.08	.09	.10	.10
8.6000	.11	.12	.12	.13	.14
8.8500	.15	.15	.16	.17	.18
9.1000	.19	.20	.21	.22	.23
9.3500	.24	.25	.26	.27	.28
9.6000	.29	.30	.31	.32	.34
9.8500	.35	.36	.37	.39	.40
10.1000	.42	.43	.45	.47	.49
10.3500	.51	.53	.55	.58	.60
10.6000	.62	.65	.67	.69	.72
10.8500	.74	.77	.80	.82	.86
11.1000	.91	.97	1.04	1.11	1.20
11.3500	1.27	1.36	1.44	1.53	1.78
11.6000	2.16	2.69	3.43	4.16	5.04
11.8500	5.87	6.89	9.49	13.68	15.64
12.1000	16.64	14.89	11.03	9.20	7.96
12.3500	7.05	6.04	5.17	4.14	3.49
12.6000	2.87	2.60	2.45	2.35	2.23
12.8500	2.14	2.03	1.94	1.83	1.76
13.1000	1.68	1.64	1.61	1.59	1.56
13.3500	1.54	1.51	1.48	1.46	1.43
13.6000	1.40	1.38	1.35	1.33	1.30
13.8500	1.27	1.24	1.22	1.19	1.17
14.1000	1.15	1.13	1.12	1.11	1.09
14.3500	1.08	1.07	1.05	1.04	1.03
14.6000	1.01	1.00	.99	.98	.96

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
14.8500	.95	.94	.92	.91	.90
15.1000	.88	.87	.86	.85	.83
15.3500	.82	.80	.79	.78	.77
15.6000	.75	.74	.72	.71	.70
15.8500	.69	.67	.66	.64	.63
16.1000	.62	.62	.61	.60	.60
16.3500	.59	.58	.58	.57	.57
16.6000	.56	.56	.55	.55	.54
16.8500	.53	.53	.52	.51	.51
17.1000	.50	.50	.49	.49	.48
17.3500	.47	.47	.46	.46	.45
17.6000	.44	.44	.43	.43	.42
17.8500	.41	.41	.40	.40	.39
18.1000	.39	.38	.38	.38	.38
18.3500	.38	.38	.37	.37	.37
18.6000	.37	.37	.37	.36	.36
18.8500	.36	.36	.36	.36	.35
19.1000	.35	.35	.35	.35	.34
19.3500	.34	.34	.34	.34	.34
19.6000	.33	.33	.33	.33	.33
19.8500	.33	.32	.32	.32	.32
20.1000	.32	.31	.31	.31	.31
20.3500	.31	.31	.31	.31	.30
20.6000	.30	.30	.30	.30	.30
20.8500	.30	.29	.29	.29	.29
21.1000	.29	.29	.29	.29	.28
21.3500	.28	.28	.28	.28	.28
21.6000	.28	.28	.27	.27	.27
21.8500	.27	.27	.27	.27	.26
22.1000	.26	.26	.26	.26	.26
22.3500	.26	.26	.25	.25	.25
22.6000	.25	.25	.25	.24	.24
22.8500	.24	.24	.24	.24	.24
23.1000	.23	.23	.23	.23	.23
23.3500	.23	.23	.23	.22	.22
23.6000	.22	.22	.22	.22	.22
23.8500	.22	.21	.21	.21	.15
24.1000	.05	.01	.00	.00	

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 24.0000 hrs Rain Depth = 2.7800 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-2B 1
Tc = .2013 hrs
Drainage Area = 5.753 acres Runoff CN= 67
Calc.Increment= .02683 hrs Out.Incr.= .0500 hrs
HYG Volume = 10012 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
11.7500	.00	.00	.02	.09	.22
12.0000	.49	.90	1.38	1.78	1.91
12.2500	1.84	1.69	1.57	1.44	1.31
12.5000	1.15	.99	.85	.73	.64
12.7500	.59	.55	.53	.50	.48
13.0000	.46	.44	.42	.41	.40
13.2500	.39	.38	.38	.37	.37
13.5000	.36	.36	.35	.35	.34
13.7500	.34	.33	.33	.32	.32
14.0000	.31	.30	.30	.29	.29
14.2500	.29	.28	.28	.28	.28
14.5000	.27	.27	.27	.27	.26
14.7500	.26	.26	.25	.25	.25
15.0000	.25	.24	.24	.24	.23
15.2500	.23	.23	.23	.22	.22
15.5000	.22	.21	.21	.21	.20
15.7500	.20	.20	.19	.19	.19
16.0000	.18	.18	.18	.17	.17
16.2500	.17	.17	.17	.16	.16
16.5000	.16	.16	.16	.16	.16
16.7500	.15	.15	.15	.15	.15
17.0000	.15	.15	.14	.14	.14
17.2500	.14	.14	.14	.13	.13
17.5000	.13	.13	.13	.13	.13
17.7500	.12	.12	.12	.12	.12
18.0000	.12	.11	.11	.11	.11
18.2500	.11	.11	.11	.11	.11
18.5000	.11	.11	.11	.11	.11
18.7500	.11	.11	.10	.10	.10
19.0000	.10	.10	.10	.10	.10

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
19.2500	.10	.10	.10	.10	.10
19.5000	.10	.10	.10	.10	.10
19.7500	.10	.10	.10	.10	.09
20.0000	.09	.09	.09	.09	.09
20.2500	.09	.09	.09	.09	.09
20.5000	.09	.09	.09	.09	.09
20.7500	.09	.09	.09	.09	.09
21.0000	.09	.09	.09	.09	.09
21.2500	.09	.08	.08	.08	.08
21.5000	.08	.08	.08	.08	.08
21.7500	.08	.08	.08	.08	.08
22.0000	.08	.08	.08	.08	.08
22.2500	.08	.08	.08	.08	.08
22.5000	.08	.08	.08	.08	.07
22.7500	.07	.07	.07	.07	.07
23.0000	.07	.07	.07	.07	.07
23.2500	.07	.07	.07	.07	.07
23.5000	.07	.07	.07	.07	.07
23.7500	.07	.07	.07	.07	.06
24.0000	.06	.06	.05	.03	.02
24.2500	.01	.00	.00	.00	.00

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1400 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-2B 10
Tc = .2013 hrs
Drainage Area = 5.753 acres Runoff CN= 67
Calc.Increment= .02683 hrs Out.Incr.= .0500 hrs
HYG Volume = 39707 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
10.1000	.00	.00	.00	.01	.02
10.3500	.03	.03	.04	.05	.07
10.6000	.08	.09	.10	.12	.13
10.8500	.14	.16	.17	.19	.21
11.1000	.23	.25	.28	.31	.34
11.3500	.38	.42	.46	.51	.57
11.6000	.68	.83	1.07	1.37	1.77
11.8500	2.22	2.77	3.59	5.04	6.88
12.1000	8.59	9.59	9.37	8.38	7.30
12.3500	6.45	5.70	5.02	4.31	3.66
12.6000	3.07	2.61	2.28	2.07	1.93
12.8500	1.82	1.72	1.64	1.56	1.48
13.1000	1.42	1.36	1.32	1.29	1.27
13.3500	1.24	1.22	1.20	1.18	1.17
13.6000	1.15	1.13	1.11	1.09	1.07
13.8500	1.05	1.03	1.01	.99	.97
14.1000	.95	.93	.92	.91	.90
14.3500	.89	.88	.87	.86	.85
14.6000	.84	.83	.82	.81	.80
14.8500	.79	.78	.77	.76	.75
15.1000	.74	.73	.72	.71	.70
15.3500	.69	.68	.67	.66	.65
15.6000	.64	.62	.61	.60	.59
15.8500	.58	.57	.56	.55	.54
16.1000	.53	.52	.51	.51	.50
16.3500	.50	.49	.49	.48	.48
16.6000	.47	.47	.46	.46	.46
16.8500	.45	.45	.44	.44	.43
17.1000	.43	.42	.42	.41	.41
17.3500	.40	.40	.39	.39	.38

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
17.6000	.38	.37	.37	.36	.36
17.8500	.35	.35	.35	.34	.34
18.1000	.33	.33	.32	.32	.32
18.3500	.32	.32	.32	.32	.31
18.6000	.31	.31	.31	.31	.31
18.8500	.31	.30	.30	.30	.30
19.1000	.30	.30	.30	.29	.29
19.3500	.29	.29	.29	.29	.29
19.6000	.28	.28	.28	.28	.28
19.8500	.28	.28	.27	.27	.27
20.1000	.27	.27	.27	.27	.27
20.3500	.26	.26	.26	.26	.26
20.6000	.26	.26	.26	.25	.25
20.8500	.25	.25	.25	.25	.25
21.1000	.25	.25	.25	.24	.24
21.3500	.24	.24	.24	.24	.24
21.6000	.24	.24	.23	.23	.23
21.8500	.23	.23	.23	.23	.23
22.1000	.23	.22	.22	.22	.22
22.3500	.22	.22	.22	.22	.22
22.6000	.21	.21	.21	.21	.21
22.8500	.21	.21	.21	.21	.20
23.1000	.20	.20	.20	.20	.20
23.3500	.20	.20	.20	.19	.19
23.6000	.19	.19	.19	.19	.19
23.8500	.19	.18	.18	.18	.17
24.1000	.13	.08	.05	.03	.01
24.3500	.01	.00	.00	.00	

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 9.3000 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-2B 100
Tc = .2013 hrs
Drainage Area = 5.753 acres Runoff CN= 67
Calc.Increment= .02683 hrs Out.Incr.= .0500 hrs
HYG Volume = 109060 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
7.7500	.00	.00	.01	.01	.02
8.0000	.02	.03	.03	.04	.05
8.2500	.06	.07	.07	.08	.09
8.5000	.10	.11	.12	.14	.15
8.7500	.16	.17	.18	.20	.21
9.0000	.23	.24	.26	.27	.29
9.2500	.30	.32	.34	.35	.37
9.5000	.39	.41	.43	.45	.47
9.7500	.49	.51	.53	.55	.57
10.0000	.60	.62	.64	.67	.70
10.2500	.73	.77	.80	.84	.87
10.5000	.91	.95	.99	1.03	1.07
10.7500	1.12	1.16	1.21	1.25	1.30
11.0000	1.35	1.40	1.46	1.54	1.64
11.2500	1.75	1.88	2.01	2.15	2.30
11.5000	2.46	2.67	3.04	3.61	4.46
11.7500	5.51	6.79	8.20	9.80	12.12
12.0000	16.17	21.09	25.27	27.23	25.90
12.2500	22.66	19.36	16.83	14.67	12.75
12.5000	10.86	9.13	7.62	6.44	5.61
12.7500	5.07	4.70	4.42	4.17	3.96
13.0000	3.75	3.57	3.40	3.27	3.16
13.2500	3.09	3.02	2.97	2.91	2.86
13.5000	2.81	2.77	2.72	2.67	2.62
13.7500	2.57	2.52	2.47	2.42	2.37
14.0000	2.32	2.27	2.22	2.18	2.15
14.2500	2.12	2.09	2.07	2.04	2.02
14.5000	2.00	1.97	1.95	1.92	1.90
14.7500	1.88	1.85	1.83	1.80	1.78
15.0000	1.75	1.73	1.71	1.68	1.66

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
15.2500	1.63	1.61	1.58	1.56	1.53
15.5000	1.51	1.48	1.46	1.43	1.41
15.7500	1.38	1.36	1.33	1.31	1.28
16.0000	1.25	1.23	1.21	1.19	1.17
16.2500	1.16	1.14	1.13	1.12	1.11
16.5000	1.10	1.09	1.08	1.07	1.06
16.7500	1.04	1.03	1.02	1.01	1.00
17.0000	.99	.98	.97	.96	.95
17.2500	.93	.92	.91	.90	.89
17.5000	.88	.87	.86	.84	.83
17.7500	.82	.81	.80	.79	.78
18.0000	.77	.76	.75	.74	.73
18.2500	.73	.72	.72	.72	.71
18.5000	.71	.70	.70	.70	.70
18.7500	.69	.69	.69	.68	.68
19.0000	.68	.67	.67	.67	.66
19.2500	.66	.66	.65	.65	.65
19.5000	.64	.64	.64	.63	.63
19.7500	.63	.62	.62	.62	.61
20.0000	.61	.61	.60	.60	.60
20.2500	.59	.59	.59	.59	.58
20.5000	.58	.58	.58	.57	.57
20.7500	.57	.57	.56	.56	.56
21.0000	.56	.55	.55	.55	.55
21.2500	.54	.54	.54	.54	.53
21.5000	.53	.53	.53	.52	.52
21.7500	.52	.52	.51	.51	.51
22.0000	.51	.50	.50	.50	.50
22.2500	.49	.49	.49	.48	.48
22.5000	.48	.48	.48	.47	.47
22.7500	.47	.46	.46	.46	.46
23.0000	.45	.45	.45	.45	.44
23.2500	.44	.44	.44	.43	.43
23.5000	.43	.43	.42	.42	.42
23.7500	.42	.41	.41	.41	.40
24.0000	.40	.38	.30	.19	.10
24.2500	.06	.03	.02	.01	.00
24.5000	.00	.00			

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 24.0000 hrs Rain Depth = 2.7800 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-3 1
Tc = .1296 hrs
Drainage Area = .642 acres Runoff CN= 80
Calc.Increment= .01727 hrs Out.Incr.= .0500 hrs
HYG Volume = 2534 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
10.0000	.00	.00	.00	.00	.00
10.2500	.00	.00	.00	.01	.01
10.5000	.01	.01	.01	.01	.01
10.7500	.01	.01	.01	.01	.01
11.0000	.02	.02	.02	.02	.02
11.2500	.03	.03	.03	.03	.04
11.5000	.04	.05	.06	.07	.09
11.7500	.12	.15	.18	.22	.30
12.0000	.46	.58	.67	.67	.55
12.2500	.46	.40	.35	.31	.27
12.5000	.22	.18	.15	.13	.12
12.7500	.12	.11	.11	.10	.10
13.0000	.09	.09	.08	.08	.08
13.2500	.08	.08	.08	.08	.07
13.5000	.07	.07	.07	.07	.07
13.7500	.07	.07	.06	.06	.06
14.0000	.06	.06	.06	.06	.06
14.2500	.06	.06	.05	.05	.05
14.5000	.05	.05	.05	.05	.05
14.7500	.05	.05	.05	.05	.05
15.0000	.05	.05	.05	.04	.04
15.2500	.04	.04	.04	.04	.04
15.5000	.04	.04	.04	.04	.04
15.7500	.04	.04	.04	.03	.03
16.0000	.03	.03	.03	.03	.03
16.2500	.03	.03	.03	.03	.03
16.5000	.03	.03	.03	.03	.03
16.7500	.03	.03	.03	.03	.03
17.0000	.03	.03	.03	.03	.03
17.2500	.03	.03	.02	.02	.02

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
17.5000	.02	.02	.02	.02	.02
17.7500	.02	.02	.02	.02	.02
18.0000	.02	.02	.02	.02	.02
18.2500	.02	.02	.02	.02	.02
18.5000	.02	.02	.02	.02	.02
18.7500	.02	.02	.02	.02	.02
19.0000	.02	.02	.02	.02	.02
19.2500	.02	.02	.02	.02	.02
19.5000	.02	.02	.02	.02	.02
19.7500	.02	.02	.02	.02	.02
20.0000	.02	.02	.02	.02	.02
20.2500	.02	.02	.02	.02	.02
20.5000	.02	.02	.02	.02	.02
20.7500	.02	.02	.02	.02	.02
21.0000	.02	.02	.02	.02	.02
21.2500	.02	.02	.01	.01	.01
21.5000	.01	.01	.01	.01	.01
21.7500	.01	.01	.01	.01	.01
22.0000	.01	.01	.01	.01	.01
22.2500	.01	.01	.01	.01	.01
22.5000	.01	.01	.01	.01	.01
22.7500	.01	.01	.01	.01	.01
23.0000	.01	.01	.01	.01	.01
23.2500	.01	.01	.01	.01	.01
23.5000	.01	.01	.01	.01	.01
23.7500	.01	.01	.01	.01	.01
24.0000	.01	.01	.00	.00	.00

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1400 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-3 10
Tc = .1296 hrs
Drainage Area = .642 acres Runoff CN= 80
Calc.Increment= .01727 hrs Out.Incr.= .0500 hrs
HYG Volume = 7026 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
7.5500	.00	.00	.00	.00	.00
7.8000	.00	.00	.00	.00	.00
8.0500	.01	.01	.01	.01	.01
8.3000	.01	.01	.01	.01	.01
8.5500	.01	.01	.01	.01	.01
8.8000	.02	.02	.02	.02	.02
9.0500	.02	.02	.02	.02	.02
9.3000	.03	.03	.03	.03	.03
9.5500	.03	.03	.03	.04	.04
9.8000	.04	.04	.04	.04	.04
10.0500	.05	.05	.05	.05	.05
10.3000	.06	.06	.06	.06	.07
10.5500	.07	.07	.07	.08	.08
10.8000	.08	.09	.09	.09	.10
11.0500	.10	.10	.11	.12	.13
11.3000	.14	.15	.16	.17	.18
11.5500	.20	.24	.29	.37	.45
11.8000	.55	.64	.76	.98	1.40
12.0500	1.72	1.89	1.84	1.49	1.21
12.3000	1.03	.90	.78	.67	.55
12.5500	.46	.38	.33	.30	.29
12.8000	.27	.26	.25	.24	.22
13.0500	.21	.20	.20	.19	.19
13.3000	.19	.18	.18	.18	.17
13.5500	.17	.17	.17	.16	.16
13.8000	.16	.15	.15	.15	.14
14.0500	.14	.14	.14	.13	.13
14.3000	.13	.13	.13	.13	.12
14.5500	.12	.12	.12	.12	.12
14.8000	.12	.11	.11	.11	.11

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
15.0500	.11	.11	.10	.10	.10
15.3000	.10	.10	.10	.09	.09
15.5500	.09	.09	.09	.09	.09
15.8000	.08	.08	.08	.08	.08
16.0500	.08	.07	.07	.07	.07
16.3000	.07	.07	.07	.07	.07
16.5500	.07	.07	.07	.07	.07
16.8000	.06	.06	.06	.06	.06
17.0500	.06	.06	.06	.06	.06
17.3000	.06	.06	.06	.06	.05
17.5500	.05	.05	.05	.05	.05
17.8000	.05	.05	.05	.05	.05
18.0500	.05	.05	.05	.05	.05
18.3000	.05	.04	.04	.04	.04
18.5500	.04	.04	.04	.04	.04
18.8000	.04	.04	.04	.04	.04
19.0500	.04	.04	.04	.04	.04
19.3000	.04	.04	.04	.04	.04
19.5500	.04	.04	.04	.04	.04
19.8000	.04	.04	.04	.04	.04
20.0500	.04	.04	.04	.04	.04
20.3000	.04	.04	.04	.04	.04
20.5500	.04	.04	.04	.04	.04
20.8000	.04	.04	.04	.03	.03
21.0500	.03	.03	.03	.03	.03
21.3000	.03	.03	.03	.03	.03
21.5500	.03	.03	.03	.03	.03
21.8000	.03	.03	.03	.03	.03
22.0500	.03	.03	.03	.03	.03
22.3000	.03	.03	.03	.03	.03
22.5500	.03	.03	.03	.03	.03
22.8000	.03	.03	.03	.03	.03
23.0500	.03	.03	.03	.03	.03
23.3000	.03	.03	.03	.03	.03
23.5500	.03	.03	.03	.03	.03
23.8000	.03	.03	.03	.03	.03
24.0500	.02	.01	.00	.00	.00

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 9.3000 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - EDA-3 100
Tc = .1296 hrs
Drainage Area = .642 acres Runoff CN= 80
Calc.Increment= .01727 hrs Out.Incr.= .0500 hrs
HYG Volume = 15969 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
5.0000	.00	.00	.00	.00	.00
5.2500	.00	.00	.00	.00	.01
5.5000	.01	.01	.01	.01	.01
5.7500	.01	.01	.01	.01	.01
6.0000	.01	.01	.01	.01	.01
6.2500	.01	.01	.02	.02	.02
6.5000	.02	.02	.02	.02	.02
6.7500	.02	.02	.02	.02	.03
7.0000	.03	.03	.03	.03	.03
7.2500	.03	.03	.03	.03	.04
7.5000	.04	.04	.04	.04	.04
7.7500	.04	.04	.05	.05	.05
8.0000	.05	.05	.05	.05	.06
8.2500	.06	.06	.06	.06	.07
8.5000	.07	.07	.07	.08	.08
8.7500	.08	.08	.09	.09	.09
9.0000	.09	.10	.10	.10	.11
9.2500	.11	.11	.11	.12	.12
9.5000	.12	.13	.13	.13	.14
9.7500	.14	.14	.15	.15	.15
10.0000	.16	.16	.17	.17	.18
10.2500	.18	.19	.19	.20	.21
10.5000	.21	.22	.22	.23	.24
10.7500	.24	.25	.26	.26	.27
11.0000	.28	.29	.30	.32	.34
11.2500	.36	.38	.40	.42	.45
11.5000	.47	.52	.62	.75	.94
11.7500	1.13	1.36	1.57	1.83	2.30
12.0000	3.24	3.89	4.19	4.01	3.21
12.2500	2.58	2.18	1.90	1.63	1.40

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
12.5000	1.14	.95	.78	.68	.62
12.7500	.59	.56	.53	.51	.48
13.0000	.46	.44	.42	.40	.39
13.2500	.39	.38	.37	.37	.36
13.5000	.35	.35	.34	.33	.33
13.7500	.32	.31	.31	.30	.30
14.0000	.29	.28	.28	.27	.27
14.2500	.27	.26	.26	.26	.25
14.5000	.25	.25	.24	.24	.24
14.7500	.23	.23	.23	.22	.22
15.0000	.22	.22	.21	.21	.21
15.2500	.20	.20	.20	.19	.19
15.5000	.19	.18	.18	.18	.17
15.7500	.17	.17	.16	.16	.16
16.0000	.15	.15	.15	.15	.14
16.2500	.14	.14	.14	.14	.14
16.5000	.14	.13	.13	.13	.13
16.7500	.13	.13	.13	.12	.12
17.0000	.12	.12	.12	.12	.12
17.2500	.11	.11	.11	.11	.11
17.5000	.11	.11	.11	.10	.10
17.7500	.10	.10	.10	.10	.10
18.0000	.09	.09	.09	.09	.09
18.2500	.09	.09	.09	.09	.09
18.5000	.09	.09	.09	.09	.09
18.7500	.09	.09	.08	.08	.08
19.0000	.08	.08	.08	.08	.08
19.2500	.08	.08	.08	.08	.08
19.5000	.08	.08	.08	.08	.08
19.7500	.08	.08	.08	.08	.08
20.0000	.08	.07	.07	.07	.07
20.2500	.07	.07	.07	.07	.07
20.5000	.07	.07	.07	.07	.07
20.7500	.07	.07	.07	.07	.07
21.0000	.07	.07	.07	.07	.07
21.2500	.07	.07	.07	.07	.07
21.5000	.07	.06	.06	.06	.06
21.7500	.06	.06	.06	.06	.06
22.0000	.06	.06	.06	.06	.06
22.2500	.06	.06	.06	.06	.06
22.5000	.06	.06	.06	.06	.06
22.7500	.06	.06	.06	.06	.06
23.0000	.06	.06	.05	.05	.05
23.2500	.05	.05	.05	.05	.05
23.5000	.05	.05	.05	.05	.05

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
23.7500	.05	.05	.05	.05	.05
24.0000	.05	.04	.02	.01	.00
24.2500	.00	.00			

SUMMARY FOR HYDROGRAPH ADDITION
at Node: DP-1

HYG Directory: S:\2015\15064\PONDPACK\2016-12-05_bd\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
PIPE	POND 1B	IN	PIPE	1
ROUTE 40	POND 1C	IN	ROUTE 40	1

INFLOWS TO: DP-1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	PIPE	1	5777	12.2500	1.41
	ROUTE 40	1	8520	12.6000	.52

TOTAL FLOW INTO: DP-1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	DP-1	1	14297	12.2500	1.72

TOTAL NODE INFLOW...
HYG file =
HYG ID = DP-1
HYG Tag = 1

Peak Discharge = 1.72 cfs
Time to Peak = 12.2500 hrs
HYG Volume = 14297 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.3500	.00	.00	.00	.00	.00
11.6000	.00	.00	.01	.01	.01
11.8500	.01	.02	.02	.04	.07
12.1000	.12	.75	1.58	1.72	1.65
12.3500	1.56	1.47	1.38	1.29	1.20
12.6000	1.12	1.03	.96	.91	.87
12.8500	.84	.81	.79	.77	.75
13.1000	.73	.71	.70	.68	.67
13.3500	.66	.65	.64	.63	.62
13.6000	.61	.60	.59	.58	.57
13.8500	.56	.55	.54	.53	.52
14.1000	.51	.51	.50	.49	.48
14.3500	.48	.47	.46	.46	.45
14.6000	.45	.44	.44	.43	.42
14.8500	.42	.41	.41	.40	.40
15.1000	.39	.39	.38	.38	.37
15.3500	.37	.36	.36	.35	.35
15.6000	.34	.34	.33	.33	.32
15.8500	.32	.32	.31	.31	.30
16.1000	.30	.30	.29	.29	.28
16.3500	.28	.28	.27	.27	.27
16.6000	.27	.26	.26	.26	.25
16.8500	.25	.25	.24	.24	.24
17.1000	.24	.23	.23	.23	.23
17.3500	.22	.22	.22	.22	.21
17.6000	.21	.21	.21	.20	.20
17.8500	.20	.20	.19	.19	.19
18.1000	.19	.18	.18	.18	.18
18.3500	.18	.17	.17	.17	.17
18.6000	.17	.17	.17	.16	.16
18.8500	.16	.16	.16	.16	.16

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
19.1000	.15	.15	.15	.15	.15
19.3500	.15	.15	.15	.15	.15
19.6000	.15	.14	.14	.14	.14
19.8500	.14	.14	.14	.14	.14
20.1000	.14	.14	.14	.14	.14
20.3500	.13	.13	.13	.13	.13
20.6000	.13	.13	.13	.13	.13
20.8500	.13	.13	.13	.13	.13
21.1000	.12	.12	.12	.12	.12
21.3500	.12	.12	.12	.12	.12
21.6000	.12	.12	.12	.12	.12
21.8500	.12	.12	.11	.11	.11
22.1000	.11	.11	.11	.11	.11
22.3500	.11	.11	.11	.11	.11
22.6000	.11	.11	.11	.11	.11
22.8500	.10	.10	.10	.10	.10
23.1000	.10	.10	.10	.10	.10
23.3500	.10	.10	.10	.10	.10
23.6000	.10	.10	.10	.10	.09
23.8500	.09	.09	.09	.09	.09
24.1000	.09	.09	.08	.08	.07
24.3500	.07	.06	.06	.06	.05
24.6000	.05	.05	.05	.05	.04
24.8500	.04	.04	.04	.04	.04
25.1000	.04	.04	.03	.03	.03
25.3500	.03	.03	.03	.03	.03
25.6000	.03	.03	.03	.03	.03
25.8500	.03	.03	.03	.02	.02
26.1000	.02	.02	.02	.02	.02
26.3500	.02	.02	.02	.02	.02
26.6000	.02	.02	.02	.02	.02
26.8500	.02	.02	.02	.02	.02
27.1000	.02	.02	.02	.02	.02
27.3500	.02	.02	.02	.02	.02
27.6000	.02	.02	.02	.02	.02
27.8500	.02	.02	.02	.02	.02
28.1000	.02	.02	.02	.02	.02
28.3500	.02	.02	.02	.02	.02
28.6000	.02	.02	.02	.02	.02
28.8500	.02	.02	.02	.02	.01
29.1000	.01	.01	.01	.01	.01
29.3500	.01	.01	.01	.01	.01
29.6000	.01	.01	.01	.01	.01
29.8500	.01	.01	.01	.01	.01
30.1000	.01	.01	.01	.01	.01

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
30.3500	.01	.01	.01	.01	.01
30.6000	.01	.01	.01	.01	.01
30.8500	.01	.01	.01	.01	.01
31.1000	.01	.01	.01	.01	.01
31.3500	.01	.01	.01	.01	.01
31.6000	.01	.01	.01	.01	.01
31.8500	.01	.01	.01	.01	.01
32.1000	.01	.01	.01	.01	.01
32.3500	.01	.01	.01	.01	.01
32.6000	.01	.01	.01	.01	.01
32.8500	.01	.01	.01	.01	.01
33.1000	.01	.01	.01	.01	.01
33.3500	.01	.01	.01	.01	.01
33.6000	.01	.01	.01	.01	.01
33.8500	.01	.01	.01	.01	.01
34.1000	.01	.01	.01	.01	.01
34.3500	.01	.01	.01	.01	.01
34.6000	.01	.01	.01	.01	.01
34.8500	.01	.01	.01	.01	.01
35.1000	.01	.01	.01	.01	.01
35.3500	.01	.01	.01	.01	.01
35.6000	.01	.01	.01	.01	.00
35.8500	.00	.00	.00	.00	.00
36.1000	.00	.00	.00	.00	.00
36.3500	.00	.00	.00	.00	.00
36.6000	.00	.00	.00	.00	.00
36.8500	.00	.00	.00	.00	.00
37.1000	.00	.00	.00	.00	.00
37.3500	.00	.00	.00	.00	.00
37.6000	.00	.00	.00	.00	.00
37.8500	.00	.00	.00	.00	.00
38.1000	.00	.00	.00	.00	.00
38.3500	.00	.00	.00	.00	.00
38.6000	.00	.00	.00	.00	.00
38.8500	.00	.00	.00		

SUMMARY FOR HYDROGRAPH ADDITION
at Node: DP-1

HYG Directory: S:\2015\15064\PONDPACK\2016-12-05_bd\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
PIPE	POND 1B	IN	PIPE	10
ROUTE 40	POND 1C	IN	ROUTE 40	10

INFLOWS TO: DP-1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	PIPE	10	31752	12.2500	4.23
	ROUTE 40	10	26775	12.7000	1.24

TOTAL FLOW INTO: DP-1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	DP-1	10	58526	12.2500	5.43

TOTAL NODE INFLOW...
HYG file =
HYG ID = DP-1
HYG Tag = 10

Peak Discharge = 5.43 cfs
Time to Peak = 12.2500 hrs
HYG Volume = 58526 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.1000	.00	.00	.00	.00	.00
9.3500	.00	.00	.00	.00	.00
9.6000	.00	.00	.01	.01	.01
9.8500	.01	.01	.01	.01	.01
10.1000	.01	.01	.01	.01	.01
10.3500	.02	.02	.02	.02	.02
10.6000	.02	.02	.03	.03	.04
10.8500	.04	.04	.05	.05	.06
11.1000	.07	.07	.08	.10	.16
11.3500	.21	.38	.46	.52	.57
11.6000	.64	.74	.88	1.10	1.39
11.8500	1.72	2.09	2.62	3.45	4.49
12.1000	5.00	5.19	5.35	5.43	5.42
12.3500	5.34	5.20	5.03	4.09	3.49
12.6000	3.36	3.24	3.15	3.09	3.04
12.8500	3.00	2.96	2.92	2.88	2.83
13.1000	2.78	2.74	2.69	2.66	2.62
13.3500	2.59	2.56	2.53	2.51	2.48
13.6000	2.45	2.43	2.40	2.38	2.36
13.8500	2.33	2.31	2.28	2.26	2.24
14.1000	2.21	2.19	2.17	2.15	2.14
14.3500	2.12	2.10	2.09	2.08	2.06
14.6000	2.05	2.03	2.02	2.01	2.00
14.8500	1.98	1.97	1.96	1.95	1.93
15.1000	1.92	1.91	1.90	1.89	1.88
15.3500	1.86	1.84	1.82	1.80	1.78
15.6000	1.74	1.70	1.66	1.62	1.58
15.8500	1.54	1.50	1.46	1.42	1.39
16.1000	1.35	1.32	1.28	1.25	1.22
16.3500	1.19	1.17	1.14	1.12	1.10
16.6000	1.07	1.05	1.03	1.01	.99

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
16.8500	.97	.96	.94	.93	.91
17.1000	.89	.88	.87	.85	.84
17.3500	.82	.81	.80	.78	.77
17.6000	.76	.75	.74	.73	.71
17.8500	.70	.69	.68	.67	.66
18.1000	.65	.64	.64	.63	.62
18.3500	.61	.61	.60	.59	.59
18.6000	.58	.58	.57	.56	.56
18.8500	.55	.55	.54	.54	.54
19.1000	.53	.53	.52	.52	.51
19.3500	.51	.51	.50	.50	.50
19.6000	.49	.49	.49	.48	.48
19.8500	.48	.47	.47	.47	.46
20.1000	.46	.46	.46	.45	.45
20.3500	.45	.45	.44	.44	.44
20.6000	.44	.43	.43	.43	.43
20.8500	.42	.42	.42	.42	.42
21.1000	.41	.41	.41	.41	.41
21.3500	.40	.40	.40	.40	.40
21.6000	.39	.39	.39	.39	.39
21.8500	.38	.38	.38	.38	.38
22.1000	.37	.37	.37	.37	.37
22.3500	.36	.36	.36	.36	.36
22.6000	.36	.35	.35	.35	.35
22.8500	.35	.34	.34	.34	.34
23.1000	.34	.33	.33	.33	.33
23.3500	.33	.33	.32	.32	.32
23.6000	.32	.32	.31	.31	.31
23.8500	.31	.31	.31	.30	.30
24.1000	.29	.27	.24	.22	.21
24.3500	.20	.19	.18	.17	.16
24.6000	.16	.15	.14	.13	.13
24.8500	.12	.11	.11	.10	.10
25.1000	.10	.09	.09	.08	.08
25.3500	.08	.08	.07	.07	.07
25.6000	.06	.06	.06	.06	.06
25.8500	.05	.05	.05	.05	.05
26.1000	.05	.05	.05	.04	.04
26.3500	.04	.04	.04	.04	.04
26.6000	.04	.04	.04	.04	.03
26.8500	.03	.03	.03	.03	.03
27.1000	.03	.03	.03	.03	.03
27.3500	.03	.03	.03	.03	.02
27.6000	.02	.02	.02	.02	.02
27.8500	.02	.02	.02	.02	.02

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
28.1000	.02	.02	.02	.02	.02
28.3500	.02	.02	.02	.02	.02
28.6000	.02	.02	.02	.02	.02
28.8500	.02	.02	.02	.02	.02
29.1000	.02	.02	.02	.02	.02
29.3500	.02	.02	.02	.02	.02
29.6000	.02	.02	.02	.02	.02
29.8500	.02	.02	.02	.02	.02
30.1000	.02	.02	.02	.02	.02
30.3500	.02	.02	.02	.02	.02
30.6000	.02	.01	.01	.01	.01
30.8500	.01	.01	.01	.01	.01
31.1000	.01	.01	.01	.01	.01
31.3500	.01	.01	.01	.01	.01
31.6000	.01	.01	.01	.01	.01
31.8500	.01	.01	.01	.01	.01
32.1000	.01	.01	.01	.01	.01
32.3500	.01	.01	.01	.01	.01
32.6000	.01	.01	.01	.01	.01
32.8500	.01	.01	.01	.01	.01
33.1000	.01	.01	.01	.01	.01
33.3500	.01	.01	.01	.01	.01
33.6000	.01	.01	.01	.01	.01
33.8500	.01	.01	.01	.01	.01
34.1000	.01	.01	.01	.01	.01
34.3500	.01	.01	.01	.01	.01
34.6000	.01	.01	.01	.01	.01
34.8500	.01	.01	.01	.01	.01
35.1000	.01	.01	.01	.01	.01
35.3500	.01	.01	.01	.01	.01
35.6000	.01	.01	.01	.01	.01
35.8500	.01	.01	.01	.01	.01
36.1000	.01	.01	.01	.01	.01
36.3500	.01	.01	.01	.01	.01
36.6000	.01	.01	.01	.01	.01
36.8500	.01	.01	.01	.01	.01
37.1000	.01	.01	.01	.01	.01
37.3500	.01	.00	.00	.00	.00
37.6000	.00	.00	.00	.00	.00
37.8500	.00	.00	.00	.00	.00
38.1000	.00	.00	.00	.00	.00
38.3500	.00	.00	.00	.00	.00
38.6000	.00	.00	.00	.00	.00
38.8500	.00	.00	.00	.00	.00
39.1000	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
39.3500	.00	.00	.00	.00	.00
39.6000	.00	.00	.00	.00	.00
39.8500	.00	.00	.00	.00	.00
40.1000	.00	.00	.00	.00	.00
40.3500	.00	.00	.00	.00	

SUMMARY FOR HYDROGRAPH ADDITION
at Node: DP-1

HYG Directory: S:\2015\15064\PONDPACK\2016-12-05_bd\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
PIPE	POND 1B	IN	PIPE	100
ROUTE 40	POND 1C	IN	ROUTE 40	100

INFLOWS TO: DP-1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	PIPE	100	93438	12.5500	8.36
	ROUTE 40	100	65155	13.0500	1.58

TOTAL FLOW INTO: DP-1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	DP-1	100	158593	12.5500	9.92

TOTAL NODE INFLOW...
HYG file =
HYG ID = DP-1
HYG Tag = 100

Peak Discharge = 9.92 cfs
Time to Peak = 12.5500 hrs
HYG Volume = 158593 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
6.6000	.00	.00	.00	.00	.00
6.8500	.00	.00	.00	.00	.00
7.1000	.00	.00	.00	.01	.01
7.3500	.01	.01	.01	.01	.01
7.6000	.01	.01	.01	.01	.01
7.8500	.01	.01	.01	.02	.02
8.1000	.02	.02	.02	.02	.02
8.3500	.02	.02	.03	.03	.03
8.6000	.04	.04	.05	.05	.06
8.8500	.06	.06	.07	.07	.08
9.1000	.13	.17	.20	.29	.35
9.3500	.38	.40	.42	.44	.46
9.6000	.48	.49	.51	.53	.55
9.8500	.57	.60	.62	.64	.67
10.1000	.69	.72	.74	.77	.80
10.3500	.83	.87	.90	.94	.97
10.6000	1.01	1.05	1.09	1.13	1.17
10.8500	1.21	1.26	1.30	1.35	1.40
11.1000	1.45	1.51	1.58	1.67	1.76
11.3500	1.86	1.97	2.08	2.20	2.34
11.6000	2.54	2.86	3.30	3.82	4.37
11.8500	4.93	5.08	5.35	5.80	6.42
12.1000	7.10	7.77	8.36	8.83	9.20
12.3500	9.48	9.68	9.83	9.90	9.92
12.6000	9.90	9.88	9.85	9.81	9.76
12.8500	9.70	9.63	9.56	9.47	9.38
13.1000	9.28	9.17	9.06	8.94	8.81
13.3500	8.68	8.54	8.40	8.24	8.09
13.6000	7.92	7.75	7.58	7.39	7.20
13.8500	6.99	6.77	6.55	6.31	6.06
14.1000	5.79	5.52	4.94	3.77	3.61

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
14.3500	3.58	3.55	3.52	3.50	3.47
14.6000	3.45	3.43	3.40	3.38	3.35
14.8500	3.33	3.30	3.28	3.25	3.23
15.1000	3.21	3.18	3.16	3.13	3.11
15.3500	3.09	3.06	3.04	3.01	2.99
15.6000	2.96	2.94	2.91	2.89	2.86
15.8500	2.84	2.81	2.79	2.76	2.74
16.1000	2.71	2.69	2.67	2.65	2.63
16.3500	2.61	2.59	2.58	2.56	2.54
16.6000	2.53	2.51	2.50	2.48	2.47
16.8500	2.46	2.44	2.43	2.41	2.40
17.1000	2.39	2.37	2.36	2.35	2.33
17.3500	2.32	2.31	2.29	2.28	2.27
17.6000	2.26	2.24	2.23	2.22	2.20
17.8500	2.19	2.18	2.16	2.15	2.14
18.1000	2.13	2.11	2.10	2.09	2.08
18.3500	2.07	2.06	2.06	2.05	2.04
18.6000	2.03	2.02	2.02	2.01	2.00
18.8500	2.00	1.99	1.98	1.98	1.97
19.1000	1.96	1.96	1.95	1.94	1.94
19.3500	1.93	1.93	1.92	1.91	1.91
19.6000	1.90	1.89	1.89	1.88	1.88
19.8500	1.87	1.86	1.86	1.85	1.85
20.1000	1.84	1.83	1.83	1.82	1.81
20.3500	1.81	1.80	1.80	1.79	1.79
20.6000	1.78	1.77	1.77	1.76	1.76
20.8500	1.75	1.75	1.74	1.73	1.73
21.1000	1.72	1.72	1.71	1.71	1.70
21.3500	1.70	1.69	1.68	1.68	1.67
21.6000	1.67	1.66	1.66	1.66	1.65
21.8500	1.65	1.64	1.64	1.63	1.63
22.1000	1.63	1.62	1.62	1.62	1.61
22.3500	1.59	1.58	1.57	1.56	1.52
22.6000	1.48	1.44	1.40	1.37	1.33
22.8500	1.30	1.26	1.23	1.20	1.17
23.1000	1.14	1.11	1.09	1.06	1.04
23.3500	1.02	1.00	.98	.96	.94
23.6000	.92	.90	.89	.87	.86
23.8500	.84	.83	.82	.80	.79
24.1000	.75	.70	.63	.57	.53
24.3500	.49	.45	.42	.40	.38
24.6000	.37	.35	.33	.32	.30
24.8500	.29	.27	.26	.25	.23
25.1000	.22	.21	.20	.19	.19
25.3500	.18	.17	.16	.16	.15

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
25.6000	.14	.14	.13	.13	.12
25.8500	.12	.11	.11	.10	.10
26.1000	.10	.09	.09	.09	.09
26.3500	.08	.08	.08	.08	.08
26.6000	.07	.07	.07	.07	.07
26.8500	.07	.07	.06	.06	.06
27.1000	.06	.06	.06	.06	.05
27.3500	.05	.05	.05	.05	.05
27.6000	.05	.05	.05	.04	.04
27.8500	.04	.04	.04	.04	.04
28.1000	.04	.04	.04	.04	.04
28.3500	.03	.03	.03	.03	.03
28.6000	.03	.03	.03	.03	.03
28.8500	.03	.03	.03	.03	.03
29.1000	.02	.02	.02	.02	.02
29.3500	.02	.02	.02	.02	.02
29.6000	.02	.02	.02	.02	.02
29.8500	.02	.02	.02	.02	.02
30.1000	.02	.02	.02	.02	.02
30.3500	.02	.02	.02	.02	.02
30.6000	.02	.02	.02	.02	.02
30.8500	.02	.02	.02	.02	.02
31.1000	.02	.02	.02	.02	.02
31.3500	.02	.02	.02	.02	.02
31.6000	.02	.02	.02	.02	.02
31.8500	.02	.02	.02	.02	.02
32.1000	.02	.02	.01	.01	.01
32.3500	.01	.01	.01	.01	.01
32.6000	.01	.01	.01	.01	.01
32.8500	.01	.01	.01	.01	.01
33.1000	.01	.01	.01	.01	.01
33.3500	.01	.01	.01	.01	.01
33.6000	.01	.01	.01	.01	.01
33.8500	.01	.01	.01	.01	.01
34.1000	.01	.01	.01	.01	.01
34.3500	.01	.01	.01	.01	.01
34.6000	.01	.01	.01	.01	.01
34.8500	.01	.01	.01	.01	.01
35.1000	.01	.01	.01	.01	.01
35.3500	.01	.01	.01	.01	.01
35.6000	.01	.01	.01	.01	.01
35.8500	.01	.01	.01	.01	.01
36.1000	.01	.01	.01	.01	.01
36.3500	.01	.01	.01	.01	.01
36.6000	.01	.01	.01	.01	.01

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
36.8500	.01	.01	.01	.01	.01
37.1000	.01	.01	.01	.01	.01
37.3500	.01	.01	.01	.01	.01
37.6000	.01	.01	.01	.01	.01
37.8500	.01	.01	.01	.01	.01
38.1000	.01	.01	.01	.01	.01
38.3500	.01	.01	.01	.01	.01
38.6000	.01	.01	.01	.01	.01
38.8500	.01	.00	.00	.00	.00
39.1000	.00	.00	.00	.00	.00
39.3500	.00	.00	.00	.00	.00
39.6000	.00	.00	.00	.00	.00
39.8500	.00	.00	.00	.00	.00
40.1000	.00	.00	.00	.00	.00
40.3500	.00	.00	.00	.00	.00
40.6000	.00	.00	.00	.00	.00
40.8500	.00	.00	.00	.00	.00
41.1000	.00	.00	.00	.00	.00
41.3500	.00	.00	.00	.00	.00
41.6000	.00	.00	.00	.00	.00
41.8500	.00	.00	.00	.00	.00

SUMMARY FOR HYDROGRAPH ADDITION
at Node: DP-2

HYG Directory: S:\2015\15064\PONDPACK\2016-12-05_bd\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 30	EDA-2B		EDA-2B	1
ADDLINK 20	EDA-2A		EDA-2A	1

INFLOWS TO: DP-2

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	EDA-2B	1	10012	12.2000	1.91
	EDA-2A	1	6017	12.1000	1.42

TOTAL FLOW INTO: DP-2

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	DP-2	1	16029	12.1500	3.20

TOTAL NODE INFLOW...
HYG file =
HYG ID = DP-2
HYG Tag = 1

Peak Discharge = 3.20 cfs
Time to Peak = 12.1500 hrs
HYG Volume = 16029 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.6500	.00	.01	.03	.09	.18
11.9000	.33	.67	1.32	2.05	2.81
12.1500	3.20	3.04	2.83	2.60	2.40
12.4000	2.17	1.94	1.67	1.44	1.21
12.6500	1.07	.96	.90	.85	.81
12.9000	.77	.74	.71	.68	.65
13.1500	.63	.62	.61	.60	.59
13.4000	.58	.58	.57	.56	.55
13.6500	.54	.54	.53	.52	.51
13.9000	.50	.49	.48	.47	.47
14.1500	.46	.45	.45	.45	.44
14.4000	.44	.43	.43	.43	.42
14.6500	.42	.41	.41	.40	.40
14.9000	.39	.39	.39	.38	.38
15.1500	.37	.37	.36	.36	.35
15.4000	.35	.34	.34	.33	.33
15.6500	.32	.32	.31	.30	.30
15.9000	.29	.29	.28	.28	.27
16.1500	.27	.27	.26	.26	.26
16.4000	.26	.25	.25	.25	.25
16.6500	.25	.24	.24	.24	.24
16.9000	.23	.23	.23	.23	.22
17.1500	.22	.22	.22	.22	.21
17.4000	.21	.21	.21	.20	.20
17.6500	.20	.20	.19	.19	.19
17.9000	.19	.18	.18	.18	.18
18.1500	.17	.17	.17	.17	.17
18.4000	.17	.17	.17	.17	.17
18.6500	.17	.17	.17	.16	.16
18.9000	.16	.16	.16	.16	.16
19.1500	.16	.16	.16	.16	.16

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
19.4000	.16	.16	.15	.15	.15
19.6500	.15	.15	.15	.15	.15
19.9000	.15	.15	.15	.15	.15
20.1500	.15	.15	.14	.14	.14
20.4000	.14	.14	.14	.14	.14
20.6500	.14	.14	.14	.14	.14
20.9000	.14	.14	.14	.14	.14
21.1500	.13	.13	.13	.13	.13
21.4000	.13	.13	.13	.13	.13
21.6500	.13	.13	.13	.13	.13
21.9000	.13	.13	.12	.12	.12
22.1500	.12	.12	.12	.12	.12
22.4000	.12	.12	.12	.12	.12
22.6500	.12	.12	.12	.12	.11
22.9000	.11	.11	.11	.11	.11
23.1500	.11	.11	.11	.11	.11
23.4000	.11	.11	.11	.11	.11
23.6500	.11	.10	.10	.10	.10
23.9000	.10	.10	.10	.09	.06
24.1500	.03	.02	.01	.00	.00
24.4000	.00	.00			

SUMMARY FOR HYDROGRAPH ADDITION
at Node: DP-2

HYG Directory: S:\2015\15064\PONDPACK\2016-12-05_bd\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 30	EDA-2B		EDA-2B	10
ADDLINK 20	EDA-2A		EDA-2A	10

INFLOWS TO: DP-2

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	EDA-2B	10	39707	12.1500	9.59
	EDA-2A	10	22317	12.1000	6.24

TOTAL FLOW INTO: DP-2

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	DP-2	10	62024	12.1500	15.33

TOTAL NODE INFLOW...
HYG file =
HYG ID = DP-2
HYG Tag = 10

Peak Discharge = 15.33 cfs
Time to Peak = 12.1500 hrs
HYG Volume = 62024 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.7500	.00	.00	.01	.01	.01
10.0000	.02	.02	.03	.03	.04
10.2500	.05	.06	.08	.09	.11
10.5000	.13	.15	.16	.18	.21
10.7500	.23	.25	.27	.30	.32
11.0000	.35	.37	.41	.45	.50
11.2500	.55	.61	.67	.74	.81
11.5000	.89	1.02	1.24	1.55	2.02
11.7500	2.56	3.26	4.03	4.96	6.74
12.0000	9.78	12.53	14.83	15.33	13.71
12.2500	12.06	10.52	9.34	8.20	7.16
12.5000	6.04	5.12	4.28	3.71	3.32
12.7500	3.07	2.88	2.73	2.59	2.47
13.0000	2.34	2.23	2.14	2.07	2.02
13.2500	1.98	1.94	1.91	1.88	1.85
13.5000	1.82	1.79	1.76	1.73	1.70
13.7500	1.67	1.63	1.60	1.57	1.54
14.0000	1.51	1.48	1.45	1.43	1.41
14.2500	1.39	1.38	1.36	1.35	1.33
14.5000	1.32	1.30	1.29	1.27	1.26
14.7500	1.24	1.23	1.21	1.20	1.18
15.0000	1.16	1.15	1.13	1.12	1.10
15.2500	1.09	1.07	1.05	1.04	1.02
15.5000	1.00	.99	.97	.96	.94
15.7500	.92	.91	.89	.87	.86
16.0000	.84	.82	.81	.80	.79
16.2500	.78	.77	.76	.76	.75
16.5000	.74	.74	.73	.72	.71
16.7500	.71	.70	.69	.68	.68
17.0000	.67	.66	.66	.65	.64
17.2500	.63	.63	.62	.61	.60

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
17.5000	.60	.59	.58	.57	.57
17.7500	.56	.55	.54	.54	.53
18.0000	.52	.51	.51	.50	.50
18.2500	.50	.49	.49	.49	.49
18.5000	.48	.48	.48	.48	.48
18.7500	.47	.47	.47	.47	.47
19.0000	.46	.46	.46	.46	.45
19.2500	.45	.45	.45	.45	.44
19.5000	.44	.44	.44	.43	.43
19.7500	.43	.43	.43	.42	.42
20.0000	.42	.42	.41	.41	.41
20.2500	.41	.41	.41	.40	.40
20.5000	.40	.40	.40	.40	.39
20.7500	.39	.39	.39	.39	.39
21.0000	.38	.38	.38	.38	.38
21.2500	.38	.37	.37	.37	.37
21.5000	.37	.36	.36	.36	.36
21.7500	.36	.36	.36	.35	.35
22.0000	.35	.35	.35	.34	.34
22.2500	.34	.34	.34	.34	.33
22.5000	.33	.33	.33	.33	.33
22.7500	.32	.32	.32	.32	.32
23.0000	.32	.31	.31	.31	.31
23.2500	.31	.30	.30	.30	.30
23.5000	.30	.30	.29	.29	.29
23.7500	.29	.29	.29	.28	.28
24.0000	.28	.24	.16	.09	.05
24.2500	.03	.01	.01	.00	.00
24.5000	.00				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: DP-2

HYG Directory: S:\2015\15064\PONDPACK\2016-12-05_bd\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 30	EDA-2B		EDA-2B	100
ADDLINK 20	EDA-2A		EDA-2A	100

INFLOWS TO: DP-2

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	EDA-2B	100	109060	12.1500	27.23
	EDA-2A	100	59313	12.1000	16.64

TOTAL FLOW INTO: DP-2

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	DP-2	100	168373	12.1500	42.12

TOTAL NODE INFLOW...
HYG file =
HYG ID = DP-2
HYG Tag = 100

Peak Discharge = 42.12 cfs
Time to Peak = 12.1500 hrs
HYG Volume = 168373 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
7.3500	.00	.00	.01	.01	.01
7.6000	.01	.02	.02	.03	.03
7.8500	.04	.05	.05	.06	.08
8.1000	.09	.10	.11	.12	.14
8.3500	.15	.17	.18	.20	.22
8.6000	.23	.25	.27	.29	.31
8.8500	.33	.35	.37	.40	.42
9.1000	.44	.47	.49	.52	.55
9.3500	.57	.60	.63	.66	.69
9.6000	.72	.75	.78	.81	.84
9.8500	.88	.91	.95	.98	1.02
10.1000	1.06	1.10	1.15	1.20	1.26
10.3500	1.31	1.37	1.43	1.49	1.55
10.6000	1.61	1.68	1.74	1.81	1.88
10.8500	1.95	2.02	2.10	2.17	2.26
11.1000	2.38	2.51	2.69	2.87	3.08
11.3500	3.28	3.51	3.74	3.99	4.45
11.6000	5.20	6.30	7.89	9.67	11.83
11.8500	14.07	16.69	21.62	29.84	36.73
12.1000	41.91	42.12	36.93	31.86	27.32
12.3500	23.88	20.70	17.92	15.00	12.63
12.6000	10.49	9.05	8.06	7.41	6.93
12.8500	6.56	6.21	5.90	5.58	5.32
13.1000	5.09	4.91	4.78	4.68	4.58
13.3500	4.50	4.42	4.35	4.27	4.20
13.6000	4.12	4.05	3.97	3.89	3.82
13.8500	3.74	3.66	3.59	3.51	3.44
14.1000	3.37	3.32	3.27	3.23	3.19
14.3500	3.15	3.11	3.08	3.04	3.00
14.6000	2.96	2.93	2.89	2.85	2.81
14.8500	2.78	2.74	2.70	2.66	2.63

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
15.1000	2.59	2.55	2.51	2.48	2.44
15.3500	2.40	2.36	2.32	2.28	2.25
15.6000	2.21	2.17	2.13	2.09	2.05
15.8500	2.02	1.98	1.94	1.90	1.86
16.1000	1.83	1.81	1.78	1.76	1.74
16.3500	1.73	1.71	1.69	1.67	1.66
16.6000	1.64	1.62	1.61	1.59	1.57
16.8500	1.56	1.54	1.52	1.50	1.49
17.1000	1.47	1.45	1.44	1.42	1.40
17.3500	1.39	1.37	1.35	1.33	1.32
17.6000	1.30	1.28	1.27	1.25	1.23
17.8500	1.21	1.20	1.18	1.16	1.15
18.1000	1.13	1.12	1.11	1.11	1.10
18.3500	1.10	1.09	1.09	1.08	1.08
18.6000	1.07	1.07	1.06	1.06	1.05
18.8500	1.05	1.04	1.04	1.03	1.03
19.1000	1.02	1.01	1.01	1.01	1.00
19.3500	.99	.99	.99	.98	.97
19.6000	.97	.96	.96	.95	.95
19.8500	.94	.94	.93	.93	.92
20.1000	.92	.91	.91	.91	.90
20.3500	.90	.89	.89	.89	.88
20.6000	.88	.88	.87	.87	.86
20.8500	.86	.86	.85	.85	.85
21.1000	.84	.84	.83	.83	.83
21.3500	.82	.82	.81	.81	.80
21.6000	.80	.80	.79	.79	.79
21.8500	.78	.78	.78	.77	.77
22.1000	.76	.76	.76	.75	.75
22.3500	.74	.74	.74	.73	.73
22.6000	.73	.72	.72	.71	.71
22.8500	.70	.70	.70	.69	.69
23.1000	.68	.68	.68	.67	.67
23.3500	.67	.66	.66	.65	.65
23.6000	.65	.64	.64	.63	.63
23.8500	.63	.62	.62	.61	.53
24.1000	.35	.20	.11	.06	.03
24.3500	.02	.01	.00	.00	.00

SUMMARY FOR HYDROGRAPH ADDITION
at Node: DP-3

HYG Directory: S:\2015\15064\PONDPACK\2016-12-05_bd\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 50	EDA-3		EDA-3	1
DRIVEWAY	POND 1B	IN	DRIVEWAY	1

INFLOWS TO: DP-3

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	EDA-3	1	2534	12.1000	.67
	DRIVEWAY	1	0	11.2000	.00

TOTAL FLOW INTO: DP-3

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	DP-3	1	2534	12.1000	.67

TOTAL NODE INFLOW...
HYG file =
HYG ID = DP-3
HYG Tag = 1

Peak Discharge = .67 cfs
Time to Peak = 12.1000 hrs
HYG Volume = 2534 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.0000	.00	.00	.00	.00	.00
10.2500	.00	.00	.00	.01	.01
10.5000	.01	.01	.01	.01	.01
10.7500	.01	.01	.01	.01	.01
11.0000	.02	.02	.02	.02	.02
11.2500	.03	.03	.03	.03	.04
11.5000	.04	.05	.06	.07	.09
11.7500	.12	.15	.18	.22	.30
12.0000	.46	.58	.67	.67	.55
12.2500	.46	.40	.35	.31	.27
12.5000	.22	.18	.15	.13	.12
12.7500	.12	.11	.11	.10	.10
13.0000	.09	.09	.08	.08	.08
13.2500	.08	.08	.08	.08	.07
13.5000	.07	.07	.07	.07	.07
13.7500	.07	.07	.06	.06	.06
14.0000	.06	.06	.06	.06	.06
14.2500	.06	.06	.05	.05	.05
14.5000	.05	.05	.05	.05	.05
14.7500	.05	.05	.05	.05	.05
15.0000	.05	.05	.05	.04	.04
15.2500	.04	.04	.04	.04	.04
15.5000	.04	.04	.04	.04	.04
15.7500	.04	.04	.04	.03	.03
16.0000	.03	.03	.03	.03	.03
16.2500	.03	.03	.03	.03	.03
16.5000	.03	.03	.03	.03	.03
16.7500	.03	.03	.03	.03	.03
17.0000	.03	.03	.03	.03	.03
17.2500	.03	.03	.02	.02	.02
17.5000	.02	.02	.02	.02	.02

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
17.7500	.02	.02	.02	.02	.02
18.0000	.02	.02	.02	.02	.02
18.2500	.02	.02	.02	.02	.02
18.5000	.02	.02	.02	.02	.02
18.7500	.02	.02	.02	.02	.02
19.0000	.02	.02	.02	.02	.02
19.2500	.02	.02	.02	.02	.02
19.5000	.02	.02	.02	.02	.02
19.7500	.02	.02	.02	.02	.02
20.0000	.02	.02	.02	.02	.02
20.2500	.02	.02	.02	.02	.02
20.5000	.02	.02	.02	.02	.02
20.7500	.02	.02	.02	.02	.02
21.0000	.02	.02	.02	.02	.02
21.2500	.02	.02	.01	.01	.01
21.5000	.01	.01	.01	.01	.01
21.7500	.01	.01	.01	.01	.01
22.0000	.01	.01	.01	.01	.01
22.2500	.01	.01	.01	.01	.01
22.5000	.01	.01	.01	.01	.01
22.7500	.01	.01	.01	.01	.01
23.0000	.01	.01	.01	.01	.01
23.2500	.01	.01	.01	.01	.01
23.5000	.01	.01	.01	.01	.01
23.7500	.01	.01	.01	.01	.01
24.0000	.01	.01	.00	.00	.00

SUMMARY FOR HYDROGRAPH ADDITION
at Node: DP-3

HYG Directory: S:\2015\15064\PONDPACK\2016-12-05_bd\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 50	EDA-3		EDA-3	10
DRIVEWAY	POND 1B	IN	DRIVEWAY	10

INFLOWS TO: DP-3

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	EDA-3	10	7026	12.1000	1.89
	DRIVEWAY	10	0	8.9000	.00

TOTAL FLOW INTO: DP-3

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	DP-3	10	7026	12.1000	1.89

TOTAL NODE INFLOW...
HYG file =
HYG ID = DP-3
HYG Tag = 10

Peak Discharge = 1.89 cfs
Time to Peak = 12.1000 hrs
HYG Volume = 7026 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
7.5500	.00	.00	.00	.00	.00
7.8000	.00	.00	.00	.00	.00
8.0500	.01	.01	.01	.01	.01
8.3000	.01	.01	.01	.01	.01
8.5500	.01	.01	.01	.01	.01
8.8000	.02	.02	.02	.02	.02
9.0500	.02	.02	.02	.02	.02
9.3000	.03	.03	.03	.03	.03
9.5500	.03	.03	.03	.04	.04
9.8000	.04	.04	.04	.04	.04
10.0500	.05	.05	.05	.05	.05
10.3000	.06	.06	.06	.06	.07
10.5500	.07	.07	.07	.08	.08
10.8000	.08	.09	.09	.09	.10
11.0500	.10	.10	.11	.12	.13
11.3000	.14	.15	.16	.17	.18
11.5500	.20	.24	.29	.37	.45
11.8000	.55	.64	.76	.98	1.40
12.0500	1.72	1.89	1.84	1.49	1.21
12.3000	1.03	.90	.78	.67	.55
12.5500	.46	.38	.33	.30	.29
12.8000	.27	.26	.25	.24	.22
13.0500	.21	.20	.20	.19	.19
13.3000	.19	.18	.18	.18	.17
13.5500	.17	.17	.17	.16	.16
13.8000	.16	.15	.15	.15	.14
14.0500	.14	.14	.14	.13	.13
14.3000	.13	.13	.13	.13	.12
14.5500	.12	.12	.12	.12	.12
14.8000	.12	.11	.11	.11	.11
15.0500	.11	.11	.10	.10	.10

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
15.3000	.10	.10	.10	.09	.09
15.5500	.09	.09	.09	.09	.09
15.8000	.08	.08	.08	.08	.08
16.0500	.08	.07	.07	.07	.07
16.3000	.07	.07	.07	.07	.07
16.5500	.07	.07	.07	.07	.07
16.8000	.06	.06	.06	.06	.06
17.0500	.06	.06	.06	.06	.06
17.3000	.06	.06	.06	.06	.05
17.5500	.05	.05	.05	.05	.05
17.8000	.05	.05	.05	.05	.05
18.0500	.05	.05	.05	.05	.05
18.3000	.05	.04	.04	.04	.04
18.5500	.04	.04	.04	.04	.04
18.8000	.04	.04	.04	.04	.04
19.0500	.04	.04	.04	.04	.04
19.3000	.04	.04	.04	.04	.04
19.5500	.04	.04	.04	.04	.04
19.8000	.04	.04	.04	.04	.04
20.0500	.04	.04	.04	.04	.04
20.3000	.04	.04	.04	.04	.04
20.5500	.04	.04	.04	.04	.04
20.8000	.04	.04	.04	.03	.03
21.0500	.03	.03	.03	.03	.03
21.3000	.03	.03	.03	.03	.03
21.5500	.03	.03	.03	.03	.03
21.8000	.03	.03	.03	.03	.03
22.0500	.03	.03	.03	.03	.03
22.3000	.03	.03	.03	.03	.03
22.5500	.03	.03	.03	.03	.03
22.8000	.03	.03	.03	.03	.03
23.0500	.03	.03	.03	.03	.03
23.3000	.03	.03	.03	.03	.03
23.5500	.03	.03	.03	.03	.03
23.8000	.03	.03	.03	.03	.03
24.0500	.02	.01	.00	.00	.00

SUMMARY FOR HYDROGRAPH ADDITION
at Node: DP-3

HYG Directory: S:\2015\15064\PONDPACK\2016-12-05_bd\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ADDLINK 50	EDA-3		EDA-3	100
DRIVEWAY	POND 1B	IN	DRIVEWAY	100

INFLOWS TO: DP-3

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	EDA-3	100	15969	12.1000	4.19
	DRIVEWAY	100	1805	12.5500	2.76

TOTAL FLOW INTO: DP-3

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time hrs	Peak Flow cfs
	DP-3	100	17775	12.1000	4.19

TOTAL NODE INFLOW...
HYG file =
HYG ID = DP-3
HYG Tag = 100

Peak Discharge = 4.19 cfs
Time to Peak = 12.1000 hrs
HYG Volume = 17775 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
5.0000	.00	.00	.00	.00	.00
5.2500	.00	.00	.00	.00	.01
5.5000	.01	.01	.01	.01	.01
5.7500	.01	.01	.01	.01	.01
6.0000	.01	.01	.01	.01	.01
6.2500	.01	.01	.02	.02	.02
6.5000	.02	.02	.02	.02	.02
6.7500	.02	.02	.02	.02	.03
7.0000	.03	.03	.03	.03	.03
7.2500	.03	.03	.03	.03	.04
7.5000	.04	.04	.04	.04	.04
7.7500	.04	.04	.05	.05	.05
8.0000	.05	.05	.05	.05	.06
8.2500	.06	.06	.06	.06	.07
8.5000	.07	.07	.07	.08	.08
8.7500	.08	.08	.09	.09	.09
9.0000	.09	.10	.10	.10	.11
9.2500	.11	.11	.11	.12	.12
9.5000	.12	.13	.13	.13	.14
9.7500	.14	.14	.15	.15	.15
10.0000	.16	.16	.17	.17	.18
10.2500	.18	.19	.19	.20	.21
10.5000	.21	.22	.22	.23	.24
10.7500	.24	.25	.26	.26	.27
11.0000	.28	.29	.30	.32	.34
11.2500	.36	.38	.40	.42	.45
11.5000	.47	.52	.62	.75	.94
11.7500	1.13	1.36	1.57	1.83	2.30
12.0000	3.24	3.89	4.19	4.01	3.21
12.2500	2.58	2.18	1.90	1.63	2.21
12.5000	3.65	3.71	2.91	1.93	1.11

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
12.7500	.67	.56	.53	.51	.48
13.0000	.46	.44	.42	.40	.39
13.2500	.39	.38	.37	.37	.36
13.5000	.35	.35	.34	.33	.33
13.7500	.32	.31	.31	.30	.30
14.0000	.29	.28	.28	.27	.27
14.2500	.27	.26	.26	.26	.25
14.5000	.25	.25	.24	.24	.24
14.7500	.23	.23	.23	.22	.22
15.0000	.22	.22	.21	.21	.21
15.2500	.20	.20	.20	.19	.19
15.5000	.19	.18	.18	.18	.17
15.7500	.17	.17	.16	.16	.16
16.0000	.15	.15	.15	.15	.14
16.2500	.14	.14	.14	.14	.14
16.5000	.14	.13	.13	.13	.13
16.7500	.13	.13	.13	.12	.12
17.0000	.12	.12	.12	.12	.12
17.2500	.11	.11	.11	.11	.11
17.5000	.11	.11	.11	.10	.10
17.7500	.10	.10	.10	.10	.10
18.0000	.09	.09	.09	.09	.09
18.2500	.09	.09	.09	.09	.09
18.5000	.09	.09	.09	.09	.09
18.7500	.09	.09	.08	.08	.08
19.0000	.08	.08	.08	.08	.08
19.2500	.08	.08	.08	.08	.08
19.5000	.08	.08	.08	.08	.08
19.7500	.08	.08	.08	.08	.08
20.0000	.08	.07	.07	.07	.07
20.2500	.07	.07	.07	.07	.07
20.5000	.07	.07	.07	.07	.07
20.7500	.07	.07	.07	.07	.07
21.0000	.07	.07	.07	.07	.07
21.2500	.07	.07	.07	.07	.07
21.5000	.07	.06	.06	.06	.06
21.7500	.06	.06	.06	.06	.06
22.0000	.06	.06	.06	.06	.06
22.2500	.06	.06	.06	.06	.06
22.5000	.06	.06	.06	.06	.06
22.7500	.06	.06	.06	.06	.06
23.0000	.06	.06	.05	.05	.05
23.2500	.05	.05	.05	.05	.05
23.5000	.05	.05	.05	.05	.05
23.7500	.05	.05	.05	.05	.05

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
24.0000	.05	.04	.02	.01	.00
24.2500	.00	.00			

Elevation (ft)	Planimeter (sq.in)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume (cu.ft)	Volume Sum (cu.ft)
338.00	-----	1470	0	0	0
340.00	-----	4640	8722	5814	5814
342.15	-----	8740	19748	14153	19967

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Elevation (ft)	Planimeter (sq.in)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume (cu.ft)	Volume Sum (cu.ft)
314.00	-----	5347	0	0	0
316.00	-----	11241	24341	16227	16227
317.00	-----	11241	33723	11241	27468
318.00	-----	11241	33723	11241	38709

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Elevation (ft)	Planimeter (sq.in)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume (cu.ft)	Volume Sum (cu.ft)
364.00	-----	7822	0	0	0
364.70	-----	16139	35197	8213	8213
365.00	-----	16139	48417	4842	13054
365.25	-----	16139	48417	4035	17089

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 364.00 ft
Increment = .10 ft
Max. Elev.= 365.25 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Weir-XY Points	W0	--->	TW	364.700	365.250
TW SETUP, DS Channel					

OUTLET STRUCTURE INPUT DATA

Structure ID = W0
Structure Type = Weir-XY Points

# of Openings = 1
WEIR X-Y GROUND POINTS

X, ft	Elev, ft
.00	365.25
12.00	364.70
24.00	364.70
36.00	365.25

Lowest Elev. = 364.70 ft

Weir Coeff. = 2.680000

Weir TW effects (Use adjustment equation)

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 40
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .00 cfs
Max. Q tolerance = .00 cfs

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
364.00	.00	Free Outfall		None contributing
364.10	.00	Free Outfall		None contributing
364.20	.00	Free Outfall		None contributing
364.30	.00	Free Outfall		None contributing
364.40	.00	Free Outfall		None contributing
364.50	.00	Free Outfall		None contributing
364.60	.00	Free Outfall		None contributing
364.70	.00	Free Outfall		W0
364.80	1.15	Free Outfall		W0
364.90	3.62	Free Outfall		W0
365.00	7.32	Free Outfall		W0
365.10	12.32	Free Outfall		W0
365.20	18.68	Free Outfall		W0
365.25	22.39	Free Outfall		W0

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 338.00 ft
Increment = .05 ft
Max. Elev.= 342.15 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Inlet Box	R0	--->	C0	338.480	342.150
Culvert-Circular	C0	--->	TW	337.180	342.150

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = R0
Structure Type = Inlet Box

# of Openings	=	1
Invert Elev.	=	338.48 ft
Orifice Area	=	9.0000 sq.ft
Orifice Coeff.	=	.600
Weir Length	=	12.00 ft
Weir Coeff.	=	3.330
K, Reverse	=	1.000
Mannings n	=	.0000
Kev,Charged Riser	=	.000
Weir Submergence	=	No

OUTLET STRUCTURE INPUT DATA

Structure ID = C0
Structure Type = Culvert-Circular

No. Barrels = 1
Barrel Diameter = 1.0000 ft
Upstream Invert = 337.18 ft
Dnstream Invert = 334.00 ft
Horiz. Length = 50.00 ft
Barrel Length = 50.10 ft
Barrel Slope = .06360 ft/ft

OUTLET CONTROL DATA...
Mannings n = .0120
Ke = .5000 (forward entrance loss)
Kb = .026647 (per ft of full flow)
Kr = .5000 (reverse entrance loss)
HW Convergence = .001 +/- ft

INLET CONTROL DATA...
Equation form = 1
Inlet Control K = .0078
Inlet Control M = 2.0000
Inlet Control c = .03790
Inlet Control Y = .6900
T1 ratio (HW/D) = .000
T2 ratio (HW/D) = 1.265
Slope Factor = -.500

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev = 337.18 ft ---> Flow = 2.75 cfs
At T2 Elev = 338.44 ft ---> Flow = 3.14 cfs

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 40
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .00 cfs
Max. Q tolerance = .00 cfs

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
338.00	.00	Free Outfall		(no Q: R0,C0)
338.05	.00	Free Outfall		(no Q: R0,C0)
338.10	.00	Free Outfall		(no Q: R0,C0)
338.15	.00	Free Outfall		(no Q: R0,C0)
338.20	.00	Free Outfall		(no Q: R0,C0)
338.25	.00	Free Outfall		(no Q: R0,C0)
338.30	.00	Free Outfall		(no Q: R0,C0)
338.35	.00	Free Outfall		(no Q: R0,C0)
338.40	.00	Free Outfall		(no Q: R0,C0)
338.45	.00	Free Outfall		(no Q: R0,C0)
338.48	.00	Free Outfall		(no Q: R0,C0)
338.50	.11	Free Outfall		R0,C0
338.55	.74	Free Outfall		R0,C0
338.60	1.66	Free Outfall		R0,C0
338.65	2.80	Free Outfall		R0,C0
338.70	3.74	Free Outfall		R0,C0
338.75	3.85	Free Outfall		R0,C0
338.80	3.95	Free Outfall		R0,C0
338.85	4.06	Free Outfall		R0,C0
338.90	4.16	Free Outfall		R0,C0
338.95	4.26	Free Outfall		R0,C0
339.00	4.35	Free Outfall		R0,C0
339.05	4.44	Free Outfall		R0,C0
339.10	4.53	Free Outfall		R0,C0
339.15	4.62	Free Outfall		R0,C0
339.20	4.71	Free Outfall		R0,C0
339.25	4.79	Free Outfall		R0,C0
339.30	4.88	Free Outfall		R0,C0
339.35	4.96	Free Outfall		R0,C0
339.40	5.04	Free Outfall		R0,C0
339.45	5.12	Free Outfall		R0,C0
339.50	5.20	Free Outfall		R0,C0
339.55	5.28	Free Outfall		R0,C0
339.60	5.36	Free Outfall		R0,C0
339.65	5.43	Free Outfall		R0,C0
339.70	5.50	Free Outfall		R0,C0
339.75	5.58	Free Outfall		R0,C0
339.80	5.65	Free Outfall		R0,C0

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
339.85	5.72	Free Outfall		R0,C0
339.90	5.79	Free Outfall		R0,C0
339.95	5.86	Free Outfall		R0,C0
340.00	5.93	Free Outfall		R0,C0
340.05	6.00	Free Outfall		R0,C0
340.10	6.07	Free Outfall		R0,C0
340.15	6.13	Free Outfall		R0,C0
340.20	6.20	Free Outfall		R0,C0
340.25	6.26	Free Outfall		R0,C0
340.30	6.33	Free Outfall		R0,C0
340.35	6.39	Free Outfall		R0,C0
340.40	6.46	Free Outfall		R0,C0
340.45	6.52	Free Outfall		R0,C0
340.50	6.58	Free Outfall		R0,C0
340.55	6.64	Free Outfall		R0,C0
340.60	6.71	Free Outfall		R0,C0
340.65	6.77	Free Outfall		R0,C0
340.70	6.82	Free Outfall		R0,C0
340.75	6.88	Free Outfall		R0,C0
340.80	6.94	Free Outfall		R0,C0
340.85	7.00	Free Outfall		R0,C0
340.90	7.06	Free Outfall		R0,C0
340.95	7.12	Free Outfall		R0,C0
341.00	7.17	Free Outfall		R0,C0
341.05	7.23	Free Outfall		R0,C0
341.10	7.29	Free Outfall		R0,C0
341.15	7.34	Free Outfall		R0,C0
341.20	7.40	Free Outfall		R0,C0
341.25	7.45	Free Outfall		R0,C0
341.30	7.51	Free Outfall		R0,C0
341.35	7.56	Free Outfall		R0,C0
341.40	7.61	Free Outfall		R0,C0
341.45	7.67	Free Outfall		R0,C0
341.50	7.72	Free Outfall		R0,C0
341.55	7.77	Free Outfall		R0,C0
341.60	7.82	Free Outfall		R0,C0
341.65	7.88	Free Outfall		R0,C0
341.70	7.93	Free Outfall		R0,C0

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
341.75	7.98	Free Outfall		R0,C0
341.80	8.03	Free Outfall		R0,C0
341.85	8.08	Free Outfall		R0,C0
341.90	8.13	Free Outfall		R0,C0
341.95	8.18	Free Outfall		R0,C0
342.00	8.23	Free Outfall		R0,C0
342.05	8.28	Free Outfall		R0,C0
342.10	8.33	Free Outfall		R0,C0
342.15	8.38	Free Outfall		R0,C0

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 338.00 ft
Increment = .05 ft
Max. Elev.= 342.15 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Weir-XY Points TW SETUP, DS Channel	W0	--->	TW	342.000	342.150

OUTLET STRUCTURE INPUT DATA

Structure ID = W0
Structure Type = Weir-XY Points

# of Openings = 1
WEIR X-Y GROUND POINTS

X, ft	Elev, ft
.00	342.15
12.00	342.00
24.00	342.00
36.00	342.15

Lowest Elev. = 342.00 ft

Weir Coeff. = 2.680000

Weir TW effects (Use adjustment equation)

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 40
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .00 cfs
Max. Q tolerance = .00 cfs

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
338.00	.00	Free Outfall		None contributing
338.05	.00	Free Outfall		None contributing
338.10	.00	Free Outfall		None contributing
338.15	.00	Free Outfall		None contributing
338.20	.00	Free Outfall		None contributing
338.25	.00	Free Outfall		None contributing
338.30	.00	Free Outfall		None contributing
338.35	.00	Free Outfall		None contributing
338.40	.00	Free Outfall		None contributing
338.45	.00	Free Outfall		None contributing
338.50	.00	Free Outfall		None contributing
338.55	.00	Free Outfall		None contributing
338.60	.00	Free Outfall		None contributing
338.65	.00	Free Outfall		None contributing
338.70	.00	Free Outfall		None contributing
338.75	.00	Free Outfall		None contributing
338.80	.00	Free Outfall		None contributing
338.85	.00	Free Outfall		None contributing
338.90	.00	Free Outfall		None contributing
338.95	.00	Free Outfall		None contributing
339.00	.00	Free Outfall		None contributing
339.05	.00	Free Outfall		None contributing
339.10	.00	Free Outfall		None contributing
339.15	.00	Free Outfall		None contributing
339.20	.00	Free Outfall		None contributing
339.25	.00	Free Outfall		None contributing
339.30	.00	Free Outfall		None contributing
339.35	.00	Free Outfall		None contributing
339.40	.00	Free Outfall		None contributing
339.45	.00	Free Outfall		None contributing
339.50	.00	Free Outfall		None contributing
339.55	.00	Free Outfall		None contributing
339.60	.00	Free Outfall		None contributing
339.65	.00	Free Outfall		None contributing
339.70	.00	Free Outfall		None contributing
339.75	.00	Free Outfall		None contributing
339.80	.00	Free Outfall		None contributing
339.85	.00	Free Outfall		None contributing

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
339.90	.00	Free Outfall		None contributing
339.95	.00	Free Outfall		None contributing
340.00	.00	Free Outfall		None contributing
340.05	.00	Free Outfall		None contributing
340.10	.00	Free Outfall		None contributing
340.15	.00	Free Outfall		None contributing
340.20	.00	Free Outfall		None contributing
340.25	.00	Free Outfall		None contributing
340.30	.00	Free Outfall		None contributing
340.35	.00	Free Outfall		None contributing
340.40	.00	Free Outfall		None contributing
340.45	.00	Free Outfall		None contributing
340.50	.00	Free Outfall		None contributing
340.55	.00	Free Outfall		None contributing
340.60	.00	Free Outfall		None contributing
340.65	.00	Free Outfall		None contributing
340.70	.00	Free Outfall		None contributing
340.75	.00	Free Outfall		None contributing
340.80	.00	Free Outfall		None contributing
340.85	.00	Free Outfall		None contributing
340.90	.00	Free Outfall		None contributing
340.95	.00	Free Outfall		None contributing
341.00	.00	Free Outfall		None contributing
341.05	.00	Free Outfall		None contributing
341.10	.00	Free Outfall		None contributing
341.15	.00	Free Outfall		None contributing
341.20	.00	Free Outfall		None contributing
341.25	.00	Free Outfall		None contributing
341.30	.00	Free Outfall		None contributing
341.35	.00	Free Outfall		None contributing
341.40	.00	Free Outfall		None contributing
341.45	.00	Free Outfall		None contributing
341.50	.00	Free Outfall		None contributing
341.55	.00	Free Outfall		None contributing
341.60	.00	Free Outfall		None contributing
341.65	.00	Free Outfall		None contributing
341.70	.00	Free Outfall		None contributing
341.75	.00	Free Outfall		None contributing

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
341.80	.00	Free Outfall		None contributing
341.85	.00	Free Outfall		None contributing
341.90	.00	Free Outfall		None contributing
341.95	.00	Free Outfall		None contributing
342.00	.00	Free Outfall		W0
342.05	.44	Free Outfall		W0
342.10	1.50	Free Outfall		W0
342.15	3.19	Free Outfall		W0

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 314.00 ft
Increment = .10 ft
Max. Elev.= 318.00 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Culvert-Circular	C0	--->	TW	314.000	318.000
TW SETUP, DS Channel					

OUTLET STRUCTURE INPUT DATA

Structure ID = C0
Structure Type = Culvert-Circular

No. Barrels	=	1
Barrel Diameter	=	.6667 ft
Upstream Invert	=	314.00 ft
Dnstream Invert	=	312.00 ft
Horiz. Length	=	300.00 ft
Barrel Length	=	300.01 ft
Barrel Slope	=	.00667 ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0120	
Ke	=	.2000	(forward entrance loss)
Kb	=	.045752	(per ft of full flow)
Kr	=	.2000	(reverse entrance loss)
HW Convergence	=	.001	+/- ft

INLET CONTROL DATA...

Equation form	=	1
Inlet Control K	=	.0018
Inlet Control M	=	2.0000
Inlet Control c	=	.02920
Inlet Control Y	=	.7400
T1 ratio (HW/D)	=	1.058
T2 ratio (HW/D)	=	1.204
Slope Factor	=	-.500

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev = 314.71 ft ---> Flow = 1.00 cfs
At T2 Elev = 314.80 ft ---> Flow = 1.14 cfs

OUTLET STRUCTURE INPUT DATA

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 40
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .00 cfs
Max. Q tolerance = .00 cfs

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
314.00	.00	Free Outfall		None contributing
314.10	.02	Free Outfall		C0
314.20	.10	Free Outfall		C0
314.30	.21	Free Outfall		C0
314.40	.35	Free Outfall		C0
314.50	.52	Free Outfall		C0
314.60	.72	Free Outfall		C0
314.70	.92	Free Outfall		C0
314.80	1.11	Free Outfall		C0
314.90	1.16	Free Outfall		C0
315.00	1.17	Free Outfall		C0
315.10	1.18	Free Outfall		C0
315.20	1.19	Free Outfall		C0
315.30	1.20	Free Outfall		C0
315.40	1.22	Free Outfall		C0
315.50	1.24	Free Outfall		C0
315.60	1.26	Free Outfall		C0
315.70	1.28	Free Outfall		C0
315.80	1.30	Free Outfall		C0
315.90	1.32	Free Outfall		C0
316.00	1.34	Free Outfall		C0
316.10	1.36	Free Outfall		C0
316.20	1.37	Free Outfall		C0
316.30	1.39	Free Outfall		C0
316.40	1.41	Free Outfall		C0
316.50	1.43	Free Outfall		C0
316.60	1.45	Free Outfall		C0
316.70	1.47	Free Outfall		C0
316.80	1.48	Free Outfall		C0
316.90	1.50	Free Outfall		C0
317.00	1.52	Free Outfall		C0
317.10	1.53	Free Outfall		C0
317.20	1.55	Free Outfall		C0
317.30	1.57	Free Outfall		C0
317.40	1.58	Free Outfall		C0
317.50	1.60	Free Outfall		C0
317.60	1.62	Free Outfall		C0
317.70	1.63	Free Outfall		C0

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
317.80	1.65	Free Outfall		C0
317.90	1.66	Free Outfall		C0
318.00	1.68	Free Outfall		C0

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND 1B IN 1
Outflow HYG file = NONE STORED - POND 1B OUT 1

Pond Node Data = POND 1B
Pond Volume Data = POND 1B
Pond Outlet Data = DI
DRIVEWAY CURB

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	338.00 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
338.00	.00	0	1470	.00	.00	.00
338.05	.00	75	1528	.00	.00	.83
338.10	.00	153	1586	.00	.00	1.70
338.15	.00	234	1646	.00	.00	2.60
338.20	.00	317	1707	.00	.00	3.53
338.25	.00	404	1769	.00	.00	4.49
338.30	.00	494	1832	.00	.00	5.49
338.35	.00	588	1897	.00	.00	6.53
338.40	.00	684	1962	.00	.00	7.60
338.45	.00	784	2029	.00	.00	8.71
338.50	.11	887	2096	.00	.11	9.97
338.55	.74	993	2165	.00	.74	11.78
338.60	1.66	1103	2235	.00	1.66	13.92
338.65	2.80	1217	2306	.00	2.80	16.32
338.70	3.74	1334	2378	.00	3.74	18.57
338.75	3.85	1455	2451	.00	3.85	20.01
338.80	3.95	1579	2525	.00	3.95	21.50
338.85	4.06	1707	2601	.00	4.06	23.03
338.90	4.16	1839	2677	.00	4.16	24.59
338.95	4.26	1975	2755	.00	4.26	26.20

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND 1B IN 1
Outflow HYG file = NONE STORED - POND 1B OUT 1

Pond Node Data = POND 1B
Pond Volume Data = POND 1B
Pond Outlet Data = DI
DRIVEWAY CURB

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	338.00 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
339.00	4.35	2115	2833	.00	4.35	27.85
339.05	4.44	2258	2913	.00	4.44	29.53
339.10	4.53	2406	2994	.00	4.53	31.27
339.15	4.62	2558	3076	.00	4.62	33.04
339.20	4.71	2714	3159	.00	4.71	34.86
339.25	4.79	2874	3243	.00	4.79	36.72
339.30	4.88	3038	3329	.00	4.88	38.63
339.35	4.96	3207	3415	.00	4.96	40.59
339.40	5.04	3380	3503	.00	5.04	42.59
339.45	5.12	3557	3591	.00	5.12	44.65
339.50	5.20	3739	3681	.00	5.20	46.74
339.55	5.28	3925	3772	.00	5.28	48.89
339.60	5.36	4116	3864	.00	5.36	51.09
339.65	5.43	4311	3957	.00	5.43	53.34
339.70	5.50	4512	4051	.00	5.50	55.64
339.75	5.58	4717	4147	.00	5.58	57.99
339.80	5.65	4926	4243	.00	5.65	60.39
339.85	5.72	5141	4341	.00	5.72	62.84
339.90	5.79	5360	4439	.00	5.79	65.35
339.95	5.86	5585	4539	.00	5.86	67.92

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND 1B IN 1
Outflow HYG file = NONE STORED - POND 1B OUT 1

Pond Node Data = POND 1B
Pond Volume Data = POND 1B
Pond Outlet Data = DI
DRIVEWAY CURB

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	= 338.00 ft
Starting Volume	= 0 cu.ft
Starting Outflow	= .00 cfs
Starting Infiltr.	= .00 cfs
Starting Total Qout	= .00 cfs
Time Increment	= .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
340.00	5.93	5814	4640	.00	5.93	70.54
340.05	6.00	6048	4721	.00	6.00	73.20
340.10	6.07	6287	4802	.00	6.07	75.92
340.15	6.13	6529	4884	.00	6.13	78.67
340.20	6.20	6775	4967	.00	6.20	81.48
340.25	6.26	7025	5051	.00	6.26	84.32
340.30	6.33	7280	5135	.00	6.33	87.22
340.35	6.39	7539	5220	.00	6.39	90.16
340.40	6.46	7802	5305	.00	6.46	93.15
340.45	6.52	8070	5392	.00	6.52	96.18
340.50	6.58	8341	5479	.00	6.58	99.26
340.55	6.64	8617	5566	.00	6.64	102.39
340.60	6.71	8898	5655	.00	6.71	105.57
340.65	6.77	9183	5744	.00	6.77	108.80
340.70	6.82	9472	5834	.00	6.82	112.07
340.75	6.88	9766	5924	.00	6.88	115.40
340.80	6.94	10065	6015	.00	6.94	118.77
340.85	7.00	10368	6107	.00	7.00	122.20
340.90	7.06	10675	6200	.00	7.06	125.67
340.95	7.12	10988	6293	.00	7.12	129.20

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND 1B IN 1
Outflow HYG file = NONE STORED - POND 1B OUT 1

Pond Node Data = POND 1B
Pond Volume Data = POND 1B
Pond Outlet Data = DI
DRIVEWAY CURB

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	338.00 ft
Starting Volume	0 cu.ft
Starting Outflow	.00 cfs
Starting Infiltr.	.00 cfs
Starting Total Qout	.00 cfs
Time Increment	.0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
341.00	7.17	11305	6387	.00	7.17	132.78
341.05	7.23	11626	6481	.00	7.23	136.41
341.10	7.29	11953	6577	.00	7.29	140.10
341.15	7.34	12284	6673	.00	7.34	143.83
341.20	7.40	12620	6770	.00	7.40	147.62
341.25	7.45	12961	6867	.00	7.45	151.46
341.30	7.51	13307	6965	.00	7.51	155.36
341.35	7.56	13658	7064	.00	7.56	159.31
341.40	7.61	14013	7164	.00	7.61	163.32
341.45	7.67	14374	7264	.00	7.67	167.38
341.50	7.72	14740	7365	.00	7.72	171.49
341.55	7.77	15110	7466	.00	7.77	175.67
341.60	7.82	15486	7569	.00	7.82	179.90
341.65	7.88	15867	7672	.00	7.88	184.18
341.70	7.93	16254	7775	.00	7.93	188.52
341.75	7.98	16645	7880	.00	7.98	192.92
341.80	8.03	17041	7985	.00	8.03	197.38
341.85	8.08	17443	8091	.00	8.08	201.90
341.90	8.13	17850	8197	.00	8.13	206.47
341.95	8.18	18263	8304	.00	8.18	211.10

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND 1B IN 1
Outflow HYG file = NONE STORED - POND 1B OUT 1

Pond Node Data = POND 1B
Pond Volume Data = POND 1B
Pond Outlet Data = DI
DRIVEWAY CURB

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	338.00 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
342.00	8.23	18681	8412	.00	8.23	215.80
342.05	8.72	19104	8521	.00	8.72	220.99
342.10	9.83	19533	8630	.00	9.83	226.86
342.15	11.57	19967	8740	.00	11.57	233.42

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND 1B OUT
HYG Tag = 1

Peak Discharge = 1.41 cfs
Time to Peak = 12.2500 hrs
HYG Volume = 5778 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.1500	.00	.00	.00	.00	.00
11.4000	.00	.00	.00	.00	.00
11.6500	.00	.00	.00	.00	.00
11.9000	.00	.00	.00	.00	.00
12.1500	.57	1.33	1.41	1.28	1.14
12.4000	1.02	.91	.80	.69	.60
12.6500	.52	.44	.39	.36	.34
12.9000	.32	.30	.29	.27	.26
13.1500	.25	.24	.23	.23	.23
13.4000	.22	.22	.21	.21	.21
13.6500	.21	.20	.20	.20	.19
13.9000	.19	.18	.18	.18	.17
14.1500	.17	.17	.17	.16	.16
14.4000	.16	.16	.16	.16	.15
14.6500	.15	.15	.15	.15	.15
14.9000	.14	.14	.14	.14	.14
15.1500	.13	.13	.13	.13	.13
15.4000	.13	.12	.12	.12	.12
15.6500	.12	.11	.11	.11	.11
15.9000	.11	.11	.11	.11	.10
16.1500	.10	.10	.10	.10	.10
16.4000	.10	.10	.09	.09	.09
16.6500	.09	.09	.09	.09	.09
16.9000	.09	.09	.09	.08	.08
17.1500	.08	.08	.08	.08	.08
17.4000	.08	.08	.08	.08	.07
17.6500	.07	.07	.07	.07	.07
17.9000	.07	.07	.07	.07	.07
18.1500	.07	.06	.06	.06	.06
18.4000	.06	.06	.06	.06	.06
18.6500	.06	.06	.06	.06	.06

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
18.9000	.06	.06	.06	.06	.06
19.1500	.06	.06	.06	.06	.06
19.4000	.06	.06	.05	.05	.05
19.6500	.05	.05	.05	.05	.05
19.9000	.05	.05	.05	.05	.05
20.1500	.05	.05	.05	.05	.05
20.4000	.05	.05	.05	.05	.05
20.6500	.05	.05	.05	.05	.05
20.9000	.05	.05	.05	.05	.05
21.1500	.05	.05	.05	.05	.05
21.4000	.05	.05	.05	.05	.05
21.6500	.05	.05	.04	.04	.04
21.9000	.04	.04	.04	.04	.04
22.1500	.04	.04	.04	.04	.04
22.4000	.04	.04	.04	.04	.04
22.6500	.04	.04	.04	.04	.04
22.9000	.04	.04	.04	.04	.04
23.1500	.04	.04	.04	.04	.04
23.4000	.04	.04	.04	.04	.04
23.6500	.04	.04	.04	.04	.04
23.9000	.04	.04	.04	.04	.03
24.1500	.03	.03	.02	.02	.02
24.4000	.01	.01	.01	.01	.01
24.6500	.01	.00	.00	.00	

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND 1B OUT
HYG Tag = 10

Peak Discharge = 4.23 cfs
Time to Peak = 12.2500 hrs
HYG Volume = 31752 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
8.8500	.00	.00	.00	.00	.00
9.1000	.00	.00	.00	.00	.00
9.3500	.00	.00	.00	.00	.00
9.6000	.00	.00	.00	.00	.00
9.8500	.00	.00	.00	.00	.00
10.1000	.00	.00	.00	.00	.00
10.3500	.00	.00	.00	.00	.00
10.6000	.00	.00	.00	.00	.00
10.8500	.00	.00	.00	.00	.00
11.1000	.00	.00	.00	.02	.07
11.3500	.11	.27	.34	.38	.41
11.6000	.46	.54	.66	.83	1.07
11.8500	1.32	1.60	2.01	2.66	3.47
12.1000	3.85	4.02	4.17	4.23	4.21
12.3500	4.12	3.98	3.80	2.85	2.26
12.6000	2.12	2.00	1.91	1.85	1.80
12.8500	1.76	1.72	1.68	1.64	1.60
13.1000	1.55	1.50	1.46	1.43	1.40
13.3500	1.37	1.34	1.31	1.29	1.26
13.6000	1.24	1.21	1.19	1.17	1.15
13.8500	1.12	1.10	1.08	1.06	1.04
14.1000	1.02	1.00	.98	.96	.95
14.3500	.93	.92	.91	.89	.88
14.6000	.87	.86	.85	.84	.82
14.8500	.81	.80	.79	.78	.77
15.1000	.76	.75	.74	.73	.72
15.3500	.71	.70	.69	.68	.67
15.6000	.66	.65	.64	.63	.62
15.8500	.61	.60	.59	.58	.57
16.1000	.56	.55	.54	.53	.52
16.3500	.52	.51	.50	.50	.49

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
16.6000	.48	.48	.47	.47	.46
16.8500	.46	.45	.45	.44	.44
17.1000	.43	.43	.42	.42	.41
17.3500	.41	.40	.40	.39	.39
17.6000	.38	.38	.37	.37	.37
17.8500	.36	.36	.35	.35	.34
18.1000	.34	.33	.33	.33	.32
18.3500	.32	.32	.31	.31	.31
18.6000	.31	.31	.30	.30	.30
18.8500	.30	.30	.30	.29	.29
19.1000	.29	.29	.29	.29	.28
19.3500	.28	.28	.28	.28	.28
19.6000	.28	.27	.27	.27	.27
19.8500	.27	.27	.27	.26	.26
20.1000	.26	.26	.26	.26	.26
20.3500	.26	.25	.25	.25	.25
20.6000	.25	.25	.25	.25	.25
20.8500	.24	.24	.24	.24	.24
21.1000	.24	.24	.24	.24	.23
21.3500	.23	.23	.23	.23	.23
21.6000	.23	.23	.23	.23	.22
21.8500	.22	.22	.22	.22	.22
22.1000	.22	.22	.22	.21	.21
22.3500	.21	.21	.21	.21	.21
22.6000	.21	.21	.21	.20	.20
22.8500	.20	.20	.20	.20	.20
23.1000	.20	.20	.19	.19	.19
23.3500	.19	.19	.19	.19	.19
23.6000	.19	.18	.18	.18	.18
23.8500	.18	.18	.18	.18	.17
24.1000	.16	.14	.12	.11	.10
24.3500	.10	.09	.08	.08	.07
24.6000	.06	.06	.05	.05	.04
24.8500	.04	.03	.03	.03	.02
25.1000	.02	.02	.02	.02	.01
25.3500	.01	.01	.01	.01	.01
25.6000	.01	.00	.00	.00	.00

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND 1B OUT
HYG Tag = 100

Peak Discharge = 11.12 cfs
Time to Peak = 12.5500 hrs
HYG Volume = 95243 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
6.3500	.00	.00	.00	.00	.00
6.6000	.00	.00	.00	.00	.00
6.8500	.00	.00	.00	.00	.00
7.1000	.00	.00	.00	.00	.00
7.3500	.00	.00	.00	.00	.00
7.6000	.00	.00	.00	.00	.00
7.8500	.00	.00	.00	.00	.00
8.1000	.00	.00	.00	.00	.00
8.3500	.00	.00	.00	.00	.00
8.6000	.00	.00	.00	.00	.00
8.8500	.00	.00	.00	.00	.00
9.1000	.04	.08	.11	.19	.24
9.3500	.26	.27	.28	.29	.30
9.6000	.31	.32	.33	.34	.35
9.8500	.36	.37	.38	.40	.41
10.1000	.42	.43	.45	.46	.48
10.3500	.49	.51	.53	.55	.57
10.6000	.59	.61	.63	.65	.67
10.8500	.69	.72	.74	.77	.79
11.1000	.82	.86	.90	.95	1.01
11.3500	1.08	1.15	1.22	1.29	1.39
11.6000	1.53	1.79	2.17	2.67	3.21
11.8500	3.76	3.89	4.14	4.56	5.13
12.1000	5.77	6.39	6.94	7.38	7.72
12.3500	7.98	8.17	9.11	10.87	11.12
12.6000	10.47	9.57	8.77	8.32	8.19
12.8500	8.13	8.06	7.98	7.89	7.80
13.1000	7.70	7.59	7.48	7.36	7.23
13.3500	7.10	6.96	6.81	6.66	6.51
13.6000	6.34	6.17	6.00	5.81	5.62
13.8500	5.41	5.20	4.97	4.73	4.48

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
14.1000	4.22	3.95	3.37	2.20	2.04
14.3500	2.01	1.98	1.96	1.93	1.91
14.6000	1.89	1.86	1.84	1.82	1.80
14.8500	1.77	1.75	1.73	1.70	1.68
15.1000	1.66	1.64	1.62	1.59	1.57
15.3500	1.55	1.52	1.50	1.48	1.46
15.6000	1.43	1.41	1.39	1.36	1.34
15.8500	1.32	1.30	1.27	1.25	1.23
16.1000	1.21	1.18	1.16	1.15	1.13
16.3500	1.11	1.10	1.09	1.07	1.06
16.6000	1.05	1.03	1.02	1.01	1.00
16.8500	.99	.97	.96	.95	.94
17.1000	.93	.92	.91	.90	.89
17.3500	.88	.87	.86	.85	.84
17.6000	.83	.82	.80	.79	.78
17.8500	.77	.76	.75	.74	.73
18.1000	.73	.72	.71	.70	.69
18.3500	.69	.68	.68	.67	.67
18.6000	.66	.66	.65	.65	.64
18.8500	.64	.64	.63	.63	.63
19.1000	.62	.62	.62	.61	.61
19.3500	.61	.60	.60	.60	.59
19.6000	.59	.59	.58	.58	.58
19.8500	.57	.57	.57	.57	.56
20.1000	.56	.56	.55	.55	.55
20.3500	.55	.54	.54	.54	.54
20.6000	.53	.53	.53	.53	.52
20.8500	.52	.52	.52	.51	.51
21.1000	.51	.51	.50	.50	.50
21.3500	.50	.50	.49	.49	.49
21.6000	.49	.48	.48	.48	.48
21.8500	.47	.47	.47	.47	.47
22.1000	.46	.46	.46	.46	.45
22.3500	.45	.45	.45	.44	.44
22.6000	.44	.44	.44	.43	.43
22.8500	.43	.43	.42	.42	.42
23.1000	.42	.41	.41	.41	.41
23.3500	.40	.40	.40	.40	.40
23.6000	.39	.39	.39	.39	.38
23.8500	.38	.38	.38	.37	.37
24.1000	.35	.31	.26	.22	.18
24.3500	.16	.14	.12	.11	.11
24.6000	.10	.09	.09	.08	.07
24.8500	.07	.06	.06	.05	.05
25.1000	.04	.04	.03	.03	.03

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
25.3500	.02	.02	.02	.02	.02
25.6000	.01	.01	.01	.01	.01
25.8500	.01	.01	.01	.00	.00
26.1000	.00				

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND 1C IN 1
Outflow HYG file = NONE STORED - POND 1C OUT 1

Pond Node Data = POND 1C
Pond Volume Data = POND 1C
Pond Outlet Data = PIPE

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	314.00 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
314.00	.00	0	5347	.00	.00	.00
314.10	.02	547	5590	.00	.02	6.10
314.20	.10	1118	5839	.00	.10	12.52
314.30	.21	1715	6093	.00	.21	19.26
314.40	.35	2337	6353	.00	.35	26.32
314.50	.52	2985	6618	.00	.52	33.70
314.60	.72	3661	6888	.00	.72	41.39
314.70	.92	4363	7164	.00	.92	49.40
314.80	1.11	5094	7445	.00	1.11	57.71
314.90	1.16	5852	7731	.00	1.16	66.19
315.00	1.17	6640	8023	.00	1.17	74.94
315.10	1.18	7457	8321	.00	1.18	84.03
315.20	1.19	8305	8624	.00	1.19	93.46
315.30	1.20	9182	8932	.00	1.20	103.23
315.40	1.22	10091	9245	.00	1.22	113.34
315.50	1.24	11031	9565	.00	1.24	123.81
315.60	1.26	12004	9889	.00	1.26	134.64
315.70	1.28	13010	10219	.00	1.28	145.83
315.80	1.30	14048	10554	.00	1.30	157.39
315.90	1.32	15120	10895	.00	1.32	169.32

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND 1C IN 1
Outflow HYG file = NONE STORED - POND 1C OUT 1

Pond Node Data = POND 1C
Pond Volume Data = POND 1C
Pond Outlet Data = PIPE

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 314.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
316.00	1.34	16227	11241	.00	1.34	181.64
316.10	1.36	17351	11241	.00	1.36	194.15
316.20	1.37	18476	11241	.00	1.37	206.66
316.30	1.39	19599	11241	.00	1.39	219.16
316.40	1.41	20724	11241	.00	1.41	231.67
316.50	1.43	21848	11241	.00	1.43	244.18
316.60	1.45	22972	11241	.00	1.45	256.69
316.70	1.47	24096	11241	.00	1.47	269.20
316.80	1.48	25220	11241	.00	1.48	281.70
316.90	1.50	26344	11241	.00	1.50	294.21
317.00	1.52	27468	11241	.00	1.52	306.72
317.10	1.53	28592	11241	.00	1.53	319.23
317.20	1.55	29717	11241	.00	1.55	331.73
317.30	1.57	30840	11241	.00	1.57	344.24
317.40	1.58	31965	11241	.00	1.58	356.74
317.50	1.60	33089	11241	.00	1.60	369.25
317.60	1.62	34213	11241	.00	1.62	381.76
317.70	1.63	35337	11241	.00	1.63	394.27
317.80	1.65	36461	11241	.00	1.65	406.77
317.90	1.66	37585	11241	.00	1.66	419.27

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND 1C IN 1
Outflow HYG file = NONE STORED - POND 1C OUT 1

Pond Node Data = POND 1C
Pond Volume Data = POND 1C
Pond Outlet Data = PIPE

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	= 314.00 ft
Starting Volume	= 0 cu.ft
Starting Outflow	= .00 cfs
Starting Infiltr.	= .00 cfs
Starting Total Qout	= .00 cfs
Time Increment	= .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
318.00	1.68	38709	11241	.00	1.68	431.78

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND 1C OUT
HYG Tag = 1

Peak Discharge = .52 cfs
Time to Peak = 12.6000 hrs
HYG Volume = 8520 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
10.9500	.00	.00	.00	.00	.00
11.2000	.00	.00	.00	.00	.00
11.4500	.00	.00	.00	.00	.00
11.7000	.01	.01	.01	.01	.02
11.9500	.02	.04	.07	.12	.18
12.2000	.25	.31	.37	.41	.45
12.4500	.48	.50	.51	.52	.52
12.7000	.52	.51	.51	.50	.50
12.9500	.49	.48	.48	.47	.46
13.2000	.45	.45	.44	.43	.43
13.4500	.42	.41	.40	.40	.39
13.7000	.39	.38	.37	.37	.36
13.9500	.35	.35	.34	.34	.33
14.2000	.33	.32	.32	.31	.31
14.4500	.31	.30	.30	.29	.29
14.7000	.29	.28	.28	.27	.27
14.9500	.27	.26	.26	.26	.25
15.2000	.25	.25	.24	.24	.24
15.4500	.23	.23	.23	.22	.22
15.7000	.22	.21	.21	.21	.21
15.9500	.20	.20	.20	.20	.19
16.2000	.19	.19	.19	.18	.18
16.4500	.18	.18	.17	.17	.17
16.7000	.17	.17	.16	.16	.16
16.9500	.16	.16	.16	.15	.15
17.2000	.15	.15	.15	.14	.14
17.4500	.14	.14	.14	.14	.13
17.7000	.13	.13	.13	.13	.13
17.9500	.13	.12	.12	.12	.12
18.2000	.12	.12	.12	.11	.11
18.4500	.11	.11	.11	.11	.11

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
18.7000	.11	.10	.10	.10	.10
18.9500	.10	.10	.10	.10	.10
19.2000	.10	.10	.09	.09	.09
19.4500	.09	.09	.09	.09	.09
19.7000	.09	.09	.09	.09	.09
19.9500	.09	.09	.09	.09	.09
20.2000	.09	.08	.08	.08	.08
20.4500	.08	.08	.08	.08	.08
20.7000	.08	.08	.08	.08	.08
20.9500	.08	.08	.08	.08	.08
21.2000	.08	.08	.08	.08	.07
21.4500	.07	.07	.07	.07	.07
21.7000	.07	.07	.07	.07	.07
21.9500	.07	.07	.07	.07	.07
22.2000	.07	.07	.07	.07	.07
22.4500	.07	.07	.07	.07	.07
22.7000	.07	.07	.06	.06	.06
22.9500	.06	.06	.06	.06	.06
23.2000	.06	.06	.06	.06	.06
23.4500	.06	.06	.06	.06	.06
23.7000	.06	.06	.06	.06	.06
23.9500	.06	.06	.06	.06	.06
24.2000	.05	.05	.05	.05	.05
24.4500	.05	.05	.05	.05	.04
24.7000	.04	.04	.04	.04	.04
24.9500	.04	.04	.04	.04	.04
25.2000	.03	.03	.03	.03	.03
25.4500	.03	.03	.03	.03	.03
25.7000	.03	.03	.03	.03	.03
25.9500	.03	.02	.02	.02	.02
26.2000	.02	.02	.02	.02	.02
26.4500	.02	.02	.02	.02	.02
26.7000	.02	.02	.02	.02	.02
26.9500	.02	.02	.02	.02	.02
27.2000	.02	.02	.02	.02	.02
27.4500	.02	.02	.02	.02	.02
27.7000	.02	.02	.02	.02	.02
27.9500	.02	.02	.02	.02	.02
28.2000	.02	.02	.02	.02	.02
28.4500	.02	.02	.02	.02	.02
28.7000	.02	.02	.02	.02	.02
28.9500	.02	.02	.01	.01	.01
29.2000	.01	.01	.01	.01	.01
29.4500	.01	.01	.01	.01	.01
29.7000	.01	.01	.01	.01	.01

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
29.9500	.01	.01	.01	.01	.01
30.2000	.01	.01	.01	.01	.01
30.4500	.01	.01	.01	.01	.01
30.7000	.01	.01	.01	.01	.01
30.9500	.01	.01	.01	.01	.01
31.2000	.01	.01	.01	.01	.01
31.4500	.01	.01	.01	.01	.01
31.7000	.01	.01	.01	.01	.01
31.9500	.01	.01	.01	.01	.01
32.2000	.01	.01	.01	.01	.01
32.4500	.01	.01	.01	.01	.01
32.7000	.01	.01	.01	.01	.01
32.9500	.01	.01	.01	.01	.01
33.2000	.01	.01	.01	.01	.01
33.4500	.01	.01	.01	.01	.01
33.7000	.01	.01	.01	.01	.01
33.9500	.01	.01	.01	.01	.01
34.2000	.01	.01	.01	.01	.01
34.4500	.01	.01	.01	.01	.01
34.7000	.01	.01	.01	.01	.01
34.9500	.01	.01	.01	.01	.01
35.2000	.01	.01	.01	.01	.01
35.4500	.01	.01	.01	.01	.01
35.7000	.01	.01	.00	.00	.00
35.9500	.00	.00	.00	.00	.00
36.2000	.00	.00	.00	.00	.00
36.4500	.00	.00	.00	.00	.00
36.7000	.00	.00	.00	.00	.00
36.9500	.00	.00	.00	.00	.00
37.2000	.00	.00	.00	.00	.00
37.4500	.00	.00	.00	.00	.00
37.7000	.00	.00	.00	.00	.00
37.9500	.00	.00	.00	.00	.00
38.2000	.00	.00	.00	.00	.00
38.4500	.00	.00	.00	.00	.00
38.7000	.00	.00	.00	.00	.00
38.9500	.00				

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND 1C OUT
HYG Tag = 10

Peak Discharge = 1.24 cfs
Time to Peak = 12.7000 hrs
HYG Volume = 26775 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
8.6000	.00	.00	.00	.00	.00
8.8500	.00	.00	.00	.00	.00
9.1000	.00	.00	.00	.00	.00
9.3500	.00	.00	.00	.00	.00
9.6000	.00	.00	.01	.01	.01
9.8500	.01	.01	.01	.01	.01
10.1000	.01	.01	.01	.01	.01
10.3500	.02	.02	.02	.02	.02
10.6000	.02	.02	.03	.03	.04
10.8500	.04	.04	.05	.05	.06
11.1000	.07	.07	.08	.08	.09
11.3500	.10	.11	.13	.14	.16
11.6000	.17	.20	.23	.27	.33
11.8500	.40	.49	.62	.79	1.02
12.1000	1.15	1.17	1.18	1.19	1.20
12.3500	1.21	1.22	1.23	1.23	1.24
12.6000	1.24	1.24	1.24	1.24	1.24
12.8500	1.24	1.24	1.24	1.24	1.24
13.1000	1.23	1.23	1.23	1.23	1.23
13.3500	1.23	1.22	1.22	1.22	1.22
13.6000	1.22	1.22	1.21	1.21	1.21
13.8500	1.21	1.21	1.20	1.20	1.20
14.1000	1.20	1.19	1.19	1.19	1.19
14.3500	1.19	1.18	1.18	1.18	1.18
14.6000	1.18	1.18	1.17	1.17	1.17
14.8500	1.17	1.17	1.17	1.17	1.16
15.1000	1.16	1.16	1.16	1.16	1.16
15.3500	1.15	1.14	1.13	1.12	1.11
15.6000	1.08	1.05	1.02	.99	.96
15.8500	.93	.90	.87	.85	.82
16.1000	.79	.77	.74	.72	.70

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
16.3500	.68	.66	.64	.62	.61
16.6000	.59	.57	.56	.54	.53
16.8500	.52	.51	.49	.48	.47
17.1000	.46	.45	.44	.43	.42
17.3500	.42	.41	.40	.39	.38
17.6000	.38	.37	.36	.35	.35
17.8500	.34	.34	.33	.33	.32
18.1000	.32	.31	.31	.30	.30
18.3500	.29	.29	.28	.28	.28
18.6000	.27	.27	.27	.26	.26
18.8500	.26	.25	.25	.25	.24
19.1000	.24	.24	.24	.23	.23
19.3500	.23	.23	.22	.22	.22
19.6000	.22	.21	.21	.21	.21
19.8500	.21	.21	.20	.20	.20
20.1000	.20	.20	.20	.20	.19
20.3500	.19	.19	.19	.19	.19
20.6000	.19	.19	.18	.18	.18
20.8500	.18	.18	.18	.18	.18
21.1000	.18	.17	.17	.17	.17
21.3500	.17	.17	.17	.17	.17
21.6000	.17	.16	.16	.16	.16
21.8500	.16	.16	.16	.16	.16
22.1000	.16	.16	.15	.15	.15
22.3500	.15	.15	.15	.15	.15
22.6000	.15	.15	.15	.15	.14
22.8500	.14	.14	.14	.14	.14
23.1000	.14	.14	.14	.14	.14
23.3500	.14	.14	.13	.13	.13
23.6000	.13	.13	.13	.13	.13
23.8500	.13	.13	.13	.13	.13
24.1000	.12	.12	.12	.11	.11
24.3500	.11	.10	.10	.10	.09
24.6000	.09	.09	.09	.09	.08
24.8500	.08	.08	.08	.08	.08
25.1000	.07	.07	.07	.07	.07
25.3500	.07	.06	.06	.06	.06
25.6000	.06	.06	.06	.06	.05
25.8500	.05	.05	.05	.05	.05
26.1000	.05	.05	.05	.04	.04
26.3500	.04	.04	.04	.04	.04
26.6000	.04	.04	.04	.04	.03
26.8500	.03	.03	.03	.03	.03
27.1000	.03	.03	.03	.03	.03
27.3500	.03	.03	.03	.03	.02

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
27.6000	.02	.02	.02	.02	.02
27.8500	.02	.02	.02	.02	.02
28.1000	.02	.02	.02	.02	.02
28.3500	.02	.02	.02	.02	.02
28.6000	.02	.02	.02	.02	.02
28.8500	.02	.02	.02	.02	.02
29.1000	.02	.02	.02	.02	.02
29.3500	.02	.02	.02	.02	.02
29.6000	.02	.02	.02	.02	.02
29.8500	.02	.02	.02	.02	.02
30.1000	.02	.02	.02	.02	.02
30.3500	.02	.02	.02	.02	.02
30.6000	.02	.01	.01	.01	.01
30.8500	.01	.01	.01	.01	.01
31.1000	.01	.01	.01	.01	.01
31.3500	.01	.01	.01	.01	.01
31.6000	.01	.01	.01	.01	.01
31.8500	.01	.01	.01	.01	.01
32.1000	.01	.01	.01	.01	.01
32.3500	.01	.01	.01	.01	.01
32.6000	.01	.01	.01	.01	.01
32.8500	.01	.01	.01	.01	.01
33.1000	.01	.01	.01	.01	.01
33.3500	.01	.01	.01	.01	.01
33.6000	.01	.01	.01	.01	.01
33.8500	.01	.01	.01	.01	.01
34.1000	.01	.01	.01	.01	.01
34.3500	.01	.01	.01	.01	.01
34.6000	.01	.01	.01	.01	.01
34.8500	.01	.01	.01	.01	.01
35.1000	.01	.01	.01	.01	.01
35.3500	.01	.01	.01	.01	.01
35.6000	.01	.01	.01	.01	.01
35.8500	.01	.01	.01	.01	.01
36.1000	.01	.01	.01	.01	.01
36.3500	.01	.01	.01	.01	.01
36.6000	.01	.01	.01	.01	.01
36.8500	.01	.01	.01	.01	.01
37.1000	.01	.01	.01	.01	.01
37.3500	.01	.00	.00	.00	.00
37.6000	.00	.00	.00	.00	.00
37.8500	.00	.00	.00	.00	.00
38.1000	.00	.00	.00	.00	.00
38.3500	.00	.00	.00	.00	.00
38.6000	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
38.8500	.00	.00	.00	.00	.00
39.1000	.00	.00	.00	.00	.00
39.3500	.00	.00	.00	.00	.00
39.6000	.00	.00	.00	.00	.00
39.8500	.00	.00	.00	.00	.00
40.1000	.00	.00	.00	.00	.00
40.3500	.00	.00	.00	.00	

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND 1C OUT
HYG Tag = 100

Peak Discharge = 1.58 cfs
Time to Peak = 13.0500 hrs
HYG Volume = 65155 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
6.0500	.00	.00	.00	.00	.00
6.3000	.00	.00	.00	.00	.00
6.5500	.00	.00	.00	.00	.00
6.8000	.00	.00	.00	.00	.00
7.0500	.00	.00	.00	.00	.01
7.3000	.01	.01	.01	.01	.01
7.5500	.01	.01	.01	.01	.01
7.8000	.01	.01	.01	.01	.02
8.0500	.02	.02	.02	.02	.02
8.3000	.02	.02	.02	.03	.03
8.5500	.03	.04	.04	.05	.05
8.8000	.06	.06	.06	.07	.07
9.0500	.08	.08	.09	.09	.10
9.3000	.11	.12	.13	.14	.15
9.5500	.15	.16	.17	.18	.19
9.8000	.20	.21	.22	.23	.25
10.0500	.26	.27	.28	.30	.31
10.3000	.32	.34	.35	.37	.39
10.5500	.40	.42	.44	.46	.48
10.8000	.50	.52	.54	.56	.58
11.0500	.61	.63	.66	.68	.71
11.3000	.75	.78	.82	.86	.91
11.5500	.95	1.01	1.08	1.13	1.16
11.8000	1.16	1.17	1.19	1.21	1.24
12.0500	1.29	1.33	1.38	1.42	1.45
12.3000	1.48	1.50	1.52	1.53	1.54
12.5500	1.55	1.56	1.56	1.57	1.57
12.8000	1.57	1.57	1.58	1.58	1.58
13.0500	1.58	1.58	1.58	1.58	1.58
13.3000	1.58	1.58	1.58	1.58	1.58
13.5500	1.58	1.58	1.58	1.58	1.58

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
13.8000	1.58	1.58	1.58	1.58	1.58
14.0500	1.58	1.57	1.57	1.57	1.57
14.3000	1.57	1.57	1.57	1.57	1.57
14.5500	1.56	1.56	1.56	1.56	1.56
14.8000	1.56	1.56	1.55	1.55	1.55
15.0500	1.55	1.55	1.55	1.54	1.54
15.3000	1.54	1.54	1.54	1.53	1.53
15.5500	1.53	1.53	1.53	1.52	1.52
15.8000	1.52	1.52	1.52	1.51	1.51
16.0500	1.51	1.51	1.50	1.50	1.50
16.3000	1.50	1.50	1.49	1.49	1.49
16.5500	1.49	1.48	1.48	1.48	1.47
16.8000	1.47	1.47	1.47	1.46	1.46
17.0500	1.46	1.46	1.45	1.45	1.45
17.3000	1.45	1.44	1.44	1.44	1.44
17.5500	1.43	1.43	1.43	1.42	1.42
17.8000	1.42	1.42	1.41	1.41	1.41
18.0500	1.40	1.40	1.40	1.39	1.39
18.3000	1.39	1.38	1.38	1.38	1.38
18.5500	1.37	1.37	1.37	1.36	1.36
18.8000	1.36	1.36	1.35	1.35	1.35
19.0500	1.34	1.34	1.34	1.34	1.33
19.3000	1.33	1.33	1.32	1.32	1.32
19.5500	1.31	1.31	1.31	1.30	1.30
19.8000	1.30	1.30	1.29	1.29	1.29
20.0500	1.28	1.28	1.28	1.27	1.27
20.3000	1.27	1.26	1.26	1.26	1.25
20.5500	1.25	1.25	1.24	1.24	1.24
20.8000	1.23	1.23	1.23	1.22	1.22
21.0500	1.22	1.21	1.21	1.21	1.20
21.3000	1.20	1.20	1.20	1.19	1.19
21.5500	1.19	1.18	1.18	1.18	1.18
21.8000	1.17	1.17	1.17	1.17	1.17
22.0500	1.17	1.16	1.16	1.16	1.16
22.3000	1.15	1.14	1.13	1.12	1.11
22.5500	1.08	1.04	1.00	.97	.94
22.8000	.90	.87	.84	.81	.78
23.0500	.75	.72	.70	.68	.65
23.3000	.63	.61	.59	.58	.56
23.5500	.54	.53	.51	.50	.49
23.8000	.47	.46	.45	.44	.43
24.0500	.42	.41	.39	.37	.36
24.3000	.34	.33	.32	.30	.29
24.5500	.28	.27	.26	.25	.24
24.8000	.23	.22	.21	.20	.19

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
25.0500	.19	.18	.18	.17	.16
25.3000	.16	.15	.15	.14	.14
25.5500	.13	.13	.13	.12	.12
25.8000	.11	.11	.11	.10	.10
26.0500	.10	.09	.09	.09	.09
26.3000	.09	.08	.08	.08	.08
26.5500	.08	.07	.07	.07	.07
26.8000	.07	.07	.07	.06	.06
27.0500	.06	.06	.06	.06	.06
27.3000	.05	.05	.05	.05	.05
27.5500	.05	.05	.05	.05	.04
27.8000	.04	.04	.04	.04	.04
28.0500	.04	.04	.04	.04	.04
28.3000	.04	.03	.03	.03	.03
28.5500	.03	.03	.03	.03	.03
28.8000	.03	.03	.03	.03	.03
29.0500	.03	.02	.02	.02	.02
29.3000	.02	.02	.02	.02	.02
29.5500	.02	.02	.02	.02	.02
29.8000	.02	.02	.02	.02	.02
30.0500	.02	.02	.02	.02	.02
30.3000	.02	.02	.02	.02	.02
30.5500	.02	.02	.02	.02	.02
30.8000	.02	.02	.02	.02	.02
31.0500	.02	.02	.02	.02	.02
31.3000	.02	.02	.02	.02	.02
31.5500	.02	.02	.02	.02	.02
31.8000	.02	.02	.02	.02	.02
32.0500	.02	.02	.02	.01	.01
32.3000	.01	.01	.01	.01	.01
32.5500	.01	.01	.01	.01	.01
32.8000	.01	.01	.01	.01	.01
33.0500	.01	.01	.01	.01	.01
33.3000	.01	.01	.01	.01	.01
33.5500	.01	.01	.01	.01	.01
33.8000	.01	.01	.01	.01	.01
34.0500	.01	.01	.01	.01	.01
34.3000	.01	.01	.01	.01	.01
34.5500	.01	.01	.01	.01	.01
34.8000	.01	.01	.01	.01	.01
35.0500	.01	.01	.01	.01	.01
35.3000	.01	.01	.01	.01	.01
35.5500	.01	.01	.01	.01	.01
35.8000	.01	.01	.01	.01	.01
36.0500	.01	.01	.01	.01	.01

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
36.3000	.01	.01	.01	.01	.01
36.5500	.01	.01	.01	.01	.01
36.8000	.01	.01	.01	.01	.01
37.0500	.01	.01	.01	.01	.01
37.3000	.01	.01	.01	.01	.01
37.5500	.01	.01	.01	.01	.01
37.8000	.01	.01	.01	.01	.01
38.0500	.01	.01	.01	.01	.01
38.3000	.01	.01	.01	.01	.01
38.5500	.01	.01	.01	.01	.01
38.8000	.01	.01	.00	.00	.00
39.0500	.00	.00	.00	.00	.00
39.3000	.00	.00	.00	.00	.00
39.5500	.00	.00	.00	.00	.00
39.8000	.00	.00	.00	.00	.00
40.0500	.00	.00	.00	.00	.00
40.3000	.00	.00	.00	.00	.00
40.5500	.00	.00	.00	.00	.00
40.8000	.00	.00	.00	.00	.00
41.0500	.00	.00	.00	.00	.00
41.3000	.00	.00	.00	.00	.00
41.5500	.00	.00	.00	.00	.00
41.8000	.00	.00	.00	.00	.00
42.0500	.00				

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND1A IN 1
Outflow HYG file = NONE STORED - POND1A OUT 1

Pond Node Data = POND1A
Pond Volume Data = POND1A
Pond Outlet Data = BERM

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 364.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
364.00	.00	0	7822	.00	.00	.00
364.10	.00	832	8828	.00	.00	9.24
364.20	.00	1768	9894	.00	.00	19.64
364.30	.00	2813	11021	.00	.00	31.25
364.40	.00	3974	12210	.00	.00	44.15
364.50	.00	5257	13459	.00	.00	58.41
364.60	.00	6668	14768	.00	.00	74.09
364.70	.00	8213	16139	.00	.00	91.25
364.80	1.15	9826	16139	.00	1.15	110.33
364.90	3.62	11440	16139	.00	3.62	130.73
365.00	7.32	13054	16139	.00	7.32	152.37
365.10	12.32	14668	16139	.00	12.32	175.30
365.20	18.68	16282	16139	.00	18.68	199.59
365.25	22.39	17089	16139	.00	22.39	212.27

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND1A OUT
HYG Tag = 1

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.6500	.00	.00	.00	.00	.00
11.9000	.00	.00	.00	.00	.00
12.1500	.00	.00	.00	.00	.00
12.4000	.00	.00	.00	.00	.00
12.6500	.00	.00	.00	.00	.00
12.9000	.00	.00	.00	.00	.00
13.1500	.00	.00	.00	.00	.00
13.4000	.00	.00	.00	.00	.00
13.6500	.00	.00	.00	.00	.00
13.9000	.00	.00	.00	.00	.00
14.1500	.00	.00	.00	.00	.00
14.4000	.00	.00	.00	.00	.00
14.6500	.00	.00	.00	.00	.00
14.9000	.00	.00	.00	.00	.00
15.1500	.00	.00	.00	.00	.00
15.4000	.00	.00	.00	.00	.00
15.6500	.00	.00	.00	.00	.00
15.9000	.00	.00	.00	.00	.00
16.1500	.00	.00	.00	.00	.00
16.4000	.00	.00	.00	.00	.00
16.6500	.00	.00	.00	.00	.00
16.9000	.00	.00	.00	.00	.00
17.1500	.00	.00	.00	.00	.00
17.4000	.00	.00	.00	.00	.00
17.6500	.00	.00	.00	.00	.00
17.9000	.00	.00	.00	.00	.00
18.1500	.00	.00	.00	.00	.00
18.4000	.00	.00	.00	.00	.00
18.6500	.00	.00	.00	.00	.00
18.9000	.00	.00	.00	.00	.00
19.1500	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
19.4000	.00	.00	.00	.00	.00
19.6500	.00	.00	.00	.00	.00
19.9000	.00	.00	.00	.00	.00
20.1500	.00	.00	.00	.00	.00
20.4000	.00	.00	.00	.00	.00
20.6500	.00	.00	.00	.00	.00
20.9000	.00	.00	.00	.00	.00
21.1500	.00	.00	.00	.00	.00
21.4000	.00	.00	.00	.00	.00
21.6500	.00	.00	.00	.00	.00
21.9000	.00	.00	.00	.00	.00
22.1500	.00	.00	.00	.00	.00
22.4000	.00	.00	.00	.00	.00
22.6500	.00	.00	.00	.00	.00
22.9000	.00	.00	.00	.00	.00
23.1500	.00	.00	.00	.00	.00
23.4000	.00	.00	.00	.00	.00
23.6500	.00	.00	.00	.00	.00
23.9000	.00	.00	.00	.00	.00
24.1500	.00	.00	.00	.00	.00
24.4000	.00	.00			

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND1A OUT
HYG Tag = 10

Peak Discharge = .86 cfs
Time to Peak = 12.9000 hrs
HYG Volume = 11477 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.8000	.00	.00	.00	.00	.00
10.0500	.00	.00	.00	.00	.00
10.3000	.00	.00	.00	.00	.00
10.5500	.00	.00	.00	.00	.00
10.8000	.00	.00	.00	.00	.00
11.0500	.00	.00	.00	.00	.00
11.3000	.00	.00	.00	.00	.00
11.5500	.00	.00	.00	.00	.00
11.8000	.00	.00	.00	.00	.00
12.0500	.00	.00	.00	.00	.00
12.3000	.00	.00	.00	.00	.15
12.5500	.39	.57	.69	.77	.81
12.8000	.84	.86	.86	.86	.86
13.0500	.84	.83	.81	.80	.78
13.3000	.76	.74	.73	.71	.70
13.5500	.68	.67	.65	.64	.63
13.8000	.62	.60	.59	.58	.57
14.0500	.56	.55	.54	.53	.52
14.3000	.51	.50	.49	.48	.47
14.5500	.47	.46	.45	.45	.44
14.8000	.43	.43	.42	.42	.41
15.0500	.41	.40	.40	.39	.38
15.3000	.38	.37	.37	.36	.36
15.5500	.35	.35	.34	.34	.33
15.8000	.33	.32	.32	.31	.31
16.0500	.30	.30	.29	.29	.28
16.3000	.28	.27	.27	.27	.26
16.5500	.26	.25	.25	.25	.25
16.8000	.24	.24	.24	.23	.23
17.0500	.23	.23	.22	.22	.22
17.3000	.22	.21	.21	.21	.21

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
17.5500	.20	.20	.20	.20	.19
17.8000	.19	.19	.19	.19	.18
18.0500	.18	.18	.18	.17	.17
18.3000	.17	.17	.17	.16	.16
18.5500	.16	.16	.16	.16	.16
18.8000	.16	.15	.15	.15	.15
19.0500	.15	.15	.15	.15	.15
19.3000	.15	.15	.14	.14	.14
19.5500	.14	.14	.14	.14	.14
19.8000	.14	.14	.14	.14	.14
20.0500	.14	.13	.13	.13	.13
20.3000	.13	.13	.13	.13	.13
20.5500	.13	.13	.13	.13	.13
20.8000	.13	.13	.12	.12	.12
21.0500	.12	.12	.12	.12	.12
21.3000	.12	.12	.12	.12	.12
21.5500	.12	.12	.12	.12	.12
21.8000	.12	.11	.11	.11	.11
22.0500	.11	.11	.11	.11	.11
22.3000	.11	.11	.11	.11	.11
22.5500	.11	.11	.11	.11	.11
22.8000	.10	.10	.10	.10	.10
23.0500	.10	.10	.10	.10	.10
23.3000	.10	.10	.10	.10	.10
23.5500	.10	.10	.10	.09	.09
23.8000	.09	.09	.09	.09	.09
24.0500	.09	.09	.09	.08	.07
24.3000	.07	.06	.05	.05	.04
24.5500	.04	.03	.03	.03	.02
24.8000	.02	.02	.02	.01	.01
25.0500	.01	.01	.01	.01	.01
25.3000	.01	.00	.00	.00	.00
25.5500	.00				

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND1A OUT
HYG Tag = 100

Peak Discharge = 10.45 cfs
Time to Peak = 12.3000 hrs
HYG Volume = 44125 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
7.4000	.00	.00	.00	.00	.00
7.6500	.00	.00	.00	.00	.00
7.9000	.00	.00	.00	.00	.00
8.1500	.00	.00	.00	.00	.00
8.4000	.00	.00	.00	.00	.00
8.6500	.00	.00	.00	.00	.00
8.9000	.00	.00	.00	.00	.00
9.1500	.00	.00	.00	.00	.00
9.4000	.00	.00	.00	.00	.00
9.6500	.00	.00	.00	.00	.00
9.9000	.00	.00	.00	.00	.00
10.1500	.00	.00	.00	.00	.00
10.4000	.00	.00	.00	.00	.00
10.6500	.00	.00	.00	.00	.00
10.9000	.00	.00	.00	.00	.00
11.1500	.00	.00	.00	.00	.00
11.4000	.00	.00	.00	.00	.00
11.6500	.00	.00	.00	.00	.00
11.9000	.00	.25	.96	2.46	4.57
12.1500	6.99	9.21	10.34	10.45	9.94
12.4000	9.14	8.24	7.33	6.62	5.88
12.6500	5.16	4.49	3.91	3.48	3.20
12.9000	2.94	2.71	2.51	2.34	2.18
13.1500	2.05	1.93	1.83	1.74	1.66
13.4000	1.60	1.55	1.50	1.46	1.42
13.6500	1.39	1.35	1.33	1.30	1.27
13.9000	1.24	1.22	1.19	1.17	1.15
14.1500	1.13	1.12	1.11	1.10	1.08
14.4000	1.07	1.06	1.04	1.03	1.02
14.6500	1.01	.99	.98	.97	.96
14.9000	.95	.93	.92	.91	.90

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
15.1500	.89	.87	.86	.85	.84
15.4000	.83	.82	.80	.79	.78
15.6500	.77	.76	.75	.73	.72
15.9000	.71	.70	.69	.68	.66
16.1500	.65	.64	.63	.62	.61
16.4000	.60	.59	.58	.57	.57
16.6500	.56	.55	.55	.54	.53
16.9000	.53	.52	.51	.51	.50
17.1500	.50	.49	.48	.48	.47
17.4000	.47	.46	.46	.45	.45
17.6500	.44	.44	.43	.42	.42
17.9000	.41	.41	.40	.40	.39
18.1500	.39	.38	.38	.37	.37
18.4000	.37	.36	.36	.35	.35
18.6500	.35	.35	.34	.34	.34
18.9000	.34	.33	.33	.33	.33
19.1500	.33	.32	.32	.32	.32
19.4000	.32	.32	.31	.31	.31
19.6500	.31	.31	.31	.30	.30
19.9000	.30	.30	.30	.30	.29
20.1500	.29	.29	.29	.29	.29
20.4000	.29	.28	.28	.28	.28
20.6500	.28	.28	.28	.28	.27
20.9000	.27	.27	.27	.27	.27
21.1500	.27	.27	.26	.26	.26
21.4000	.26	.26	.26	.26	.26
21.6500	.25	.25	.25	.25	.25
21.9000	.25	.25	.25	.25	.24
22.1500	.24	.24	.24	.24	.24
22.4000	.24	.24	.23	.23	.23
22.6500	.23	.23	.23	.23	.23
22.9000	.22	.22	.22	.22	.22
23.1500	.22	.22	.22	.22	.21
23.4000	.21	.21	.21	.21	.21
23.6500	.21	.21	.20	.20	.20
23.9000	.20	.20	.20	.20	.19
24.1500	.19	.17	.16	.14	.13
24.4000	.12	.10	.09	.08	.07
24.6500	.06	.05	.05	.04	.04
24.9000	.03	.03	.03	.02	.02
25.1500	.02	.02	.01	.01	.01
25.4000	.01	.01	.01	.01	.01
25.6500	.00	.00	.00	.00	.00

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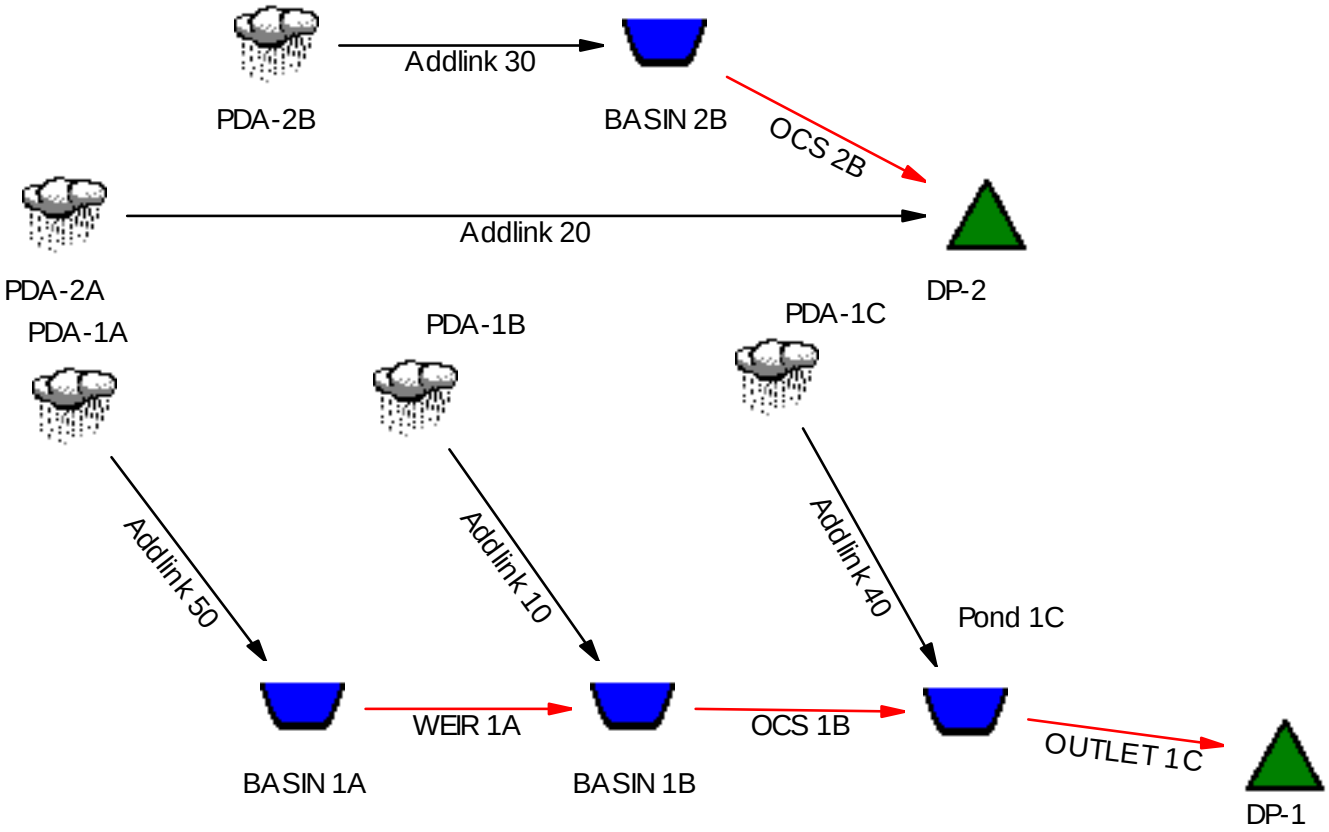
APPENDIX B

PROPOSED HYDROLOGIC CALCULATIONS


Addlink 30
PDA-2B
BASIN 2B
OCS 2B
Addlink 20
PDA-2A
DP-2
PDA-1A
PDA-1B
PDA-1C
Addlink 50
Addlink 10
Addlink 40
Pond 1C
WEIR 1A
OCS 1B
OUTLET 1C
BASIN 1A
BASIN 1B
DP-1

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********** CN CALCULATIONS **********

PDA-1A..... Runoff CN-Area 4.01

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PDA-1C..... Runoff CN-Area 4.03

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********** RUNOFF HYDROGRAPHS **********

PDA-1A..... 1
Unit Hyd. (HYG output) 5.01

PDA-1A..... 10
Unit Hyd. (HYG output) 5.03

PDA-1A..... 100
Unit Hyd. (HYG output) 5.05

PDA-1B..... 1
Unit Hyd. (HYG output) 5.08

PDA-1B..... 10
Unit Hyd. (HYG output) 5.10

PDA-1B..... 100
Unit Hyd. (HYG output) 5.12

PDA-1C..... 1
Unit Hyd. (HYG output) 5.14

PDA-1C..... 10
Unit Hyd. (HYG output) 5.16

PDA-1C..... 100
Unit Hyd. (HYG output) 5.18

PDA-2A..... 1
Unit Hyd. (HYG output) 5.20

PDA-2A..... 10
Unit Hyd. (HYG output) 5.22

PDA-2A..... 100
Unit Hyd. (HYG output) 5.24

PDA-2B..... 1
Unit Hyd. (HYG output) 5.26

PDA-2B..... 10
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PDA-2B..... 100
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BASIN 1A..... Vol: Elev-Area 6.01

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BASIN 2B..... Vol: Elev-Area 6.03

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********** POND ROUTING **********

BASIN 1A..... Pond E-V-Q Table 8.01

BASIN 1A OUT 1
Pond Routed HYG (total out) 8.05

BASIN 1A OUT 10
Pond Routed HYG (total out) 8.07

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BASIN 1A OUT 100
Pond Routed HYG (total out) 8.11

BASIN 1B..... Pond E-V-Q Table 8.18

BASIN 1B OUT 1
Pond Routed HYG (total out) 8.21

BASIN 1B OUT 10
Pond Routed HYG (total out) 8.23

BASIN 1B OUT 100
Pond Routed HYG (total out) 8.26

BASIN 2B..... Pond E-V-Q Table 8.29

BASIN 2B OUT 1
Pond Routed HYG (total out) 8.33

BASIN 2B OUT 10
Pond Routed HYG (total out) 8.36

BASIN 2B OUT 100
Pond Routed HYG (total out) 8.40

POND 1C..... Pond E-V-Q Table 8.44

POND 1C OUT 1
Pond Routed HYG (total out) 8.47

POND 1C OUT 10
Pond Routed HYG (total out) 8.49

POND 1C OUT 100
Pond Routed HYG (total out) 8.51

MASTER DESIGN STORM SUMMARY

Network Storm Collection: OSSINING-JMC

Return Event	Total Depth in	Rainfall Type	RNF ID
1	2.7800	Synthetic Curve	TypeIII 24hr
10	5.1400	Synthetic Curve	TypeIII 24hr
100	9.3000	Synthetic Curve	TypeIII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
BASIN 1A	IN	POND	1	17956	12.1500	4.61		
BASIN 1A	IN	POND	10	49785	12.1500	12.91		
BASIN 1A	IN	POND	100	113148	12.1500	28.43		
BASIN 1A	OUT	POND	1	0	9.9500	.00	360.72	8032
BASIN 1A	OUT	POND	10	0	7.4500	.00	362.47	32044
BASIN 1A	OUT	POND	100	8517	16.3000	.57	365.11	81955
BASIN 1B	IN	POND	1	9492	12.1000	2.39		
BASIN 1B	IN	POND	10	31287	12.1000	8.65		
BASIN 1B	IN	POND	100	86745	12.1000	21.45		
BASIN 1B	OUT	POND	1	0	11.3000	.00	344.37	3129
BASIN 1B	OUT	POND	10	10966	12.7000	1.00	345.37	13000
BASIN 1B	OUT	POND	100	59248	12.5500	3.93	347.00	33264
BASIN 2B	IN	POND	1	11241	12.1500	2.68		
BASIN 2B	IN	POND	10	40405	12.1000	10.74		
BASIN 2B	IN	POND	100	105700	12.1000	28.48		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
BASIN 2B	OUT POND	1	4852		16.6000	.15	304.93	7771
BASIN 2B	OUT POND	10	34017		12.2000	9.42	305.45	10479
BASIN 2B	OUT POND	100	99311		12.1500	26.29	305.86	12855
*DP-1	JCT	1	4881		12.3500	.64		
*DP-1	JCT	10	28550		12.3500	3.08		
*DP-1	JCT	100	105275		12.6000	6.23		
*DP-2	JCT	1	6928		12.2000	.32		
*DP-2	JCT	10	43645		12.2000	11.65		
*DP-2	JCT	100	127725		12.1500	33.58		
PDA-1A	AREA	1	17956		12.1500	4.61		
PDA-1A	AREA	10	49785		12.1500	12.91		
PDA-1A	AREA	100	113148		12.1500	28.43		
PDA-1B	AREA	1	9492		12.1000	2.39		
PDA-1B	AREA	10	31287		12.1000	8.65		
PDA-1B	AREA	100	78228		12.1000	21.45		
PDA-1C	AREA	1	4896		12.1500	1.18		
PDA-1C	AREA	10	17599		12.1000	4.84		
PDA-1C	AREA	100	46041		12.1000	12.72		
PDA-2A	AREA	1	2076		12.2000	.32		
PDA-2A	AREA	10	9629		12.1500	2.34		
PDA-2A	AREA	100	28414		12.1500	7.29		
PDA-2B	AREA	1	11241		12.1500	2.68		
PDA-2B	AREA	10	40405		12.1000	10.74		
PDA-2B	AREA	100	105700		12.1000	28.48		
POND 1C	IN POND	1	4896		12.1500	1.18		
POND 1C	IN POND	10	28565		12.1000	4.90		
POND 1C	IN POND	100	105289		12.1000	15.34		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
POND 1C	OUT	POND 1	4882		12.3500	.64	314.52	844
POND 1C	OUT	POND 10	28551		12.3500	3.08	315.30	3292
POND 1C	OUT	POND 100	105275		12.6000	6.23	317.06	15355

Title... Project Date: 9/30/2015
Project Engineer: BD
Project Title: RIVER KNOLL
Project Comments:

DESIGN STORMS SUMMARY

Design Storm File,ID = OSSINING-JMC

Storm Tag Name = 1

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 1 yr
Total Rainfall Depth= 2.7800 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 10

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.1400 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 9.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = OSSINING-JMC

Storm Tag Name = 1

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 1 yr
Total Rainfall Depth= 2.7800 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 10

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.1400 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 9.3000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.2400
Hydraulic Length	40.00 ft
2yr, 24hr P	3.4100 in
Slope	.142500 ft/ft
Avg.Velocity	.22 ft/sec

Segment #1 Time: .0505 hrs

Segment #2: Tc: TR-55 Sheet

Mannings n	.4000
Hydraulic Length	60.00 ft
2yr, 24hr P	3.4100 in
Slope	.133300 ft/ft
Avg.Velocity	.15 ft/sec

Segment #2 Time: .1079 hrs

Segment #3: Tc: TR-55 Shallow

Hydraulic Length	226.00 ft
Slope	.132300 ft/ft
Unpaved	
Avg.Velocity	5.87 ft/sec

Segment #3 Time: .0107 hrs

==========
Total Tc: .1690 hrs
==========

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.2400
Hydraulic Length	100.00 ft
2yr, 24hr P	3.4100 in
Slope	.200000 ft/ft

Avg.Velocity .30 ft/sec

Segment #1 Time: .0917 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	140.00 ft
Slope	.171430 ft/ft

Unpaved

Avg.Velocity 6.68 ft/sec

Segment #2 Time: .0058 hrs

Segment #3: Tc: TR-55 Shallow

Hydraulic Length	168.00 ft
Slope	.101100 ft/ft

Paved

Avg.Velocity 6.46 ft/sec

Segment #3 Time: .0072 hrs

Segment #4: Tc: TR-55 Channel

Flow Area	1.2270	sq.ft
Wetted Perimeter	3.92	ft
Hydraulic Radius	.31	ft
Slope	.021700	ft/ft
Mannings n	.0120	
Hydraulic Length	184.00	ft

Avg.Velocity 8.43 ft/sec

Segment #4 Time: .0061 hrs

Total Tc: .1108 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.2400
Hydraulic Length	100.00 ft
2yr, 24hr P	3.4100 in
Slope	.180000 ft/ft
Avg.Velocity	.29 ft/sec

Segment #1 Time: .0957 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	292.00 ft
Slope	.123280 ft/ft
Unpaved	
Avg.Velocity	5.67 ft/sec

Segment #2 Time: .0143 hrs

Total Tc: .1100 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.2400
Hydraulic Length	100.00 ft
2yr, 24hr P	3.4100 in
Slope	.057000 ft/ft

Avg.Velocity .18 ft/sec

Segment #1 Time: .1515 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	571.00 ft
Slope	.140100 ft/ft
Unpaved	

Avg.Velocity 6.04 ft/sec

Segment #2 Time: .0263 hrs

Total Tc: .1778 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.2400
Hydraulic Length	100.00 ft
2yr, 24hr P	3.4100 in
Slope	.250000 ft/ft
Avg.Velocity	.33 ft/sec

Segment #1 Time: .0839 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	563.00 ft
Slope	.049733 ft/ft
Unpaved	
Avg.Velocity	3.60 ft/sec

Segment #2 Time: .0435 hrs

Total Tc: .1274 hrs

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
IMPERVIOUS	98	2.085			98.00
LAWN B	61	1.681			61.00
LAWN D	80	.368			80.00
WOODS B	55	.173			55.00
WOODS D	77	.241			77.00
COMPOSITE AREA & WEIGHTED CN --->		4.548			80.12 (80)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
IMPERVIOUS	98	.629			98.00
LAWN B	61	1.922			61.00
LAWN D	80	.568			80.00
WOODS D	77	.486			77.00
COMPOSITE AREA & WEIGHTED CN --->		3.605			72.61 (73)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
LAWN D	80	.021			80.00
IMPERVIOUS	98	.134			98.00
LAWN B	61	.849			61.00
LAWN C	74	1.065			74.00
WOODS C	70	.196			70.00
COMPOSITE AREA & WEIGHTED CN --->		2.265			70.26 (70)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
LAWN B	61	1.256			61.00
LAWN D	80	.241			80.00
WOODS B	55	.163			55.00
COMPOSITE AREA & WEIGHTED CN --->		1.660			63.17 (63)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
IMPERVIOUS	98	.941			98.00
LAWN B	61	2.294			61.00
LAWN C	74	.701			74.00
LAWN D	80	.127			80.00
WOODS B	55	.738			55.00
WOODS C	70	.346			70.00
WOODS D	77	.053			77.00
COMPOSITE AREA & WEIGHTED CN --->		5.200			69.82 (70)

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 24.0000 hrs Rain Depth = 2.7800 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-1A 1
Tc = .1690 hrs
Drainage Area = 4.548 acres Runoff CN= 80
Calc.Increment= .02254 hrs Out.Incr.= .0500 hrs
HYG Volume = 17956 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
9.9000	.00	.00	.00	.01	.01
10.1500	.01	.02	.02	.03	.03
10.4000	.04	.04	.05	.05	.06
10.6500	.06	.07	.07	.08	.09
10.9000	.09	.10	.11	.12	.13
11.1500	.14	.15	.17	.18	.20
11.4000	.22	.24	.27	.30	.36
11.6500	.45	.58	.74	.94	1.16
11.9000	1.42	1.85	2.68	3.60	4.31
12.1500	4.61	4.21	3.59	3.09	2.72
12.4000	2.39	2.09	1.77	1.48	1.23
12.6500	1.06	.94	.87	.82	.78
12.9000	.74	.71	.67	.64	.62
13.1500	.59	.58	.57	.56	.55
13.4000	.54	.53	.52	.51	.51
13.6500	.50	.49	.48	.47	.46
13.9000	.45	.44	.43	.43	.42
14.1500	.41	.40	.40	.40	.39
14.4000	.39	.38	.38	.37	.37
14.6500	.37	.36	.36	.35	.35
14.9000	.34	.34	.33	.33	.33
15.1500	.32	.32	.31	.31	.30
15.4000	.30	.29	.29	.28	.28
15.6500	.27	.27	.26	.26	.26
15.9000	.25	.25	.24	.24	.23
16.1500	.23	.23	.22	.22	.22
16.4000	.22	.21	.21	.21	.21
16.6500	.21	.20	.20	.20	.20
16.9000	.20	.19	.19	.19	.19
17.1500	.19	.18	.18	.18	.18

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
17.4000	.17	.17	.17	.17	.17
17.6500	.16	.16	.16	.16	.16
17.9000	.15	.15	.15	.15	.14
18.1500	.14	.14	.14	.14	.14
18.4000	.14	.14	.14	.14	.14
18.6500	.14	.14	.14	.13	.13
18.9000	.13	.13	.13	.13	.13
19.1500	.13	.13	.13	.13	.13
19.4000	.13	.13	.13	.13	.12
19.6500	.12	.12	.12	.12	.12
19.9000	.12	.12	.12	.12	.12
20.1500	.12	.12	.12	.12	.12
20.4000	.12	.12	.11	.11	.11
20.6500	.11	.11	.11	.11	.11
20.9000	.11	.11	.11	.11	.11
21.1500	.11	.11	.11	.11	.11
21.4000	.11	.11	.10	.10	.10
21.6500	.10	.10	.10	.10	.10
21.9000	.10	.10	.10	.10	.10
22.1500	.10	.10	.10	.10	.10
22.4000	.10	.10	.10	.09	.09
22.6500	.09	.09	.09	.09	.09
22.9000	.09	.09	.09	.09	.09
23.1500	.09	.09	.09	.09	.09
23.4000	.09	.09	.09	.08	.08
23.6500	.08	.08	.08	.08	.08
23.9000	.08	.08	.08	.07	.05
24.1500	.03	.01	.01	.00	.00
24.4000	.00				

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1400 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-1A 10
Tc = .1690 hrs
Drainage Area = 4.548 acres Runoff CN= 80
Calc.Increment= .02254 hrs Out.Incr.= .0500 hrs
HYG Volume = 49785 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
7.4000	.00	.00	.00	.01	.01
7.6500	.01	.01	.02	.02	.02
7.9000	.03	.03	.03	.03	.04
8.1500	.04	.05	.05	.05	.06
8.4000	.06	.07	.07	.08	.08
8.6500	.09	.10	.10	.11	.11
8.9000	.12	.13	.13	.14	.15
9.1500	.16	.16	.17	.18	.19
9.4000	.20	.20	.21	.22	.23
9.6500	.24	.25	.26	.27	.28
9.9000	.29	.30	.31	.32	.33
10.1500	.34	.36	.37	.39	.41
10.4000	.42	.44	.46	.48	.50
10.6500	.52	.54	.56	.58	.60
10.9000	.62	.64	.66	.69	.72
11.1500	.76	.81	.87	.93	.99
11.4000	1.06	1.13	1.20	1.31	1.53
11.6500	1.84	2.29	2.83	3.47	4.15
11.9000	4.89	6.08	8.39	10.81	12.46
12.1500	12.91	11.52	9.61	8.13	7.05
12.4000	6.12	5.29	4.44	3.69	3.07
12.6500	2.61	2.32	2.14	2.01	1.91
12.9000	1.81	1.73	1.64	1.56	1.49
13.1500	1.44	1.40	1.37	1.34	1.32
13.4000	1.29	1.27	1.25	1.23	1.21
13.6500	1.18	1.16	1.14	1.12	1.09
13.9000	1.07	1.05	1.03	1.00	.99
14.1500	.97	.95	.94	.93	.92
14.4000	.91	.90	.89	.88	.87
14.6500	.86	.84	.83	.82	.81

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
14.9000	.80	.79	.78	.77	.76
15.1500	.75	.73	.72	.71	.70
15.4000	.69	.68	.67	.66	.64
15.6500	.63	.62	.61	.60	.59
15.9000	.58	.57	.55	.54	.53
16.1500	.53	.52	.51	.51	.50
16.4000	.50	.49	.49	.48	.48
16.6500	.47	.47	.46	.46	.45
16.9000	.45	.44	.44	.43	.43
17.1500	.42	.42	.41	.41	.40
17.4000	.40	.39	.39	.38	.38
17.6500	.37	.37	.36	.36	.35
17.9000	.35	.34	.34	.33	.33
18.1500	.33	.32	.32	.32	.32
18.4000	.32	.32	.31	.31	.31
18.6500	.31	.31	.31	.31	.30
18.9000	.30	.30	.30	.30	.30
19.1500	.30	.29	.29	.29	.29
19.4000	.29	.29	.29	.28	.28
19.6500	.28	.28	.28	.28	.28
19.9000	.27	.27	.27	.27	.27
20.1500	.27	.27	.26	.26	.26
20.4000	.26	.26	.26	.26	.26
20.6500	.26	.25	.25	.25	.25
20.9000	.25	.25	.25	.25	.25
21.1500	.24	.24	.24	.24	.24
21.4000	.24	.24	.24	.23	.23
21.6500	.23	.23	.23	.23	.23
21.9000	.23	.23	.22	.22	.22
22.1500	.22	.22	.22	.22	.22
22.4000	.22	.21	.21	.21	.21
22.6500	.21	.21	.21	.21	.21
22.9000	.20	.20	.20	.20	.20
23.1500	.20	.20	.20	.19	.19
23.4000	.19	.19	.19	.19	.19
23.6500	.19	.19	.18	.18	.18
23.9000	.18	.18	.18	.16	.11
24.1500	.06	.03	.01	.01	.00
24.4000	.00	.00			

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 9.3000 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-1A 100
Tc = .1690 hrs
Drainage Area = 4.548 acres Runoff CN= 80
Calc.Increment= .02254 hrs Out.Incr.= .0500 hrs
HYG Volume = 113148 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
4.8500	.00	.00	.00	.01	.01
5.1000	.01	.01	.02	.02	.02
5.3500	.03	.03	.03	.04	.04
5.6000	.05	.05	.05	.06	.06
5.8500	.06	.07	.07	.07	.08
6.1000	.08	.09	.09	.10	.10
6.3500	.11	.11	.12	.12	.13
6.6000	.13	.14	.14	.15	.16
6.8500	.16	.17	.18	.18	.19
7.1000	.20	.20	.21	.22	.23
7.3500	.23	.24	.25	.26	.27
7.6000	.27	.28	.29	.30	.31
7.8500	.32	.33	.34	.34	.35
8.1000	.36	.38	.39	.40	.42
8.3500	.43	.45	.46	.48	.50
8.6000	.51	.53	.55	.57	.58
8.8500	.60	.62	.64	.66	.68
9.1000	.70	.72	.74	.76	.78
9.3500	.80	.82	.84	.87	.89
9.6000	.91	.93	.96	.98	1.00
9.8500	1.03	1.05	1.07	1.10	1.12
10.1000	1.15	1.19	1.22	1.26	1.30
10.3500	1.34	1.39	1.43	1.47	1.52
10.6000	1.56	1.61	1.65	1.70	1.75
10.8500	1.79	1.84	1.89	1.94	2.00
11.1000	2.08	2.17	2.30	2.43	2.59
11.3500	2.74	2.90	3.06	3.23	3.50
11.6000	4.03	4.79	5.91	7.20	8.69
11.8500	10.23	11.87	14.48	19.55	24.68
12.1000	27.89	28.43	25.06	20.69	17.34

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
12.3500	14.93	12.88	11.06	9.25	7.67
12.6000	6.35	5.40	4.79	4.42	4.14
12.8500	3.92	3.72	3.53	3.35	3.19
13.1000	3.04	2.93	2.85	2.78	2.73
13.3500	2.68	2.63	2.58	2.54	2.49
13.6000	2.44	2.40	2.35	2.31	2.26
13.8500	2.21	2.17	2.12	2.07	2.03
14.1000	1.99	1.95	1.92	1.90	1.87
14.3500	1.85	1.83	1.81	1.78	1.76
14.6000	1.74	1.72	1.69	1.67	1.65
14.8500	1.63	1.60	1.58	1.56	1.54
15.1000	1.51	1.49	1.47	1.45	1.42
15.3500	1.40	1.38	1.36	1.33	1.31
15.6000	1.29	1.26	1.24	1.22	1.20
15.8500	1.17	1.15	1.13	1.10	1.08
16.1000	1.06	1.05	1.03	1.02	1.01
16.3500	1.00	.99	.98	.97	.96
16.6000	.95	.94	.93	.92	.91
16.8500	.90	.89	.88	.87	.86
17.1000	.85	.84	.83	.82	.81
17.3500	.80	.79	.78	.77	.76
17.6000	.75	.74	.73	.72	.71
17.8500	.70	.69	.68	.67	.66
18.1000	.65	.65	.64	.64	.64
18.3500	.63	.63	.63	.62	.62
18.6000	.62	.61	.61	.61	.60
18.8500	.60	.60	.60	.59	.59
19.1000	.59	.58	.58	.58	.58
19.3500	.57	.57	.57	.56	.56
19.6000	.56	.55	.55	.55	.55
19.8500	.54	.54	.54	.53	.53
20.1000	.53	.52	.52	.52	.52
20.3500	.52	.51	.51	.51	.51
20.6000	.50	.50	.50	.50	.49
20.8500	.49	.49	.49	.49	.49
21.1000	.48	.48	.48	.48	.47
21.3500	.47	.47	.47	.46	.46
21.6000	.46	.46	.45	.45	.45
21.8500	.45	.45	.44	.44	.44
22.1000	.44	.43	.43	.43	.43
22.3500	.42	.42	.42	.42	.42
22.6000	.41	.41	.41	.41	.41
22.8500	.40	.40	.40	.40	.39
23.1000	.39	.39	.39	.39	.38
23.3500	.38	.38	.38	.37	.37

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
23.6000	.37	.37	.36	.36	.36
23.8500	.36	.35	.35	.35	.32
24.1000	.22	.12	.06	.03	.01
24.3500	.01	.00	.00	.00	

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 24.0000 hrs Rain Depth = 2.7800 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-1B 1
Tc = .1108 hrs
Drainage Area = 3.605 acres Runoff CN= 73
Calc.Increment= .01478 hrs Out.Incr.= .0500 hrs
HYG Volume = 9492 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
11.2500	.00	.00	.01	.02	.03
11.5000	.04	.05	.08	.11	.17
11.7500	.24	.34	.46	.61	.93
12.0000	1.54	2.02	2.39	2.39	1.92
12.2500	1.65	1.46	1.32	1.16	1.01
12.5000	.83	.70	.58	.52	.49
12.7500	.47	.45	.43	.41	.40
13.0000	.37	.36	.35	.34	.33
13.2500	.33	.32	.32	.31	.31
13.5000	.30	.30	.30	.29	.29
13.7500	.28	.28	.27	.27	.26
14.0000	.26	.25	.25	.24	.24
14.2500	.24	.24	.23	.23	.23
14.5000	.23	.22	.22	.22	.22
14.7500	.21	.21	.21	.21	.20
15.0000	.20	.20	.20	.19	.19
15.2500	.19	.19	.18	.18	.18
15.5000	.17	.17	.17	.17	.16
15.7500	.16	.16	.15	.15	.15
16.0000	.15	.14	.14	.14	.14
16.2500	.14	.14	.13	.13	.13
16.5000	.13	.13	.13	.13	.13
16.7500	.12	.12	.12	.12	.12
17.0000	.12	.12	.12	.11	.11
17.2500	.11	.11	.11	.11	.11
17.5000	.11	.10	.10	.10	.10
17.7500	.10	.10	.10	.09	.09
18.0000	.09	.09	.09	.09	.09
18.2500	.09	.09	.09	.09	.09
18.5000	.09	.09	.09	.09	.09

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
18.7500	.08	.08	.08	.08	.08
19.0000	.08	.08	.08	.08	.08
19.2500	.08	.08	.08	.08	.08
19.5000	.08	.08	.08	.08	.08
19.7500	.08	.08	.08	.08	.08
20.0000	.08	.07	.07	.07	.07
20.2500	.07	.07	.07	.07	.07
20.5000	.07	.07	.07	.07	.07
20.7500	.07	.07	.07	.07	.07
21.0000	.07	.07	.07	.07	.07
21.2500	.07	.07	.07	.07	.07
21.5000	.07	.07	.07	.07	.06
21.7500	.06	.06	.06	.06	.06
22.0000	.06	.06	.06	.06	.06
22.2500	.06	.06	.06	.06	.06
22.5000	.06	.06	.06	.06	.06
22.7500	.06	.06	.06	.06	.06
23.0000	.06	.06	.06	.06	.06
23.2500	.06	.06	.05	.05	.05
23.5000	.05	.05	.05	.05	.05
23.7500	.05	.05	.05	.05	.05
24.0000	.05	.04	.02	.01	.00
24.2500	.00				

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1400 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-1B 10
Tc = .1108 hrs
Drainage Area = 3.605 acres Runoff CN= 73
Calc.Increment= .01478 hrs Out.Incr.= .0500 hrs
HYG Volume = 31287 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
9.0000	.00	.00	.00	.01	.01
9.2500	.02	.02	.02	.03	.03
9.5000	.04	.04	.05	.05	.06
9.7500	.06	.07	.08	.08	.09
10.0000	.09	.10	.11	.11	.12
10.2500	.13	.14	.15	.16	.17
10.5000	.18	.19	.20	.21	.23
10.7500	.24	.25	.26	.28	.29
11.0000	.30	.32	.34	.37	.40
11.2500	.43	.47	.51	.55	.59
11.5000	.64	.73	.90	1.12	1.47
11.7500	1.81	2.25	2.68	3.22	4.39
12.0000	6.52	7.85	8.65	8.20	6.35
12.2500	5.27	4.56	4.06	3.50	3.02
12.5000	2.45	2.06	1.70	1.52	1.42
12.7500	1.35	1.29	1.24	1.18	1.12
13.0000	1.06	1.02	.98	.95	.93
13.2500	.92	.90	.89	.87	.86
13.5000	.85	.83	.82	.80	.79
13.7500	.77	.76	.74	.73	.71
14.0000	.70	.68	.67	.66	.65
14.2500	.65	.64	.63	.62	.62
14.5000	.61	.60	.60	.59	.58
14.7500	.57	.57	.56	.55	.54
15.0000	.54	.53	.52	.51	.51
15.2500	.50	.49	.48	.48	.47
15.5000	.46	.45	.44	.44	.43
15.7500	.42	.41	.41	.40	.39
16.0000	.38	.38	.37	.36	.36
16.2500	.36	.35	.35	.35	.34

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
16.5000	.34	.34	.33	.33	.33
16.7500	.32	.32	.32	.31	.31
17.0000	.31	.30	.30	.30	.29
17.2500	.29	.29	.28	.28	.28
17.5000	.27	.27	.26	.26	.26
17.7500	.25	.25	.25	.24	.24
18.0000	.24	.23	.23	.23	.23
18.2500	.23	.23	.23	.22	.22
18.5000	.22	.22	.22	.22	.22
18.7500	.22	.22	.22	.21	.21
19.0000	.21	.21	.21	.21	.21
19.2500	.21	.21	.20	.20	.20
19.5000	.20	.20	.20	.20	.20
19.7500	.20	.20	.19	.19	.19
20.0000	.19	.19	.19	.19	.19
20.2500	.19	.19	.19	.18	.18
20.5000	.18	.18	.18	.18	.18
20.7500	.18	.18	.18	.18	.18
21.0000	.18	.17	.17	.17	.17
21.2500	.17	.17	.17	.17	.17
21.5000	.17	.17	.17	.17	.16
21.7500	.16	.16	.16	.16	.16
22.0000	.16	.16	.16	.16	.16
22.2500	.16	.15	.15	.15	.15
22.5000	.15	.15	.15	.15	.15
22.7500	.15	.15	.15	.14	.14
23.0000	.14	.14	.14	.14	.14
23.2500	.14	.14	.14	.14	.14
23.5000	.14	.13	.13	.13	.13
23.7500	.13	.13	.13	.13	.13
24.0000	.13	.10	.04	.01	.00
24.2500	.00	.00			

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 9.3000 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-1B 100
Tc = .1108 hrs
Drainage Area = 3.605 acres Runoff CN= 73
Calc.Increment= .01478 hrs Out.Incr.= .0500 hrs
HYG Volume = 78228 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
6.5000	.00	.00	.00	.01	.01
6.7500	.01	.02	.02	.02	.03
7.0000	.03	.03	.04	.04	.05
7.2500	.05	.06	.06	.06	.07
7.5000	.07	.08	.08	.09	.09
7.7500	.10	.10	.11	.11	.12
8.0000	.12	.13	.14	.14	.15
8.2500	.16	.17	.18	.19	.20
8.5000	.21	.21	.22	.23	.25
8.7500	.26	.27	.28	.29	.30
9.0000	.31	.33	.34	.35	.37
9.2500	.38	.39	.41	.42	.43
9.5000	.45	.46	.48	.49	.51
9.7500	.53	.54	.56	.57	.59
10.0000	.61	.63	.65	.67	.70
10.2500	.72	.75	.78	.81	.84
10.5000	.87	.90	.93	.96	.99
10.7500	1.02	1.06	1.09	1.13	1.16
11.0000	1.20	1.24	1.31	1.38	1.49
11.2500	1.58	1.69	1.79	1.91	2.02
11.5000	2.14	2.42	2.92	3.58	4.58
11.7500	5.51	6.68	7.75	9.07	11.97
12.0000	17.19	20.07	21.45	19.88	15.14
12.2500	12.39	10.59	9.34	7.99	6.87
12.5000	5.54	4.65	3.82	3.40	3.17
12.7500	3.02	2.87	2.75	2.61	2.49
13.0000	2.35	2.25	2.16	2.10	2.05
13.2500	2.02	1.98	1.95	1.92	1.89
13.5000	1.85	1.82	1.78	1.75	1.72
13.7500	1.68	1.65	1.62	1.58	1.55

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
14.0000	1.51	1.48	1.45	1.43	1.41
14.2500	1.40	1.38	1.37	1.35	1.33
14.5000	1.32	1.30	1.28	1.27	1.25
14.7500	1.23	1.22	1.20	1.18	1.17
15.0000	1.15	1.14	1.12	1.10	1.08
15.2500	1.07	1.05	1.03	1.02	1.00
15.5000	.98	.97	.95	.93	.91
15.7500	.90	.88	.87	.85	.83
16.0000	.81	.80	.79	.78	.77
16.2500	.76	.75	.75	.74	.73
16.5000	.72	.72	.71	.70	.69
16.7500	.69	.68	.67	.66	.66
17.0000	.65	.64	.63	.63	.62
17.2500	.61	.60	.60	.59	.58
17.5000	.57	.57	.56	.55	.54
17.7500	.54	.53	.52	.51	.51
18.0000	.50	.49	.49	.48	.48
18.2500	.48	.48	.47	.47	.47
18.5000	.47	.47	.46	.46	.46
18.7500	.46	.45	.45	.45	.45
19.0000	.45	.44	.44	.44	.44
19.2500	.43	.43	.43	.43	.43
19.5000	.42	.42	.42	.42	.41
19.7500	.41	.41	.41	.40	.40
20.0000	.40	.40	.40	.39	.39
20.2500	.39	.39	.39	.39	.38
20.5000	.38	.38	.38	.38	.37
20.7500	.37	.37	.37	.37	.37
21.0000	.37	.37	.36	.36	.36
21.2500	.36	.36	.35	.35	.35
21.5000	.35	.35	.35	.34	.34
21.7500	.34	.34	.34	.34	.33
22.0000	.33	.33	.33	.33	.33
22.2500	.32	.32	.32	.32	.32
22.5000	.31	.31	.31	.31	.31
22.7500	.31	.30	.30	.30	.30
23.0000	.30	.30	.29	.29	.29
23.2500	.29	.29	.29	.29	.28
23.5000	.28	.28	.28	.28	.27
23.7500	.27	.27	.27	.27	.26
24.0000	.26	.21	.09	.03	.01
24.2500	.00	.00			

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 24.0000 hrs Rain Depth = 2.7800 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-1C 1
Tc = .1100 hrs
Drainage Area = 2.265 acres Runoff CN= 70
Calc.Increment= .01467 hrs Out.Incr.= .0500 hrs
HYG Volume = 4896 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
11.6000	.00	.01	.02	.05	.09
11.8500	.15	.22	.38	.67	.93
12.1000	1.15	1.18	.96	.84	.75
12.3500	.69	.60	.53	.44	.37
12.6000	.31	.28	.26	.25	.24
12.8500	.23	.22	.21	.20	.19
13.1000	.19	.18	.18	.18	.17
13.3500	.17	.17	.17	.17	.16
13.6000	.16	.16	.16	.15	.15
13.8500	.15	.14	.14	.14	.14
14.1000	.13	.13	.13	.13	.13
14.3500	.13	.13	.13	.12	.12
14.6000	.12	.12	.12	.12	.12
14.8500	.11	.11	.11	.11	.11
15.1000	.11	.11	.10	.10	.10
15.3500	.10	.10	.10	.10	.09
15.6000	.09	.09	.09	.09	.09
15.8500	.09	.08	.08	.08	.08
16.1000	.08	.08	.08	.08	.08
16.3500	.07	.07	.07	.07	.07
16.6000	.07	.07	.07	.07	.07
16.8500	.07	.07	.07	.07	.06
17.1000	.06	.06	.06	.06	.06
17.3500	.06	.06	.06	.06	.06
17.6000	.06	.06	.06	.05	.05
17.8500	.05	.05	.05	.05	.05
18.1000	.05	.05	.05	.05	.05
18.3500	.05	.05	.05	.05	.05
18.6000	.05	.05	.05	.05	.05
18.8500	.05	.05	.05	.05	.05

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
19.1000	.05	.05	.05	.05	.04
19.3500	.04	.04	.04	.04	.04
19.6000	.04	.04	.04	.04	.04
19.8500	.04	.04	.04	.04	.04
20.1000	.04	.04	.04	.04	.04
20.3500	.04	.04	.04	.04	.04
20.6000	.04	.04	.04	.04	.04
20.8500	.04	.04	.04	.04	.04
21.1000	.04	.04	.04	.04	.04
21.3500	.04	.04	.04	.04	.04
21.6000	.04	.04	.04	.04	.04
21.8500	.04	.04	.04	.04	.04
22.1000	.04	.03	.03	.03	.03
22.3500	.03	.03	.03	.03	.03
22.6000	.03	.03	.03	.03	.03
22.8500	.03	.03	.03	.03	.03
23.1000	.03	.03	.03	.03	.03
23.3500	.03	.03	.03	.03	.03
23.6000	.03	.03	.03	.03	.03
23.8500	.03	.03	.03	.03	.02
24.1000	.01	.00	.00		

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1400 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-1C 10
Tc = .1100 hrs
Drainage Area = 2.265 acres Runoff CN= 70
Calc.Increment= .01467 hrs Out.Incr.= .0500 hrs
HYG Volume = 17599 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
9.6000	.00	.00	.01	.01	.01
9.8500	.01	.02	.02	.02	.03
10.1000	.03	.03	.04	.04	.05
10.3500	.05	.06	.06	.07	.07
10.6000	.08	.09	.09	.10	.11
10.8500	.11	.12	.13	.13	.14
11.1000	.16	.17	.19	.20	.22
11.3500	.24	.26	.29	.31	.36
11.6000	.45	.57	.75	.93	1.17
11.8500	1.41	1.72	2.37	3.57	4.35
12.1000	4.84	4.61	3.58	3.00	2.60
12.3500	2.33	2.01	1.74	1.41	1.19
12.6000	.98	.88	.82	.78	.75
12.8500	.72	.68	.65	.62	.59
13.1000	.57	.55	.54	.54	.53
13.3500	.52	.51	.50	.49	.49
13.6000	.48	.47	.46	.45	.44
13.8500	.43	.43	.42	.41	.40
14.1000	.39	.39	.38	.38	.37
14.3500	.37	.37	.36	.36	.35
14.6000	.35	.35	.34	.34	.33
14.8500	.33	.32	.32	.32	.31
15.1000	.31	.30	.30	.29	.29
15.3500	.28	.28	.28	.27	.27
15.6000	.26	.26	.25	.25	.24
15.8500	.24	.23	.23	.23	.22
16.1000	.22	.22	.21	.21	.21
16.3500	.21	.20	.20	.20	.20
16.6000	.20	.20	.19	.19	.19
16.8500	.19	.19	.18	.18	.18

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
17.1000	.18	.18	.17	.17	.17
17.3500	.17	.16	.16	.16	.16
17.6000	.16	.15	.15	.15	.15
17.8500	.15	.14	.14	.14	.14
18.1000	.14	.14	.14	.13	.13
18.3500	.13	.13	.13	.13	.13
18.6000	.13	.13	.13	.13	.13
18.8500	.13	.13	.13	.13	.13
19.1000	.12	.12	.12	.12	.12
19.3500	.12	.12	.12	.12	.12
19.6000	.12	.12	.12	.12	.12
19.8500	.12	.11	.11	.11	.11
20.1000	.11	.11	.11	.11	.11
20.3500	.11	.11	.11	.11	.11
20.6000	.11	.11	.11	.11	.11
20.8500	.11	.10	.10	.10	.10
21.1000	.10	.10	.10	.10	.10
21.3500	.10	.10	.10	.10	.10
21.6000	.10	.10	.10	.10	.10
21.8500	.10	.10	.10	.09	.09
22.1000	.09	.09	.09	.09	.09
22.3500	.09	.09	.09	.09	.09
22.6000	.09	.09	.09	.09	.09
22.8500	.09	.09	.09	.09	.08
23.1000	.08	.08	.08	.08	.08
23.3500	.08	.08	.08	.08	.08
23.6000	.08	.08	.08	.08	.08
23.8500	.08	.08	.08	.08	.06
24.1000	.02	.01	.00	.00	

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 9.3000 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-1C 100
Tc = .1100 hrs
Drainage Area = 2.265 acres Runoff CN= 70
Calc.Increment= .01467 hrs Out.Incr.= .0500 hrs
HYG Volume = 46041 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
7.1500	.00	.00	.00	.01	.01
7.4000	.01	.01	.02	.02	.02
7.6500	.02	.03	.03	.03	.03
7.9000	.04	.04	.04	.05	.05
8.1500	.05	.06	.06	.07	.07
8.4000	.08	.08	.09	.09	.10
8.6500	.10	.11	.11	.12	.13
8.9000	.13	.14	.15	.15	.16
9.1500	.17	.17	.18	.19	.20
9.4000	.20	.21	.22	.23	.24
9.6500	.25	.26	.27	.27	.28
9.9000	.29	.30	.31	.32	.34
10.1500	.35	.36	.38	.40	.41
10.4000	.43	.44	.46	.48	.50
10.6500	.51	.53	.55	.57	.59
10.9000	.61	.63	.65	.68	.72
11.1500	.76	.82	.87	.94	1.00
11.4000	1.06	1.13	1.20	1.36	1.65
11.6500	2.03	2.60	3.15	3.83	4.46
11.9000	5.25	6.98	10.09	11.84	12.72
12.1500	11.80	8.98	7.40	6.33	5.60
12.4000	4.80	4.13	3.33	2.80	2.30
12.6500	2.05	1.91	1.82	1.73	1.66
12.9000	1.58	1.51	1.42	1.36	1.30
13.1500	1.27	1.24	1.23	1.20	1.18
13.4000	1.16	1.14	1.12	1.10	1.08
13.6500	1.06	1.04	1.02	1.00	.98
13.9000	.96	.94	.92	.90	.88
14.1500	.87	.86	.85	.84	.83
14.4000	.82	.81	.80	.79	.78

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
14.6500	.77	.76	.75	.74	.73
14.9000	.72	.71	.70	.69	.68
15.1500	.67	.66	.65	.64	.63
15.4000	.62	.61	.60	.59	.58
15.6500	.57	.56	.55	.54	.53
15.9000	.52	.51	.50	.49	.48
16.1500	.47	.47	.46	.46	.45
16.4000	.45	.45	.44	.44	.43
16.6500	.43	.42	.42	.41	.41
16.9000	.41	.40	.40	.39	.39
17.1500	.38	.38	.37	.37	.36
17.4000	.36	.35	.35	.35	.34
17.6500	.34	.33	.33	.32	.32
17.9000	.31	.31	.30	.30	.30
18.1500	.30	.29	.29	.29	.29
18.4000	.29	.29	.29	.28	.28
18.6500	.28	.28	.28	.28	.28
18.9000	.27	.27	.27	.27	.27
19.1500	.27	.27	.27	.26	.26
19.4000	.26	.26	.26	.26	.26
19.6500	.25	.25	.25	.25	.25
19.9000	.25	.25	.25	.24	.24
20.1500	.24	.24	.24	.24	.24
20.4000	.24	.24	.23	.23	.23
20.6500	.23	.23	.23	.23	.23
20.9000	.23	.22	.22	.22	.22
21.1500	.22	.22	.22	.22	.22
21.4000	.22	.21	.21	.21	.21
21.6500	.21	.21	.21	.21	.21
21.9000	.21	.20	.20	.20	.20
22.1500	.20	.20	.20	.20	.20
22.4000	.20	.19	.19	.19	.19
22.6500	.19	.19	.19	.19	.19
22.9000	.18	.18	.18	.18	.18
23.1500	.18	.18	.18	.18	.18
23.4000	.18	.17	.17	.17	.17
23.6500	.17	.17	.17	.17	.17
23.9000	.16	.16	.16	.13	.05
24.1500	.02	.01	.00	.00	

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 24.0000 hrs Rain Depth = 2.7800 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-2A 1
Tc = .1778 hrs
Drainage Area = 1.660 acres Runoff CN= 63
Calc.Increment= .02371 hrs Out.Incr.= .0500 hrs
HYG Volume = 2076 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
11.9000	.00	.00	.03	.09	.19
12.1500	.29	.32	.32	.31	.29
12.4000	.28	.25	.22	.19	.16
12.6500	.14	.13	.12	.11	.11
12.9000	.11	.10	.10	.09	.09
13.1500	.09	.09	.08	.08	.08
13.4000	.08	.08	.08	.08	.08
13.6500	.08	.08	.07	.07	.07
13.9000	.07	.07	.07	.07	.07
14.1500	.07	.07	.06	.06	.06
14.4000	.06	.06	.06	.06	.06
14.6500	.06	.06	.06	.06	.06
14.9000	.06	.06	.06	.06	.05
15.1500	.05	.05	.05	.05	.05
15.4000	.05	.05	.05	.05	.05
15.6500	.05	.05	.05	.04	.04
15.9000	.04	.04	.04	.04	.04
16.1500	.04	.04	.04	.04	.04
16.4000	.04	.04	.04	.04	.04
16.6500	.04	.04	.04	.04	.04
16.9000	.03	.03	.03	.03	.03
17.1500	.03	.03	.03	.03	.03
17.4000	.03	.03	.03	.03	.03
17.6500	.03	.03	.03	.03	.03
17.9000	.03	.03	.03	.03	.03
18.1500	.03	.03	.03	.03	.03
18.4000	.03	.03	.03	.03	.03
18.6500	.03	.02	.02	.02	.02
18.9000	.02	.02	.02	.02	.02
19.1500	.02	.02	.02	.02	.02

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
19.4000	.02	.02	.02	.02	.02
19.6500	.02	.02	.02	.02	.02
19.9000	.02	.02	.02	.02	.02
20.1500	.02	.02	.02	.02	.02
20.4000	.02	.02	.02	.02	.02
20.6500	.02	.02	.02	.02	.02
20.9000	.02	.02	.02	.02	.02
21.1500	.02	.02	.02	.02	.02
21.4000	.02	.02	.02	.02	.02
21.6500	.02	.02	.02	.02	.02
21.9000	.02	.02	.02	.02	.02
22.1500	.02	.02	.02	.02	.02
22.4000	.02	.02	.02	.02	.02
22.6500	.02	.02	.02	.02	.02
22.9000	.02	.02	.02	.02	.02
23.1500	.02	.02	.02	.02	.02
23.4000	.02	.02	.02	.02	.02
23.6500	.02	.02	.02	.02	.02
23.9000	.02	.02	.02	.01	.01
24.1500	.01	.00	.00	.00	

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1400 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-2A 10
Tc = .1778 hrs
Drainage Area = 1.660 acres Runoff CN= 63
Calc.Increment= .02371 hrs Out.Incr.= .0500 hrs
HYG Volume = 9629 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
10.8000	.00	.00	.01	.01	.01
11.0500	.02	.02	.03	.03	.04
11.3000	.04	.05	.06	.07	.08
11.5500	.10	.12	.15	.21	.28
11.8000	.37	.48	.61	.82	1.22
12.0500	1.71	2.12	2.34	2.23	1.95
12.3000	1.70	1.51	1.34	1.18	1.01
12.5500	.85	.71	.61	.54	.50
12.8000	.47	.45	.42	.41	.39
13.0500	.37	.35	.34	.33	.32
13.3000	.32	.31	.31	.30	.30
13.5500	.30	.29	.29	.28	.28
13.8000	.27	.27	.26	.26	.25
14.0500	.25	.24	.24	.23	.23
14.3000	.23	.23	.22	.22	.22
14.5500	.22	.22	.21	.21	.21
14.8000	.21	.20	.20	.20	.20
15.0500	.19	.19	.19	.18	.18
15.3000	.18	.18	.17	.17	.17
15.5500	.17	.16	.16	.16	.16
15.8000	.15	.15	.15	.14	.14
16.0500	.14	.14	.13	.13	.13
16.3000	.13	.13	.13	.13	.13
16.5500	.12	.12	.12	.12	.12
16.8000	.12	.12	.12	.11	.11
17.0500	.11	.11	.11	.11	.11
17.3000	.11	.10	.10	.10	.10
17.5500	.10	.10	.10	.10	.09
17.8000	.09	.09	.09	.09	.09
18.0500	.09	.09	.09	.08	.08

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
18.3000	.08	.08	.08	.08	.08
18.5500	.08	.08	.08	.08	.08
18.8000	.08	.08	.08	.08	.08
19.0500	.08	.08	.08	.08	.08
19.3000	.08	.08	.08	.08	.07
19.5500	.07	.07	.07	.07	.07
19.8000	.07	.07	.07	.07	.07
20.0500	.07	.07	.07	.07	.07
20.3000	.07	.07	.07	.07	.07
20.5500	.07	.07	.07	.07	.07
20.8000	.07	.07	.07	.07	.07
21.0500	.07	.06	.06	.06	.06
21.3000	.06	.06	.06	.06	.06
21.5500	.06	.06	.06	.06	.06
21.8000	.06	.06	.06	.06	.06
22.0500	.06	.06	.06	.06	.06
22.3000	.06	.06	.06	.06	.06
22.5500	.06	.06	.06	.06	.06
22.8000	.06	.05	.05	.05	.05
23.0500	.05	.05	.05	.05	.05
23.3000	.05	.05	.05	.05	.05
23.5500	.05	.05	.05	.05	.05
23.8000	.05	.05	.05	.05	.05
24.0500	.04	.03	.02	.01	.00
24.3000	.00	.00	.00		

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 9.3000 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-2A 100
Tc = .1778 hrs
Drainage Area = 1.660 acres Runoff CN= 63
Calc.Increment= .02371 hrs Out.Incr.= .0500 hrs
HYG Volume = 28414 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
8.5500	.00	.00	.00	.01	.01
8.8000	.01	.02	.02	.02	.02
9.0500	.03	.03	.04	.04	.04
9.3000	.05	.05	.06	.06	.06
9.5500	.07	.07	.08	.08	.09
9.8000	.09	.10	.10	.11	.12
10.0500	.12	.13	.13	.14	.15
10.3000	.16	.17	.18	.18	.19
10.5500	.20	.21	.22	.24	.25
10.8000	.26	.27	.28	.29	.31
11.0500	.32	.34	.36	.38	.41
11.3000	.44	.48	.51	.55	.59
11.5500	.65	.76	.92	1.15	1.44
11.8000	1.78	2.15	2.57	3.21	4.47
12.0500	5.87	6.91	7.29	6.71	5.71
12.3000	4.86	4.24	3.70	3.21	2.71
12.5500	2.27	1.89	1.61	1.42	1.31
12.8000	1.22	1.16	1.10	1.05	.99
13.0500	.95	.90	.87	.85	.83
13.3000	.81	.80	.78	.77	.76
13.5500	.75	.73	.72	.71	.69
13.8000	.68	.67	.65	.64	.63
14.0500	.61	.60	.59	.58	.57
14.3000	.57	.56	.55	.55	.54
14.5500	.54	.53	.52	.52	.51
14.8000	.50	.50	.49	.48	.48
15.0500	.47	.46	.46	.45	.44
15.3000	.44	.43	.42	.42	.41
15.5500	.40	.40	.39	.38	.38
15.8000	.37	.36	.35	.35	.34

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
16.0500	.33	.33	.32	.32	.32
16.3000	.31	.31	.31	.30	.30
16.5500	.30	.29	.29	.29	.29
16.8000	.28	.28	.28	.27	.27
17.0500	.27	.26	.26	.26	.26
17.3000	.25	.25	.25	.24	.24
17.5500	.24	.23	.23	.23	.22
17.8000	.22	.22	.22	.21	.21
18.0500	.21	.20	.20	.20	.20
18.3000	.20	.20	.20	.20	.19
18.5500	.19	.19	.19	.19	.19
18.8000	.19	.19	.19	.19	.19
19.0500	.18	.18	.18	.18	.18
19.3000	.18	.18	.18	.18	.18
19.5500	.18	.17	.17	.17	.17
19.8000	.17	.17	.17	.17	.17
20.0500	.17	.17	.16	.16	.16
20.3000	.16	.16	.16	.16	.16
20.5500	.16	.16	.16	.16	.16
20.8000	.16	.15	.15	.15	.15
21.0500	.15	.15	.15	.15	.15
21.3000	.15	.15	.15	.15	.15
21.5500	.14	.14	.14	.14	.14
21.8000	.14	.14	.14	.14	.14
22.0500	.14	.14	.14	.14	.14
22.3000	.13	.13	.13	.13	.13
22.5500	.13	.13	.13	.13	.13
22.8000	.13	.13	.13	.13	.13
23.0500	.12	.12	.12	.12	.12
23.3000	.12	.12	.12	.12	.12
23.5500	.12	.12	.12	.12	.11
23.8000	.11	.11	.11	.11	.11
24.0500	.10	.07	.04	.02	.01
24.3000	.01	.00	.00	.00	

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 1 year storm
Duration = 24.0000 hrs Rain Depth = 2.7800 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-2B 1
Tc = .1274 hrs
Drainage Area = 5.200 acres Runoff CN= 70
Calc.Increment= .01698 hrs Out.Incr.= .0500 hrs
HYG Volume = 11241 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
11.6000	.00	.01	.04	.10	.19
11.8500	.31	.47	.77	1.37	1.98
12.1000	2.50	2.68	2.32	2.00	1.78
12.3500	1.63	1.44	1.27	1.06	.89
12.6000	.75	.66	.61	.58	.56
12.8500	.54	.51	.49	.47	.45
13.1000	.43	.42	.41	.41	.40
13.3500	.40	.39	.39	.38	.38
13.6000	.37	.36	.36	.35	.35
13.8500	.34	.33	.33	.32	.32
14.1000	.31	.31	.30	.30	.30
14.3500	.29	.29	.29	.29	.28
14.6000	.28	.28	.27	.27	.27
14.8500	.26	.26	.26	.25	.25
15.1000	.25	.25	.24	.24	.24
15.3500	.23	.23	.23	.22	.22
15.6000	.21	.21	.21	.20	.20
15.8500	.20	.19	.19	.19	.18
16.1000	.18	.18	.18	.17	.17
16.3500	.17	.17	.17	.17	.17
16.6000	.16	.16	.16	.16	.16
16.8500	.16	.15	.15	.15	.15
17.1000	.15	.15	.14	.14	.14
17.3500	.14	.14	.14	.13	.13
17.6000	.13	.13	.13	.13	.12
17.8500	.12	.12	.12	.12	.12
18.1000	.12	.11	.11	.11	.11
18.3500	.11	.11	.11	.11	.11
18.6000	.11	.11	.11	.11	.11
18.8500	.11	.11	.11	.11	.11

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
19.1000	.11	.10	.10	.10	.10
19.3500	.10	.10	.10	.10	.10
19.6000	.10	.10	.10	.10	.10
19.8500	.10	.10	.10	.10	.10
20.1000	.10	.10	.10	.09	.09
20.3500	.09	.09	.09	.09	.09
20.6000	.09	.09	.09	.09	.09
20.8500	.09	.09	.09	.09	.09
21.1000	.09	.09	.09	.09	.09
21.3500	.09	.09	.09	.09	.08
21.6000	.08	.08	.08	.08	.08
21.8500	.08	.08	.08	.08	.08
22.1000	.08	.08	.08	.08	.08
22.3500	.08	.08	.08	.08	.08
22.6000	.08	.08	.08	.08	.08
22.8500	.07	.07	.07	.07	.07
23.1000	.07	.07	.07	.07	.07
23.3500	.07	.07	.07	.07	.07
23.6000	.07	.07	.07	.07	.07
23.8500	.07	.07	.07	.07	.05
24.1000	.03	.01	.00	.00	.00

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 10 year storm
Duration = 24.0000 hrs Rain Depth = 5.1400 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-2B 10
Tc = .1274 hrs
Drainage Area = 5.200 acres Runoff CN= 70
Calc.Increment= .01698 hrs Out.Incr.= .0500 hrs
HYG Volume = 40405 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
9.5500	.00	.00	.01	.01	.02
9.8000	.02	.03	.04	.04	.05
10.0500	.06	.07	.08	.09	.10
10.3000	.11	.12	.13	.14	.15
10.5500	.17	.18	.19	.21	.22
10.8000	.24	.25	.27	.29	.31
11.0500	.33	.35	.38	.42	.46
11.3000	.50	.54	.59	.64	.70
11.5500	.80	.98	1.22	1.61	2.02
11.8000	2.54	3.08	3.75	5.03	7.51
12.0500	9.50	10.74	10.67	8.76	7.24
12.3000	6.25	5.55	4.82	4.18	3.44
12.5500	2.88	2.39	2.09	1.93	1.83
12.8000	1.74	1.67	1.59	1.52	1.44
13.0500	1.38	1.32	1.28	1.25	1.23
13.3000	1.21	1.20	1.18	1.16	1.14
13.5500	1.12	1.10	1.08	1.06	1.04
13.8000	1.02	1.00	.98	.96	.94
14.0500	.92	.91	.89	.88	.87
14.3000	.86	.85	.84	.84	.82
14.5500	.82	.81	.80	.79	.78
14.8000	.77	.76	.75	.74	.73
15.0500	.72	.71	.70	.69	.68
15.3000	.67	.66	.65	.64	.62
15.5500	.62	.60	.59	.58	.57
15.8000	.56	.55	.54	.53	.52
16.0500	.51	.50	.50	.49	.49
16.3000	.48	.48	.47	.47	.46
16.5500	.46	.45	.45	.44	.44
16.8000	.44	.43	.43	.42	.42

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
17.0500	.41	.41	.40	.40	.39
17.3000	.39	.38	.38	.37	.37
17.5500	.37	.36	.36	.35	.35
17.8000	.34	.34	.33	.33	.32
18.0500	.32	.31	.31	.31	.31
18.3000	.31	.31	.31	.30	.30
18.5500	.30	.30	.30	.30	.30
18.8000	.29	.29	.29	.29	.29
19.0500	.29	.29	.28	.28	.28
19.3000	.28	.28	.28	.28	.27
19.5500	.27	.27	.27	.27	.27
19.8000	.27	.27	.26	.26	.26
20.0500	.26	.26	.26	.26	.26
20.3000	.25	.25	.25	.25	.25
20.5500	.25	.25	.25	.24	.24
20.8000	.24	.24	.24	.24	.24
21.0500	.24	.24	.24	.23	.23
21.3000	.23	.23	.23	.23	.23
21.5500	.23	.23	.23	.22	.22
21.8000	.22	.22	.22	.22	.22
22.0500	.22	.22	.21	.21	.21
22.3000	.21	.21	.21	.21	.21
22.5500	.21	.21	.20	.20	.20
22.8000	.20	.20	.20	.20	.20
23.0500	.19	.19	.19	.19	.19
23.3000	.19	.19	.19	.19	.19
23.5500	.18	.18	.18	.18	.18
23.8000	.18	.18	.18	.17	.17
24.0500	.15	.07	.03	.01	.00
24.3000	.00	.00			

SCS UNIT HYDROGRAPH METHOD

STORM EVENT: 100 year storm
Duration = 24.0000 hrs Rain Depth = 9.3000 in
Rain Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Rain File -ID = - TypeIII 24hr
Unit Hyd Type = Default Curvilinear
HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
HYG File - ID = - PDA-2B 100
Tc = .1274 hrs
Drainage Area = 5.200 acres Runoff CN= 70
Calc.Increment= .01698 hrs Out.Incr.= .0500 hrs
HYG Volume = 105700 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
7.1500	.00	.00	.01	.01	.02
7.4000	.02	.03	.03	.04	.05
7.6500	.05	.06	.06	.07	.08
7.9000	.08	.09	.10	.10	.11
8.1500	.12	.13	.14	.15	.16
8.4000	.17	.18	.19	.21	.22
8.6500	.23	.24	.26	.27	.28
8.9000	.30	.31	.33	.34	.36
9.1500	.38	.39	.41	.43	.45
9.4000	.47	.48	.50	.52	.54
9.6500	.56	.58	.60	.62	.65
9.9000	.67	.69	.71	.74	.76
10.1500	.79	.83	.86	.90	.93
10.4000	.97	1.01	1.05	1.09	1.13
10.6500	1.17	1.21	1.26	1.30	1.35
10.9000	1.39	1.44	1.49	1.55	1.63
11.1500	1.72	1.85	1.97	2.11	2.25
11.4000	2.40	2.55	2.71	3.03	3.63
11.6500	4.41	5.64	6.86	8.38	9.83
11.9000	11.58	14.93	21.40	26.07	28.48
12.1500	27.51	22.14	17.97	15.30	13.42
12.4000	11.55	9.94	8.13	6.79	5.60
12.6500	4.89	4.50	4.26	4.04	3.87
12.9000	3.68	3.51	3.32	3.17	3.03
13.1500	2.94	2.88	2.83	2.78	2.73
13.4000	2.68	2.64	2.59	2.55	2.50
13.6500	2.45	2.40	2.36	2.31	2.27
13.9000	2.22	2.17	2.12	2.08	2.04
14.1500	2.01	1.98	1.96	1.93	1.91
14.4000	1.89	1.87	1.84	1.82	1.80

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
14.6500	1.78	1.75	1.73	1.71	1.69
14.9000	1.66	1.64	1.62	1.59	1.57
15.1500	1.55	1.52	1.50	1.48	1.45
15.4000	1.43	1.41	1.38	1.36	1.33
15.6500	1.31	1.29	1.26	1.24	1.22
15.9000	1.19	1.17	1.14	1.13	1.11
16.1500	1.09	1.08	1.07	1.06	1.05
16.4000	1.03	1.02	1.02	1.01	.99
16.6500	.98	.97	.96	.95	.94
16.9000	.93	.92	.91	.90	.89
17.1500	.88	.87	.86	.85	.84
17.4000	.83	.82	.81	.80	.79
17.6500	.78	.77	.76	.74	.73
17.9000	.72	.71	.70	.69	.68
18.1500	.68	.68	.67	.67	.67
18.4000	.66	.66	.66	.65	.65
18.6500	.65	.64	.64	.64	.64
18.9000	.63	.63	.63	.62	.62
19.1500	.62	.61	.61	.61	.60
19.4000	.60	.60	.59	.59	.59
19.6500	.59	.58	.58	.58	.57
19.9000	.57	.57	.56	.56	.56
20.1500	.55	.55	.55	.55	.55
20.4000	.54	.54	.54	.54	.53
20.6500	.53	.53	.53	.52	.52
20.9000	.52	.52	.52	.51	.51
21.1500	.51	.51	.50	.50	.50
21.4000	.50	.49	.49	.49	.49
21.6500	.49	.48	.48	.48	.48
21.9000	.47	.47	.47	.47	.46
22.1500	.46	.46	.46	.45	.45
22.4000	.45	.45	.44	.44	.44
22.6500	.44	.44	.43	.43	.43
22.9000	.43	.42	.42	.42	.41
23.1500	.41	.41	.41	.41	.40
23.4000	.40	.40	.40	.39	.39
23.6500	.39	.39	.38	.38	.38
23.9000	.38	.37	.37	.31	.16
24.1500	.06	.02	.01	.00	.00

Elevation (ft)	Planimeter (sq.in)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume (cu.ft)	Volume Sum (cu.ft)
360.00	-----	10469	0	0	0
362.00	-----	14623	37465	24977	24977
364.00	-----	19342	50783	33855	58832
365.00	-----	21892	61812	20604	79436
366.00	-----	28841	75860	25287	104722

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Elevation (ft)	Planimeter (sq.in)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume (cu.ft)	Volume Sum (cu.ft)
344.00	-----	8256	0	0	0
346.00	-----	11978	30178	20119	20119
348.00	-----	16797	42959	28640	48758

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Elevation (ft)	Planimeter (sq.in)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume (cu.ft)	Volume Sum (cu.ft)
300.50	-----	65	0	0	0
301.50	-----	291	494	165	165
302.50	-----	665	1396	465	630
303.00	-----	2084	3926	654	1284
304.00	-----	3425	8181	2727	4011
306.00	-----	6484	14622	9748	13759
308.00	-----	9680	24086	16058	29816

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Elevation (ft)	Planimeter (sq.in)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume (cu.ft)	Volume Sum (cu.ft)
314.00	-----	1166	0	0	0
316.00	-----	6607	10549	7032	7032
318.00	-----	11901	27375	18250	25283
319.00	-----	11901	35703	11901	37184

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 360.00 ft
Increment = .10 ft
Max. Elev.= 366.00 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Weir-XY Points	W0	--->	TW	365.000	366.000
TW SETUP, DS Channel					

OUTLET STRUCTURE INPUT DATA

Structure ID = W0
Structure Type = Weir-XY Points

# of Openings = 1
WEIR X-Y GROUND POINTS

X, ft	Elev, ft
.00	366.00
5.00	365.00
10.00	365.00
15.00	366.00

Lowest Elev. = 365.00 ft

Weir Coeff. = 2.680000

Weir TW effects (Use adjustment equation)

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 40
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .00 cfs
Max. Q tolerance = .00 cfs

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
360.00	.00	Free Outfall		None contributing
360.10	.00	Free Outfall		None contributing
360.20	.00	Free Outfall		None contributing
360.30	.00	Free Outfall		None contributing
360.40	.00	Free Outfall		None contributing
360.50	.00	Free Outfall		None contributing
360.60	.00	Free Outfall		None contributing
360.70	.00	Free Outfall		None contributing
360.80	.00	Free Outfall		None contributing
360.90	.00	Free Outfall		None contributing
361.00	.00	Free Outfall		None contributing
361.10	.00	Free Outfall		None contributing
361.20	.00	Free Outfall		None contributing
361.30	.00	Free Outfall		None contributing
361.40	.00	Free Outfall		None contributing
361.50	.00	Free Outfall		None contributing
361.60	.00	Free Outfall		None contributing
361.70	.00	Free Outfall		None contributing
361.80	.00	Free Outfall		None contributing
361.90	.00	Free Outfall		None contributing
362.00	.00	Free Outfall		None contributing
362.10	.00	Free Outfall		None contributing
362.20	.00	Free Outfall		None contributing
362.30	.00	Free Outfall		None contributing
362.40	.00	Free Outfall		None contributing
362.50	.00	Free Outfall		None contributing
362.60	.00	Free Outfall		None contributing
362.70	.00	Free Outfall		None contributing
362.80	.00	Free Outfall		None contributing
362.90	.00	Free Outfall		None contributing
363.00	.00	Free Outfall		None contributing
363.10	.00	Free Outfall		None contributing
363.20	.00	Free Outfall		None contributing
363.30	.00	Free Outfall		None contributing
363.40	.00	Free Outfall		None contributing
363.50	.00	Free Outfall		None contributing
363.60	.00	Free Outfall		None contributing
363.70	.00	Free Outfall		None contributing

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
363.80	.00	Free Outfall		None contributing
363.90	.00	Free Outfall		None contributing
364.00	.00	Free Outfall		None contributing
364.10	.00	Free Outfall		None contributing
364.20	.00	Free Outfall		None contributing
364.30	.00	Free Outfall		None contributing
364.40	.00	Free Outfall		None contributing
364.50	.00	Free Outfall		None contributing
364.60	.00	Free Outfall		None contributing
364.70	.00	Free Outfall		None contributing
364.80	.00	Free Outfall		None contributing
364.90	.00	Free Outfall		None contributing
365.00	.00	Free Outfall		W0
365.10	.45	Free Outfall		W0
365.20	1.37	Free Outfall		W0
365.30	2.67	Free Outfall		W0
365.40	4.35	Free Outfall		W0
365.50	6.41	Free Outfall		W0
365.60	8.87	Free Outfall		W0
365.70	11.73	Free Outfall		W0
365.80	15.01	Free Outfall		W0
365.90	18.72	Free Outfall		W0
366.00	22.88	Free Outfall		W0

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 344.00 ft
Increment = .10 ft
Max. Elev.= 348.00 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Inlet Box	R0	--->	C0	347.750	348.000
Orifice-Circular	O0	--->	C0	344.600	348.000
Culvert-Circular	C0	--->	TW	344.600	348.000

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = R0
Structure Type = Inlet Box

# of Openings = 1
Invert Elev. = 347.75 ft
Orifice Area = 16.0000 sq.ft
Orifice Coeff. = .600
Weir Length = 16.00 ft
Weir Coeff. = 3.330
K, Reverse = 1.000
Mannings n = .0000
Kev,Charged Riser = .000
Weir Submergence = No

Structure ID = O0
Structure Type = Orifice-Circular

# of Openings = 1
Invert Elev. = 344.60 ft
Diameter = 1.0000 ft
Orifice Coeff. = .600

OUTLET STRUCTURE INPUT DATA

Structure ID = C0
Structure Type = Culvert-Circular

No. Barrels = 1
Barrel Diameter = 1.2500 ft
Upstream Invert = 344.60 ft
Dnstream Invert = 318.00 ft
Horiz. Length = 371.00 ft
Barrel Length = 371.95 ft
Barrel Slope = .07170 ft/ft

OUTLET CONTROL DATA...
Mannings n = .0130
Ke = .5000 (forward entrance loss)
Kb = .023225 (per ft of full flow)
Kr = .5000 (reverse entrance loss)
HW Convergence = .001 +/- ft

INLET CONTROL DATA...
Equation form = 1
Inlet Control K = .0078
Inlet Control M = 2.0000
Inlet Control c = .03790
Inlet Control Y = .6900
T1 ratio (HW/D) = 1.100
T2 ratio (HW/D) = 1.261
Slope Factor = -.500

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev = 345.97 ft ---> Flow = 4.80 cfs
At T2 Elev = 346.18 ft ---> Flow = 5.49 cfs

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 40
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .00 cfs
Max. Q tolerance = .00 cfs

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
344.00	.00	Free Outfall		(no Q: R0,O0,C0)
344.10	.00	Free Outfall		(no Q: R0,O0,C0)
344.20	.00	Free Outfall		(no Q: R0,O0,C0)
344.30	.00	Free Outfall		(no Q: R0,O0,C0)
344.40	.00	Free Outfall		(no Q: R0,O0,C0)
344.50	.00	Free Outfall		(no Q: R0,O0,C0)
344.60	.00	Free Outfall		(no Q: R0,O0,C0)
344.70	.02	Free Outfall		O0,C0 (no Q: R0)
344.80	.09	Free Outfall		O0,C0 (no Q: R0)
344.90	.18	Free Outfall		O0,C0 (no Q: R0)
345.00	.30	Free Outfall		O0,C0 (no Q: R0)
345.10	.45	Free Outfall		O0,C0 (no Q: R0)
345.20	.63	Free Outfall		O0,C0 (no Q: R0)
345.30	.84	Free Outfall		O0,C0 (no Q: R0)
345.40	1.07	Free Outfall		O0,C0 (no Q: R0)
345.50	1.34	Free Outfall		O0,C0 (no Q: R0)
345.60	1.68	Free Outfall		O0,C0 (no Q: R0)
345.70	1.87	Free Outfall		O0,C0 (no Q: R0)
345.80	2.06	Free Outfall		O0,C0 (no Q: R0)
345.90	2.24	Free Outfall		O0,C0 (no Q: R0)
346.00	2.42	Free Outfall		O0,C0 (no Q: R0)
346.10	2.59	Free Outfall		O0,C0 (no Q: R0)
346.20	2.76	Free Outfall		O0,C0 (no Q: R0)
346.30	2.92	Free Outfall		O0,C0 (no Q: R0)
346.40	3.08	Free Outfall		O0,C0 (no Q: R0)
346.50	3.23	Free Outfall		O0,C0 (no Q: R0)
346.60	3.37	Free Outfall		O0,C0 (no Q: R0)
346.70	3.52	Free Outfall		O0,C0 (no Q: R0)
346.80	3.66	Free Outfall		O0,C0 (no Q: R0)
346.90	3.79	Free Outfall		O0,C0 (no Q: R0)
347.00	3.93	Free Outfall		O0,C0 (no Q: R0)
347.10	4.05	Free Outfall		O0,C0 (no Q: R0)
347.20	4.18	Free Outfall		O0,C0 (no Q: R0)
347.30	4.30	Free Outfall		O0,C0 (no Q: R0)
347.40	4.43	Free Outfall		O0,C0 (no Q: R0)
347.50	4.55	Free Outfall		O0,C0 (no Q: R0)
347.60	4.66	Free Outfall		O0,C0 (no Q: R0)
347.70	4.78	Free Outfall		O0,C0 (no Q: R0)

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
347.75	4.83	Free Outfall		O0,C0 (no Q: R0)
347.80	5.34	Free Outfall		R0,O0,C0
347.90	7.19	Free Outfall		R0,O0,C0
348.00	9.20	Free Outfall		R0,O0,C0

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 314.00 ft
Increment = .10 ft
Max. Elev.= 319.00 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Culvert-Circular	C0	--->	TW	314.000	319.000
TW SETUP, DS Channel					

OUTLET STRUCTURE INPUT DATA

Structure ID = C0
Structure Type = Culvert-Circular

No. Barrels	=	1
Barrel Diameter	=	1.0000 ft
Upstream Invert	=	314.00 ft
Dnstream Invert	=	312.50 ft
Horiz. Length	=	50.00 ft
Barrel Length	=	50.02 ft
Barrel Slope	=	.03000 ft/ft

OUTLET CONTROL DATA...

Mannings n	=	.0120
Ke	=	.5000 (forward entrance loss)
Kb	=	.026647 (per ft of full flow)
Kr	=	.5000 (reverse entrance loss)
HW Convergence	=	.001 +/- ft

INLET CONTROL DATA...

Equation form	=	1
Inlet Control K	=	.0078
Inlet Control M	=	2.0000
Inlet Control c	=	.03790
Inlet Control Y	=	.6900
T1 ratio (HW/D)	=	1.121
T2 ratio (HW/D)	=	1.281
Slope Factor	=	-.500

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev = 315.12 ft ---> Flow = 2.75 cfs
At T2 Elev = 315.28 ft ---> Flow = 3.14 cfs

OUTLET STRUCTURE INPUT DATA

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 40
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .00 cfs
Max. Q tolerance = .00 cfs

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Notes		
		Converge		
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
314.00	.00	Free Outfall		None contributing
314.10	.03	Free Outfall		C0
314.20	.10	Free Outfall		C0
314.30	.23	Free Outfall		C0
314.40	.40	Free Outfall		C0
314.50	.60	Free Outfall		C0
314.60	.84	Free Outfall		C0
314.70	1.12	Free Outfall		C0
314.80	1.41	Free Outfall		C0
314.90	1.73	Free Outfall		C0
315.00	2.06	Free Outfall		C0
315.10	2.39	Free Outfall		C0
315.20	2.74	Free Outfall		C0
315.30	3.07	Free Outfall		C0
315.40	3.40	Free Outfall		C0
315.50	3.67	Free Outfall		C0
315.60	3.88	Free Outfall		C0
315.70	4.08	Free Outfall		C0
315.80	4.28	Free Outfall		C0
315.90	4.46	Free Outfall		C0
316.00	4.64	Free Outfall		C0
316.10	4.82	Free Outfall		C0
316.20	4.98	Free Outfall		C0
316.30	5.14	Free Outfall		C0
316.40	5.30	Free Outfall		C0
316.50	5.45	Free Outfall		C0
316.60	5.60	Free Outfall		C0
316.70	5.74	Free Outfall		C0
316.80	5.88	Free Outfall		C0
316.90	6.02	Free Outfall		C0
317.00	6.15	Free Outfall		C0
317.10	6.28	Free Outfall		C0
317.20	6.41	Free Outfall		C0
317.30	6.54	Free Outfall		C0
317.40	6.66	Free Outfall		C0
317.50	6.78	Free Outfall		C0
317.60	6.90	Free Outfall		C0
317.70	7.02	Free Outfall		C0

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
317.80	7.13	Free Outfall		C0
317.90	7.24	Free Outfall		C0
318.00	7.36	Free Outfall		C0
318.10	7.47	Free Outfall		C0
318.20	7.57	Free Outfall		C0
318.30	7.68	Free Outfall		C0
318.40	7.79	Free Outfall		C0
318.50	7.89	Free Outfall		C0
318.60	7.99	Free Outfall		C0
318.70	8.09	Free Outfall		C0
318.80	8.19	Free Outfall		C0
318.90	8.29	Free Outfall		C0
319.00	8.39	Free Outfall		C0

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 300.50 ft
Increment = .10 ft
Max. Elev.= 308.00 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Inlet Box	R0	--->	C0	305.150	308.000
Culvert-Circular	C0	--->	TW	302.000	308.000
Orifice-Circular	O0	--->	TW	304.600	308.000
Orifice-Circular	O1	--->	TW	304.760	308.000

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID = R0
Structure Type = Inlet Box

# of Openings	=	1
Invert Elev.	=	305.15 ft
Orifice Area	=	10.0000 sq.ft
Orifice Coeff.	=	.600
Weir Length	=	16.00 ft
Weir Coeff.	=	3.330
K, Reverse	=	1.000
Mannings n	=	.0000
Kev,Charged Riser	=	.000
Weir Submergence	=	No

OUTLET STRUCTURE INPUT DATA

```
Structure ID      = C0
Structure Type    = Culvert-Circular
------------------------------------
No. Barrels       =         1
Barrel Diameter   =    2.0000 ft
Upstream Invert   =    302.00 ft
Dnstream Invert   =    298.00 ft
Horiz. Length     =     50.00 ft
Barrel Length     =     50.16 ft
Barrel Slope      =    .08000 ft/ft

OUTLET CONTROL DATA...
Mannings n        =     .0130
Ke                =     .5000  (forward entrance loss)
Kb                =   .012411  (per ft of full flow)
Kr                =     .5000  (reverse entrance loss)
HW Convergence    =      .001  +/- ft

INLET CONTROL DATA...
Equation form     =         1
Inlet Control K   =     .0078
Inlet Control M   =    2.0000
Inlet Control c   =    .03790
Inlet Control Y   =     .6900
T1 ratio (HW/D)   =     1.096
T2 ratio (HW/D)   =     1.256
Slope Factor      =     -.500

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use   submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev =    304.19 ft  --->  Flow =     15.55 cfs
At T2 Elev =    304.51 ft  --->  Flow =     17.77 cfs
```

OUTLET STRUCTURE INPUT DATA

Structure ID = O0
Structure Type = Orifice-Circular

# of Openings = 1
Invert Elev. = 304.60 ft
Diameter = .2500 ft
Orifice Coeff. = .600

Structure ID = O1
Structure Type = Orifice-Circular

# of Openings = 1
Invert Elev. = 304.76 ft
Diameter = .2500 ft
Orifice Coeff. = .600

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 40
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .00 cfs
Max. Q tolerance = .00 cfs

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
300.50	.00	Free Outfall		(no Q: R0,C0,O0,O1)
300.60	.00	Free Outfall		(no Q: R0,C0,O0,O1)
300.70	.00	Free Outfall		(no Q: R0,C0,O0,O1)
300.80	.00	Free Outfall		(no Q: R0,C0,O0,O1)
300.90	.00	Free Outfall		(no Q: R0,C0,O0,O1)
301.00	.00	Free Outfall		(no Q: R0,C0,O0,O1)
301.10	.00	Free Outfall		(no Q: R0,C0,O0,O1)
301.20	.00	Free Outfall		(no Q: R0,C0,O0,O1)
301.30	.00	Free Outfall		(no Q: R0,C0,O0,O1)
301.40	.00	Free Outfall		(no Q: R0,C0,O0,O1)
301.50	.00	Free Outfall		(no Q: R0,C0,O0,O1)
301.60	.00	Free Outfall		(no Q: R0,C0,O0,O1)
301.70	.00	Free Outfall		(no Q: R0,C0,O0,O1)
301.80	.00	Free Outfall		(no Q: R0,C0,O0,O1)
301.90	.00	Free Outfall		(no Q: R0,C0,O0,O1)
302.00	.00	Free Outfall		(no Q: R0,C0,O0,O1)
302.10	.00	Free Outfall		(no Q: R0,C0,O0,O1)
302.20	.00	Free Outfall		(no Q: R0,C0,O0,O1)
302.30	.00	Free Outfall		(no Q: R0,C0,O0,O1)
302.40	.00	Free Outfall		(no Q: R0,C0,O0,O1)
302.50	.00	Free Outfall		(no Q: R0,C0,O0,O1)
302.60	.00	Free Outfall		(no Q: R0,C0,O0,O1)
302.70	.00	Free Outfall		(no Q: R0,C0,O0,O1)
302.80	.00	Free Outfall		(no Q: R0,C0,O0,O1)
302.90	.00	Free Outfall		(no Q: R0,C0,O0,O1)
303.00	.00	Free Outfall		(no Q: R0,C0,O0,O1)
303.10	.00	Free Outfall		(no Q: R0,C0,O0,O1)
303.20	.00	Free Outfall		(no Q: R0,C0,O0,O1)
303.30	.00	Free Outfall		(no Q: R0,C0,O0,O1)
303.40	.00	Free Outfall		(no Q: R0,C0,O0,O1)
303.50	.00	Free Outfall		(no Q: R0,C0,O0,O1)
303.60	.00	Free Outfall		(no Q: R0,C0,O0,O1)
303.70	.00	Free Outfall		(no Q: R0,C0,O0,O1)
303.80	.00	Free Outfall		(no Q: R0,C0,O0,O1)
303.90	.00	Free Outfall		(no Q: R0,C0,O0,O1)
304.00	.00	Free Outfall		(no Q: R0,C0,O0,O1)
304.10	.00	Free Outfall		(no Q: R0,C0,O0,O1)
304.20	.00	Free Outfall		(no Q: R0,C0,O0,O1)

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
304.30	.00	Free Outfall		(no Q: R0,C0,O0,O1)
304.40	.00	Free Outfall		(no Q: R0,C0,O0,O1)
304.50	.00	Free Outfall		(no Q: R0,C0,O0,O1)
304.60	.00	Free Outfall		(no Q: R0,C0,O0,O1)
304.70	.02	Free Outfall		O0 (no Q: R0,C0,O1)
304.76	.04	Free Outfall		O0 (no Q: R0,C0,O1)
304.80	.06	Free Outfall		O0,O1 (no Q: R0,C0)
304.90	.13	Free Outfall		O0,O1 (no Q: R0,C0)
305.00	.20	Free Outfall		O0,O1 (no Q: R0,C0)
305.10	.25	Free Outfall		O0,O1 (no Q: R0,C0)
305.15	.28	Free Outfall		O0,O1 (no Q: R0,C0)
305.20	.89	Free Outfall		R0,C0,O0,O1
305.30	3.42	Free Outfall		R0,C0,O0,O1
305.40	7.03	Free Outfall		R0,C0,O0,O1
305.50	11.42	Free Outfall		R0,C0,O0,O1
305.60	16.50	Free Outfall		R0,C0,O0,O1
305.70	22.18	Free Outfall		R0,C0,O0,O1
305.80	25.98	Free Outfall		R0,C0,O0,O1
305.90	26.52	Free Outfall		R0,C0,O0,O1
306.00	27.03	Free Outfall		R0,C0,O0,O1
306.10	27.54	Free Outfall		R0,C0,O0,O1
306.20	28.04	Free Outfall		R0,C0,O0,O1
306.30	28.53	Free Outfall		R0,C0,O0,O1
306.40	29.01	Free Outfall		R0,C0,O0,O1
306.50	29.48	Free Outfall		R0,C0,O0,O1
306.60	29.95	Free Outfall		R0,C0,O0,O1
306.70	30.40	Free Outfall		R0,C0,O0,O1
306.80	30.86	Free Outfall		R0,C0,O0,O1
306.90	31.30	Free Outfall		R0,C0,O0,O1
307.00	31.74	Free Outfall		R0,C0,O0,O1
307.10	32.18	Free Outfall		R0,C0,O0,O1
307.20	32.60	Free Outfall		R0,C0,O0,O1
307.30	33.02	Free Outfall		R0,C0,O0,O1
307.40	33.44	Free Outfall		R0,C0,O0,O1
307.50	33.84	Free Outfall		R0,C0,O0,O1
307.60	34.25	Free Outfall		R0,C0,O0,O1
307.70	34.65	Free Outfall		R0,C0,O0,O1
307.80	35.05	Free Outfall		R0,C0,O0,O1

***** COMPOSITE OUTFLOW SUMMARY ****

WS Elev, Total Q		Converge		Notes
Elev. ft	Q cfs	TW Elev ft	Error +/-ft	Contributing Structures
307.90	35.44	Free Outfall		R0,C0,O0,O1
308.00	35.83	Free Outfall		R0,C0,O0,O1

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - BASIN 1A IN 1
Outflow HYG file = NONE STORED - BASIN 1A OUT 1

Pond Node Data = BASIN 1A
Pond Volume Data = BASIN 1A
Pond Outlet Data = BASIN 1A

Infiltration = .43 cfs

INITIAL CONDITIONS

Starting WS Elev = 360.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
360.00	.00	0	10469	.00	.00	.00
360.10	.00	1057	10660	.43	.43	12.16
360.20	.00	2132	10853	.43	.43	24.12
360.30	.00	3227	11048	.43	.43	36.28
360.40	.00	4342	11244	.43	.43	48.67
360.50	.00	5476	11443	.43	.43	61.27
360.60	.00	6630	11643	.43	.43	74.10
360.70	.00	7805	11844	.43	.43	87.14
360.80	.00	8999	12047	.43	.43	100.41
360.90	.00	10214	12253	.43	.43	113.92
361.00	.00	11450	12459	.43	.43	127.64
361.10	.00	12706	12668	.43	.43	141.61
361.20	.00	13984	12878	.43	.43	155.80
361.30	.00	15282	13090	.43	.43	170.22
361.40	.00	16602	13304	.43	.43	184.89
361.50	.00	17943	13520	.43	.43	199.79
361.60	.00	19306	13737	.43	.43	214.93
361.70	.00	20690	13956	.43	.43	230.32
361.80	.00	22097	14176	.43	.43	245.94
361.90	.00	23525	14399	.43	.43	261.82

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - BASIN 1A IN 1
Outflow HYG file = NONE STORED - BASIN 1A OUT 1

Pond Node Data = BASIN 1A
Pond Volume Data = BASIN 1A
Pond Outlet Data = BASIN 1A

Infiltration = .43 cfs

INITIAL CONDITIONS

Starting WS Elev = 360.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
362.00	.00	24977	14623	.43	.43	277.94
362.10	.00	26450	14843	.43	.43	294.31
362.20	.00	27945	15065	.43	.43	310.93
362.30	.00	29463	15289	.43	.43	327.79
362.40	.00	31003	15514	.43	.43	344.90
362.50	.00	32566	15741	.43	.43	362.27
362.60	.00	34151	15970	.43	.43	379.89
362.70	.00	35760	16200	.43	.43	397.76
362.80	.00	37391	16432	.43	.43	415.88
362.90	.00	39046	16665	.43	.43	434.27
363.00	.00	40724	16900	.43	.43	452.92
363.10	.00	42426	17137	.43	.43	471.83
363.20	.00	44152	17375	.43	.43	491.00
363.30	.00	45901	17615	.43	.43	510.44
363.40	.00	47675	17857	.43	.43	530.15
363.50	.00	49473	18100	.43	.43	550.12
363.60	.00	51295	18346	.43	.43	570.37
363.70	.00	53142	18592	.43	.43	590.89
363.80	.00	55013	18840	.43	.43	611.69
363.90	.00	56910	19090	.43	.43	632.76

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - BASIN 1A IN 1
Outflow HYG file = NONE STORED - BASIN 1A OUT 1

Pond Node Data = BASIN 1A
Pond Volume Data = BASIN 1A
Pond Outlet Data = BASIN 1A

Infiltration = .43 cfs

INITIAL CONDITIONS

Starting WS Elev = 360.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
364.00	.00	58832	19342	.43	.43	654.11
364.10	.00	60778	19590	.43	.43	675.74
364.20	.00	62750	19839	.43	.43	697.65
364.30	.00	64746	20090	.43	.43	719.83
364.40	.00	66768	20343	.43	.43	742.29
364.50	.00	68815	20597	.43	.43	765.04
364.60	.00	70888	20853	.43	.43	788.06
364.70	.00	72986	21110	.43	.43	811.38
364.80	.00	75109	21369	.43	.43	834.97
364.90	.00	77259	21630	.43	.43	858.86
365.00	.00	79436	21892	.43	.43	883.04
365.10	.45	81657	22544	.43	.88	908.18
365.20	1.37	83945	23205	.43	1.79	934.52
365.30	2.67	86298	23876	.43	3.09	961.97
365.40	4.35	88720	24557	.43	4.77	990.55
365.50	6.41	91210	25247	.43	6.84	1020.29
365.60	8.87	93770	25947	.43	9.30	1051.19
365.70	11.73	96400	26656	.43	12.16	1083.27
365.80	15.01	99101	27375	.43	15.44	1116.56
365.90	18.72	101875	28103	.43	19.15	1151.09

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - BASIN 1A IN 1
Outflow HYG file = NONE STORED - BASIN 1A OUT 1

Pond Node Data = BASIN 1A
Pond Volume Data = BASIN 1A
Pond Outlet Data = BASIN 1A

Infiltration = .43 cfs

INITIAL CONDITIONS

Starting WS Elev = 360.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
366.00	22.88	104722	28841	.43	23.30	1186.88

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 1A OUT
HYG Tag = 1

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.9000	.00	.00	.00	.00	.00
10.1500	.00	.00	.00	.00	.00
10.4000	.00	.00	.00	.00	.00
10.6500	.00	.00	.00	.00	.00
10.9000	.00	.00	.00	.00	.00
11.1500	.00	.00	.00	.00	.00
11.4000	.00	.00	.00	.00	.00
11.6500	.00	.00	.00	.00	.00
11.9000	.00	.00	.00	.00	.00
12.1500	.00	.00	.00	.00	.00
12.4000	.00	.00	.00	.00	.00
12.6500	.00	.00	.00	.00	.00
12.9000	.00	.00	.00	.00	.00
13.1500	.00	.00	.00	.00	.00
13.4000	.00	.00	.00	.00	.00
13.6500	.00	.00	.00	.00	.00
13.9000	.00	.00	.00	.00	.00
14.1500	.00	.00	.00	.00	.00
14.4000	.00	.00	.00	.00	.00
14.6500	.00	.00	.00	.00	.00
14.9000	.00	.00	.00	.00	.00
15.1500	.00	.00	.00	.00	.00
15.4000	.00	.00	.00	.00	.00
15.6500	.00	.00	.00	.00	.00
15.9000	.00	.00	.00	.00	.00
16.1500	.00	.00	.00	.00	.00
16.4000	.00	.00	.00	.00	.00
16.6500	.00	.00	.00	.00	.00
16.9000	.00	.00	.00	.00	.00
17.1500	.00	.00	.00	.00	.00
17.4000	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
17.6500	.00	.00	.00	.00	.00
17.9000	.00	.00	.00	.00	.00
18.1500	.00	.00	.00	.00	.00
18.4000	.00	.00	.00	.00	.00
18.6500	.00	.00	.00	.00	.00
18.9000	.00	.00	.00	.00	.00
19.1500	.00	.00	.00	.00	.00
19.4000	.00	.00	.00	.00	.00
19.6500	.00	.00	.00	.00	.00
19.9000	.00	.00	.00	.00	.00
20.1500	.00	.00	.00	.00	.00
20.4000	.00	.00	.00	.00	.00
20.6500	.00	.00	.00	.00	.00
20.9000	.00	.00	.00	.00	.00
21.1500	.00	.00	.00	.00	.00
21.4000	.00	.00	.00	.00	.00
21.6500	.00	.00	.00	.00	.00
21.9000	.00	.00	.00	.00	.00
22.1500	.00	.00	.00	.00	.00
22.4000	.00	.00	.00	.00	.00
22.6500	.00	.00	.00	.00	.00
22.9000	.00	.00	.00	.00	.00
23.1500	.00	.00	.00	.00	.00
23.4000	.00	.00	.00	.00	.00
23.6500	.00	.00	.00	.00	.00
23.9000	.00	.00	.00	.00	.00
24.1500	.00	.00	.00	.00	.00
24.4000	.00	.00	.00	.00	.00
24.6500	.00	.00	.00	.00	.00
24.9000	.00	.00	.00	.00	.00
25.1500	.00	.00	.00	.00	.00
25.4000	.00	.00	.00	.00	.00
25.6500	.00	.00	.00	.00	.00
25.9000	.00	.00	.00	.00	.00
26.1500	.00	.00	.00	.00	.00
26.4000	.00	.00	.00	.00	.00

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 1A OUT
HYG Tag = 10

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
7.4000	.00	.00	.00	.00	.00
7.6500	.00	.00	.00	.00	.00
7.9000	.00	.00	.00	.00	.00
8.1500	.00	.00	.00	.00	.00
8.4000	.00	.00	.00	.00	.00
8.6500	.00	.00	.00	.00	.00
8.9000	.00	.00	.00	.00	.00
9.1500	.00	.00	.00	.00	.00
9.4000	.00	.00	.00	.00	.00
9.6500	.00	.00	.00	.00	.00
9.9000	.00	.00	.00	.00	.00
10.1500	.00	.00	.00	.00	.00
10.4000	.00	.00	.00	.00	.00
10.6500	.00	.00	.00	.00	.00
10.9000	.00	.00	.00	.00	.00
11.1500	.00	.00	.00	.00	.00
11.4000	.00	.00	.00	.00	.00
11.6500	.00	.00	.00	.00	.00
11.9000	.00	.00	.00	.00	.00
12.1500	.00	.00	.00	.00	.00
12.4000	.00	.00	.00	.00	.00
12.6500	.00	.00	.00	.00	.00
12.9000	.00	.00	.00	.00	.00
13.1500	.00	.00	.00	.00	.00
13.4000	.00	.00	.00	.00	.00
13.6500	.00	.00	.00	.00	.00
13.9000	.00	.00	.00	.00	.00
14.1500	.00	.00	.00	.00	.00
14.4000	.00	.00	.00	.00	.00
14.6500	.00	.00	.00	.00	.00
14.9000	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
15.1500	.00	.00	.00	.00	.00
15.4000	.00	.00	.00	.00	.00
15.6500	.00	.00	.00	.00	.00
15.9000	.00	.00	.00	.00	.00
16.1500	.00	.00	.00	.00	.00
16.4000	.00	.00	.00	.00	.00
16.6500	.00	.00	.00	.00	.00
16.9000	.00	.00	.00	.00	.00
17.1500	.00	.00	.00	.00	.00
17.4000	.00	.00	.00	.00	.00
17.6500	.00	.00	.00	.00	.00
17.9000	.00	.00	.00	.00	.00
18.1500	.00	.00	.00	.00	.00
18.4000	.00	.00	.00	.00	.00
18.6500	.00	.00	.00	.00	.00
18.9000	.00	.00	.00	.00	.00
19.1500	.00	.00	.00	.00	.00
19.4000	.00	.00	.00	.00	.00
19.6500	.00	.00	.00	.00	.00
19.9000	.00	.00	.00	.00	.00
20.1500	.00	.00	.00	.00	.00
20.4000	.00	.00	.00	.00	.00
20.6500	.00	.00	.00	.00	.00
20.9000	.00	.00	.00	.00	.00
21.1500	.00	.00	.00	.00	.00
21.4000	.00	.00	.00	.00	.00
21.6500	.00	.00	.00	.00	.00
21.9000	.00	.00	.00	.00	.00
22.1500	.00	.00	.00	.00	.00
22.4000	.00	.00	.00	.00	.00
22.6500	.00	.00	.00	.00	.00
22.9000	.00	.00	.00	.00	.00
23.1500	.00	.00	.00	.00	.00
23.4000	.00	.00	.00	.00	.00
23.6500	.00	.00	.00	.00	.00
23.9000	.00	.00	.00	.00	.00
24.1500	.00	.00	.00	.00	.00
24.4000	.00	.00	.00	.00	.00
24.6500	.00	.00	.00	.00	.00
24.9000	.00	.00	.00	.00	.00
25.1500	.00	.00	.00	.00	.00
25.4000	.00	.00	.00	.00	.00
25.6500	.00	.00	.00	.00	.00
25.9000	.00	.00	.00	.00	.00
26.1500	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
26.4000	.00	.00	.00	.00	.00
26.6500	.00	.00	.00	.00	.00
26.9000	.00	.00	.00	.00	.00
27.1500	.00	.00	.00	.00	.00
27.4000	.00	.00	.00	.00	.00
27.6500	.00	.00	.00	.00	.00
27.9000	.00	.00	.00	.00	.00
28.1500	.00	.00	.00	.00	.00
28.4000	.00	.00	.00	.00	.00
28.6500	.00	.00	.00	.00	.00
28.9000	.00	.00	.00	.00	.00
29.1500	.00	.00	.00	.00	.00
29.4000	.00	.00	.00	.00	.00
29.6500	.00	.00	.00	.00	.00
29.9000	.00	.00	.00	.00	.00
30.1500	.00	.00	.00	.00	.00
30.4000	.00	.00	.00	.00	.00
30.6500	.00	.00	.00	.00	.00
30.9000	.00	.00	.00	.00	.00
31.1500	.00	.00	.00	.00	.00
31.4000	.00	.00	.00	.00	.00
31.6500	.00	.00	.00	.00	.00
31.9000	.00	.00	.00	.00	.00
32.1500	.00	.00	.00	.00	.00
32.4000	.00	.00	.00	.00	.00
32.6500	.00	.00	.00	.00	.00
32.9000	.00	.00	.00	.00	.00
33.1500	.00	.00	.00	.00	.00
33.4000	.00	.00	.00	.00	.00
33.6500	.00	.00	.00	.00	.00
33.9000	.00	.00	.00	.00	.00
34.1500	.00	.00	.00	.00	.00
34.4000	.00	.00	.00	.00	.00
34.6500	.00	.00	.00	.00	.00
34.9000	.00	.00	.00	.00	.00
35.1500	.00	.00	.00	.00	.00
35.4000	.00	.00	.00	.00	.00
35.6500	.00	.00	.00	.00	.00
35.9000	.00	.00	.00	.00	.00
36.1500	.00	.00	.00	.00	.00
36.4000	.00	.00	.00	.00	.00
36.6500	.00	.00	.00	.00	.00
36.9000	.00	.00	.00	.00	.00
37.1500	.00	.00	.00	.00	.00
37.4000	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
37.6500	.00	.00	.00	.00	.00
37.9000	.00	.00	.00	.00	.00
38.1500	.00	.00	.00	.00	.00
38.4000	.00	.00	.00	.00	.00
38.6500	.00	.00	.00	.00	.00
38.9000	.00	.00	.00	.00	.00
39.1500	.00	.00	.00	.00	.00
39.4000	.00	.00	.00	.00	.00
39.6500	.00	.00	.00	.00	.00
39.9000	.00	.00	.00	.00	.00
40.1500	.00	.00	.00	.00	.00
40.4000	.00	.00	.00	.00	.00
40.6500	.00	.00	.00	.00	.00
40.9000	.00	.00	.00	.00	.00
41.1500	.00	.00	.00	.00	.00
41.4000	.00	.00	.00	.00	.00
41.6500	.00	.00	.00	.00	.00
41.9000	.00	.00	.00	.00	.00
42.1500	.00	.00	.00	.00	.00
42.4000	.00	.00	.00	.00	.00
42.6500	.00	.00	.00	.00	.00
42.9000	.00	.00	.00	.00	.00
43.1500	.00	.00	.00	.00	.00
43.4000	.00	.00	.00	.00	.00
43.6500	.00	.00	.00	.00	.00
43.9000	.00	.00	.00	.00	.00
44.1500	.00	.00	.00	.00	.00
44.4000	.00	.00	.00	.00	.00
44.6500	.00	.00	.00	.00	.00
44.9000	.00	.00	.00	.00	.00
45.1500	.00	.00			

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 1A OUT
HYG Tag = 100

Peak Discharge = .57 cfs
Time to Peak = 16.3000 hrs
HYG Volume = 8517 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
4.8500	.00	.00	.00	.00	.00
5.1000	.00	.00	.00	.00	.00
5.3500	.00	.00	.00	.00	.00
5.6000	.00	.00	.00	.00	.00
5.8500	.00	.00	.00	.00	.00
6.1000	.00	.00	.00	.00	.00
6.3500	.00	.00	.00	.00	.00
6.6000	.00	.00	.00	.00	.00
6.8500	.00	.00	.00	.00	.00
7.1000	.00	.00	.00	.00	.00
7.3500	.00	.00	.00	.00	.00
7.6000	.00	.00	.00	.00	.00
7.8500	.00	.00	.00	.00	.00
8.1000	.00	.00	.00	.00	.00
8.3500	.00	.00	.00	.00	.00
8.6000	.00	.00	.00	.00	.00
8.8500	.00	.00	.00	.00	.00
9.1000	.00	.00	.00	.00	.00
9.3500	.00	.00	.00	.00	.00
9.6000	.00	.00	.00	.00	.00
9.8500	.00	.00	.00	.00	.00
10.1000	.00	.00	.00	.00	.00
10.3500	.00	.00	.00	.00	.00
10.6000	.00	.00	.00	.00	.00
10.8500	.00	.00	.00	.00	.00
11.1000	.00	.00	.00	.00	.00
11.3500	.00	.00	.00	.00	.00
11.6000	.00	.00	.00	.00	.00
11.8500	.00	.00	.00	.00	.00
12.1000	.00	.00	.00	.00	.00
12.3500	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
12.6000	.00	.00	.00	.00	.00
12.8500	.00	.00	.00	.00	.00
13.1000	.00	.00	.00	.00	.00
13.3500	.00	.00	.00	.00	.00
13.6000	.00	.00	.00	.00	.00
13.8500	.00	.00	.00	.00	.00
14.1000	.00	.00	.00	.00	.00
14.3500	.00	.00	.00	.00	.00
14.6000	.00	.00	.00	.00	.00
14.8500	.00	.02	.06	.10	.14
15.1000	.17	.21	.24	.27	.29
15.3500	.32	.34	.36	.38	.40
15.6000	.42	.43	.45	.47	.49
15.8500	.51	.52	.54	.55	.56
16.1000	.56	.57	.57	.57	.57
16.3500	.57	.57	.57	.57	.57
16.6000	.57	.56	.56	.56	.55
16.8500	.55	.54	.54	.53	.52
17.1000	.52	.51	.50	.50	.49
17.3500	.48	.47	.47	.46	.45
17.6000	.45	.44	.44	.43	.43
17.8500	.42	.42	.41	.41	.40
18.1000	.39	.39	.38	.38	.37
18.3500	.36	.36	.35	.35	.34
18.6000	.34	.33	.33	.32	.32
18.8500	.31	.31	.30	.30	.29
19.1000	.29	.28	.28	.27	.27
19.3500	.26	.26	.26	.25	.25
19.6000	.24	.24	.24	.23	.23
19.8500	.22	.22	.22	.21	.21
20.1000	.20	.20	.20	.19	.19
20.3500	.19	.18	.18	.18	.17
20.6000	.17	.17	.16	.16	.16
20.8500	.15	.15	.15	.14	.14
21.1000	.14	.14	.13	.13	.13
21.3500	.12	.12	.12	.11	.11
21.6000	.11	.11	.10	.10	.10
21.8500	.10	.09	.09	.09	.09
22.1000	.08	.08	.08	.07	.07
22.3500	.07	.07	.06	.06	.06
22.6000	.06	.05	.05	.05	.05
22.8500	.04	.04	.04	.04	.04
23.1000	.03	.03	.03	.03	.02
23.3500	.02	.02	.02	.01	.01
23.6000	.01	.01	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
23.8500	.00	.00	.00	.00	.00
24.1000	.00	.00	.00	.00	.00
24.3500	.00	.00	.00	.00	.00
24.6000	.00	.00	.00	.00	.00
24.8500	.00	.00	.00	.00	.00
25.1000	.00	.00	.00	.00	.00
25.3500	.00	.00	.00	.00	.00
25.6000	.00	.00	.00	.00	.00
25.8500	.00	.00	.00	.00	.00
26.1000	.00	.00	.00	.00	.00
26.3500	.00	.00	.00	.00	.00
26.6000	.00	.00	.00	.00	.00
26.8500	.00	.00	.00	.00	.00
27.1000	.00	.00	.00	.00	.00
27.3500	.00	.00	.00	.00	.00
27.6000	.00	.00	.00	.00	.00
27.8500	.00	.00	.00	.00	.00
28.1000	.00	.00	.00	.00	.00
28.3500	.00	.00	.00	.00	.00
28.6000	.00	.00	.00	.00	.00
28.8500	.00	.00	.00	.00	.00
29.1000	.00	.00	.00	.00	.00
29.3500	.00	.00	.00	.00	.00
29.6000	.00	.00	.00	.00	.00
29.8500	.00	.00	.00	.00	.00
30.1000	.00	.00	.00	.00	.00
30.3500	.00	.00	.00	.00	.00
30.6000	.00	.00	.00	.00	.00
30.8500	.00	.00	.00	.00	.00
31.1000	.00	.00	.00	.00	.00
31.3500	.00	.00	.00	.00	.00
31.6000	.00	.00	.00	.00	.00
31.8500	.00	.00	.00	.00	.00
32.1000	.00	.00	.00	.00	.00
32.3500	.00	.00	.00	.00	.00
32.6000	.00	.00	.00	.00	.00
32.8500	.00	.00	.00	.00	.00
33.1000	.00	.00	.00	.00	.00
33.3500	.00	.00	.00	.00	.00
33.6000	.00	.00	.00	.00	.00
33.8500	.00	.00	.00	.00	.00
34.1000	.00	.00	.00	.00	.00
34.3500	.00	.00	.00	.00	.00
34.6000	.00	.00	.00	.00	.00
34.8500	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
35.1000	.00	.00	.00	.00	.00
35.3500	.00	.00	.00	.00	.00
35.6000	.00	.00	.00	.00	.00
35.8500	.00	.00	.00	.00	.00
36.1000	.00	.00	.00	.00	.00
36.3500	.00	.00	.00	.00	.00
36.6000	.00	.00	.00	.00	.00
36.8500	.00	.00	.00	.00	.00
37.1000	.00	.00	.00	.00	.00
37.3500	.00	.00	.00	.00	.00
37.6000	.00	.00	.00	.00	.00
37.8500	.00	.00	.00	.00	.00
38.1000	.00	.00	.00	.00	.00
38.3500	.00	.00	.00	.00	.00
38.6000	.00	.00	.00	.00	.00
38.8500	.00	.00	.00	.00	.00
39.1000	.00	.00	.00	.00	.00
39.3500	.00	.00	.00	.00	.00
39.6000	.00	.00	.00	.00	.00
39.8500	.00	.00	.00	.00	.00
40.1000	.00	.00	.00	.00	.00
40.3500	.00	.00	.00	.00	.00
40.6000	.00	.00	.00	.00	.00
40.8500	.00	.00	.00	.00	.00
41.1000	.00	.00	.00	.00	.00
41.3500	.00	.00	.00	.00	.00
41.6000	.00	.00	.00	.00	.00
41.8500	.00	.00	.00	.00	.00
42.1000	.00	.00	.00	.00	.00
42.3500	.00	.00	.00	.00	.00
42.6000	.00	.00	.00	.00	.00
42.8500	.00	.00	.00	.00	.00
43.1000	.00	.00	.00	.00	.00
43.3500	.00	.00	.00	.00	.00
43.6000	.00	.00	.00	.00	.00
43.8500	.00	.00	.00	.00	.00
44.1000	.00	.00	.00	.00	.00
44.3500	.00	.00	.00	.00	.00
44.6000	.00	.00	.00	.00	.00
44.8500	.00	.00	.00	.00	.00
45.1000	.00	.00	.00	.00	.00
45.3500	.00	.00	.00	.00	.00
45.6000	.00	.00	.00	.00	.00
45.8500	.00	.00	.00	.00	.00
46.1000	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
46.3500	.00	.00	.00	.00	.00
46.6000	.00	.00	.00	.00	.00
46.8500	.00	.00	.00	.00	.00
47.1000	.00	.00	.00	.00	.00
47.3500	.00	.00	.00	.00	.00
47.6000	.00	.00	.00	.00	.00
47.8500	.00	.00	.00	.00	.00
48.1000	.00	.00	.00	.00	.00
48.3500	.00	.00	.00	.00	.00
48.6000	.00	.00	.00	.00	.00
48.8500	.00	.00	.00	.00	.00
49.1000	.00	.00	.00	.00	.00
49.3500	.00	.00	.00	.00	.00
49.6000	.00	.00	.00	.00	.00
49.8500	.00	.00	.00	.00	.00
50.1000	.00	.00	.00	.00	.00
50.3500	.00	.00	.00	.00	.00
50.6000	.00	.00	.00	.00	.00
50.8500	.00	.00	.00	.00	.00
51.1000	.00	.00	.00	.00	.00
51.3500	.00	.00	.00	.00	.00
51.6000	.00	.00	.00	.00	.00
51.8500	.00	.00	.00	.00	.00
52.1000	.00	.00	.00	.00	.00
52.3500	.00	.00	.00	.00	.00
52.6000	.00	.00	.00	.00	.00
52.8500	.00	.00	.00	.00	.00
53.1000	.00	.00	.00	.00	.00
53.3500	.00	.00	.00	.00	.00
53.6000	.00	.00	.00	.00	.00
53.8500	.00	.00	.00	.00	.00
54.1000	.00	.00	.00	.00	.00
54.3500	.00	.00	.00	.00	.00
54.6000	.00	.00	.00	.00	.00
54.8500	.00	.00	.00	.00	.00
55.1000	.00	.00	.00	.00	.00
55.3500	.00	.00	.00	.00	.00
55.6000	.00	.00	.00	.00	.00
55.8500	.00	.00	.00	.00	.00
56.1000	.00	.00	.00	.00	.00
56.3500	.00	.00	.00	.00	.00
56.6000	.00	.00	.00	.00	.00
56.8500	.00	.00	.00	.00	.00
57.1000	.00	.00	.00	.00	.00
57.3500	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
57.6000	.00	.00	.00	.00	.00
57.8500	.00	.00	.00	.00	.00
58.1000	.00	.00	.00	.00	.00
58.3500	.00	.00	.00	.00	.00
58.6000	.00	.00	.00	.00	.00
58.8500	.00	.00	.00	.00	.00
59.1000	.00	.00	.00	.00	.00
59.3500	.00	.00	.00	.00	.00
59.6000	.00	.00	.00	.00	.00
59.8500	.00	.00	.00	.00	.00
60.1000	.00	.00	.00	.00	.00
60.3500	.00	.00	.00	.00	.00
60.6000	.00	.00	.00	.00	.00
60.8500	.00	.00	.00	.00	.00
61.1000	.00	.00	.00	.00	.00
61.3500	.00	.00	.00	.00	.00
61.6000	.00	.00	.00	.00	.00
61.8500	.00	.00	.00	.00	.00
62.1000	.00	.00	.00	.00	.00
62.3500	.00	.00	.00	.00	.00
62.6000	.00	.00	.00	.00	.00
62.8500	.00	.00	.00	.00	.00
63.1000	.00	.00	.00	.00	.00
63.3500	.00	.00	.00	.00	.00
63.6000	.00	.00	.00	.00	.00
63.8500	.00	.00	.00	.00	.00
64.1000	.00	.00	.00	.00	.00
64.3500	.00	.00	.00	.00	.00
64.6000	.00	.00	.00	.00	.00
64.8500	.00	.00	.00	.00	.00
65.1000	.00	.00	.00	.00	.00
65.3500	.00	.00	.00	.00	.00
65.6000	.00	.00	.00	.00	.00
65.8500	.00	.00	.00	.00	.00
66.1000	.00	.00	.00	.00	.00
66.3500	.00	.00	.00	.00	.00
66.6000	.00	.00	.00	.00	.00
66.8500	.00	.00	.00	.00	.00
67.1000	.00	.00	.00	.00	.00
67.3500	.00	.00	.00	.00	.00
67.6000	.00	.00	.00	.00	.00
67.8500	.00	.00	.00	.00	.00
68.1000	.00	.00	.00	.00	.00
68.3500	.00	.00	.00	.00	.00
68.6000	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
68.8500	.00	.00	.00	.00	.00
69.1000	.00	.00	.00	.00	.00
69.3500	.00	.00	.00	.00	.00
69.6000	.00	.00	.00	.00	.00
69.8500	.00	.00	.00	.00	.00
70.1000	.00	.00	.00	.00	.00
70.3500	.00	.00	.00	.00	.00
70.6000	.00	.00	.00	.00	.00
70.8500	.00	.00	.00	.00	.00
71.1000	.00	.00	.00	.00	.00
71.3500	.00	.00	.00	.00	.00
71.6000	.00	.00	.00	.00	.00
71.8500	.00	.00	.00	.00	.00
72.1000	.00	.00	.00	.00	.00
72.3500	.00	.00	.00	.00	.00
72.6000	.00	.00	.00	.00	.00
72.8500	.00	.00	.00	.00	.00
73.1000	.00	.00	.00	.00	.00
73.3500	.00	.00	.00	.00	.00
73.6000	.00	.00	.00	.00	.00
73.8500	.00	.00	.00	.00	.00
74.1000	.00	.00	.00	.00	.00
74.3500	.00	.00	.00	.00	.00
74.6000	.00	.00	.00	.00	.00
74.8500	.00	.00	.00	.00	.00
75.1000	.00	.00	.00	.00	.00
75.3500	.00	.00	.00	.00	.00
75.6000	.00	.00	.00	.00	.00
75.8500	.00	.00	.00	.00	.00
76.1000	.00	.00	.00	.00	.00
76.3500	.00	.00	.00	.00	.00
76.6000	.00	.00	.00	.00	.00
76.8500	.00	.00	.00	.00	.00
77.1000	.00	.00	.00	.00	.00
77.3500	.00	.00	.00	.00	.00
77.6000	.00	.00	.00	.00	.00
77.8500	.00	.00	.00	.00	.00
78.1000	.00	.00	.00	.00	.00
78.3500	.00	.00	.00	.00	.00
78.6000	.00	.00	.00	.00	

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - BASIN 1B IN 1
Outflow HYG file = NONE STORED - BASIN 1B OUT 1

Pond Node Data = BASIN 1B
Pond Volume Data = BASIN 1B
Pond Outlet Data = BASIN 1B

Infiltration = .37 cfs

INITIAL CONDITIONS

Starting WS Elev = 344.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
344.00	.00	0	8256	.00	.00	.00
344.10	.00	834	8426	.37	.37	9.64
344.20	.00	1685	8597	.37	.37	19.10
344.30	.00	2553	8770	.37	.37	28.74
344.40	.00	3439	8945	.37	.37	38.58
344.50	.00	4343	9122	.37	.37	48.62
344.60	.00	5264	9300	.37	.37	58.86
344.70	.02	6203	9480	.37	.39	69.32
344.80	.09	7160	9662	.37	.46	80.01
344.90	.18	8135	9845	.37	.55	90.94
345.00	.30	9129	10031	.37	.67	102.10
345.10	.45	10141	10218	.37	.82	113.50
345.20	.63	11173	10406	.37	1.00	125.14
345.30	.84	12223	10597	.37	1.21	137.01
345.40	1.07	13292	10789	.37	1.44	149.12
345.50	1.34	14381	10983	.37	1.71	161.49
345.60	1.68	15489	11178	.37	2.05	174.14
345.70	1.87	16616	11376	.37	2.24	186.87
345.80	2.06	17764	11575	.37	2.43	199.81
345.90	2.24	18931	11775	.37	2.61	212.96

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - BASIN 1B IN 1
Outflow HYG file = NONE STORED - BASIN 1B OUT 1

Pond Node Data = BASIN 1B
Pond Volume Data = BASIN 1B
Pond Outlet Data = BASIN 1B

Infiltration = .37 cfs

INITIAL CONDITIONS

Starting WS Elev = 344.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
346.00	2.42	20119	11978	.37	2.79	226.34
346.10	2.59	21328	12200	.37	2.96	239.94
346.20	2.76	22559	12423	.37	3.13	253.79
346.30	2.92	23812	12649	.37	3.29	267.87
346.40	3.08	25089	12877	.37	3.45	282.21
346.50	3.23	26388	13107	.37	3.60	296.80
346.60	3.37	27710	13338	.37	3.74	311.64
346.70	3.52	29056	13572	.37	3.89	326.73
346.80	3.66	30425	13808	.37	4.03	342.08
346.90	3.79	31817	14046	.37	4.16	357.69
347.00	3.93	33234	14286	.37	4.30	373.56
347.10	4.05	34675	14528	.37	4.42	389.70
347.20	4.18	36140	14772	.37	4.56	406.11
347.30	4.30	37629	15018	.37	4.67	422.77
347.40	4.43	39143	15266	.37	4.80	439.72
347.50	4.55	40682	15516	.37	4.92	456.94
347.60	4.66	42247	15768	.37	5.03	474.44
347.70	4.78	43836	16022	.37	5.15	492.22
347.75	4.83	44640	16150	.37	5.20	501.21
347.80	5.34	45451	16278	.37	5.71	510.72

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - BASIN 1B IN 1
Outflow HYG file = NONE STORED - BASIN 1B OUT 1

Pond Node Data = BASIN 1B
Pond Volume Data = BASIN 1B
Pond Outlet Data = BASIN 1B

Infiltration = .37 cfs

INITIAL CONDITIONS

Starting WS Elev = 344.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
347.90	7.19	47092	16537	.37	7.57	530.81
348.00	9.20	48758	16797	.37	9.57	551.33

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 1B OUT
HYG Tag = 1

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.2500	.00	.00	.00	.00	.00
11.5000	.00	.00	.00	.00	.00
11.7500	.00	.00	.00	.00	.00
12.0000	.00	.00	.00	.00	.00
12.2500	.00	.00	.00	.00	.00
12.5000	.00	.00	.00	.00	.00
12.7500	.00	.00	.00	.00	.00
13.0000	.00	.00	.00	.00	.00
13.2500	.00	.00	.00	.00	.00
13.5000	.00	.00	.00	.00	.00
13.7500	.00	.00	.00	.00	.00
14.0000	.00	.00	.00	.00	.00
14.2500	.00	.00	.00	.00	.00
14.5000	.00	.00	.00	.00	.00
14.7500	.00	.00	.00	.00	.00
15.0000	.00	.00	.00	.00	.00
15.2500	.00	.00	.00	.00	.00
15.5000	.00	.00	.00	.00	.00
15.7500	.00	.00	.00	.00	.00
16.0000	.00	.00	.00	.00	.00
16.2500	.00	.00	.00	.00	.00
16.5000	.00	.00	.00	.00	.00
16.7500	.00	.00	.00	.00	.00
17.0000	.00	.00	.00	.00	.00
17.2500	.00	.00	.00	.00	.00
17.5000	.00	.00	.00	.00	.00
17.7500	.00	.00	.00	.00	.00
18.0000	.00	.00	.00	.00	.00
18.2500	.00	.00	.00	.00	.00
18.5000	.00	.00	.00	.00	.00
18.7500	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
19.0000	.00	.00	.00	.00	.00
19.2500	.00	.00	.00	.00	.00
19.5000	.00	.00	.00	.00	.00
19.7500	.00	.00	.00	.00	.00
20.0000	.00	.00	.00	.00	.00
20.2500	.00	.00	.00	.00	.00
20.5000	.00	.00	.00	.00	.00
20.7500	.00	.00	.00	.00	.00
21.0000	.00	.00	.00	.00	.00
21.2500	.00	.00	.00	.00	.00
21.5000	.00	.00	.00	.00	.00
21.7500	.00	.00	.00	.00	.00
22.0000	.00	.00	.00	.00	.00
22.2500	.00	.00	.00	.00	.00
22.5000	.00	.00	.00	.00	.00
22.7500	.00	.00	.00	.00	.00
23.0000	.00	.00	.00	.00	.00
23.2500	.00	.00	.00	.00	.00
23.5000	.00	.00	.00	.00	.00
23.7500	.00	.00	.00	.00	.00
24.0000	.00	.00	.00	.00	.00
24.2500	.00	.00	.00	.00	.00
24.5000	.00	.00	.00	.00	.00
24.7500	.00	.00	.00	.00	.00
25.0000	.00	.00	.00	.00	.00
25.2500	.00	.00	.00	.00	.00
25.5000	.00	.00	.00	.00	.00
25.7500	.00	.00	.00	.00	

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 1B OUT
HYG Tag = 10

Peak Discharge = 1.00 cfs
Time to Peak = 12.7000 hrs
HYG Volume = 10966 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.0000	.00	.00	.00	.00	.00
9.2500	.00	.00	.00	.00	.00
9.5000	.00	.00	.00	.00	.00
9.7500	.00	.00	.00	.00	.00
10.0000	.00	.00	.00	.00	.00
10.2500	.00	.00	.00	.00	.00
10.5000	.00	.00	.00	.00	.00
10.7500	.00	.00	.00	.00	.00
11.0000	.00	.00	.00	.00	.00
11.2500	.00	.00	.00	.00	.00
11.5000	.00	.00	.00	.00	.00
11.7500	.00	.00	.00	.00	.00
12.0000	.00	.00	.06	.18	.33
12.2500	.47	.60	.71	.80	.88
12.5000	.94	.97	.99	1.00	1.00
12.7500	1.00	1.00	1.00	.99	.98
13.0000	.97	.96	.95	.94	.92
13.2500	.91	.90	.88	.87	.85
13.5000	.84	.83	.81	.80	.79
13.7500	.77	.76	.75	.73	.72
14.0000	.71	.69	.68	.67	.65
14.2500	.64	.63	.62	.61	.60
14.5000	.58	.57	.56	.55	.54
14.7500	.53	.52	.51	.50	.49
15.0000	.48	.47	.46	.45	.44
15.2500	.43	.43	.42	.41	.40
15.5000	.39	.39	.38	.37	.36
15.7500	.35	.35	.34	.33	.32
16.0000	.31	.31	.30	.29	.29
16.2500	.28	.27	.27	.26	.25
16.5000	.25	.24	.24	.23	.22

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
16.7500	.22	.21	.21	.20	.20
17.0000	.19	.19	.18	.18	.17
17.2500	.17	.16	.16	.15	.15
17.5000	.15	.14	.14	.13	.13
17.7500	.13	.12	.12	.11	.11
18.0000	.10	.10	.10	.09	.09
18.2500	.09	.08	.08	.08	.07
18.5000	.07	.07	.07	.06	.06
18.7500	.06	.06	.05	.05	.05
19.0000	.05	.04	.04	.04	.04
19.2500	.03	.03	.03	.03	.02
19.5000	.02	.02	.02	.02	.02
19.7500	.02	.02	.02	.02	.02
20.0000	.01	.01	.01	.01	.01
20.2500	.01	.01	.01	.01	.01
20.5000	.01	.00	.00	.00	.00
20.7500	.00	.00	.00	.00	.00
21.0000	.00	.00	.00	.00	.00
21.2500	.00	.00	.00	.00	.00
21.5000	.00	.00	.00	.00	.00
21.7500	.00	.00	.00	.00	.00
22.0000	.00	.00	.00	.00	.00
22.2500	.00	.00	.00	.00	.00
22.5000	.00	.00	.00	.00	.00
22.7500	.00	.00	.00	.00	.00
23.0000	.00	.00	.00	.00	.00
23.2500	.00	.00	.00	.00	.00
23.5000	.00	.00	.00	.00	.00
23.7500	.00	.00	.00	.00	.00
24.0000	.00	.00	.00	.00	.00
24.2500	.00	.00	.00	.00	.00
24.5000	.00	.00	.00	.00	.00
24.7500	.00	.00	.00	.00	.00
25.0000	.00	.00	.00	.00	.00
25.2500	.00	.00	.00	.00	.00
25.5000	.00	.00	.00	.00	.00
25.7500	.00	.00	.00	.00	.00
26.0000	.00	.00	.00	.00	.00
26.2500	.00	.00	.00	.00	.00
26.5000	.00	.00	.00	.00	.00
26.7500	.00	.00	.00	.00	.00
27.0000	.00	.00	.00	.00	.00
27.2500	.00	.00	.00	.00	.00
27.5000	.00	.00	.00	.00	.00
27.7500	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
28.0000	.00	.00	.00	.00	.00
28.2500	.00	.00	.00	.00	.00
28.5000	.00				

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 1B OUT
HYG Tag = 100

Peak Discharge = 3.93 cfs
Time to Peak = 12.5500 hrs
HYG Volume = 59248 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
6.5000	.00	.00	.00	.00	.00
6.7500	.00	.00	.00	.00	.00
7.0000	.00	.00	.00	.00	.00
7.2500	.00	.00	.00	.00	.00
7.5000	.00	.00	.00	.00	.00
7.7500	.00	.00	.00	.00	.00
8.0000	.00	.00	.00	.00	.00
8.2500	.00	.00	.00	.00	.00
8.5000	.00	.00	.00	.00	.00
8.7500	.00	.00	.00	.00	.00
9.0000	.00	.00	.00	.00	.00
9.2500	.00	.00	.00	.00	.00
9.5000	.00	.00	.00	.00	.00
9.7500	.00	.00	.00	.00	.00
10.0000	.00	.00	.00	.00	.00
10.2500	.00	.00	.00	.00	.00
10.5000	.00	.00	.00	.00	.00
10.7500	.00	.00	.00	.00	.00
11.0000	.00	.00	.00	.00	.00
11.2500	.00	.00	.00	.00	.00
11.5000	.00	.00	.01	.03	.08
11.7500	.15	.26	.43	.66	1.00
12.0000	1.62	2.14	2.62	3.02	3.31
12.2500	3.51	3.65	3.75	3.83	3.88
12.5000	3.92	3.93	3.93	3.92	3.90
12.7500	3.88	3.86	3.83	3.81	3.78
13.0000	3.75	3.72	3.69	3.65	3.62
13.2500	3.58	3.55	3.51	3.47	3.44
13.5000	3.40	3.36	3.32	3.29	3.25
13.7500	3.21	3.17	3.13	3.09	3.05
14.0000	3.01	2.97	2.93	2.88	2.84

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
14.2500	2.80	2.76	2.72	2.68	2.64
14.5000	2.60	2.55	2.51	2.47	2.43
14.7500	2.39	2.35	2.31	2.27	2.23
15.0000	2.20	2.16	2.13	2.09	2.06
15.2500	2.03	2.00	1.97	1.94	1.91
15.5000	1.88	1.86	1.83	1.80	1.78
15.7500	1.76	1.73	1.71	1.69	1.66
16.0000	1.62	1.59	1.56	1.53	1.50
16.2500	1.47	1.44	1.41	1.39	1.37
16.5000	1.34	1.32	1.30	1.29	1.27
16.7500	1.25	1.24	1.22	1.20	1.19
17.0000	1.17	1.15	1.14	1.12	1.11
17.2500	1.09	1.07	1.06	1.05	1.03
17.5000	1.02	1.00	.99	.98	.96
17.7500	.95	.94	.92	.91	.90
18.0000	.88	.87	.86	.84	.83
18.2500	.82	.81	.80	.78	.77
18.5000	.76	.75	.74	.73	.72
18.7500	.71	.70	.69	.68	.67
19.0000	.66	.65	.64	.63	.62
19.2500	.61	.60	.59	.58	.58
19.5000	.57	.56	.55	.54	.53
19.7500	.53	.52	.51	.50	.49
20.0000	.49	.48	.47	.46	.46
20.2500	.45	.44	.44	.43	.42
20.5000	.42	.41	.41	.40	.39
20.7500	.39	.38	.38	.37	.36
21.0000	.36	.35	.35	.34	.34
21.2500	.33	.32	.32	.31	.31
21.5000	.30	.30	.29	.29	.28
21.7500	.28	.27	.27	.27	.26
22.0000	.26	.25	.25	.24	.24
22.2500	.23	.23	.23	.22	.22
22.5000	.21	.21	.20	.20	.19
22.7500	.19	.19	.18	.18	.17
23.0000	.17	.17	.16	.16	.16
23.2500	.15	.15	.15	.14	.14
23.5000	.14	.13	.13	.12	.12
23.7500	.12	.11	.11	.11	.10
24.0000	.10	.09	.09	.08	.08
24.2500	.07	.07	.06	.06	.05
24.5000	.05	.04	.04	.03	.03
24.7500	.02	.02	.02	.02	.02
25.0000	.01	.01	.01	.01	.01
25.2500	.01	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
25.5000	.00	.00	.00	.00	.00
25.7500	.00	.00	.00	.00	.00
26.0000	.00	.00	.00	.00	.00
26.2500	.00	.00	.00	.00	.00
26.5000	.00	.00	.00	.00	.00
26.7500	.00	.00	.00	.00	.00
27.0000	.00	.00	.00	.00	.00
27.2500	.00	.00	.00	.00	.00
27.5000	.00	.00	.00	.00	.00
27.7500	.00	.00	.00	.00	.00
28.0000	.00	.00	.00	.00	.00
28.2500	.00	.00	.00	.00	.00
28.5000	.00	.00	.00	.00	.00
28.7500	.00	.00	.00	.00	.00
29.0000	.00	.00	.00	.00	.00
29.2500	.00	.00	.00	.00	.00
29.5000	.00	.00	.00	.00	.00
29.7500	.00	.00	.00	.00	.00
30.0000	.00	.00	.00	.00	.00
30.2500	.00	.00	.00	.00	.00
30.5000	.00	.00	.00	.00	.00
30.7500	.00	.00	.00	.00	.00
31.0000	.00	.00	.00	.00	.00
31.2500	.00	.00	.00	.00	.00
31.5000	.00	.00	.00	.00	.00
31.7500	.00	.00			

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - BASIN 2B IN 1
Outflow HYG file = NONE STORED - BASIN 2B OUT 1

Pond Node Data = BASIN 2B
Pond Volume Data = BASIN 2B
Pond Outlet Data = OCS 2B

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 300.50 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
300.50	.00	0	65	.00	.00	.00
300.60	.00	7	80	.00	.00	.08
300.70	.00	16	97	.00	.00	.18
300.80	.00	27	116	.00	.00	.30
300.90	.00	39	136	.00	.00	.44
301.00	.00	54	158	.00	.00	.60
301.10	.00	71	181	.00	.00	.79
301.20	.00	90	206	.00	.00	1.00
301.30	.00	112	233	.00	.00	1.25
301.40	.00	137	261	.00	.00	1.52
301.50	.00	165	291	.00	.00	1.83
301.60	.00	195	322	.00	.00	2.17
301.70	.00	229	354	.00	.00	2.54
301.80	.00	266	387	.00	.00	2.95
301.90	.00	306	422	.00	.00	3.40
302.00	.00	350	459	.00	.00	3.89
302.10	.00	398	497	.00	.00	4.42
302.20	.00	450	537	.00	.00	5.00
302.30	.00	506	578	.00	.00	5.62
302.40	.00	566	621	.00	.00	6.28

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - BASIN 2B IN 1
Outflow HYG file = NONE STORED - BASIN 2B OUT 1

Pond Node Data = BASIN 2B
Pond Volume Data = BASIN 2B
Pond Outlet Data = OCS 2B

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 300.50 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
302.50	.00	630	665	.00	.00	7.00
302.60	.00	707	886	.00	.00	7.86
302.70	.00	808	1138	.00	.00	8.98
302.80	.00	936	1422	.00	.00	10.40
302.90	.00	1093	1737	.00	.00	12.15
303.00	.00	1284	2084	.00	.00	14.27
303.10	.00	1499	2203	.00	.00	16.65
303.20	.00	1725	2326	.00	.00	19.17
303.30	.00	1964	2451	.00	.00	21.82
303.40	.00	2215	2581	.00	.00	24.61
303.50	.00	2480	2713	.00	.00	27.56
303.60	.00	2758	2849	.00	.00	30.65
303.70	.00	3050	2988	.00	.00	33.89
303.80	.00	3356	3130	.00	.00	37.29
303.90	.00	3676	3276	.00	.00	40.84
304.00	.00	4011	3425	.00	.00	44.57
304.10	.00	4360	3555	.00	.00	48.45
304.20	.00	4722	3687	.00	.00	52.47
304.30	.00	5098	3822	.00	.00	56.64
304.40	.00	5487	3959	.00	.00	60.96

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - BASIN 2B IN 1
Outflow HYG file = NONE STORED - BASIN 2B OUT 1

Pond Node Data = BASIN 2B
Pond Volume Data = BASIN 2B
Pond Outlet Data = OCS 2B

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 300.50 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
304.50	.00	5890	4099	.00	.00	65.44
304.60	.00	6307	4241	.00	.00	70.07
304.70	.02	6738	4386	.00	.02	74.88
304.76	.04	7004	4473	.00	.04	77.86
304.80	.06	7184	4532	.00	.06	79.88
304.90	.13	7644	4682	.00	.13	85.07
305.00	.20	8120	4834	.00	.20	90.42
305.10	.25	8611	4988	.00	.25	95.93
305.15	.28	8862	5066	.00	.28	98.75
305.20	.89	9118	5144	.00	.89	102.20
305.30	3.42	9640	5303	.00	3.42	110.54
305.40	7.03	10178	5465	.00	7.03	120.12
305.50	11.42	10733	5629	.00	11.42	130.68
305.60	16.50	11304	5795	.00	16.50	142.10
305.70	22.18	11892	5963	.00	22.18	154.31
305.80	25.98	12497	6135	.00	25.98	164.84
305.90	26.52	13119	6308	.00	26.52	172.29
306.00	27.03	13759	6484	.00	27.03	179.90
306.10	27.54	14414	6629	.00	27.54	187.70
306.20	28.04	15085	6775	.00	28.04	195.64

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - BASIN 2B IN 1
Outflow HYG file = NONE STORED - BASIN 2B OUT 1

Pond Node Data = BASIN 2B
Pond Volume Data = BASIN 2B
Pond Outlet Data = OCS 2B

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 300.50 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
306.30	28.53	15769	6923	.00	28.53	203.75
306.40	29.01	16469	7072	.00	29.01	212.00
306.50	29.48	17184	7223	.00	29.48	220.41
306.60	29.95	17914	7376	.00	29.95	228.99
306.70	30.40	18659	7530	.00	30.40	237.73
306.80	30.86	19420	7686	.00	30.86	246.63
306.90	31.30	20196	7843	.00	31.30	255.71
307.00	31.74	20989	8002	.00	31.74	264.95
307.10	32.18	21797	8163	.00	32.18	274.36
307.20	32.60	22621	8325	.00	32.60	283.94
307.30	33.02	23462	8489	.00	33.02	293.71
307.40	33.44	24319	8654	.00	33.44	303.65
307.50	33.84	25193	8821	.00	33.84	313.76
307.60	34.25	26083	8990	.00	34.25	324.07
307.70	34.65	26991	9160	.00	34.65	334.55
307.80	35.05	27915	9332	.00	35.05	345.22
307.90	35.44	28857	9505	.00	35.44	356.08
308.00	35.83	29816	9680	.00	35.83	367.13

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 2B OUT
HYG Tag = 1

Peak Discharge = .15 cfs
Time to Peak = 16.6000 hrs
HYG Volume = 4852 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.6000	.00	.00	.00	.00	.00
11.8500	.00	.00	.00	.00	.00
12.1000	.00	.00	.00	.00	.00
12.3500	.00	.00	.00	.00	.00
12.6000	.00	.00	.00	.00	.00
12.8500	.00	.00	.00	.00	.00
13.1000	.00	.00	.00	.00	.00
13.3500	.00	.00	.00	.00	.00
13.6000	.00	.00	.00	.00	.00
13.8500	.00	.00	.00	.00	.00
14.1000	.01	.01	.01	.01	.01
14.3500	.02	.02	.02	.03	.03
14.6000	.04	.04	.04	.05	.05
14.8500	.06	.06	.07	.07	.08
15.1000	.08	.09	.09	.10	.10
15.3500	.10	.11	.11	.11	.12
15.6000	.12	.12	.12	.13	.13
15.8500	.13	.13	.13	.13	.14
16.1000	.14	.14	.14	.14	.14
16.3500	.14	.14	.14	.14	.14
16.6000	.15	.15	.15	.15	.15
16.8500	.15	.15	.15	.15	.15
17.1000	.15	.15	.15	.15	.15
17.3500	.15	.15	.15	.15	.15
17.6000	.15	.15	.14	.14	.14
17.8500	.14	.14	.14	.14	.14
18.1000	.14	.14	.14	.14	.14
18.3500	.14	.14	.14	.13	.13
18.6000	.13	.13	.13	.13	.13
18.8500	.13	.13	.13	.13	.13
19.1000	.13	.13	.13	.13	.12

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
19.3500	.12	.12	.12	.12	.12
19.6000	.12	.12	.12	.12	.12
19.8500	.12	.12	.12	.12	.12
20.1000	.12	.12	.11	.11	.11
20.3500	.11	.11	.11	.11	.11
20.6000	.11	.11	.11	.11	.11
20.8500	.11	.11	.11	.11	.11
21.1000	.11	.11	.10	.10	.10
21.3500	.10	.10	.10	.10	.10
21.6000	.10	.10	.10	.10	.10
21.8500	.10	.10	.10	.10	.10
22.1000	.10	.10	.10	.10	.09
22.3500	.09	.09	.09	.09	.09
22.6000	.09	.09	.09	.09	.09
22.8500	.09	.09	.09	.09	.09
23.1000	.09	.09	.09	.09	.09
23.3500	.09	.09	.09	.08	.08
23.6000	.08	.08	.08	.08	.08
23.8500	.08	.08	.08	.08	.08
24.1000	.08	.08	.08	.07	.07
24.3500	.07	.07	.07	.06	.06
24.6000	.06	.06	.06	.06	.06
24.8500	.05	.05	.05	.05	.05
25.1000	.05	.05	.05	.05	.05
25.3500	.04	.04	.04	.04	.04
25.6000	.04	.04	.04	.04	.04
25.8500	.04	.04	.04	.04	.03
26.1000	.03	.03	.03	.03	.03
26.3500	.03	.03	.03	.03	.03
26.6000	.03	.03	.03	.03	.03
26.8500	.03	.03	.03	.03	.03
27.1000	.03	.02	.02	.02	.02
27.3500	.02	.02	.02	.02	.02
27.6000	.02	.02	.02	.02	.02
27.8500	.02	.02	.02	.02	.02
28.1000	.02	.02	.02	.02	.02
28.3500	.02	.02	.02	.02	.02
28.6000	.02	.02	.02	.02	.02
28.8500	.02	.02	.02	.02	.01
29.1000	.01	.01	.01	.01	.01
29.3500	.01	.01	.01	.01	.01
29.6000	.01	.01	.01	.01	.01
29.8500	.01	.01	.01	.01	.01
30.1000	.01	.01	.01	.01	.01
30.3500	.01	.01	.01	.01	.01

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
30.6000	.01	.01	.01	.01	.01
30.8500	.01	.01	.01	.01	.01
31.1000	.01	.01	.01	.01	.01
31.3500	.01	.01	.01	.01	.01
31.6000	.01	.01	.01	.01	.01
31.8500	.01	.01	.01	.01	.01
32.1000	.01	.01	.01	.01	.01
32.3500	.01	.01	.01	.01	.01
32.6000	.01	.01	.01	.01	.01
32.8500	.01	.01	.01	.01	.01
33.1000	.01	.01	.01	.01	.01
33.3500	.01	.01	.01	.01	.01
33.6000	.01	.01	.01	.01	.01
33.8500	.01	.01	.01	.01	.01
34.1000	.01	.01	.01	.01	.01
34.3500	.01	.01	.01	.01	.01
34.6000	.01	.01	.01	.01	.01
34.8500	.01	.01	.01	.01	.01
35.1000	.01	.01	.01	.01	.01
35.3500	.01	.01	.01	.01	.01
35.6000	.01	.01	.01	.01	.01
35.8500	.01	.01	.01	.01	.01
36.1000	.01	.01	.01	.01	.01
36.3500	.01	.01	.01	.01	.01
36.6000	.01	.01	.01	.01	.01
36.8500	.01	.01	.01	.01	.01
37.1000	.01	.01	.01	.01	.01
37.3500	.01	.01	.00	.00	.00
37.6000	.00	.00	.00	.00	.00
37.8500	.00	.00	.00	.00	.00
38.1000	.00	.00	.00	.00	.00
38.3500	.00	.00	.00	.00	.00
38.6000	.00	.00	.00	.00	.00
38.8500	.00	.00	.00	.00	.00
39.1000	.00	.00	.00	.00	.00
39.3500	.00	.00	.00	.00	.00
39.6000	.00	.00	.00	.00	.00
39.8500	.00	.00	.00	.00	.00
40.1000	.00	.00	.00	.00	.00
40.3500	.00	.00	.00	.00	.00
40.6000	.00	.00	.00	.00	.00
40.8500	.00	.00	.00	.00	.00
41.1000	.00	.00	.00	.00	.00
41.3500	.00				

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 2B OUT
HYG Tag = 10

Peak Discharge = 9.42 cfs
Time to Peak = 12.2000 hrs
HYG Volume = 34017 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.5500	.00	.00	.00	.00	.00
9.8000	.00	.00	.00	.00	.00
10.0500	.00	.00	.00	.00	.00
10.3000	.00	.00	.00	.00	.00
10.5500	.00	.00	.00	.00	.00
10.8000	.00	.00	.00	.00	.00
11.0500	.00	.00	.00	.00	.00
11.3000	.00	.00	.00	.00	.00
11.5500	.00	.00	.00	.00	.00
11.8000	.00	.00	.00	.00	.00
12.0500	.11	1.32	7.97	9.42	8.24
12.3000	7.00	6.17	5.43	4.73	4.04
12.5500	3.39	2.93	2.51	2.21	2.01
12.8000	1.87	1.77	1.68	1.61	1.53
13.0500	1.45	1.39	1.34	1.29	1.26
13.3000	1.24	1.22	1.20	1.18	1.16
13.5500	1.14	1.12	1.10	1.08	1.06
13.8000	1.05	1.03	1.01	.99	.97
14.0500	.95	.93	.91	.90	.89
14.3000	.88	.87	.86	.86	.85
14.5500	.84	.83	.82	.81	.80
14.8000	.79	.78	.77	.76	.75
15.0500	.74	.73	.72	.71	.70
15.3000	.69	.68	.67	.66	.65
15.5500	.64	.63	.62	.61	.60
15.8000	.59	.58	.57	.56	.54
16.0500	.53	.52	.52	.51	.50
16.3000	.49	.49	.48	.48	.47
16.5500	.47	.46	.46	.46	.45
16.8000	.45	.44	.44	.43	.43
17.0500	.42	.42	.41	.41	.40

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
17.3000	.40	.40	.39	.39	.38
17.5500	.38	.37	.37	.36	.36
17.8000	.35	.35	.34	.34	.33
18.0500	.33	.32	.32	.32	.31
18.3000	.31	.31	.31	.31	.31
18.5500	.30	.30	.30	.30	.30
18.8000	.30	.30	.29	.29	.29
19.0500	.29	.29	.29	.29	.29
19.3000	.28	.28	.28	.28	.28
19.5500	.28	.28	.28	.28	.28
19.8000	.28	.28	.27	.27	.27
20.0500	.27	.27	.27	.27	.27
20.3000	.27	.27	.27	.27	.27
20.5500	.27	.27	.27	.27	.27
20.8000	.27	.27	.27	.27	.27
21.0500	.27	.27	.27	.27	.27
21.3000	.27	.26	.26	.26	.26
21.5500	.26	.26	.26	.26	.26
21.8000	.26	.26	.26	.26	.26
22.0500	.26	.26	.26	.25	.25
22.3000	.25	.25	.25	.25	.25
22.5500	.25	.25	.25	.25	.25
22.8000	.24	.24	.24	.24	.24
23.0500	.24	.24	.24	.24	.24
23.3000	.24	.23	.23	.23	.23
23.5500	.23	.23	.23	.23	.23
23.8000	.23	.23	.22	.22	.22
24.0500	.22	.22	.22	.21	.21
24.3000	.20	.20	.19	.19	.18
24.5500	.18	.17	.17	.17	.16
24.8000	.16	.15	.15	.14	.14
25.0500	.14	.13	.13	.13	.12
25.3000	.12	.12	.11	.11	.11
25.5500	.10	.10	.10	.10	.09
25.8000	.09	.09	.09	.08	.08
26.0500	.08	.08	.07	.07	.07
26.3000	.07	.07	.07	.06	.06
26.5500	.06	.06	.06	.06	.05
26.8000	.05	.05	.05	.05	.05
27.0500	.05	.05	.05	.05	.04
27.3000	.04	.04	.04	.04	.04
27.5500	.04	.04	.04	.04	.04
27.8000	.04	.04	.04	.03	.03
28.0500	.03	.03	.03	.03	.03
28.3000	.03	.03	.03	.03	.03

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
28.5500	.03	.03	.03	.03	.03
28.8000	.03	.03	.03	.03	.03
29.0500	.03	.02	.02	.02	.02
29.3000	.02	.02	.02	.02	.02
29.5500	.02	.02	.02	.02	.02
29.8000	.02	.02	.02	.02	.02
30.0500	.02	.02	.02	.02	.02
30.3000	.02	.02	.02	.02	.02
30.5500	.02	.02	.02	.02	.02
30.8000	.02	.02	.02	.01	.01
31.0500	.01	.01	.01	.01	.01
31.3000	.01	.01	.01	.01	.01
31.5500	.01	.01	.01	.01	.01
31.8000	.01	.01	.01	.01	.01
32.0500	.01	.01	.01	.01	.01
32.3000	.01	.01	.01	.01	.01
32.5500	.01	.01	.01	.01	.01
32.8000	.01	.01	.01	.01	.01
33.0500	.01	.01	.01	.01	.01
33.3000	.01	.01	.01	.01	.01
33.5500	.01	.01	.01	.01	.01
33.8000	.01	.01	.01	.01	.01
34.0500	.01	.01	.01	.01	.01
34.3000	.01	.01	.01	.01	.01
34.5500	.01	.01	.01	.01	.01
34.8000	.01	.01	.01	.01	.01
35.0500	.01	.01	.01	.01	.01
35.3000	.01	.01	.01	.01	.01
35.5500	.01	.01	.01	.01	.01
35.8000	.01	.01	.01	.01	.01
36.0500	.01	.01	.01	.01	.01
36.3000	.01	.01	.01	.01	.01
36.5500	.01	.01	.01	.01	.01
36.8000	.01	.01	.01	.01	.01
37.0500	.01	.01	.01	.01	.01
37.3000	.01	.01	.01	.01	.01
37.5500	.01	.01	.01	.01	.01
37.8000	.01	.01	.01	.01	.01
38.0500	.01	.01	.01	.01	.01
38.3000	.01	.01	.01	.01	.01
38.5500	.01	.01	.01	.01	.01
38.8000	.01	.01	.01	.01	.01
39.0500	.01	.01	.01	.01	.01
39.3000	.01	.00	.00	.00	.00
39.5500	.00	.00	.00	.00	.00

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
39.8000	.00	.00	.00	.00	.00
40.0500	.00	.00	.00	.00	.00
40.3000	.00	.00	.00	.00	.00
40.5500	.00	.00	.00	.00	.00
40.8000	.00	.00	.00	.00	.00
41.0500	.00	.00	.00	.00	.00
41.3000	.00	.00	.00	.00	.00
41.5500	.00	.00	.00	.00	.00
41.8000	.00	.00	.00	.00	.00
42.0500	.00	.00	.00	.00	.00
42.3000	.00	.00	.00	.00	.00
42.5500	.00	.00	.00	.00	.00
42.8000	.00	.00	.00	.00	.00
43.0500	.00	.00	.00	.00	.00
43.3000	.00				

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = BASIN 2B OUT
HYG Tag = 100

Peak Discharge = 26.29 cfs
Time to Peak = 12.1500 hrs
HYG Volume = 99311 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
7.1500	.00	.00	.00	.00	.00
7.4000	.00	.00	.00	.00	.00
7.6500	.00	.00	.00	.00	.00
7.9000	.00	.00	.00	.00	.00
8.1500	.00	.00	.00	.00	.00
8.4000	.00	.00	.00	.00	.00
8.6500	.00	.00	.00	.00	.00
8.9000	.00	.00	.00	.00	.00
9.1500	.00	.00	.00	.00	.00
9.4000	.00	.00	.00	.00	.00
9.6500	.00	.00	.00	.00	.00
9.9000	.00	.00	.00	.00	.00
10.1500	.00	.00	.00	.00	.00
10.4000	.00	.00	.00	.00	.00
10.6500	.00	.00	.00	.00	.00
10.9000	.00	.00	.01	.02	.05
11.1500	.08	.13	.18	.22	.26
11.4000	.60	1.54	2.20	2.61	3.04
11.6500	3.69	4.70	5.87	7.20	8.79
11.9000	10.39	12.87	17.63	23.06	26.01
12.1500	26.29	26.08	22.10	17.02	14.63
12.4000	12.72	10.99	9.37	7.78	6.52
12.6500	5.56	4.91	4.51	4.24	4.03
12.9000	3.83	3.65	3.47	3.32	3.19
13.1500	3.07	2.97	2.90	2.84	2.79
13.4000	2.74	2.69	2.65	2.60	2.55
13.6500	2.51	2.46	2.41	2.37	2.32
13.9000	2.27	2.22	2.18	2.13	2.09
14.1500	2.05	2.02	1.99	1.96	1.94
14.4000	1.92	1.89	1.87	1.85	1.83
14.6500	1.80	1.78	1.76	1.73	1.71

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
14.9000	1.69	1.67	1.64	1.62	1.60
15.1500	1.57	1.55	1.53	1.50	1.48
15.4000	1.46	1.43	1.41	1.39	1.36
15.6500	1.34	1.31	1.29	1.27	1.24
15.9000	1.22	1.20	1.17	1.15	1.13
16.1500	1.11	1.09	1.08	1.07	1.06
16.4000	1.05	1.04	1.03	1.02	1.01
16.6500	1.00	.99	.98	.97	.95
16.9000	.94	.93	.92	.91	.90
17.1500	.89	.89	.88	.87	.86
17.4000	.85	.84	.83	.82	.81
17.6500	.80	.79	.78	.77	.76
17.9000	.75	.74	.73	.72	.71
18.1500	.70	.69	.69	.68	.68
18.4000	.67	.67	.66	.66	.66
18.6500	.66	.65	.65	.65	.64
18.9000	.64	.64	.63	.63	.63
19.1500	.62	.62	.62	.61	.61
19.4000	.61	.61	.60	.60	.60
19.6500	.59	.59	.59	.58	.58
19.9000	.58	.57	.57	.57	.56
20.1500	.56	.56	.56	.55	.55
20.4000	.55	.55	.54	.54	.54
20.6500	.54	.53	.53	.53	.53
20.9000	.53	.52	.52	.52	.52
21.1500	.51	.51	.51	.51	.50
21.4000	.50	.50	.50	.49	.49
21.6500	.49	.49	.48	.48	.48
21.9000	.48	.48	.47	.47	.47
22.1500	.47	.46	.46	.46	.46
22.4000	.45	.45	.45	.45	.44
22.6500	.44	.44	.44	.44	.43
22.9000	.43	.43	.43	.42	.42
23.1500	.42	.42	.41	.41	.41
23.4000	.41	.40	.40	.40	.40
23.6500	.39	.39	.39	.39	.39
23.9000	.38	.38	.38	.36	.32
24.1500	.27	.27	.27	.26	.26
24.4000	.25	.25	.25	.24	.24
24.6500	.23	.23	.22	.22	.21
24.9000	.21	.20	.20	.20	.19
25.1500	.19	.18	.18	.17	.17
25.4000	.16	.16	.15	.15	.15
25.6500	.14	.14	.13	.13	.13
25.9000	.12	.12	.12	.11	.11

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
26.1500	.11	.10	.10	.10	.10
26.4000	.09	.09	.09	.09	.08
26.6500	.08	.08	.08	.08	.07
26.9000	.07	.07	.07	.07	.06
27.1500	.06	.06	.06	.06	.06
27.4000	.06	.05	.05	.05	.05
27.6500	.05	.05	.05	.05	.05
27.9000	.05	.04	.04	.04	.04
28.1500	.04	.04	.04	.04	.04
28.4000	.04	.04	.04	.04	.03
28.6500	.03	.03	.03	.03	.03
28.9000	.03	.03	.03	.03	.03
29.1500	.03	.03	.03	.03	.03
29.4000	.03	.03	.03	.03	.03
29.6500	.03	.03	.02	.02	.02
29.9000	.02	.02	.02	.02	.02
30.1500	.02	.02	.02	.02	.02
30.4000	.02	.02	.02	.02	.02
30.6500	.02	.02	.02	.02	.02
30.9000	.02	.02	.02	.02	.02
31.1500	.02	.02	.02	.02	.02
31.4000	.02	.02	.02	.02	.02
31.6500	.01	.01	.01	.01	.01
31.9000	.01	.01	.01	.01	.01
32.1500	.01	.01	.01	.01	.01
32.4000	.01	.01	.01	.01	.01
32.6500	.01	.01	.01	.01	.01
32.9000	.01	.01	.01	.01	.01
33.1500	.01	.01	.01	.01	.01
33.4000	.01	.01	.01	.01	.01
33.6500	.01	.01	.01	.01	.01
33.9000	.01	.01	.01	.01	.01
34.1500	.01	.01	.01	.01	.01
34.4000	.01	.01	.01	.01	.01
34.6500	.01	.01	.01	.01	.01
34.9000	.01	.01	.01	.01	.01
35.1500	.01	.01	.01	.01	.01
35.4000	.01	.01	.01	.01	.01
35.6500	.01	.01	.01	.01	.01
35.9000	.01	.01	.01	.01	.01
36.1500	.01	.01	.01	.01	.01
36.4000	.01	.01	.01	.01	.01
36.6500	.01	.01	.01	.01	.01
36.9000	.01	.01	.01	.01	.01
37.1500	.01	.01	.01	.01	.01

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
37.4000	.01	.01	.01	.01	.01
37.6500	.01	.01	.01	.01	.01
37.9000	.01	.01	.01	.01	.01
38.1500	.01	.01	.01	.01	.01
38.4000	.01	.01	.01	.01	.01
38.6500	.01	.01	.01	.01	.01
38.9000	.01	.01	.01	.01	.01
39.1500	.01	.01	.01	.01	.01
39.4000	.01	.01	.01	.01	.01
39.6500	.01	.01	.01	.01	.01
39.9000	.01	.01	.01	.00	.00
40.1500	.00	.00	.00	.00	.00
40.4000	.00	.00	.00	.00	.00
40.6500	.00	.00	.00	.00	.00
40.9000	.00	.00	.00	.00	.00
41.1500	.00	.00	.00	.00	.00
41.4000	.00	.00	.00	.00	.00
41.6500	.00	.00	.00	.00	.00
41.9000	.00	.00	.00	.00	.00
42.1500	.00	.00	.00	.00	.00
42.4000	.00	.00	.00	.00	.00
42.6500	.00	.00	.00	.00	.00
42.9000	.00	.00	.00	.00	.00
43.1500	.00	.00	.00	.00	.00
43.4000	.00	.00	.00	.00	.00
43.6500	.00	.00	.00	.00	.00
43.9000	.00	.00			

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND 1C IN 1
Outflow HYG file = NONE STORED - POND 1C OUT 1

Pond Node Data = POND 1C
Pond Volume Data = POND 1C
Pond Outlet Data = BASIN 1C

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 314.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
314.00	.00	0	1166	.00	.00	.00
314.10	.03	125	1333	.00	.03	1.41
314.20	.10	267	1510	.00	.10	3.07
314.30	.23	427	1699	.00	.23	4.98
314.40	.40	607	1899	.00	.40	7.14
314.50	.60	807	2110	.00	.60	9.57
314.60	.84	1029	2332	.00	.84	12.28
314.70	1.12	1274	2565	.00	1.12	15.28
314.80	1.41	1543	2809	.00	1.41	18.55
314.90	1.73	1836	3065	.00	1.73	22.13
315.00	2.06	2156	3331	.00	2.06	26.01
315.10	2.39	2503	3609	.00	2.39	30.20
315.20	2.74	2878	3897	.00	2.74	34.71
315.30	3.07	3283	4197	.00	3.07	39.54
315.40	3.40	3718	4508	.00	3.40	44.71
315.50	3.67	4185	4830	.00	3.67	50.16
315.60	3.88	4684	5163	.00	3.88	55.93
315.70	4.08	5218	5508	.00	4.08	62.06
315.80	4.28	5786	5863	.00	4.28	68.57
315.90	4.46	6391	6229	.00	4.46	75.47

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND 1C IN 1
Outflow HYG file = NONE STORED - POND 1C OUT 1

Pond Node Data = POND 1C
Pond Volume Data = POND 1C
Pond Outlet Data = BASIN 1C

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 314.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
316.00	4.64	7032	6607	.00	4.64	82.78
316.10	4.82	7704	6835	.00	4.82	90.42
316.20	4.98	8400	7067	.00	4.98	98.31
316.30	5.14	9118	7302	.00	5.14	106.45
316.40	5.30	9860	7542	.00	5.30	114.86
316.50	5.45	10626	7786	.00	5.45	123.52
316.60	5.60	11417	8033	.00	5.60	132.46
316.70	5.74	12233	8284	.00	5.74	141.67
316.80	5.88	13074	8539	.00	5.88	151.15
316.90	6.02	13941	8798	.00	6.02	160.92
317.00	6.15	14834	9061	.00	6.15	170.97
317.10	6.28	15753	9327	.00	6.28	181.32
317.20	6.41	16700	9598	.00	6.41	191.96
317.30	6.54	17673	9872	.00	6.54	202.90
317.40	6.66	18674	10150	.00	6.66	214.15
317.50	6.78	19703	10433	.00	6.78	225.71
317.60	6.90	20761	10718	.00	6.90	237.58
317.70	7.02	21847	11008	.00	7.02	249.76
317.80	7.13	22962	11302	.00	7.13	262.27
317.90	7.24	24108	11600	.00	7.24	275.11

LEVEL POOL ROUTING DATA

HYG Dir = S:\2015\15064\PONDPACK\2016-12-05_bd\
Inflow HYG file = NONE STORED - POND 1C IN 1
Outflow HYG file = NONE STORED - POND 1C OUT 1

Pond Node Data = POND 1C
Pond Volume Data = POND 1C
Pond Outlet Data = BASIN 1C

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 314.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0500 hrs

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
318.00	7.36	25283	11901	.00	7.36	288.27
318.10	7.47	26473	11901	.00	7.47	301.61
318.20	7.57	27663	11901	.00	7.57	314.94
318.30	7.68	28853	11901	.00	7.68	328.27
318.40	7.79	30043	11901	.00	7.79	341.60
318.50	7.89	31233	11901	.00	7.89	354.92
318.60	7.99	32423	11901	.00	7.99	368.25
318.70	8.09	33613	11901	.00	8.09	381.58
318.80	8.19	34803	11901	.00	8.19	394.90
318.90	8.29	35993	11901	.00	8.29	408.22
319.00	8.39	37184	11901	.00	8.39	421.54

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND 1C OUT
HYG Tag = 1

Peak Discharge = .64 cfs
Time to Peak = 12.3500 hrs
HYG Volume = 4882 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
11.6000	.00	.00	.00	.00	.00
11.8500	.01	.02	.03	.07	.16
12.1000	.28	.42	.53	.59	.63
12.3500	.64	.64	.63	.60	.57
12.6000	.53	.49	.45	.42	.39
12.8500	.37	.35	.33	.31	.29
13.1000	.27	.26	.25	.24	.23
13.3500	.22	.21	.21	.20	.20
13.6000	.19	.19	.18	.18	.18
13.8500	.17	.17	.17	.16	.16
14.1000	.16	.15	.15	.15	.15
14.3500	.14	.14	.14	.14	.14
14.6000	.13	.13	.13	.13	.13
14.8500	.13	.12	.12	.12	.12
15.1000	.12	.12	.12	.11	.11
15.3500	.11	.11	.11	.11	.11
15.6000	.10	.10	.10	.10	.10
15.8500	.10	.10	.10	.09	.09
16.1000	.09	.09	.09	.09	.09
16.3500	.09	.08	.08	.08	.08
16.6000	.08	.08	.08	.08	.08
16.8500	.08	.08	.07	.07	.07
17.1000	.07	.07	.07	.07	.07
17.3500	.07	.07	.07	.07	.07
17.6000	.06	.06	.06	.06	.06
17.8500	.06	.06	.06	.06	.06
18.1000	.06	.06	.06	.06	.05
18.3500	.05	.05	.05	.05	.05
18.6000	.05	.05	.05	.05	.05
18.8500	.05	.05	.05	.05	.05
19.1000	.05	.05	.05	.05	.05

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
19.3500	.05	.05	.05	.05	.05
19.6000	.05	.05	.05	.05	.05
19.8500	.04	.04	.04	.04	.04
20.1000	.04	.04	.04	.04	.04
20.3500	.04	.04	.04	.04	.04
20.6000	.04	.04	.04	.04	.04
20.8500	.04	.04	.04	.04	.04
21.1000	.04	.04	.04	.04	.04
21.3500	.04	.04	.04	.04	.04
21.6000	.04	.04	.04	.04	.04
21.8500	.04	.04	.04	.04	.04
22.1000	.04	.04	.04	.04	.04
22.3500	.04	.04	.04	.04	.04
22.6000	.04	.03	.03	.03	.03
22.8500	.03	.03	.03	.03	.03
23.1000	.03	.03	.03	.03	.03
23.3500	.03	.03	.03	.03	.03
23.6000	.03	.03	.03	.03	.03
23.8500	.03	.03	.03	.03	.03
24.1000	.03	.03	.03	.02	.02
24.3500	.02	.02	.02	.02	.02
24.6000	.02	.02	.02	.02	.02
24.8500	.02	.01	.01	.01	.01
25.1000	.01	.01	.01	.01	.01
25.3500	.01	.01	.01	.01	.01
25.6000	.01	.01	.01	.01	.01
25.8500	.01	.01	.01	.01	.01
26.1000	.01	.01	.01	.01	.01
26.3500	.00	.00	.00	.00	.00
26.6000	.00	.00	.00	.00	.00
26.8500	.00	.00	.00	.00	

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND 1C OUT
HYG Tag = 10

Peak Discharge = 3.08 cfs
Time to Peak = 12.3500 hrs
HYG Volume = 28551 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
9.6000	.00	.00	.00	.00	.00
9.8500	.00	.00	.00	.00	.00
10.1000	.00	.01	.01	.01	.01
10.3500	.01	.01	.01	.02	.02
10.6000	.02	.02	.03	.03	.04
10.8500	.04	.05	.06	.06	.07
11.1000	.08	.09	.10	.11	.12
11.3500	.13	.15	.17	.18	.20
11.6000	.23	.27	.33	.41	.52
11.8500	.65	.81	1.04	1.39	1.83
12.1000	2.30	2.69	2.92	3.03	3.07
12.3500	3.08	3.06	3.01	2.94	2.84
12.6000	2.73	2.61	2.50	2.39	2.29
12.8500	2.20	2.12	2.04	1.97	1.90
13.1000	1.84	1.78	1.73	1.68	1.64
13.3500	1.60	1.56	1.53	1.50	1.47
13.6000	1.44	1.41	1.38	1.36	1.33
13.8500	1.31	1.28	1.26	1.23	1.21
14.1000	1.19	1.17	1.14	1.12	1.10
14.3500	1.08	1.07	1.05	1.03	1.01
14.6000	1.00	.98	.96	.95	.93
14.8500	.92	.90	.89	.87	.86
15.1000	.84	.83	.81	.80	.78
15.3500	.77	.76	.74	.73	.72
15.6000	.71	.69	.68	.67	.65
15.8500	.64	.63	.62	.60	.59
16.1000	.58	.57	.56	.55	.54
16.3500	.53	.52	.51	.50	.49
16.6000	.48	.47	.46	.46	.45
16.8500	.44	.43	.42	.41	.41
17.1000	.40	.39	.39	.38	.37

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
17.3500	.37	.36	.35	.35	.34
17.6000	.33	.33	.32	.31	.31
17.8500	.30	.29	.29	.28	.28
18.1000	.27	.26	.26	.25	.25
18.3500	.24	.24	.23	.23	.23
18.6000	.22	.22	.21	.21	.21
18.8500	.20	.20	.20	.20	.19
19.1000	.19	.19	.18	.18	.18
19.3500	.17	.17	.17	.16	.16
19.6000	.16	.16	.15	.15	.15
19.8500	.15	.15	.14	.14	.14
20.1000	.14	.14	.13	.13	.13
20.3500	.13	.13	.13	.12	.12
20.6000	.12	.12	.12	.12	.12
20.8500	.11	.11	.11	.11	.11
21.1000	.11	.11	.11	.11	.11
21.3500	.11	.10	.10	.10	.10
21.6000	.10	.10	.10	.10	.10
21.8500	.10	.10	.10	.10	.10
22.1000	.10	.10	.10	.10	.10
22.3500	.10	.10	.10	.09	.09
22.6000	.09	.09	.09	.09	.09
22.8500	.09	.09	.09	.09	.09
23.1000	.09	.09	.09	.09	.09
23.3500	.09	.09	.09	.09	.08
23.6000	.08	.08	.08	.08	.08
23.8500	.08	.08	.08	.08	.08
24.1000	.08	.07	.06	.06	.05
24.3500	.05	.04	.04	.04	.03
24.6000	.03	.03	.03	.02	.02
24.8500	.02	.02	.02	.02	.02
25.1000	.02	.02	.02	.02	.02
25.3500	.02	.01	.01	.01	.01
25.6000	.01	.01	.01	.01	.01
25.8500	.01	.01	.01	.01	.01
26.1000	.01	.01	.01	.01	.01
26.3500	.01	.01	.01	.01	.01
26.6000	.01	.01	.01	.01	.01
26.8500	.00	.00	.00	.00	.00
27.1000	.00	.00	.00	.00	.00
27.3500	.00	.00	.00	.00	

POND ROUTED TOTAL OUTFLOW HYG...
HYG file =
HYG ID = POND 1C OUT
HYG Tag = 100

Peak Discharge = 6.23 cfs
Time to Peak = 12.6000 hrs
HYG Volume = 105275 cu.ft

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time on left represents time for first value in each row.

Time hrs					
7.1500	.00	.00	.00	.00	.00
7.4000	.00	.00	.00	.00	.00
7.6500	.00	.00	.01	.01	.01
7.9000	.01	.01	.01	.01	.01
8.1500	.01	.02	.02	.02	.02
8.4000	.02	.03	.03	.04	.04
8.6500	.05	.05	.06	.06	.07
8.9000	.07	.08	.09	.09	.10
9.1500	.10	.11	.12	.13	.14
9.4000	.15	.15	.16	.17	.18
9.6500	.19	.20	.20	.21	.22
9.9000	.23	.24	.25	.26	.27
10.1500	.28	.29	.31	.32	.33
10.4000	.35	.36	.37	.39	.40
10.6500	.42	.44	.46	.47	.49
10.9000	.51	.53	.55	.57	.59
11.1500	.62	.65	.68	.72	.77
11.4000	.81	.86	.92	.99	1.08
11.6500	1.22	1.43	1.70	2.04	2.43
11.9000	2.87	3.41	3.94	4.47	4.93
12.1500	5.32	5.60	5.78	5.92	6.02
12.4000	6.10	6.16	6.20	6.22	6.23
12.6500	6.22	6.21	6.20	6.19	6.17
12.9000	6.15	6.13	6.11	6.08	6.05
13.1500	6.02	5.99	5.96	5.93	5.89
13.4000	5.86	5.82	5.78	5.75	5.71
13.6500	5.66	5.62	5.58	5.53	5.49
13.9000	5.44	5.39	5.34	5.29	5.24
14.1500	5.18	5.13	5.07	5.01	4.96
14.4000	4.90	4.84	4.77	4.71	4.65
14.6500	4.58	4.51	4.45	4.37	4.30

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
14.9000	4.23	4.15	4.08	4.00	3.92
15.1500	3.84	3.76	3.68	3.59	3.49
15.4000	3.41	3.30	3.19	3.10	3.01
15.6500	2.92	2.84	2.77	2.70	2.63
15.9000	2.57	2.51	2.46	2.40	2.35
16.1500	2.29	2.24	2.20	2.15	2.11
16.4000	2.07	2.03	1.99	1.95	1.92
16.6500	1.88	1.85	1.82	1.80	1.77
16.9000	1.74	1.72	1.69	1.67	1.65
17.1500	1.62	1.60	1.58	1.56	1.53
17.4000	1.51	1.49	1.47	1.45	1.43
17.6500	1.41	1.39	1.38	1.36	1.34
17.9000	1.32	1.30	1.28	1.26	1.24
18.1500	1.23	1.21	1.19	1.18	1.16
18.4000	1.15	1.13	1.12	1.10	1.09
18.6500	1.08	1.06	1.05	1.04	1.03
18.9000	1.01	1.00	.99	.98	.96
19.1500	.95	.94	.93	.92	.91
19.4000	.90	.89	.88	.87	.86
19.6500	.85	.84	.83	.82	.81
19.9000	.80	.79	.78	.77	.76
20.1500	.75	.74	.73	.73	.72
20.4000	.71	.70	.69	.69	.68
20.6500	.67	.66	.65	.65	.64
20.9000	.63	.63	.62	.61	.61
21.1500	.60	.59	.59	.58	.57
21.4000	.57	.56	.55	.55	.54
21.6500	.53	.53	.52	.51	.51
21.9000	.50	.50	.49	.49	.48
22.1500	.47	.47	.46	.46	.45
22.4000	.45	.44	.44	.43	.42
22.6500	.42	.41	.41	.40	.40
22.9000	.39	.39	.38	.38	.37
23.1500	.37	.36	.36	.35	.35
23.4000	.34	.34	.34	.33	.33
23.6500	.32	.32	.31	.31	.30
23.9000	.30	.29	.29	.28	.27
24.1500	.24	.22	.20	.19	.17
24.4000	.16	.14	.13	.12	.11
24.6500	.10	.09	.09	.08	.08
24.9000	.07	.07	.06	.06	.05
25.1500	.05	.04	.04	.04	.03
25.4000	.03	.03	.03	.03	.02
25.6500	.02	.02	.02	.02	.02
25.9000	.02	.02	.02	.02	.02

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .0500 hrs
Time hrs | Time on left represents time for first value in each row.

Time hrs					
26.1500	.02	.02	.01	.01	.01
26.4000	.01	.01	.01	.01	.01
26.6500	.01	.01	.01	.01	.01
26.9000	.01	.01	.01	.01	.01
27.1500	.01	.01	.01	.01	.01
27.4000	.01	.01	.01	.01	.01
27.6500	.01	.00	.00	.00	.00
27.9000	.00	.00	.00	.00	.00
28.1500	.00	.00	.00	.00	.00

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PDA-1B... 3.02, 4.02, 5.08, 5.10, 5.12
PDA-1C... 3.04, 4.03, 5.14, 5.16, 5.18
PDA-2A... 3.05, 4.04, 5.20, 5.22, 5.24
PDA-2B... 3.06, 4.05, 5.26, 5.28, 5.30
POND 1C... 6.04, 8.44, 8.47, 8.49, 8.51

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Watershed... 1.01

APPENDIX C

NYSDEC STORMWATER SIZING CALCULATIONS

WATER QUALITY VOLUME WORKSHEET JMC Project: **15064**

FOR REDEVELOPMENT PROJECTS Design Point: **1**

River Knoll Drainage Area: **1A, 1B**

Initial Water Quality Treatment Volume

DESCRIPTION	Design Storm	Area	Existing Impervious Area	New Impervious Area	Percent Impervious	Runoff Coefficient	Total Required WQ Volume
SYMBOL	P	A	I_E	I_N	%I	R_V	WQ_V
VALUE	1.5	9.88	0.98	1.65	26.69	0.290236504	**15,619**
UNITS	In	Ac	Ac	Ac	%	CF	CF
VALUE	Enhanced Phosphorus Removal (WQ_V = 1-yr Storm Runoff)						

Runoff Reduction Techniques (Area)

DESCRIPTION	Total Area	Impervious Area
SYMBOL	A	I
Conservation of Natural Areas		
Sheetflow to Riparian Buffers or Filter Strips		
Vegetated Swale		
Tree Planting / Tree Pit		
Disconnection of Rooftop Runoff		
Stream Daylighting		
TOTAL		
UNITS	Ac	Ac

Adjusted Water Quality Treatment Volume from Runoff Reduction Techniques

DESCRIPTION	Design Storm	Area	Adjusted Existing Impervious Area	New Impervious Area	Percent Impervious	Runoff Coefficient	Total Required WQ Volume
SYMBOL	P	A	I_{EA}	I_N	%I	R_V	WQ_V
VALUE	1.5	9.88	0.98	1.65	26.69	0.290236504	**15,619**
UNITS	In	Ac	Ac	Ac	%	CF	CF
VALUE	Enhanced Phosphorus Removal (WQ_V = 1-yr Storm Runoff)						

Net Water Quality Treatment Volume for Standard Practices (25% I_E + 100% I_N)

DESCRIPTION	Design Storm	Area	Existing Impervious Area	New Impervious Area	Percent Impervious	Runoff Coefficient	Total Required WQ Volume
SYMBOL	P	A	I_E	I_N	%I	R_V	WQ_V
VALUE	1.5	9.88	0.25	1.65	19.22	0.222981404	**12,000**
UNITS	In	Ac	Ac	Ac	%	CF	CF

Date Printed: 12/22/2016

WATER QUALITY VOLUME WORKSHEET JMC Project: **15064**

FOR REDEVELOPMENT PROJECTS Design Point: **2**

River Knoll Drainage Area: **2A, 2B**

Initial Water Quality Treatment Volume

DESCRIPTION	Design Storm	Area	Existing Impervious Area	New Impervious Area	Percent Impervious	Runoff Coefficient	Total Required WQ Volume
SYMBOL	P	A	I_E	I_N	%I	R_V	WQ_V
VALUE	1.5	6.86	0.19	0.78	14.17	0.177564248	**6,633**
UNITS	In	Ac	Ac	Ac	%	CF	CF
VALUE	Enhanced Phosphorus Removal (WQ_V = 1-yr Storm Runoff)						

Runoff Reduction Techniques (Area)

DESCRIPTION	Total Area	Impervious Area
SYMBOL	A	I
Conservation of Natural Areas		
Sheetflow to Riparian Buffers or Filter Strips		
Vegetated Swale		
Tree Planting / Tree Pit		
Disconnection of Rooftop Runoff		
Stream Daylighting		
TOTAL		
UNITS	Ac	Ac

Adjusted Water Quality Treatment Volume from Runoff Reduction Techniques

DESCRIPTION	Design Storm	Area	Adjusted Existing Impervious Area	New Impervious Area	Percent Impervious	Runoff Coefficient	Total Required WQ Volume
SYMBOL	P	A	I_{EA}	I_N	%I	R_V	WQ_V
VALUE	1.5	6.86	0.19	0.78	14.17	0.177564248	**6,633**
UNITS	In	Ac	Ac	Ac	%	CF	CF
VALUE	Enhanced Phosphorus Removal (WQ_V = 1-yr Storm Runoff)						

Net Water Quality Treatment Volume for Standard Practices (25% I_E + 100% I_N)

DESCRIPTION	Design Storm	Area	Existing Impervious Area	New Impervious Area	Percent Impervious	Runoff Coefficient	Total Required WQ Volume
SYMBOL	P	A	I_E	I_N	%I	R_V	WQ_V
VALUE	1.5	6.86	0.05	0.78	12.06	0.15852764	**5,922**
UNITS	In	Ac	Ac	Ac	%	CF	CF

Date Printed: 12/22/2016

RUNOFF REDUCTION VOLUME WORKSHEET

JMC Project:	15064
Design Point:	1

River Knoll	Drainage Area:	**PDA-1**

Total Water Quality Treatment Volume

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Initial Water Quality Volume	WQ_V	**15,619**	CF
Adjusted Water Quality Volume	WQ_V	**12,000**	CF

Minimum Runoff Reduction Volume

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.5	In
Total Area of *new* Impervious Cover	Aic	1.77	Ac
Hydrologic Soil Group (HSG) Specific Reduction Factor	S	0.40	
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
Impervious Cover targeted for Runoff Reduction [S x Aic]	Ai	0.71	Ac
TOTAL VOLUME Required [RR_V = (P x R_V x Ai) / 12]	RR_V	**3,672**	CF

Runoff Reduction Techniques (Volume)

GREEN INFRASTRUCTURE PRACTICE / SMP	*SYMBOL*	*VALUE*	*UNITS*
INFILTRATION BASIN 1A	RR_V	12,126	CF
INFILTRATION BASIN 1B	RR_V	4,273	CF
TOTAL	RR_V	**16,399**	CF

Runoff Reduction

Is Total RR_V > Adjusted WQ_V ?	**YES**
Is Total RR_V > Minimum RR_V ?	**YES**

Date Printed: 12/22/2016

RUNOFF REDUCTION VOLUME WORKSHEET

JMC Project:	15064
Design Point:	2

River Knoll	Drainage Area:	PDA-2

Total Water Quality Treatment Volume

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Initial Water Quality Volume	WQ_V	**6,633**	CF
Adjusted Water Quality Volume	WQ_V	**5,922**	CF

Minimum Runoff Reduction Volume

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.5	In
Total Area of *new* Impervious Cover	Aic	0.77	Ac
Hydrologic Soil Group (HSG) Specific Reduction Factor	S	0.40	
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
Impervious Cover targeted for Runoff Reduction [S x Aic]	Ai	0.31	Ac
TOTAL VOLUME Required [RR_V = (P x R_V x Ai) / 12]	RR_V	**1,587**	CF

Runoff Reduction Techniques (Volume)

GREEN INFRASTRUCTURE PRACTICE / SMP	*SYMBOL*	*VALUE*	*UNITS*
STORMWATER PLANTERS	RR_V	1,851	CF
TOTAL	RR_V	**1,851**	CF

Runoff Reduction

Is Total RR_V > Adjusted WQ_V ?	**NO**
Is Total RR_V > Minimum RR_V ?	**YES**

Date Printed: 12/22/2016

PROPRIETARY PRACTICE WORKSHEET

JMC Project:	**15064**
Design Point:	**1**
Drainage Area:	**1C**

Continuous Deflective Separation Unit

Rainfall Distribution Type: **III**

		A	B	C
Coefficients for the equation unit peak [$R = I_a / P$] [$C_i = A \times R^2 + B \times R + C$]	C_0	-1.774	0.3301	2.4577
	C_1	1.8622	-0.7397	-0.4627
	C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.5	In
Impervious Area	I	0.13	Ac
Area	A	0.29	Ac
Percent Impervious	%I	44.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.45	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**697**	CF

Water Quality Peak Flow Calculation			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	697	CF
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.5	In
Time of Concentration	t_c	0.1274	Hr
Runoff Volume [$Q = WQ_V / (A \times 3630)$]	Q	0.67	In
Curve Number [$CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25\ QP)^{½}$]	CN	89.73	
Curve Number	CN	90	
Initial Abstraction [$I_a = 200 / CN - 2$]	I_a	0.23	In
Ratio [$R = I_a / P$]	R	0.15	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.47	
$C_1 = A \times R2 + B \times R + C$	C_1	-0.53	
$C_2 = A \times R2 + B \times R + C$	C_2	-0.16	
Unit Peak Discharge	q_u	652.98	$cfs/mi^2/in$
Peak Discharge [$Q_p = q_u \times A \times Q / 640$]	Q_p	**0.20**	cfs

Proposed Device			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Peak Flow Provided	Q_p	**0.7**	cfs
Water Quality Volume Provided [$WQ_V = 640 \times 3600 \times Q_P / q_u$]	WQ_V	**2,470**	CF
Model Designation		2015-4	
Quantity			

Date Printed: 12/22/2016

STREAM CHANNEL PROTECTION VOLUME Cp_v

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Unified Stormwater Sizing Criteria (See Section 4.4 & Appendix B.2)

RAINFALL DISTRIBUTION TYPE		III		
$(R=I_a/P)$	$C_i=A*R^2+B*R+C$		A	B	C
Coefficients for the equation unit peak		C_0	-1.774	0.3301	2.4577
Coefficients for the equation unit peak		C_1	1.8622	-0.7397	-0.4627
Coefficients for the equation unit peak		C_2	-0.0648	0.2276	-0.1932

D E S I G N P A R A M E T E R S				
	SYMBOL	UNITS	**PDA-2B**	
TOTAL DEVELOPED AREA	**A**	acres	5.20	
RAINFALL EVENT (1-year recurrence, 24-hr. duration)	P_1	inches	2.84	
RUNOFF CURVE NUMBER (proposed)	**CN**		70.00	
TIME OF CONCENTRATION (Use TR-55 equations)	T_c	hours	7.74	

D E S I G N C A L C U L A T I O N S				
CHANNEL PROTECTION VOLUME, (Cp_v) ((see Section 4.4 and Appendix B)				
INITIAL ABSTRACTION $I_a=(200/CN)-2$	I_a	inches	0.857	
RATIO $R=I_a/P_1$	**R**		0.30	
$C_0 = A*R^2 +B*R +C$	C_0		2.40	
$C_1 = A*R^2 +B*R +C$	C_1		-0.52	
$C_2 = A*R^2 +B*R +C$	C_2		-0.13	
UNIT PEAK DIS. $q_u=10^{(C_0+C_1*Log(T_c)+C_2*(log(T_c))^2)}$	q_u	$cfs/mi^2/in$	68.21	
RUNOFF (TR-55) $Q=((P_1-I_a)^2)/(P_1+4*I_a)$	**Q**	inches	0.63	
PEAK DISCHARGE $Q_{p1}=q_u*A*Q$ (TR-5 1 year storm)	Q_{p1}	cfs	***0.35***	
RATIO of out/in flow $(q_o/q_i)=14.121*q_u^{(-0.9703)}$	(q_o/q_i)		0.23	
$(V_s/V_r)=0.682-1.43*(q_o/q_i)+1.64*(qo/qi)^2-0.804*(qo/qi)^3$	(V_s/V_r)		0.43	
HYG RUNOFF VOLUME $V_r=Q*A*3630$ (TR-55 1year)	V_r	cu. ft.	***11,839***	
		acres-ft	0.27	
REQUIRED STORAGE VOLUME Vs=(Vs/Vr)*V_r (Cpv)	**Vs**	**cu. ft.**	**5,048**	
		acres-ft	0.12	
Provided Runoff Reduction Volume	**RRv**	**CF**	1,850.84	
Net Channel Protection Volume Required			3,196.68	
STORAGE VOLUME PROVIDED EXDT.tab	(Cp_v)	**cu. ft.**	**3,655**	
AVERAGE RELEASE $Q_{avg}=V_s/(24hr*3600sec)$	Q_{avg}	cfs	0.06	
MAXIMUM RELEASE $Q_{max}=2*Q_{avg}$	Q_{max}	cfs	0.12	

DESIGN OF OUTLET CONTROL STRUCTURE
ORIFII FOR EXTENDED DETENTION OF WATER QUALITY & STREAM CHANNEL PROTECTION VOLUMES

JMC Project No: **15064**
Computed By: BD
Checked BY: DL
Dwg, Ref: DA-1, DA-2

Project: River Knoll
Location: Ossining, NY

DESIGN PARAMETERS		SYMBOL	UNITS	
SUB AREA NAME				PDA-2
DRAINAGE AREA		A	acres	5.20
PRACTICE DESIGNATION				P-1
PRACTICE NAME				Wet Ext. Det.
PERCENTAGE PERMANENT POOL REQUIRED		PPR	%	20%
PERCENTAGE PERMANENT POOL PROVIDED		PPP		20%
PERCENTAGE FOREBAY PRETREATMENT POOL		PFR	%	10%
PERCENTAGE FOREBAY PRETREATMENT POOL PROVIDED		PFP		10%
TOTAL WATER QUALITY VOLUME REQUIRED		**WQvr**	cu. ft.	6,633
PERMANENT POOL REQUIRED Vpool=WQv*PPP		VR_{pool}	cu. ft.	1,327
PERMANENT POOL VOLUME PROVIDED		*VP_{pool}*	*cu. ft.*	*6,448*
FOREBAY PRETREATMENT REQUIRED Vpret=WQv*PFP		VR_{pret}	cu. ft.	663
FOREBAY PRETREATMENT PROVIDED		*VP_{pret}*	*cu. ft.*	*1,715*
ELEVATION PERMANENT POOL (orifice inv. above permanent pool)		E_1	(ft.)	304.50
Elev. Ext. Det. for rest of WQv (Use E-Q-V from PondPack at Volume WQVR)		E_2	(ft.)	304.53
EXTENDED DETENTION ELEV. PROVIDED (rounded UP)		E_{2P}	(ft.)	304.60

DESIGN WATER QUALITY ORIFICE *(See Section 8.2 Step 6.)*				
VERIFY IF IS ENOUGH PERMANENT POOL PROVIDED				OKAY
VERIFY IF IS ENOUGH FOREBAY POOL PROVIDED				OKAY
EXTENDED DETENTION VOLUME REQUIRED	EDvr=WQvr-VRpool-VRpret	ED_{VR}	(cfs)	4,643
EXTENDED DETENTION VOLUME PROVIDED (to be)	EDvp=WQvp-VPpool	EDvp	cu. ft.	487
AVERAGE DISCHARGE (to be release in 24 hr)	$Q_0=ED_{VP}/(24hr*3600sec)$	Q_0	(cfs)	0.00564
AVERAGE HEAD WATER QUALITY	$H_0=(E_2-E_1)/2$	H_0	(ft.)	0.01
ORIFICE DIAMETER CALCULATION	$D_0=6.166*Q_0^{0.5}/H_0^{0.25}$	D_0	(in.)	1
ORIFICE DIAMETER ROUNDDOWN @ 1/8)		D_W	(in.)	1
ORIFICE DIAMETER PROVIDED	(suggested less than calculated)	D_W	(in.)	3
AVERAGE HEAD PROVIDED	$H_W=(Q_0/(C*\pi*D_W^2/4))^2=(Q_0/(0.02626*D_W^2))^2$	H_W	(ft.)	0.000569
EXTENDED DETENTION ORIFICE ELEV. PROVIDED	$E_{2P}=E_1+Dw/(2*12)+2*Hw$	**E_{2P}**	(ft.)	304.60
WATER QUALITY VOLUME PROVIDED WQ_{VP}	Use E-Q-V from PondPack at **E_{2P}**	WQvp	(cfs)	**6,935**
VERIFY IF ENOUGH WATER QUALITY IS PROVIDED				OKAY

DESIGN CHANNEL PROTECTION ORIFICE *(See Section 8.2 Step 7.)*				
CHANNEL PROTECTION VOLUME REQUIRED		CP_{VR}	(cu. ft.)	**3,197**
PERMANENT POOL VOLUME PROVIDED		VP_{pool}	(cu. ft.)	6,448
TOTAL CHANNEL PROTECTION VOLUME REQUIRED	$TCP_{VR}=CP_{VR}+VP_{pool}$	**TCP_{VR}**	(cu. ft.)	9,645
ELEVATION PERMANENT POOL (orifice invert above permanent pool	see above	E_1	(ft.)	304.50
EXTENDED DETENTION ELEV. PROVIDED (rounded,1)	see above	E_{2P}	(ft.)	304.60
EXTENDED DETENTION C_{PV} ELEVATION	Use E-Q-V from PondPack at Volume CPv	E_3	(ft.)	305.15
AVERAGE HEAD WATER QUALITY	$H_0=(E_3-E_1)/2$	H_0	(ft.)	0.32
AVERAGE HEAD CHANNEL PROTECTION	$H_1=(E_3-E_{2P})/2$	H_1	(ft.)	0.27
AVERAGE DISCHARGE (release rate in 24 hr)	$Q_{0C}=CP_{VR}/(24hr*3600sec)$	Q_{0C}	(cfs)	0.0370
AVERAGE DISCHARGE (calculated at WQ orifice)	$Q_W=0.02626*D_W^2*Hw^{0.5}$	Q_W	(cfs)	0.01
DISCHARGE CHANNEL PROTECTION	$Q_{1C}=Q_{0C}-Q_W$	Q_{1C}	(cfs)	0.0314
ORIFICE DIAMETER CALCULATION	$D_{1C}=6.166*Q_{1C}^{0.5}/H_1^{0.25}$	D_{1C}	(in.)	1.508
ORIFICE DIAMETER ROUNDDOWN @ 1/8)		D_{1C}	(in.)	1 4/8
ORIFICE DIAMETER PROVIDED		D_{CP}	(in.)	3
AVERAGE HEAD PROVIDED	$H_W=(Q_{1C}/(C*\pi*D_{CP}/4))^2=(Q_{1C}/(0.02626*D_{CP}^2))^2$	H_{CP}	(ft.)	0.02
EXTENDED DETENTION ELEV. PROVIDED	$E_{2CP}=E_{2P}+Dcp/(2*12)+2*Hcp$	**E_{2CP}**	(ft.)	304.76
TOTAL CHANNEL PROTECTION VOLUME PROVIDED	Use E-Q-V from PondPack at **E_{2CP}**	CPvp	(cu. ft.)	10,103
NET CHANNEL PROTECTION VOLUME PROVIDED	$CP_v=CP_{VP}-VPpool$		(cu. ft.)	**3,655**
VERIFY IF ENOUGH CHANNEL PROTECTION VOLUME IS PROVIDED				OKAY

APPENDIX D

TEST PIT AND PERCOLATION TEST DATA

CARLIN • SIMPSON & ASSOCIATES

Consulting Engineers
Geotechnical & Environmental

MEMO

DATE: 14 December 2016

TO: Mr. Brian Darcy, EIT
JMC

FROM: Robert B. Simpson, P.E.
Meredith R. Anke, P.E

RE: Proposed River Knoll Development
40 Croton Dam Road
Ossining, New York

JOB NO: 16-207

In accordance with our proposal dated 7 November 2016, we have performed a Subsurface Soil and Foundation Investigation at the referenced site. The following is a summary of the preliminary geotechnical design recommendations for the proposed stormwater management areas. The recommendations below are considered preliminary in nature and are intended to give guidance in the planning and designing of the new stormwater management system.

We understand that the planned construction will include four (4) new stormwater detention basins. We have been provided with a plan showing the locations of the new basins. During this study, 14 borings (PT-1 through PT-12) and two (2) probes (P-1 and P-2) were performed in the proposed stormwater management areas at the referenced site. The borings and probes were performed at the locations shown on the attached Boring Location Plan. In addition, we inspected two (2) existing monitoring wells (MW-1 and MW-2) that were found in the proposed stormwater management areas on the site. The well locations are also shown on the attached Boring Location Plan. The boring and probe observations are summarized in the following table.

Preliminary Boring and Probe Observations

Boring or Probe No.	Approximate Ground Surface Elevation	Observed Depth to Groundwater (Elevation)	Seasonal High Groundwater Elevation	Depth to Bottom of Existing Fill (Elevation)	Observed Depth to Bedrock (Elevation)
Northwest Basin					
PT-1	+363.5	NE to 11’0”	+355.0	NE	9’0” (+354.5)
PT-2	+363.5	NE to 9’6”	+355.0	NE	9’6” (+354.0)
PT-2A	+363.5	NE to 9’6”	+355.0	NE	9’6” (+354.0)
PT-9	+365.0	NE to 12’0”	+355.0	NE	NE to 12’0”
PT-10	+366.0	NE to 10’0”	+355.0	NE	10’0” (+354.0)
Central West Basin					
PT-3	+339.0	3’0” (+336.0)	+337.0	2’0” (+337.0)	NE to 9’0”
PT-4	+339.0	3’0” (+336.0)	+337.0	2’0” (+337.0)	10’6” (+328.5)
PT-11	+345.0	7’0” (+338.0)	+340.0	NE	8’6” (+336.5)
PT-12	+348.5	NE to 11’0”	+340.0	NE	11’0” (+337.5)

Boring or Probe No.	Approximate Ground Surface Elevation	Observed Depth to Groundwater (Elevation)	Seasonal High Groundwater Elevation	Depth to Bottom of Existing Fill (Elevation)	Observed Depth to Bedrock (Elevation)
Southwest Basin					
PT-5	+317.0	5'6" (+311.5)	+312.0	4'0" (+313.0)	NE to 17'0"
PT-6	+315.0	5'0" (+310.0)	+312.0	5'0" (+310.0)	NE to 12'0"
Southeast Basin					
PT-7	+307.0	NE to 5'0"	--	2'6" (+304.5)	NE to 5'0"
PT-7A	+305.0	9'0" (+296.0)	+299.5	3'0" (+302.0)	NE to 9'0"
PT-8	+305.0	10'0" (+295.0)	+298.0	4'0" (+301.0)	NE to 17'0"
P-1	+307.0	12'6" (+294.5)	+298.0	NR	NE to 15'0"
P-2	+309.0	14'0" (+295.0)	+298.0	NR	NE to 15'0"

NE- Not Encountered NR – Not Recorded

Soil Conditions

1. **Topsoil** – The surface layer in each of the borings, except for PT-7, PT-7A, and PT-8, consists of topsoil, which varies from approximately 0'4" to 0'9" in thickness.

2. **Asphalt** – At the surface in borings PT-7, PT-7A, and PT-8 is asphalt pavement that is approximately 0'2" in thickness.

3. **Existing Fill** – Below the surface layer in borings PT-3 through PT-8 is existing fill that consists of loose to medium dense brown or dark brown coarse to fine SAND, some (to and) Silt, trace (to little) coarse to fine Gravel. Some topsoil and bricks were encountered within the fill at select boring locations. The fill layer continued to depths ranging from 2'0" to 5'0" below the existing ground surface at the boring locations.

4. **Silty Sand with Gravel –** Underlying the surface layers and existing fill in each of the borings are layers of brown, gray, or red brown coarse to fine SAND, little (to and) Silt, trace (to and) coarse to fine Gravel. Ten of the borings were terminated in this stratum at final depths ranging from 5'0" to 17'0" below the ground surface. In the remaining locations, this layer extended to depths ranging from 8'6" to 11'0" beneath the existing ground surface.

5. **Weathered Bedrock** – Borings PT-2, PT-4, PT-10, and PT-12 were terminated at auger refusal on the probable bedrock surface at final depths ranging from 8'6" to 11'0" below the existing ground surface.

Groundwater

- Groundwater was encountered in seven (7) borings and two (2) probes at depths ranging from 3'0" to 14'0" below the existing ground surface. These depths correlate with water levels ranging from approximately elevation +294.5 to elevation +338.0.

- The seasonal high groundwater level was encountered between elevation +298.0 and elevation +355.0 as indicated in the table above.

- The groundwater observations from this study are summarized in the table above.

- We also inspected two (2) existing monitoring wells (MW-1 and MW-2) that were found in the proposed stormwater management areas on the site. The well observations are summarized in the following table.

Monitoring Well Observations

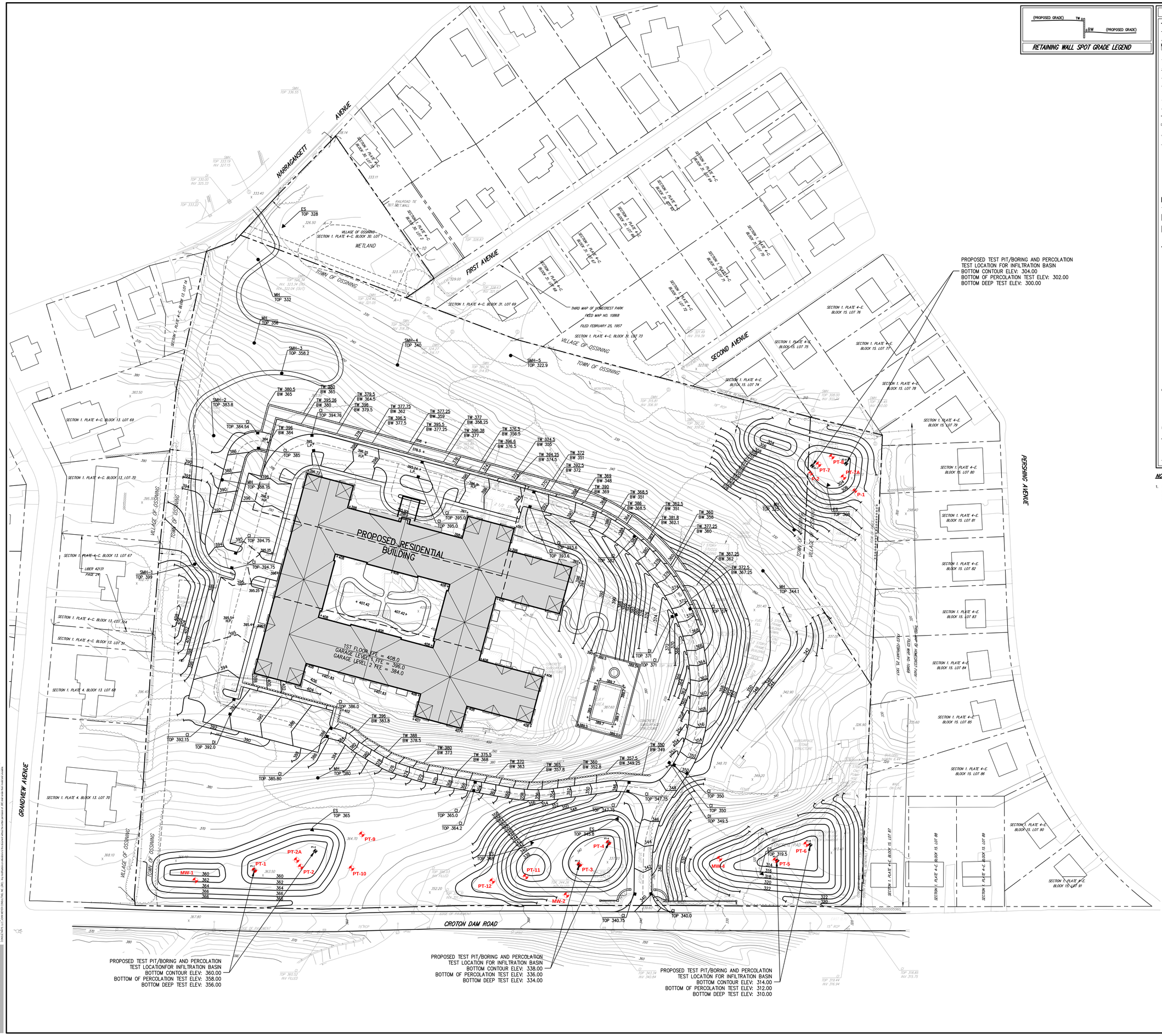
Monitoring Well No.	Approximate Ground Surface Elevation	Depth to Groundwater (Elevation)	Depth to Bottom of Well (Elevation)
MW-1	+363.0	7'6" (+355.5)	7'6" (+355.5)
MW-2	+343.0	5'0" (+338.0)	6'2" (+336.8)

Permeability Test Results

- During this investigation, borehole permeability tests were performed at nine (9) of the boring locations at elevations indicated by JMC. The test results are summarized in the following table.

Borehole Permeability Test Results

Boring No.	Basin Location	Test Depth (Elevation)	Permeability Rate
Northwest Basin			
PT-1	Northwest	5'6" (+358.0)	2.4 in/hr
PT-2	Northwest	5'6" (+358.0)	12.2 in/hr
PT-2A	Northwest	3'6" (+360.0)	3.6 in/hr
PT-9	Northwest	5'0" (+360.0)	2.5 in/hr
PT-10	Northwest	4'0" (+360.0)	4.3 in/hr
Central West Basin			
PT-3	Central West	2'0" (+337.0)	0.0 in/hr
PT-11	Central West	3'0" (+342.0)	4.1 in/hr
Southeast Basin			
PT-7A	Southeast	4'6" (+301.5)	0.0 in/hr
PT-8	Southeast	4'0" (+301.0)	0.0 in/hr



RETAINING WALL SPOT GRADE LEGEND

(PROPOSED GRADE) TW 46 / BW (PROPOSED GRADE)

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING WETLAND LINE AND DELINEATION (WLF-43, WLF-44, WLF-45)
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED CONCRETE SIDEWALK
- PROPOSED DROP CURB AND RAMP
- PROPOSED FINISHED GRADE
- PROPOSED SPOT GRADE
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED TYPE CI DRAIN INLET
- PROPOSED TYPE DI DRAIN INLET
- PROPOSED TRENCH DRAIN
- PROPOSED RIP-RAP SUMP
- PROPOSED HEADWALL
- PROPOSED UNDERGROUND ROOF RUNOFF STORAGE TANK
- PROPOSED WATER QUALITY STRUCTURE
- PROPOSED SUBSURFACE DRAINAGE OUTLET CONTROL STRUCTURE
- PROPOSED OUTLET CONTROL STRUCTURE
- PROPOSED CLEANOUT
- PROPOSED HYDRANT
- PROPOSED RETAINING WALL (DESIGN BY OTHERS)
- PROPOSED DOUBLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
- PROPOSED SINGLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
- BORING LOCATION AND DESIGNATION
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED DITCH OR SWALE
- PROPOSED RIP-RAP
- EXISTING FEATURE TO BE REMOVED

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHY OF PROPERTY PREPARED FOR HOVNANIAN ENTERPRICES, INC." PREPARED BY THOMAS C. MERRITTS LAND SURVEYORS, P.C., DATED 02/27/2006.

APPLICANT/OWNER:
GLENCO
9 RIDGE ROAD
BRONXVILLE, NY 10708

ARCHITECT:
MINNO WASKO
80 LAMBERT LANE
LAMBERTVILLE, NEW JERSEY 08530

No.	Revision	Date	By
	Revised Editorial Obstacle		

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GRADING PLAN

RIVER KNOLL
40 CROTON DAM ROAD
TOWN OF OSSINING, NEW YORK

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

PROGRESS PLOTTING

Drawing: 15064-GRAD
Date: 2016-11-22
Time: 2:37 PM
By: PD

Drawn:	JSJ	Approved:	AG
Scale:	1" = 40'		
Date:	10/02/2015		
Project No:	15064		
15064-SNAI		GRAD	GRAD.scr

Drawing No:
SP–2

BORING LOCATION PLAN
CSA 16-207 12.14.16

NOT FOR CONSTRUCTION

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APPENDIX E

STORMWATER PRACTICE/CDS UNITS OPERATION, MAINTENANCE AND MANAGEMENT INSPECTION CHECKLIST

JMC Project 15064
River Knoll
40 Croton Dam Road
Ossining, NY

Temporary Erosion and Sediment Control Inspection and Maintenance Checklist

Erosion and Sediment Control Measure	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Stabilized Construction Entrance	Daily	• Periodic top dressing with additional aggregate as required • Clean sediment in public right-of-ways immediately
Silt Fence	Weekly + After Each Rain	• Remove & redistribute sediment when bulges develop in the silt fence.
Inlet Protection	Weekly + After Each Rain	• Refer to Figures A5.11, A5.12, A5.13 & A5.14 within the NYSDEC New York State Standard and Specifications for Erosion and Sediment Control
Stone Check Dam	Weekly + After Each Rain	• Correct all damage immediately. • Notify design engineer if significant erosion has occurred between structures as a liner of stone or other suitable material maybe required in this section of the channel. • Remove sediment accumulated behind the dam as needed to allow the channel to drain through the stone check dam and prevent large flows from carrying sediment over the dam. • Replace stones as needed to maintain the design cross section of the structures.

JMC Project 15064
River Knoll
40 Croton Dam Road
Ossining, NY

Permanent Stormwater Management Practice Inspection and Maintenance Checklist

Stormwater Management Practice	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Vegetated Swale/Open Channel/Level Spreader	Monthly	• Check that contributing area is clean of debris. • Confirm vegetation is adequately maintained (mowing, fertilizer, etc.) • Check for rilling/erosion and repair as needed. • Confirm dewatering occurs between storms.
Rip-Rap Apron/Energy Dissipator and Check Dams	Annually + After Major Storms	• Check for evidence of flows going around the structure. • Check for evidence at downstream toe and repair as needed. • Clean sediment and install additional aggregate as necessary.
Stormwater Management Basin	Monthly	• Check Permanent Pool for undesirable vegetative growth and floatings or floatable debris. Remove as needed. • Check Forebays for sediment and cleanout when it depth <50% design depth. • Check Dry Pond areas for adequate vegetation, undesirable vegetative growth, low flow channels are clear of obstructions, standing water or wet spots and sediment and/or trash accumulation. Repair/remove as necessary.

JMC Project 15064
River Knoll
40 Croton Dam Road
Ossining, NY

Permanent Stormwater Management Practice Inspection and Maintenance Checklist (Cont'd)

Stormwater Management Practice	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Stormwater Management Basin	Annually + After Major Storms	• Check adequacy of vegetation and ground cover; for evidence of embankment erosion, animal burrows, unauthorized plantings and cracking, bulging or sliding of dam, clear/properly functioning drains, seeps/leaks on downstream face, failure of slope protection or riprap. Repair/remove as necessary. • Confirm emergency spillway is clear of obstructions and debris. • Confirm all inlets and outlet structures/pipes are operating properly.
Drain Inlets	Monthly	• Check for blockage and/or erosion at top of each inlet. Repair/remove as necessary. • Check for sediment and debris collected within sumps and clean out as necessary.
CDS Water Quality Structure	(See Manufacturer's Maintenance)	• Open access cover for visual inspection and measure the distance from the standing water surface to the sediment pile with a measuring stick or tape. If less than 4 feet, insert hose from vacuum truck into the sump and screen through both access covers

		to clean out the standing water, layer of oil, sediment, trash, etc. • The screen must be powerwashed to ensure it is free of trash and debris.

The owner/operator responsible for inspection and maintenance as outlined above:

Glenco Group LLC
Glen Vetromile
670 White Plains Road
Scarsdale, NY 10583
Phone: (914) 472-4521
Fax: (646) 473-1034
Email: glen@glencogroupny.com

s:\2015\15064\report\temporary & permanent s&e inspection and maintenance checklist.docx

APPENDIX F

STORMWATER PRACTICE/CDS UNITS OPERATION, MAINTENANCE AND MANAGEMENT INSPECTION CHECKLIST

Infiltration Basin Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Runoff diverted		
Soil permeability tested		
Groundwater / bedrock depth		
2. Excavation		
Size and location		
Side slopes stable		
Excavation does not compact subsoils		
3. Embankment		
Barrel		
Anti-seep collar or Filter diaphragm		
Fill material		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
4. Final Excavation		
Drainage area stabilized		
Sediment removed from facility		
Basin floor tilled		
Facility stabilized		
5. Final Inspection		
Pretreatment facility in place		
Inlets / outlets		
Contributing watershed stabilized before flow is routed to the factility		

Comments:

Actions to be Taken:

APPENDIX G

CONTRACTOR CERTIFICATION

JMC Project 15064
River Knoll
40 Croton Dam Road
Town of Ossining, NY

CONTRACTOR'S CERTIFICATION

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware there are significant penalties for submitting false information that I do not believe to be true, including the possibility of time and imprisonment for knowing violations."

Company Name: _____

Address: _____

Telephone Number: _____

Name and Title: _____

Signature: _____ Date: _____

Permit Identification No.: _____

Name and Title of Trained Contractor: _____

Elements of the SWPPP Contractor is responsible for: _____

s:\swmr template\support docs\nys contractors certification.docx

APPENDIX H

DRAWINGS

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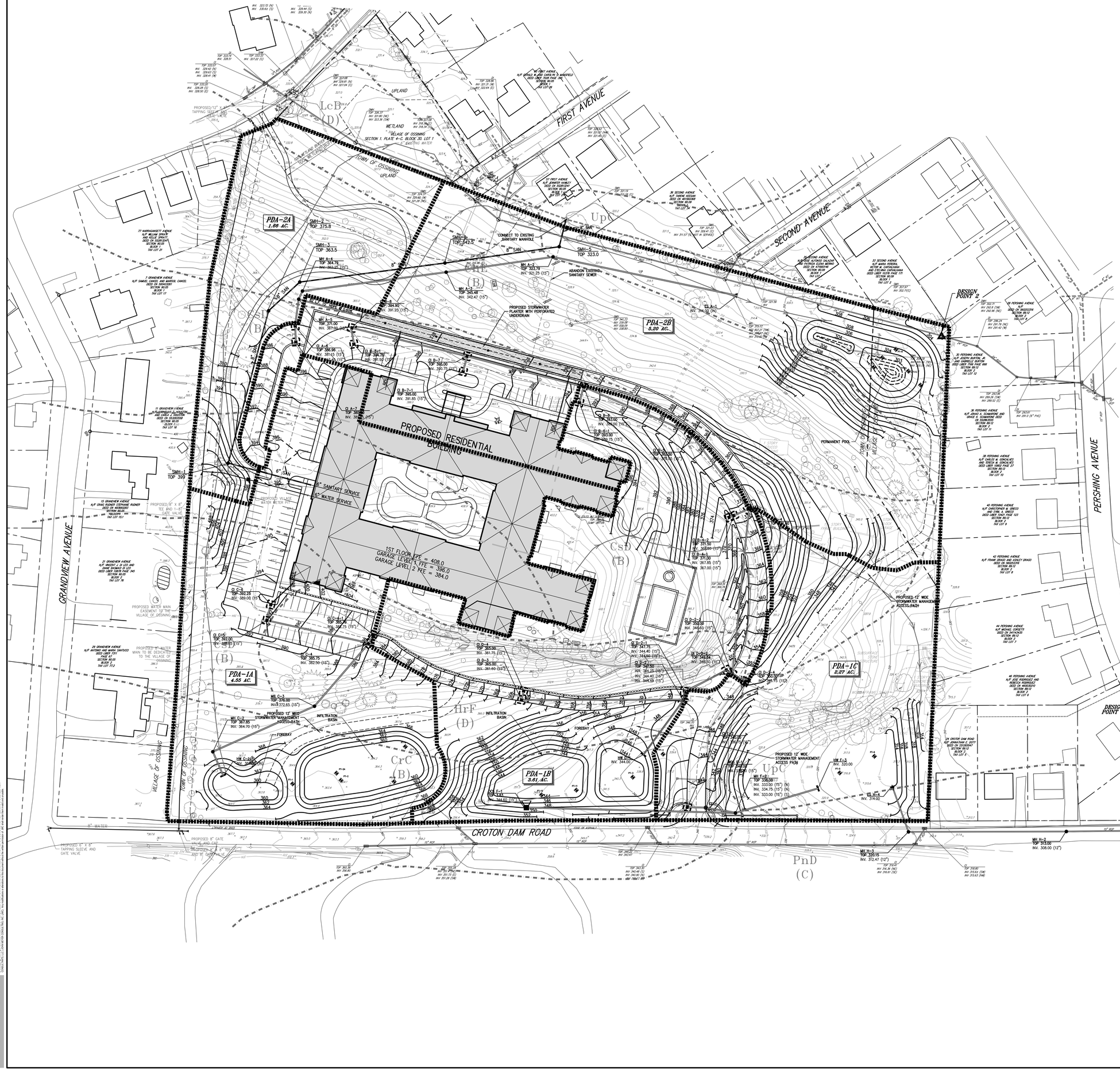
PROPOSED DRAINAGE LEGEND
EXISTING GRADE
PROPOSED FINISHED GRADE
WETLANDS LINE
LIMIT OF SOIL GROUPS LINE
FLOW PATH LINE
PROPOSED BUILDING LINE
PROPOSED CONCRETE CURB
PROPOSED MANHOLE (MH)
EXISTING DRAIN INLET
PROPOSED DRAIN INLET (DI)
PROPOSED DOUBLE DRAIN INLET (DDI)
PROPOSED COMBINATION INLET (CI)
PROPOSED END SECTION (ES)
PnD (C)
SOIL DESIGNATION AND HYDROLOGIC SOIL GROUP
NOTES:
1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "----," PREPARED BY JMC, PLLC, DATED ----.
2. GEOTECHNICAL BORING/TEST PIT LOCATIONS DEPICTED ON THIS PLAN WERE TAKEN FROM THE GEOTECHNICAL MEMO TITLED, "PRELIMINARY BORING AND PROBE OBSERVATIONS", DATED 12/14/2016, PREPARED BY CARLIN–SIMPSON & ASSOCIATES.
3. THE SOIL TYPES, HYDROLOGIC SOIL GROUPS AND BOUNDARY INFORMATION SHOWN ON THIS PLAN WERE TAKEN FROM THE UNITED STATES DEPARTMENT OFAGRICULTURE (USDA) WEB SOIL SURVEY.
4. THE TOPOGRAPHIC CONTOURS DEPICTED ON THIS PLAN HAVE BEEN SUPPLEMENTED BY THE WESTCHESTER COUNTY GIS BASE MAP. THE WESTCHESTER COUNTY GIS DATASET CONTAINS CONTOUR LINES MODELED AT A TWO FOOT INTERVAL. THE SOURCE INFORMATION USED IN THE COLLECTION OF THE DATASET WAS PART OF THE NEW YORK STATE DIGITAL ORTHOIMAGERY PROGRAM; PHOTOS TAKEN IN APRIL 2004. THE VERTICAL DATUM IS NAVD88.
THE COUNTY OF WESTCHESTER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE COMPLETENESS OR ACCURACY OF THE DATA AND ASSUMES NO LIABILITY WHATSOEVER FOR ANY PRODUCT OR ANALYSIS DERIVED FROM OR BASED ON THE DATA.
PDA–1A 4.55 AC.
PDA–1B 3.61 AC.
PDA–1C 2.27 AC.
PDA–2A 1.66 AC.
PDA–2B 5.20 AC.
PROPOSED RESIDENTIAL BUILDING
1ST FLOOR EFE = 408.0
GARAGE LEVEL 1 FFE = 396.0
GARAGE LEVEL 2 FFE = 384.0
FIRST AVENUE
SECOND AVENUE
PERSHING AVENUE
GRANDVIEW AVENUE
CROTON DAM ROAD
DESIGN POINT 1
DESIGN POINT 2
PERMANENT POOL
130 L.F. 12" HDPE @ 2.22%
PROPOSED 12" WIDE STORMWATER MANAGEMENT ACCESS PATH
INFILTRATION BASIN
FOREBAY
PROPOSED STORMWATER PLANTER WITH PERFORMED UNDERDRAIN
ABANDON EXISTING SANITARY SEWER
CONNECT TO EXISTING SANITARY MANHOLE
PROPOSED 12" WIDE STORMWATER MANAGEMENT ACCESS PATH
PROPOSED 6" WATER MAIN TO BE DEDICATED TO THE VILLAGE OF OSSINING
PROPOSED WATER MAIN EASEMENT TO THE VILLAGE OF OSSINING
PROPOSED 6" X 6" TAPPING SLEEVE AND GATE VALVE
PROPOSED 6" X 8" TEE AND 8" GATE VALVE
PROPOSED 8" GATE VALVE AND 8" TEE
PROPOSED 6" X 8" TAPPING SLEEVE AND GATE VALVE
PROPOSED VILLAGE WATER METER
PROPOSED 6" X 8" TEE AND 6" GATE VALVE
6" SANITARY SERVICE
6" WATER SERVICE
6" SAN
8" SAN
12" SAN
15" SAN
8" WATER
12" WATER
VILLAGE OF OSSINING
TOWN OF OSSINING
UPLAND
WETLAND
VILLAGE OF OSSINING SECTION 1, PLATE 4–C, BLOCK 30, LOT 1
SANITARY SEWER
SMH–1 TOP 399
SMH–2 TOP 375.8
SMH–3 TOP 363.5
SMH–4 TOP 342.5
SMH–5 TOP 323.0
MH A–1 TOP 364.79 INV. 353.49 (15")
MH A–2 TOP 323.79 INV. 321.25 (15")
MH A–3 TOP 371.00 INV. 367.90 (24")
MH C–1 TOP 392.00 INV. 389.15 (15")
MH C–2 TOP 376.00 INV. 372.65 (15")
MH C–3 TOP 367.85 INV. 364.70 (15")
MH C–4 TOP 385.75 INV. 382.50 (15")
MH F–1 TOP 333.00 INV. 329.75 (15")
MH F–2 TOP 333.00 INV. 333.00 (15") (N) INV. 334.75 (15") (N) INV. 333.00 (15") (S)
MH F–3 INV. 320.00
MH H–1 TOP 320.10 INV. 312.47 (12")
MH H–2 TOP 315.00 INV. 308.00 (12")
MH H–3 TOP 335.85 INV. 289.50 (12")
CB A–1 INV. 344.00 (N)
CB A–2 TOP 364.00 INV. 360.00 (15")
CB A–3 TOP 363.00 INV. 359.00 (15")
CB A–4 TOP 368.98 INV. 361.45 (15")
CB B–1 TOP 394.76 INV. 391.50 (15")
CB B–2 TOP 395.00 INV. 391.85 (15")
CB B–3 TOP 393.00 INV. 389.75 (15")
CB B–4 TOP 371.50 INV. 367.85 (15") INV. 367.00 (15")
CB C–1 TOP 382.29 INV. 379.04 (15")
CB C–2 TOP 382.29 INV. 389.00 (15")
CB C–3 TOP 365.00 INV. 361.75 (15")
CB C–4 TOP 365.00 INV. 361.60 (15")
CB D–1 TOP 347.75 INV. 344.40 (15") INV. 344.00 (15") (S)
CB D–2 TOP 347.75 INV. 344.25 (18") INV. 344.40 (18") INV. 344.09 (15")
CB D–3 TOP 344.84 INV. 340.50 (15")
CB E–1 TOP 360.00 INV. 356.15 (15")
CB F–1 TOP 344.60 (15")
CB G–1 TOP 371.50 INV. 368.00 (15")
CB G–2 TOP 371.00 INV. 367.85 (15") INV. 367.00 (15")
CB G–3 TOP 352.00 INV. 346.60 (15")
CB H–1 TOP 320.10 INV. 312.47 (12")
CB H–2 TOP 315.00 INV. 308.00 (12")
CB H–3 TOP 335.85 INV. 289.50 (12")
CB H–4 INV. 314.00
LcB (D)
CsD (B)
CrC (B)
HrF (D)
PnD (C)
UpB
UpC
UpD
SuB
SuC
SuD
11 GRANDVIEW AVENUE N/F CRAIG RUDNER STEPHANIE RUDNER DEED LIBER 10878 PAGE 1 SECTION 80.05 BLOCK 1 TAX LOT 16
15 GRANDVIEW AVENUE N/F CRAIG RUDNER STEPHANIE RUDNER DEED LIBER 10878 PAGE 1 SECTION 80.05 BLOCK 1 TAX LOT 15.1
21 GRANDVIEW AVENUE N/F VINCENT J. DI LEO AND DIANE BIONDO DI LEO DEED LIBER 10878 PAGE 345 SECTION 80.05 BLOCK 1 TAX LOT 76
29 GRANDVIEW AVENUE N/F ANTONIO AND MARIA SANTIAGO DEED LIBER 7311 PAGE 87 SECTION 80.05 BLOCK 1 TAX LOT 77.2
7 GRANDVIEW AVENUE N/F SAMUEL CANCEL AND MARISOL CANCEL DEED ON 05/08/2001 SECTION 80.05 BLOCK 1 TAX LOT 17
77 NORMANDY AVENUE N/F WILLIAM SPRATT AND KELLIE SPRATT DEED ON 03/28/2014 SECTION 80.05 BLOCK 1 TAX LOT 21
N/F ERNEST A. AND MARGARET A. WINGFIELD DEED LIBER 1228 PAGE 396 SECTION 80.05 BLOCK 1 TAX LOT 18
37 FIRST AVENUE N/F JENNIFER HUNLEY DEED LIBER 10878 PAGE 1 SECTION 80.05 BLOCK 1 TAX LOT 1
36 SECOND AVENUE N/F SABINE KISSLING DEED ON 4/19/2013 SECTION 80.05 BLOCK 1 TAX LOT 14
38 SECOND AVENUE N/F GEORGE AUTENZI DALKAM AND PATRICIA CLOW MERRO DEED LIBER 10878 PAGE 1 SECTION 80.05 BLOCK 1 TAX LOT 13
33 SECOND AVENUE N/F MARIA PEREIRA, ANTONIO PEREIRA AND CELSINO CARVALHAIS DEED LIBER 10878 PAGE 171 SECTION 80.05 BLOCK 1 TAX LOT 2
30 PERSHING AVENUE N/F JOSEPH BURTON, JR. AND DARNELLE BURTON DEED LIBER 11098 PAGE 466 SECTION 80.12 BLOCK 2 TAX LOT 12
32 PERSHING AVENUE N/F JORGE A. SCHARIFKER AND GRACE K. SCHARIFKER DEED LIBER 10878 PAGE 1 SECTION 80.12 BLOCK 2 TAX LOT 11
35 PERSHING AVENUE N/F CARLOS M. GONCALVES AND TERESA M. GONCALVES DEED LIBER 10892 PAGE 27 SECTION 80.12 BLOCK 2 TAX LOT 10
40 PERSHING AVENUE N/F JOSEPH A. GRECO AND LORI A. GRECO DEED LIBER 10901 PAGE 123 SECTION 80.12 BLOCK 2 TAX LOT 9
42 PERSHING AVENUE N/F TRAM DRAGO AND JOSLEY DRAGO DEED ON 08/20/2018 SECTION 80.12 BLOCK 2 TAX LOT 8
44 PERSHING AVENUE N/F MICHAEL CORSETTI DEED ON 04/14/2015 SECTION 80.12 BLOCK 2 TAX LOT 7
46 PERSHING AVENUE N/F ANTHONY ROSADO AND REBECCA RODRIGUEZ DEED ON 11/08/2010 SECTION 80.12 BLOCK 2 TAX LOT 6
24 CROTON DAM ROAD N/F JENNIFER L. ZOTTY DEED ON 03/08/2017 SECTION 79.12 BLOCK 2 TAX LOT 3
JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com
JMC
No. | Revision | Date | By
Preliminary Not for Construction
PROJECT OWNER: GLENCO, 9 RIDGE ROAD, BRONXVILLE, NY 10708
PROJECT: MINNO WASKO, 80 LAMBERT LANE, LAMBERTVILLE, NEW JERSEY 08530
ARCHITECT:
PROPOSED DRAINAGE AREA MAP
RIVER KNOLL
40 CROTON DAM ROAD
TOWN OF OSSINING, NEW YORK
ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.
GIS GEOGRAPHIC INFORMATION SYSTEMS
THE 2–FOOT CONTOURS DEPICTED ON THIS PLAN ARE INTENDED TO BE USED FOR PLANNING & PRELIMINARY ENGINEERING APPLICATIONS. THEY ARE NOT INTENDED TO BE USED IN ENGINEERING DESIGN AND DO NOT NEGATE THE NEED FOR A FIELD SURVEY. THE WESTCHESTER COUNTY GIS DATASET CONTAINS CONTOUR LINES MODELED AT A TWO FOOT INTERVAL. THE SOURCE INFORMATION USED IN THE COLLECTION OF THE DATASET WAS PART OF THE NEW YORK STATE DIGITAL ORTHOIMAGERY PROGRAM; PHOTOS TAKEN IN APRIL 2004. VERTICAL DATUM IS NAVD88.
THE COUNTY OF WESTCHESTER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE COMPLETENESS OR ACCURACY OF THE DATA AND ASSUMES NO LIABILITY WHATSOEVER FOR ANY PRODUCT OR ANALYSIS DERIVED FROM OR BASED ON THE DATA.
Drawn: JSJ Approved: AG
Scale: 1" = XX'
Date: XX/XX/2016
Project No: 15064
1994–DRAINAGE | PDA | --
Drawing No: DA–2
NOT FOR CONSTRUCTION
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Appendix I
Drainage Map

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Appendix J
Natural Resources

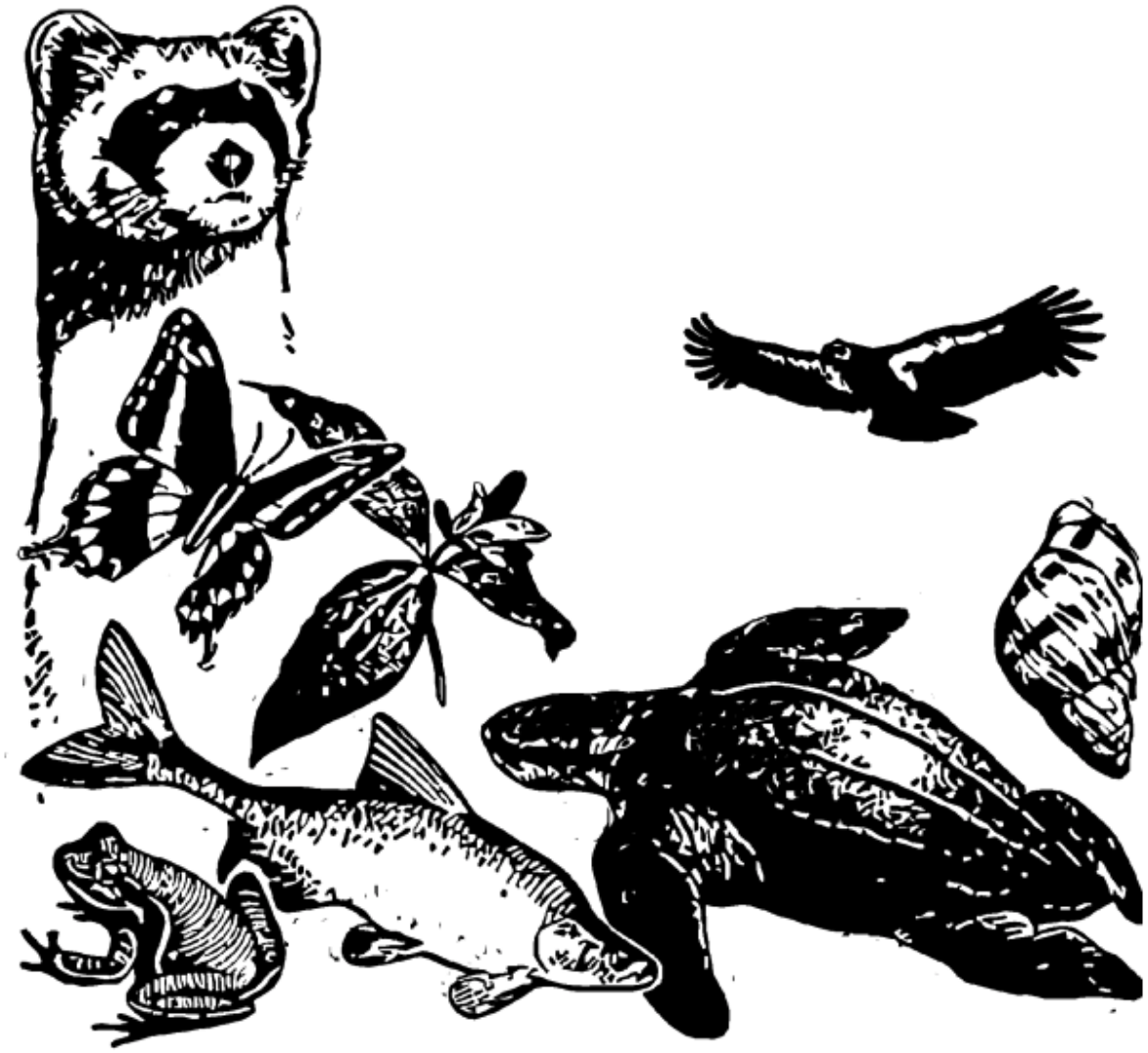
U.S. Fish & Wildlife Service

Stony Lodge

IPaC Trust Resources Report

Generated October 12, 2016 10:02 AM MDT, IPaC v3.0.9

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



IPaC - Information for Planning and Conservation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

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Project Description 1
Endangered Species 2
Migratory Birds 3
Refuges & Hatcheries 6
Wetlands 7

U.S. Fish & Wildlife Service

IPaC Trust Resources Report

NAME

Stony Lodge

LOCATION

Westchester County, New York

IPAC LINK

https://ecos.fws.gov/ipac/project/ZYGDL-ZADEF-CM7PA-X4FC6-EWZVYQ

U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

Long Island Ecological Services Field Office
340 Smith Road
Shirley, NY 11967
(631) 286-0485

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9349
(607) 753-9334

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

There are no endangered species in this location

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

---

1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The following species of migratory birds could potentially be affected by activities in this location:

American Bittern Botaurus lentiginosus — Bird of conservation concern
On Land Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F3

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
On Land Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

Black-billed Cuckoo Coccyzus erythropthalmus — Bird of conservation concern
On Land Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HI

Blue-winged Warbler Vermivora pinus — Bird of conservation concern
On Land Season: Breeding

Canada Warbler Wilsonia canadensis — Bird of conservation concern
On Land Season: Breeding

Cerulean Warbler Dendroica cerulea — Bird of conservation concern
On Land Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B09I

Fox Sparrow Passerella iliaca — Bird of conservation concern
On Land Season: Wintering

Golden-winged Warbler Vermivora chrysoptera — Bird of conservation concern
On Land Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0G4

Hudsonian Godwit Limosa haemastica — Bird of conservation concern
At Sea Season: Migrating

Kentucky Warbler Oporornis formosus — Bird of conservation concern
On Land Season: Breeding

Least Bittern Ixobrychus exilis
On Land Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B092

Olive-sided Flycatcher Contopus cooperi — Bird of conservation concern
On Land Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon Falco peregrinus — Bird of conservation concern
On Land Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU

Pied-billed Grebe Podilymbus podiceps — Bird of conservation concern
On Land Season: Year-round

Prairie Warbler Dendroica discolor — Bird of conservation concern
On Land Season: Breeding

Purple Sandpiper Calidris maritima — Bird of conservation concern
On Land Season: Wintering

Rusty Blackbird Euphagus carolinus — Bird of conservation concern
On Land Season: Wintering

Short-eared Owl Asio flammeus — Bird of conservation concern
On Land Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD

Snowy Egret Egretta thula — Bird of conservation concern
On Land Season: Breeding

Upland Sandpiper Bartramia longicauda — Bird of conservation concern
On Land Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HC

Willow Flycatcher Empidonax traillii — Bird of conservation concern
On Land Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F6

Wood Thrush Hylocichla mustelina — Bird of conservation concern

On Land Season: Breeding

Worm Eating Warbler Helmitheros vermivorum — Bird of conservation concern

On Land Season: Breeding

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

There are no wetlands in this location

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

November 14, 2016

James Nash
AKRF, Inc.
34 South Broadway, Suite 401
White Plains, NY 10601

Re: River Knoll - residential development
Town/City: Ossining. County: Westchester.

Dear James Nash:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

We have no records of rare or state-listed animals or plants, or significant natural communities at your site or in its immediate vicinity.

The absence of data does not necessarily mean that rare or state-listed species, significant natural communities, or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information that indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other resources may be required to fully assess impacts on biological resources.

This response applies only to known occurrences of rare or state-listed animals and plants, significan natural communities, and other significant habitats maintained in the Natural Heritage database. Your project may require additional review or permits; for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

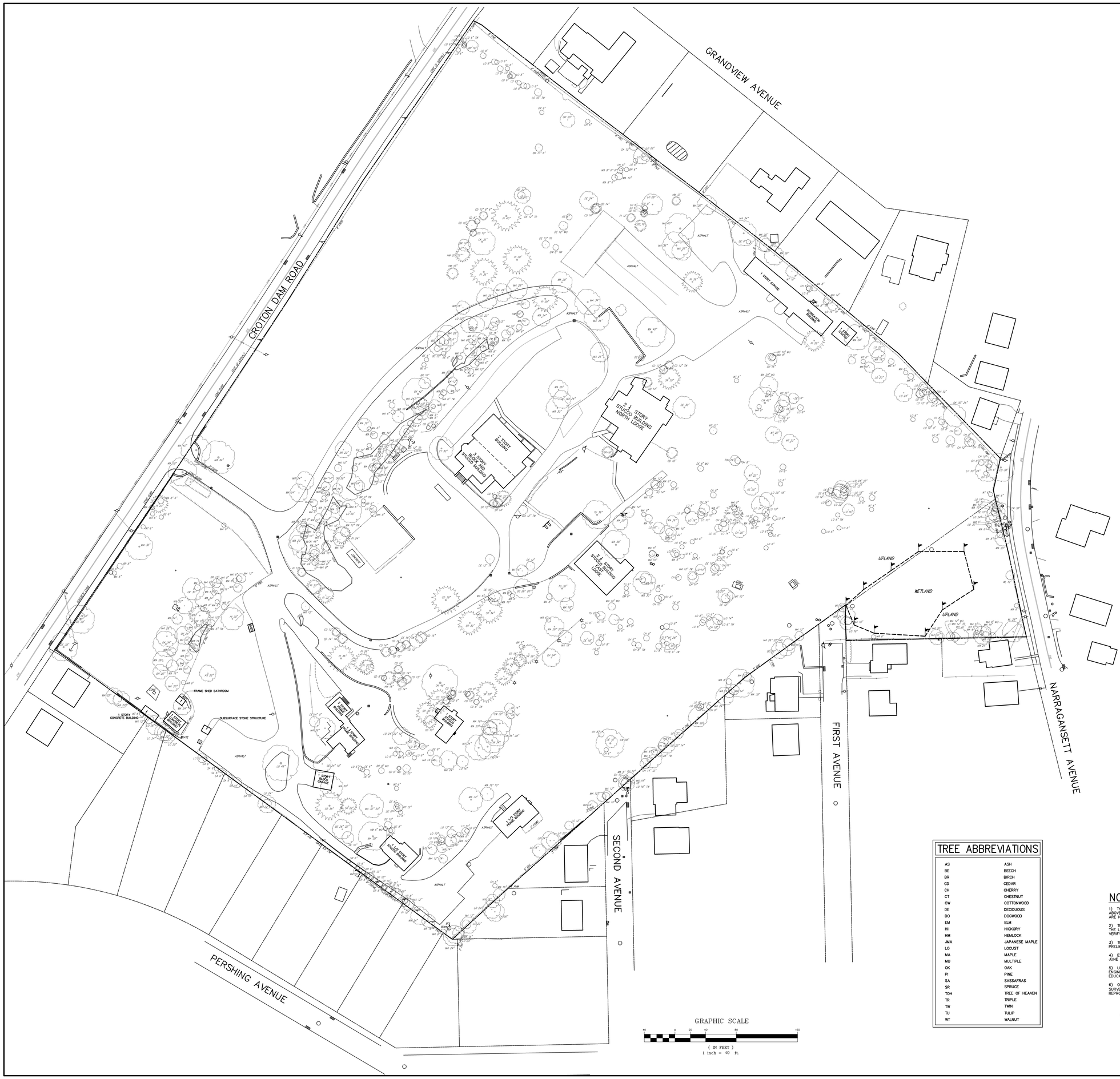
Sincerely,

Andrea Chaloux

Andrea Chaloux
Environmental Review Specialist
New York Natural Heritage Program

1406

Appendix K
Tree Survey



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

ABBREVIATIONS

BLDG	BUILDING
CONC	CONCRETE
DYL	DASHED YELLOW LINE
E	EAST
FFE	FINISH FLOOR ELEVATION
FNC	CHAIN LINK FENCE
FNPVC	POLYVINYL CHLORIDE
FNPR	POST AND RAIL FENCE
FNS	STOCKADE FENCE
FNW	WIRE FENCE
N	NORTH
S	SOUTH
SWL	SINGLE WHITE LINE
W	WEST

TREE SURVEY LEGEND

ADJACENT PROPERTY LINE	
CURB	
CURB CUT	
CLEAN OUT	
COMBINATION INLET	
CONIFER TREE AND SIZE	Pi 10"
DRAIN INLET	
DECIDUOUS TREE AND SIZE	OK 10"
EDGE OF GRAVEL	
FENCE	
FENCE POST	FNP
FUEL FILL	
GAS VALVE	
GUIDE RAIL	
GUY WIRE	
HYDRANT	
HEDGE	
LIGHT POLE	
LEDGE STONE	
MANHOLE	
OVERHEAD WIRE	OHW
PROPERTY LINE	
SANITARY MANHOLE	
SIGN	
UTILITY POLE	
UTILITY POLE WITH LIGHT	
VENT PIPE	
WALL	
WATER LINE	
WATER VALVE	
WETLAND FLAG	
WETLAND LINE	

TREE ABBREVIATIONS

AS	ASH
BE	BEECH
BR	BIRCH
CD	CEDAR
CH	CHERRY
CT	CHESTNUT
CW	COTTONWOOD
DE	DECIDUOUS
DO	DOGWOOD
EM	ELM
HI	HICKORY
HM	HEMLOCK
JMA	JAPANESE MAPLE
LO	LOCUST
MA	MAPLE
MU	MULTIPLE
OK	OAK
PI	PINE
SA	SASSAFRAS
SR	SPRUCE
TOH	TREE OF HEAVEN
TR	TRIPLE
TW	TWIN
TU	TULIP
WT	WALNUT

NOTES & REFERENCES:

1) THIS MAP IS PREPARED TO DEPICT TREES 8" IN DIAMETER AND GREATER MEASURED AT A POINT 3' ABOVE GRADE. TREE SYMBOLS ARE SHOWN TO REPRESENT THE RELATIVE SIZE OF TREE STEMS AND ARE NOT INTENDED TO REPRESENT THE ACTUAL SIZE OF THE TREE CANOPY.

2) THE LOCATION OF SUBSURFACE IMPROVEMENTS OR ENCROACHMENTS, IF ANY, ARE NOT COMPLETE. THE LOCATION OR COMPLETENESS OF UNDERGROUND INFORMATION CANNOT BE GUARANTEED. VERIFY THE ACTUAL LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION.

3) THE PROPERTY LINE SHOWN HEREON IS PER DEED LIBER 8445 PAGE 240. THE PROPERTY LINE IS PRELIMINARY AND SHOULD BE CONSIDERED APPROXIMATE.

4) EXISTING WETLANDS WERE DELINEATED BY AKRF, INC ON JUNE 8, 2016 AND FIELD SURVEYED ON JUNE 14, 2016.

5) UNAUTHORIZED ALTERATION OR ADDITION TO A MAP BEARING THE SEAL OF A PROFESSIONAL ENGINEER OR A LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW STATE EDUCATION LAW, EXCEPT AS PER SECTION 7209, SUB-DIVISION 2.

6) ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY, MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES. UNAUTHORIZED REPRODUCTION OF THIS MAP IS A VIOLATION APPLICABLE LAWS.

TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

THOMAS M. SCHMIDT NY LIC. NO. 50221

DATE

NO.	REVISION	DATE	BY

Previous Edition Obsolete

CLIENT:

GLENCO
9 RIDGE ROAD
BRONXVILLE NY, 10708

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TREE SURVEY

RIVER KNOLL SURVEY
40 CROTON DAM ROAD, VILLAGE OF OSSINING
TOWN OF OSSINING, WESTCHESTER COUNTY, NEW YORK

DRAWN:	ML	APPROVED:	TS
SCALE:	1"=40'		
DATE:	11/18/2016		
PROJ. NO:	16108-S		
CONTROL.dwg:	TRS-1.tab		NA
DRAWING NO:	TRS-1		

Appendix L
Phase IA Study and CRIS Correspondance

River Knoll Project

40 CROTON DAM ROAD,

OSSINING, WESTCHESTER COUNTY, NEW YORK

Phase 1A Archaeological Documentary Study

Prepared for:

Glenco Ossining, LLC
9 Ridge Road
Bronxville, NY 10708

Prepared by:

AKRF, Inc.
440 Park Avenue South
New York, NY 10016
212-696-0670

JANUARY 2017

MANAGEMENT SUMMARY

OPRHP Project Review Number:	15PR05971
Involved Agencies:	New York State Department of Environmental Conservation
Phase of Survey:	Phase 1A Archaeological Documentary Study
Location Information	
Location:	40 Croton Dam Road, Ossining, NY
Minor Civil Division:	11912 and 11947
County:	Westchester
Survey Area	
Length:	Approximately 305 meters (1,000 feet)
Width:	Approximately 274 meters (900 feet)
Area:	17.89 acres (779,182 square feet)
USGS 7.5 Minute Quadrangle Map:	Ossining
Report Author:	Elizabeth D. Meade, MA, RPA and A. Michael Pappalardo, MA, RPA
Date of Report:	January 2017

Chapter 1: Introduction and Methodology

A. PROJECT DESCRIPTION

The Glenco Group, LLC is proposing the River Knoll project, which would involve the construction of a new residential building in the Town of Ossining and the Village of Ossining, Westchester County, New York (see **Figure 1**). The Project Site is bounded by Croton Dam Road, Pershing Avenue, Grandview Avenue, and Narragansett Avenue (see **Figure 2**). The Project Site includes three parcels: (1) Parcel 89.08-1-83 (40 Croton Dam Road), a 16.65-acre parcel in the Town of Ossining; (2) Parcel 90.05-1-26 (along Narragansett Avenue), a 0.60-acre parcel within the Village of Ossining; and (3) Parcel 89.12-13 (along Croton Dam Road), a 0.64-acre parcel within the Village of Ossining. The construction of the proposed project would revitalize an underutilized site and provide income to the Town of Ossining through new tax revenues and the increased economic vitality to the greater-Ossining area. The proposed project would also increase and protect open and green space to benefit the local community.

The nearly 18-acre Project Site is currently developed with Stony Lodge Psychiatric Hospital, a child and adolescent psychiatric center that has been closed since 2012. Ten buildings associated with the hospital are currently located on the Project Site, all of which are vacant with the exception of the Administration and Maintenance buildings which are still in operation on the property. The buildings were constructed between the 1860s and the 1960s.The proposed project would involve the demolition of all of the existing buildings currently located on the Project Site and the construction of a new residential structure within the footprint of the existing hospital in addition to parking space. Existing paved areas would be removed and landscaped to create additional green space. Finally, the proposed project will involve the construction of a new, onsite stormwater system consisting of high density polyethylene pipe, manholes, catch basins with sumps, outlet control structures and infiltration basins.

The project would require permits and approvals from the Town and Village of Ossining, as well as stormwater management and sewer/water approvals from the New York State Department of Environmental Conservation (NYSDEC) and Westchester County Department of Health (WCDOH). The project is therefore subject to Section 14.09 of the New York State Historic Preservation Act of 1980. In a comment letter issued via the New York State Cultural Resource Information System (CRIS) on October 20, 2105, the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) requested that a Phase 1A Archaeological Documentary Study be prepared to determine the site's archaeological sensitivity and to summarize its historic development. This document has been prepared to satisfy that request.

B. RESEARCH GOALS AND METHODOLOGY

The following Phase 1A Archaeological Documentary Study of the River Knoll Project Site has been designed to satisfy the requirements of the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP), issued in 2005, and it follows the guidelines of the New York Archaeological Council (NYAC), issued in 1994 and adopted by OPRHP in 1995. The study documents the development history of the proposed Project Site as well as its potential to yield archaeological resources including both precontact and historic cultural resources. In addition, this report documents the current conditions of

the Project Site and previous cultural resource investigations which have taken place on the Project Site and in the vicinity.

This Phase 1A Archaeological Documentary Study has four major goals: (1) to determine the likelihood that the Project Site was occupied during the precontact (i.e., Native American) and/or historic periods; (2) to determine the effect of subsequent development and landscape alteration on any potential archaeological resources that may have been located at the Project Site; (3) to make a determination of the Project Site's potential archaeological sensitivity; and (4) to make recommendations for further archaeological analysis, if necessary. The steps taken to fulfill these goals are explained in greater detail below.

The first goal of this documentary study is to determine the likelihood that the project locations were inhabited during the precontact or historic periods and identify any activities that may have taken place on the Project Site that would have resulted in the deposition of archaeological resources. In order to determine the likelihood of the Project Site's occupation during the precontact and historic periods, documentary research was completed to establish a chronology of the project location's development, landscape alteration, and to identify any individuals who may have owned the land or worked and/or resided there and to determine if buildings were present on the project locations in the past. Data were gathered from various published and unpublished primary and secondary resources, such as historic maps, topographical analyses (both modern and historic), historic photographs, newspaper articles, local histories, and previously conducted archaeological surveys. Information regarding previous archaeological sites and cultural resources investigations from the files of OPRHP and NYSM were accessed through the New York State Cultural Resources Information System (CRIS).[1] On-line textual archives, such as Google Books and the Internet Archive Open Access Texts, were also accessed.

The second goal of this Phase 1A study is to determine the likelihood that archaeological resources could have survived intact on the Project Site after development and landscape alteration (i.e., erosion, grading, filling, etc.). Potential disturbance associated with the construction and demolition of buildings, paving, and utility installation was also considered. Historic maps documenting structures on the project location were analyzed and historic and current topographical maps were compared to determine the extent to which the project locations have been disturbed. After identifying the likelihood that archaeological resources were deposited on the Project Site and the likelihood that they could remain intact given subsequent development and landscape alteration, a sensitivity determination was made for the project locations for both precontact and historic period resources. As described by NYAC in their Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State, published in 1994 and subsequently adopted by OPRHP (see page 2):

> *An estimate of the archaeological sensitivity of a given area provides the archaeologist with a tool with which to design appropriate field procedures for the investigation of that area. These sensitivity projections are generally based upon the following factors: statements of locational preferences or tendencies for particular settlement systems, characteristics of the local environment which provide essential or desirable resources (e.g., proximity to perennial water sources, well-drained soils, floral and faunal resources, raw materials, and/or trade and transportation routes), the density of known archaeological and historical resources within the general area, and the extent of known disturbances which can potentially affect the integrity of sites and the recovery of material from them.*

[1] CRIS can be accessed at: https://cris.parks.ny.gov/.

As stipulated by the NYAC standards, sensitivity assessments should be categorized as low, moderate, or high to reflect "the likelihood that cultural resources are present within the project area" (NYAC 1994: 10). For the purposes of this study, those terms are defined as follows:

- **Low**: Areas of low sensitivity are those where the original topography would suggest that Native American sites would not be present (i.e., locations at great distances from fresh and salt water resources), locations where no historic activity occurred before the installation of municipal water and sewer networks, or those locations determined to be sufficiently disturbed so that archaeological resources are not likely to remain intact.
- **Moderate**: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and with some disturbance, but not sufficient disturbance to eliminate the possibility that archaeological resources are intact on the Project Site.
- **High**: Areas with topographical features that would suggest Native American occupation, documented historic period activity, and minimal or no documented disturbance.

According to NYAC standards, Phase 1B testing is generally warranted for areas determined to have moderate sensitivity or higher. Archaeological testing is designed to determine the presence or absence of archaeological resources that could be impacted by a proposed project. Should they exist on the project locations, such archaeological resources could provide new insight into the precontact occupation of Westchester County, the transition from Native American to European settlement, or the historic period occupation of the Project Site.

Chapter 2: Physical Setting

A. CURRENT CONDITIONS

As mentioned previously, the Project Site is currently developed with the Stony Lodge Psychiatric Hospital, a 10-building complex (see **Figure 2** and **Photographs 1** through **23**). The hospital complex is centered around the Main Building, which was constructed as a residence in the late 19th century. The remaining buildings were constructed in later years, with the majority in the 20th century. The Project Site includes various roads and pathways in addition to landscaped areas and meadows.

B. GEOLOGY AND TOPOGRAPHY

Westchester County is found within a geographic bedrock region known as the Manhattan Prong of the New England (Upland) Physiographic Province. This region is a "rolling lowland area…of metamorphic rocks" dating to the Early Paleozoic, which began approximately 575 million years ago (Isachsen et al. 2000). The bedrock in the vicinity of the Project Site includes Lower Quartzite, Inwood Marble, and Manhattan Schist dating to approximately 435 million years ago with bands of Yonkers Granite and Fordham Gneiss dating to approximately 575 to 1,100 million years ago (Isachsen et al. 2000). Throughout the majority of the Manhattan Prong, the bedrock is covered with glacial till known as the Atlantic Coastal Plain deposits (Schuberth 1968). These deposits were left behind by massive glaciers of up to 1,000 feet thick that retreated from the area towards the end of the Pleistocene. There were four major glaciations that affected the region until approximately 12,000 years ago when the Wisconsin period—the last glacial period—came to an end. The rocks and sand deposits left behind as a result of glacial movements brought about the creation of hundreds of sand hills, or kames, some of which were nearly one hundred feet tall. In many cases, the glaciers transported huge boulders (Reeds 1925).

At its highest point near the center of the site, the Project Site's elevation is approximately 400-415 feet above mean sea level. The topography slopes down to the south, east, and west and the elevation of the Project Site is between 300 and 350 feet around the site's perimeter. The Project Site therefore contains extremely steep hills, and 57 percent of the site's surface features hills with slopes greater than 15 percent (see **Figure 3**). Historic USGS maps (see **Figure 5**) suggest that the topography has remained consistent since at least 1892.

C. HYDROLOGY

The Project Site is situated approximately 7,250 feet (1.4 miles) east of the Hudson River. A small pond is situated approximately 750 feet to the northeast of the Project Site within Veteran's Park, and a stream runs to the south and east of the Project Site. A USGS map published in 1892 (see **Figure 5**) suggests that a second branch of the stream, identified as Sing Sing Creek, may have originally run closer to the eastern boundary of the Project Site. In addition, the 1851 Sidney and Neff Map depicts a spring at the end of the creek to the east of the Project Site.

D. SOILS

The soil survey of Westchester County published by the National Resource Conservation Service (United States Department of Agriculture) indicates that the Project Site contains eight soil complexes. These soil complexes are summarized in **Table 1**.

Table 1
Study Area Soils

Series Name (Map Symbol)	Soil Horizon Depth (in)	Soil Type	Slope (%)	Drainage	Landform
Charlton Loam (ChE)	H1: 0 to 8	Loam	25-35	Well-drained	Hills and Till Plains
	H2: 8 to 24	Sandy Loam			
	H3: 24 to 60	Sandy Loam			
Charlton-Chatfield (CrC)	Oe: 0 to 2	Moderately Decomposed Plant Material	0 to 15	Well-drained	Ridges and Hills
	A: 2 to 4	Fine Sandy Loam			
	Bw: 4 to 27	Gravelly Fine Sandy Loam			
	C: 27 to 65	Gravelly Fine Sandy Loam			
Chatfield-Charlton (CsD)	Oi: 0 to 1	Slightly Decomposed Plant Material	15 to 30	Well-drained	Ridges and Hills
	A: 1 to 2	Fine Sandy Loam			
	Bw: 2 to 30	Gravelly Fine Sandy Loam			
	2R: 30 to 40	Bedrock			
Hollis-Rock Outcrop (HrF)	Oi: 0 to 2	Slightly Decomposed Plant Material	35 to 60	Well-drained	Ridges and Hills
	A: 2 to 7	Fine Sandy Loam			
	Bw: 7 to 16	Gravelly Fine Sandy Loam			
	2R: 16 to 26	Bedrock			
Leicester Loam (LcB)	H1: 0 to 8	Loam	3 to 8	Somewhat Poorly Drained	Ridges, Hills, and Till Plains
	H2: 8 to 26	Sandy Loam			
	C: 26 to 60	Sandy Loam			
Paxton Fine Sandy Loam (PnD)	Ap: 0 to 8	Fine Sandy Loam	15 to 25	Well-drained	Drumlins, Ground Moraines, Hills
	Bw1: 8 to 15	Fine Sandy Loam			
	Bw2: 15 to 26	Fine Sandy Loam			
	Cd: 26 to 65	Gravelly Fine Sandy Loam			
Urban Land-Paxton Complex (UpB; UpC)	Ap: 0 to 8	Fine Sandy Loam	UpB: 3 to 8 UpC: 8 to 15	Well-drained	Drumlins, Ground Moraines, Hills
	Bw1: 8 to 15	Fine Sandy Loam			
	Bw2: 15 to 26	Fine Sandy Loam			
	Cd: 26 to 65	Gravelly Fine Sandy Loam			

Sources: Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed January 10, 2017.

Chapter 3: The Historic Development of the Project Site

A. 19TH AND EARLY 20TH CENTURY RESIDENTIAL DEVELOPMENT ON THE PROJECT SITE

One of the earliest maps depicting landowners' names in Westchester County was published by Sidney and Neff in 1851. That map depicts the Project Site as a vacant area and depicts precursors to modern Croton Dam Road and Naragansett Road. A map of Westchester drawn by Merry in 1858 also depicts the Project Site, and appears to suggest that a building owned by D.B. Brandreth was located within the Project Site along the eastern side of Croton Dam Road, however subsequent maps indicate that this home may have been further north, outside the Project Site.

Maps published by F.W. Beers in 1867 and 1868 and J.B. Beers in 1872 continue to depict the Project Site as undeveloped, though all three depict the home of D.B. Moses to the southeast of the Project Site along Naragansett Avenue. Moses was a wealthy businessman who had engaged in the export of bacon and pork products as well as banking and insurance before retiring in 1864 (Scharf 1886). Deeds on file at the office of the Westchester County Clerk show that Moses purchased numerous properties in the county between 1859 and 1892 and maps identify him as the owner of multiple homes in the vicinity of the Project Site. Moses and his family were recorded as residents of Ossining in the 1860 federal census. Prior to his retirement, he had purchased a large estate in Sing Sing/Ossining, where he had constructed a summer home "of white marble taken from the prison quarries" between 1868 and 1870 (ibid: 326). This first home appears to have been the home along Naragansett Avenue, outside of the Project Site. Moses was recorded as a resident of Ossining in the 1870 census, which documents his vast wealth and lists the value of his real estate holdings at $200,000 and his personal estate at $100,000. At the time, Moses lived with his wife, Jennetta (also spelled Jeannette) and his daughter, Isabel, though he and his wife had additional children (*New York Tribune* 1893).

Bromley's 1881 atlas of Westchester suggests that Moses had constructed a new home within the Project Site. This building would later be known as "Stony Lodge" and currently serves as the Main Building of Stony Lodge Hospital. On the 1881 map, the home is depicted as surrounded by a circular driveway that then connected to Croton Dam Road to the southwest. Moses' wife, Jeanette, died in 1877 and he appears to have continued to reside on his Ossining property year-round until he died there in 1893 (Scharf 1886; *New York Tribune* 1893). However, it is unknown if Moses resided in this structure or in the home he originally constructed along Naragansett Avenue to the southeast. Beers' 1891 map of Ossining depicts the Moses property to the south of that of Mrs. E.P. Clagett, which contained a single structure. Though the property lines are not consistent with that seen on other maps, possibly due to the original map's inaccuracy, the home on the Claggett property may be Stony Lodge. Bien's 1893 map of Ossining more clearly identifies the occupant of Stony Lodge and the surrounding 70-acre estate as "Mrs. E. Claggett," though D.B. Moses continues to be identified of the owner of additional buildings in the area. It is therefore possible that Moses rented out Stony Lodge to other tenants while he himself occupied one of the other homes on his estate.

After his death, Moses' estate was inherited by his only surviving child, Isabel Helm (*New York Tribune* 1893). Helm appears to have divided her father's estate into smaller parcels. In 1896, she sold a large tract of land including the majority of the Project Site to Cornelius Walke, a physician (Westchester County Liber 1435, Page 146). The 1901 Bromley atlas (see **Figure 7**) depicts Dr. C. Walke as the owner of the parcel and identifies Helm as the owner of the remainder of the estate, including the former Moses home along Naragansett Avenue. The map depicts Stony Lodge in the center of Walke's property and an additional building to the north. The 1911 Bromley map depicts the Project Site and vicinity in an identical manner, though it indicates that the remaining 50-acre portion of the Moses/Helm estate had been sold to F. Mohrmann.

Cornelius Walke resided in the Ossining home during the summer and also maintained a home in New York City (Western Biographical Publishing 1891). Walke and his wife, Hannah E. Walke, were recorded as residents of Ossining in both the 1910 and 1911 federal censuses. The two did not have any children and were recorded as residents of either Croton Dam Road or McCord Road and in 1910, they lived with multiple domestic servants. Walke died at the estate, which he referred to as "Lauenston," in 1914 at the age of 92 (*New York Times* 1914). His widow, Hannah, continued to reside on the property until her death there in 1918 at age 94 (*New York Tribune* 1918). In 1920, the executors of Hannah Walke's estate sold the property to Irving J. Fox (Westchester County Liber 2253, Page 63). Fox was a wealthy stock broker and he also appears to have used the home as a summer retreat while maintaining a residence in Manhattan, as suggested by the 1920 Federal census. Fox appears to have co-owned the home with is father-in-law, Moses Thalheimer and Thalheimer also appears to have sold shares in the estate to Glueck (*The New York* Sun1913; *New York Times* 1927). Fox and Thalheimer sold the estate, it was described as "a large stone residence of twenty acres" (*New York Times* 1927: 29).

THE FOUNDATION OF STONY LODGE HOSPITAL

In 1927, Irving J. and Irma A. Fox and Moses Thalheimer sold the estate including the Project Site to Bernard and Josephine S. Glueck (Westchester County Liber 2790, Pages 351 and 389). The Drs. Glueck were eminent psychologists who established Stony Lodge Hospital as a private psychiatric intuition on the Project Site after his purchase. Dr. Bernard Glueck had earned acclaim for founding a prison psychiatry program at nearby Sing Sing Correctional Facility in 1916 and he was considered an "a specialist of international fame in mental disease" (*New York Times* 1916: 1). Bernard Glueck became a recognized expert in criminal psychology and was called as an expert witness in many criminal trials, perhaps most famously that of Nathan Leopold and Richard Loeb, who were tried for the murder of Bobby Franks in Chicago in 1924 (*Olean Evening Herald* 1924; *New York Times* 1972). Dr. Josephine Glueck was also a noted psychiatrist who had been trained at Baltimore Women's Medical College, Johns Hopkins, and Queens Square General Hospital (*The Washington Post* 1956). Both Drs. Glueck had previously worked for the United States Public Health Service and were in charge of examining immigrants traveling through Ellis Island (ibid).

Stony Lodge was operated by the Gluecks between 1926 and 1946 and served as one of the first private mental health hospitals in the country (*The Washington Post* 1956; *The Washington Post* 1972). The hospital under the Gluecks' was a "private nervous clinic similar to those in Switzerland" (Shorter and Healy 2007: 54). Dr. Bernard Glueck stated that his goal for the hospital was "to limit results to the treatment of patients in whom the intensive applications of medical, physiological, occupational and recreations measures promises to bring a lasting cure" (Keir 1931: 3). Early therapies included crafting activities such as basket waving and carpentry as well as artistic efforts such as painting (ibid).

The 1930 Hopkins map (see **Figure 8**) is the first to accurately depict the buildings located on the Project Site. The owner of the 16.2-acre property at that time was identified as "Berdan Realty Company, Inc." The Main Building of the hospital is depicted on the map and identified as "Stony Lodge." The home was

surrounded by a circular driveway, likely the one seen on the 1881 Bromley atlas. Adjacent outbuildings, one constructed of stone and one of wood, were located to the northeast of the home and a stucco structure was to the east. A smaller stone house was located to the southeast of the home and four stone or wood frame outbuildings were located in the southwestern portion of the site. The map also shows that the two portions of the Project Site that are located within the Village of Ossining—representing the southeast and northeast corners of the site—were both undeveloped. The southeast parcel was included within a larger estate owned by Andrew Montague and the northeast parcel was an undeveloped lot.

The Gluecks founded the hospital on the grounds of Stony Lodge, though he and his family also resided on the property in one of the "three large and interestingly constructed buildings" located on the property in 1931 while the remaining buildings were in use by the hospital (Keir 1931: 3). In 1938, the *New York Herald Tribune* reported the return of Josephine Glueck to Stony Lodge on Croton Dam Road after a vacation in Massachusetts and in 1941 the *New York Times* listed Stony Lodge as the residence of Dr. Glueck's son, Lt. David S. Glueck, after he was killed in a car accident while driving from Virginia to New York for his wedding in 1941. Two of the surviving Glueck children, Dr. Bernard Glueck, Jr., and Dr. Ruth Addison would also go into the field of psychiatry (*The Washington Post* 1956). Along with his wife, Marie-Louise, Bernard Glueck, Jr. served as the director of Stony Lodge following his parents' tenure there (*The Hartford Courant* 1961; *New York Times* 1999).

In 1948, Bernard and Josephine Glueck transferred ownership of the hospital campus to Su-Mar Realty Corp (Westchester County Liber 4640, Page 97). Extensive storm damage occurred in the winter of 1950, when sections of the roof of the Main Building were destroyed and trees and landscaping were damaged (*The Citizen Register* 1950). In 1953, the hospital was managed by Louis E. Bernhard until his death in 1958 (*The New York Times* 1958). An aerial photograph taken in 1953[2] depicts the conditions of the site during Bernhard's tenure as manager. The photograph shows the Main Building surrounded by a circular driveway, much as it is today, as well as the North and East Buildings surrounding it. The Administration, South, and Maintenance Buildings also appear to be on the property at this time. According to a personal communication with a member of the property's operations staff, a pool was also located near the southwestern corner of the site as was a landscaped garden to the southwest of the Main Building, in the location of what is now a playground. Additional paved areas and small structures may be depicted on the property at this time, although the resolution of the photographs is not sufficient to clearly identify structures or locations of potential disturbance.

In 1958, Su-Mar Realty Corp. granted the hospital property to Maurice J. O'Conner, doing business as Stony Lodge (Westchester County Liber 6071, Page 174). O'Connor died in 1963 and his estate later transferred the property to Luis G. Murillo, doing business as Stony Lodge, in 1965 (*New York Times* 1963; Westchester County Liber 6545, Page 417). Murillo became noted for his clinical studies involving electro convulsive therapy, which he carried out at Stony Lodge in the 1970s (Shorter and Healy 2007). Aerial photographs taken in 1964 and 1965 appear to depict extensive clearing along the eastern and western sides of the site and the photographs also reflect the construction of the Recreation and West Buildings. By the 1980s, Stony Lodge earned a reputation as a respected facility for both psychiatric treatment and drug rehabilitation and eating disorders (Kerr 1986; Ames 1987). The hospital also catered to some notable residents during this time. Famed playwright Tennessee Williams' sister, Rose, resided at the facility for more than five decades after undergoing a lobotomy in the 1930s (*Sun Sentinel* 1987). In addition, actor Northern J. Calloway, famous for his role as David on Sesame Street, passed away at the hospital in 1990 (*Boston Globe* 1990). The hospital was permanently closed in the early 21st century.

[2] Accessible through http://www.historicaerials.com/.

Chapter 4: Results of Survey

A. CARTOGRAPHIC ANALYSIS

As discussed in the previous chapter, the first map to depict historic development on the Project Site is Bromley's 1881 atlas of Westchester, which indicates a single structure on the property, the Main Building. The Main Building had been constructed at this time as a personal residence and is depicted as being surrounded by a long circular driveway, necessary due to the extreme elevation difference between the hilltop and surrounding area. The driveway connected to Croton Dam Road to the southwest. Over the following decades, the property was developed as a hospital with the rest of the buildings now present and the connecting roads. No major new development appears to have occurred since the middle of the twentieth century.

B. SITE FILE SEARCH

Information regarding previously identified archaeological sites was obtained from the site files of OPRHP, the New York State Museum (NYSM), and other published accounts. Two sites were located within one mile of the Project Site, as summarized in **Table 2**. Both sites were to the west and southwest, closer to the Hudson River. The Project Site is not included within a generalized area of archaeological sensitivity as mapped in the New York State Cultural Resource Information System (CRIS) website.

Table 2
Previously Identified Archaeological Sites Within One Mile of the Project Site

Site #	Approximate Distance from Project Site	Time Period	Site Type
Winterich NYSM 613	5,000 feet	Precontact	Unknown
NYSM 5183	4,500 feet	Precontact	Village site identified by Parker (1922)

Sources: CRIS database: https://cris.parks.ny.gov.

C. SITE WALKOVER SURVEY

A qualified archaeologist conducted a reconnaissance-level walkover survey of the entire Project Site to identify areas of potential sensitivity for prehistoric or historic archaeological resources. Of primary concern was the identification of level, undisturbed, well-drained areas that would have been suitable for habitation and conducive to site formation and preservation and evidence of historic features. Such areas would not include the portions of the Project Site with slopes in excess of 10 percent, which constitute the majority of the property (see **Figure 3**), or level areas that have developed or otherwise disturbed. Field observations were documented through photography and map notations.

The Main Building (see **Photograph 1**) is located at close to the center of the Project Site, a level area at the property's highest elevation, approximately 410 to 415 feet above mean sea level (see **Figures 1** and **4**). From this location, the property slopes steeply downward to the west (see **Photograph 6**), south (see

Photograph 15), and east (see **Photographs 14**, **15**, and **17**) at slopes ranging from 15 percent to well over 35 percent (see **Figure 3**). This location affords an unobstructed view of the Hudson River, just over one mile to the west. The property slopes downward more gradually toward the north/northeast, which is behind the Main Building (see **Photograph 2** through **4**). The largest contiguous areas of 0 to 15 percent slopes are to the rear/north of the Main Building, the broad lawns fronting Croton Dam Road on the west side of the property (see **Photograph 7**), and the eastern edge of the property (see **Photographs 18** through **20**).

The Project Site contains wetlands along the site's eastern edge, an area of heavily grown marshy vegetation but no open water (see **Photographs 18** through **20**). As described in **Chapter 2: Physical Setting**, this is near the location of a former stream, though the only area currently occupied by open water is a small stream approximately 1,200 feet to the south of the Project Site. During the site visit, the archaeologist observed bedrock outcroppings along the steep hillside southwest of the Main Building. Finally, a rectangular stone behind the Main Building is identified as a well on project survey maps and appears to be covered (see **Photograph 2**).

D. SITE DISTURBANCE CHARACTERIZATION

Development-related disturbance occurred on the Project Site as a result of the construction of the ten buildings currently located on the property (see **Photographs 1**, **4**, **8**, **12**, **16**, **20**, and **21**); the construction of paved roads, sidewalks, stairways, and parking areas (see **Photographs 4** through **6** and **8** through **10**); grading and construction of retaining walls (see **Photographs 10** and **11**); and the installation of supporting infrastructure such as utilities and stormwater drainage equipment. The types of impacts associated with site development would have involved grading and excavation. The site's numerous buildings are connected by a series of paved roads and walkways that also would have involved cutting, grading, and excavation to create level areas. The least disturbed areas are to the west and east, where subsurface disturbance is limited to drainage lines and they appear to remain undisturbed.

The presence of several mature trees provides an indication that the steep slopes have remained undisturbed since before development of the property (see **Photographs 6** and **13**). Construction activities have therefore significantly impacted a large portion of the Project Site, in particular those areas that were originally level and were easier to develop than the adjacent steep slopes. The most disturbed level area is the site of the Main Building. Though little information is available regarding the original landform situated at this higher elevation area prior to construction of the Main Building in the late-19th century and subsequent expansion and improvements of the property over time, it can be concluded that is has been significantly altered. Remaining portions of this hilltop, such as the Main Building's rear yard (to the north), have not been affected to the same extent as the footprint of the Main Building (see **Photographs 2** and **3**).

Chapter 5: Conclusions and Recommendations

A. CONCLUSIONS

PRECONTACT ARCHAEOLOGICAL SENSITIVITY ASSESSMENT

In general, Native American habitation sites in the northeastern United States are correlated with level topography (typically less than 12 to 15 percent slopes), access to natural resources such as fresh water and lithic source material, and on well-drained soils (NYAC 1994). The potential presence of Native American activity near a project site can also be predicted by the presence of previously identified resources in the vicinity. Given the former presence of the Sing Sing Creek to the east of the project site and the level plateau at the top of the hill, it is expected that the Project Site would have been an attractive settlement location for Native Americans residing in the vicinity during the precontact period. However, most documented precontact archaeological sites in the vicinity have been identified nearly a mile to the west in closer proximity to the Hudson River.

Those portions of the project site with slopes greater than 15 percent are determined to have no sensitivity for archaeological resources. Undisturbed level areas within the project site are therefore determined to have moderate sensitivity for archaeological resources dating to the precontact period. It is not known if development on the level areas first involved the deposition of fill—thereby protecting the original ground surface—but it appears that the presence of extensive layers of fill is unlikely due to the presence of mature trees and the original portion of the Main Building, which are located on the current grade.

HISTORIC ARCHAEOLOGICAL SENSITIVITY ASSESSMENT

Historic period occupation sites are often correlated with similar landforms as prehistoric sites—including high level areas—and along established transportation corridors. The identification of map-documented structures is typically a critical indicator of historic period archaeological sensitivity. No map-documented structures were identified on the project site prior to the construction of the Main Building in the 1870s or early 1880s. Given the relatively late date of the construction of the Main Building, historic features on the site—including the sealed well located behind the Main Building—are unlikely to be of significant archaeological research value. Therefore, the Project Site is determined to have low sensitivity for archaeological resources dating to the historic period.

B. RECOMMENDATIONS

A Phase 1B Archaeological Survey of undisturbed, well-drained level areas is recommended prior to the start of construction to confirm the presence or absence of precontact archaeological resources. These potentially undisturbed level areas appear to be limited to the rear yard north of the Main Building, the area in the front lawn (south) of the Main Building, and the level area adjacent to the wetland near the former stream in the vicinity of the eastern side of the Project Site.

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Figures

NEW YORK STATE OF OPPORTUNITY. Parks, Recreation and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

ARCHAEOLOGY COMMENTS

Phase IA Archaeological Survey Recommendation
(15PR05971 – River Knoll Residential Development)

The Office of Parks, Recreation and Historic Preservation (OPRHP) anticipates that much of the project area is characterized by prior soil disturbance, as result of the construction of the Stony Lodge Hospital in the mid-twentieth century. However, there appears to be at least one structure on the property dating to the nineteenth century, and there is a potential for archaeological deposits associated with this earlier occupation. In addition, if there are intact soils on the property, there is a potential for pre-contact Native American deposits. Therefore, OPRHP recommends a Phase IA archaeological survey, unless prior ground disturbance for the entire project area can be documented. If you consider the entire project area to be disturbed, documentation of the disturbance will need to be reviewed by OPRHP. Examples of disturbance include mining activities and multiple episodes of building construction and demolition.

Documentation of ground disturbance should include a description of the disturbance with confirming evidence. Confirmation can include current photographs and/or older photographs of the project area which illustrate the disturbance (approximately keyed to a project area map), past maps or site plans that accurately record previous disturbances, or current soil borings that verify past disruptions to the land. Agricultural activity is not considered to be substantial ground disturbance.

A Phase IA archaeological survey is designed to identify previously recorded archaeological sites and other cultural resources within or near the project area, and to assess the archaeological sensitivity of the project area. The OPRHP can provide standards for conducting cultural resource investigations upon request. Cultural resource surveys and survey reports that meet these standards will be accepted and approved by the OPRHP.

Our office does not conduct archaeological surveys. A 36 CFR 61 qualified archaeologist should be retained to conduct the Phase IA survey. Many archaeological consulting firms advertise their availability in the phone book and online. The services of qualified archaeologists can also be obtained by contacting local, regional, or statewide professional archaeological organizations. Phase IA surveys can be expected to vary in cost, depending on the size of the project area. We encourage you to contact a number of consulting firms and compare examples of each firm's work to obtain the best product.

If you have any questions concerning archaeology, please contact Tim Lloyd at 518-268-2186 or Timothy.Lloyd@parks.ny.gov

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

REQUEST FOR STATE HISTORIC PRESERVATION ACT REVIEW

This form is being submitted to NYS Office of Parks, Recreation and Historic Preservation to request consultation on historic properties or archeological resources or both in accordance with the Letter of Resolution between NYS Department of Environmental Conservation and the NYS OPRHP regarding compliance with PRHPL §14.09 for the **SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-15-002)**

- Important - Complete Form And Return To Both Addresses

New York State Office of Parks, Recreation and Historic Preservation (OPRHP)
Field Services Bureau
Peebles Island State Park
Waterford, NY 12188-0189

Copy To:
New York State Department of Environmental Conservation
Agency Historic Preservation Officer (APO)
Division of Lands and Forests
625 Broadway
Albany, NY 12233-4255

Date: 10/14/2015

Name of Owner/Operator of Proposed Construction Activity: Glenco Ossining, LLC

Telephone: 646-473-1014

Email: glen@glencogroupny.com

Project Name: River Knoll

Project Location: 40 Croton Dam Road

City/Town/Village: Ossining

County: WESTCHESTER

CONSULTATION WITH OPRHP CRIS WEB SITE AT http://cris.parks.ny.gov or the DEC EAF Mapper http://www.dec.ny.gov/eafmapper indicates the Project Site:

- ○ Project is located within an archeologically sensitive area as indicated on sensitivity map.
- ○ Project is located immediately adjacent to or contains an historic property.
- ◉ Other.

Project is not located on archaeologically sensitive area. Project is not located near any eligible or listed historic property.

PLEASE ADVISE ON:

- ☐ Need for Survey/Scope of Survey Needed
- ☒ Significance of Identified Unevaluated Property
- ☒ Impact on Significant Cultural Resources
- ☐ Other
- ☐ Adequacy of Survey To Date
- ☐ Significance of Identified Archeological Resources
- ☐ Project Alternatives (As Described)
- ☐ Need for Mitigation

Supporting Documentation Attached

- ○ Project Description
- ○ Maps
- ○ Archeological Studies
- ○ Agreement reached with OPRHD through the State Environmental Quality Review Act
- ○ Other documentation that impacts to Historic properties or archeological resources, or both have been addressed.
- ◉ Other. Please describe.

Photos, aerial map/photo key and site plans are also included.

OPRHP PROJECT NUMBER (Assigned by OPRHP): PR#

1 Buildings, structures or objects that are greater than 50 years of age that have not been evaluated for eligibility for listing on the State or National Registers of Historic Places.

Project Site

Tax Parcel Boundaries

0 200 FEET

Project Site Buildings

RIVER KNOLL

CRIS Submission

Project Description

The applicant, Glenco Group LLC, is proposing a multi-family residential development consisting of 188 one and two bedroom units on a 17.9 acre site; 16.7 acres lie within the Town of Ossining and 1.2 acres within the Village of Ossining. The site is located at 40 Croton Dam Road in the Town of Ossining. One hundred and sixty nine units would be market rate rental units, and 19 units (10%) would be affordable rental units. The units would be distributed in 4 buildings in the central portion of the site. Access to the site would be from the existing driveway on Croton Dam Road. Each building would be 3 stories in height. A total of 376 parking spaces would be provided: 204 spaces in structures beneath the four residential buildings; 28 spaces in six (6) free standing garages located opposite the proposed residential buildings; and 144 surface parking spaces. Additional amenities would include courtyards, a swimming pool and outdoor recreation area, expansive meadows, and perimeter landscape buffers ranging from 150-265 feet. A large portion of the site will remain as open space. The project is located on the former Stony Lodge Hospital grounds, which is comprised of 9 buildings that date from the mid-19th to mid-20th centuries. The hospital served as a child psychiatric center and was a use considerably less compatable with the surrounding residential properties than the proposed multifamily development. These existing buildings will be replaced by the proposed project. The housing will be privately funded, but the project does require a Stormwater Pollution Prevention Plan (SWPPP).