Appendix A

Notice of Completion of Draft EIS
And
Notice of Joint Hearing on Draft EIS and
Applications for Site Plan and Special Permit Approvals

Lead Agency: Town of Goshen Planning Board

Address: 41 Webster Avenue, Goshen, New York 10924

Date: May 2, 2016

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law and Chapter 97 of the Town of Goshen Code entitled "Zoning." A Draft Environmental Impact Statement ("DEIS") has been submitted by the project applicant, Amy's Kitchen and Science of the Soul to the Town of Goshen Planning Board, as lead agency, for the proposed action described below. The Planning Board has determined that the DEIS is adequate for public review.

The applicant will provide for the placement of the DEIS on www.townofgoshen.org and full copies of the DEIS will be made available at the Town Building Department located in Town Hall (41 Webster Avenue, Goshen) during normal business hours as well as the Goshen Public Library (203 Main Street, Goshen).

Public Hearing: Pursuant to 6 NYCRR 617.9 (a) (4) and § 97-76 F (1) and § 97-72 F (2) of the Town of Goshen Zoning Law a joint public hearing will be held on **Tuesday, May 31, 2016 at 7:30 P.M.** at the Town of Goshen, Town Hall, 41 Webster Avenue, 2nd Floor, Goshen, New York 10924, at which time the Town of Goshen Planning Board will receive comments on both the DEIS and Application for Site Plan and Special Permit Approval. Written comments will be received during normal business hours prior to the public hearing by the Building Department, and for ten (10) days following the close of the public hearing.

Title of Action: Amy's Kitchen & Science of the Soul

SEQRA Status: Type I

Contact Person/Address:
Hon. Lee Bergus Chairman
Town of Goshen Planning Board
41 Webster Avenue
Goshen, New York 10924
(845) 294-6430

Description of Action:

Amy's Kitchen proposes to construct an approximately 369,000 square foot food manufacturing facility with parking and supporting accessory structures on property totaling 60.1+/- acres.

Science of the Soul proposes to a construct a Conference Center comprising a 200,000 square foot open-air pavilion and supporting parking and restroom facilities; an approximately 80,000 square foot multi-purpose/family area building; an approximately 38,000 square foot central building; an approximately 8,000 square foot maintenance barn, two caretaker residences of approximately 2,400 square feet each and an approximately 4,500 square foot guest house, together with associated parking all on property totaling 195 +/- acres.
The DEIS also assesses the related actions of extending sewer and water lines from the Amy's and Science of

the Soul sites to the City of Middletown and creation of a principal vehicle access from NYS Route 17M that will service the Amy's and Science of the Soul facilities as well as the Mid-Hudson Psychiatric Center.

The DEIS also assesses the potential future action of a subdivision of approximately 11.6 acres from the "Ver Hage Property" for a potential future 70,000 +/- square foot warehouse use.

Location:

The Amy's Kitchen manufacturing facility will be located proximate to Hartley Road on parcels designated on the Town of Goshen tax maps as Section 12, Block 1, Lots 1.222, 19.2, and 1.41 (referred to generally as the ("Ver Hage" and "Lipoff" properties).

Science of the Soul will be located proximate to Echo Lake Road on properties designated on the Town of Goshen tax maps as Section12, Block 1, Lots 24.2 and 23.2 and Section 10 Block 1, Lot 11.2 (referred to generally as the Echo Lake and Strong Farm properties).

The sewer and water service lines will be located primarily within the bounds of the Heritage Trail proximate to Echo Lake Road in the Town of Goshen and then extend through portions of Wawayanda and into the City of Middletown.

The potential Warehouse Use will be located on the Ver Hage property on an approximately 11.6+/- acre lot.

Potential Environmental Impacts:

Potential Environmental Impacts assessed in the DEIS include those relating to: Geology and Soils; Topography; Surface Water Resources; Vegetation and Wildlife; Groundwater/Water Supply; Wastewater Management; Stormwater Management; Traffic; Noise; Utilities and Solid Waste Disposal; Land use and Zoning; Community Services; Fiscal Impacts; Visual Resources; Environmental Contamination; Cultural Resources; Agriculture; Air Quality; Construction Impacts; Unavoidable Adverse Environmental Impacts, Irreversible and Irretrievable Commitment of Resources and Growth Inducing Impacts.

Copies of this Notice Sent to:

See Attached Distribution List

AMY'S KITCHEN/SCIENCE OF THE SOUL
NOTICE OF COMPLETION OF DEIS DISTRIBUTION LIST

TOWN OF GOSHEN

Town of Goshen
Goshen Town Hall
41 Webster Ave
Goshen, NY 10924
Phone: (845) 294-6430

(Copies to: Planning Board, Town Board, Environmental Review Board, Town Clerk, Zoning Board of Appeals, and Building Inspector)

Broderick Knoell, Superintendent
Town of Goshen Highway Department
44 Police Hwy
Goshen, NY 10924
(845) 294-6033

Sean T. Hoffman, PE
H2M architects + engineers
2 Executive Boulevard, Suite 401
Suffern, NY 10901
(845) 357-7238

Kelly M. Naughton, Esq.
Burke, Miele & Golden, LLP
40 Matthews Street, Suite 209
P.O. Box 216
Goshen, New York 10924
(845) 294-4080

INVOLVED AGENCIES

Basil Seggos, Acting Commissioner
NYS Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1011
(518) 402-8545

Mr. Daniel Whitehead
Regional Permit Administrator
NYSDEC Region 3
21 South Putt Corners Road
New Paltz, NY 12561-1696
(845) 256-3054

SEQR Unit
New York State Department of Transportation
Traffic Engineering & Safety Division
4 Burnett Blvd.
Poughkeepsie, NY 12603

James Sproat, Executive Director
Real Estate Planning and Development
Office of General Services
41st Floor, Corning Tower
Empire State Plaza
Albany, NY 12242
(518) 474-3899

Emil Slane, Deputy Commissioner and Chief Fiscal Officer
Office of Financial Management
New York State Office of Mental Health
44 Holland Avenue
Albany, New York 12229
(518) 474-5968

New York State Department of Health
Corning Tower
Empire State Plaza,
Albany, NY 12237

Meghan Taylor, Regional Director
ESD Mid-Hudson Region
33 Airport Center Drive - Suite 201
New Windsor, NY 12553
(845) 567-4882

Steven M. Neuhaus, County Executive
Orange County
15 Matthews Street
Goshen, NY 10924
(845) 291-4800

Christopher Viebrock, Commissioner
Orange County Department of Public Works
2455-2459 Route 17M
P.O. Box 509
Goshen, NY 10924
(845) 291-2750

Eli N. Avila, Commissioner
Orange County Department of Health
1887 County Building
124 Main Street
Goshen, NY 10924
(845) 291-2332

Orange County Industrial Development Agency
4 Crotty Lane, Suite 100
New Windsor, NY 12553
(845) 234-4192

Joseph DeStefano, Mayor
City of Middletown City Hall
16 James Street
Middletown, NY 10940
(845) 346-4100

Town of Wawayanda
80 Ridgebury Hill Road
State Hill, NY 10973
(845) 355-5700

Environmental Notice Bulletin
http://www.dec.ny.gov/enb/enb.html

INTERESTED AGENCIES

Brian A. Orzel
Project Manager/Civil Engineer
NY District U.S. Army Corps of Engineers
26 Federal Plaza, Room 1937
New York, NY 10278
(917) 790-8511

Patricia Cole, Deputy Field Supervisor
New York Field Office
U.S. Fish and Wildlife Service
3817 Luker Road
Cortland, NY 13045
(607) 753-9334

Tim Lloyd, Ph.D., RPA
Division for Historic Preservation
NYS Department of Parks, Recreation and Historic Preservation
P.O. Box 189
Waterford, NY 12188-0189
(518) 237-8643

Richard A. Ball, Commissioner
NYS Department of Agriculture & Markets
10B Airline Drive
Albany, NY 12235
(800) 554-4501

NYS Police Troop F
Troop Headquarters
55 Crystal Run Road
Middletown, NY 10941-9755
(845) 344-5300

NYS Dormitory Authority
One Penn Plaza, 52nd Fl.
New York, NY 10119-0098
(212) 273-5000

David E. Church, AICP
Planning Commissioner
Orange County Department of Planning
124 Main St.
Goshen, NY 10924
(845) 615-3840

Richard L. Rose, Jr., Commissioner
Orange County Department of Parks, Recreation and Conservation
211 Route 416
Montgomery, NY 12549
(845) 615-3830

Carl E. DuBois, Sheriff
Orange County Sheriff's Office
110 Wells Farm Road
Goshen, NY 10924
(845) 291-4033

Town of Goshen Fire District
P.O. Box 278
Goshen, NY 10924
(845) 294-3448

Goshen Town Police Department
44 Police Hwy
Goshen, NY 10924
(845) 294-9555

Goshen Volunteer Ambulance Corps
P.O. Box 695
Goshen, NY 10924
(845) 294-9695

Town of Wallkill
99 Tower Drive
Building A
Middletown, NY 10941
(845) 692-7800

Village of Goshen
276 Main Street
Goshen, NY 10924
(845) 294-6750

PROJECT TEAM

AKRF
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White Plains, NY 10601
(914) 922-2350

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1650 Corporate Circle, Suite 200
Petaluma, CA 94954-6970
(707) 781-7618

Daniel Singh
Science of the Soul
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Encino, CA 91436
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Jacobowitz and Gubits, LLP
158 Orange Ave.
Walden, NY 12586
(845) 778-2121 x 215

Philip J. Grealy, Ph.D.,P.E.
Maser Consulting P.A.
11 Bradhurst Avenue
Hawthorne, NY 10532
(914) 347-7500 x 4802

Phil Dropkin
36 Gregory Drive
Goshen, NY 10924
(845) 551-7438

David Paget
Sive, Paget & Riesel, P.C.
460 Park Avenue
10th Floor
New York, NY 10022
(212) 421-2150

John O'Rourke, PE
Lanc & Tully Engineering and Surveying, PC
3132 Route 207
Campbell Hall, NY 10916
(845) 294-3700

FINAL
SCOPING DOCUMENT
JULY 16, 2015

FOR

AMY'S KITCHEN, INC.
Draft Environmental Impact Statement

NYS Route 17M/ Echo Lake Road/ Hartley Road
Town of Goshen
Orange County, New York

Lead Agency and Contact Person:
Lee Bergus, Chairman
Town of Goshen Planning Board
Goshen Town Hall
41 Webster Ave
Goshen, NY 10924

Prepared By:
Graham Trelstad, AICP
AKRF, Inc.
34 South Broadway, Suite 401
White Plains, NY 10601
914-949-7336

GENERAL GUIDELINES

- The Draft Environmental Impact Statement ("DEIS") shall address all items in this Scoping Document and conform to the format outlined in this Scoping Document. If appropriate, impact issues listed separately in this outline may be combined in the DEIS, provided all such issues described in this Scoping Document are addressed as fully in a combined format as if they were separately addressed.
- 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 "Project Sponsor," "Applicant" or "the Developer."
- Narrative discussions should be accompanied by appropriate charts, graphs, maps and diagrams whenever possible. If a particular subject matter can most effectively be described in graphic format, the narrative discussion should merely summarize and highlight the information presented graphically. All plans and maps showing the applicable sites shall include adjacent homes, other neighboring uses and structures, roads, 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 that the layperson can readily understand (e.g., truck-loads of fill and cubic yards rather than just cubic yards).
- 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.

The DEIS is intended to convey general and technical information regarding the potential environmental impacts of the proposed project to the Town of Goshen Planning Board (as Lead Agency), as well as several other agencies involved in the review of the proposed project. The DEIS is also intended to convey the same information to the interested public. The Preparer of the DEIS is encouraged to keep this audience in mind as it prepares the document. Enough detail should be provided in each subject area to ensure that most readers of the document will understand, and be able to make decisions based upon, the information provided.

As the DEIS will become, upon acceptance by the Lead Agency, a document that may, if appropriate, support objective findings on approvals requested under the application, the Preparer is requested to avoid subjective statements regarding potential impacts. The EIS should contain objective statements and conclusions of facts based upon technical analyses. Subjective evaluations of impacts where evidence is inconclusive or subject to opinion should be prefaced by statements indicating that "It is the Applicant's opinion that...". The Town of Goshen Planning Board reserves the right, during review of the document, to require that subjective statements be removed from the document or otherwise modified to indicate that such subjective statements are not necessarily representative of the findings of the Lead Agency.

BRIEF DESCRIPTION OF THE PROPOSED ACTION

The proposed project comprises five (5) primary components:

- Amy's Kitchen manufacturing plant on the "ver Hage property" (12-1-1.222 & 19.2);
- Subdivision of approximately 10 to 12 acres from the "ver Hage property" for future warehouse use;
- Science of the Soul conference center on the "Echo Lake property" (12-1-23.2 & 24.2);
- Use of the "Strong Farm property" (10-1-11.2) for agricultural use and parking for volunteers during the Science of the Soul national event; and
- Use of the "Lipoff Wells property" (12-1-1.41) as a source of water for Amy's Kitchen manufacturing plant.

Amy's Kitchen

Amy's Kitchen, Inc. ("Amy's Kitchen") proposes to construct an approximately 366,000 square foot manufacturing plant where food is prepared, packaged and frozen. The manufacturing plant is proposed to be constructed on the "ver Hage property," which fronts on Hartley Road. Initial site access will be from Hartley Road. Ultimately, a new entrance drive will provide direct access for Amy's Kitchen to NYS Route 17M across the "Echo Lake property" via a new vehicular bridge across the Wallkill River.

The plant will be constructed in two (2) phases: (i) an initial approximately 226,000 square foot plant, including an 11,000 square foot office area, to be opened in the First Quarter of 2018, and (ii) an approximately 140,000 square foot expansion to be opened in approximately 2023. An ancillary building of approximately 3,000 square feet will be constructed for on-site medical treatment of Amy's Kitchen employees as part of Phase 1. The project proposes approximately 642 parking spaces for employees, 49 parking spaces for visitors, and 18 tractor-trailer parking spaces for the manufacturing plant and office area. For the plant, 20 to 30 loading bays will be provided. The Amy's Kitchen manufacturing facility will employ approximately 681 people on the project site at full build-out.

ver Hage Subdivision

An approximately 10- to 12-acre portion of the ver Hage property will be subdivided for future warehouse use with access from Hartley Road.

Science of the Soul

Science of the Soul ("SoS") is an international, non-denominational philosophy and organization based on the teachings universal to all religions. SoS, also known as Radha Soami Satsang Beas, has been in the United States since in 1911 and is a registered 501(c)(3) religious non-profit organization.

SoS proposes to construct a conference center on the "Echo Lake property." The conference center will comprise an approximately 200,000 square foot covered structure with open sides and an earthen floor; ancillary buildings for administration and support; parking areas (both paved and gravel) to accommodate approximately 2,000 cars and 130 buses; two (2) 2,600 square foot caretaker residences; and one (1) five-bedroom guest-house.

The conference center will be used to host an annual three-day national conference, with attendance of up to 12,000 people. This annual conference will usually be held over a three-day period. Science of the Soul believes that sufficient parking would be accommodated on-site at the Echo Lake site. Volunteer parking would be provided on the Strong Farm property and overflow parking could be provided at the Amy's Kitchen facility.

In addition to the annual three-day conference, SoS will hold one (1) annual regional two-day conference for 1,200 to 2,000 people. Regular weekly meetings on Sunday mornings for local congregants would attract approximately 200 to 400 people. During the week, a small staff (5 to 10 people) and a small number of volunteers will attend to normal administrative and property management tasks.

Access to SoS will be from a new entrance drive off NYS Route 17M, which will also serve the Amy's Kitchen manufacturing plant upon the completion of the new vehicular bridge across the Wallkill River as noted above. This road will traverse an approximately 7 to 10 acre area of land currently owned by the State of New York. The State has agreed to transfer this land to the Town of Goshen for highway purposes, and an access arrangement (easement or other) will be sought from the Town to construct a road over this land. Emergency access and such other access as the Town may require will be provided from Echo Lake Road with a permeable hard surface.

Strong Farm

SoS has purchased the Strong Farm on Cheechunk Road and Owens Road for agricultural use and parking of the volunteers for the SoS conference center.

Infrastructure

Water supply for the Amy's Kitchen manufacturing plant will be provided by wells to be established on a property north of Echo Lake Road, known as the "Lipoff Wells property", with a new private utility connection (and Transportation Corporation or other appropriate entity) conveying the water to the ver Hage parcel. Water supply for the SoS conference center will be provided by two (2) existing wells on the Echo Lake property. Water supply for the ver Hage future warehouse use would be provided by the same wells serving the Amy's Kitchen manufacturing plant.

Wastewater for Amy's Kitchen will either be conveyed to an on-site sewage treatment facility where it will be treated and discharged to the Wallkill River or conveyed to a nearby municipally owned sewage treatment facility. Wastewater for SoS will be provided through an on-site septic system (supplemented by portable facilities during the annual 12,000 person events) or through interconnection with the Amy's Kitchen site. All options will be explored. Wastewater treatment for the ver Hage future warehouse use would be provided at the Amy's Kitchen tertiary treatment plant through a Transportation Corporation or other appropriate entity.

This application is a TYPE 1 Action under SEQRA, as it involves the construction of a non-residential facility with greater than 100,000 square feet, parking for more than 1,000 cars, and involves the physical alteration of more than 10 acres. See 6 N.Y.C.R.R. § 617.4(b)(6).

INVOLVED AGENCIES

NYS Department of Environmental Conservation
- SPDES (wastewater and stormwater)
- Water Supply Application

NYS Department of Transportation
- Highway Work Permit
- Approval of new bridge

NYS Office of General Services
- Land transfer to the Town of Goshen

NYS Office of Mental Health
Land transfer to the Town of Goshen
Orange County Legislature
Approval of potential wastewater conveyance within the Heritage Trail right-of-way
Orange County Department of Public Works
Realignment of County road
Orange County Department of Health
Approval of public water supplies
Town of Goshen Town Board
Granting of access easement and acceptance of roadway dedication of land transferred to the Town from the State.
Potential Zoning Map amendment for Echo Lake parcel
Town of Goshen Planning Board
Site Plan, Subdivision and Special Permit Approval
Town of Goshen Zoning Board of Appeals
Potential Area Variance(s)
Town of Goshen Highway Department
Highway Work Permit for improvements on Echo Lake Road, Hartley Road, Owens Road, and/or Cheechunk Road
Town of Goshen Building Department
Floodplain Development Permit
Village of Goshen
Potential agreement to treat sanitary sewage at the Village WWTP
Orange County Industrial Development Agency
NYS Department of Parks, Recreation and Historic Preservation
NYS Dormitory Authority

INTERESTED AGENCIES
U.S. Army Corps of Engineers
Orange County Department of Planning — G.M.L. § 239-l, m, and n
Orange County Department of Parks, Recreation and Conservation (Heritage Trail)
Town of Goshen Environmental Review Board
Town of Goshen Fire Department
Town of Goshen Police Department
Goshen Volunteer Ambulance Corp
Town of Wallkill
Town of Wawayanda
NYS Department of Agriculture & Markets
U.S. Fish and Wildlife Services
NYS Police (for large SoS events)
County Sheriff Department (for large SoS events)

FORMAT AND SCOPE OF DEIS

COVER SHEET

The DEIS must begin with a cover sheet that identifies the following:

- Identification as the Draft Environmental Impact Statement;
- The date the document was submitted to the Planning Board;
- The name and location of the Project;
- The Town of Goshen Planning Board as the Lead Agency for the Project, and the name, address, telephone number and facsimile number of the contact person for the Lead Agency, and the SEQRA status (Type I action);
- The name and address of the Project Sponsor, and the name, address and telephone number of the contact person representing the applicant;
- The name, address and email address of the primary preparers of the DEIS, and the name, address, email address and telephone number of the contact person representing the preparer;
- The date the DEIS was accepted by the Lead Agency as complete (to be inserted at a later date);
- The date of the public hearing and subsequent adjournments (to be inserted at a later date);
- The date which public written comments on the DEIS are due (to be inserted at a later date); and
- All revision dates of the DEIS.

TABLE OF CONTENTS

The DEIS will include a Table of Contents identifying major sections and subsections of the document. The Table of Contents must also include a list of figures, tables, appendices and any additional volumes if necessary.

I. EXECUTIVE SUMMARY

An Executive Summary shall be required and will provide a précis of the more comprehensive information included within the document. No information will be included in the Executive Summary that is not found within the body of the document. The Executive Summary will include the following elements:

- An Introduction, including the purpose of the DEIS, a relevant history of the SEQRA process that has occurred (i.e., relevant dates establishing Lead Agency, the date of adoption of the Positive Declaration, date of the acceptance of the Scoping Document).
- Project Site Existing Conditions - provide a short description of the subject property and characterize its topographical, water and natural features as well as provide a brief history of the use of the property and where existing changes to its natural state have occurred.
- Project Description - overview of the project layout, size and use of proposed structures, discussion of parking, loading, circulation, landscaping, lighting, and proposed utilities.
- Discussion of Project Plan Alternatives
- List of Involved and Interested Agencies.
- Project purpose, need and benefits.
- Summary of Existing Conditions, Potential Impacts and Proposed Mitigation Measures in the order they appear later in the document (organized by topic and presented in tabular format, if possible).
- Summary of adverse impacts and irreversible commitment of resources.
- Alternatives to the Proposed Action including the mandatory no build alternative.
- Unavoidable Adverse Impacts and Irreversible and Irretrievable Commitment of Resources.

II. PROJECT DESCRIPTION

A. Site Location — This section will include a narrative description and graphical representation of the location of the proposed project. In addition, parcel acreage, tax map designation, abutting streets, zoning designation, surrounding land uses, existing utilities (and access thereto) will be included as well as any and all easements, rights-of-way, private agreements, special district boundaries and any other legal agreements that may affect the proposed use of the site. This section should discuss the historical uses of the properties proposed to be developed by Amy's Kitchen, SoS and the ver Hage future warehouse use.

B. Description of Proposed Action — This will include written and graphical representation of the proposed action including general layout of the site, access, circulation, parking and loading. Hours of operation and general operations at the site will also be described, as well as large events to be held at the SoS conference center. Any improvements to public rights of ways or other public improvements will be discussed. Transfer of land for access purposes will be discussed (correspondence with the State will be provided). Any areas to remain as open and/or green space will be discussed. This section will discuss the possible presence of any hazardous materials utilized by, in, or created by the various processes in the facility or the wastewater treatment or potable water treatment plants. It will also discuss the height of the buildings, and number of people anticipated to be in any given structure at any one time, and the nature of the fire alarm system. The fire protection for the building shall be discussed in terms of on-site pressurized water systems, hydrants, stand pipes, sprinklers, year round connections, and whether the Wallkill River could be utilized for fire protection as a backup system.

Proposed drainage, utilities and construction phasing will be summarized. The section will discuss the project's compliance with the Zoning Code, and any required variances, zoning changes or waivers needed to construct the project, and an evaluation of why such variance is needed. This section should discuss the relationship between the Proposed Action and both the Town and County Comprehensive Plans.

C. Project Need and Benefit — This section will include a narrative description of the need for the project, it shall identify the objectives of the project sponsor and the public benefits achieved by the development of the proposed action.

D. Permits and Approvals required — This section will list the Involved Agencies for the Proposed Action and the necessary approvals and a list of the Interested Agencies.

III. EXISTING CONDITIONS, POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

A. Geology and Soils

1. Existing Conditions
    - Underlying geological conditions including depth to bedrock and depth to groundwater will be described;
    - Soil types and characteristics shall be identified as presented in the Orange County Soil Survey and supported with actual borings when necessary.
    - The Applicant shall provide a map of the fracture traces on the property, including those traces that continue onto adjacent properties.
2. Potential Impacts
    - Limitations that geology or soils may place on the development of the sites;
    - Potential for erosion or drainage complications; and
    - Potential for blasting or major rock removal.

3. Proposed Mitigation
    - Mitigation will be proposed for identified adverse environmental impacts as necessary. Unavoidable adverse impacts will be identified.

B. Topography

1. Existing Conditions
    - Site topography and slopes shall be described.
    - Topographical maps at 2' contours shall be provided.
2. Potential Impacts
    - Grading plan will be presented with a cuts and fills analysis at 2' contours;
    - The need for any retaining walls will be discussed; and
    - Any limitations or relevant regulations of the Town Code shall be discussed and the project's consistency therewith.
3. Proposed Mitigation
    - Mitigation will be proposed for identified adverse environmental impacts as necessary.

C. Surface Water Resources

1. Existing Conditions
    - All existing surface waters, including wetlands (as defined by the Goshen Town Code and Federal/NYS criteria) the Wallkill River and flood plains, will be discussed and presented graphically; and
    - All resources will be described in terms of jurisdiction, classification, size and any applicable regulated areas including buffer and floodplains. A Jurisdictional Determination will be provided as an attachment to the DEIS.
2. Potential Impacts
    - Any encroachment into surface water resources or regulated areas will be discussed. Discuss whether those encroachments will be permanent or temporary and impacts associated therewith will be provided;
    - The potential for contamination of surface waters on both a long- and short-term (construction) basis will be addressed, including use of deicing agents on site; and
    - Proposed existing supply wells that are tested may be impacted by surface water. Thus, all water supply well testing shall include appropriate testing measures (i.e., piezometers and monitoring of wetlands and surface water bodies).
3. Proposed Mitigation
    - Mitigation will be proposed for identified adverse environmental impacts as necessary.

D. Vegetation and Wildlife

1. Existing Conditions
    - Site Biological Assessment will be prepared for the sites by a qualified consultant. Mapping for habitats of threatened and endangered species and species of special concern will be provided. For purposes of this DEIS, a habitat is a place where a plant or animal lives, with all the living and nonliving conditions necessary for it to thrive. Also, an ecological community shall be considered an assemblage of plants and animals that interact in a shared environment, and a vegetative community is only the plant component of the assemblage;
    - On-site vegetative communities will be described and an inventory of species likely on the sites will be provided;

- Existing significant trees (i.e., 12" dbh), hedgerows, etc. will be discussed;
- Threatened, endangered and rare species as well as species of conservation concern (as defined by DEC), found on the site or known to be located in the area, and the potential for such species to locate on the sites given the existing site ecology will be discussed; and
- Correspondence with and documentation from the NYS DEC Natural Heritage Program and U.S. Fish and Wildlife Services will be provided.

2. Potential Impacts
   - Discuss amount of vegetation removal including any portion of habitats identified above and the amount of open and/or green space which will remain after construction. In addition, the impact on existing trees with the limits of potential site disturbance will be provided.
   - The impacts to, and maintenance of, any significant trees (i.e., 12" dbh), hedgerows, etc. shall be discussed with regard to the layout of the facilities and entry road.
3. Proposed Mitigations
   - Mitigation will be proposed for identified adverse environmental impacts as necessary, which may include, if appropriate, preservation, rehabilitation, relocation, plantings, etc. or a restriction on tree cutting during specified time periods. Additionally, the selection of any planted vegetation for mitigation should be, to the extent possible, restricted to native, companion and xeriscape compatible vegetation.

E. Groundwater/ Water Supply

1. Existing Conditions
   - Identify existing wells on the sites and their pumping capacity. Include dates of pump testing and protocol employed. Provide both current and prior testing (quantity and quality) where relevant and identify inconsistencies. Provide confirmation protocol was consistent with requirements of the Town of Goshen Zoning Code.
   - Identify an off-site existing supply well array that will be monitored during proposed on-site water supply testing to assess off-site impacts, if any.
   - Identify source of ground water and potential contamination sources.
   - Calculate water budgets for both the bedrock and unconsolidated aquifers beneath the sites. Relate the water budgets to proposed site water use. Estimate available water on the subject sites and in the surrounding drainage basin for the bedrock and unconsolidated aquifers.
2. Potential Impacts
   - Calculate the anticipated amount of water usage for the proposed Action and discuss the ability and feasibility of the existing and proposed wells to serve the project in terms of both quantity and quality, as well as any long-term impacts to the local hydrogeological character of the aquifer(s);
   - If the existing sources are inadequate discuss alternatives for providing adequate water for potable or non-potable uses including development of adjacent water supplies and/or connections to or expansion of existing systems;
   - Discuss the results of off-site and on-site and surface water monitoring before, during and after pump testing of on-site supply wells. Confirm what the impacts of on-site pumping are on these three items;
   - Describe the infrastructure required for the proposed water distribution system (storage tanks, pressure zones, distribution mains, etc.) and provide a map of the system(s). Both on and off-site improvements will be described if appropriate. Discuss anticipated water demand (domestic, fire flow and process), treatment systems based on the results of the water quality analysis;

- Discuss any possible connectivity and/or draw-down of on-site or adjoining surface waters, as well as on existing off-site water supply wells;
- Discuss fate of existing wells on all of the sites (Echo Lake, ver Hage, Lipoff and Strong) that are not intended to be developed including well abandonment procedures;
- Describe administrative issues related to the proposed water systems such as property ownership, easements, facility ownership, maintenance, and service area boundaries; and
- Discuss any possible connection between the proposed Amy's Kitchen and/or SoS and/or ver Hage warehouse water systems.

3. Proposed Mitigation
   - The Applicant shall discuss what mitigation measures will be proposed for identified adverse environmental impacts including off-site existing supply wells. Unavoidable adverse environmental impacts will also be identified.

F. Wastewater Management

1. Existing Conditions
   - Identify existing wastewater infrastructure on-site or in the immediate vicinity of the project site.
2. Potential Impacts
   - Calculate amount of anticipated wastewater production for the proposed Action;
   - Describe proposed system to collect, convey and treat wastewater and provide a map of the proposed system including potential outfall location and alternatives (if any);
   - Describe the feasibility and impacts associated with an on-site wastewater treatment systems including impacts to surface water resources and ground water as well as possible odor or noise associated with the system. Discuss the maintenance, replacement and life expectancy of an on-site sewage collection and treatment system;
   - Describe administrative issues related to the on-site sewage collection and treatment system such as property ownership, easements, facility ownership, maintenance, and service area boundaries. Discuss the requirements to form a Sewage Works Corporation if pertinent; and
   - Describe proposed plan to address wastewater collection, conveyance and treatment from anticipated annual conference.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

G. Stormwater Management

1. Existing Conditions
   - Existing drainage patterns will be described and presented graphically; and
   - Discuss of the overall watershed in which the project sites are located.
2. Potential Impacts
   - Project will require coverage under SPDES General Permit for Stormwater Discharges from Construction Activity - GP-0-15-002;
   - Temporary construction impacts will be discussed;
   - Describe pre and post-construction drainage patterns, flows and proposed infrastructure to capture and treat stormwater consistent with the NYS DEC design manual (latest edition);
   - Describe and graphically depict proposed stormwater pond discharges and study points;
   - Potential water quality impacts will be addressed; and

- Preliminary SWPPP, which shall include a sediment and erosion control plan, will be provided as an appendix.

3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.
   - The discussion shall include consideration of vegetated roof decks and stormwater infiltration as a way to mitigate run-off from impervious rooftop on the manufacturing plant, and a use of impervious and pervious materials for the on-site and off-site parking areas.

H. Traffic

1. Existing Conditions
   - Provide a detailed description of existing area roadways (most particularly, U.S. Route 6/NYS Route 17M and Hartley Road), including ownership, pavement width, pavement condition, width of travel lanes, shoulder and parking lanes, speed limits, roadway characteristics including vertical and horizontal features, location of bus stops and types of traffic control and signage with focus on the following intersections:
     - U.S. Route 6/ NYS Route 17M and Lower Road/ Golf Links Road;
     - U.S. Route 6/NYS Route 17M and Mid-Hudson Psychiatric Center Access;
     - U.S. Route 6/NYS Route 17M and Training Center Lane;
     - U.S. Route 6/NYS Route 17M and Hartley Road/Gate Schoolhouse Road;
     - U.S. Route 6/NYS Route 17M and 6 1/2 Station Road;
     - U.S. Route 6/NYS Route 17M and Route 17;
     - U.S. Route 6/NYS Route 17M and 1-84;
     - U.S. Route 6/NYS Route 17M and Cannon Hill Drive;
     - Echo Lake Road and Golf Links Road/McVeigh Road; and
     - Hartley Road and Echo Lake Road.
   - Perform manual field traffic counts during the weekday AM (6:30-9:00 AM) and PM (3:00-6:00 PM) hours as well as on Saturdays from 11:00 AM to 2:00 PM at the above listed intersections (Study Intersections). Also obtain available traffic volume data for the NYS Route 17M corridor from NYSDOT.
   - Perform at least three runs in either direction along the corridor to document (1) the number of school buses encountered traveling in either direction, and (2) the number of stops that were observed.
   - Compute the existing intersection capacity and operational level of service for the Study Intersections during the peak hours for each intersection following the procedures set forth in the 2010 Highway Capacity Manual (HCM). Analysis will be performed using an appropriate analysis tool such as Synchro, including an evaluation of the adequacy of left-turn queue storage lanes on US Route 6/NYS Route 17M. **For the PM Peak Hour, the analysis shall focus on the period from 3:00 p.m. to 4:00 p.m., when there is a shift change at the plant, when traffic volumes are at 97% of peak and schools may be letting out.**
   - Obtain the most recent three years of accident data from NYSDOT and from the Town of Goshen Police Department for the study area listed above. Compile and analyze the accident data to determine whether there are any locations which have exhibited a high rate of accidents (defined as twice the statewide average rate for similar facilities). For such locations, study the type of accidents, list of contributory causes and conduct a field inspection of the location to verify that the roadway geometry conforms to current design standards.

2. Future Traffic Conditions without the Project
For a development of this size, the New York State Department of Transportation, who will have approval jurisdiction over the U.S. Route 6/NYS Route 17M access, typically requires future traffic volumes to be evaluated for a ten-year window after the estimated time of completion ("ETC + 10").

The analysis of future conditions without the Project shall consist of the following elements:

- Apply an annual growth factor to the existing traffic volumes to project them to the expected ETC +10. Note, this may or may not require the use of separate evaluation years for each of the alternatives. The Applicant should provide their best estimate for when each of the alternatives will be completed and then conduct the analysis for 10 years after that. Add in traffic from other projects (proposed, approved, under construction or constructed but yet occupied) in the area expected to add more than ten vehicles per hour to the corridor.
- Calculate intersection capacity, queues and operational level of service at the Study Intersections for future conditions without the project.

3. Potential Impacts
Two alternatives shall be evaluated to determine the project's future impacts. The first alternative will assume full development of the Amy's Kitchen and Science of the Soul facilities with access to the Amy's Kitchen component provided through the Echo Lake site via the contemplated new bridge from the ver Hage site to the Echo Lake site, together with the development of the ver Hage warehouse use. The second alternative (see Chapter V, "Alternatives") will assume the contemplated full development of the Amy's Kitchen and Science of the Soul facilities with access to the Amy's Kitchen component provided via Hartley Road and access to the Science of the Soul component from U.S. Route 6/NYS Route 17M, together with the development of the ver Hage warehouse use.

Science of the Soul has indicated that the site will be used to host an annual three-day national conference, with attendance of up to 12,000 people. This annual conference would usually be held over a three-day period. Science of the Soul believes that sufficient parking would be accommodated on-site at the Echo Lake site. Volunteer parking would be provided on the Strong Farm property and overflow parking could be provided at the Amy's Kitchen facility. Science of the Soul indicates that in addition to the annual three-day conference, an annual two-day regional conference with attendance between 1,200 to 2,000 people, and regular weekly meetings on Sunday mornings for local congregants, estimated between 200 and 400 people would be held. During the week, a small staff (5 to 10 people) and a small number of volunteers will attend to normal administrative and property management tasks.

The event analysis must assume that the event may occur on any three-day period, including weekdays and weekends, and that access to the Amy's Kitchen facility will be through the Science of the Soul property, as this is the worst-case analysis. Analysis of the SoS National Event will be conducted for a weekend (when Amy's Kitchen would not be in operation) and for a weekday (when Amy's Kitchen would be in operation). Mitigation may consist of such measures as police officers providing temporary traffic control or other similar event-type measures. An event analysis assuming access to Amy's Kitchen component of the development is via Hartley Road need only be performed if it is determined that there are unacceptable and unmitigable adverse traffic impacts with a single point of access via U.S. Route 6/NYS Route 17M. The potential impact on the NYS Route 17 exit 122A interchange and access to the Strong Farm shall be evaluated including the Cheechunk Road and Owens Road intersection.

The analysis of future conditions for both alternatives, as well as the event analysis, shall consist of the following elements:

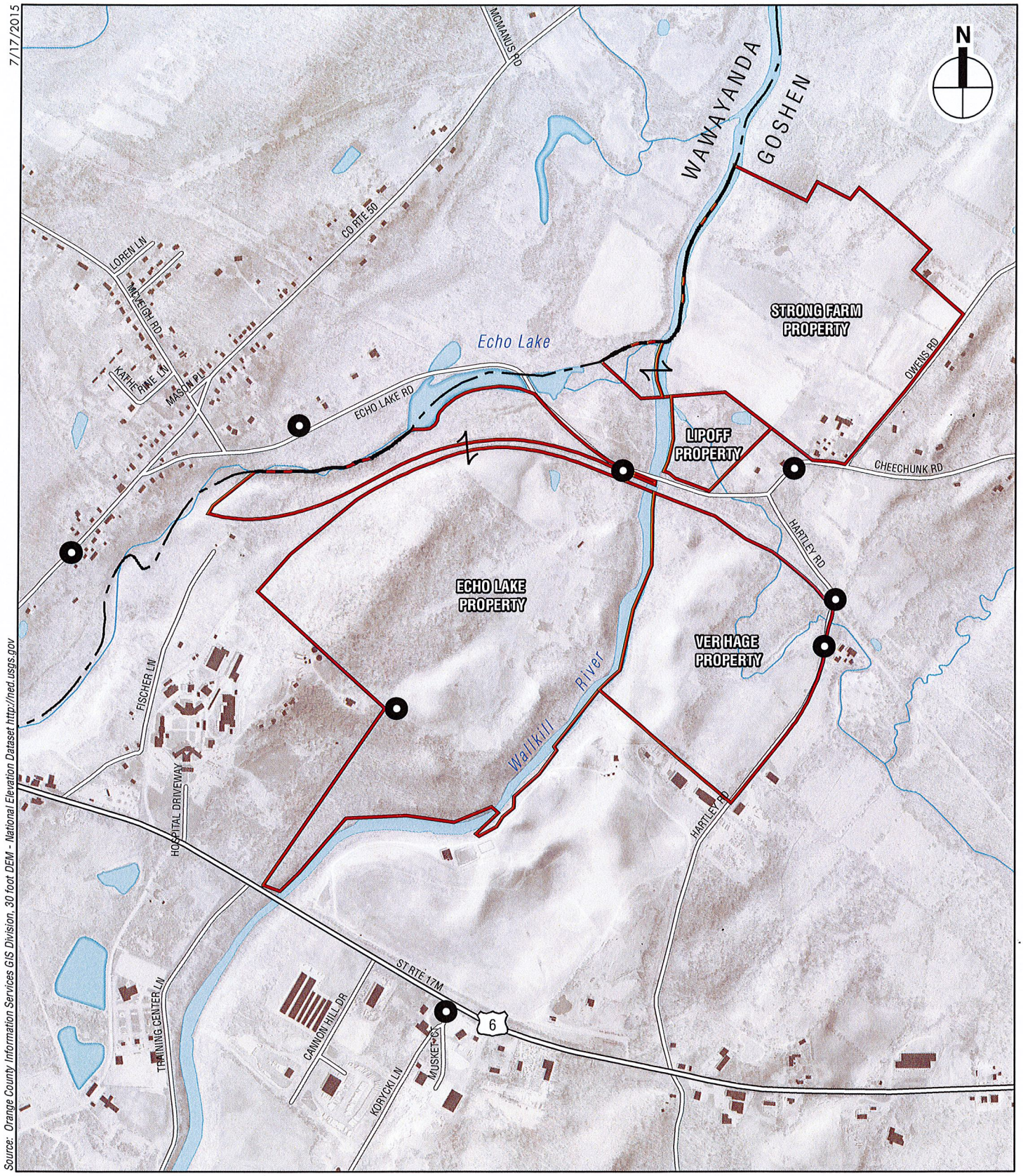
- Describe Amy's Kitchen employees' shifts and impacts on traffic; describe staggering of traffic for both the Amy's Kitchen facility and the annual event.
- For non-event days, estimate peak-hour traffic generation of passenger vehicles, busses and trucks for typical operation of Amy's Kitchen facility, including the potential future warehouse use located on Hartley Road. For ease of analysis, all truck and bus trips generated by the project shall be identified and each shall be counted as 2 car trips for the analysis of future conditions with the project (the alternative would be to have the applicant calculate the number of site-generated truck/bus trips on every movement and then adjust the heavy vehicle percentage of each movement manually, an extremely laborious effort). Rates from a similar Amy's Kitchen facility should be used to make this determination, but there should be a clear link between the size of the operations/number of employees at such similar facility and the size of operation of the proposed facility. Also estimate the number of peak-hour trips generated by the proposed adjacent private conference center on a typically busy day when no special traffic mitigation measures will be implemented.
- For event days, identify the measures that will be used to reduce the potential trip generation of the annual event and its possible impact. Such measures may include limiting the times when events start or finish to periods when traffic volumes on US Route 6/NYS Route 17 are below a critical threshold value (700 vph, for example) or using satellite parking and bussing some or all of the visitors to and from the site.
- Estimate the number of peak-hour trips which could be generated by the proposed conference center's annual event. Based on implementation of previously identified measures, estimate (showing calculations) how many passenger vehicles, busses and trucks would be added to the roadway system during the annual event (counting each single bus or truck trip as the equivalent of two passenger car trips).
- To the trips generated by the annual event, also estimate and add the number of Amy's Kitchen trips that would be added to the roadway system at the same time, indicating whether or not such events would be scheduled to start or finish at times other than Amy's Kitchen shift changes.
- Generally identify areas where sufficient parking could be provided to accommodate annual event parking and describe how adequate access to the regional roadway network would be provided to these general areas.
- Apply the estimated combined traffic volumes to the Study Intersections utilizing appropriate arrival and departure distributions for the Amy's Kitchen build condition and the annual event condition. The arrival and departure distributions should reflect the general bias to and from the west exhibited by the psychiatric center and the training center (but modified to reflect the location of satellite parking for bussed events) as well as the apparent considerable use of Gate Schoolhouse Road by local motorists. Calculate intersection capacity and operation level of service including left-turn lane queuing, at the Study Intersections for future conditions with the Amy's Kitchen manufacturing facility and conference center;
- Calculate intersection capacity and operation level of service including left-turn lane queuing at the Study Intersections for future conditions with a large event at the Science of the Soul conference center.

- Potential for use of public transportation and the existing Heritage Trail will be discussed; including how cyclists and pedestrians would travel from the site to the trail;
- Calculate the total number of parking spaces expected to be needed at the Amy's Kitchen Plant, including during shift changes and compare it to the proposed number of Amy's Kitchen parking spaces.
- Calculate the total number of parking spaces for cars and for busses expected to be needed at the proposed private conference center at the annual event and compare it to the proposed number of parking Spaces.
- Discuss how parking may or may not be shared by the facilities and how this would either permit the total impervious coverage to be reduced or to allow more parking at the private conference center for events.
- Where high accident locations were identified, discuss the projected increase in traffic volumes on the movements involved and how the increase might impact traffic safety;
- Describe on-site circulation by trucks, bus and car traffic for both sites.
- Describe proposed emergency access and discuss use as secondary access or service access during the annual event.

4. Proposed Mitigation
   - Recommend traffic and safety improvements, including roadway widening, addition of lanes, signalization additions and modifications, signage, striping, etc. as needed for the Study Intersections;
   - Identify measures for accommodating annual event conditions, including temporary traffic control (such as police officers directing traffic and functioning like a simple signal);
   - Identify who will be responsible for funding the measures and who will be responsible for ensuring that the measures are implemented or carried out;
   - Describe the traffic management plan(s) to be employed for the annual event at the Science of the Soul conference center and who will be responsible for ensuring that the measures are implemented or carried out; and
   - Additional Mitigations as necessary. All unavoidable impacts will be identified.

I. Noise

1. Existing Conditions
   - Existing noise measurements will be taken at locations identified on the Noise Monitoring Locations map, annexed hereto, to characterize ambient noise levels at sensitive receptors (e.g., residences) in close proximity to the project site. Dates and times of measurements will be provided.
2. Potential Impacts
   - Major sources of noise will be identified and their potential noise levels based on manufacture specifications or noise measurements at other similar facilities, including the SoS conference center;
   - Overall anticipated noise generation from the proposed action will be discussed and a comparison to existing conditions will be provided; and
   - A discussion of how the anticipated noise levels relate to Town or other noise regulations will be provided.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.



Amy's Kitchen
Science of the Soul

Noise Monitoring Locations
Figure III.I-1

J. Utilities and Solid Waste Disposal

1. Existing Conditions
   - Utilities not discussed above, including gas and electric service will be discussed in terms of their availability at the project site and service providers; and
   - Existing solid waste management will be discussed.
2. Potential Impacts
   - Impacts to electric and gas service will be discussed including any required upgrades to service or existing infrastructure;
   - If standby power generators are being proposed, describe the possible impacts, positive and negative, including the possibility of load-sharing during peak times of consumption;
   - Impacts of the use and conservation of energy; and
   - Impacts of the proposed action on solid waste management.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary, including recycling where possible. The Applicant will expand on what is available to the facilities in terms of recycling.

K. Land Use and Zoning

1. Existing Conditions
   - Existing land use and zoning of the project site and within one mile will be described and presented graphically; and
   - Overlay districts will be identified.
2. Potential Impacts
   - A bulk table comparing the existing zoning dimensional requirements with proposed conditions will be prepared;
   - Special Permit criteria, overlay district requirements, and requirements of § 97-14 (HC, CO and I Districts) of the zoning code will be discussed and how the project does or does not meet these criteria;
   - Subdivision regulations will be discussed;
   - Any required variances or waivers will be identified;
   - Consistency with the Town and County Comprehensive Plans will be addressed; and
   - Discuss the relationship with surrounding land uses including the Heritage Trail and landfill; and
   - A statement and evaluation of the potential impacts shall be set forth at a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence, and as otherwise necessary pursuant to the items listed at 6 NYCRR § 617.9(b)(5)(iii)(a)-(h), including the relationship of the proposed project to the overall land use patterns within the study area. This section will describe the project's conformance with the Town Zoning Code, the Town Comprehensive Plan, the Town Open Space and Farmland Protection Plan, the Southern Wallkill Biodiversity Plan, the Orange County Comprehensive Plan and the Orange County Open Space Plan.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

L. Community Services

1. Existing Conditions
   - Police, Fire, Ambulance and Town Hall services will be discussed in terms of manpower, equipment and facility locations relative to the project site.
2. Potential Impacts
   - Services will be contacted to discuss their possible concerns related to the project. A discussion of fire fighting needs, including water storage, access and circulation, will be provided.
   - Services will be contacted to discuss potential needs during large events at the SoS conference center.
   - Provide a discussion on the loss of a future recreation resource, which shall include a discussion of the Town's Wallkill River Trailway Report, Comprehensive Plan and Trail Map.
3. Proposed Mitigation
   - Any on-site security will be discussed; and
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

M. Fiscal Impacts

1. Existing Conditions
   - Existing tax revenue for each taxing jurisdiction will be presented based on the most recent tax records.
2. Potential Impacts
   - Anticipated costs and revenues will be calculated for the proposed project using the proportional valuation method or other acceptable method agreed to by the Town Planning Board;
   - Provide an analysis of the changes in the local economy (including hotels, restaurants, shopping, services, etc.) that would likely occur as a result of the completion of the project, including jobs not only for Amy's Kitchen and SoS employees, but also for construction, maintenance, service, vendors, and other trades;
   - The discussion of the potential changes in the local economy will include a discussion of the anticipated economic benefits and any detriments from construction and operations over a three and five year period (and thereafter); and
   - Describe impacts to the operations and maintenance costs for road maintenance including Town Highway Department manpower, equipment and materials.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

N. Visual Resources

1. Existing Conditions
   - Narrative and graphic description of the existing site and surrounding properties will be presented; and
   - Visual resources in the area of the site will be identified. View analysis will include the sites shown on Visual Analysis Locations Map, annexed hereto, as well as from:
     - The intersection of Golf Links Road and McVeigh Road;
     - Along Owens Road, approximately 1/4 to 1/2 mile north of its intersection with Cheechunk Road; and
     - At the municipal boundary along the Heritage Trail.

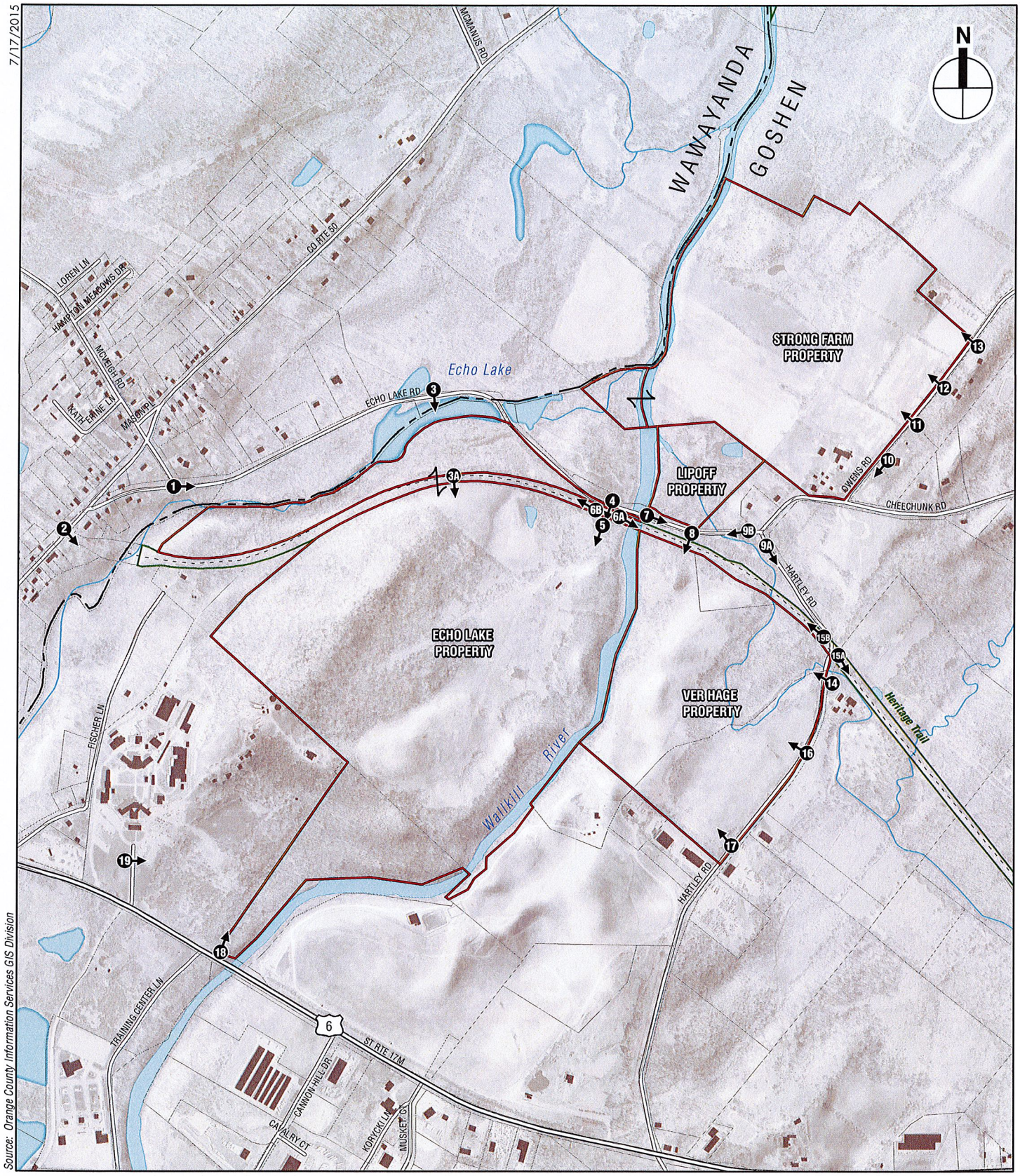
2. Potential Impacts
   - Narrative and graphic description of proposed project will be provided including physical dimensions and architectural characteristics of buildings and structures, and how they relate to visible structures in the surrounding area in terms of visibility, height, etc.;
   - Portions of proposed Action which will be visible from public roads will be discussed with photo-simulation, including from the views listed above;
   - Discussion of proposed site lighting (including, but not limited to, signage, security, driveway and parking lot lighting) and landscaping;
   - Discussion of proposed signage (and location of signage) for uses on-site; and
   - Discussion of visual impacts to the Orange County Heritage Trail.
3. Proposed Mitigation
   - Landscaping plans, including an entrance design for the main entrance on NYS Route 17M and the proposed emergency access on Echo Lake Road, the proposed temporary access on Hartley Road and any entrances to the volunteer parking from Owens Road will be described and presented graphically.
   - Mitigation will be proposed for identified adverse environmental impacts as necessary, including, but not limited to earth tone colors, night-sky friendly lighting, and limitation of foot candles at the boundary line.

O. Environmental Contamination

1. Existing Conditions
   - Surrounding contaminated sites will be discussed in terms of history, current status and likelihood of site impact.
   - Summarize the findings of any Phase I Environmental Site Assessments completed for each of the properties.
2. Potential Impacts
   - Potential for any contamination on the project site or for the proposed action to otherwise impact or disturb contaminated areas.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

P. Cultural Resources

1. Existing Conditions
   - A Phase 1A archaeological investigation will be prepared and appended to the DEIS. This will include a discussion of the history of the use of the project site and immediate area;
   - A Phase 1B will be prepared if recommended.
2. Potential Impacts
   - Describe the potential for construction of the proposed project to affect any cultural resources that may be present on the project sites.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.



Amy's Kitchen
Science of the Soul

Visual Assessment Location Map

Figure III.N-1

Q. Agriculture

1. Existing Conditions
   - The project site is located in an Agricultural District. Discuss the implications associated with this designation; and
   - Discuss any agricultural history of the project site or adjacent sites.

2. Potential Impacts
   - Discuss reduction in agricultural land or impacts to surrounding agricultural land and/or impacts to local agricultural labor supply;
   - Discuss how Amy's will source materials, including whether there is processing for those materials and how that is to be accomplished, whether Amy's will need the use of certified organic farmers, and the potential contractors or categories of contractors for these materials; and
   - Discuss benefits to agricultural community and use of local products in Amy's facilities.
3. Proposed Mitigation
   - Mitigation will be proposed for identified adverse environmental impacts as necessary.

R. Air Quality

1. Existing Conditions
   - Existing ambient air quality conditions within the study area based on data obtained from the NYSDEC will be described. NYSDEC data will be analyzed and compared to the National Ambient Air Quality Standards in order to characterize the existing air quality at the site.
2. Potential Impacts
   - A statement and evaluation of the potential impacts shall be set forth at a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence, and as otherwise necessary pursuant to the items listed at 6 NYCRR § 617.9(b)(5)(iii)(a)-(h). The effects of emissions from stationary sources at the project site will be qualitatively assessed, and, if necessary, a screening analysis to determine the potential impacts of site generated traffic on air quality will be performed to determine whether any location should undergo a detailed microscale CO analysis. This screening analysis should follow the procedures outlined by the New York State Department of Transportation. The Applicant shall include any potential impacts from construction equipment, trucks, busses, idling vehicles, traffic entering and exiting the site, and delivery vehicles, as well as all emissions during the operation of the proposed facilities.
3. Proposed Mitigation
   - Proposed and potential mitigation measures for identified adverse Environmental Impacts will be discussed. The discussion shall clearly indicate which mitigation measures have been incorporated into the plans. Unavoidable adverse Environmental Impacts will also be identified.

S. Construction Impacts

Potential Environmental Impacts anticipated due to the construction of the proposed project, phasing, if any, hours of construction operations, including noise, traffic, alternate construction traffic access to the site that will minimize the use of Town roadways, removal of soil, rocks and trees from the site, air quality (including all sources of emissions during construction), dust and the impact on the surrounding area will be described, including the potential (and remedial measures to be taken to correct such damage) to Town and County roadways and infrastructure from construction traffic, and the prevention of project mud and gravel from being tracked onto Town and County roadways. Estimates of the tons and truck trips necessary to accomplish the construction activities, and an itemization of the proposed construction traffic routes, and speed restrictions shall be set forth. Also, the precautions that will be

taken during construction to avoid and protect wetlands shall be described in detail. This Section will also describe methods of recycling waste and natural materials on-site during construction and the building process, and other "green" building techniques employed, so as to minimize the carbon footprint to the extent economically and technologically feasible.

IV. UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

This section will identify and summarize those adverse environmental impacts that can be expected to occur with or without mitigation measures, and the probability of such impacts.

V. ALTERNATIVES

A. No Action Alternative
B. Alternatives to an on-site wastewater treatment package plant (i.e., Village of Goshen or Middletown)
C. Potential use of Echo Lake Road (over Heritage Trail) as an emergency access, "employee only" entrance/exit or access for Science of the Soul events.
D. Permanent access to Amy's Kitchen manufacturing facility from Hartley Road

VI. PROJECT IMPACTS ON ENERGY USE AND SOLID WASTE MANAGEMENT

This chapter will summarize the proposed project and its Environmental Impacts in terms of the use of energy and the management of solid waste produced by the proposed project. It will identify the energy sources to be used, anticipated levels of consumption and ways to reduce energy consumption, including Leadership in Energy and Environmental Design Standards (LEED). This chapter will discuss whether geothermal and/or solar energy are options for use at this site, including but not limited to heating walkways, parking areas and road surfaces to reduce the amount of road salt required during the winter.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

This chapter will summarize the proposed project and its impacts in terms of the loss of environmental resources, both in the immediate future and in the long term.

VIII. GROWTH INDUCING IMPACTS

This chapter will discuss whether there is a growth inducing impact as a consequence of the approval and construction of the proposed action.

Technical Appendices (unless full report is in DEIS text)

1. SEQRA Documentation: EAF, DEIS Scope and Agency Correspondence;
2. SWPPP and supporting data;
3. Wetland Delineation Map and all other technical reports;
4. Site Plan (Full size);
5. Natural resources reports;
6. Subsurface Exploration Report(s);
7. Water System Data & Supporting Technical Reports;
8. Traffic Report;
9. Wastewater Collection & Treatment System Data & Supporting Technical Reports including WAC analysis (if required by DEC);
10. Archaeological Survey: Phases 1A and 1B (if required);
11. Noise Report;
12. Fiscal Report; and
13. Resumes of Professionals submitting reports.

TOWN OF GOSHEN PLANNING BOARD
STATE ENVIRONMENTAL QUALITY REVIEW
NOTICE OF INTENT TO BECOME LEAD AGENCY

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law.

The Planning Board of the Town of Goshen hereby declares its intent to serve as Lead Agency for the Amy's Kitchen, Inc. application, which application seeks subdivision, site plan and special permit approval on property located in the Town of Goshen, Orange County. If, within 30 calendar days from the date of mailing this notification, no Involved Agency submits a written objection to the Town of Goshen Planning Board, said Planning Board shall serve as Lead Agency pursuant to 6 N.Y.C.R.R. Part 617.

Amy's Kitchen, Inc. intends to prepare and submit a Draft Environmental Impact Statement in order to evaluate the effects of the subdivision, site plan, and special permit as described further below.

Name of Action: Amy's Kitchen, Inc.

Date of Action: April 17, 2014

SEQR Status: Type 1

Description of Action: Amy's Kitchen, Inc. is the contract vendee of a 200+/- acre project site located between Echo Lake Road and New York State Route 17M, involving property better known on the Town's tax maps as Section 12, Block 1, Lots 23.2 and 24.2. The project site is located within the Commercial/Office Mixed-Use ("CO"), Industrial ("I") and Rural ("RU") zoning districts of the Town of Goshen. The Proposed Action includes a two-lot minor subdivision of the property. On Lot 1, Amy's Kitchen, Inc. proposes to construct a 579,680 square foot manufacturing plant to manufacture and distribute its full line of natural and organic frozen food products. The building will contain a 25,000 square foot office area.

On Lot 2, Amy's Kitchen, Inc. proposes to construct a 200,000 square foot open-air shed structure to be used for annual conferences and other private gatherings. The structure will have a cantilevered roof over grass with six permanent restrooms and other accessory buildings.

The project also involves a 7.6-acre land transfer, representing a portion of Section 12, Block 1, Lot 101 from the State of New York to the Town of Goshen. The purpose of the land transfer is to improve access to New York State Route 17M, not only for the proposed Amy's Kitchen project, but also for the surrounding properties. A portion of the project site, tax parcel 1-1-40, is located in the Town of Wawayanda. No disturbance is proposed on this portion of the property.

There are two existing wells onsite which will be utilized for water for the project. Wastewater will be conveyed to an onsite sewage treatment facility where it will be treated and discharged to the Wallkill River.

Amy's Kitchen, Inc. projects that it will employ approximately 680 people on the project site. It is anticipated that with the construction of the new manufacturing plant in Goshen, Amy's Kitchen will look to find a significant volume of their products from local and regional farms.

Location: The project site is located on the north side of New York State Route 17M and south of Echo Lake Road in the Town of Goshen.

Contact Person: Lee Bergus, Chairman
Town of Goshen Planning Board
41 Webster Ave.
Goshen, NY 10924
(845) 294-6250

Involved Agency Circulation: This notice is being sent to the following involved agencies:

NYS Department of Environmental Conservation
Division of Environmental Permits – Region 3
625 Broadway
Albany, New York 12233-1010

NYS Department of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561

New York State Department of Transportation
4 Burnett Boulevard
Poughkeepsie, New York 12601
Contact: Terry Donoghue

NYS Office of General Services
Empire State Plaza, 41st Floor, Corning Tower
Albany, New York 12242
Contact: James Sproat, Executive Director

NYS Office of Mental Health
44 Holland Avenue
Albany, New York 12229
Contact: Emil Slane, Deputy Commissioner

Orange County Department of Health, Division of Environmental Permits
1887 County Building
124 Main Street
Goshen, New York 10924
Contact: Edwin Sims, PE, Acting Director

Orange County Department of Public Works
2455-2459 Route 17M
P.O. Box 509
Goshen, New York 10924
Contact: Charles Lee, P.E., Commissioner

Town of Goshen Town Board
41 Webster Ave
Goshen, New York 10924
Contact: Douglas Bloomfield, Supervisor

New York State Office of Parks, Recreation and Historic Preservation
Post Office Box 189, Peebles Island
Waterford, New York 12188

Orange County Industrial Development Agency
4 Crotty Lane, Suite 100
New Windsor, New York 12553

Dormitory Authority of the State of New York
515 Broadway
Albany, New York 12207-2964

Interested Agency Circulation: This notice is being sent to the following interested agencies:

Village of Goshen
276 Main Street
Goshen, New York 10924

Town of Goshen Police Department
44 Police Drive
P.O. Box 217
Goshen, New York 10924

Town of Wawayanda
80 Ridgebury Hill Road
Slate Hill, New York 10973

Town of Wallkill
99 Tower Drive, Building A
Middletown, New York 10941

Orange County Department of Planning
1887 County Building
124 Main Street
Goshen, New York 10924

U.S. Army Corps of Engineers
26 Federal Plaza
Jacob Javits Building
New York, New York 10278

U.S. Fish and Wildlife Service
New York Field Office
3817 Luker Road
Cortland, New York 13045
Attn: Noelle Rayman

NYS Department of Agriculture & Markets
10B Airline Drive
Albany, New York 12235

Northeast Organic Farming Association
P.O. Box 164
Stevenson, CT 06491

Town of Goshen Environmental Review Board
41 Webster Avenue
Goshen, New York 10924

Goshen Volunteer Ambulance Corp.
P.O. Box 695
Goshen, New York 10924

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Sponsor Information.

Name of Action or Project: Amy's Kitchen, Inc.		
Project Location (describe, and attach a general location map): NYS Route 17M and Echo Lake Road		
Brief Description of Proposed Action (include purpose or need): See attached narrative.		
Name of Applicant/Sponsor: Amy's Kitchen, Inc.	Telephone: (707) 781-7618 E-Mail:	
Address: 1650 Corporate Circle, Suite 200		
City/PO: Petaluma	State: CA	Zip Code: 94955
Project Contact (if not same as sponsor; give name and title/role): Mark Rudolph, CFO	Telephone: (707) 781-7618 E-Mail: markrudolph@amyskitchen.net	
Address: same as above		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): Concrete Properties, LLC / Tetz Family, LLC	Telephone: E-Mail:	
Address: 130 Crotty Rd		
City/PO: Middletown	State: NY	Zip Code: 10941

B. Government Approvals

B. Government Approvals Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Council, Town Board, or Village Board of Trustees ☑Yes ☐No	Town Board - Access easement for site access road	TBD
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Town Planning Board: Site Plan, Special Permit and subdivision	3/27/14
c. City Council, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☑Yes ☐No	County Health Department: Water Supply County Planning:GML, County DPW: road work	TBD
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYS DEC: SPDES NYS DOT: highway work permit	TBD
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
CO and I, Town AQ-3 Overlay District and County Ag District #2

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site?

C.4. Existing community services.

a. In what school district is the project site located? Goshen Central School District

b. What police or other public protection forces serve the project site?
Town of Goshen Police Department

c. Which fire protection and emergency medical services serve the project site?
Goshen FD and GOVAC

d. What parks serve the project site?
Orange Co Heritage Trail adjacent to project site.

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Industrial with conference center and office components

b. a. Total acreage of the site of the proposed action? +/- 195 acres
b. Total acreage to be physically disturbed? +/- 131 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? +/- 212 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☑ Yes ☐ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
One industrial lot with separate lot for conference center
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? 2
iv. Minimum and maximum proposed lot sizes? Minimum TBD Maximum TBD

e. Will proposed action be constructed in multiple phases? ☑ Yes ☐ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated TBD
- Anticipated commencement date of phase 1 (including demolition) 3 month 2015 year
- Anticipated completion date of final phase 11 month 2015 year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases:

f. Does the project include new residential uses? ☐Yes ☑No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No

If Yes,

i. Total number of structures 17

ii. Dimensions (in feet) of largest proposed structure: 45 height; 1060 width; and 683 length

iii. Approximate extent of building space to be heated or cooled: 579,680 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☑Yes ☐No

If Yes,

i. Purpose of the impoundment: stormwater detension

ii. If a water impoundment, the principal source of the water: ☑ Ground water ☐ Surface water streams ☑Other specify: Stormwater

iii. If other than water, identify the type of impounded/contained liquids and their source.

iv. Approximate size of the proposed impoundment. Volume: TBD . million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: TBD height; TBD length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

earth fill

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☑No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i .What is the purpose of the excavation or dredging?

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards):
- Over what duration of time?

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No
If yes, describe.

v. What is the total area to be dredged or excavated? _____ acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan:

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☑No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description):

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☐ No
If Yes, describe:

iv. Will proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☐ No
If Yes:

- acres of aquatic vegetation proposed to be removed:
- expected acreage of aquatic vegetation remaining after project completion:
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):
- proposed method of plant removal:
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No
If Yes:

i. Total anticipated water usage/demand per day: 200,000 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐ Yes ☑ No
If Yes:

- Name of district or service area: On site, private system
- Does the existing public water supply have capacity to serve the proposal? ☐ Yes ☑ No
- Is the project site in the existing district? ☐ Yes ☑ No
- Is expansion of the district needed? ☐ Yes ☑ No
- Do existing lines serve the project site? ☐ Yes ☑ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☑ Yes ☐ No
If, Yes:

- Applicant/sponsor for new district: Amy's Kitchen, Inc.
- Date application submitted or anticipated: 4/1/14
- Proposed source(s) of supply for new district: on site wells.

v. If a public water supply will not be used, describe plans to provide water supply for the project:
Plans and additional details will be provided in an Environmental Impact Statement

vi. If water supply will be from wells (public or private), maximum pumping capacity: 330 gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No
If Yes:

i. Total anticipated liquid waste generation per day: 200,000 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each):
Sanitary and manufacturing wastewater

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐ Yes ☑ No
If Yes:

- Name of wastewater treatment plant to be used:
- Name of district:
- Does the existing wastewater treatment plant have capacity to serve the project? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will line extension within an existing district be necessary to serve the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge, or describe subsurface disposal plans):

On-site sewer treatment with potential discharge to the Wallkill River.

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or +/- 49 acres (impervious surface)

_____ Square feet or 212.3 acres (parcel size)

ii. Describe types of new point sources. buildings/ roads/ parking areas

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

Combination of stormwater management structures and green treatment methods.

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐Yes ☑No

iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑Yes ☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

Large trucks

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

Construction equipment

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

Cooking and packaging equipment

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☑Yes ☐No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☑ Morning ☑ Evening ☐ Weekend
☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of semi-trailer truck trips/day: See attached traffic discussion

iii. Parking spaces: Existing 0 Proposed 3051 Net increase/decrease 3051

iv. Does the proposed action include any shared use parking? ☑Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:
New access road and realignment to serve adjoining properties. See attached preliminary traffic report.

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☑No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☑No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☑Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action:
TBD

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):
Local utility

iii. Will the proposed action require a new, or an upgrade to, an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 8am-8pm or as otherwise req'd
- Saturday: 9am-8pm or as otherwise req'd
- Sunday: none
- Holidays: none

ii. During Operations:

- Monday - Friday: 6am-11pm
- Saturday: TBD
- Sunday: none
- Holidays: none

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Plant machinery, HVAC units and trucks will create noise. Additional information will be provided in the DEIS.

ii. Will proposed action remove existing natural barriers that could act as a noise barrier or screen? ☑ Yes ☐ No

Describe: Existing site vegetation will be removed.

n.. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Plan will be provided in the DEIS

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☑ Yes ☐ No

Describe: removal of existing vegetation

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☑ Yes ☐ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures:

Cooking and vehicle emissions could possibly produce odors. The nearest occupied structure is the adjacent psychiatric center which is scheduled to be closed by the State. Other nearby uses include landfills and agricultural uses which also produce odors. Additional information to be provided in the DEIS.

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally describe proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: TBD tons per _____ (unit of time)
- Operation : TBD tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: TBD
- Operation: recycling as required by Orange County recycling program

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: private dumpster
- Operation: private hauler

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☑ Industrial ☑ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
☑ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): County Psychiatric Center & adjacent landfill

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	49	+ 49
• Forested	+/- 145	37	- 108
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	+/- 53	112	+ 59
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	+/- 3.3	+/- 3.3	0
• Wetlands (freshwater or tidal)	+/- 10.7	+/- 10.7	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? ☐Yes ☑No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑Yes ☐No

If Yes,

i. Identify Facilities:

Project site is adjacent to Mid-Hudson Psychiatric Center for adults with mental disabilities.

e. Does the project site contain an existing dam? ☐Yes ☑No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☑Yes ☐No

If Yes:

i. Has the facility been formally closed? ☑Yes ☐ No

- If yes, cite sources/documentation: Based on Phase 1, see report for additional details.

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

Al Turi Landfill - 73 Hartley Rd, 500 feet south of site at a lower elevation
Orange Co Landfill, NYS Rotue 17M, Goshen, 3,096 feet South, lower elevation

iii. Describe any development constraints due to the prior solid waste activities: _____

A Phase 1 Environmental Assessment will be submitted with the DEIS.

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☑Yes ☐No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

Between 1968 and 1981 the Al Turi landfill accepted hazardous materials. Additional details to be provided in the DEIS.

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑Yes ☐No

☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____

☑ Yes – Environmental Site Remediation database — Provide DEC ID number(s): 336016

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑Yes ☐No

If yes, provide DEC ID number(s): 336016

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

The Al Turi landfill has been capped. Ground water, surface water and gas emissions are currently monitored by the NYS DEC and USEPA

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? >70' feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site:

Mardin Gravelly Silt Loam (Md)	38.7 %
Riverhead Sandy Loam (Rh)	21.2 %
	%

d. What is the average depth to the water table on the project site? Average: 20 feet

e. Drainage status of project site soils:

☑ Well Drained:	59.6 % of site
☑ Moderately Well Drained:	27.4 % of site
☑ Poorly Drained	13 % of site

f. Approximate proportion of proposed action site with slopes:

☑ 0-10%:	51.5 % of site
☑ 10-15%:	17.1 % of site
☑ 15% or greater:	31.4 % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name Wallkill River Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Wetland / NYSDEC Approximate Size Fed: 0.84 / DEC: 9.09
- Wetland No. (if regulated by DEC) MD-24

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☑ Yes ☐ No

j. Is the project site in the 100 year Floodplain? ☑ Yes ☐ No

k. Is the project site in the 500 year Floodplain? ☑ Yes ☐ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

i. Name of aquifer: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:
Green Frog, Treefrog, American Toad | Chipmunk, gray squirrel, raccoon
Wood Frog, bull frog, snapping turtle | coyote and white-tailed deer

n. Does the project site contain a designated significant natural community? ☐Yes ☑No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): _____
ii. Source(s) of description or evaluation: _____
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑Yes ☐No

Indiana Bat - potential habitat along Wallkill River

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐Yes ☑No

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐Yes ☑No
If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☑Yes ☐No
If Yes, provide county plus district name/number: ORAN002

b. Are agricultural lands consisting of highly productive soils present? ☐Yes ☑No
i. If Yes: acreage(s) on project site? _____
ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐Yes ☑No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐Yes ☑No
If Yes:
i. CEA name: _____
ii. Basis for designation: _____
iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on, or has been nominated by the NYS Board of Historic Preservation for inclusion on, the State or National Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Orange Co Heritage Trail

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): County Park/ Trailway

iii. Distance between project and resource: 0 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

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

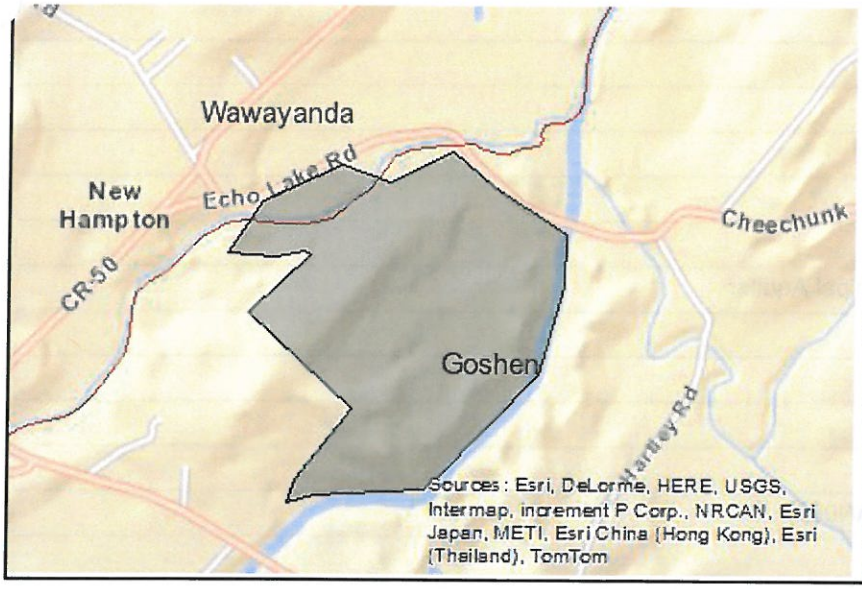
Applicant/Sponsor Name Amy's Kitchen Date 2/20/2014

Signature _____ Title _____

PRINT FORM

EAF Mapper Summary Report

Wednesday, April 16, 2014 1:33 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	336016
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	855.5-1
E.2.h.iv [Surface Water Features - Stream Classification]	B
E.2.h.iv [Surface Water Features - Wetlands Name]	NYS Wetland, Federal Wetland

E.2.h.iv [Surface Water Features - Wetlands Size in Acres]	Federal Wetland:6.25695858, Federal Wetland:0.89311641, Federal Wetland:0.69927919, Federal Wetland:0.22966854, Federal Wetland:0.74412443, Federal Wetland:0.6085139, Federal Wetland:0.22363596, Federal Wetland:0.39699229, Federal Wetland:0.72248635, Federal Wetland:0.30780888, NYS Wetland:27.4
E.2.h.iv [Surface Water Features - Wetlands No]	MD-24
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	Yes
E.2.j. [100 Year Floodplain]	Yes
E.2.k. [500 Year Floodplain]	Yes
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	ORAN002
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National Register of Historic Places]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

Agency Use Only [If applicable]

Project:

Date:

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "Yes" to a numbered question, please complete all the questions that follow in that section.
- If you answer "No" to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land
Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1)
☐ NO ☑ YES
If "Yes", answer questions a - j. If "No", move on to Section 2.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☑	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☐	☑
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☑	☐
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☐	☑
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☑	☐
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☐	☑
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☑	☐
h. Other impacts: _____		☑	☐

2. Impact on Geological Features

The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g) ☑ NO ☐ YES

If "Yes", answer questions a - c. If "No", move on to Section 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Identify the specific land form(s) attached: _____	E2g	☐	☐
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: _____	E3c	☐	☐
c. Other impacts: _____		☐	☐

3. Impacts on Surface Water

The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h) ☐ NO ☑ YES

If "Yes", answer questions a - l. If "No", move on to Section 4.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may create a new water body.	D2b, D1h	☑	☐
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	☑	☐
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	☑	☐
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	☑	☐
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	☐	☑
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	☑	☐
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	☐	☑
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	☐	☑
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	☐	☑
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	☑	☐
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	☐	☑

l. Other impacts: _____		☑	☐

4. Impact on groundwater

The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer. (See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t) ☐ NO ☑ YES

If "Yes", answer questions a - h. If "No", move on to Section 5.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	☐	☑
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: _____	D2c	☑	☐
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	☑	☐
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	☑	☐
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	☑	☐
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	☑	☐
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	☑	☐
h. Other impacts: _____		☑	☐

5. Impact on Flooding

The proposed action may result in development on lands subject to flooding. (See Part 1. E.2) ☐ NO ☑ YES

If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	☑	☐
b. The proposed action may result in development within a 100 year floodplain.	E2j	☑	☐
c. The proposed action may result in development within a 500 year floodplain.	E2k	☑	☐
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	☐	☑
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	☐	☑
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	☑	☐

g. Other impacts: _____		☑	☐

6. Impacts on Air

The proposed action may include a state regulated air emission source. ☐NO ☑YES

(See Part 1. D.2.f., D,2,h, D.2.g)

If "Yes", answer questions a - f. If "No", move on to Section 7.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☑	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☑	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☑	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☑	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☑	☐
vi. 43 tons/year or more of methane	D2h	☑	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☑	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☑	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☑	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☑	☐
f. Other impacts: _____		☑	☐

7. Impact on Plants and Animals

The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) ☐NO ☑YES

If "Yes", answer questions a - j. If "No", move on to Section 8.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☑	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☐	☑
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☑	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☑	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	☑	☐
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: _____	E2n	☑	☐
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	☑	☐
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: _____ _____	E1b	☐	☑
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	☑	☐
j. Other impacts: _____ _____		☑	☐

8. Impact on Agricultural Resources
The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.) ☐ NO ☑ YES
If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	☐	☑
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, E1b	☑	☐
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	☑	☐
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	☑	☐
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	E1a, E1b	☑	☐
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	☑	☐
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	☑	☐
h. Other impacts: _____		☑	☐

9. Impact on Aesthetic Resources
The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.)
☐ NO ☑ YES
If "Yes", answer questions a - g. If "No", go to Section 10.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☐	☑
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☐	☑
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	☐ ☐	☑ ☑
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	☑ ☐	☐ ☑
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☑	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☑	☐
g. Other impacts: _____		☑	☐

10. Impact on Historic and Archeological Resources
The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.)
☐ NO ☑ YES
If "Yes", answer questions a - e. If "No", go to Section 11.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on or has been nominated by the NYS Board of Historic Preservation for inclusion on the State or National Register of Historic Places.	E3e	☑	☐
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	☑	☐
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: _____	E3g	☑	☐

d. Other impacts: _____		☑	☐
e. If any of the above (a-d) are answered "Yes", continue with the following questions to help support conclusions in Part 3:			
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	☑	☐
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	☑	☐
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	☑	☐

11. Impact on Open Space and Recreation

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan.
(See Part 1. C.2.c, E.1.c., E.2.q.)
If "Yes", answer questions a - e. If "No", go to Section 12.

☐ NO ☑ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	☑	☐
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	☐	☑
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	☑	☐
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	☑	☐
e. Other impacts: Trail plan adopted by Town Board involving this property		☐	☑

12. Impact on Critical Environmental Areas

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)
If "Yes", answer questions a - c. If "No", go to Section 13.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
c. Other impacts: _____		☐	☐

13. Impact on Transportation
The proposed action may result in a change to existing transportation systems. ☐ NO ☑ YES
(See Part 1. D.2.j)
If "Yes", answer questions a - g. If "No", go to Section 14.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☐	☑
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☐	☑
c. The proposed action will degrade existing transit access.	D2j	☑	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☑	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☐	☑
f. Other impacts: _____		☑	☐

14. Impact on Energy
The proposed action may cause an increase in the use of any form of energy. ☐ NO ☑ YES
(See Part 1. D.2.k)
If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☑	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☑	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☑	☐
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☐	☑
e. Other Impacts: _____		☑	☐

15. Impact on Noise, Odor, and Light
The proposed action may result in an increase in noise, odors, or outdoor lighting. ☐ NO ☑ YES
(See Part 1. D.2.m., n., and o.)
If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☑	☐
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☑	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☑	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☐	☑
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☐	☑
f. Other impacts: _____ _____		☑	☐

16. Impact on Human Health
The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.) ☐ NO ☑ YES
If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No,or small impact may occur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☑
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☑	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☑	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☑	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☑	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☑	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☑
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☑	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☑
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☑
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☑	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☑	☐
m. Other impacts: _____ _____		☑	☐

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. (See Part 1. C.1, C.2. and C.3.) ☐ NO ☑ YES

If "Yes", answer questions a - h. If "No", go to Section 18.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☑	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☑	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☑	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☑	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, E1b	☑	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☑	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☑	☐
h. Other: _____ _____		☑	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. (See Part 1. C.2, C.3, D.2, E.3) ☐ NO ☑ YES

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☑	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☑	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☑	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☑	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☑	☐
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☑	☐
g. Other impacts: _____ _____		☑	☐

State Environmental Quality Review Act

POSITIVE DECLARATION

Notice of Intent to Prepare a Draft Environmental Impact Statement
and Notice of Public Scoping Meeting
Lead Agency Determination of Significance

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law. The Planning Board of the Town of Goshen has determined that the proposed action described below may have a significant impact on the environment and that a Draft Environmental Impact Statement will be prepared. The Planning Board hereby adopts a Positive Declaration in order to investigate and evaluate the potential environmental impacts of this Proposed Action. Scoping will be conducted, and a public scoping meeting will be held on June 19, 2014.

Name of Action: Amy's Kitchen, Inc.

Lead Agency: Planning Board of the Town of Goshen, Orange County

Date: May 22, 2014

SEQR Status: Type 1

Description of Action: Amy's Kitchen, Inc. is the contract vendee of a 200+/- acre project site located between Echo Lake Road and New York State Route 17M, involving property better known on the Town of Goshen tax maps as Section 12, Block 1, Lots 23.2 and 24.2. The project site is located within the Commercial/Office Mixed-Use ("CO"), Industrial ("I") and Rural ("RU") zoning districts of the Town of Goshen. The Proposed Action includes a two-lot minor subdivision of the property. On Lot 1, Amy's Kitchen, Inc. proposes to construct a 579,680 square foot manufacturing plant to manufacture and distribute its full line of natural and organic frozen food products. The building will contain a 25,000 square foot office area.

On Lot 2, Amy's Kitchen, Inc. proposes to construct a 200,000 square foot open-air shed structure to be used for annual conferences and other private gatherings. The structure will have a cantilevered roof over grass with six permanent restrooms and other accessory buildings.

The project also involves a 7.6-acre land transfer, representing a portion of Section 12, Block 1, Lot 101 from the State of New York to the Town of Goshen. The purpose of the land transfer is to improve access to New York State Route 17M, not only for the proposed Amy's Kitchen project, but also for the surrounding properties. A portion of the project site, tax parcel 1-1-40, is located in the Town of Wawayanda. No disturbance is proposed on this portion of the property.

There are two existing wells onsite which will be utilized for water for the project. Wastewater will be conveyed to an onsite sewage treatment facility where it will be treated and discharged to the Wallkill River.

Amy's Kitchen, Inc. projects that it will employ approximately 680 people on the project site. It is anticipated that with the construction of the new manufacturing plant in Goshen, Amy's Kitchen will look to find a significant volume of their products from local and regional farms.

Location: The project site is located on the north side of New York State Route 17M and south of Echo Lake Road in the Town of Goshen.

Reasons Supporting this Determination: Potential environmental impacts associated with the proposed action are identified in the Full Environmental Assessment Form. These impacts, which may be reasonably expected to result from the Project, have been compared to the criteria for determining significance identified in 6 N.Y.C.R.R. § 617.7(c)(1) and in accordance with 6 N.Y.C.R.R. § 617.7(c)(2) and (3). The Planning Board finds that the Proposed Action may result in one or more significant impact on the environment, and an Environmental Impact Statement ("EIS") will be prepared to address, at a minimum, the following elements of the Proposed Action, which may result in potential impacts:

1. The Proposed Action includes construction on slopes of 15% or greater.

2. The Proposed Action could involve the excavation of more than 1,000 tons of natural materials.

3. The Proposed Action may result in increased erosion from both physical disturbance and natural vegetation removal.

4. The Proposed Action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.

5. The Proposed Action will create one or more outfalls for discharge of wastewater into the Wallkill River from on an onsite wastewater treatment plant.

6. The Proposed Action may affect the water quality of a water body within or downstream of the project site.

7. The Proposed Action requires conversion of more than 10 acres of forest habitat.

8. The project site contains soil classified within soil group 1 through 4 of the NYS Land Classification System.

9. The Proposed Action requires new water supply wells.

10. The Proposed Action may be visible from the Orange County Heritage Trail and other publically accessible vantage points.

11. The Proposed Action includes construction of over 700 paved parking spaces.

12. Traffic from the Proposed Action may exceed capacity of the existing road network and may alter the present pattern of people or goods.

13. Project has potential to generate traffic significantly above current levels and may result in the alteration of traffic patterns for cars as well as busses.

14. The project will result in the heating and cooling of more than 100,000 square feet of building area when completed.

15. The proposed action may result in light shining onto adjoining properties.

16. The Proposed Action may result in lighting creating sky-glow brighter than existing area conditions.

17. The proposed action may result in an increase in the rate of disposal, or processing of solid waste.

18. The Proposed Action may result in excavation or disturbance within 2,000 feet of a site used for the disposal of solid or hazardous waste.

Public Scoping: The Planning Board has scheduled a Public Scoping Meeting for **June 19, 2014** starting at 7:30 PM or reasonably soon thereafter. Scoping is the process by which the Lead Agency identifies the potentially significant adverse impacts related to the proposed action that are to be addressed in the forthcoming DEIS, including the content and level of detail of the analysis, range of alternatives to be considered, and mitigation measures needed and the identification of non relevant issues.

A copy of the applicant's draft scoping document can be viewed on the Town's website: www.townofgoshen.org, or in the Town Building Department located in Town Hall (41 Webster Ave.). All persons interested are invited to be present at said meeting. Written comments can be submitted to the Building Department at any time up to the meeting date.

For Further Information:

Contact Person: Lee Bergus, Chairman
Town of Goshen Planning Board
41 Webster Avenue
Goshen, New York 10924
(845) 294-6250

A copy of this Notice is being sent to the following Involved and Interested Agencies:

Involved Agencies

NYS Department of Environmental Conservation
Division of Environmental Permits – Region 3
625 Broadway
Albany, New York 12233-1010

NYS Department of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561

New York State Department of Transportation
4 Burnett Boulevard
Poughkeepsie, New York 12601
Contact: Terry Donoghue

NYS Office of General Services
Empire State Plaza, 41st Floor, Corning Tower
Albany, New York 12242
Contact: James Sproat, Executive Director

NYS Office of Mental Health
44 Holland Avenue
Albany, New York 12229
Contact: Emil Slane, Deputy Commissioner

Orange County Department of Health, Division of Environmental Permits
1887 County Building
124 Main Street
Goshen, New York 10924
Contact: Edwin Sims, PE, Acting Director

Orange County Department of Public Works
2455-2459 Route 17M
P.O. Box 509
Goshen, New York 10924
Contact: Charles Lee, P.E., Commissioner

Town of Goshen Town Board
41 Webster Ave
Goshen, New York 10924
Contact: Douglas Bloomfield, Supervisor

New York State Office of Parks, Recreation and Historic Preservation
Post Office Box 189, Peebles Island
Waterford, New York 12188

Orange County Industrial Development Agency
4 Crotty Lane, Suite 100
New Windsor, New York 12553

Dormitory Authority of the State of New York
515 Broadway
Albany, New York 12207-2964

Interested Agencies

Environmental Notice Bulletin – via email
enb@gw.dec.state.ny.us

Village of Goshen
276 Main Street
Goshen, New York 10924

Town of Goshen Police Department
44 Police Drive
P.O. Box 217
Goshen, New York 10924

Town of Wawayanda
80 Ridgebury Hill Road
Slate Hill, New York 10973

Town of Wallkill
99 Tower Drive, Building A
Middletown, New York 10941

Orange County Department of Planning
1887 County Building
124 Main Street
Goshen, New York 10924

U.S. Army Corps of Engineers
26 Federal Plaza
Jacob Javits Building
New York, New York 10278

U.S. Fish and Wildlife Service
New York Field Office
3817 Luker Road
Cortland, New York 13045
Attn: Noelle Rayman

NYS Department of Agriculture & Markets
10B Airline Drive
Albany, New York 12235

Northeast Organic Farming Association
P.O. Box 164
Stevenson, CT 06491

Town of Goshen Environmental Review Board
41 Webster Avenue
Goshen, New York 10924

Goshen Volunteer Ambulance Corp.
P.O. Box 695
Goshen, New York 10924

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 3
21 South Putt Corners Road, New Paltz, New York 12561-1620
Phone: (845) 256-3054 **FAX:** (845) 255-4659
Website: www.dec.ny.gov

Joe Martens
Commissioner

May 22, 2014

REC
MAY 29 2014
TOWN OF GOSHEN
TOWN CLERK

Lee Bergus, Chairman
Town of Goshen Planning Board
41 Webster Avenue
Goshen, NY 10924

Re: Amy's Kitchen
DEC Tracking ID #: 3-3330-00231/00001, /00002
Town of Goshen, Orange County
Response to SEQR Lead Agency and DEC Jurisdiction

Dear Chairman Bergus:

The New York State Department of Environmental Conservation (DEC) has reviewed the Town of Goshen's notice of intent to assume lead agency status for the State Environmental Quality Review (SEQR) of the proposed development of Amy's Kitchen. DEC has no objection to the Town acting as lead agency; the Lead Agency request indicated that an Environmental Impact Statement (EIS) will be prepared for this Type 1 action. DEC jurisdiction is as follows with reference to the Environmental Conservation Law (ECL). By copy of this letter the applicant is made aware of these jurisdictions.

State Pollutant Discharge Elimination System (SPDES) – Industrial
Pursuant to Article 17, Titles 7, 8 of the ECL, this development will require an industrial SPDES permit for the proposed discharge of 200,000 gallons per day to the Wallkill River, NYS Waters Index # H-139-13 portion (Rio Grande to New York-New Jersey state line), Class C. The applicant will be required to provide the following information in the application:

- Sampling information for the industrial wastewater discharge.
- A breakdown of the relative portions of the discharge that will be industrial process waste and sanitary waste.
- Discussion of the alternative of connecting to a municipal sewer system.

Technical questions on preparation of the SPDES permit application can be directed to DEC Division of Water staff member Manju Cherian at (914) 428-2505 ext 357.

Water Withdrawal
This project will require a Water Withdrawal Permit pursuant to Article 15, Title 15 of the ECL for withdrawal of water in excess of 100,000 gallons per day. The applicant will have to demonstrate that a sustainable yield is possible and determine any potential impacts to nearby resources such neighboring wells, the Wallkill River, or NYS freshwater wetland MD-24.

The applicant is referred to the DEC website for information on the water withdrawal program - http://www.dec.ny.gov/permits/6036.html and the necessary elements of a complete application.

These will include pump test results; the DEC pumping test procedures are available at http://www.dec.ny.gov/lands/86950.html.

Technical questions on preparation of the Water Withdrawal application can be directed to DEC Division of Water staff member Aparna Roy at (914) 428-2505 ext 362.

Protection of Waters and Freshwater Wetlands
The site contains portions of the Wallkill River, NYS Waters Index # H-139-13 portion, Class C (upstream of Rio Grande) regulated under Article 15, Title 5 of the ECL, Protection of Waters. A permit is not required to disturb the bed or banks of a Class C stream without a trout standard.

The site contains portions of DEC freshwater wetland MD-24, regulated under Article 24 of the ECL. The wetland boundary was delineated and surveyed in 2009. According to the plans and EAF, no disturbances are proposed to this wetland or the associated adjacent area.

If any disturbance is proposed to wetlands regulated by the Army Corps of Engineers and permit is required from the Corps, then a Water Quality Certification pursuant to Section 401 of the Clean Water Act will be required from DEC. If the project qualifies for an Army Corps Nationwide Permit, then it may qualify for the DEC Blanket Water Quality Certification.

Endangered and Threatened Species
This site is within 2.5 miles of known roost trees of Indiana bat (*Myotis sodalist*), a species listed by New York State and the U.S. Fish & Wildlife Service as endangered. Removal of forested areas has the potential to impact Indiana bat roosting and foraging habitat. The general habitat report submitted with the EAF, "Vegetation and Wildlife Resources at the Echo Lake Site", lists a number of tree species occurring on the site that are suitable as roost trees.

The DEC requires sufficient information to determine whether a permit pursuant to Article 11, Title 5 of the ECL, Endangered and Threatened Species, may be required for the taking of endangered species habitat. The applicant must provide an assessment of potential impacts of the development on Indiana bat foraging and roosting habitat for DEC review.

The applicant may contact Lisa Masi, DEC Bureau of Wildlife, at (845) 256-2257 to discuss potential impacts or options for avoidance.

Mined Land Reclamation
Portions of the property are currently mined for sand and gravel under Mined Land Reclamation permit 3-3330-00072/00001, issued to E Tetz & Sons Inc, and expiring January 31, 2018. Prior to Amy's Kitchen Inc initiating construction, the mine permittee must either complete reclamation pursuant to their approved reclamation plan or modify the permit reclamation plan to allow for the construction.

If more than 1000 tons (750 cubic yards) of soil and minerals will be excavated in association with the construction, then a mined land reclamation permit or construction exemption will be required. Any EIS should include a comprehensive cut and fill analysis.

State Pollutant Discharge Elimination System (SPDES) – Stormwater
The proposed action will disturb more than 1 acre and will require coverage under the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001). The EAF indicated that impoundment(s) will be constructed for stormwater with the size given as "TBD". If the stormwater impoundment(s) exceed either of the following thresholds, a Protection of Waters Dam Safety permit will be required:

- the maximum height[1] is more than 6 feet **and** the maximum impounding capacity[2] is greater than three million gallons; or
- the maximum height is more than 15 feet **and** the maximum impounding capacity is more than one million gallons.

Other DEC Jurisdictions
The EAF states that on the site there will be no underground storage of chemicals or petroleum products and no aboveground storage of petroleum products in excess of 1,100 gallons or chemical storage in excess of 185 gallons. Please note that these regulatory thresholds for bulk storage registration apply to the summary capacity of all storage units of a type (petroleum or chemical), not just to the individual units.

The EAF states that air emissions will be limited to construction equipment, vehicles, and equipment for cooking and packaging. Construction, vehicle, and food production emissions are exempt from regulation pursuant to 6 NYCRR Part 201 Air Resource Permits and Registrations.

Please note that an air facility registration may be required if the project includes installation of a combustion boiler burning coal or wood with a maximum-rated heat-input capacity greater than one million British Thermal Units per hour or a boiler burning any other fuel with a capacity greater than ten million.

The site is adjacent to and across the Wallkill River from the former Al Turi landfill, Remediation Site Code 336016. Impacts on the development from this former landfill are not expected because the river marks the boundary of a regional groundwater discharge zone and is a hydrologic boundary.

Uniform Procedures
All SPDES, Water Withdrawal, and Protection of Waters permits, as well as Water Quality Certifications, are processed pursuant to Uniform Procedures, Article 70 of the ECL. Per

1 Maximum height is measured from the downstream (outside) toe of the impoundment at its lowest point to the highest point at the top of the structure.
2 Maximum impounding capacity is the volume of water impounded when the water level is at the top of the structure.

Re: Amy's Kitchen
DEC Tracking ID #: 3-3330-00231/00001, /00002
Town of Goshen, Orange County
Response to SEQR Lead Agency and DEC Jurisdiction

Uniform Procedures regulations 6 NYCRR Part 621, all DEC applications for a project must be submitted simultaneously and processed as a single application batch, with the exception of filing for coverage under the stormwater SPDES general permit. A determination on taking of an endangered species must also be made prior to the application being deemed complete.

Please note that this will be a major application pursuant to Uniform Procedures and a 30-day public comment period will be required. No application can be deemed complete until the Town as Lead Agency pursuant to SEQR either issues a Negative Declaration or accepts a Draft Environmental Impact Statement for review. As the site is within an area designated by the NY State Historic Preservation Office (SHPO) as sensitive for archeological sites, a determination on potential impacts by SHPO will be required for a complete application for permits.

DEC recommends the applicant request a pre-application meeting to discuss the necessary elements of the SPDES and Water Withdrawal permits, as well as the Endangered Species Taking jurisdiction determination.

If the applicant wishes to schedule a meeting, they may contact me. If you have any questions, please feel free to contact me at (845) 256-3014 or at rscrist@gw.dec.state.ny.us.

Sincerely,

Rebecca Crist
Environmental Analyst

Ecc: Mark Rudolph, Amy's Kitchen Inc
Stuart Turner, Turner Miller Group
John O'Rourke, Lanc and Tully Engineering and Surveying P.C.
Gary Tetz, E. Tetz & Sons
Orange County Department of Health
Philip Perazio, NYSHPO
Manju Cherian, DEC Division of Water
Aparna Roy, DEC Division of Water
Lisa Masi, DEC Bureau of Wildlife

Appendix B

BURKE, MIELE & GOLDEN, LLP

DATE: 4/19/2016

TO: LEE BERGUS, CHAIRMAN; PLANNING BOARD MEMBERS; PLANNING BOARD CONSULTANTS

FROM: RICHARD B. GOLDEN; KELLY M. NAUGHTON

RE: TOWN OF GOSHEN PLANNING BOARD: AMY'S KITCHEN DEIS

Our office has reviewed the Amy's Kitchen Draft Environmental Impact Statement ("DEIS") for "completeness" (*i.e.,* adequacy for public review only), and has the following comments:

General

- Please keep the headings consistent with the headings in the Scoping Document. (Completeness.)

Cover Page

- Missing SEQRA status (Type I)
- Missing the email address of the primary preparer of the DEIS, as well as the name, address, email address and telephone number of the contact person representing the preparer.
- Missing all revision dates of the DEIS

I. Executive Summary

- No comments at this time.

II. Project Description

- There is now a reference that the Central Building for Science of the Soul will have dormitory accommodations. This residential use, and its interplay with the residential uses of the caretaker houses and the 5-bedroom house should be made clear to allow the Planning Board and public to fully understand the residential components of the Science of the Soul project, and their impacts and zoning issues.
- Page II-5 references an easement within the Echo Lake property held by the City of Middletown. We did not see that easement shown on the plan for SoS. Please identify all easements on the plans, and provide our office with a copy of all easements and/or include them in an appendix.
- On page II-5, if the reference to the 40-lot subdivision is the Owen's Road subdivision (a/k/a Goshen Meadows), it was approved for 39 lots rather than 40 lots.
- On page II-6, is the DEIS saying that the Heritage Trail from the original Wallkill River channel west to the City of Middletown is owned by the City of Middletown (rather than the County of Orange)?
- Discuss the particulars concerning the extent, quantity, etc. of the composting use, which may also require a special permit from the Town Board. (Completeness.)
- Page II-25 should be revised to include a special permit from the Planning Board for the religious use in the CO district and a warehouse use in the Industrial district.
- On page II-25, why was the NYS Dormitory Authority removed as an involved agency? Also, why was the Town of Goshen Building Department, for issuance of a floodplain development permit, removed? Why was the US FWS and the ACOE removed from the Interested Agency list (when the

ACOE will clearly be interested considering the recent events on the Ver Hage site)? (Completeness.)
- Per the scope, there was no mention of the hydrants for the SoS portion of the site.

A. Geology and Soils

- There was no response to "Unavoidable adverse impacts will be identified". If there are no unavoidable adverse impacts, please state as much. (Completeness.)

B. Topography

- The DEIS did not provide topographical maps at 2' contours. (5' contours were provided). (Completeness.)
- The Scope required that a grading plan be presented with a cuts and fills analysis at 2' contours, this is mentioned on pages III.B-4 and III.B-5, however there is no reference to the plan. (The Scope required a plan be presented.)

C. Surface Water Resources

- On page III.C-5, the DEIS states that the wetland field delineation will be confirmed through a jurisdictional determination by the USACE and NYSDEC. When is that expected? The Scope requires a "Jurisdictional Determination will be provided as an attachment to the DEIS."
- The Scope required "the potential for contamination of surface waters on both a long- and short-term (construction) basis will be addressed, including use of deicing agents on site." This was only partially addressed in the DEIS. (Completeness.)
- The Scope required that mitigation be proposed for identified adverse environmental impacts as necessary. The DEIS states that the SWPPP includes provisions that would ensure that runoff would not adversely affect the quality or quantity of waters in the Wallkill River or Cheechunk Creek. Please include those mitigation measures that are within the SWPPP that are proposed for this project in the Mitigation section.

D. Natural Resources

- The DEIS is missing a table of "vegetation identified" for the Echo Lake property; one is provided for the other three properties.
- The Scope required that "existing significant trees (*i.e.,* 12" dbh), hedgerows, etc. will be discussed" and "the impacts to, and maintenance of, any significant trees (*i.e.,* 12" dbh), hedgerows, etc. shall be discussed with regard to the layout of the facilities and entry road. This section should be modified as per the Planning Board's discussion on April 14, 2016. (Completeness.)
- There was no mention or discussion of "rare species" in the DEIS. (Completeness.)

E. Groundwater/Water Supply

- Please provide the easements referenced on page III.E-2.
- This section does not discuss the additional usage of water for SoS for the weekly meetings, and the bi-weekly meetings. (Completeness.)

F. Wastewater Management

- This section does not include the expected bi-weekly meetings.
- There is no mention of the wastewater facilities to be utilized on the Strong property (please state what the current site uses as far as wastewater management).

G. Stormwater Management

- The Scope required the DEIS to describe pre- and post-construction drainage patterns, flows and proposed infrastructure in the "Potential Impacts" section; only post-construction information was discussed in this section. At a minimum, a reference to an earlier portion of the DEIS discussing pre-construction drainage patterns should be included.

H. Traffic

- Our office defers to the Town's traffic consultant for his comments on this section.

I. Noise

- The noise study has identified the annual conference as exceeding the 65 dBA established by the DEC, but concludes that there would not be a significant noise impact because the existing noise at those locations already exceed 65 dBA, and this would be just be a small increase above that. The Applicant should provide mitigation measures for this environmental impact.

J. Utilities and Solid Waste Disposal

- The Scope requires the Applicant to "expand on what is available to the facilities in terms of recycling." There needs to be a discussion generally concerning recycling and, specifically, the recycling available to the facilities, as per the SEQRA Scope. (Completeness.)
- Please confirm the electric service being provided to the facilities will be running the lines underground.

K. Land Use, Zoning and Public Policy

- There is no discussion of applicable subdivision regulations as required by the SEQRA Scope. This must be corrected. Additionally, there needs to be more specific discussion of the project's interplay with the Heritage Trail and the landfill, as required by the SEQRA Scope. This must be corrected. (Completeness.)
- On page III.K-10, footnote 2, is the Applicant proposing to design the buildings to look like they are broken into smaller sections through the use of color changes or other facade treatments? (§ 97-14(D)).
- On page III.K-12, referring to § 97-14(D)(2), it is a finding for the Planning Board to make as to whether there are historic structures or structures with architectural significance on the properties.
- On page III.K-16, the Applicant should address whether any of the other buildings proposed by SoS will require variances.

L. Community Services

- On page III.L-4, the Applicant has stated that the Town was unable to provide the Applicant with a copy of the *Wallkill River Trailway: Conceptual Plans*. This was previously provided to the Applicant. Please contact our office, and another copy will be provided. Additionally, this conflicts with the section on page III.L-9, discussing this document.
- On page L-2, under "Town of Goshen Police Department", the DEIS should indicate the number of part-time officers at the Town of Goshen Police Department.
- On pages L-7 and L-8, the DEIS states that there were no fire calls for the Medford plant in 2014 and seven ambulance calls for the Medford plant in 2014. The DEIS has been updated to include 2015, and what has occurred thus far in 2016. What about prior years?

- On page L-9, "Mitigation Measures", the Applicant should revise this section to include a discussion of (or a reference to an earlier subsection) the on-site security, as required by the Scope.

M. Fiscal Impacts

- No comments at this time.

N. Visual Impacts

- The Existing Conditions views are missing View 3A. (Completeness.)
- Existing Conditions View 10 is labeled as "View of Strong Farm Property from Owens Road"; however, the Visual Assessment Location Map shows that it is supposed to be a view from Owens Road towards the Ver Hage property. Seeing as this is the only photo depicting the farm buildings, the Planning Board should determine if this direction was its intent. (Completeness.)
- The Applicant should confirm that the additional three locations set forth in the Scoping Document (in addition to the Visual Analysis Locations Map) were included or covered by a different numbered photograph.
- The Scope required that "portions of [the] proposed Action which will be visible from public roads will be discussed with photo-simulation, including from the views listed above." The DEIS should be revised to include the missing locations: 3A, 6A (was redirected), 7, 9A, 11, 13, 14, 15A, 15B, 16, and 17. (Completeness.)
- The Applicant should amend this chapter per the Planning Board's discussion on April 14, 2016 regarding the two-dimensional photo-simulations.
- The Potential Impacts section does not include a narrative of the architectural characteristics of all buildings and structures, as required by the Scope.
- The discussion of the proposed signage and the location of the signage should be more developed in the FEIS.
- The Proposed Mitigation section in the Scope required: "Landscaping plans, including an entrance design for the main entrance on NYS Route 17M and the proposed emergency access on Echo Lake Road, the proposed temporary access on Hartley Road and any entrances to the volunteer parking from Owens Road will be described and presented graphically" and "Mitigation will be proposed for identified adverse environmental impacts as necessary, including, but not limited to earth tone colors, night-sky friendly lighting, and limitation of foot candles at the boundary line." These items were not included or discussed. (Completeness.)

O. Environmental Contamination

- No comments at this time.

P. Cultural Resources

- No comments at this time.

Q. Agriculture

- The Existing Conditions section does not discuss the implications associated with the designation of portions of the project site as being located within an Agricultural District.

R. Air Quality

- Unavoidable adverse environmental impacts to the air quality were required to be included under "Proposed Mitigation", but there are no impacts identified. The DEIS stated that the project would

not result in any significant adverse air quality impacts. At a minimum, this should include emissions from vehicles and construction equipment. (Completeness.)

S. Construction Impacts

- There was no discussion concerning the estimates of the tons necessary to accomplish the construction activities as required by the Scope.

IV. Unavoidable Adverse Environmental Impacts

- This section only includes the increase of solid waste, impervious surfaces, traffic, and temporary impacts from construction for Amy's Kitchen and SoS. This should also include the impact to the number of trees that are 12" dbh or greater that will be removed for the development (which would in turn decrease habitat for animals, etc.).

V. Alternatives

- No comments at this time.

VI. Energy Use and Solid Waste Management

- No comments at this time.

VII. Irreversible and Irretrievable Commitment of Resources

- No comments at this time.

VIII. Growth Inducing Impacts

- No comments at this time.

Appendices

- The Scope required all "SEQRA documentation: EAF, DEIS Scope and Agency Correspondence" to be provided in an Appendix. The Scope and several items of correspondence were provided, but the remainder of the SEQRA correspondence was not included.

Site Plan Comments

- The Project Attorney should be updated on the cover page of the site plans.
- There are several areas where the lighting exceeds 0.1-foot candles at the property line. This is a condition that the Planning Board frequently includes, despite the DEIS stating that it will restrict lighting to 0.5-foot candles at the property line.
- No further comments at this time.

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MEMORANDUM

Date: May 26, 2016

To: Lee Bergus, Chairman & Planning Board

From: Ralph E. Huddleston Jr., Planning Board Consultant

CC: Neal Halloran, Building Inspector, Broderick Knoell, Highway Superintendent, Richard Golden, Esq., John Swift, Esq., and Graham Trelstad, AICP (for applicant)

Re: Amy's Kitchen, Inc.
Special Permit, Site Plan & Subdivision-DEIS Review
File No. 12-1-1.222, 1.41, 19.2, 23.2, 24.2 and 10-1-11.2

CEA No. 21605

Carpenter Environmental Associates, Inc., (CEA) offers for your consideration the following technical comments regarding the Draft Environmental Impact Statement (DEIS) for the proposed Amy's Kitchen application prepared by AKRF, last revised April 29, 2016. We have reviewed the assigned sections of the DEIS for technical content and accuracy as directed by the Town of Goshen Planning Board (Planning Board). We anticipate that additional comment will be required as the environmental review process proceeds. Please feel free to contact me directly with any questions or requests.

I Executive Summary

- The adopted scope for this project specifies that no information will be included in the Executive Summary that is not included within the document We have only performed a cursory review of the executive summary having focused our efforts on the individual sections which should include the full detailed discussions.

III.C: Surface Water Resources and Wetlands

- Page III C4 – The DEIS that NYSDEC Streams and their classifications are shown on Figure III.C3. They are presently shown on Figure III.C8.

- Page III C5 – The DEIS indicates that a jurisdictional confirmation by the USACOE of the extent of onsite regulated wetlands is pending. An estimate of when confirmation is anticipated should be provided.

- Page III C6 – The DEIS indicates NYSDEC Wetland MD-24 is shown on Figure III.C-4. The wetland is not clearly designated.. The area should be clearly labeled.

- Page III C7 – The DEIS states that Echo Lake wetlands and 100 foot buffers are shown on Figure III C-7. The wetlands and buffers are not clearly designated.

- Page III C9 – The DEIS states that three potential areas of wetland impact associated with the utility lines between the Heritage trail and the Middletown WWTP will be delineated after final design. We recommend the Board consider requiring this delineation prior to final design so potential for impact or avoidance can be assessed.

- Page III C11 – The DEIS states that a final design of the Wallkill River Bridge drainage has not been completed. Several alternative methods are discussed. We recommend that the Board consider requiring this design be completed and a discharge method discussed in FEIS.

- Page III C13 – DEIS states that no federally regulated wetlands will be impacted by the access road improvement. This is inconsistent with the provided site plans.

- Page III C13 – DEIS states that no impacts to surface water have been identified. We recommend the NYSDEC determination on the isolated ponds be obtained because of the potential impact to amphibians.

III. D. Vegetation and Wildlife

- Page III D 1 – The DEIS states that vegetation and wildlife inventories were conducted on single day events in May and June of 2015 with additional “incidental observations” on two additional days in May and June. The limited time and seasons over which these inventories were conducted would seem to warrant consideration by the Board. All season inventories have been the standard for large projects in the past. The Board may want to consider having the applicant to continue theses

inventories through the review process. In the unlikely event that something of significance was identified, a Supplemental EIS should be provided.

- Page III D-30 – The DEIS states that prior to site disturbance ecologist will capture and relocate reptiles and amphibians. The methods and anticipated value of these methods should be provided and discussed. Careful consideration for the seasonal timing of these efforts should be considered.

- The DEIS should discuss the impacts of eliminating significant habitat for species such as deer, raccoon, and others that will likely try to relocate to adjacent areas and that are often considered nuisance species.

III.O: Environmental Contamination

- No additional comments at this time.

III.P: Cultural Resources

- Page III P-10- DEIS states that Phase III Data Recovery Plans will be design and carried out. Confirmation of the completion and results of all studies that are available to the public should be provided to the Board as soon as available. If not already provided, all documentation between LAI and SHPO should be provided.

III.Q; Agriculture

- The DEIS discusses various areas that will remain active farmlands. Discussion as to the applicant's willingness to designate these areas as forever farmland should be considered.

III.R: Air Quality

- No additional comments at this time.

III.S: Construction

- The Board should discuss the definition of "construction activities" as it applies to starting times. Do the time restrictions include equipment warmup and shutdown time?

- The DEIS seems to indicate no road improvements or maintenance to Hartley Road. Is that the understanding of the Board?

IV. Unavoidable Adverse Environmental Impacts

- The DEIS fails to address the loss of existing and future wildlife associated with construction activities and habitat loss.

V. Alternatives

- No additional comments at this time.

VI. Energy Use and Solid Waste Management

- No additional comments at this time.

VII. Irreversible and Irretrievable Commitment of Resources

- No additional comments at this time.

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M E M O R A N D U M

TO: Lee Bergus, Chairman & Planning Board

FROM: Dennis G. Lindsay, PE, Town Engineer, &
Sean T. Hoffman, PE, Planning Board Consultant

SUBJECT: Amy's Kitchen, Inc.
Special Permit, Site Plan & Subdivision– **DEIS Review – Public Hearing**
File No. 12-1-1.222, 1.41, 19.2, 23.2, 24.2 and 10-1-11.2[1]; Memo No. 83–16-015

DATE: May 27, 2016

CC: Douglas Bloomfield, Supervisor & Town Board; Neal Halloran, Building Inspector, Broderick Knoell, Highway Superintendent, Richard Golden, Esq., John Canning, PE, Traffic Consultant; Ralph E. Huddleston, Jr., Environmental Consultant & Graham Trelstad, AICP (for Applicant)

* *

The following are our technical comments regarding the Draft Environmental Impact Statement (DEIS) for the Amy's Kitchen application which includes: (1) construction of a 229,000 square foot manufacturing plant (with potential expansion to 369,000 square feet) with associated infrastructure; (2) subdivision of seven (7) to ten (10) acres from property owned by New York State to develop an access road from NYS Route 17M and (3) construction of a 200,000 square foot conference center with ancillary administrative and support buildings. The project site has frontage on NYS Route 17M, Echo Lake, Hartley, Cheechunk and Owens Roads and comprises a 374.14-acre tract (total holdings). The site is located within the Industrial (I), Commercial/Office (CO) and Rural (RU) zoning districts with AQ-3/AQ-6, Flood Plain & Ponding Area and Stream Corridor and Reservoir Watershed Overlay Zones.

Background – During the May 22, 2014 meeting you assumed lead agency status and required submission of an environmental impact statement (EIS). A public scoping session on the revised application was held and a revised scope was adopted during your July 16, 2015 meeting. On April 21, 2016 you accepted the Draft Environmental Impact Statement (DEIS) as adequate for public review and scheduled a public hearing for May 31, 2016.

Process – We have reviewed the Draft Environmental Impact Statement (DEIS) for technical content. Review of this document, receipt of public comment (public hearing and written comments), completion of a Final Environmental Impact Statement (FEIS) on substantive issues and adoption of findings are required to conclude SEQRA. To assist in your review, we have prepared the attached list of comments based on our review. We are distributing this in advance of the public hearing to give you and the project sponsor an early opportunity to consider our comments. We may wish to supplement these based on information you receive at the public hearing.

We have also commented on the site plan to the extent related to the environmental review. We anticipate further comment on plan details as the environmental review concludes and revised site plans are submitted incorporating your findings. Our comments have addressed the typical zoning and engineering issues assigned to us as Town Engineer; comments on traffic and environmental review have been left to other special Board consultants.

If you or the project sponsor requires any clarification on our comments, please advise.

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[1] Section 12, Block 1, Lot 101 is currently owned by New York State and a portion is intended to be transferred to the Town of Goshen for the purpose of improving site access to NYS Route 17M for this project as well as the adjacent Mid-Hudson Psychiatric Center and County facilities.

In addition to the below tabulated list we have identified the following matters to be considered by you and the applicant so a plan may be developed to address these potentially significant environmental issues:

- *Phasing* – The DEIS indicates site grading on the Echo Lake and Ver Hage properties will commence simultaneously and the Amy's Kitchen Facility will likely be completed prior to the Science of the Soul (SoS) Conference Center. We understand all site improvements must be completed before any Certificates of Occupancy may be issued and suggest the applicant consider a phasing plan to allow issuance of the Certificate(s) of Occupancy and startup of the Amy's Kitchen Facility while SoS is being completed.

- *Water Storage* – The DEIS indicates Amy's may require one (1) or two (2) 200,000-gallon water storage tanks and SoS may require an onsite water storage tank for firefighting purposes. A hydraulic analysis of the connection to the City of Middletown should be provided to determine available fire flow and anticipated pressures. If water storage tanks are possible, they should be shown on the Site Plans (only two (2) tanks for Amy's shown) and additional information provided (height, location, visibility, etc.) so their environmental impact may be evaluated.

- *Parking/Strong Farm* – The DEIS indicates up to 12,000 National Conference attendees (including volunteers) and anticipates between 20% (2,400) and 40% (4,800) attendees will arrival by bus. If the remaining 7,200 to 9,600 attendees arrive by car, with an average occupancy of three (3) attendees per car, approximately 2,400 – 3,200 stalls are required. The SoS site includes 2,043 parking stalls. We understand Strong Farm will be used for volunteer parking (DEIS Figure II-15 shows an approximate 25-acre area (by scale) for parking) during the National Conference. We estimate parking for up to 1,160 vehicles at Strong Farm may be necessary. Although use of Strong Farm would be limited to one (1) event per year, impact could be considerable. We suggest the applicant further discuss the parking plan relative to Strong Farm including shuttling of volunteers from Strong Farm to the SoS site (i.e. will modification of current deed restriction by Orange County be necessary to use Echo Lake access or will shuttles from Strong Farm utilize Amy's Hartley Road access or the NYS Route 17M access).

- *Stormwater Management* – Stormwater discharges from the Project are regulated by both NYSDEC and the Town's zoning regulations. The NYSDEC General Permit for Stormwater Discharges from Construction Activity allows a waiver from the requirements to control the one (1) year (channel protection), ten (10) year (overbank flood) and one hundred (100) year (extreme flood) storm events if the site discharges to a fifth (5th) order stream. The Town Code requires no increase in the peak rate of surface water flowing offsite from predevelopment conditions [§97-75D(5)(c)] regardless of the numeric stream order. In accordance with NYSDEC regulations, after development, approximately 50-acres from the Amy's Kitchen Facility and 225-acres from the SoS Conference Center will discharge to the Wallkill River without quantity control (water quality will be provided). The DEIS indicates this approach will minimize flooding and damage downstream since site runoff will be release to the Wallkill River before the arrival of floodwaters. In our opinion, this approach may be appropriate however, given the history and significance of downstream flooding in this area, we recommend performing a downstream analysis to demonstrate the release of unattenuated runoff will reduce flooding.

Introduction – The following comment are formatted to correspond with the structure of the DEIS. We believe this makes it easier to follow and for tracking responses in the FEIS. We have attempted to limit our comments to those of a substantive nature. In some instances, we have noted inconsistencies. These are usually of small environmental consequence but are noted where they might lead to confusion or leave an unclear record of the underpinnings of the Board's ultimate findings.

Cover Page - No comments at this time.		
Chapter I Executive Summary – See comments below.		
Chapter II Project Description		
Comment No.	**Page/Fig.**	**Comment**
II-1	Fig. II-3	Figure shows a Study Area (One Mile Radius). DEIS should describe intent of the One Mile Radius Study Area or, if no longer applicable, Study Area should be removed from figure.
II-2	Fig.II-4	AQ-3 Aquifer Overlay District hatching difficult to distinguish; Hatching should be revised or the AQ-3 identified/labelled.
II-3	II-4	DEIS describes an easement over the Echo Lake property for the Middletown sanitary sewer trunk line; DEIS should include a figure showing the extent of the easement. Alternatively, the site plan should show the easement and trunk line to confirm no conflict with the proposed improvements.
II-4	II-8 & 19	DEIS indicates 20.75 acres of disturbance on Ver Hage property and 33.8 acres of disturbance on Echo Lake property. Site plans indicate 32.8 acres of disturbance on Ver Hage and 105.5 acres of disturbance on Echo Lake.
II-5	II-8	DEIS indicates electric service will be provided by O&R and gas service will be provide by NYSEG. Appendix III.E-2 includes correspondence from O&R indicating their willingness to serve the project. FEIS should include similar correspondence from NYSEG.
II-6	II-9	DEIS indicates new eight (8) inch private wastewater conveyance line will be installed in the same trench as the new eight (8) inch water line and separated by three (3) feet horizontally and 18-inches vertically. FEIS should verify separation dimensions are measured from outside edge to outside edge.
II-7	II-9	DEIS indicates the wastewater conveyance line will include vents. FEIS should clarify the line will include air release and/or vacuum valves (rather than vents).
II-8	II-10	DEIS indicates a sidewalk from NYS Route 17M to Amy's site. The site plans include construction details for monolithic curb and sidewalk, however the grading and utility plans appear to show no curb/sidewalk along the access road.
II-9	II-10, III.H-23 & 24	DEIS (Project Description) indicates 200-foot left turn lane (LTL) in each direction along NYS Route 17M; DEIS (Traffic) indicates 185-foot LTL eastbound and 125-foot LTL westbound. In addition, DEIS (Project Description) indicates 150-foot right turn lane (RTL) westbound; DEIS (Traffic) indicates 135-foot RTL westbound. FEIS should clarify.
II-10	II-11	DEIS indicates use of the Hartley Road driveways will be limited to emergency access. FEIS should indicate how this will be controlled to limit impact to Hartley Road (i.e. signage along NYS Route 17M) and under what conditions the emergency access will be utilized (i.e. is the emergency access intended for ingress of emergency vehicles only?)
II-11	II-12	DEIS indicates "very limited construction traffic would use either Hartley Road or Echo Lake Road"; FEIS should quantify construction traffic volume anticipated to utilize these roads.
II-12	Fig. II-12	FEIS should clarify the Open-Air Pavilion floor will be grassed. Figure appears to show finished floor.

II-13	II-13, II-19 III.E-3	DEIS (Project Description) indicates 10-15 volunteers staying onsite during the week. DEIS (Groundwater/Water Supply) indicates 5-10 volunteers staying onsite. FEIS to clarify for consistency.
II-14	II-14	DEIS indicates SoS centers in Fayetteville and Petaluma have set a goal of 20% arrivals by bus (shuttle or long-range); DEIS indicates the goal for Goshen is 40% arrivals by bus (charter or shuttle). FEIS should verify 40% goal for Goshen and provide information supporting this value.
II-15	II-16	Applicant should review architectural plans for SoS Central Building and provide revised square footages if applicable. Specifically, DEIS indicates up to 60 volunteers will stay in one (1) 2,500 square foot (SF) sleeping room (approximately 40 SF per person).
II-16	II-17	DEIS indicates typical volunteer onsite stays will be one (1) to two (2) weeks with a one (1) month maximum stay. FEIS to indicate if SoS Central Building will include any amenities for volunteers (i.e. laundry, recreation, etc.)
II-17	II-19	FEIS should identify if any special provisions to collect and transfer onsite refuse and/or recyclables during National Conference are necessary.
Chapter III.A Geology and Soils		
III.A-1	III.A-2 & Fig. III.A-2	DEIS indicates bedrock fracture trace extending through the north*west* portion of Ver Hage property; Figure III.A-2 shows extension through north*east* portion of Ver Hage property.
III.A-2	III.A-2 & Table III.A-1	DEIS indicates 25 soil mapping units on the project site; Table III.A-1 lists 23. ESB appears to be missing from the table (Figure III.A-3).
III.A-3	III.A-10 App. III.A	DEIS indicates boring depth of 30-feet; Appendix indicates 32-feet. DEIS indicates groundwater encountered at 19.5-feet; Appendix indicates 19.7-feet.
III.A-4	App. III.A	Geotechnical Report for Ver Hage property is identified as Preliminary and notes additional subsurface exploration will be necessary to satisfy building code requirements. (Informational). The proposed bridge is anticipated to require deep foundations (piles). Additional subsurface exploration for Ver Hage property should also include the bridge.
III.A-5	App. III.A	Subsurface Investigation for Echo Lake property was performed in late-2013/early-2014 when both SoS and Amy's Kitchen were to be located on the Echo Lake property. As such, some of the boring data may no longer be relevant. FEIS to include discussion on applicability of data and include recommendations for additional subsurface exploration if necessary.
III.A-6	III.A-13	DEIS indicates proposed water and wastewater lines to Middletown will be in fill soils along former railroad bed of Heritage Trail and Mardin Gravelly Silt Loam in the area between the trail and Middletown STP. FEIS should include figure(s) showing offsite soil map unit boundaries.
Chapter III.B Topography		
III.B-1	III.B-3	DEIS states a detailed survey of the Heritage Trail Utility Corridor has not been prepared and previous surveys and GIS data have been used for preliminary design. As indicated during the completeness review, we believe this is sufficient for the purpose of evaluating environmental impacts but we recommend submission of detailed surveys of the pipeline routes prior to Board site plan action. Additionally, the HEC-RAS analysis provided for the proposed bridge will need to be correlated with the existing survey.
III.B-2	Fig. III.B-2 & Fig. III.B-3	Figures appear to be at variance. Specifically, Fig. III.B-2 shows additional sloped areas between 10% -25% through the center portion of the Ver Hage property.

III.B-3	III.B-3	DEIS discussion of Access Road Improvement Area slopes references Figure III.B-1. Figure should be revised to identify Access Road Improvement Area.
III.B-4	III.B-4	DEIS indicates excess material from the Echo Lake property will be used on the Ver Hage property. The cut and fill analysis indicates Echo Lake to be a relatively balanced site (996,921 CY cut and 991,258 CY fill) with 5,663 CY of excess material available for use on Ver Hage property. FEIS should include cut and fill calculations and provide the volume of material to be imported to the site (CY and truck trips). We recommend FEIS present this information in a table.
III.B-5	III.B.6	DEIS states fused HDPE pipe will be directionally bored for both the water and wastewater conveyance lines within the Heritage Trail Utility Corridor. FEIS should clarify directional boring will be performed at four (4) crossings (wetlands MD-19 & MD-24, Monhagen Brook and the Wallkill River). All other locations will be open cut.
Chapter III.C Surface Water Resources and Wetlands		
III.C-1	Fig. III.C-3	DEIS indicates streams and NYS DEC classifications are shown on Figure III.C-3. Provide revised figure to show or revised FEIS to reference Figure III.C-8.
III.C-2	III.C-5	DEIS indicates wetland boundary drawings have been sent to USACE for validation. FEIS should provide status update (if any change).
III.C-3	III.C-6 & Fig. III.C-4	DEIS indicates NYS DEC Wetland MD-24 is shown on Figure III.C-4. Provide revised figure in FEIS to included wetland.
III.C-4	III.C-7 & Fig. III.C-7	DEIS indicates 100-foot wetland buffers are shown on Figure III.C-7. Revise figure in FEIS to include buffers.
III.C-5	III.C-9	DEIS indicates three (3) potential wetlands in the area between the Heritage Trail and Middletown STP will be delineated following final design of the utility line (water and wastewater) connections within this area. We recommend delineation in conjunction with development of final design plans to determine if modifications to the pipeline route may avoid potential wetland impact.
III.C-6	III.C-9	DEIS references electrical substation in Middletown. FEIS should identify location of substation in plan.
III.C-7	III.C-10	Reference to “Aquifer Protection Overlay Zone” should be revised to Aquifer Overlay District to correspond with Town Code.
III.C-8	III.C-10	DEIS indicates no development in designated Wallkill River “floodway”. FEIS should clarify the proposed bridge abutments will be within the floodplain but outside of the floodway.
III.C-9	III.C-11	Preliminary plans for the proposed bridge appear to show runoff directly draining to the Wallkill River. DEIS indicates stormwater collection and conveyance structures could be added to direct runoff to the nearby Bioretention Area 2 on the Ver Hage property. Alternatively, the DEIS indicates, if drainage systems are not provided, a practice to use only sand would be adopted.
III.C-10	III.C-13	DEIS indicates no impacts to federally-regulated wetlands in connection with access road improvements. Site plans appear to show proposed minor federal wetland disturbances of 72 LF, 43 LF, 29 LF and 0.039-acres.
Chapter III.D Vegetation and Wildlife – No comments at this time.		

Chapter III.E Groundwater/Water Supply		
III.E-1	III.E-2	DEIS identifies a number of monitoring wells on the Ver Hage property installed by Al Turi Landfill to implement long-term groundwater monitoring. A figure should be provided graphically showing the location of the wells. DEIS indicates NYSDEC approved relocation or discontinuance of three (3) wells to allow construction of Amy's Kitchen; FEIS should verify other identified wells will remain. Site Plan appears to identify some of the monitoring wells (well identification numbers appear to be at variance with DEIS); Site Plan should identify all wells to remain, wells to be relocated (show location of new wells), wells to be discontinued (show well abandonment procedure), well access easements and any additional modification to wells (i.e. extension to accommodate proposed grade). We recommend all monitoring wells be field identified and protected during construction (DEIS indicates protection of water supply wells).
III.E-2	III.E-2	DEIS indicates two (2) water supply wells on a five (5) acre easement held by the Town of Wallkill in the northeast section of the Echo Lake property to remain. Site Plans show a number of wells adjacent to the Wallkill River in this vicinity. A figure should be provided graphically showing the location of all wells. FEIS should verify if all wells will remain. Site Plan should identify wells to remain (all shown outside the limits of disturbance) and easement. If wells are not associated with NYSDEC monitoring of the Al Turi Landfill and there is no intention to develop wells for water supply, we recommend abandonment to protect groundwater supply.
III.E-3	III.E-2	DEIS indicates portions of the Heritage Trail Utility Corridor is owned by the City of Middletown and the remainder is owned by Orange County. A Transportation Corporation will be formed to own, install, operate and maintain the water line servicing the Project. FEIS to indicate if any easements across the Heritage Trail Utility Corridor and/or adjacent areas (for access) are necessary. If so, these should be shown on the plans.
III.E-4	III.E-3 & App. III.E	DEIS indicates Project water demand at build out to be 418,000 GPD (Amy's Kitchen: 375,000 GPD; Warehouse: 7,000 GPD and SoS: 36,000 GPD) This conservatively assumes a SoS event during operation of the Amy's Kitchen facility. Correspondence from the City of Middletown (Appendix III.E) indicates an ability to provide 375,000 GPD and a small additional potable water for SoS twice annual meeting events. FEIS should provide revised correspondence verifying the City's ability to provide 418,000 GPD. Alternately, SoS events could be restricted to times when the Amy's plant is not operational.
III.E-5	App. III.E	DEIS indicates correspondence from the City of Middletown confirming its safe yield is included in Appendix III.E. We were unable to find this correspondence in the Appendix.
III.E-6	III.E-3	DEIS indicates irrigation for landscaping may be provided through an onsite irrigation system connected to the potable water system or through rain barrels. Site plan appears to show a piped stormwater collection system conveying roof runoff to stormwater treatment practices and no onsite irrigation system. FEIS should indicate whether 375,000 GPD water demand estimate for Amy's (based on a similar facility in Medford) includes water for landscaping. Alternatively, FEIS should provide a revised water demand calculation including landscaping.
III.E-7	III.E-4 App. III.E	DEIS indicates the new water line within the Heritage Trail Utility Corridor will be separated from the existing City of Middletown wastewater effluent line by ten (10) feet (horizontal). The plans provided in the Appendix are identified as 30% Design Drawings and should be updated to include information listed in Ten State Standards including physical features, utilities and topography (topographic survey of the Heritage Trail Utility Corridor should utilize same datum as survey for Site Plans).

III.E-8	III.E-4	DEIS indicates hydrants spaced every 600-feet along Heritage Trail Utility Corridor and at 400-feet plus high points on Project Site; spacing is at variance with the plans. FEIS to revise spacing and/or Site Plans to be updated. Site Plans should include water main profiles to confirm hydrants placed at high points.
III.E-9	III.E-5	DEIS indicates a stub-end service line will be provided to the Warehouse. FEIS should indicate the size of service and if any easements will be required. Site Plan should show service location.
II.E-10	III.E-5	DEIS indicates onsite distribution system will consist of eight (8) inch ductile iron pipe (DIP). Trench Cross Section Detail on Site Plan shows PVC C-900 and should be revised (DIP recommended). Site Plan shows 12X6 reducer at Hartley Road Employee Entrance indicating distribution piping is twelve (12) inch. Hydraulic analysis (see comment above) should confirm adequacy of onsite distribution system.
Chapter III.F Wastewater Management		
III.F-1	III.F-2	DEIS indicates Project wastewater generation at build out to be 300,000 GPD and includes correspondence from the City of Middletown (Appendix III.E) indicating an ability to accept 300,000 GPD and a small additional flow from SoS twice annual meeting events. It appears 300,000 GPD is for Amy's only and excludes flow from the Warehouse (7,000 GPD) and SoS (36,000 GPD National Conference). FEIS should provide revised correspondence verifying the City's ability to provide flow for all uses. Alternately, SoS events could be restricted to times when the Amy's plant is not operational.
III.F-2	III.F-3	DEIS indicates wastewater from Amy's will be pre-treated prior to conveyance to the City of Middletown. The location of the Pre-Treatment Facility is shown on the Site Plan. Although detailed architectural plans are not necessary, a schematic plan should be provided identifying the process components (including odor control and noise attenuation) and general building design.
III.F-3	III.F-3	DEIS identifies an onsite 20,000-gallon sludge holding tank. The sludge holding tank should be shown on the Site Plans and information including general building design, access, odor potential and control details should be provided.
III.F-4	III.F-4	DEIS indicates wastewater from SoS will flow by gravity to a SoS Pumping Station where it will be pumped to the Amy's Kitchen Pumping Station. This is at variance with the Site Plan which shows the SoS Pumping Station discharging directly to the wastewater conveyance pipeline. SoS Pumping Station will be sized to accommodate flow from National Conference; FEIS to indicate how smaller flows will be addressed (second pump station, smaller pumps in SoS Pumping Station, resetting pump station controller, etc.)
Chapter III.G Stormwater Management		
III.G-1	App. III.G	SWPPP to include calculations demonstrating adequacy of collection and conveyance system (pipelines and swales).
Chapter III.H Traffic – No comments at this time.		
Chapter III.I Noise – No comments at this time.		
Chapter III.J Utilities and Solid Waste Disposal		
III.J-1	III.J-2 & III.J-4	DEIS indicates electrical service for the Project (Amy's, SoS & Warehouse) will be provided by overhead service lines from either Hartley or Echo Lake Roads. The Goshen Town Code requires telephone, electrical distribution and electrical transmission lines of 138 kilovolts and less to be placed underground [§97-61].
III.J-2	III.J-2	DEIS indicates "will serve" letters are provided in Appendix III.J. This reference should be revised to Appendix III.E.

III.J-3	III.J-2 & III.J-4	DEIS indicates backup generators are proposed for Amy's and under consideration for SoS and will require onsite fuel storage. FEIS should address location of generators and include information on fuel transfer and storage.
III.J-4	III.J-2	DEIS indicates solar panel arrays will be installed on the Amy's plant and SoS roofs. The Town of Goshen is considering modifications to the Zoning Code which may require nonresidential lots with an aggregate surface area of 2,500 square feet to require special permit and site plan approval
Chapter III.K Land Use, Zoning and Public Policy		
III.K-1	Fig. III.K-2	DEIS indicates the Project Site is within both AQ-3 and AQ-6 Overlay Districts. Site Plan should show delineation of overlay districts.
III.K-2	III.K-4	DEIS indicates portions of the Ver Hage property is within the floodplain. Site Plan shows the proposed employee and visitor parking, bridge and biroretention area Nos. 2 & 3 within the 100-year floodplain. Site Plan appears to show filling in the floodplain which will require compliance with Chapter 61A of Town Code.
III.K-3	III.K-10	DEIS indicates one (1) or more variances may be necessary to obtain relief from the Design Standards (§97-14D) and includes a discussion on the Code requirement to break up large buildings into smaller volumes. Table III.K-4 indicates possible variances necessary in connection with fencing and distance from curb cuts. FEIS should identify all possible variances.
III.K-4	Table III.K-4 III.N-12	DEIS Table indicates installation of signage; DEIS (Visual Resources) indicate signage has not been design but will be fully compliant with Town Code. Site Plan should include information on signage so compliance with Town Code may be confirmed (§97-49). Specifically, we suspect Amy's requires signage at NYS 17M. This should be reviewed with Counsel and Building Inspector to determine if considered an off-premises commercial sign.
III.K-5	III.K-18	DEIS indicates floodplain encroachment on the Echo Lake property due to the parking lot. Site Plan shows encroachment due to bridge and driveway (access road) only.
III.K-6	III.K-19	DEIS provides analysis of potential warehouse use, noting the application for subdivision may be submitted by others in the future. DEIS utilizes a conceptual design to analyze zoning compliance. A figure of the conceptual design should be provided.
Chapter III.L Community Services		
III.L-1	III.L-5	DEIS indicates event staffing levels at five (5) to six (6) percent of attendees and provide an example of a 10,000-person event with 550 volunteers. The specific volunteer numbers provided in the DEIS for this event sum to 271 (45 for parking; 145 for crowd flow; 50 for security and crowd care; 22 for first-aid and 9 for safety).
III.L-2	III.L-7	DEIS indicates gated emergency access will be provided at Hartley and Echo Lake Roads. The Site Plan identifies the SoS Echo Lake access as "Emergency" however the two (2) access driveways to Amy's from Hartley Road are identified as "Truck Entrance" and "Employee Entrance" and include access gates (Employee Entrance includes a Guard House).
Chapter III.M Fiscal Impacts		
III.M-1	III.M-1 & III.L-6	DEIS (Fiscal Impacts) indicates the SoS National Conference will require additional police, fire and/or emergency service assistance for which the various agencies will be compensated. This appears somewhat at variance with DEIS (Community Services) which indicated four (4) or five (5) local law enforcement officers would be required primarily for traffic control for which the Town would be reimbursed. FEIS to clarify.

III.M-2	III.M-10	DEIS indicates Amy's Kitchen would construct and maintain the Town road approaching the Project Site. The Site Plans show stormwater drainage and lighting along this road which we understand will be constructed and maintained by Amy's Kitchen. FEIS should discuss mechanism for construction on Town property (i.e. easement) and maintenance and indicate if any special districts may be required (i.e. lighting district, drainage district, etc.).
III.M-3	III.M-19	DEIS indicates the fiscal analysis conservatively assumed the Echo Lake property would generate no property taxes, however an agreement could be considered under the PILOT where the Echo Lake property would pay property taxes for some period of time. FEIS should include additional information.
III.M-4	III.M-27	DEIS indicates construction of the SoS facility would be performed by mostly unskilled volunteer labor. FEIS should provide additional details (perhaps in connection with Chapter III.S, Construction) identifying the work to be performed by volunteer labor (presumed road construction, site grading, pipeline installation, etc. to be performed by professional contractors) and confirm all work will satisfy applicable building codes and permit approvals.
Chapter III.N Visual Resources		
III.N-1	III.N-2	DEIS indicates 23 "Vantage Points" were identified to conduct a visual assessment and references Figure III.N-1 which shows 24 Vantage Points. Original identification of Vantage Points during scoping included one Vantage Point at location No. 11; DEIS includes two (2) Vantage Points at this location (Nos. 11A & 11B). FEIS should include a brief clarifying statement.
III.N-2	III.N-3	DEIS indicated Vantage Point 5 is *north* of Vantage Point 4; Figure III.N-1 shows Vantage Point 5 to be *south* of Vantage Point 4.
III.N-3	III.N-5 Fig. III.N-23	Vantage Point 17 (from Hartley Road) shows the proposed loading dock for Amy's. Visual impact will be reduced through proposed landscaping (not showed in photo-simulation); Town Code [§97-48B] suggests screening with walls extending from building face, arcades or other architectural features intended to minimize visual impact.
III.N-4	III.N-7 Fig. III.N-27	Three-dimensional rendering shows proposed onsite Wastewater Pre-Treatment Plant to have tanks open to the atmosphere. FEIS to indicate which components (if any) will be open and advise if enclosures could reduce odors and noise.
III.N-5	III.N-7 Fig. III.N-27	Three-dimensional rendering shows proposed water storage tanks along the northerly side of the Amy's production facility near the entrance drive. FEIS should provide additional information on visibility of tanks including whether visibility from Hartley Road could be reduced or eliminated by relocation or additional grading (i.e. berm), plantings or an architectural feature.
III.N-6	III.N-8 Fig. III.N-14	Figure III.N-14 appears to show a northwesterly view from Vantage Point 14. Figure III.N-1 appears to indicate a southwesterly view was intended to show potential visual impact from the proposed warehouse. FEIS to confirm orientation of Vantage Point 14 and provide additional Vantage Point toward proposed warehouse.
III.N-7	III.N-8	DEIS described SoS buildings as utilitarian and indicates the proposed color palette is not exclusively earth toned. Photo-renderings indicate buildings will be visible from public locations (i.e. Heritage Trail). FEIS should include additional information on building design (i.e. architectural elevation showing proposed colors).
III.N-8	III.N-9	DEIS indicates three-dimensional models are shown in Figure III.N-4; this should be revised to Figure III.N-34
III.N-9	III.N-10 Fig. III.N-8	DEIS indicates SoS will be partially visible from Vantage Point 6A however photo-rendering indicates the site will not be visible.

III.N-10	III.N-10 Fig. III.N-11	DEIS indicates possible visibility of Project from this location (Vantage Point 8) however photo-rendering includes note indicating the Proposed Project not visible from location.
III.N-11	III.N-12	DEIS references Figure III.N-32; this should be revised to Figure III.N-33.
III.N-12	III.N-12	Site Plan shows light poles to be 20-feet onsite (access drives) and 15-feet in parking lots. Town Code [§97-48A(4)(d)] requires lighting within parking lots to be on low poles of 12-feet to 15-feet maximum height. This should be reviewed with Counsel and Building Inspector to verify Code compliance.
Chapter III.O Environmental Contamination – No comments at this time.		
Chapter III.P Cultural Resources – No comments at this time.		
Chapter III.Q Agriculture – No comments at this time.		
Chapter III.R Air Quality – No comments at this time.		
Chapter III.S Construction – No comments at this time.		
Chapter IV Unavoidable Adverse Environmental Impacts – No comments at this time.		
Chapter V Alternatives		
V-1	V-4	Alternate 2 considers allowing secondary egress from SoS National Conference. FEIS should define secondary egress and whether modifications to internal site circulation would be necessary to facilitate site egress from two (2) locations.
V-2	V-5	Alternate 3 considers permanent access to Amy's from Hartley Road. Intersection analysis is included with Traffic Impact Study. FEIS should include evaluation of Hartley Road (e.g. geometry, structural composition, sight distances, etc.) to determine what improvements (if any) are necessary to accommodate additional construction, delivery truck and employee vehicle use.
Chapter VI Energy Use and Solid Waste Management – No comments at this time.		
Chapter VII Irreversible and Irretrievable Commitment of Resources – No comments at this time.		
Chapter VIII Growth Inducing Impacts		
VIII-1	VIII-1	DEIS indicates the proposed water and sewer utility lines within the Heritage Trail Utility Corridor will be privately owned and sized to only accommodate the Project. Pipeline sizing calculations should be provided so this may be verified.

All,
Below are a few of my observations from Chapter III.S Construction

1) Excavated material will be used from the Echo Lake property to fill the Ver Hage property, we want to make sure Ver Hage fill will not be brought to the Echo Lake property.

2) Page III.S-3 state 66,582 cubic yards of fill would be imported to the Echo Lake property, what type of material and from where?

3) The new access road that's referred to on page III.S-1 off of NYS Rt 17M, is this what will eventually be the permanent access road?

4) Where will the construction entrance be to access the Ver Hage property for the bridge construction, and once the bridge is done, will all/most construction traffic access the site off of 17M?

The section on construction is fairly thorough, citing their adherence to NYSDEC, OSHA, NYSDOT and local regulations regarding storm water run-off, contaminated waste disposal, noise levels and traffic control. It's somewhat unclear what the timing will be regarding the construction of the reconfigured intersection at 17M and Training Center Lane, getting much of that done prior to the start of construction on phase 1 would go a long way to ease any disruptions/delays on 17M.
Regards,
Marty Holmes

Amy's Kitchen and Science of the Soul Project
Visual Impacts

The Planners have gone to great lengths to explain that simply having a visual impact should not prevent a project such as this from moving forward. As they point out:

"Aesthetic impact: Aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure. Mere visibility, even startling visibility of a project proposal, should not be a threshold for decision making. Instead a project, by virtue of its visibility, must clearly interfere with or reduce the public's enjoyment and/or appreciation of the appearance of an inventoried resource (e.g. cooling tower plume blocks a view from a State Park overlook)." (DEP-002, p.9)

The NYS DEC Policy goes on further however to describe Aesthetically Significant Places as such:

"Aesthetically significant place: A formally designated place visited by recreationists and others for the express purpose of enjoying its beauty. For example, millions of people visit Niagara Falls on an annual basis. They come from around the country and even from around the world. By these measurements, DEP-00-2 10. July 31, 2000 one can make the case that Niagara Falls (a designated State Park) is an aesthetic resource of national significance. Similarly, a resource that is visited by large numbers who come from across the state probably has statewide significance. A place visited primarily by people whose place of origin is local generally is generally of local significance. Unvisited places either have no significance or are "no trespass" places."

The Heritage Trail (a county park) certainly has local significance it could also be argued that lands/roadways within the Town of Goshen Scenic Corridor Overlay also carry local significance. Both of which will carry greater and greater significance as the rural nature of our landscape disappears.

This only to say that the visual impacts of a project as significant as Amy's/SOS should be thoroughly vetted from all perspectives accurately.

The visual impact study reviews the visual impacts from several locations. In general the locations are well chosen BUT in several notable instances the direction of the sightlines does/may not depict the actual visual impact. The addition of superimposed illustrations is helpful and appreciated in assessing some vantage points.

Vantage Points 1-4 are stated to have no visual impact. Which is supported by both the narrative and the photos

Vantage Point 5 the SOS pavilion is visible. It also highlights the Access Road which will cross the Heritage Trail which is a significant safety concern as it has been with other projects impacting the trail.

Vantage Points 6a and 6b. View the property tangentially. 6b does show some visual impacts. These photos and description would be more helpful if they showed other perspectives of the property.

Vantage Point 7 does not show any view of the interior of the property.

Vantage Point 8 views an undeveloped portion of the Ver Hage Property. A view more to the East might more accurately depict the visual impacts of Amy's Kitchen.

Vantage Points 9a and 9b are both tangential views and not respective of potential visual impacts.

Vantage Point 10 is not taken from the road and therefore not representative of the views the general public would see.

Vantage Points 10-13 also look away from the proposed projects (Amy's/SOS) and do not add any insight into the visual impacts of the proposed projects. Different perspectives should be presented.

Vantage Points 15a and 15b. Are tangential to the project and do not represent potential visual impacts.

Vantage Points 16 and 17 offer significant visual impacts which may be mitigated by berms and plantings. Effort should be made to reduce the impacts of these views of the project.

Greater care should be taken to assess the visual impacts of a project this significant. I would suggest that the study be redone to better represent the visual impacts of the project.

Figures III N-27 through N-32 depict parking lots. The lots do not have any vegetation / trees included in the designs. Vegetation and islands would greatly reduce the impact of a heat sink effect such a large area would have. It may also improve storm water runoff and the night sky friendliness of the project.

Transportation
Land Development
Environmental
Services

Memorandum

Date: Tuesday, May 31, 2016

Project: Amy's Kitchen & Science of the Soul (SoS)

Re: DEIS Review

Prepared by: John Canning, P.E.

VHB has reviewed the traffic study prepared by Maser Consulting, P.A., dated April 22, 2016 and Chapters I (Executive Summary), II (Project Description), III-H (Traffic) and V (Alternatives) of the Draft Environmental Impact Statement (DEIS) for the subject project, which was prepared by AKRF and dated April 29, 2016. This review was conducted to determine whether any additional analyses need to be performed to correct deficiencies or evaluate new information discovered during the DEIS review process. While the bulk of our comments, listed at the end of this document, are generally mundane and relate, primarily, to minor corrections, we would like to draw the Board's attention to the following issues:

Project Traffic Impacts

Section 97-50.N (1) (d) of the Town of Goshen Code ("Environmental Performance Standards") defines significant adverse traffic impacts as:

- Intersection Level-of Service (LOS) deterioration below LOS D;
- Any increase in delays for intersections operating at LOSE or worse; and
- The addition of traffic that will cause demand to exceed capacity on mainline highways (between intersections/interchanges).

Tables III.H-2 through III.H-6 and III.h-13 through III.H-17 document, in specific detail, the results of all of the traffic analyses relative to the potential impacts of the project. A review of the information included in these tables revealed that, without mitigation, the project would have a significant adverse traffic impact (as defined in the Town Code) at the following intersections:

- Cannon Hill Drive at US 6/17M (Daily Amy's and SoS Nat. Conf.);
- The Westbound I-84 off ramp to US 6/17M westbound (Daily Amy's and SoS Nat. Conf);
- The Eastbound I-84 off ramp at Fletcher Street (Daily Amy's and SoS Nat. Conf);
- The Westbound I-84 off ramp at Fletcher Street (Daily Amy's and SoS Nat. Conf);
- Golf Links Road westbound at McVeigh Road (Daily Amy's and SoS Nat. Conf);
- The Psychiatric Center Driveway at US 6/17M (Daily Amy's and SoS Nat. Conf);
- The Training Center Driveway at US 6/17M (Daily Amy's and SoS Nat. Conf);
- The intersection of US 6/17M with CR 12/50 (Daily Amy's and SoS Nat. Conf);
- The intersection of US6/17M with Hartley Rd./Gate Schoolhouse Rd. (SOS Nat. Conf only);

In addition, the accident history, summarized in Table III.H-0, indicates above average accident rates at the following intersections, through which the project will generate additional traffic:

- US 6/17M westbound and the I-84WB off ramp;
- US 6/17M and CR12/CR 50;
- US 6/17m and the Psychiatric Center Driveway;
- US 6/17M and 6 ½ station Road/ Maple Avenue.

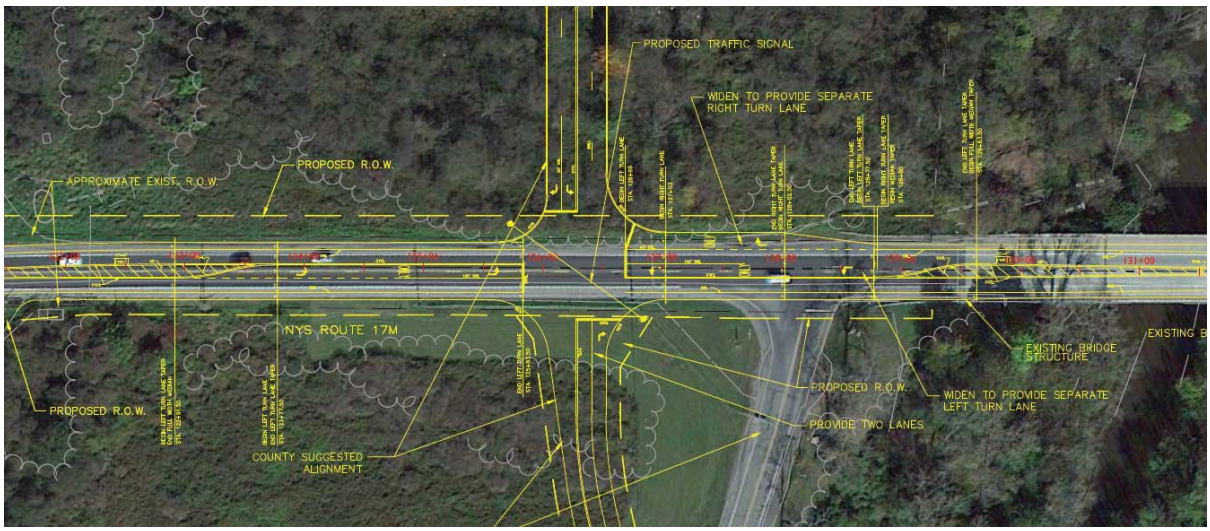
The DEIS also notes that, while the accident rate at the intersection of US 6/17M with Hartley Road was slightly below average, there is a history of severe, rear-end type accidents at that location.

Proposed Mitigation

The following mitigation measures are proposed:

- US 6/17M and the Training Center & Psychiatric Center Driveways – consolidate the driveways, signalize and add turn lanes;

Proposed improvements to US 6/17M at the Training Center and Psychiatric Center Driveways



- US 6/17M westbound and the I-84 westbound off ramp – Possible replacement of the ramp STOP sign with a YIELD sign.
- US 6 and CR12/CR 50 – Traffic signal timing modifications;
- US 6 and Hartley Road/Gate Schoolhouse Road – Traffic signal back plates and signal timing modification;
- US 6 and 6 ½ Station Rd/Maple Ave – Traffic signal timing modifications;
- Golf Links Road at McVeigh Road – Convert to an all-way stop condition;
- Fletcher Street and the eastbound and westbound I-84 off ramps – monitor for traffic signal installation;

The DEIS also suggests that the installation of a traffic signal at the intersection of US 6/17M with the consolidated Psychiatric Center/Training center/ Project site driveways will create gaps in the traffic stream which may make it easier to exit Cannon Hill Drive. However, it is difficult to determine whether these gaps will coincide with the gaps generated by the Hartley Road signal or whether they will deviate from the Hartley Road signal gaps, making it harder to get out of Cannon Hill Drive

Potentially Unmitigated Conditions

Based on a review of the projected operating conditions and the proposed mitigation, it appears that the impacts of the Project will not be fully mitigated at the intersections below:

- Cannon Hill Drive – This intersection is projected to see significant increases in delay due to the substantial increases in traffic passing through the intersection on US 6/ 17M associated with the Amy's Kitchen Plan and also the SoS National Conference. The FEIS should discuss how the impact of the national conference could be mitigated by the deployment of a police officer to direct traffic at this intersection during events, as needed, and whether the intersection should be monitored for the installation of a traffic signal to mitigate the plant's daily traffic impacts.
- US 6/17M at the Site Driveway – The analysis indicates that the southbound left-turn movement exiting the site during the peak afternoon shift-change period will experience LOS F conditions with demand exceeding capacity by approximately 10% on this movement. However, it is noted this condition will be better than if the mitigation measures were not implemented, will be confined to the site and will not interfere with traffic operating conditions on US 6/17M. However, during SoS National Conference event, the analyses indicate that demand will exceed the capacity of the eastbound left-turn movement into the site, which would likely delay through traffic on eastbound US 6/17M. The analyses also indicate that demand will exceed capacity on the southbound right-turn out of the site (in addition to the southbound left-turn out of the site). This condition will be worst for weekday afternoon events, when the overall intersection is projected to operate at LOS F. The FEIS should include a discussion as to the practicality of constructing either a roundabout, to accommodate peak-period traffic, or supplementing the proposed signal and lane

improvements with a double left-turn lane on eastbound US 6/17M to accommodate peak event entering conditions, as well as a double left-turn lane out of the site and an auxiliary acceleration lane on westbound US 6/17M serving a free-flow right-turn movement to accommodate daily and peak event exiting conditions. Alternatively, the Applicant may wish to limit weekday event activity to mornings, as discussed below.

- US 6/17M at CR12/CR50 – The analyses of SoS event weekday afternoon peak entry period and, to a lesser extent, the Saturday afternoon peak entry period, indicate that event traffic will result in overall LOS F conditions at this intersection. The FEIS should include a discussion as to the ability to reduce or eliminate these impacts through signal timing changes. Alternatively, the Applicant may wish to limit weekday event activity to mornings, as discussed below. The FEIS should also discuss the practicality of installing backing plates on the US 6/17M signal faces to mitigate potential safety impacts associated with the increase traffic associated with the proposed action;

- US 6/17M at Gate Schoolhouse Road/Hartley Road – The analyses of SoS event weekday afternoon peak entry period indicate that event traffic will result in overall LOS F conditions at this intersection. The FEIS should include a discussion as to the ability to reduce or eliminate this impact through signal timing changes. Alternatively, the Applicant may wish to limit weekday event activity to mornings, as discussed below.

- US 6/17M at Maple Avenue/6 ½ Station Road – The analyses of SoS event weekday afternoon peak entry period indicate that event traffic will result in overall LOS F conditions at this intersection. The FEIS should include a discussion as to the ability to reduce or eliminate this impact through signal timing changes. Alternatively, the Applicant may wish to limit weekday event activity to mornings, as discussed below. The FEIS should also discuss the practicality of installing backing plates on the US 6/17M signal faces to mitigate potential safety impacts associated with the increase traffic associated with the proposed action;

It is noted that, while the project (both Amy's Kitchen's daily operations and the Science of the Soul National Conference) will, technically, trigger a significant adverse impact at the intersections of the I-84 ramps with Fletcher Street and the I-84 westbound ramp with westbound US 6/17M, the increases in delay will less than 5 seconds for Amy's Kitchen's daily operations and could be handled by the deployment of a police officer, as needed, for SOS events. The high accident rate on the westbound I-84 off-ramp at westbound US 6/17M (and delays on that approach) are a function of the inadequate design to accommodate the volume of traffic on that movement, to which the project will be adding no traffic.

Additional Mitigation of Plant Traffic Impacts

In addition to implementing the above mitigation measures, Amy's Kitchen proposes to mitigate daily traffic impacts in a manner similar to that employed at its Medford, Oregon facility, namely, through carpooling (<1% of parking spaces will be provided for car poolers) and, more importantly, scheduling shift times to start and end during the off-peak hours and staggering the shift times to spread the trips generated by the facility. Table III.H-8 of the DEIS is very instructive in this regard and is included here for discussion purposes.

CAMPARISON OF EXISTING TRAFFIC VOLUMES TO AMY'S KITCHEN TRIP GENERATION

Time Period		NYS Route 17M 2014 Existing Traffic Volumes		Number of School Buses Observed along NYS Route 17M		Amy's Kitchen Anticipated Trip Generation	
		EB	WB	EB	WB	ENTRY	EXIT
AM PEAK PERIOD							
6:00 AM	6:30 AM	503	89	-	-	110	4
6:30 AM	7:00 AM	522	148	6	9	68	34
7:00 AM	7:30 AM	505	218	7	9	48	2
7:30 AM	8:00 AM	541	263	6	8	33	36
8:00 AM	8:30 AM	520	285	5	19	7	7
8:30 AM	9:00 AM	437	345	11	12	0	1
PM PEAK PERIOD							
2:30 PM	3:00 PM	373	494	-	-	15	85
3:00 PM	3:30 PM	393	503	12	6	105	93
3:30 PM	4:00 PM	340	495	7	7	73	52
4:00 PM	4:30 PM	306	546	4	7	24	34
4:30 PM	5:00 PM	343	546	2	0	50	6
5:00 PM	5:30 PM	333	616	1	0	3	7
5:30 PM	6:00 PM	253	566	-	-	1	1

Clearly, the Amy's kitchen facility will generate a considerable volume of traffic activity around shift changes, identified in Table III.H-3 as from 5:30 to 7:00 a.m. and from 2:30 p.m. to 4:00 p.m., with the peak 30-minute period occurring from 3:00 to 3:30 p.m. in the afternoon, when 198 vehicles are projected to enter or exit the plant. In the morning, there is little difference between the 114 trips projected to be generated from 6:00 to 6:30 a.m. and the 102 trips projected to be generated from 6:30 to 7:00 a.m.

The goal of the SEQRA process is to mitigate any traffic impacts to the greatest extend possible. To that end, as Amy's has indicated, this involves scheduling shift changes, to the extent practicable, so that they correspond to periods when background traffic on the passing roadways will be lowest (or at least so that shift changes do not coincide with the highest periods of background traffic activity). As can be seen from Table III.H-8, the shift changes at Amy's Medford Oregon facility result in traffic volumes peaking from 6:00 to 7:00 in the morning and from 3:00 to 3:30 in the afternoon. Also, a review of the information in Table III.H-8 (and in Table T-2 of the DEIS traffic study) indicates that school bus activity along US 6/17M past the site peaks at approximately 8:00 a.m. and 3:00 p.m. Of particular concern is the afternoon peak period, when facility traffic is projected to peak during the second highest 30-minute period (when overall traffic volumes are only 5.6% lower than in the peak 30-minute period) and when school-bus traffic activity is greatest.

Based on a qualitative consideration of the existing, school-bus and projected-Amy's traffic volumes, it is suggested that the traffic impacts of typical day-to-day operations at the proposed plant could be minimized if the shift times were set to occur either 1.5 hours before or 3 hours after the current shift times in Medford Oregon. This would result in peak traffic activity associated with Amy's occurring either from 4:30 to 5:00 a.m. and 1:30 to 2:00 p.m. or from 9:00 to 9:30 a.m. and 6:00 to 6:30 p.m.

It is recognized that, for operational reasons, these hours may not be practical. It is suggested that the traffic impacts of typical day-to-day operations at the proposed plant could be reduced below what is currently projected (based on the information presented in Table III.H-8) if the shift times were set to occur either a half or a whole hour before the current shift times in Medford Oregon. This would result in peak traffic activity associated with Amy's occurring either from 5:30 to 6:00 a.m. and 2:30 to 3:00 p.m. or from 5:00 to 5:30 a.m. and 2:00 to 2:30 p.m.

It is recommended that the FEIS include further detailed discussion of what adjustments could be made to the shift schedules to mitigate the project's traffic impact to the greatest tent practicable. This discussion would include details as to why the shift times suggested above might not be practicable.

Additional Mitigation of Science of the Soul National Conference Traffic Impacts

In a similar fashion, the FEIS should include a detailed discussion of practical measures to mitigate traffic impacts associated with the annual Science of the Soul National Conference. This would include formalizing the Event Traffic Management Plan which is presented informally on pages III.H-42 and 42. This plan, which would be a living document, would be required to be updated prior to and after each event, in response to knowledge gained by the hosts each year.

Included in the detailed discussion of practical mitigation measures in the FEIS should be a determination as to what days, what hours and under what conditions the event will be permitted to occur. It is noted that on Page I-9 and Page II-13, the DEIS states that "Each day's program for a National Conference would run from 9:00 AM until 1:00 PM", while on Page III-H-30 the DEIS states that "Based on information provided by SoS, the duration of these events is approximately two (2) hours and could either be morning or evening events."

As can be seen from Table III.H-8, traffic volumes in the afternoon are typically at least 10% higher than during the morning which, on the face of it, would suggest that allowing the annual National Conference only to occur during a weekday mornings is one method that may be a practical way to minimize the event's traffic impacts. This conclusion is supported by the event capacity analyses, contained in the DEIS, which indicate that events held on weekday afternoons will have significant adverse impacts at 6 intersections, while those held on weekday mornings will have such impacts at only 4 intersections and those held on the weekend will have impacts at only 3 intersections.

Table III.H-8 also indicates that (considering that 60% of Amy's traffic is projected to travel to and from the west on US6/17M) shift changes at Amy's Kitchen plant will increase US 6/17M traffic by approximately 10% during the morning peak hour and approximately 11% during the busier afternoon peak hour. This would suggest that the annual National Conference event should not be allowed to start or finish within, perhaps, 90 minutes of a shift change at the plant. The FEIS should discuss what hours this would leave for event start and finish times and how much different traffic volumes would be if the weekday event were held when Amy's Plant was closed for the day.

Similarly, traffic volumes on US 6/17M during the weekend and on holidays are substantially lower than on regular weekdays (DEIS data suggest that weekend and holiday peak-hour traffic is at least 15% lower than the weekday afternoon peak-hour traffic and at least 9% lower that weekday morning peak-hour traffic. Further, weekend and holiday peak-hour traffic typically exhibits an approximately equal directional split, while the weekday peak commuter hours typically have approximately 65% of vehicles traveling in one direction and only 35% traveling in the opposite direction). The FEIS discussion should document what the benefits would be of holding the 3-day National Conference on a holiday weekend and what the practicality (or not) of such a condition of approval would be.

One important issue related to the annual National Conference is the ability of SoS to hit its target goal of getting 40% of attendees to come by bus. The DEIS documents current SoS National Conference events accommodating approximately 20 percent of traffic by bus. As stated on Page I-10 and Page II-14, it states that the "goal" for the Goshen SoS annual event is to get 40% of attendees to and from the site by bus, and the traffic analysis is based on this assumption. The DEIS Parking analysis also indicates that there is only enough parking to accommodate 60% of attendees arriving by car. As part of the Traffic Management Plan previously discussed, the FEIS should include a backup plan, indicating how the Applicant proposes to accommodate the additional 20% of drivers who might drive to the annual Nation Conference if event transit use is not increased above current documented levels. This could include identifying one or more locations which, combined, would be available to accommodate 685 cars for all three days of the event and which would be able to accommodate a shuttle between the site and these parking locations.

Responsibility for Mitigating Project Impacts

On Page I-33 and Page III-H-26 of the DEIS, it is noted that "the following is a summary of the potential adverse impacts that could result from the additional traffic generated by the project as well as the potential measures identified to mitigate these impacts." On page III.H-2 it is stated that "all recommended improvements associated with the proposed development discussed herein will be required and will be completed at the time of opening of Phase I". The FEIS should confirm that this statement applies to all mitigation measures and the mitigation measures should be listed in their own section so that they may be easily incorporated into the Findings Statements.

Alternative Access

The DEIS Traffic Study contained an evaluation of potentially providing access to the Amy's Kitchen and future warehouse facilities via Hartley Road. No discussion of this analysis was found in Section III.H of the DEIS, although it may have been included in the alternatives Chapter. A review of this alternative access analysis revealed that it would be necessary to provide left-turn lanes on US 6/17M at Hartley Road and to provide a left-turn lane on the Gate Schoolhouse Road approach to US 6/17m to accommodate project traffic. Providing access via Hartley Road would also alleviate weekday shift-change exit delays as well as provide slightly better operating conditions at the SoS driveway for events (presuming that all of the improvements to the Psychiatric Center and Training Center driveways were to be implemented). This alternative would, however, increase peak-period delays by about 10% at the Cannon Hill Drive approach to US 6/17M. The FEIS should include a discussion as to the practicality, relative to right-of-way availability, of providing the additional turn lanes at the intersection of US 6/17M with Hartley Road, as well as what improvements might need to be made to the pavement of Hartley Road so that it could support the potential additional car and truck traffic.

Housekeeping Comments

Existing Traffic Volumes:

A comparison of the existing traffic volumes on US 6/17M between the intersections of Police Highway and Hartley Road suggests that the westbound through movement on US 6/17M at Maple Avenue may be low by 35 vehicles during the 4:30 to 5:30 p.m. peak hour. A review of the intersection capacity analyses for 2033 indicates that traffic on this movement is projected to approach capacity during this analysis period.

No-Build Traffic Volumes:

Apart from the carry-on effect of the potentially low 5:30 to 6:30 p.m. westbound existing through volume on US 6/17M at Maple Avenue, all of the No-Build traffic volumes checked out.

Trip Generation:

The trip generation estimates were all considered acceptable. See the discussion above regarding the optimal timing of shift changes.

Arrival and Departure Patterns:

The Arrival-Departure patterns show 10% of arriving car traffic traveling on the northbound through movement across US 6/17M from Gate Schoolhouse Road, instead of making a left-turn toward the site. This error was also reflected in the Site-generated and Build traffic volumes.

The Arrival-Departure patterns show only 50% of departing car traffic turning right out of the site driveway instead of 60%, consistent with the remainder of the arrival and departure patterns.

Site-generated Traffic Volumes:

The Arrival-Departure pattern issues referenced above led to an under-assignment of traffic existing the site driveway and making a right turn onto US 6/17M.

Build Traffic Volumes:

In addition to the site-generated and existing traffic volume issues identified above, it appears that the existing traffic on US 6/17M either turning right into or right out of the Mid-Hudson Psychiatric Center driveway was not correctly reassigned for the weekday 3:00 to 4:00 p.m. peak period or for the Saturday peak period.

Intersection Capacity Analyses:

The intersection capacity analyses for the intersection of US6/17M with Maple Avenue for the Existing, No-Build and Build conditions during the 4:30 to 5:30 p.m. peak hour did not reflect the 35 vehicles discussed above.

The intersection capacity analyses for the intersection of US6/17M with Gate Schoolhouse Road for the Existing, No-Build and Build conditions during all peak hours did not reflect the correct assignment of Site traffic discussed above.

---------- Forwarded message ----------
From: **Neal Halloran** <nhalloran@townofgoshen.org>
Date: Mon, Jun 6, 2016 at 2:54 PM
Subject: FW: Town of Goshen Planning Board response To AMY's public hearing
To: Kelly Naughton <knaughton@bmglawyers.com>, "Sean T. Hoffman" <SHoffman@h2m.com>, Graham Trelstad <gtrelstad@akrf.com>, Larry Wolinsky <lw@jacobowitz.com>, Lee Bergus <lberguscivilengineer@gmail.com>

All,

Attached is a comment sent to us. Please consider it part of the written responses from the public.

Neal Halloran

Building and Zoning Inspector
Town of Goshen
P.O. Boz 217
Goshen, New York 10924

845-294-6430 x226

From: Mary Israelski [mailto:mary.israelski@randrealty.com]
Sent: Monday, June 06, 2016 1:22 PM
To: nhalloran@townofgoshen.org
Subject: TO : Town of Goshen Planning Boadr response To AMY's public hearing
Importance: High

Dear Chairman Lee Bergus, Planning board members, Neal Halloran, building inspector, Town Consultants and ERB.

My husband Ron and are very supportive of Amy's coming to Goshen and are proud that the board and special advisors, Orange County Partnership and others have supported his great boost to economic development. Thank you for all your great efforts!

I do have one question: **Why is Hartley Road being used for Emergency Access only? Hartely Road should instead be used as another connection to integrate the town roads and more effectively move traffic. Providing access to Hartely road will improve traffic flow. Hartley Road connected to Cheechunk which runs parrarell to I 86 / 17 and has easy access to this major highway instead of funneling all traffic on 17 M which could greatly cause increased congestion**. .

Please add this comment to the public hearing notes to answer as appropriate.

Mary Rice Israelski
Associate Broker
Better Homes and Gardens Rand Realty
300 Canal Street
Goshen, NY 10924
914-443-9023

JAMES TORCIVIA
6 Strack Road
Goshen, NY 10924
(845) 294-5038

RECEIVED
JUN 08 2016
TOWN OF GOSHEN
TOWN CLERK

June 6, 2016

Dear Town of Goshen Planning Board Chairman:

Recently a Public Hearing on the Amy's Kitchen project was held at the Town Hall. I attended for about 40 minutes and had to leave for another meeting. While I was in attendance, I heard the gentleman give his talk on the project. He cited many pros for the project.

1). TRAFFIC: On a recent visit to the Orange County Landfill I personally counted 94 cars in line at the traffic light by Stewart's heading towards Goshen. The speaker's talk said they did a traffic study and Amy's Kitchen would not have an effect on traffic. How could that be possible with that number of cars in line at 8:30 am and Amy's Kitchen isn't even operating yet. He must be wrong. It took me 6 minutes and twenty five seconds to exit the landfill on a left turn towards Middletown. The traffic study he is talking about can't be right.

2) 12,000 EXTRA PEOPLE IN GOSHEN on any given weekend seems like way too many people for any town to handle. The speaker stated we would have two such weekends every year. How do we know it won't be 4 weekends or 8 weekends and how do we know it will be 12,000 people and not more. Do we have a guarantee on how many people and how many weekends. No we don't. This must be looked into.

3). SCIENCE OF THE SOUL: What is Science of the Soul. Is it a religious retreat? What kind of religion? Will it be tax exempt? What is the connection to Amy's Kitchen? Will the Science of the Soul be built before Amy's Kitchen or after?

Will Amy's Kitchen get a tax break from the State, County and Town Taxes? These are all things the taxpayers should know.

All in all, if Legoland comes to Goshen and Amy's Kichen comes to Goshen, on any given day, there won't be any room for our taxpayers to live in the Town or the Village. As you can tell I am not in favor of the Amy's Kitchen projects. I feel in the long run it will only detract from our historical country community.

Yours truly,

James Torcivia

McGOEY, HAUSER and EDSALL
CONSULTING ENGINEERS D.P.C.

MARK J. EDSALL, P.E., P.P. (NY, NJ & PA)
MICHAEL W. WEEKS, P.E. (NY, NJ & PA)
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6 June 2016

Town of Goshen
Planning Board
41 Webster Avenue
P.O. Box 217
Goshen, NY 10924

ATTENTION: **LEE BERGUS, CHAIRMAN**

SUBJECT: **AMY'S KITCHEN SCIENCE OF THE SOUL**
DEIS REVIEW

Dear Mr. Bergus:

This office represents the Town of Wawayanda. The Town of Wawayanda Town Board has authorized our office to perform a review of potential inter municipal issues regarding the subject project. The Town has received a copy of the draft environmental impact statement dated 24 April 2016. This review will specifically be regarding Impacts which may affect the Town of Wawayanda due to the scale of the proposed project. This review will specially detail comments regarding traffic and water/sewer infrastructure.

Traffic

1. The traffic study identifies that the Amy's Kitchen manufacturing facility will address peak traffic flows by modifying worker shift time. The document does not state how these times will be enforced. In additions some of the times will closely coincide to peak hourly traffic on the Route 17M corridor.

2. The report identifies that existing mass transit including buses along the Route 17m corridor will be utilized. These buses are typically commuter buses picking up and discharging passengers in designated areas. Use of the commuter bus system seems impractical.

3. Traffic signal changes are recommended in various scenarios in the traffic study. No identification of the post modification levels of service at each of the intersections is provided in the narrative report.

4. The intersection of NYS Route 17M and I84West off ramp is identified as having "a high rate of accidents". This is attributed to the stop sign control on the west bound off ramp approach. Mitigation measures further in the report identify that this intersection is to be modified to a yield, rather than a stop intersection. An analysis of this modification should be included in the report to included queuing to identify gaps and accident analysis at similar yield type intersections with similar traffic volumes.

5. The analysis identifies that signal changes for existing signal controlled intersections could be implemented in the existing and build condition. Significant reductions in level of service may result if the signal changes are not approved by the NYSDOT. An analysis of the proposed signal changes and levels of service at the intersections should be provided for review.

6. It is noted in the Science of the Soul regional and national events evaluation that the onsite manufacturing facility will continue to operate. It is recommended that the access to the events be scheduled away from the peak employee arrival time frames. This will push the regional and national events into the peak traffic times along the 17M corridor.

7. Traffic mitigation identified as 'traffic demand management and parking" states that the project sponsor will employee several initiatives, including off peak starts, staggering of shifts and car pooling. How these will be required, monitored and implemented should be addressed. Enforceable conditions through a developers agreement, map notes or other legal mechanisms should be required to enforce the mitigation measures identified.

8. Golf Links Road(CR50)/McVeigh Road is identified as experiencing a reduction in level of service to LOS F during the p.m. peak hour. In addition significant delays are identified under other peak time frames. The report identifies that an analysis of the intersection with an All way stop control was conducted for each of the peak periods indicating that the intersection would operate at LOS C or better on all approaches during the peak hours. This analysis should be provided for review and identified in the document.

9. The DEIS identifies that one regional 2 day conference and one national 3 day conference are proposed with approximately 1,200 – 12,000 attendees. The document should identify how the number of events will be permitted/controlled as once the project is approved it would be difficult to prevent/ monitor how the facility is utilized. Will a developers agreement/legal restrictions be imposed on the site to control uses.

10. The traffic analysis assumes 40% of arrivals by bus for the National event. This conflicts with information provided by SoS that 20% of attendees arrive via bus at their California and North Carolina facilities. This number should be justified as a significant number of additional vehicle trips will be generated should the 20% utilized at other facilities be the actual number. In addition the location of bus staging pick-ups should be provided.

11. The document states SoS encourages car pooling to their events, and based on experience at their Petaluma and Fayettville locations a car occupancy of between 3.3 and 3.8 persons per vehicle can be expected. The analysis for the Goshen site identifies a "somewhat conservative ratio of 3.5 persons per vehicle," the conservative rate would be the 3.3 persons per vehicle. Utilizing the 3.5 persons per vehicle it identifies that 7,000 attendees can be accommodated in the 2,000 car parking spaces. This leaves 5,000 additional attendees anticipated without a

method of access to the site. If bus utilization is lower than estimated and similar to other facilities a significant increase in parking would be required.

12. The basis for the 50/50 split traffic distribution should be provided. Many of the hotels in the area are located west of the project site in the city of Middletown, Wallkill and Wawayanda area with minimal hotels located to the south and east.

13. The traffic study identifies that manned police traffic control will be utilized during events at a majority of the intersections. The traffic study does not identify levels of service which can be maintained utilizing manned police traffic control. The document identifies this procedure utilized at the Bethel Woods facility in Sullivan County. Those familiar with this facility are aware of several hours long traffic jams associated with events utilizing police traffic control at this venue.

14. The document appears to identify that several events during the day will occur during regional and national conventions. It appears that participants are encouraged to leave the site in between events causing several waves of traffic to occur during the regional and national events. Timing of traffic control manpower and resources should be identified in the document.

15. The document identifies that manned police traffic control practices are employed by SoS at their Petaluma and Fayettville facilities. Information regarding travel time through the major roadway corridors at these facilities during events should be provided.

16. The document states that "another option to help distribute traffic volumes along the exit period after the events would be to request permission to use the emergency access connection to Echo Lake Road." An analysis of any use of the emergency access and traffic impacts associated with it should be provided. The emergency access road would most likely be an important site access during the regional and national conferences. Emergency vehicle access through all roadways should be addressed. The Town of Wawayanda currently does not support the use of the emergency access for anything other than emergency vehicles.

17. Shuttles are identified as being provided for off site parking including the Strong Farm overflow parking. The document does not identify the Strong Farm being utilized for parking during events and only identifies it as volunteer parking, whose arrival is several hours before the event. If Strong Farm parking is utilized for the events the analysis should be modified to identify the number of vehicles accessing this site and the impact of this traffic on the town roads.

Water and Sewer

1. Portions of the proposed Water and Sewer mains will traverse lands within the Town of Wawayanda. The Town would like to be provided with detailed design plans in order to evaluate if potential for a municipal interconnection could be facilitated between the City of Middletown, the Town of Wawayanda and the transportation corporation.

2. The Town of Wawayanda is a regulated MS4 land use community. A MS4 Stormwater permit for the lineal portion of the project in the Town of Wawayanda must be issued by the town. Submission of a detailed design for the water and sewer mains is required in order to obtain a

municipal authorization from the Town of Wawayanda. The submitted SWPPP apparently was prepared (21 Sept. 2015) before the water interconnect was prepared.

Permits and Approvals

1. The NYSDEC must approve an increase in the water taking for extension of the water main serving multiple parcels of property in the Town of Goshen. The water main extension/service area expansion is required.

The above comments reflect the Town of Wawayanda's concern for inter municipal impacts of the proposed project located in the Town of Goshen. The comments generally pertain to concerns regarding the mass gatherings associated with the SoS events and potential interconnects with utilities crossing the Town of Wawayanda.

Very Truly Yours,

McGoey, Hauser & Edsall
Consulting Engineers, D.P.C.

Patrick J. Hines
Principal

Owens Road Associates, LLC
141 Kinderkamack Road
Park Ridge, NJ 07656
(201)391-1324

June 10, 2016

Via Email
Chairman Lee Bergus
Town of Goshen Planning Board
41 Webster Avenue
Goshen, NY 10924

Re: Comments on Draft EIS on the proposed Amy's Kitchen, Inc. Manufacturing Facility and Science of the Soul Conference Center ("Amy's/SOS DEIS")

Dear Chairman Bergus:

I am a member of Owens Road Associates, LLC ("Owens Road") and property owner in the Town of Goshen. Owens Road owns the parcel of land adjacent to the Strong/Science of the Soul property and is proposing a subdivision.

Please accept the following comments in connection with the Amy's/SOS DEIS":

1. Please provide further details and plans as to what is being proposed on the Strong/Science of the Soul property. Please include details on proposed parking layout, access drives and emergency access. Our subdivision proposes a road ending at the Strong/Science of the Soul property as directed by the Planning Board and Code for future expansion if and when the Strong Farm is developed. It would make sense to tie our proposed road to the proposed access roads on the Strong/Science of the Soul property to establish an emergency access system for both properties. This emergency connection would provide a benefit to the future users of both parcels.
2. Please provide details as to the deed restrictions and/or conservation easements proposed for the Strong/Science of the Soul property limiting uses to agriculture and parking.
3. Please provide details with regard to noise impacts of the project and proposed mitigation measures.
4. Please provide details regarding impacts from odors generated by the project and mitigation measures.
5. Please provide all letters and documents referred to in the October 20, 2015 letter by the Building Inspector in connection with project zoning.
6. Please provide more detailed analysis regarding traffic during the meetings proposed by Science of the Soul. The analysis assumes 40% of attendees will

take a bus to the event site while other events in California have only had 20% use of bus transportation into events

7. Please confirm that the proposed Amy's/Science of the Soul project will have no impact on the water quality and/or supply for our proposed project.
8. Please provide details of mitigation measures to be taken to preserve cultural resources that have been deemed unavoidable as well as the basis for determining those cultural resources are unavoidable.

Thank you for your time and consideration.

Very truly yours,

Kenneth F. Cerullo, Esq.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Region 3 Main Office
21 South Putt Corners Road, New Paltz, NY 12561-1620
P: (845) 256-3033 | F: (845) 255-3042
www.dec.ny.gov

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

June 10, 2016

Lee Bergus, Chairman
Town of Goshen Planning Board
41 Webster Avenue
Goshen, NY 10924

Re: Amy's Kitchen
DEC Tracking ID #: 3-3330-00231/00001, /00002
Town of Goshen, Orange County
Comments on Draft Environmental Impact Statement

Dear Chairman Bergus:

The Department of Environmental Conservation (DEC) staff have reviewed the Draft Environmental Impact Statement (DEIS). One material change is included in the DEIS in comparison to the project as described in the scoping document. Rather than developing on-site sewer and water facilities, new sewer and water mains are proposed along an undeveloped portion of the Orange County Heritage Trail to allow connection to the City of Middletown sewer and water systems.

DEC PERMITS AND JURISDICTION

The following comments are offered, with reference to articles of the Environmental Conservation Law.

Article 15, Title 15, Water Withdrawal

The proposed service of water to the facility by the City of Middletown will require that the City apply for a Water Withdrawal permit modification to extend their area of service. They will have to either apply for a new Permissive Service Area (PSA) or addition of an Outside User. The application will require that the City justify the quantity for the sale and that there is sufficient water available.

Article 24, Freshwater Wetlands and Article 15, Title 5, Protection of Waters

The plan presented in the scoping document did not include any disturbance to the DEC-regulated freshwater wetlands on the Echo Lake property, wetland ID MD-24, Class 2. The plan presented in the DEIS includes disturbance to this wetland, as well as others, as part of the installation of mains to connect the project site to the City of Middletown sewer and water. The mains are proposed along the former Erie railroad, now the Orange County Heritage Trail. This section is currently undeveloped.

The proposed mains will pass through the area of wetland MD-24 in Goshen and wetland MD-19, Class 2, in the Town of Wawayanda. DEC records from previous

project reviews have found that wetland MD-19 is far greater in size than shown on the official map. In addition, there is another wetland in Town of Wawayanda which DEC has determined is eligible to be mapped. In total, it appears that the proposed main will be in close proximity to DEC mapped or eligible wetlands for approximately 3,500 feet.

The locations of all mapped and eligible wetlands must be delineated and the delineation validated by DEC staff. At this time, Orange County has not yet approached the Department about validation or permitting for the proposed development of the rail trail. Either Amy's Kitchen or Orange County must obtain the validation for the permit applications for either project.

Many of the areas in Wawayanda were previously mapped and validated for other projects. If the applicants wish to obtain this information, a Freedom of Information Law request must be made to DEC Region 3. DEC Bureau of Habitat staff Michael Fraatz is the contact for obtaining a validation of the wetland boundary and can be reached at (845) 256- 3057 or by email at michael.fraatz@dec.ny.gov.

Please note that even if all work is in the wetland adjacent area, the wetland application will still be major and require a minimum 30-day public comment period.

The portion of the Wallkill River, NYS Waters Index # H-139-13 portion, which is on the project site, is Class C. The proposed sewer/water mains will pass over several additional waterbodies, see attached map:

Name	NYS Waters Index Number (WIN)	Class
Wallkill River – western braid	H-139-13	C
Monhagen Brook	H-139-13-52	C
Tributary 1 of Monhagen Brook	H-139-13-52-1	C

A permit is not required to disturb the bed or banks of a Class C stream without a trout standard. However, there are concerns with impact to protected species from the proposed bridge on the Wallkill River, as discussed below.

Any disturbance to waterbodies or wetlands which requires a Clean Water Act Section 404 permit from the Army Corps of Engineers, will also require a Water Quality Certification pursuant to Section 401. These federal certifications have been delegated to DEC in New York State.

Article 11, Title 5, Endangered and Threatened Species
The DEIS considers potential impacts to Indiana bat (Myotis sodalist), a species listed by New York State and the U.S. Fish & Wildlife Service as endangered and northern long-eared bat (Myotis septentrionalis), listed by New York State and the U.S. Fish & Wildlife Service as threatened. These are summer tree-roosting species that hibernate during the winter in underground caves. They forage in forested habitats, forest edges, and riparian areas.

Re: Amy's Kitchen
DEC Tracking ID #: 3-3330-00231/00001, /00002
Town of Goshen, Orange County
Comments on Draft Environmental Impact Statement

Potential impacts to bats from this development include both direct impacts and indirect impacts. Direct impacts include the taking of individual bats present in roost trees during removal and the removal of essential habitat. Indirect impacts can include noise, vibration, dust, chemical use, lighting, vehicle use, and general levels of human activity which may interfere with essential behaviors. Reference is made in the following comments to the report which is contained in the 03.D Vegetation and Wildlife Appendix, 'Impact Assessment for the Indiana and Northern Long-eared Bat', dated April 2016.

Direct take of individuals:
As stated in the DEIS and supporting reports, all tree-clearing must be conducted between October 31st and March 31st. This will be included as condition in any department permits and must be noted on the project site plans.

Because of the previously-disturbed nature of the Heritage Trail, a timing restriction on tree-cutting will be sufficient to address any potential impacts from the sewer/water main construction. The remaining comments refer to the proposed Amy's Kitchen and Science of the Soul developments.

Direct take of Habitat that would impact essential behaviors:
An analysis of percent forested habitat within 2.5 miles of the location was conducted. The analysis found 42.5% pre-development reduced to 41.9% post-development. This is above the 35% threshold, below which signifies that habitat may be limiting for Indiana bats in that home range.

While roosting habitat is present, no known roosts have been identified. The report outlines how an estimated amount of roosting habitat was determined and the estimated the reduction in that amount. While a number of roost trees would be impacted, the estimates also predict a large number of potential roost to remain on the site.

A total of 49 acres are reported as being impacted and 160 acres of 'woodland' are reported as being protected long term.

Indirect take for impact to essential behaviors:
Indirect impacts related to construction noise, light, and human activity are addressed in the report. No details were included on the use of pesticides and treatment of standing water on the site, or general water quality. The report highlights that there will be increased indirect impacts to bats from lighting at the site, further reducing habitat for both species, but more so for northern long-eared bat.

The following take-avoidance measures are proposed in the report:
- 160 acres of 'woodland' that will be preserved through a 'conservation easement or similar legal agreement'
- Wintertime tree clearing: October 31st to March 31st

- Project footprints centered on old field and shrub land.
- Best Management practices for outdoor nighttime lighting.
- Minimal nighttime operation of SOS conference center.
- Orchard-style design of SOS parking area.

Additional information for final jurisdiction determination

In general staff believe that the project is capable of obtaining a determination of no taking, but there is insufficient detail in the report and DEIS for a final determination:

- A full description of phasing of the project is required. The discussion of phasing in the DEIS section 03.S Construction is very limited and does not provide any acreage numbers or depictions of areas of disturbance.
- There is little discussion of impacts to on-site wetlands, which can significantly affect bat foraging. Section 03.D Vegetation and Wildlife is missing the referenced figures: Figure III.D-1 showing the ecological communities and Figure III.D-2 showing the impacts[1].

  The Surface Waters section Figure III.C-5 & Figure III.C-7 show the wetlands on the Amy's Kitchen and Science of the Soul sites, but there is no impact analyst. In addition Figure 5 of the 03.D Appendix, "Wetland Location Map", shows the wetlands on the Science of the Soul property that these do not match those shown on the site plans or the Section 03.C figures. The Science of the Soul grading plans appear to only show the wetlands associated with Echo Lake (DEC Id MD-24) and those associated with the Wallkill River. The only reference in Section 03.D to buffering is with regard to the access road and the Wallkill River.

  - The applicant must clarify if wetlands are to be buffered and by how much.
  - A discussion of water quality maintenance both during construction and facility operation is also needed, including any future use of pesticides at the facility.
- The DEIS grading plans are overlaid by details on the proposed development, making the existing and proposed contours difficult to distinguish. The full limit of disturbance of all work needs to be clearly depicted. This needs to include the proposed future warehouse.
- The applicant must justify the need for the configurations of the drives and structures. A discussion of alternatives considered for each is also needed. Examples for consideration include justification and alternatives for:

  - the proposed bridge crossing of the Wallkill; Alternative 3 discusses the option of primary access off of Hartley Road, but considers only traffic, noise, and air quality, not impact to the river corridor or associated wetlands. It appears this alternative is feasible and should be considered as part of the avoidance of a taking.

[1] The figures were not found in either the CD-copy submitted to the Department, nor the copy on the Town's website.

  - the disturbance and fragmentation associated with the isolation of the 5-bedroom guest house at Science of the Soul. This is very large disturbance in otherwise undisturbed forested habitat and there is no discussion regarding the isolation of it from the remaining facility;
  - the overall footprint for both developments, including options to reduce it.

- Details on the area of impact and the easement proposed in the report.
  - The report states that 160-acres of 'woodland' will be protected long term. However the report outlines direct and indirect impacts to the habitat and qualifies habitats differently for the two species, making it difficult to clearly determine the full impact in comparison to the number of acres to be protected. Numbers were not provided for the full impact of all the project elements to the total 374.1 acre area; numbers were only provided for the Amy's Kitchen development which is impacting 37 acres and leaving 34 acres undisturbed. In addition, the same categories applied in the evaluation of impacts should also be applied to the proposed easement area.
  - No details are provided on the mechanism for ensuring protection of the undisturbed portions of the properties or the locations of these protected areas on a location map. These details are very important to verifying that impacts are offset and that the properties are protected both in the long term and in the species' best interest.

- More detail is required on the lighting Best-Management-Practices. The report and DEIS describes the lighting plan, what the lights look like, and how they will be operated, but the potential effects of this on the bats is inferred, not clearly stated.
- Much of the discussion on impacts from Science of the Soul relies on the proposed limited operation regarding the number of major events and the use of night-time lighting. It is not clear how this will be restricted or if it may change in the future.
- The orchard parking area is offered as a mitigation measure, but no details are provided on its design and what native trees will be planted there. Nor is it clear whether the parking is pervious or impervious. It does not appear that it would function in the same way as the habitat it would replace.

Article 23, Title 27, Mined Land Reclamation

The DEIS section 03.B, "Topography", states that for the Ver Hage property, "total earthwork estimated to involve approximately 307,057 cubic yards" and for Echo Lake, "approximately 1,988,179 cubic yards of total earthworks." It furthers states that "188,873 cubic yards of fill" are required for the Ver Hage property, the majority of which will come from the Echo Lake site. However the description of the Echo Lake site states that only "5,663 cubic yards of cut" will be produced. The inconsistencies in these number must be clarified, however it appears that a Mined Land Reclamation permit may be required.

Mining is defined in the DEC Mined Land Reclamation regulations as "excavation from which a mineral is to be produced for sale or exchange, or for commercial, industrial or

municipal use"[2]. A Mined Land Reclamation permit is required for mining of 1,000 tons or 750 cubic yards of minerals within 12 successive calendar months.

The excavation or grading of an area that is part of an approved construction plan is generally exempt from the Mined Land Reclamation permitting requirements, provided that the following criteria are met:

a. all necessary Local, State and Federal approvals shall have been obtained for the project;
b. the proposed excavation and/or grading work is to be conducted solely in aid of onsite construction and is deemed necessary to prepare the site for approved construction;
c. the excavation takes place within the construction project area and is an integral part of the construction project activities. The construction project area is defined as the area of excavation essential to the successful completion of the construction project;
d. objective evidence is provided which leads the Department to reasonably conclude that the construction project is not speculative, will occur at the site of excavation and grading; and will occur concurrently, or soon after the excavation and grading is completed. Objective evidence includes, but is not limited to: copies of all relevant building permits, grading plans and all necessary approvals from the local planning and zoning boards; and
e. construction activities should commence within 6 months and be completed within 2 years of excavation.

The DEIS lacks a clear cut/fill analysis and details on phasing as described above. The Stormwater Management section suggests that a single Stormwater Pollution Prevention Plan (SWPPP) will cover both projects, yet the project description implies that facilities will be constructed separately. The Department cannot make a determination on the need for a Mined Land Use permit at this time.

State Pollutant Discharge Elimination System (SPDES) – sanitary

Service of the site by the City of Middletown sewer district will require a district extension. Review of the new main and extension by DEC will be required, but may not require a modification of the SPDES permit unless the composition of the waste may affect the City's effluent limits. If the pretreatment facility is going to be privately owned, it will fall under the requirements of the City of Middletown's Sewer Use Law and their review.

Article 19, Air Pollution Control

The 03.R Air Quality section states that process boilers will be used by Amy's Kitchen with a "maximum expected heat input capacity of approximately 36 million British thermal units per hour". No information was provided on the capacity of boilers for the Science of the Soul building. If any boilers are in excess of 10 million British thermal units per hour, then a permit or registration pursuant to Article 19 will be required.

[2] 6 NYCRR §420.1(h)

Re: Amy's Kitchen
DEC Tracking ID #: 3-3330-00231/00001, /00002
Town of Goshen, Orange County
Comments on Draft Environmental Impact Statement

OTHER ISSUES

The DEIS identified several special concern amphibians and reptiles as potentially present on the site: Jefferson salamander (Ambystoma jeffersonianum), blue-spotted salamander (Ambystoma laterale), spotted turtle (Clemmys guttata), wood turtle (Clemmys insculpta), and eastern box turtle (Terrapene Carolina). As noted in the DEIS, these species are not subject to direct regulation through an Incidental Taking permit, but impacts to them should be considered as part of SEQR.

The DEIS states that habitat will be inspected prior to the start of construction and any individuals located will be removed to other habitat areas. But there is no discussion in the DEIS of where or how much habitat is present on the site for these species. Of particular concern is the number of smaller wetlands on the Echo Lake site which may be habitat for woodland pool salamanders and which are proposed for elimination.

The EIS should include an assessment of available habitat for these species with an analysis of the proposed impacts. The assessment should follow the DEC Hudson River Estuary Program's Woodland Pool Conservation guidance, available website at http://www.dec.ny.gov/lands/52325.html.

As documented in the DEIS, the DEC Division of Materials Management has approved the closure of two monitoring wells on the Ver Hage property associated with the former Al Turi landfill. There are no further concerns with the development relative to this landfill. Once plans for the sewer/water main are prepared, staff may have concerns if disturbance is proposed within the footprint of the State Superfund Program site "Middletown Dump", located east of the sewage treatment plant.

If there are any questions, please feel free to contact me at (845) 256-3014 or by email at rebecca.crist@dec.ny.gov.

Respectfully,

Rebecca S. Crist
Deputy Regional Permit Administrator

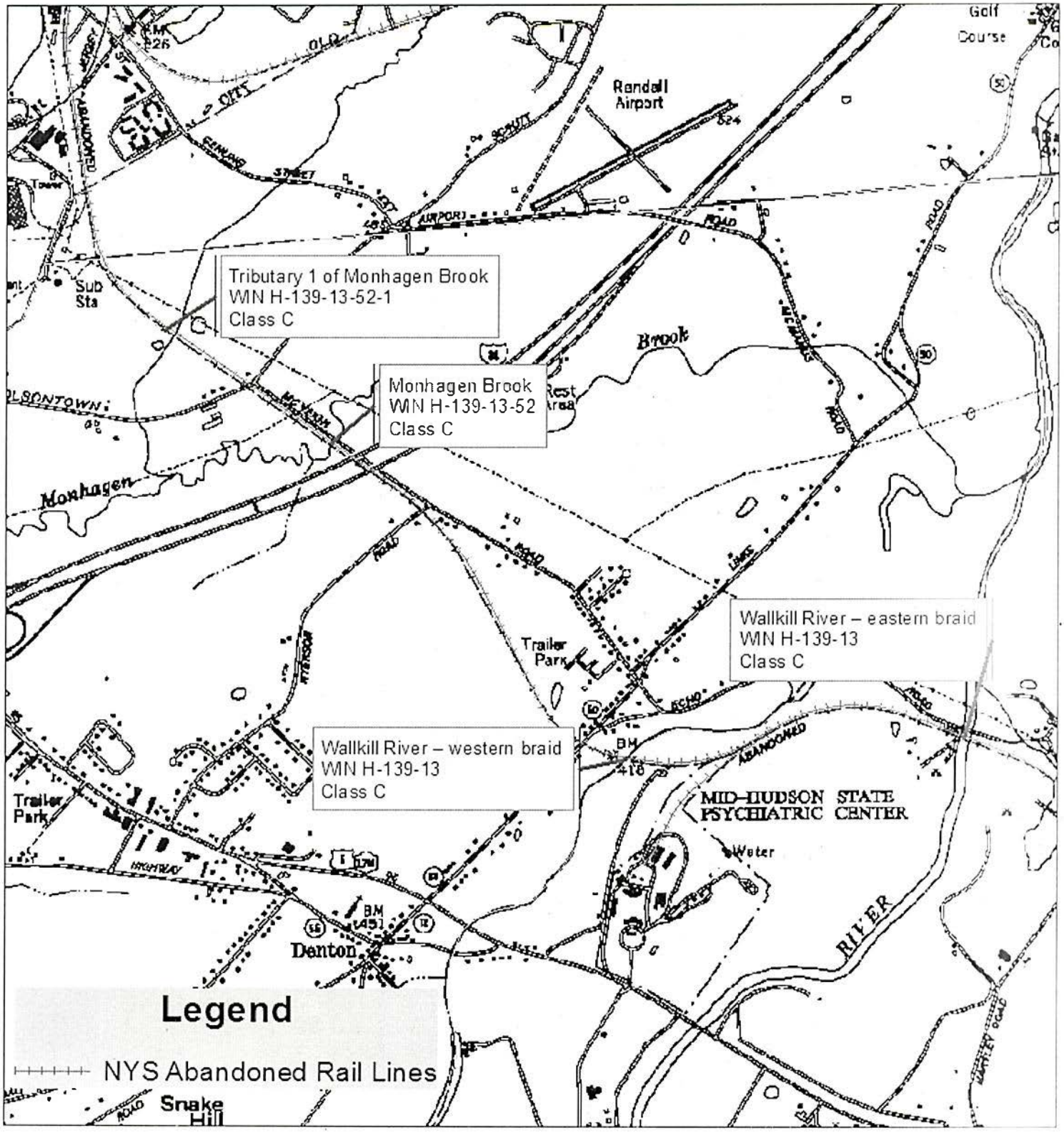
Enc: Map of waterbodies

Ecc: Graham Trelstad, AKRF, INC
Mark Rudolph and Sue-Anne Dropkin, Amy's Kitchen
Larry Wolinski, Jacobowitz and Gubits, LLP
Brian Orzel, Army Corps of Engineers
Noelle Rayman, US Fish & Wildlife Service
Tim Lloyd, NYSHPO

Re: Amy's Kitchen
DEC Tracking ID #: 3-3330-00231/00001, /00002
Town of Goshen, Orange County
Comments on Draft Environmental Impact Statement

Kate Schmidt, Orange County Department of Planning
Orange County Department of Health
Richard, Rose, Orange County Dept. of Parks, Recreation and Conservation
City of Middletown, Mayor
Town of Wawayanda, Supervisor
Lisa Masi, NYSDEC Bureau of Wildlife
Michael Fraatz, NYSDEC Bureau of Habitat
Manju Cherian, NYSDEC Division of Water
Meena George, NYSDEC Division of Water
Erik Schmitt, NYSDEC Division of Water, Albany
Steve Parisio, NYSDEC Division of Materials Management
George Sweikert, NYSDEC Division of Air Resources

Amy's Kitchen - Sewer/Water Main
Towns of Goshen & Wawayanda,
City of Middletown, Orange County



Prepared by
Rebecca Crist
DEC Division of Environmental Permits
FOR REFERENCE ONLY

0 0.25 0.5 1 Miles

N

ORANGE COUNTY
DEPARTMENT OF PUBLIC WORKS

Christopher R. Viebrock, P.E.
Commissioner

Steven M. Neuhaus
County Executive

P.O. Box 509, 2455-2459 Route 17M
Goshen, New York 10924-0509
www.orangecountygov.com
TEL (845) 291-2750 **FAX (845) 291-2778**

June 8, 2016

Hon. Lee Bergus, Chairman
Town of Goshen Planning Board
41 Webster Avenue
Goshen, New York 10924

RECEIVED
JUN 10 2016
By

Re: Amy's Kitchen & Science of the Soul
State Route 17M & Training Center Lane
Draft Environmental Impact Statement
Prepared by: AKRF
Dated: April 29, 2016

Dear Mr. Bergus:

This Department has reviewed select portions of Draft Environmental Impact Statement (DEIS) and the Notice of Completion for the above referenced project. The Orange County Department of Public Works Highway Engineering Department has comments based on our review of the following sections of the DEIS:

Chapter I, Executive Summary
Chapter III.E, Groundwater / Water Supply
Chapter III.F, Wastewater Management
Chapter III.G, Stormwater Management
Chapter III.H, Traffic
Chapter III.L, Community Services
Chapter III.S, Construction

1. Chapter I and Chapter III.H are not consistent with each other regarding the length of the left and right turn lanes on State Route 17M for Training Center Lane and the new Site Access road. There is also a discrepancy in the distance that Training Center Lane will move.

2. Please clarify when the relocation of Training Center Lane will begin. We believe that all changes and improvements to Training Center Ln. should be built at the same time as the proposed site access road, at the start of construction. Such work should include the installation and activation of the new traffic signal at the proposed intersection. We believe that completing the construction of the new intersection at the start of the project will help limit the impacts that construction will have on traffic.

3. During construction activities at proposed State Route 17M/Training Center Ln./Site Access intersection, special consideration must be given to Garbage Trucks and other vehicles traveling to and from the County Transfer Station on Training Center Ln. Additional traffic control measures, such as signs, flaggers, etc..., should be provided as part of the Maintenance and Protection of Traffic plan(s) in order to minimize confusion about Transfer Station access.

4. Please confirm that all new lanes on State Route 17M and the new traffic signal will be NYSDOT maintained. Orange County will only accept ownership and maintenance responsibility for Training Center Ln. outside the State highway right-of-way. The developer should be responsible for coordinating any easements or right-of-way acquisitions necessary to install the new traffic signal and traffic signal detection loops.

5. Chapter III.H recommends that the CR50/McVeigh Road intersection will need to be changed to all-way Stop control to handle future traffic volumes. All of the future 'build' scenarios in the report assume this intersection will be changed to an all-way Stop. It is the County's preference to maintain CR50 as a through road both now and in the future. What alternative improvements could be implemented to provide a similar level of service at this intersection? Also, identify what modifications would be implemented at the side road intersections for Mason Place and Echo Lake Road as part of improvements to the CR50/McVeigh Rd. intersection.

A full set of site design plans, including the proposed intersection design, FEIS, SEQRA information and related submittals, prepared in conformance with the Policy & Standards of the Orange County Department of Public Works and the Town of Goshen regulations, must be reviewed and approved by this department under Section 239-f of the General Municipal Law and Section 136 of the Highway Law. The developer will be required to obtain a permit from the Orange County Department of Public Works prior to any site preparation or construction activity. Specifically, permits from this department must be obtained due to the proposed impacts to Training Center Lane and the Heritage Trail Utility Corridor. We kindly request that your board not grant approvals for construction or site development until after our Department has reviewed and approved the plans.

If you have any questions please do not hesitate to contact this Office.

Very truly yours,

Joseph E. Stankavage, P.E.
Principal Engineer

cc: Christopher R. Viebrock, PE, Commissioner
Travis Ewald, P.E., Deputy Commissioner
Mike Carroll, Senior Engineer

Orange County Department of Planning

124 Main Street
Goshen, NY 10924-2124
Tel: (845) 615-3840
Fax: (845) 291-2533

David E. Church, AICP
Commissioner

www.orangecountygov.com/planning
planning@orangecountygov.com

Steven M. Neuhaus
County Executive

County Reply – Mandatory Review of Local Planning Action
as per NYS General Municipal Law §239-l, m, &n

Local Referring Board: Town of Goshen Planning Board **Referral ID #:** GOT06-16M
Applicant: Amy's Kitchen **Tax Map #:**12-1-1.222, 19.2, 23.2, 24.2 & 1.41
Project Name: Amy's Kitchen & Science of the Soul (SoS) DEIS 10-1-11.2
Proposed Action: NYS SEQRA DEIS
Reason for County Review: Non-Mandatory Review

Advisory Comments: The Orange County Department of Planning has reviewed the draft environmental impact statement (DEIS) for Amy's Kitchen and Science of the Soul under the State Environmental Quality Review Act (SEQRA) as the County Planning Agency responsible for bringing pertinent inter-community and countywide planning, zoning and site plan considerations to the attention of the municipality having jurisdiction; in this case the Town of Goshen. The following comments are provided. Our comments are advisory and may be addressed within the Final EIS and/or Findings Statement. We also appreciate that specific actions related to our comments may best be a part of final site plan approval. We will be providing our specific review of the site plan promptly consistent with NYS GML 239.

Chapter III.C: Surface Water Resources & Wetlands
As per the DEIS, development of Amy's will result in wetlands loss. We recommend some discussion of wetland loss mitigation or avoidance in the Final SEQRA documentation.

Chapter III.D.: Vegetation and Wildlife
In consultation with NYS DEC, it is recommended that maps indicating wildlife sightings/habitats should be overlaid on impacted land. This can then be used to include appropriate documentation of any necessary mitigation or avoidance plans for wildlife habitat, notably species of concern.

The Department suggests that a forest loss mitigation action could include provision of replacement trees. At minimum, native trees could be planted - and maintained – along the perimeter of the six parcels and water courses. We support theorchard tree parking design.

Chapter III.G: Stormwater Management
This office applauds the use of road salt alternatives, especially on the Wallkill bridge crossing.

The DEIS stated that the construction of Amy's Kitchen and SoS will result in 24 and 34 aacres of impervious surface respectively.. The use of low impact development should be increased in order to reduce stormwater impacts and replenish groundwater over the Wallkill aquifer. We recommend discussion of best options and standards in final SEQRA documentation.Maps submitted to this office contain conflicting information.
All medians should have trees and tree box filters that will act as mini bioretention areas.
Recessed curbs and hydric-soiled, raingardens should be added to all medians as well as around the perimeter of all parking lots and roadway sidings and direct stormwater toward these areas for pretreatment.
We recommend consideration of grey water collection system to be considered and used for irrigation and fire suppression.

Chapter III.H: TrafficTraffic Impact Study Methodology & Analyses: One of the most significant impacts associated with Amy's Kitchen, the Ver Hage warehouse and Science of the Soul events is traffic impact. Normally traffic impact studies, analyses and documentation follow a logical step-by-step, progression that is transparent, rational and easy to follow. For example, most traffic impact studies document existing conditions, along with trips from other nearby major development (yet to be built), background traffic growth, as well as trips generated by a subject project. This information is usually presented in tables indicating vehicular trips generated and diagrams (maps) showing vehicular directional flow for each use by timeframe in a logical sequence.
For example, different sections of the traffic impact study use different traffic volumes to calculate levels of service and traffic impact for the same intersection and timeframe. In addition, the total trips calculated for Amy's, the Ver Hage Warehouse use and Science of the Soul in Table III.H-7 on page III.H-18 are erroneous. In some sections of this table, total trucks are used and in others total truck equivalents are summed to attain total trips by timeframe. The trips indicated in this table also do not coincide with the trips used to calculate levels of service for the various timeframes studied. In addition, in some sections of the traffic impact study, trips generated by Amy's are co-mingled with trips generated by the Mid-Hudson Psych Center, making it is impossible to determine the directionality of this traffic, the impact therefrom and whether such is reasonable. Trips generated by other major development (yet to be built) in the area, as well as the directional distribution of these trips and their impact is not documented anywhere in the traffic impact study. Overall, trips and traffic from many different sources and places are melded together, making it impossible to determine cause and effect and making it impossible to determine whether the methodology, assumptions and the foregone conclusions arrived at in the DEIS are satisfactory.

Furthermore, the traffic impact study appears to include an inconsistency as it shows that portions of car traffic to the Amy's manufacturing facility and the Ver Hage Warehouse will be using Hartley Road (Figure III.H-16) even though the Hartley Road entrance/exit is designated for emergencies only. Similarly, a significant portion of traffic departing Amy's and the Ver Hage Warehouse is missing (Figure III.H-13 & Figure III.H-17) from the analyses, presumably using the Hartley Road Exit. We suggest traffic impact at the various intersections should be recalculated for any Final EIS documentation with the 100% of arriving and departing cars and trucks using the NYS Route 6/17M Entrance/Exist. Otherwise, clarification needs to be made on the usage of Hartley Road.

Traffic Impact Mitigation: The primary means of mitigating traffic impact in the DEIS for Amy's Kitchen is to stagger employee work schedules to off-peak AM and PM hours of the adjacent street (NYS Route 17M) and highway network as a whole. For Science of the Soul regional and annual events, the bussing, shuttling and carpooling of people along with police assisted traffic direction and special scheduling are the primary means of mitigating traffic impact.

We applaud these approaches to mitigation. Given current existing congestion, both recurring and episodic along the Route 17M / 6 corridor, the Town of Goshen should ensure that Amy's and Science of the Soul strictly adhere to these mitigating measures as part of site plan and special use permit approvals. Periodic annual or biennial approval of special permits for Science of the Soul may be warranted to ensure that traffic impact, as well as other potential environmental impacts are adequately mitigated.

Chapter III.J: Utilities and Solid Waste Disposal

The DEIS states that the use of photovoltaic roof systems are under consideration. We strongly urge the use of alternative energy to minimize the applicant's carbon footprint.The mandatory dimming of exterior LED fixtures is suggested.

Solid Waste Management:

Solid waste should be reduced at large events. The DEIS states that 39% of the 444 tons per month is recyclables and compost thus contributing 173 tons. Sludge is 41 tons. What comprises the balance (and majority) of the remaining 230 tons generated each month?

Chapter III.K: Land Use, Zoning, and Public Policy

The Town's Open Space and Farmland Protection Plan as well as the Southern Wallkill Biodiversity Plan emphasize the importance of unfragmented habitat in this area. The he applicant could consider using the existing Strong home or another location rather than constructing a new home and the necessary half-mile driveway – resulting in unnecessary habitat fragmentation for a very modest land use. For the same reason, the Applicant should preserve the 230 acres referenced as 'protected' in the DEIS with a conservation easement or related set of real estate conservation tools,

Chapter III.P. Cultural Resources

If the Applicant shifted the access road, it may be possible to avoid disturbing two archeological sites of interest rather than three as currently proposed.

Chapter III.Q. Agriculture

Located in the Hudson Valley, Amy's has an unique opportunity to develop a reuse program with the surrounding farmers so that pallets, sacs, crates and other transporting materials can be continuously reused. This will reduce the applicant's solid waste.

Date: June 10, 2016

Prepared by: Kate Schmidt & Fred Budde

David Church, AICP
Commissioner of Planning

-----Original Message-----
From: Jeremy Pearlman [mailto:jeremypearlman@yahoo.com]
Sent: Friday, June 10, 2016 7:56 AM
To: pgersbeck@TownofGoshen.org
Subject: Amy's Kitchen

Hello Ms. Gersbeck,
Good morning.

I had read in the Times Herald Record that if the public had any questions to send it in and they would be answered, though it didn't say to whom or to where to send them to. So hoping you can help.

I live on County Route 50, with my back of my house facing Echo Lake. I (along with several neighbors)am very close to that property that Amy's will be built on. I had a few questions:

1- everything I read about traffic wise, and traffic studies look at 17M. However , my concern is that County Route 50 will become a major pass through for the deliveries to and from Amy's. Especially for those going or coming from 17W. I also hope that no traffic will be routed on echo lake road.?What is the plan?
2- I'm concerned about the noise from the factory and vehicles, especially that this plant plans to operate 3 shifts. Again, in my reading up, I haven't seen this addressed anywhere. The area is currently very quiet at night , I would hate for that to change. And be disappointed if our concern is not addressed .
3- separately, I read how heritage trail plans to be built up and extend off Hearlty road to Middletown. And that employees can use it to access Amy's. Is there any place I can find the proposed plan of there the extension will actually be? The back of my house, the woods extend directly down to Echo Lake.

Thank you for taking your time to look into my questions. It sounds like Amy's is a great opportunity for the area, it's just I am in very close proximity to the proposed plant site and I do have concerns.

If I should forward this email or contact someone else , please let me know.

Thanks in advance,
Jeremy Pearlman

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, NY 13045

June 23, 2016

Mr. Graham Trelstad, AICP
AKRF, Inc.
Senior Vice President
Director of Planning
34 South Broadway, Suite 401
White Plains, NY 10601

Dear Mr. Trelstad:

The following comments are provided regarding the proposed Amy's Kitchen project totaling approximately 410 acres located between Echo Lake Road and New York Route 17M in the Town of Goshen, Orange County, New York. The U.S. Fish and Wildlife Service (Service) has reviewed AKRF, Inc.'s letter dated April 19, 2016, as well as the Draft Environmental Impact Statement (DEIS) dated April 29, 2016, and the Impact Assessment for the Indiana and Northern Long-Eared Bat dated April 2016. In addition, staff from this office participated in a conference call on May 31, 2016, to discuss those documents and this letter serves as a summary of our understanding of the documents and that conversation.

Project Description:

The project sponsor, Amy's Kitchen, Inc., proposes to construct a 369,000-square foot (s.f.) manufacturing facility to manufacture and distribute frozen food products on a 71-acre parcel, as well as a 200,000-s.f. open-air pavilion for annual conferences on a 195-acre parcel sponsored by Science of the Soul. Additional construction includes four restroom buildings (approximately 5,000 s.f. each), a two-story multi-purpose/family area building (approximately 80,000 s.f.), a two-story central building (approximately 38,000 s.f.), a maintenance barn (approximately 8,000 s.f.), two caretaker residences (approximately 2,400 s.f. each), a guest house (approximately 4,500 s.f.), and parking areas for approximately 2,043 cars and 130 buses; all associated with the open-air pavilion. Amy's Kitchen, Inc., also plans to construct an approximately 70,000-s.f. warehouse with an approximately 10,000-s.f. parking area and loading bays on an 11.6-acre parcel that would generate potable water.

The Amy's Kitchen portion of the project will be constructed in two phases, with full build-out anticipated by 2023. Estimated construction dates were not provided for the Science of the Soul facilities nor the warehouse use.

The Service is providing the following comments pursuant to our authorities under the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Endangered Species Act:

As you are aware, Federal agencies have responsibilities under Section 7 of the ESA to consult with the Service regarding projects that may affect federally-listed species or designated critical habitat, and confer with the Service regarding projects that are likely to jeopardize federally-proposed species or adversely modify proposed critical habitat. We understand that the U.S. Army Corps of Engineers (Corps) will likely act as lead federal agency for this project. Therefore, please make sure to forward any correspondence and documents regarding this project to the Corps so they can make a final determination of effects on federally-listed species.

There were five federally-listed species that were evaluated for impacts from this proposed project – the dwarf wedgemussel (*Alasmidonta heterodon*; Endangered), the Indiana bat (*Myotis sodalis*; Endangered), the northern long-eared bat (*Myotis septentrionalis*; Threatened), the bog turtle (*Clemmys* [= *Glyptemys*] *muhlenbergii*; Threatened), and the small whorled pogonia (*Isotria medeloides*; Threatened). AKRF, Inc., stated in the DEIS (section III.D-21) that no impacts were likely to occur to the dwarf wedgemussel, the bog turtle, and the small whorled pogonia as potential suitable habitat for these species was not found within the project area and/or surveys did not detect presence of the species. We have no further comments on these species for your consideration at this time. Please make sure to forward these determinations to the Corps so they can make a final determination of effects.

AKRF, Inc., identified potential suitable habitat onsite for the Indiana bat and northern long-eared bat. A known Indiana bat roost tree is within 2.5 miles of the proposed project area and, therefore, this project is within the likely home range of an Indiana bat maternity colony. In addition, an acoustic bat survey was conducted by AKRF, Inc., at three locations within the proposed project area between August 6 and August 15, 2015. Results of the survey indicated that both Indiana and northern long-eared bats were present on the properties. While it cannot be determined if either species was roosting within the properties based on the type of survey completed, we agree with your assumption that both species are likely using the site for foraging and commuting. In addition, they may be potentially roosting onsite as suitable habitat was identified.

The project would disturb approximately 151 acres of the 410-acre proposed project area and includes 48.9 acres of successional southern hardwood, 19.4 acres of successional shrubland, 79.2 acres of successional old field, 3.6 acres of shallow emergent marsh, and 0.1 acre of red maple hardwood swamp, much of which can be considered potential foraging and/or roosting habitat for both the Indiana bat and northern long-eared bat.

Direct and indirect[1] impacts were assessed for both bat species and several potential impacts were identified including directly killing/injuring of bats potentially roosting in trees during tree removal, and displacement of bats as a result of habitat loss and fragmentation, construction noise, facility operations, and lighting.

We understand that Amy's Kitchen, Inc., has agreed to implement several measures to avoid and minimize impacts to both bat species including:

- Conducting tree removal between October 31 and March 31, while bats are in hibernation;

- Centering the design layout within areas of existing successional old field and scrub-shrub to minimize tree removal and encroachment into wooded areas;

- Implementing best management practices for outdoor nighttime lighting by using motion sensors and dimmers, lower pole heights, and using downward directional lighting;

- Minimizing nighttime operation of the Science of the Soul open-air pavilion by ending activities by 9:00 p.m.;

- Implementing orchard-style parking where parking areas would be heavily planted with trees and have impervious surface, and be kept mostly unlit; and

- Approximately 160 acres of successional southern hardwood forest, floodplain forest, red maple-hardwood swamp, and beech-maple mesic forest would be protected by a conservation easement for potential foraging and roosting habitat for bats. In addition, approximately 17 acres of old field, 12 acres of shrubland, 5 acres of sedge meadow, 2 acres of shallow emergent marsh, and 62 acres of cropland would be preserved as potential foraging habitat for bats.

While many adverse effects will be avoided, others will only be minimized. As mentioned above, the Service hosted a conference call on May 31, 2016, with staff from AKRF, Inc., Corps, counsel from Amy's Kitchen, and the New York State Department of Environmental Conservation (NYSDEC) to discuss AKRF's reports. Several outstanding information needs were discussed during the call and are outlined below:

- A shapefile of the proposed project that overlays where the developed areas are planned with the locations of the three acoustic detector placements;

- A map that identifies where all of the proposed preserved parcels are located;

- Details as to how the proposed preserved parcels will be protected;

[1] Indirect effects are those that are caused by the proposed action and occur later in time.

- Information pertaining to the long-term maintenance of the properties, especially around waterbodies, including the use of pesticides;

- Information pertaining to the potential for future activities at the Science of the Soul open-air pavilion and whether activities may go beyond the 9:00 p.m. end time;

- Details on the proposed project phasing that includes construction of the warehouse and the Science of the Soul facilities;

- Details pertaining to wetland impacts, particularly impacts for sewer and watermain placement (*i.e.*, how much impact, water quality control measures); and

- Details as to whether buffers will be maintained around onsite wetlands and the amount.

As adverse effects are anticipated, the above information needs will help the Corps and Service complete our required analyses and consultation procedures.

As you are aware, the most recent compilation of federally-listed and proposed endangered and threatened species in New York is available for your information.* Until the proposed project is complete, we recommend that you check our website every 90 days from the date of this letter to ensure that listed species presence/absence information for the proposed project is current.

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the ESA. This response does not preclude additional Service comments under other legislation.

The above-listed species are also listed by the State of New York. Any additional information regarding the proposed project and its potential to impact listed species should be coordinated with both this office and with the NYSDEC.

Thank you for the opportunity to comment on this proposed project. Please contact Noelle Rayman-Metcalf at 607-753-9334 if there are any questions regarding this letter and reference file number 140645.

Sincerely,

FOR David A. Stilwell
Field Supervisor

*Additional information referred to above may be found on our website at:
http://www.fws.gov/northeast/nyfo/es/section7.htm

cc: Town of Goshen Planning Board, Goshen, NY (L. Bergus)
NYSDEC, New Paltz, NY (Env. Permits and L. Masi)
NYSDEC, Albany, NY (C. Herzog)
USACOE, New York, NY (B. Orzel)

UNAPPROVED MINUTES
Town of Goshen Planning Board
Town Hall
41 Webster Avenue
Goshen, New York
May 31, 2016

Members Present:
Lee Bergus, Chair
Reynell Andrews
Phil Dropkin
David Gawronski
John Lupinski
Giovanni Pirraglia

Also Present:
Sean Hoffman, P.E. PB Engineer
Kelly Naughton, Esq. PB Attorney
Neal Halloran, Building Inspector
Richard Golden, Esq. PB Attorney
David Crawford, Alternate Member
John Canning, PB Traffic Consultant
Ralph Huddleston, Environmental Specialist

Absent: Dr. Kris Baker

The Planning Board meeting was opened at 7:30 p.m. by Chairman Lee Bergus.

Amy's Kitchen, Inc.

Mr. Dropkin recused himself. David Crawford joins the Board. John Canning joins the Planning Board consultants.

Representing the applicant: Graham Trelstad (AKRF); Larry Wolinsky, Esq. (Jacobowitz & Gubits) and Mark Rudolph

Mr. Bergus stated that this public hearing is part of the SEQRA process, and from the scope the DEIS was developed. The DEIS was deemed adequate for public review by the Planning Board, and after the close of the public hearing, there will be 10 days to submit written comments to the Building Department. These can either be comments that people did not speak on this evening or thought about when you went home. After that is complete, the comments would be passed along to the Applicant to draft the FEIS. Once the FEIS responds to all of the comments that the Planning Board deems appropriate, then there will be a SEQRA Findings Statement.

Mr. Golden stated that for those individuals that are not used to the process, he just wanted to make it very clear: this is the public's big opportunity to comment on the environmental issues involved and the site plan for the Planning Board's consideration. Whatever comments are said tonight will be taken down verbatim and the Applicant will have to respond to all of those questions in the FEIS, the Final Environmental Impact Statement. There will be an answer in that document. If you have questions, rather than just comments, they will not be able to be answered tonight, because they may have to be looked into. If questions can be answered, and

the answers are readily available by the consultants, we will try to do so, but otherwise they will be answered in the FEIS.

Mr. Bergus introduces the Planning Board: John Lupinski, Giovanni Pirraglia, Reynell Andrews, David Gawronski, and David Crawford. Mr. Bergus introduced Neal Halloran, the building inspector; Rick Golden and Kelly Naughton, the attorneys; Sean Hoffman, the engineer; Ralph Huddleston, the environmental specialist; John Canning, the transportation expert; Douglas Bloomfield, the Town Supervisor; Ken Newbold, Town Board member; Phil Canterino, Orange County Legislator; Mark Kalish President of the Goshen Chamber of Commerce, and recognized representatives from Assemblyman James Skoufis and Senator Kirsten Gillibrand's offices.

Mr. Wolinsky stated his name, and that he is a land use attorney. We are here for the public hearing for Amy's Kitchen and Science of the Soul. We are going to do a very brief presentation, and as Rick Golden said we have a stenographer here who will take down the comments, and we are required to respond to them under SEQRA as part of the FEIS. Mr. Wolinsky introduced members of the project team: Mark Rudolph (CFO and VP of Development), Tom Richmond (SoS), Graham Trelstad and Ashley Ley (AKRF and primary authors of DEIS), Phil Grealey from Maser, John O'Rourke (Lanc & Tully).

Mr. Trelstad presented a summary of the project. Tom Richmond summarized the Science of the Soul operation. Mark Rudolph discussed Amy's Kitchen's and the economic benefits of the project.

Mr. Bergus opened the floor for comment from the County Executive.

Count Executive Steve Neuhaus stated that this project came in about a month or two after he took office. We do not see manufacturing jobs anymore. This is a family run company. Many people went out to CA to see the operation. This is a positive for Orange County. Look what's going on in southern Orange County. To have a big company coming in here and providing manufacturing jobs is a great benefit. I honestly think that this is a good company. What that property is generating today, compared to what it will be when they start building… I have seen people leave because the jobs aren't here. This is good for the community, and this is a positive. The Mayor of Middletown and Goshen are talking about developing the Heritage Trail. That's going to be a means for people to travel to work on; it's a positive development for the community and the County.

Mr. Bergus requested the consultants' comments.

Mr. Huddleston stated that he had a number of comments, but a number of the comments were editorial, so he would like to get into the technical aspects for the Board. Basically, the DEIS states that there are three potential areas of wetland impacts along utility lines along Heritage Trail. The Applicant was going to delineate those when they were building it, but it should be done prior to final design so the potential for impact or avoidance can be assessed. The final design of the Wallkill River Bridge drainage has not been completed. There were

several methods for how the Applicant was going to handle the run off for that. The Planning Board would benefit from seeing a complete design of the bridge. The DEIS states that no Federal wetlands were impacted by the access road, but the drawings show one. The Applicant spoke with the DEC about the wetlands, but there are small pond-like systems that are being impacted by this. He thinks the Planning Board may want the Applicant to look at these ponds to see the impacts during the breeding season for amphibians. The DEIS states that the data for vegetation and wildlife was collected mostly during May and June. That is not how the Planning Board has handled the review in the past, and the Board might want the Applicant to do the inventories as the review process goes on. This would include the other seasons, and there could be a solid baseline. Also there was a comment in the DEIS that the reptiles and amphibians would be caught and relocated. Mr. Huddleston would like to see the methodology. The DEIS should discuss some species whose habitat will be removed, such as deer and raccoon. Cultural resources – the Applicant is doing a good job, but Mr. Huddleston requests that the Applicant notify the Town Board when the programs have been completed, to confirm completion and where and when that information would be available to the public and to the Board. Under "Construction", Mr. Huddleston requested that "construction activities" be defined – does it include warm-up of vehicles, etc. The Planning Board had discussed maintenance and repair to Hartley Road, but now the Applicant is not going to do anything to that road. Mr. Huddleston wants to make sure that is acceptable. Lastly, the DEIS does not address the loss of existing and future wildlife associated with construction activities and habitat loss in the "Unavoidable Adverse Environmental Impacts" section.

Mr. Canning stated that, as you know Route 17M is a busy corridor. The traffic impact study was thorough and detailed. Mr. Canning has distilled the study down for the Planning Board in his report. The Applicant has proposed a substantial number of mitigation measures, including the relocating of the driveways, the installation of the traffic light, turn lanes, stop signs, yield signs, etc. Mr. Canning's recommendations to the Planning Board are that the Applicant examine and explain the optimal time for shift changes, because there is a lot that happens on Route 17M in the afternoon. The Applicant should see how they can best get the work schedule to coincide with the traffic patterns. Mr. Canning requested that a back up plan for Science of the Soul be included. The DEIS states that 40% of attendees will be brought by busses, but in the event that this is not successful, the Applicant should see if they can secure parking locations from which people can be bussed to the site.

Mr. Hoffman stated that he reviewed the DEIS and looked at earthwork, stormwater, etc. He has filed a 10-page memorandum with the Building Department and the Planning Board. Building off of the parking raised by Mr. Canning, he looked at use of Strong Farm for extra parking, but there could be a deficit of 1,160 spaces. The Planning Board needs to see how those cars will be handled on the site, and how will the volunteers be getting from the Strong Farm to the site. He had a few items on phasing, and Mr. Hoffman stated that he understands that there are two phases proposed for the manufacturing plant. His understanding of the project timeline is that Phase 1 of Amy's Kitchen will be completed in 18 months, but Science of the Soul may take longer. The Applicant should consider a phasing plan, so that Amy's Kitchen can be operational while Science of the Soul is still being constructed. He would also like to see

the impact of the height of the water tanks that may be necessary. Stormwater is regulated by the Town and DEC requirements. The DEC permits a waiver if the discharge is to a fifth order stream. Mr. Hoffman's recommendation is to consider the downstream impacts prior to granting a waiver out of hand.

Mr. Huddleston stated that in the "Agriculture" section, the DEIS stated that the Strong Farm will remain as active farmland. The Board may want to consider asking for a dedication or easement stating that the property remain as farmland.

Mr. Golden stated that his office has nothing at this time.

Mr. Bergus asked the Planning Board if they had any additional comments that have not been made already throughout this process.

Mr. Lupinski stated that he had a couple of concerns. The "Agriculture" section should contain a little more detail about the vegetables that are being included and the tests that were done. A number of growers out there have expressed a concern about the labor problem. Labor is in short supply. Farmers pay more than minimum wage because they have to. The growers are very concerned that the laborers are going to go somewhere else. Could the Applicant please deal with that issue?

Mr. Bergus instructed the public that the Town will pass around the microphone; please introduce yourself and state your name.

Bill Fioravanti, Director of Business Attraction for the Orange County Partnership stated that he has been working on this project for about 2.5 years. This will bring over 700 jobs to Orange County, but he would rather focus on what an outstanding company this is. A local contingent got to go out to CA and got to know the owners and the operation there. His first observation was that this was an outstanding employer. You could see the pride in the workers and the management. The rapport that the owners had with the staff – it was a mutual admiration and respect. We got to see the health clinic that is there for the employees and their families for $5. The people are outstanding. We were invited to the Berliners' home, which was an incredibly modest home that they have lived there for 40 years. This has not been the simplest process, but Amy's Kitchen has kept their word throughout the process. We asked Amy's to pledge that the manufacturing center would be built before Science of the Soul, and they have honored that. They want to do whatever they can to help the community.

Jerry Boss stated that his interest is in the Strong Farm. We talk about raising crops and agriculture on the farm, but then it is going to be used for parking of 1,000 cars during various events. Mr. Huddleston made a good point of keeping the farm a farm. Does this interfere with the various events Science of the Soul will have?

A. Zuckerman from Chester stated that his family built the industrial park. Regarding Amy's Kitchen, the philosophy of the company is one that the Planning Board should consider for

approval. Part of the Comprehensive Plan for the County concerns farmland, and it is one section of the plan that is being working on. We are discussing raising farmers. Orange County has 43 milking farms, and a decent amount of milk product. We also have a company that is a producer of dairy product. Amy's Kitchen has gone out of its way to minimize impacts, which is very important. The water and sewer is being provided by Middletown. The Heritage Trail is adjacent to the utility lines, and this does not encroach on anyone's land. We are looking to support local farms.

Supervisor Bloomfield stated that this company is owned and run by the Berliners. Mr. Bloomfield worked for DuPont. Andy Berliner was at a meeting and explained the operation of the company. They do not have a Board of Directors; they are not owned by anyone. They do what they think is right for the employees. Almost all the employees that they started with are still there. That does not happen for big businesses, like DuPont. As the Town Supervisor, Mr. Bloomfield does not think that the Town could find a better group of people to work with.

Chris Pennings stated that he was born and raised here. He is a third generation farmer. Most of his family is in agriculture. He was approached by Amy's Kitchen, and he went out to CA and had a unique glimpse at how they treat their workers – the nurturing of their employees and the laid back aspect. This is a company that makes food; the Town cannot turn its back on these kinds of opportunities. The impact is going to bring inner city challenged communities hope. This will bring our two major cities back. This is one of our better chances to get Middletown and Newburgh back to prosperous cities.

Lynne Cione, the Executive Director of the Orange County Chamber of Commerce, stated that she lives in Goshen. Amy's Kitchen has been gracious to us. We have heard of the amount of taxes that will be paid, and the economic impact of this project. We have pressures on us that no other community in Orange County has due to the County, Town and Village buildings. As a taxpayer, this is a great opportunity in the Town. Amy's Kitchen has come in and has hired people from this community already, and has sought to be a neighbor and to integrate itself with the community. The respect that this community has for its history has been respected by Amy's Kitchen. As the President of the Orange County Chamber, I see a lot of people come in and want to be part of Orange County. This is a good project and will help us recapture part of our tax base, and I think this is a wonderful project.

Betsy Dunlevy stated that she is curious about the farm aspect, which she thinks is wonderful. There are very few organic farmers in our area and in our County. The certification process for organic is costly. Is Amy's Kitchen planning on helping local farmers become organic so they can be utilized by Amy's Kitchen? She would rather eat something that has not been treated by pesticides. It would be wonderful if Amy's Kitchen would help farms become organic, and that the Strong Farm crops will be organic. Isn't there a garbage transfer station on Hartley Road and will it have an impact on Amy's Kitchen?

Mark Rudolph stated that Amy's Kitchen is working with the Rodale Institute, which is providing grant money to the local farmers to learn how to convert to organic farmers and along to convert to organic farms.

Mr. Golden stated that if there is no one else to speak, the Planning Board will be closing the public hearing.

Mr. Bergus stated that if you do not have comments for us, we will be closing the public hearing. The public will have ten days – until June 10 – to submit written comments to Building Department as well.

VOTE BY PROPER MOTION, by Mr. Pirraglia, seconded by Mr. Lupinski, to close the public hearing. Unanimously approved.

Mr. Andrews	Aye	Mr. Gawronski	Aye
Mr. Bergus	Aye	Mr. Lupinski	Aye
Mr. Crawford	Aye	Mr. Pirraglia	Aye

Mr. Bergus thanked the public for joining the Board and contributing in the process.

VOTE BY PROPER MOTION, by Mr. Andrews, seconded by Mr. Pirraglia, to adjourn the meeting. Unanimously approved.

Mr. Andrews	Aye	Mr. Gawronski	Aye
Mr. Bergus	Aye	Mr. Lupinski	Aye
Mr. Crawford	Aye	Mr. Pirraglia	Aye

CHAIRMAN BURGUS: I would like to call this meeting of the Planning Board to order. If everyone would be please for the Pledge of Allegiance.

(Pledge of Allegiance.)

CHAIRMAN BURGUS: Thank you. First off, I'd like to thank everyone for joining us here this evening for this special meeting. We're here for a public hearing on the DEIS and site plan for Amy's Kitchen, Science of the Soul. The public hearing is a part of the process, the SEQRA process. Moving along, we've adopted a scope. From that scope the DEIS was developed. The DEIS was deemed complete by this Board, available to the public for review. The next step was to be and is to be the public hearing where we're at today.

At the commencement of the public hearing -- once we do close the public hearing, there will be an additional period of time, ten days, for the public to introduce written comments. They would come to the building department.

MR. GOLDEN: Yes. June 10th is going

to be the last day.

CHAIRMAN BURGUS: June 10th would be the last date for submitting any written comments that you might have, either comments that you didn't get to speak on today, maybe you didn't want to stand up and speak, maybe something you thought about when you went home. So June 10th would be the deadline on that. That would come to the building department. After that's complete, then all the comments will be passed along to the applicant and their consultants for a rewrite on the DEIS to create the final environmental impact statement, the FEIS. Once that is complete and deemed responsive to all the comments as appropriate, then this Board would then come up with a Findings Statement which would then be memorialized into the approval for the project when that time arises.

MR. GOLDEN: For those that are not used to the process, again just to make it very clear, this is the public's big opportunity for not only the environmental issues involved but also all the issues related to this site plan that's before the Planning Board for their

consideration.

The way the process will work is that whatever comments are said tonight, they're going to be taken down verbatim and in a transcript, and the applicant will be required to respond to each and every of those questions in the Final Environmental Impact Statement. So there will be an answer to everything that's raised this evening with respect to questions. Many of the questions, if you have questions tonight rather than just comments, they will not be able to be answered tonight because they may need to be looked into to decide what the proper answer would be to that question. If there are questions that are readily answerable, either by the Planning Board's consultants that are sitting up here or the applicant, we will try to provide those answers that are readily available. But for most of the questions, we'll just take the questions down and there will be an answer given in the Final Environmental Impact Statement.

CHAIRMAN BURGUS: Just for those of you who don't know us, your Town of Goshen Planning Board, we have John Lupinski; Giovanni; myself

Lee Burgus, Chairman; Reynell Andrews; you have Dave and Dave Crawford. We have two Daves at the end. Then our building inspector, Neil Holloran on the wall; we have counsel, we have Rick and Kelly; our town engineer, Sean; next to him we have Ralph Huddelston, our environmental specialist; and John Canning, our transportation expert on the wall as well. On the left-hand side we have our town supervisor, Doug Bloomfield; Kennie Newboe, town board, hiding behind the door. Who else do we have here? Phil, Orange County Legislator here. Anyone else that we have from the public? We have Mark Kaylik which is our Goshen Chamber of Commence president. Of course we have our applicants and their consultants. Who else is here that I haven't mentioned that should be mentioned? I should mention everybody but I don't know everyone's name. So absent that --

MR. GOLDEN: We have a representative from Skoufis's office.

CHAIRMAN BURGUS: We have a representative from -- someone from Skoufis's office standing on the wall next to Kennie

Newbot. And Senator Gillibrandt's office, we have a representative as well. We're very well represented this evening. I'm thankful everyone came out.

I'm going to pass this on now to Mr. Wolinsky and he'll introduce the applicant and his staff.

MR. WOLINSKY: Thank you very much, Mr. Chairman, Members of the Board, Consultants. My name is Larry Wolinsky, I'm a land use attorney working on this project.

We're here, as Mr. Golden and the Chairman said to you, tonight for the public hearing for Amy's Kitchen and Science of the Soul. We're going to do a very brief presentation because, as was mentioned to you earlier, this is a night for the public to get its comments out. So we understand there are many supporters here tonight. We appreciate very much your presence. There are those here that also would like to substantively comment on the document. As Mr. Golden said previously, we have a Stenographer here who will take down all of those comments, and we are required to respond to them under the

State Environmental Quality Review Act regulations as part of the Final Environmental Impact Statement for this project.

So what I'd like to do first before I turn it over, is to introduce the members of our project team who are here tonight. So from Amy's Kitchen we have Mark Rudolph who is the CFO and vice president of development. Many of you have met Mark already. Representing Science of the Soul and its point person for this project is Tom Richman. We have Graham Trelstad and Ashley Leigh from AKRF who are the primary authors of the Environmental Impact Statement that is before us this evening. We have Phil Grealy, our traffic consultant from Maser Engineering. Finally John O'Rourke with the civil engineering firm of Lanc & Tully.

So at this point in time and without further ado, I will turn it right over to Graham who will do a brief presentation, and then he will be turning it over to Mark and Tom for further brief comments before we can get to the public.

Thank you.

MR. TRELSTAD: Thank you, Larry. Thank you, Mr. Chair, Members of the Board. I will try to keep this brief because I know we do want to get to the public comment. It's hard to summarize briefly an environmental impact statement that is this thick with four volumes of appendices, all of which are available on the Town's website should you choose to read it. I'm going to have to stand here.

MR. WOLINSKY: Do you want to sit here?

MR. TRELSTAD: Maybe I could sit here. Pardon my back.

All right. I'm going to just take you through the project summary here just to orient everybody and then get to some of the issues we included in the DEIS.

The project is a combination of both the Amy's Kitchen manufacturing facility on what is known as the ver Hage property, which I'll show you on the map in just a second. It's a piece of property on Hartley Road. We also subdivide approximately 11.6 acres from that property to create a future warehouse use, a 70,000 square foot warehouse use.

The Science of the Soul conference center will be located on the Echo Lake property, which is on the west side of the Wallkill River, which I'll show you in a second. That's about 195 acre parcel. Science of the Soul also owns the Strong Farm property on Owens Road which will be continued to be used as an argicultural use. They have crop land there now and some open meadows and volunteer parking for their national event which will be held once a year for three days.

The proposed project will be receiving potable water supply and sanitary wastewater treatment from the City of Middletown. At one point we were looking at various locations for water supply and it became apparent it would be easier to dig one trench and have the sanitary wastewater and the water supply coming from one location. That's why it's coming from there.

Then we have access, which I'll show you in a second, from New York State Route 17M. There we go. Let me just move this chair slightly. There are several properties that comprise the project site as shown here. The

Amy's Kitchen will be on the ver Hage site which is a combination of two tax parcels here. Hartley Road is down right. New York State Route 17M and Route 6 is right here. You can see the Wallkill River runs between these properties. This is the ver Hage property where the Amy's Kitchen site would be. This is the Echo Lake property. It comprises two pieces right there. The extension on this side is approximately 195 acres. This is where the Science of the Soul conference center would be.

We are seeking a transfer of between seven and ten acres of land from the New York State Office of Mental Health which owns the Mid-Hudson Psychiatric Center here which is accessed off of 17M. It would be transferred to the Town and there would be and agreement between the Town and Amy's Kitchen to allow for road access across seven to ten acres, into the Echo Lake property so we can get access to 17M.

I mentioned the Strong Farm up on Owens Road here. Owens Road, Chechunk Road as it comes down to Echo Lake Road. This is the Strong Farm that would be maintained by Science of the Soul

for agricultural use. Amy's also does own the Lipoff property which had been previously looked at for a potential well site but we won't be using that.

We also have identified in the DEIS the Heritage Trail utility corridor. The Heritage Trail currently comes from the Village of Goshen to Hartley Road, and that's where the multi-use trail stops. The County is currently planning some design work to extend that trail from Hartley Road all the way to the City of Middletown. What we'd like to do is build the water and sewer lines in advance of that such that when the trail is ready and open for use we wouldn't have to come and disturb it. That's about a two-and-a-half, three mile stretch to the City of Middletown. The City of Middletown wastewater treatment plant is about here. We would have to come in off the Heritage Trail following an extension of the line where their sewer outfall is currently located to bring our water and sewer line to the site.

Here's the overall site plan showing the Amy's Kitchen manufacturing facility,

approximately 369,000 square feet on the 60 acre remaining portion of the site. The 70,000 square foot warehouse use would be located right here. The Science of the Soul conference center would be located here in this area. There's an open air pavilion, approximately 200,000 square feet. Several other buildings that would service that building. This is the main access road coming in off of Route 17M. So site access for both Science of the Soul and Amy's Kitchen would be from this main road which would come up here. Amy's Kitchen traffic would come down the hill and cross a new bridge which Amy's would construct. This is a bridge across the Wallkill River. Amy's Kitchen would construct that as part of the initial stages of construction so that all of Amy's Kitchen traffic, employee traffic and truck traffic, would come in and exit to 17M. There are emergency accessways on Hartley Road into Amy's Kitchen and into the warehouse use, and there's an existing driveway to the Echo Lake property from Echo Lake Road which would be used for emergency access only.

The DEIS that I showed you before

covered a wide range of issues. This is basically the whole list of issues. We covered the gamut of all the natural resources including geology, soils, water supply, wastewater, wetlands, vegetation, wildlife. We do have Indiana Bat and Northern Long Ear Bat on the property, and so we've done some acoustic surveys and we've additional analyses on those species. We have that information contained in the EIS.

We have a very detailed traffic analysis. Phil Grealy and his company did a detailed analysis of both the Amy's Kitchen and Science of the Soul activities. There's also a special event management plan or a special event traffic analysis showing the traffic conditions that would exist during the annual conference, the 12,000 people that would arrive for three days. So we have a detailed description of that as well.

We have a description of all of the community facilities in Town and a discussion about emergency service provisions. We've met with the emergency service providers, they're aware of the plans. Science of the Soul has

discussed with them the various practices that they've used in other locations and how that could be handled here in the Town.

We also have a very detailed fiscal analysis. Mark will talk on some of the high points of that as well.

We did a visual impact assessment from a number of locations from around the area, including the Owens Road scenic corridor. We do know we are adjacent to the Al Turi Landfill, so we have a very detailed environmental contamination chapter where we look at all the history of the Al Turi Landfill and the possible issues that might arise from that, and we have a great deal of studies. In fact, one of those whole binders is devoted to the detail there.

We have a lot of resources -- information on cultural resources. Believe it or not, there are a number of archeologically sensitive sites within the area, and so we have very detailed reports on where those might be and what measures must be taken, and we've reached out to the State Historic Preservation officer to begin that process as well.

You can see the rest of the list of studies that we have in the DEIS. Quite a comprehensive list.

The property is located in two zones, the industrial zone here. This is the ver Hage property where the Amy's Kitchen would be. This is a permitted use in the Town's industrial district. The Science of the Soul property is actually in two different zoning districts, the I district here on the eastern side and the CO district, the commercial overlay -- commercial/ office. Both uses are considered permanent uses. The Science of the Soul conference center would require a special permit from the Planning Board because of it's status. The warehouse use, which would be located in this corner of the ver Hage property, would also require a special permit from the Planning Board.

This is a drawing which was also included in the DEIS of the proposed roadway improvements on New York State 17M which is running east/west at this location. We had proposed to create a new access road in this general location and realign the County's

training center lane road on the south side of New York State 17M and then install a traffic signal at this location to help make those maneuvers in and out of the project and in and out of the County's facility here. We would also close this existing driveway to the Mid-Hudson Psychiatric Center and have them come in through this new accessway here too. So that would help minimize some of the conflicts that you might see in this corridor. We know how busy traffic is along 17M, so we proposed to realign this and signalize it. We couldn't have an access road closer to the Wallkill River where we actually own property because of it's proximity to the Wallkill and to the bridge here. The bridge abutment would preclude that from happening in a safe manner. We've reviewed these plans preliminarily with New York State DOT and we've begin to have more detailed discussions on those as well.

This is the Amy's Kitchen layout with the main manufacturing facility here. Employee parking -- I need to check my cheat sheet. Employee parking of 642 parking spaces for

employees and 49 spaces for visitors.

We have loading docks. We have 20 to thirty bays available for loading at the facility.

I mentioned the emergency access ways to Hartley Road are here.

There's also an on-site 3,000 square foot clinic. Amy's Kitchen provides medical care for all of it's employees and families, and so that clinic is on site.

Amy's would run three shifts, approximately 320 people during the day shift, 304 people on the swing shift and about 56 people on the graveyard shift, overnight shift. So at any one time you have about 325 people on the site. In total, with phase 1, Amy's projects approximately 459 full-time employees, and then with full buildout, the 369,000 square feet, Amy's is projecting 681 full-time employees at this location. As I said, about 325 during any one shift.

These are some renderings that were prepared by the project architect of what the building would look like. This is taken from the

northwestern side of the building showing the main entrance with office spaces and some visitor parking. This is the small clinic. This is the manufacturing facility. This facility is largely similar to a plant that Amy's currently has in Medford, Oregon. I'll show you some pictures of that in just a second. This is another view of this at the northwestern end of the parking lot.

The Heritage Trail does pass by this property, and you might be able to see views similar to this, although not directly associated with this, this is right on top of the parking lot, but pulled back a couple hundred feet and you'd be able to see the same angle. We didn't show any of the on-site landscaping but that would help cut down the view as well. These are photographs of the Amy's Kitchen plant in Medford, Oregon showing the same type of construction, showing the same kind of sage green tile-up panels that would be installed here. It's a very easy construction process with concrete and the tilt-up panels themselves. Lush landscaping in the parking lots and places for people to sit. You can see some bike racks in

the very front of the location.

This is the pre-treatment facility that they have at the Medford, Oregon plant. Because of the high biological oxygen band that Amy's Kitchen will produce in terms of it's wastewater, Amy's will have to be an on-site pre-treatment wastewater facility that would look very similar to this, and then the pre-treated wastewater would be conveyed to the City of Middletown plant for final treatment and disposal in the Wallkill River through the existing outfall that's there now.

This is an image of the gate and the signs at Amy's. We have something very similar at this location.

Switching over to the Science of the Soul site, the whole conference center is located on a mined area on the property. The 200,000 square foot open air pavilion is a large shed like structure open to the air which is where the main conference event would be. There will be an open lawn area for people to gather and additional seating. Not everybody can fit in the 200,000 square foot facility. There will be

restroom facilities on on either side, four buildings on either side which provide restroom facilities.

There's an approximately 80,000 square foot multi-purpose building here, two-story multi-purpose building. I'll show you pictures of similar architecture in Cataluma where they have an existing conference center. And then a central building of about 38,000 square feet which would be used for administration, smaller meetings, et cetera.

There will be two caretaker residences, one at this location where the access road comes up and branches off for Amy's into the Science of the Soul. So there will be a caretaker residence here and a caretaker residence here. There will be a maintenance barn at this location.

Science of the Soul relies a lot on volunteer labor and they've got wonderful grounds that they maintain. They use a lot of equipment that will be stored in there. Then there will be a driveway to a five-bedroom guesthouse that will be used for visiting dignitaries for the national conference.

The Science of the Soul has a combination of approximately 2,043 parking spaces, many which will be contained in this larger area here which will be a combination of what we call orchard parking, which is parking under trees on a grass or gravel surface, and then there will be some paved. There's also parking spaces here for 130 buses. As is described in the DEIS, the Science of the Soul volunteers run a very rigorous program of getting people into and off the site and working with area lodgers to make sure everybody is launched appropriately. They come to the site in buses and in carpools, to the extent possible, to minimize the impact to the community.

In general the conference center will be used for one national conference of three days where approximately 12,000 people would attend. There would also be a second regional two-day conference once a year where between 1,200 and 2,000 people would attend. On a weekly basis, on Saturdays and Sundays there would be between 200 and 400 people there for regular meetings or worship services, much like any house of worship

you'd see in this area. On a daily basis, a typical weekday basis you might see 10 to 15 volunteers at the site doing various chores or tasks.

These are images of the Science of the Soul location in Pedaluma. This is the large central pavilion which is smaller than -- is that right, Tom? It's smaller than what is proposed here. They also have this structure here, it's a temporary structure. The poles are permanent but then they have fabric that's stretched across to enclose that space. You can see the open lawn with walking paths where people will be sitting. You can also see there's a natural incline on that. It's kind of like an ampitheater. The same thing would be proposed here.

You can see the outter buildings which are used for services or kitchens, and the barns which would be similar to what we propose here.

Other pictures from the Pedaluma area. This is the orchard parking. You can see cars parked under trees. There are other active orchards where they have olives. We're not proposing olives here in Goshen because of

growing conditions but there might be other crops that the volunteers could harvest for their use.

Accessory buildings on the property, very similar nature. One to two stories, maybe a sloped metal seam roof, and obviously the maintenance barn would have all the equipment that the volunteers would need for the maintenance throughout the property.

I'll turn it over to Tom Richman who can cover some of the more details on the program for Science of the Soul.

MR. RICHMAN: Thank you, Graham.

I want to thank everybody for your warm welcome. I think Graham touched on this. I'll just repeat it briefly so that -- the question is what actually happens here at the center. There will be one annual conference for three days. It's a Friday, Saturday, Sunday or Saturday, Sunday Monday. Typically it's in the summertime. People come for, you know, a couple hour lecture basically. So an hour or two of arrival, a couple of hour lecture and then they leave. The economic benefit of that is not small. People come from all over. They stay in hotels. That

happens once a year. Then one other time in the year, maybe in the spring or the fall, there would be a regional gathering where people come from just around the northeast, maybe 1,200 people, maybe 2,000 people. That's on the Saturday, Sunday. Typically it starts midday Saturday, ends Saturday afternoon and then it picks up again Sunday morning and finishes midday or early afternoon on Sunday. Like any other house of worship, there might be a Sunday morning regular meeting for a couple hundred people. During the weeks volunteers would come and work on the weekends. There might be a couple hundred people working on the weekend, 100 people, they come from the city and get some fresh air, work in the garden, maintain the buildings in the spirit of fellowship and openness. Then during the week it's very quiet. There's nothing happening there basically.

The last thing I'll just say is that the Strong Farm is a beautiful historic farm which we've also purchased as part of this project. It will be maintained in agriculture. We hope to enhance the agricultural production.

Many of our members have an agricultural background.

We have other centers. For example, in our center in Toronto we have volunteers that grow thousands of pounds of food every year. Some of it is used to feed our own volunteers but much of it is donated to local food kitchens and other service organizations.

So that's the program for Science of the Could. That's what will be happening on this property if we get our approval.

Now I'll introduce Mark Rudolph, the CFO of Amy's to talk a little bit more about Amy's.

MR. RUDOLPH: I just wanted to highlight some of the economic benefits of this project. To start out with, we've been at this for a number of years. It's taken awhile. When we started we were about 550 billion dollars in sales. Sixty percent of that volume is shipped to and consumed here on the east coast. It's all made on the west coast. That's kind of the impetus for us coming in this direction.

The project itself, as you can see, is

going to generate a lot of economic activities, whether they're construction jobs, operational jobs in the facility itself, construction wages, just general spending. This plant is going to need other services, whether they're supplies or, you know, contracts for HVAC, whatever. Just supplies and services. Between that activity and taxes, it's a significant impact to the region.

Additionally we talked about the potential of millions of dollars a year in organic agriculture. That's our largest consumable item. We had some work to do to determine whether we could grow organic agriculture here in the kind of volumes we need and the kind of quality that we need. Over the last couple of years we've had an opportunity to do that. We've been working with Cornell University and we have actually planted crops in the region. We've qualified those crops. We've actually taken some of that product, shipped it to California and used it in our production. So we've made some significant advances on the ability for us to grow organic crops in the region. We're currently working with Cornell on

working on the dairy part of our business. We consume a lot of dairy. There's dairy to be had here. Again, we have high standards. We have cheese. We're a vegetarian company and we have requirements with cheese production that don't include any kind of animal product, like rennin which they use in cheese manufacturing.

In addition to this we are going to be generating a lot of taxes, whether it's property taxes or income taxes. But once we get through this Pilot program we're going to be looking at about two and a quarter million dollars of property taxes a year, one-and-a-half million of that would go to the schools which is currently getting $60,000. Just over $100,000 would go to the fire department that's currently getting about $4,000. So between that and the corporate income taxes that we generate, it's going to be roughly $5,000,000 here of economic benefit.

MR. WOLINSKY: Mr. Chairman, Members of the Board, that concludes the applicant's presentation. We'll turn it back over to you.

CHAIRMAN BURGUS: Thank you very much.

Before we get started with our

consultants, I'm sure they have a few comments to offer to this public hearing, I'd like to introduce our county executive. I saw him up in there. Steve Neuhaus. I know he has a few comments he'd like to make regarding this project.

MR. NEUHAUS: I apologize for coming in. We have the town supervisors and mayors meetings tonight at the same time.

This project came in about a month or two after I took office. In my opinion, I think it's a good project for Orange County. Manufacturing jobs are something we don't see any more, and these folks -- I met with Andy Lerner and his whole family from Amy's Kitchen. They're the real deal. It's a family run, for the most part, company. Many of the people in this room I see I know are going to speak as well, went out to California, I didn't, to see the operation, to talk about how they treat their employees. I think that it's a positive for Orange County.

I come from southern Orange County. Many of you guys know me. I'm from Chester. I went to Monroe-Woodbury. Look what's going on in

southern Orange County. To have a big company come in here that wants to develop and bring in hundreds of jobs, manufacturing jobs, marrying with local agriculture. I've seen the growers, the people that are growing foods, not the ones that were grown from yesterday but the ones that are growing healthier and without pesticides for tomorrow.

So I honestly think this is a good company. I've sat across from this guy, Andy Lerner, man to man. They're going to start paying right away. You saw what the consultants said. What that property is generating today compared to what it's going to do once they start building. Nobody loves Pilot agreements but companies like Amy's doesn't need to be in New York. I hate to say it. I'm a New Yorker. I'm born and bread. I was born in Arden Hill Hospital up here. I've seen every one of my classmates, people grow up here leave because the jobs aren't here. So I honestly think this is something that's good for the community. I know it's a big project but I think it definitely is something that is a positive, and I think it's

going to bring nothing but plus.

I'll add one other thing. The mayor of Middletown and the mayor of Goshen and myself are talking about developing the Heritage Trail. That is going to happen. We think that this is also going to be used as a corridor for people to go to work. Hundreds of jobs for people. These are different types of things than we're used to. People acting healthy, living healthy. I think it's a positive. I think it would be a shame to let this go. I think it's a positive.

I appreciate everybody's time and patience. Thank you.

CHAIRMAN BURGUS: Thank you to our county executive, Steve. Thank you.

What I'm going to do next, like I said, we'll turn this over to our consultants. They're going to have a few comments to make based on their reviews of the project. Maybe you might hear one of your concerns raised by them. Perhaps it might answer some questions you might have. So we'll go down the line. Once we're done with our consultants, then I'll open it up to the general public for your comments and we'll

go from there.

First we'll introduce Ralph Huddelston. He's our environmental specialist. Perhaps he has a couple words for us.

MR. HUDDLESTON: Thank you, Mr. Chairman. It sounds kind of strange to say.

Yeah, I have a -- I have several comments, a lot of -- it's not working. I have a number of comments but a lot of them are editorial so I'm just going to leave those, referencing a drawing or a statement or something like that. I'm not really going to get into that. I'd like to get into the technical aspects for the Board.

Basically one of the first things that popped up, the DEIS states that there are three potential areas of wetland impact associated with the utility lines along the Heritage Trail. They were basically planning I believe in the document to delineate those when they got the final design of that portion. I believe the Board, to be consistent in how it's been handled in the past, would probably want to see those delineations done so you know what overall impacts you have to

all wetlands associated with the project, whether they're in the Town of Goshen or not.

The second one is the DEIS states that the Wallkill River drainage basin has not been completed -- or the design of the bridge drainage has not been completed. They talk about several alternative methods, how they were going to handle the runoff associated with that. I believe the Board might want to consider seeing, if not a complete, an almost complete design of that bridge and see the methodology so you know actually how that runoff is being handled as well.

The DEIS states that no Federally regulated wetland were impacted by the access road. I believe if you'll check your drawings it shows some impacts on one of the drawings. You might want to straighten that out.

And then one I was thinking of -- I mean I know they talked to the New York State DEC about wetlands, and I think they talked to them primarily in relationship to the maps, but there are a number of small isolated system -- pond-like systems being eliminated by this project. I

would just, just for record sake and just to cover everyone's interest --

CHAIRMAN BURGUS: Good word.

MR. HUDDLESTON: -- cover everyone's interest, I would think the Board might want them to take a look at these isolated ponds and make sure we don't have considerations for amphibeans or something along that line during the breeding season.

Then moving to vegetation and wildlife. Something for the Board to consider, the DEIS states in the document that in fact this data -- for a couple of these things this data was pretty much gathered from a wildlife point of view in one or two days, in May and in June, and then with supplemental, you know, observations when they happened to be on the site for a couple more days. That's really not how the Board has handled that kind of review in the past for vegetation and wildlife. It's been a little more extensive than that. My suggestion was that the Board might want to have them, I believe I mentioned this to Graham at one point, might want to have them continue to do these inventories as this

process goes on, and that way you can complete the spring, get into the summer. I know they don't want to hear it but maybe even a piece of the fall where you could get into there and get a little more solid baseline for that.

DEIS stated prior to site disturbance ecologists will capture and relocate reptile and amfibeans. I'd like to see the methods and anticipated value associated with those kinds of studies. I've been doing this for like forty years. My experience is those kinds of studies are very seasonally and very selective in the timeframe where they're effective. So we would need to say what they are proposing and when they plan on doing it, et cetera. Going out and trying to find all the salamanders in the woods after they moved out of the breeding areas and stuff is very difficult. That might not even be worth doing if it's not going to be able to be done at the right time.

Let's see. I think the DEIS should eliminate and discuss some species. One of the things it didn't talk about is there's going to be a lot of relocation or a lot of elimination of

habitat associated with this in hardwood forest as far as acreage. For adjacent farmers and property owners, we may want some address, or at least statements of what they anticipate species such as deer, raccoon and other nuisance species that have a tendency not to just die off. I mean a frog or a salamander is not going to go far and you're going to wipe it out. A deer and raccoon are going to up and run and they're going to go somewhere. There is a lot of them in that area. I would say that needs to be addressed.

Cultural resources, they're doing a very good job. They're doing exactly like I thought they should do it. One of the things I would ask, though, is that they do notify the Town Board when those programs have been completed to confirm that they have been completed and to also give notice as to where, and again I don't know how SHPPO is going to handle it, but where and when that information would be available to the public and to the Board once those studies are completed.

Let's see. Environmental contamination, I had no additional comments at

this time.

Air quality, no additional comments at this time.

Under construction, just because some of the trouble we've had in the Town recently that I've been hearing about, I would ask that we define -- the Board define construction activities and let them know if we're talking about equipment warmup, because I don't know if you've ever worked on a cold bulldozer but it takes quite awhile to get going and get warmed up. We have time sets in here. Lots of times people would say we're not constructing, let's start up early. Start up two hours earlier which could be rough on the neighbors.

Again, we had talked at one point in time about some maintenance and repair to Hartley Road. I know they've eliminated most of that use of Hartley Road, but again they're now saying they're not going to go anything. I just wanted to bring that to the Board's attention and make sure that was acceptable.

And then under unavoidable adverse environmental impacts, the DEIS fails to address

the loss of existing or future wildlife associated with construction activities and habitat loss. I think it's just an oversight because I know you guys know it's going to occur but it was not listed in the adverse index.

If you have any questions, I'll be happy to answer them. Other than the editorials that you can pull out of my notes, that's what I have.

CHAIRMAN BURGUS: Thank you.

Next we'll hear from John Canning. Do you have any comments regarding transportation?

MR. CANNING: Good evening, Mr. Chairman, Members of the Board.

As you know, Route 17M is about busy corridor connecting Middletown, I-84 Goshen and Route 17. The project will generate a substantial volume of traffic.

The traffic impact study that was performed for DEIS was very thorough, comprehensive and detailed. In my report to you I've tried to distill down the most important elements of it. As you're aware, the purpose of the SEQRA process is to mitigate impacts to the

greatest extent practicable.

The applicant has proposed a substantial number of mitigation measures, including the redesign of the driveway serving the psychiatric center, the training center, the installation of a traffic signal, the construction of turn lanes into and out of the site. In addition, they have proposed a possible replacement of a stop sign on the westbound off ramp from 17 to 17M westbound with a yield sign, traffic signal timing modifications at Route 6, 17M, County Route 12 and County Route 50. At Route 6, 17M, Hartley Road and Gate Schoolhouse Road they have suggested installing a traffic signal backface so the signals are more visible at sunrise and sunset when the sun is in the east and west. At Golf Links Road and McVey Road they propose to convert the intersection to an all-way stop condition. At Maple Avenue and 17M they proposed traffic signal timing modifications. At the Fletcher Street ramps to, I guess Route 17 -- or I-84, I-86, 17 they proposed that the intersections be monitored for traffic signal installation.

In addition to this, my recommendations to you for consideration are that the applicant carefully examine and explain what the most practicable and optimal time for shift time changes are because there's a lot of stuff that goes on 17M, particularly in the afternoon. It was notable that the peak school hour is about 3:00 and the peak computer our is about 4:30. The applicant should see what time they can best get their work schedule to coincide with traffic patterns.

Similarly, with the Science of the Soul annual national conference, they have a traffic management plan which I think is a good start. I have suggested that in the DEIS they discuss the practicability of what their schedules would be. They talked about having morning events and afternoon events and Saturday events. So if they can detail what's most practical for them. Some of the events have more impacts than others.

And finally, I've suggested that they look to see if they can have a back-up plan. They have proposed they will bring forty percent of their attendees to the annual event via buses.

In their California facility they've -- at Petaluma they've been successful in doing that at twenty percent. They may be successful at forty percent. In the event they're not, they should be looking to see if they can secure parking facilities at nearby locations where people can drive there and get bussed the last few miles.

These are all measures to finetune and make sure the impacts of this project would be mitigated to the greatest extent practicable.

Thank you.

CHAIRMAN BURGUS: Thank you. Next we'll hear from Sean, our town engineer.

MR. HOFFMAN: We've reviewed the DEIS and site plan as relating to engineering matters separate from the environmental consultant's and traffic consultant's comments. We stuck to the areas of our expertise, including stormwater, water supply, wastewater, grading and earth work. I have filed with the building department a detailed list of our comments. It's approximately ten pages long. I distributed it to the Board electronically as well as the applicant. They acknowledged receipt of it prior

to the meeting.

I just want to touch on a couple points. One, building off what John Canning said about the parking and forty percent versus twenty percent, when we reviewed it we looked at potential utilizing of the Strong Farm for volunteer parking. When we ran the numbers we see there could be a deficit of up to 1,160 parking stalls. If they are intending to be on Strong Farm, we'd like to see some sort of plan developed as to how that would be accommodated on Strong Farm, that number of cars, and how those volunteers would be brought into the site. Would they be brought down Hartley and into the site througha private entrance? Would they utilize the Hartley Road emergency entrance through Amy's site? We just need some sort of clarification on how that's actually going to work, the mechanics of that.

Items on phasing. We understand that the applicant is proposing two phases for the manufacturing plant. When we look at the site plan we see phase 1 actually being phase 1 Amy's plant as well the Science of the Soul. My

understanding of the project timeline is that Amy's will be be constructed in approximately eighteen months but Science of the Soul may take some additional time due to the earth work. We would like the applicant to consider possibly a phasing plan so that if Amy's is completed before Science of the Soul, they could receive their certificate of occupancy and begin operating prior to and during Science of the Soul construction.

On the water supply and storage side, the applicant has indicated in the DEIS they may have upwards of three water storage tanks, each being 200,000 gallons apiece. Two would be located on the northerly side of the Amy's plant and one may be located on the Science of the Soul facility. The two on the Amy's plant have been shown on the site plan. The one on the Science of the Soul has not. We would like that to be shown and identified so that we can see the impact of the tank as well as visibility.

The last item that I have that I just want to mention this evening was the stormwater management. Stormwater is regulated by both Town

and DEC requirements. DEC permits a waiver of of their requirements if the discharge is to a fifth water stream. The Town doesn't necessarily have that waiver but you could proceed with another waiver. Our recommendation is that you consider the downstream impacts before just a waiver out of hand, if you will. So we recommended that the applicant perform a hydraulic analysis of flooding of the Wallkill.

That's all we have this evening.

CHAIRMAN BURGUS: Thank you very much.

MR. HUDDLESTON: I'm sorry, Mr. Chairman. I forgot one. Under agricultural, I noted that the DEIS stated that the Strong Farm was designated to remain as an active farmland. If that is the case and these two projects are approved, the Board might want to consider asking for an easement or a dedication of the Strong Farm to remain as agricultural farmland in the future as the Board has done with other properties in the past that were included.

CHAIRMAN BURGUS: Thank you. Counsel?

MR. GOLDEN: I have nothing at this time.

CHAIRMAN BURGUS: Nothing at this time.

In that case what we'll do -- Board Members, do we have any additional comments that haven't been made through the whole process and what you've seen on the presentation or from our consultants?

MR. LUPINSKI: Yes. Mr. Chair, I have a couple of concerns about the agricultural section here. I think it could use a little bit more detail exactly what kind of tests you're running, what kind of vegetables were involved in that and how much you plan to source from like Orange County and/or the Hudson Valley or the wider area.

I'm a small vegetable farm myself here. I grow in the black dirt. A number of other growers out there have expressed a concern about the labor problem. I mean labor is a very, very short -- is in very short supply now. We pay more than minimum wage because we have to. There's just no way anybody is going to work for less than $10 an hour. People that come here, they get housing, you know, people that come on H2A, the Federal programs, which, don't quote me

on this, was known as the former Brusaro program back in the `50s, if anybody remembers that. You have to pay those people to come in, you have to pay for them to go home, you have to have housing for them. If you hire anybody local that's -- that does a similar job, you have to pay them the effective wage rate which is almost $11 an hour now. The people that work in agriculture are very skilled. They can do anything from manual labor to operating equipment. Growers out there are really concerned that a lot of these people are going to go and do something else. The numbers that you use, there are a lot of people. A lot of those people don't either want to work that hard or can't work that hard. So those numbers really don't reflect the potential labor pool in agriculture. Could you please deal with that issue?

CHAIRMAN BURGUS: Thank you.

Any other comments?

(No response.)

CHAIRMAN BURGUS: If not, what I'll do now is I'll open it up to the public. What I'd like you to do is just recognize yourself by

raising your hand, we'll pass around the mic. If you could just stand up when you're speaking, introduce yourself, mention your name, your address, and then point out whatever your concern may be or comment, whatever you wish to make. We'll start with that.

We have our first speaker here, Bill.

MR. FIORONTE: I'm not shy with the microphone as you know. Thanks for the opportunity. If you don't mind, I'll face the crowd here. My name is bill Fioraonte and I'm the director of business attraction for the Orange County Partnership. For those that don't know, we're the economic development office for the county.

I've had the privilege to work on this project since I started the partnership about two and-a-half years ago. It's been an amazing but wild ride. This is an outstanding ecobnomic development project. It's got all the bells and whistles that we look for. They're talking over 700 jobs, likely over a hundred million dollars in investment. The eye popping tax revenue numbers that Mark outlined before, it's great.

But tonight I'd rather focus on what an outstanding company this is. They've made an incredible impression on me in that regard. The County Executive mentioned before that the Local contingent got to go out to California and see their operation and really get to know the owners and the rest of the team out there. As you can imagine, it was a really impressive operation, but I made a few other observations that I took home with me that I bet members of the planning board that made the trip with us, I bet they feel the same way.

Number one, this is an -- by the way, we went to Santa Rosa, California, they have a manufacturing operation there, and Medford Oregon, the one this this site is going to be modeled after.

My first observation was that this was an outstanding employer. We got to take a full tour of the facility, see their operation. One, you could see the pride in the work in both the workers and in management all the way up and down. It was really obvious through the entire trip out there and interfacing with everyone that

was there. You also could see the rapport that the ownership, especially Andy Berliner, had with the staff, with all the employees there. It was a mutual admiration, respect. You could see that and you could see it was genuine. You really did feel that.

They mentioned the health clinic a few times before. We got to see that as well. This is an on-site health clinic that's there for the employees and the employees' families. For $5 you can come and you can see a doctor, you can be checked out, and your family can come for that same amount.

I'll note that some also I picked up when we toured the health facility, when we were there there was a family of one of the employees that was there to be seen by one of the doctors. Andy Berliner, the owner, he noticed that when he was talking about the facility, he was very conscientious about that and worried about them being uncomfortable or embarrassed by our presence, and kind of quickly ushered us out. I thought that said an awful lot. The people there are outstanding as well. They're quality people.

Andy and Rachel Berliner are the owners. The name sake of the company is their daughter, Amy. They're incredible human beings.

I'll also note we did get invited to their home which is an incredibly modest home they've lived in for forty hours, long before the mega success of Amy's Kitchen. I think that means a lot. The rest of the team has been incredible, Tom Richman, Mark Rudolph, the rest of the team. They're high integirty people and they've kept their word throughout the entire process. Any of you that have been following this, you know it's been up and down. It hasn't been the simpliest A to B kind of process. They have been tried and true through it all. They kept their word.

I'll give one example of that. They've had a lot nay sayers out there. I love talking about that at this point. It was said we'd never get to this point and here we are. We have even conspiracy theororists, like people who felt that Amy's is trying to bring this Science of the Soul here and they never intend on building the factory, it's a big bait and siwtch. We heard a

lot of that and we heard it from enough people that we said it to them. We said this is a major concern. We asked them to pledge that they would start building the manufacturing center before they built the retreat center for Science of the Soul. They understood that and honored it and here they are again to this day.

Also they're quality partners. I want to mention that as well. We talked about trying to have some synergy with our argircultural community. They're really tried to interface with everyone they can.

After we went out for the visit and we asked all of our questions, they quickly turned it around on us, and the first thing they asked us is how can we help Goshen? What can we do to help this community? We're committed to it. They even talked about, if you can imagine this subject, bringing a supermarket here. They have relations with Wegman's and others. They want to do whatever they can to help the community.

I could not have been more impressed by Amy's, the organization, the company. The project itself speaks for itself. It's a winner

in that regard. I've been very impressed by Amy's and could not offer more support and certainly encourage you all to do the same.

Thank you so much.

CHAIRMAN BURGUS: Thank you, Bill. We have a mike over on the left side here. Mr. Moss.

MR. MOSS: My interest is in this Strong Farm. Two of them members there made reference to it. One, we talk about raising crops, agriculture on the farm. Then I hear, if I heard correctly, they're going to use it as parking for, I guess was it a thousand cars or something they had their various events.

Ralph, you brought up a good point. To keep the Strong Farm perpetually a farm. I mean we've seen developers come in, we're going to do this, do that. Next thing you know you have a housing project.

I guess I could get my answer relative to John, you're a farmer, what kind of crops. There's going to be a time when they're harvested. Does this interfere at all with the various events they're going to have?

Did I hear correctly that that area is

going to be used for parking?

MR. HOFFMAN: Overflow parking, yes.

MR. MOSS: Thank you very much.

CHAIRMAN BURGUS: What I would ask from this point forward, if anyone has something to say, if you could just step forward, come to the front of the room. It would be easier than trying to maneuver the mike around the room. He'll just maneuver the people.

MR. ZUCKERMAN: Good evening. I'm Irving Zuckerman from Chester, New York. Just a quick background. My family built and developed the Goshen the west gate Goshen big park. There was always a lot of concern at that time. It was a former farm property that was zoned industrial park and it certainly worked out very nicely for the county and for the jobs that were brought here. Regarding Amy's Kitchen and science for the /SOUL, firstly the philosophy this family and this company are one of the reasons we don't see this every day and I certainly wouldn't say if it I didn't believe it in my heart, their philosophy is one where we should consider very strongly and approval for this. Certainly they have

additional work to do but so that's one comment. I also speak as a member of the county planning board which I have been a member for about 10 years now, served on the /A*G and farm protect /*FR protection board as a representative of the planning board. Part of the Comp. plan every 5 years that's supposed to be done leg slate /EUFL for the county, it's farm land is one of the sections of the Comp. plan that we are working on and part of that is what's called raising farmers and that is generation /HREU teaching and training their corner /TPHEL cooperative and other organizations thousand /*FR how these young people, family members who aren't quite educated into it can learn about it. I was brought up. I'm a fourth generation construction company and proud of that I've done. I just like to say very interesting Orange County and some of the data is from the /A*FG and farm protection board, 43 milking fathers ^ fifty ^ 50 percent of Orange County consumption and we have a did he /EPBT amount of dairy, of milk product, one of the other things you need, because Amy's needs a considerable amount of cheese /-Z I understand,

we also have a company right herein Goshen that is a producer and import err of milk and dairy products. So we already have something in the Orange County partnership has taken a big step in helping to make that connection with this company and we've been consulting for them for some time. So there's another piece of business that a local company can benefit by. Again, there's always an impact but aim aim has gone out of their way to minimize that impact, not to save money but to make sure that they were good neighbors and that's something very important. I'm saying that as a member of the planning board because we look at the long term impact of anything that happens. These people are looking to do that. So we do have a process err little /RAEL within the village of Goshen. You may not know it. It's called Greek mountain dairy. It's owned by /TPAPBT a foods. It comes out of ^ agrees ^ grease. It's a very well known nationally recognize had family. Another benefit here for Goshen, for the /TPAOUT err growth of Goshen is the water and sewer as stated by Middletown is -- will provide service letter

indicating that they will provide that. We heard something relative to the heritage farm -- excuse me, the heritage trail and that as I understand may be the way for the water and sewer line to go into Middletown. Again, there's a real benefit, what we have in southern Orange County we have a /SAO*UFR line in the heritage trail. It works out /PWAOUT /TPHREU for everyone that there's a simple way it doesn't encroach on anyone /-S land. So I just wanted to make sure that you understood ^ we have ^ we've more land than Ulster County, Dutchess, even northern Jersey that are competitive farm lands and the field crops that we have here, the /ABG culture or should I say dairy, we have good opportunities and we're looking to support local farms and yes there is a certainly a need and a desire certainly for field crops which they're going to do and corner /TPHEL cooperative has been working for two years with them to develop known G M O and certified organic products. So it's an ongoing project. These people know what they want to buy and everyone is working hard to do it. So thank you.

CHAIRMAN BURGUS: Thank you very much. Next. Town supervise /OEU.

A. /TK*UFG bloom field. I've been associated with this project, talking to the /PWER /HREUPB /ERS, going back I guess two or three years ago. There's a unique thing about the /PWER /HREUPB /ERS. They own the company and that is significant. I worked for a for tune 500 company and at the, the due /POPBT chemical company with 140 thousand employees aboard of directors and it was one /*FR run by wall street. Could you not do what you wanted to do because the stock prices would deteriorate. We were in a meeting over at the Orange County partnership and Mr. /PWER /HREUPB was talking, he was asked could you explain a little bit about your company. He said we use 32 million pound of cheese, beans, this and this. He talked for two or three minutes and his wife said honor I can I say something. Sure /*F sure sweet I go ahead. He never got his mike back. That said it all to me. Because best of /*F that's the relationship that they have. She then went on to say they had no board of directors. They're not owned by anybody. She

and her daughter and the husband do what they think is good for the employees. Further they went on to say that we have -- we've been in business 22 years or whatever it is and many of those, almost all of those employees, they started with are still there. Still there. And I can tell you after coming -- working in private enterprise for 30 years, that's not the case for big business. It just doesn't happen. And Mr. Rich /PHOPBD shared with me and by the way he's and /EUS could you see in, okay, and he planned -- he's the gentleman who was up here talking about /SKRAOEUPBS of the /SOUL. He said when ever a family has a problem, when ever a family has a problem you will find and I there doing all he can do for that family. So you take that, you take the fact that you've got medical facilities on the property, you've got a 401K. And then Mrs. /PWER /HREUPB err said one other thing, a lot of our employees don't have children that go to college but if they do we will assist them financially in a big way, in a big way. So you can see the love and attention that they're giving to their employees. So I as a the town

supervisor of this community where a lot of the employees are going to come from, I don't think, I really don't think we can find a better or well meaning honest group of people to work with. Thank you very much.

CHAIRMAN BURGUS: Thank you. Who would like to speak next? In the back.

A. Good evening. My /TPHAOEUPL a /KREUGSZ person /-GS, I'm on a born and raised here. We've -- I'm actually like yourself I'm third generation /TPARPLG err. My wife and I started a vineyards and/or /KHARD about eight years ago, pretty much most of my family is in agriculture and I have a new /TPHAOEBG perspective where I had the opportunity to be approached by Amy's Kitchen in my other life that actually pays the bills, a recruiting and staffing firm. I had an opportunity, my wife and I. To go out to California as well, engage with them on some searches and just had a unique /TKPWHREUPL /-PS at how they do treat their people. What they say is how they are. The in your /TURG of their employees, the laid back aspect and /PWHRAEF me I go through many manufacturing facility that many

of you may be just don't even think about in your background but if you went and toured them you'd wonder what's there. This is a company that their making food. I take food and we from food to farm of the sciences. We can't turn our back on these kinds of opportunities. I know it's a lot of people but the impact it's going to bring inner city challenged communities hope to then be able to pay taxes in those inner cities, that will bring our two major cities back again. I believe that. I mean everybody believed about the /KAS even owe. Here's our second chance, or I think one of our better chances to get city of Newburgh, the city of Middletown back into the process /PRUS cities that my grandparents talked about. So I would like to say thank you for sticking with it and I hope everybody supports it.

CHAIRMAN BURGUS: Thank you very much. The lady in the back.

A. My /TPHAOEUPL a /HREUPB see own I'm the president of the Orange County chamber, unlike some of the other people who have spoken. I live here. I'm your neighbor. I'm a resident of the village of

Goshen and I live in the town and I pay taxes in the town. I've known Amy's since I was with the Goshen chamber of commerce and they have been gracious to us and you know, we have -- we have heard an about the number of /TAFPLT /-S that will be generated by Amy's. The economic impact which is going to be huge for our area. We don't have as we know anybody who lives in Goshen. We have about 50 percent of our properties is tax exempt because we're the county seat. So we have pressures on us that no other community in Orange County has because so much of our land is taken away by, no offense, the town building and the village building and the county building so the taxes and the burden is born really by only half of the property owners. So as a taxpayer I say I think that this is a great opportunity for us in the town. I also will say that historically we see the economic impact, we see all the numbers but I've worked with Amy's since they first came, /TKPW-RB-but when ever there was an issue that was raised they dealt with it and many times when we have businesses that come into our /*F Orange County, they come in, they /PWEUPLT, they bring

in people who don't live here, they don't work here and they are gone before the taxes have to be paid, ^ they are ^ they're gone before Workers' Compensation has to be paid and they have absolutely nothing to do with this community and I can say that Amy's has come in /H-RBGS they have hired people from this area already, they have not just brought in their own people, they have sought to integrate themselves in our community and they have sought to be not just good neighbors but to be a neighbor that. That. We -- one of the concerns that communities always have is when somebody comes in is our quality of life going to be respected and is our quality of life going to be disrupted so much to the point it's not going to look like Goshen any more /P-FPLT I'm one of the transplants. I came up here from Long Island so I thank you all in 1987 and I thank you for welcome /-G me and I know that the respect that this community has for it's history. We respect our history /-RPBGS we reveal our history and I can say that you have /-LS of also been respectful of that. For that I thank you very much. I say as the president of

the Orange County chamber who sees a lot of /PW-RB /PW-RB like bill does, we see a lot of people come in and we see a lot of people who want to be part of Orange County. They just want to come in, make a buck and leave. So I say that this is a good thing for us. I think this is a very good thing /TPOURS. It will help us to recap /TAOUR some of our tax base that is lost because we are a county seat Government. So I would just, you know, ask that the board seriously /KEURPBLG it's a wonderful project.

CHAIRMAN BURGUS: Thank you very much. Anybody else wish to speak? . I'm not seeing any hands go up. /PWARB full? Anybody? We have one. Okay.

A. I'm bet /SEU bun /*FR did you know levy. I'm curious about the farming aspect which I think is wonderful. The strong property but also local farmers who are currently not organic, there are very few organic farmers in our area in Orange County. When you speak to someone who has clean farming practices they say the certification process for organic is costly, time consuming, paper /PWUR /KWREUPBG. I was wondering is Amy's

planning on helping these local farmers who want to become organic so they may be utilized by Amy's. I think that's a really important aspect because I for one would rather eat something that has not been treated with pesticides. I think it's a great -- the non G M O thing. /SOEUPBLG it's a wonderful thing if Amy's will help local farmers become organic so that they could be a part of this growth and that the strong farm I would /EUPL /AB /-FR ago in if the crops are going to be ^ groan ^ grown they'll also be organic. My only other thought which is totally different, isn't there a garbage transfer station on hardly road, is it still there and will it have an impact on Amy's Kitchen. Thank you.

CHAIRMAN BURGUS: Thank you. Do you want to comment? Mark do you want to say anything? Mark mark mark we are working with the row /TKEL institute on organic farming. We put together a program where we're providing grant money to local farmers who want to make that investment in not only learning how to convert from conventional farming to organic farming but also need some financial assistance to do that.

CHAIRMAN BURGUS: Thank you. Anybody else? Bill bill can I speak again.

CHAIRMAN BURGUS: We certain have the time. If you'd like to speak again, by all means. Weed love to here what you have to say. Anybody else that wishes to speak?

CHAIRMAN BURGUS: Okay. Rick.

MR. GOLDEN: I think give them one last chance. If we'll be closing the public hearing and /PHAOR forward with the project. Now is the time other than written comments.

CHAIRMAN BURGUS: Right. Okay. I'll give you one more opportunity to speak. If you don't have comments for us, we'll presume everybody is come place /EPBT with what they've heard, what they've seen, what they've heard, what they heart from our consultants, in which case then I would make a motion to close the public hearing and then we could proceed from there with the process from that point forward. Do we have any other comments that people wish to make now? You have the opportunity afterwards as /SPAEUTD /*F stated before, until June 10. You have ten days to make public comment, written

comments to the building department. Those would be incorporated as well and considered one by one in the revisions to the DEIS as they formulate the if EIS. . Going, going. Okay. Could I have a motion then on the board to close the public hearing /PEUR /PEUR so moved will you please will you please.

CHAIRMAN BURGUS: /TKPWAO van I. Seconded by John. All in favor all all.

CHAIRMAN BURGUS: Against? Okay. The public hearing is closed. I would like to thank everybody for joining us and contributing being involved in the process. Thank you very much. 8:fifty p.m..

Appendix C

From: J Tawil [redacted]
Date: August 8, 2016 at 8:30:32 PM EDT
To: [redacted]
Cc: Joseph DeStefano [redacted]
Subject: Firm Yield - City of Middletown - Amy's Kitchen
Reply-To: J Tawil [redacted]

Hi Phil,
City of Middletown Firm Yield is around 4.1 MGD, taking into account all water sources, including Mill Pond and Indigot skimming operation.

Regards
Jacob

Jacob S. Tawil, P.E.
Commissioner
Department of Public Works
City of Middletown
16 James Street
Middletown, New York 10940
Tel: 845-343-3169
Fax:845-343-4014

P **Please consider the environment before printing this email.**

Department of Public Works
City of Middletown

Jacob S. Tawil, P.E.
Commissioner of Public Works

16 James Street
Middletown, N.Y. 10940-1587
Tel: (845) 343-3169
Fax: (845) 343-4014

September 30, 2016

Lee Bergus, Chairman
Town of Goshen Planning Board
41 Webster Avenue
Goshen, New York 10924

Re: Amy's Kitchen and Science of the Soul

Dear Chairman Bergus:

The City has previously provided Water and Sewer "will serve" letter to Amy's Kitchen, where the City will supply the referenced project "project" finished water in the amount of 375, 000 gpd based on approximately 5.5 days per week.

Please accept this letter as the City's intention to increase the said supply of water to the "project" from 375,000 gpd to 382,000 gpd per same above conditions and to further supply the project with approximately 418,000 Gallons of water for one day of the year, when the Science of the Soul national conference is hosted at the "project" site.

The City Water System has adequate capacity and Firm Yield at this time to meet this water demand. The City Wastewater Treatment Facility has adequate capacity at this time to meet this wastewater which must be in compliance with City Sewer Ordinance.

Sincerely

Jacob S. Tawil, P.E.
Commissioner
Department of Public Works
City of Middletown
16 James Street
Middletown, New York 10940

Cc: Honorable Mayor DeStefano

NYSEG

June 23, 2016

Robert Gates

Corporate Engineering Manager

Amy's Kitchen, Inc.

P.O. Box 4359

Petaluma, CA 94955

Re: Natural Gas Availability at 111 Hartley Road, Goshen, NY 10924

Service Notification: 10300224043

NYSEG (the "Company") received a request for natural gas service at the location referenced above. Based upon an engineering analysis of the existing natural gas distribution system, the Company has capacity to serve the above address at this time subject to the following:

- Total connected peak load information provided by the customer of 32.2 MCFH.
- The Company's ability to serve this load may be impacted by changes in gas load between the date of this letter and the installation of your service.

This letter is intended to address natural gas capacity capability only, and does not address costs you may be required to pay for natural gas service under the Company's tariff(s) and applicable laws and regulations. As your project progresses, the Company urges you to remain in contact with us regarding project schedule, our ability to serve, and any modifications to proposed load. In future correspondence, please include the Service Notification number noted above.

NYSEG's tariff (Public Service Commission 90) contain terms regarding extension and installation of natural gas facilities.

Please contact me at 585-484-3406 with any questions.

Sincerely,

Guy Owen

Key Account Manager

Orange & Rockland
Pike County Light & Power Co.
Rockland Electric Company

New
Construction
Services
845 577 3324

Orange and Rockland Utilities, Inc. and Subsidiaries
390 West Route 59 Spring Valley NY 10977-5320
500 Route 208 Monroe NY 10950-9986
71 Dolson Avenue Middletown NY 10940-6501
One Lethbridge Plaza Mahwah NJ 07430-2113
www.oru.com

March 23, 2016

Hudson Valley Area LLC
Mr Mark Rudolph CPA
Po Box 4759
Petaluma, CA 94955

Re: 36-97 Hartley Road Goshen NY

Dear Mr. Rudolph:

Please be advised that O&R will provide electric facilities to the above referenced project in accordance with filed tariffs.

If you have any questions, or if I can be of further assistance, please feel free to contact me.

Sincerely,

Ana Dunn

Ana Dunn
Major Accounts Engineer
New Construction Services
845-577-3324

Appendix D

IMPACT ASSESSMENT FOR THE INDIANA AND NORTHERN LONG-EARED BAT

AMY'S KITCHEN

&

SCIENCE OF THE SOUL

GOSHEN, NY

April 8, 2016
(Revised August 18, 2016)

Prepared for:
Amy's Kitchen
1650 Corporate Circle, Suite 200
Petaluma, CA 94954-6970

Prepared by:
AKRF, Inc.
34 South Broadway
White Plains, NY 10601

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A. INTRODUCTION

Amy's Kitchen, Inc. ("Amy's Kitchen") proposes to construct an approximately 369,000 square-foot food manufacturing facility on a 60.1-acre property located on Hartley Road in the Town of Goshen, New York. Science of the Soul ("SoS") proposes to construct a Conference Center (herein referred to as the "Conference Center") comprising an approximately 200,000 square-foot open-air pavilion with four (4) associated restroom buildings (approximately 5,000 square feet each); one (1) two-story approximately 80,000 square-foot Multi-Purpose/Family Area Building; one (1) two-story approximately 38,000 square-foot Central Building; one (1) one-story approximately 8,000 square-foot Maintenance Barn; two (2) Caretaker Residences, approximately 2,400 square feet each; one (1) approximately 4,500 square-foot Guest House; and associated pervious and impervious parking areas to accommodate approximately 2,043 cars and 130 buses on an approximately 195-acre property located on NYS Route 17M and Echo Lake Road in the Town of Goshen, New York. A potential Warehouse Use on an approximately 11.6-acre subdivided parcel on Hartley Road is also contemplated. (See **Figures 1, 2 and 3a through 3c**).

The two entities, Amy's Kitchen and SoS, have agreed to collaborate on the preparation of State Environmental Quality Review Act (SEQRA) compliance documents and to share certain access, water supply, and wastewater treatment infrastructure. The Amy's Kitchen manufacturing facility, the SoS Conference Center, Strong Farm, Lipoff property (East), together with private water and wastewater conveyance utilities connected to the City of Middletown, as well as the Warehouse Use comprise the "Proposed Project." The Proposed Project has been revised since the April 8, 2016 *Impact Assessment For The Indiana And Northern Long-Eared Bat* report (the "Report"), in response to comments on that report from the U.S. Fish and Wildlife Service (USFWS) and New York State Department of Environmental Conservation (NYSDEC), as well as comments from other Involved and Interested Agencies on the Draft Environmental Impact Statement (DEIS). The following project modifications have been made to further avoid, minimize, or mitigate potential impacts:

- Slight realignment of the proposed site access road from NYS Route 17M;
- Relocation of the proposed Guest House and a reduction in the length of the driveway to reach the Guest House on the SoS property; and
- Identification of certain properties to be included in a Conservation Easement as part of offsets proposed to offset indirect impacts to habitat of the Indiana bat and northern long-eared bat.
- Addition of 27.8 acres of New Conservation Properties (see Figure 1)

This document evaluates potential impacts of the Proposed Project, as revised, to the Indiana bat (*Myotis sodalis*; federally and New York State listed Endangered) and northern long-eared bat (*M. septentrionalis*; federally and New York State listed Threatened) and identifies measures to minimize such impacts.

The USFWS Information for Planning and Conservation System identifies the Indiana bat and northern long-eared bat as occurring in the vicinity of the Project Site. The closest known Indiana bat and northern long-eared bat hibernaculum is approximately 9.25 miles from the Project Site, and an Indiana bat summer roost tree has been documented within 2.5 miles of the Project Site. No northern long-eared bat roost trees have been documented near the Project Site (NYNHP 2015, NYSDEC 2015). An acoustic bat survey that was conducted within the Project

Site during August 2015 indicated that Indiana and northern long-eared bats were present (**Appendix A**). Acoustic surveys inform the presence of foraging bats by detecting feeding buzzes and echolocation calls, but cannot be used to determine whether bats also roost within the survey location. Therefore, it could not be determined from the acoustic survey whether the Project Site is only used by Indiana and northern long-eared bats as foraging habitat, or if one or both species also roost within the site. For the purposes of this evaluation, both species of bats are considered to forage within the site, while having the potential to roost within the site based on the presence of suitable roosting habitat. Given the proximity of the site to a hibernaculum approximately 9.25 miles away, it is also possible that the site is used as fall swarming habitat by both species in preparation for their winter hibernation.

B. NATURAL HISTORY AND LOCAL DISTRIBUTION OF THE INDIANA AND NORTHERN LONG-EARED BAT

INDIANA BAT

The Indiana bat is a temperate, insectivorous bat that is federally and New York State-listed as Endangered. Indiana bats emerge from the caves or mines in which they hibernate in early spring; males then disperse and remain solitary until mating season at the end of the summer, and pregnant females form maternity colonies in which to rear their young. Maternity roosts, roosting sites of post-lactating females, and roosting sites of solitary males are usually under loose bark or in the crevices of trees. Indiana bat roosting sites have been documented in numerous species of deciduous trees; tree availability, diameter, height, bark characteristics, and sun exposure appear to be more important factors in roost site selection than tree species (Kurta 2004, USFWS 2007). Roost trees in New York (Britzke et al. 2006) and elsewhere (USFWS 2007) are typically in trees with a diameter at breast height (DBH) greater than 16 inches and a height taller than 52 feet, but roosts in smaller trees are not uncommon (USFWS 2007). Trees are usually dead or nearly dead and decayed (Menzel et al. 2001, Kitchell 2008).

Indiana bats often roost near forest gaps or edges where trees receive direct sunlight for much of the day (Callahan et al. 1997, Menzel et al. 2001). Habitats used by Indiana bats during summer are varied and include riparian, bottomland/floodplain, and upland forests (Humphrey et al. 1977, Britzke et al. 2006, Watrous et al. 2006) often within highly fragmented agricultural landscapes (Murray and Kurta 2004, Watrous et al. 2006, USFWS 2007). They will forage in the forest canopy, over open fields, over impounded waterbodies, along riparian corridors, and along forest edges (USFWS 2007). Maternity colonies are commonly located in areas with abundant natural or artificial freshwater sources (Carter et al. 2002, Kurta et al. 2002, Watrous et al. 2006, and USFWS 2007). Spring and autumn habitats of Indiana bats have not been well described, but appear to be largely similar to their summer habitat (Britzke et al. 2006, USFWS 2007).

During autumn, Indiana bats mate and deposit fat stores in preparation for winter hibernation. Hibernacula are typically in caves or abandoned mines where ambient temperatures remain above freezing (USFWS 2007). There are only 10 Indiana bat hibernacula known in New York State, none of which are located within Orange County (NYNHP 2013). Four of these hibernacula, however, are located in neighboring Ulster County (NYNHP 2013), and Indiana bats may migrate upwards of 100 miles from their hibernaculum to their summer territory (Winhold and Kurta 2006, USFWS 2011). The closest hibernaculum to the Project Site is approximately 9.25 miles away (NYSDEC 2015).

The Indiana bat has recently undergone steep population declines due to the outbreak of White-nose Syndrome (WNS)—an emerging infectious disease caused by the fungus *Geomyces*

destructans, which was first discovered in New York's Howe's Cave in 2006 and has since spread to over 200 bat hibernacula in more than 25 states and Canadian provinces (Reeder and Moore 2013, PAGC 2015). Bats infected with WNS suffer structural damage to their wing membranes and exhibit aberrant hibernation behavior and physiology, the consequences of which are usually fatal (Reeder and Moore 2013). Range-wide, Indiana bat populations have been declining by approximately 10% per year since the outbreak of WNS in 2006 (Thogmartin et al. 2012). In New York State, pre- and post-WNS count data on hibernating Indiana bats showed an average statewide population decline of 72% between 2006 and 2011 (Turner et al. 2011). Population models indicate that extirpation of the Indiana bat is likely to be caused by WNS throughout much of the species' range (Thogmartin et al. 2013).

The Indiana bat is listed by the USFWS Information for Planning and Conservation (IPaC) System as occurring in Orange County, and the New York Natural Heritage Program (NYNHP) has a record of an Indiana bat maternity colony approximately 2.5 miles from the Project Site (NYNHP 2015). An acoustic bat survey that was conducted in August 2015 indicated the presence of Indiana bats foraging within the Project Site (**Appendix A**). It is unknown whether the Project Site is only used by Indiana bats as foraging habitat, or if Indiana bats also roost within the site.

NORTHERN LONG-EARED BAT

The northern long-eared bat is also a temperate, insectivorous bat that hibernates in caves and mines during winter, and then emerges in early spring to disperse to summer habitat. Like Indiana bats, the males remain solitary until mating season at the end of the summer and the pregnant females form maternity colonies in which they rear their pups. Summer habitat typically includes mature, closed-canopy, upland and riparian forest within heavily forested landscapes (Ford et al. 2005, Henderson et al. 2008), usually within about 60 miles of the hibernaculum (Caceras and Barclay 2000, USFWS 2014).

The northern long-eared bat is considered to be an interior forest-dependent species that is sensitive to fragmentation and requires large tracts of unbroken forest for both foraging and breeding (Foster and Kurta 1999, Broders et al. 2006, Henderson et al. 2008, Segers and Broders 2014). Unlike many other bats of the Northeast, northern long-eared bats will commonly glean prey from leaves and other surfaces rather than strictly hawking flying insects in the air, and are thereby well-adapted to foraging in cluttered, structurally complex, forest interior habitat (Owen et al. 2003, Lacki et al. 2007). Most foraging occurs above the understory and below the canopy (Brack and Whitaker 2001, Harvey et al. 2011, USFWS 2014) in interior areas with a tall and closed canopy (Owen et al. 2003, Patriquin and Barclay 2003, Adams 2013). Northern long-eared bats do not concentrate along riparian corridors or other linear landscape features as much as strictly aerial-foraging species do (Owen et al. 2003, Ford et al. 2005, Harvey et al. 2011, USFWS 2014), and most radio-telemetry and acoustic studies have found that they typically avoid roads and other sharp forest edges (Owen et al. 2003, Patriquin and Barclay 2003, Carter and Feldhammer 2005, Morris et al. 2010, Segers and Broders 2014), where prey availability is expected to be lower than in the forest interior (Owen et al. 2003). Mature forest is considered to be the most important foraging habitat for the northern long-eared bat (USFWS 2013, 2014).

Roost trees are also usually in intact forest, close to the core and away from large clearings, roads, or other sharp edges (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005). Roosts are usually in cavities or, less often, under exfoliating bark of large-diameter trees that form a high and dense canopy (Foster and Kurta 1999, Menzel et al. 2002, Carter and Feldhammer 2005; reviewed by Barclay and Kurta 2007), but the USFWS (2014) considers trees

as small as 3 inches DBH to be potential roost sites. Northern long-eared bats, including lactating females, will use many different summer roost trees, often switching roosts every 1 to 5 days and moving hundreds of feet between successive locations (Menzel et al. 2002, Owen et al. 2002, Johnson et al. 2009).

The northern long-eared bat has experienced the steepest population decline of the six species of bats in the Northeast that are affected by WNS, with numbers at monitored hibernacula in several states dropping by an average of 98% between 2006 and 2011 (Turner et al. 2011, Langwig et al. 2012, Reeder and Moore 2013). Population models for the closely-related Indiana bat and little brown bat (*M. lucifugus*), which have experienced lower relative population declines of 72% and 91%, respectively, project imminent broad-scale extirpation of these species throughout much of their range (Frick et al. 2010, Thogmartin et al. 2013), indicating that the northern long-eared bat is also at extremely high risk of extinction. In New York State, pre- and post-WNS count data from 18 northern long-eared bat hibernacula showed local population extinction at all but 4 of the sites as of 2011 and suggested an average statewide population decline of 97% (Turner et al. 2011). Surveys at these 18 hibernacula in New York State during the winter of 2012-2013 found only 14 northern long-eared bats where there had previously been over 1,100 before WNS (Niver 2015). Although geographically widespread, the northern long-eared bat was uncommon in New York State and many other parts of eastern North America even prior to the outbreak of WNS, relative to most other bats (Turner et al. 2011, Langwig et al. 2012, Moosman et al. 2013). Henderson et al. (2008) theorized that this was possibly due in part to their sensitivity to deforestation and fragmentation (Henderson et al. 2008).

The USFWS IPaC System lists the northern long-eared bat as occurring within Orange County, and the acoustic bat survey conducted in August 2015 indicated the presence of northern long-eared bats foraging within the Project Site (**Appendix A**). As with the Indiana bat, it is unknown whether the Project Site is only used by northern long-eared bats as foraging habitat, or if they roost within the site as well. With the exception of the woodland on the western and southern sides of the Echo Lake property, the wooded areas within the Project Site are small fragments that have a high amount of edge relative to their area and are therefore unlikely to be selected by northern long-eared bats for roosting, given their preference for interior forest (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005). NYNHP does not have any records of northern long-eared bat maternity colonies or roosts in the vicinity of the Project Site (NYNHP 2015).

C. DEFINITION OF THE PROJECT SITE

This report makes reference to several geographical areas: the Project Site, Additional Areas, and New Conservation Properties. The Project Site, described below, would contain the Amy's Kitchen Manufacturing Facility, SoS Conference Center, volunteer parking on Strong Farm, and the Warehouse. The Additional Areas would contain the access roadway and water and sewer infrastructure to serve the Proposed Project. The New Conservation Properties are identified as supplementary areas of off-site habitat conservation. The Additional Areas and New Conservation Properties together comprise the "Ancillary Properties" to the Proposed Project.

PROJECT SITE

The Project Site is located in the Town of Goshen north of New York State Route 17M ("NYS Route 17M"), east of the Town of Wawayanda, west of the Village of Goshen, and south of the West Hills Country Club (see **Figure 1)**. The Project Site comprises four (4) properties totaling approximately 374 acres in the Town of Goshen, Orange County, New York (see **Table 1**). The Project Site is

bisected in a north-south direction by the Wallkill River and generally lies south of Echo Lake Road and the future Orange County Heritage Trail ("Heritage Trail") extension west of Hartley Road,[1] although portions of the Project Site lie north of Echo Lake Road and the Heritage Trail.

The Project Site consists of the Ver Hage and Echo Lake properties, where the Amy's Kitchen manufacturing facility and SoS Conference Center would be located, respectively, as well as two additional, adjacent properties herein referred to as the "Lipoff" and "Strong Farm" properties (**Figure 1**). The Lipoff property would remain as vacant land and the Strong Farm property would remain in its current agricultural use while providing limited volunteer parking and overflow attendee parking (if needed) during the daytime hours of the three (3)-day SoS Annual Conference. The properties are located in Commercial/Office Mixed-Use, Industrial, and Rural Zoning Districts of Goshen, NY **(Table 1)**. Land uses in the immediate vicinity of the Project Site include rural residential, farmland, institutional, and rural commercial uses.

Table 1
Properties Comprising the Project Site

Property	Address	SBL	Zoning[1]	Acres	Proposed Use
Amy's Kitchen Properties					
Ver Hage property[2]	111 Hartley Road	12-1-1.222	I	54.6	Manufacturing Facility and Conservation Easement
	103 Hartley Road	12-1-19.2	I	17.1	Manufacturing Facility and Conservation Easement
Lipoff property (east)	12 Echo Lake Road	12-1-1.41	RU	11.8	Conservation Easement
Science of the Soul Properties					
Echo Lake property	41 Echo Lake Road	12-1-24.2	CO, I, and RU	172.9	SoS Conference Center and Conservation Easement
	2832 NYS Route 17M	12-1-23.2	I	21.7	Portion of Access Road and Conservation Easement
Strong Farm property	212 Cheechunk Road	10-1-11.2	RU	96	Maintain Existing Residential and Agricultural Uses, Conservation Easement, Temporary Parking
			TOTAL	**374.1**	

Notes:
[1] Town of Goshen Zoning Designations: Commercial/Office Mixed-Use (CO); Industrial (I); and Rural (RU).
[2] It is anticipated that approximately 11.6 acres of this property would be subdivided off for use by Mr. Ver Hage for a warehouse use. This would leave approximately 60.1acres for use by Amy's Kitchen.

ADDITIONAL AREAS

Two (2) additional areas are required for improvements related to the Proposed Project, but would not be owned or controlled by either Amy's Kitchen or SoS (and so are not considered part of the "Project Site").

ACCESS ROAD IMPROVEMENT AREA

The Proposed Project involves a land transfer of an approximately 8.2 acre portion of SBL 12-1-101 from the State of New York to the Town of Goshen to construct an access road from NYS Route 17M into the main portion of the Echo Lake property (see **Figure 1**). A small area of land on the south side of NYS Route 17M owned by New York State would be used to allow for the re-alignment of Training Center Lane 200 feet west of its current location. This property would

[1] While the Heritage Trail west of Hartley Road is not currently improved as a recreational trail, Orange County intends to initiate clearing in 2016 and complete construction of a multi-use trail west to the City of Middletown by 2018.

remain in its current ownership. As a result of discussions with the New York State Office of Mental Health (NYSOMH), slight modifications to the alignment of the proposed access road would cause a change to the boundary of the land to be transferred from the State of New York to the Town of Goshen. However, the "Access Road Improvement Area" is still located in the same area as described and analyzed in the previous report.

HERITAGE TRAIL UTILITY CORRIDOR

A portion of the Heritage Trail from the Project Site west to the City of Middletown wastewater treatment plant will be occupied by a water supply line and wastewater conveyance line to serve the Proposed Project (see **Figure 2**). The Heritage Trail will remain in the ownership of Orange County (from Hartley Road west to the original Wallkill River channel) and the City of Middletown (from the original Wallkill River channel west to the City of Middletown) and utility easements will be required as part of the Proposed Project (see **Table 2**).

Table 2
Properties Comprising the Proposed Utility Corridor

Owner	Address	Tax ID	Land Use
City of Middletown	159 Dolson Ave, Middletown, NY 10940	49-1-8	WWTP
Orange and Rockland Utilities, Inc	71 Dolson Ave, Middletown, NY 10940	49-1-3 and 1-1-3.1	Electrical Substation*
City of Middletown	Dolsontown Rd, Wawayanda, NY 10973	1-1-4.11 and 1-1-4.12	Heritage Trail Right of Way
City of Middletown	County Rt 50, Wawayanda, NY 10973	3-3-6 and 6-1-10	Heritage Trail Right of Way
City of Middletown	103 Fischer Ln, Goshen NY 10924	12-1-7.11	Heritage Trail Right of Way
County of Orange	45 6 ½ Station Rd, Goshen NY 10924	12-1-7.12	Heritage Trail Right of Way

Notes: * -- No improvements are proposed within the electrical substation. Proposed Project utility lines would run in unimproved portions of these properties.
Sources: Orange County Tax Maps

NEW CONSERVATION PROPERTIES

Table 3 lists three (3) additional parcels, indicated in Figure 1, for inclusion in a Conservation Easement as part of an offset for indirect impacts to threatened and endangered bat species. These parcels include an additional approximately 14.4-acre tax parcel (SBL 12-1-1.5—the western portion of the "Lipoff" property) already owned by an entity affiliated with Amy's Kitchen, an additional approximately 5.3-acre parcel (SBL 12-1-1.3) north of the Ver Hage property and south of Echo Lake Road that is soon to be under contract to purchase from Al Turi Landfill, Inc., and an approximately 8.1 acre portion of the Echo Lake property located in the Town of Wawayanda.

Table 3
New Conservation Properties

Property	Address	SBL	Zoning[1]	Acres	Proposed Use
Hartley Road property	121 Hartley Road	12-1-1.3	I	5.3	Conservation Easement
Lipoff property (west)	38 Echo Lake Road	12-1-1.5	RU	14.4	Conservation Easement
Wawayanda property	Echo Lake Road	1-1-40	SR	8.1[2]	Conservation Easement
			TOTAL	**27.8**	

Notes:
[1] Town of Goshen Zoning Designations: Commercial/Office Mixed-Use (CO); Industrial (I); and Rural (RU). Town of Wawayanda Zoning Designation: Suburban Residential (SR).
[2] The total acreage of this tax parcel is 12.1 acres. However, an approximately four (4) acre portion of the property will be reserved for potential future residential use.

D. PROJECT DESCRIPTION

As discussed in the Introduction above, the Proposed Project has been modified in response to comments. However, it still comprises the following primary components (see site layout in **Figures 3a-c**):

- Amy's Kitchen manufacturing facility on the Ver Hage property;
- Potential subdivision of approximately 11.6 acres from the Ver Hage property for future warehouse use;
- SoS Conference Center on the Echo Lake property;
- Potable water supply line and wastewater conveyance line within the existing Heritage Trail; and
- Use of the Strong Farm property for agricultural use and volunteer parking for SoS.

The Proposed Project also involves a land transfer of an approximately 8.2 acre portion of SBL 12-1-101 from the State of New York to the Town of Goshen to construct a Project Site access road from NYS Route 17M into the main portion of the Echo Lake property (see **Figure 3a**). The portion of the Echo Lake property that currently has road frontage on NYS Route 17M (SBL 12-1-23.2) is too narrow and too close to the existing bridge that carries NYS Route 17M over the Wallkill River to permit the site access road. The new access road would serve the Mid-Hudson Psychiatric Center (one of the two existing driveways to which would be closed on NYS Route 17M) SoS Conference Center, and Amy's Kitchen Manufacturing Facility. The new roadway would be located approximately 200 feet west of the existing Training Center Lane, which would be relocated to align opposite the new site access road to form a full movement signalized intersection.

AMY'S KITCHEN

Amy's Kitchen proposes to construct an approximately 369,000 square-foot manufacturing facility where food is prepared, packaged and frozen (**Figure 3b**). The manufacturing facility is proposed to be constructed on the Ver Hage property, with initial site access from Hartley Road. Ultimately, a new roadway would provide direct access for Amy's Kitchen to NYS Route 17M across the Echo Lake property and across a new vehicular bridge over the Wallkill River.

The plant would be constructed in two (2) phases: an initial approximately 226,000 square-foot plant, including an 11,000 square-foot office area, to be completed in 2019 with an approximately 140,000 square-foot expansion (134,000 square feet of production space plus 6,000 square feet of office area) to be opened in approximately 2023. An ancillary building of approximately 3,000 square feet would be constructed for on-site medical treatment of Amy's Kitchen staff and families as part of Phase 1.

The Proposed Project includes approximately 642 parking spaces for employees, 49 parking spaces for visitors, and 18 tractor-trailer parking spaces. Approximately 20 to 30 loading bays would be provided. The Amy's Kitchen manufacturing facility would employ approximately 459 full-time people on the Project Site upon completion of Phase 1, and approximately 681 full-time people upon completion of Phase 2 of the Project.

The plant would run three shifts, five days per week, with operations occasionally occurring on weekends as noted below. The shift times would generally start/end during the 5:00 AM to 7:00 AM time period, during the 2:00 PM to 5:00 PM time period, and overnight during the 10:00 PM to 1:00 AM time period. During these periods, the start and end times of the shifts are

staggered, with each shift lasting 8.5 hours. At full operation there would be approximately 321 Day Shift, 304 Swing Shift, and 56 Graveyard Shift employees. Thus, the maximum number of individuals to be in the manufacturing facility at any one time is projected to be approximately 325 people (assuming a small number of visitors). The on-site clinic building would be staffed by one (1) doctor and one (1) nurse as well as one (1) office assistant. Including patients and staff, and based on the Applicant's experience in its Medford, Oregon plant, the maximum number of individuals to be in the on-site clinic building at any one time is projected to be approximately eight (8) to ten (10) people. Regular plant operations would not take place on weekends except for cleaning or maintenance but occasionally, based on demand, the plant may run production shifts on weekends. General operations at the factory include processing, cooking, assembling, packaging and freezing meals for distribution.

The full footprint of disturbance for the Amy's Kitchen facility, including all buildings and other permanent impervious surfaces, would be approximately 37 acres. Approximately 34 acres (approximately 48 percent) of the property (excluding the 11.6 acres for the potential subdivision explained below) would remain undisturbed as open space.

Stormwater management facilities are proposed for the purpose of water quality treatment and stormwater quantity control. Stormwater treatment would be provided through a combination of filtration and infiltration. Several of the proposed practices provide runoff reduction volume credits (RRV), including porous pavement, bio-retention areas, and dry swales. In order to minimize site disturbance and mimic existing drainage patterns, existing topography would be held to the greatest extent possible when determining the proposed site grading. The stormwater management system would be designed to comply with the latest design standards of New York State Department of Environmental Conservation (NYSDEC) and the NYSDEC General Permit for Stormwater from Construction Activity (GP-0-15-002) or its successor.

SITE ACCESS

A new roadway and a new vehicular bridge across the Wallkill River would provide direct access for Amy's Kitchen to NYS Route 17M across the Echo Lake property. In addition to employee vehicle trips, Amy's Kitchen anticipates approximately 56 truck trips (entering or exiting) per day. Emergency access would be provided from Hartley Road.

NYS Route 17M and Site Entrance

Site access would be from a new access road intersecting with NYS Route 17M near the existing Training Center Lane. Based on initial consultations with NYSDOT, the Proposed Project would need to upgrade the intersection of NYS Route 17M at the location of the proposed site entrance. To facilitate these improvements, the Proposed Project involves a land transfer of an approximately 8.2 acre portion of SBL 12-1-101 from the State of New York to the Town of Goshen. The purpose of the land transfer would be to improve access to NYS Route 17M and safety along NYS Route 17M, not only for the Project, but also for the Mid-Hudson Psychiatric Center and the Orange County Transfer Station.

The new access road would serve the Mid-Hudson Psychiatric Center, SoS, and Amy's Kitchen. The new roadway would be located approximately 200 feet west of the existing Training Center Lane, which would be relocated to align opposite the SoS and Amy's Kitchen access to form a full movement signalized intersection. The intersection would be reconstructed to have multi-lane approaches. Two entrance and exit lanes would be provided on the new access road, one entrance and one exit lane would be provided on Training Center Lane, separate left-turn lanes

in each direction would be provided along NYS Route 17M, and a separate right-turn lane in the westbound direction would be provided along NYS Route 17M.

Traffic light signalization of this intersection would be required to accommodate anticipated future traffic volumes and improve safety. The proposed improvements will require a Highway Work Permit from the New York State Department of Transportation. Coordination with the Orange County Department of Public Works regarding the relocation of Training Center Lane will also be required.

Based on the current Highway Improvement Plans for the NYS Route 17M/Training Center Lane intersection improvements, the eastbound left-turn lane is proposed to be 185 feet long with an 86 foot taper and the eastbound right-turn lane is proposed to be 100 feet long with a 75 foot taper. The westbound left-turn lane is proposed to be 200 feet with an 86 foot taper and the westbound right-turn lane is proposed to be 125 feet with a 75 foot taper. Training Center Lane is proposed to be relocated approximately 200 feet west of its current location.

While it is understood that the Town would continue to own the portion of the new access road to and on the Project Site and located on Town-owned property, Amy's Kitchen and SoS would be responsible for snow-removal and maintenance of the full length of this roadway, as well as the nearby landscaped areas to ensure access and adequate site distances are maintained.

Wallkill River Bridge

A new Warren-truss bridge would be constructed across the Wallkill River to connect the Ver Hage property to the Echo Lake property and the access road to NYS Route 17M. The bridge would be approximately 50 feet wide and accommodate three (3) vehicular lanes and a sidewalk. The third vehicular lane would allow for a left-turn lane at the end of the bridge into the employee parking lot and is considered a necessary safety element. Bridge abutments would be located outside of the boundaries of the Wallkill River and any associated wetlands but would be within the 100-year floodplain. The bridge would be constructed in accordance with New York State Department of Transportation standards.

WAREHOUSE

An approximately 11.6-acre portion of the Ver Hage property would be subdivided for a future approximately 70,000 square-foot Warehouse Use that would have access from the Amy's Kitchen internal site driveway (emergency access would be provided from Hartley Road). The Warehouse Use would likely generate potable water demand of approximately 7,000 gpd (and an equivalent amount of sanitary wastewater). Water and sewer service would be provided through interconnections with the systems serving Amy's Kitchen. Water and wastewater pump stations would likely be required to serve the Warehouse Use and would be located on the warehouse property. Of the approximately 11.6-acre lot, the warehouse, site driveway, and parking area would disturb approximately 5.6 acres leaving approximately 6 acres undisturbed. It is anticipated that stormwater management facilities for the purpose of water quality treatment and stormwater quantity control would be required as part of Site Plan approval for the Warehouse Use. The stormwater management system would be designed to comply with the latest design standards of NYSDEC and the NYSDEC General Permit for Stormwater from Construction Activity (GP-0-15-002) or its successor. (See **Figure 3d**)

SCIENCE OF THE SOUL

SoS is an international, non-denominational philosophy based on the teachings universal to all religions. SoS, also known as Radha Soami Satsang Beas, has been in the United States since 1911 and is a registered 501(c)(3) religious non-profit organization.

SoS proposes to construct a Conference Center on the Echo Lake property. The Conference Center would comprise an approximately 200,000 square-foot open-air pavilion with four (4) associated restroom buildings (approximately 5,000 square feet each); one (1) two-story approximately 80,000 square-foot Multi-Purpose/Family Area Building; one (1) two-story approximately 38,000 square-foot Central Building; one (1) one-story approximately 8,000 square-foot Maintenance Barn; two (2) Caretaker Residences, approximately 2,400 square feet each; one (1) approximately 4,500 square-foot Guest House; and associated pervious and impervious parking areas to accommodate approximately 2,043 cars and 130 buses (see **Figure 3c**)

The Conference Center would be used to host one (1) annual three (3)-day national conference ("National Conference"), with attendance of up to 12,000 people. The National Conference would typically be held over a three (3) day period: either Friday through Sunday or Saturday through Monday. Each day's program for a National Conference would run from 9:00 AM until 1:00 PM.

In addition, SoS would hold one (1) regional two (2)-day conference ("Regional Conference") per year with approximately 1,200 to 2,000 attendees over a weekend. The Regional Conference would be held in the two-story Multi-Purpose/Family Area Building. The lecture would occur on one floor, and the other floor would be used for the family area. The Regional Conference would start mid-day on a Saturday and conclude on a Sunday afternoon.

Regular weekly meetings on Sunday mornings for local congregants ("Weekly Meeting"), estimated between 200 and 400 people, would be held in the Multi-Purpose Building. The Central Building would be used for administrative purposes, temporary accommodation for volunteers staying for short periods, and small volunteer meetings. During the week, a small number of volunteers (10 to 15 people) would attend to normal administrative and property management tasks.

The Central Building would also contain a commercial kitchen, which would be used to provide meals for volunteers. Guests attending the National and Regional Conferences would not be served from this kitchen. As further described below, they will be offered a bag lunch with wrapped food provided by Amy's Kitchen.

During both the National and Regional Conferences, attendees would engage in off-site activities (tourism, shopping, and entertainment) or on-site volunteer activities (property maintenance and agriculture) after the day's session.

The Conference Center would not be used for weddings or other cultural events, nor would it be rented to the general public for any use.

Access to SoS would be from the new entrance roadway off NYS Route 17M, which would also serve the Amy's Kitchen manufacturing facility. Emergency access and such other access as the Town may require, and as the County might permit, would be provided from Echo Lake Road with a permeable hard surface.

SoS would seek to avoid using temporary structures. Temporary structures would be limited to small canopy/tent structures for serving water, lunch, and tea or as information tables. These would be located in strategic areas so that event staff and guests would have access to water, tea,

and information at several locations. Temporary canopy structures may also be used for book sales during the National Conference.

The two (2) caretaker residences would serve as permanent residences for two (2) on-site caretaker households (individuals or couples). The five-bedroom guest-house would be used by SoS traveling speakers attending the National Conference and for National Board members and distinguished guests. The guest house would be vacant at all other times.

The proposed use will be subject to a Special Permit issued by the Planning Board of the Town of Goshen, the restrictions of which will be enforced by the Town Code Enforcement Officer.

NOISE

During the National and Regional Conferences, all sound amplification would take place within the 200,000 square-foot steel-frame open-air pavilion. The amplified sound would consist of an approximately two-hour lecture preceded by approximately 30 minutes of spiritual singing. At Weekly Meetings, the amplified sound would be contained in the multi-purpose building. Amplified speakers would not be used throughout the property to make announcements.

SITE LIGHTING

SoS does not contemplate large nighttime events. The only night-time use would be by volunteers in preparation for the National and Regional events, night watch, and periodic evening "Study Sessions" where religious texts are studied in a small group. These Study Sessions are held once or twice during the week, starting at approximately 7:00 PM and ending at approximately 8:00 PM, with attendance of 20 to 25 people who live locally and would leave the property promptly after the session ends. Other than preparation for the National and Regional events, all activities would cease and the Conference Center would close at 9:00 PM.

As such, site lighting would be minimal, and would generally be used to light roads, small parking areas, and pathways. All lighting would be dark-sky compliant. In addition, the proposed lighting would be zoned, so that only those fixtures needed to support site activities would be turned on. In particular, the lighting for the orchard parking area at the SoS Conference Center would only be used during the National and Regional Events.

SITE ACCESS AND PARKING

Access to SoS would be from the new entrance roadway off NYS Route 17M, which, as discussed above, would also eventually serve the Amy's Kitchen manufacturing facility. Emergency access and such other access as the Town may require, and as the County might permit, would be provided from Echo Lake Road with a permeable hard surface. The primary parking for the SoS Conference Center would be on the Echo Lake property. The main parking area would have a combination of approximately 660 paved and 1,280 gravel and/or grass parking spaces. Four additional parking areas containing approximately 24 parking spaces each would be located adjacent to the Central Building and Family Area building. Another small parking area with approximately 7 spaces would be located in the rear of the open-air pavilion. In addition, a parking area to accommodate 130 bus parking spaces would be located on the eastern side of the Center. During the larger National Conference, parking for volunteers would be provided on an as-needed basis on portions of the Strong Farm property that are currently fields or otherwise already cleared space. No impervious surface parking areas would be created on the Strong Farm property. The gravel/grass parking area on the Echo Lake property would be heavily planted with a grid of trees (hereafter referred to as the "orchard parking area"), which would help to offset losses of trees from clearing some of the currently wooded areas of the

property and would provide a soft edge or buffer between the Conference Center and the western portion of the property that would remain wooded and be preserved.

STRONG FARM

SoS purchased the Strong Farm property and intends to continue and enhance its current agricultural use. SoS would also restore the main residence and some of the agricultural structures on the property; the two other residential structures would be rented to tenants or used for volunteer housing during the National and Regional Conferences. Continuation of the former dairy farm use is not proposed. As noted above, the Strong Farm property would also be used for volunteer parking for the SoS Conference Center during the National Conference.

POTABLE WATER AND WASTEWATER

Potable water supply to the Amy's Kitchen manufacturing facility, warehouse, and SoS would be provided by a new private utility connection to the City of Middletown water supply. An approximately eight (8)-inch diameter line would be constructed within the Heritage Trail corridor and would connect with existing City of Middletown water supply lines in the vicinity of the City of Middletown wastewater treatment plant (WWTP). The new private water line would be constructed in a new trench within the Heritage Trail Utility corridor at a depth of approximately 4.5 feet below existing ground surface. The water line would be horizontally separated from the existing 36- to 42-inch City of Middletown wastewater effluent line by ten (10) feet and from the proposed private wastewater conveyance line serving the Proposed Project by three (3) feet horizontally and 18 inches vertically. The new water line and wastewater conveyance line would be constructed in a single trench. It is anticipated that no pumping stations would be required along the Heritage Trail corridor to ensure satisfactory water pressure at the end of the conveyance line. (see **Figure 2, and Figures 8a through 8o**).

An approximately eight (8)-inch diameter wastewater force-main would be constructed within the Heritage Trail corridor and would connect to the City of Middletown WWTP. Two (2) below-ground pumping stations would be required to ensure pre-treated wastewater effluent conveyance to the Middletown WWTP. One (1) pumping station would be located within the Echo Lake property and one (1) pumping station would be located within the Ver Hage property. The Echo Lake pumping station would be approximately ten (10) feet in diameter and 14 feet in depth. The Ver Hage pumping station would be approximately 20 feet by 46 feet and 12 feet in depth. Air release or vacuum valves would be placed along the length of the wastewater conveyance to allow maintenance access and to allow for release of air.

A wastewater pre-treatment plant would be constructed on the Ver Hage property to reduce the high biological oxygen demand (BOD) that is characteristic of Amy's process wastewater. The wastewater pre-treatment plant would be located at the north end of the employee parking lot and would have a footprint of approximately 15,000 square feet.

Since issuance of the DEIS, the Applicant has prepared more detailed design drawings of the wastewater pre-treatment plant, which would comprise an enclosed structure containing the treatment works, an exterior enclosed sludge storage tank, and an equalization tank, selector tank and aeration basin. The plant building would be approximately 60 feet by 40 feet and 18 feet high with an influent channel screen building approximately 22 feet long by 10 feet wide. Building height for the channel screen will be specified per final equipment selection or match the general plant building. The sludge storage tank would be approximately 14 feet in diameter and approximately 20 feet high. The sludge storage tank would be equipped with odor control that would minimize odors from the tank. Any fan

or other equipment on the exterior of the wastewater pre-treatment plant would likely be of a size and capacity as to be virtually inaudible above background noise levels.

TOTAL ACREAGE OF DISTURBANCE

It is estimated that the total footprint of the Proposed Project would disturb approximately 151 of the 426 total acres that comprise the Project Site and Ancillary Properties. **Appendix B** to this report contains the grading plans for the Proposed Project. The majority of the acreage that would be disturbed to construct the Proposed Project is currently old field and successional southern hardwoods habitat. The remainder of the area of disturbance currently consists of successional shrubland, shallow emergent marsh, and red maple swamp (**Table 4**). The areas of disturbance in relation to the current distribution of habitat types occurring within the Project Site are shown in **Table 4** and illustrated in **Figure 4**.

Table 4
Acreages of Disturbance to Different Habitat Types on the Project Site and Ancillary Properties

Community Type	Total Acres	Acres Disturbed	Acres Undisturbed
Project Site			
Beech-Maple Mesic Forest (W)	0.94	0.00	0.94
Cropland/Field Crops	33.94	0.00	33.94
Cropland/Row Crops	27.92	0.00	27.92
Ditch/Artificial Intermittent Stream	0.89	0.00	0.89
Floodplain Forest (W)	11.59	0.00	11.59
Red Maple - Hardwood Swamp	1.26	0.05	1.22
Sedge Meadow	5.53	0.00	5.53
Shallow Emergent Marsh	5.56	4.32	1.25
Successional Old Field	96.31	74.74	21.56
Successional Shrubland	27.18	16.67	10.51
Successional Southern Hardwoods (W)	175.23	48.88	126.35
SUBTOTAL	***386.35***[1]	***144.66***	***241.69***
Ancillary Properties			
NYS Land transfer parcel			
Successional Shrubland	3.32	3.32	0.00
Successional Southern Hardwoods (W)	4.90	2.78	2.12
SUBTOTAL	***8.22***	***6.10***	***2.12***
New Conservation Properties			
Floodplain Forest (W)	7.15	0.00	7.15
Successional Old Field	6.22	0.00	6.22
Successional Southern Hardwoods (W)[2]	16.03	0.00	16.03
SUBTOTAL	***29.40***	***0.00***	***29.40***
TOTAL	**423.97**	**150.76**	**273.21**

Notes:
[1] Total Acres were calculated using tax parcel boundaries obtained from Orange County GIS and do not match property tax records of parcel acreage presented in Table 1 above.
[2] Excludes 4 acre portion of Wawayanda parcel for potential future residential development (W) Woodland

CONSTRUCTION SEQUENCE

Full build-out of Amy's Kitchen would occur in two (2) phases. Phase 1 would total 226,000 square feet: 215,000 square feet of production space and 11,000 square feet of office space. An accessory 3,000 square-foot medical clinic would be constructed in a free-standing building on the Project Site. Phase 1 would also include construction of the new access road from NYS Route 17M, relocation of Training Center Lane, the bridge across the Wallkill River, internal driveways and employee parking, water supply lines, wastewater conveyance lines, and the on-

site wastewater pre-treatment system. Site landscaping, stormwater management, and lighting would also be completed. It is anticipated that Phase 1 would take approximately 24 months to complete. Amy's Kitchen has scheduled the Goshen facility building to be completed in 2019. Grading would not commence until Site Plan approval has been finalized by the Town of Goshen Planning Board. Clearing of trees would not commence until November 1 to comply with NYSDEC restrictions relating to protected species of bats.

Overall, the sequence of construction activities is substantially similar to what was described in the previous report. A modified construction schedule has been developed (see **Figure 9**).

Construction activity would begin with site work (clearing and grading) of the Access Road Improvement Area, access road alignment on the Echo Lake property, and the bridge landing area on the Ver Hage property. Delivery of earth-moving equipment and limited construction worker access to the Project Site would be provided directly from NYS Route 17M and by the existing driveway to the Echo Lake property on Echo Lake Road and by the existing driveway to the Ver Hage property on Hartley Road. The use of the Hartley Road access would be de minimis, as once the earth moving equipment is delivered to the site it will remain for a significant portion of the construction period. Neither the Echo Lake Road driveway nor the Hartley Road driveway would be used as long-term construction site access points. Since the initial focus of construction is the clearing and grading of the access road from NYS Route 17M to the upper portion of the Echo Lake property and the Wallkill River bridge location, that road would become the primary construction access to the Project Site.

While rough grading occurs on the Echo Lake property and the Wallkill River bridge is constructed, installation of utilities serving the Proposed Project would be underway. A significant amount of investment is required to bring utilities to the Project Site and this must occur before construction can commence on building foundations and super-structure. The water supply and wastewater force main would be constructed within the Heritage Trail Utility Corridor while the gas line would be constructed along the access road from NYS Route 17M. Installation of the Wallkill River bridge would follow to allow for construction access to the Ver Hage property from NYS Route 17M.

Once the access road and bridge have been substantially completed and would allow for construction truck traffic, transfer of excess fill material from the Echo Lake property to the Ver Hage property would commence. Since the grading plan for the Proposed Project contemplates a roughly balanced cut-and-fill across the Project Site, excavated material from the Echo Lake property would be used to fill the Ver Hage property. With the access road and bridge completed in the earliest construction phase, very limited construction traffic would use either Hartley Road or Echo Lake Road.

Following rough grading on the Ver Hage property, construction of building foundations and site utilities would commence, followed by construction of site buildings for the Amy's Kitchen manufacturing facility. Electrical connections for both Amy's Kitchen and SoS Conference Center would be pulled from existing transmission lines along Hartley Road and/or Echo Lake Road.

Phase 2 of Amy's Kitchen would total 140,000 square feet: a 134,000 square feet expansion of production space and an additional 6,000 square feet of office space. Phase 2 construction is anticipated to be completed by approximately 2023.

Although not under the direct control of the Project Sponsors, for purposes of reviewing it was assumed that the warehouse use would be completed by 2023.

E. ECOLOGICAL COMMUNITIES OF THE PROJECT SITE AND ANCILLARY PROPERTIES

The section below provides an overview of the ecological communities (*sensu* Edinger et al. 2002; **Figure 4**) occurring within each of the four properties that comprise the Project Site, Additional Areas, and the New Conservation Properties. **Section F** presents detailed information on forest composition and structure, and potential roosting habitat for the Indiana and northern long-eared bat within and outside of the Proposed Project's limits of disturbance.

PROJECT SITE

VER HAGE

The Ver Hage property is bordered to the south by a closed landfill and an active waste processing facility, to the west by the Wallkill River, to the north by a former railroad right-of-way intended for improvement by Orange County as a continuation of the Heritage Trail, and to the east by Hartley Road. It consists of successional old field, woodland, wetland, and fresh surface waters (Wallkill River and Cheechunk Creek) and associated riparian/floodplain forest. The successional old field occupies approximately two-thirds of the property (**Figure 4**). Dominant herbaceous plants in the field include wild madder (*Rubia peregrina*), common milkweed (*Asclepias syriaca*), Canada goldenrod (*Solidago canadensis*), common mugwort (*Artemisa vulgaris*), cow vetch (*Vicia cracca*), yellow vetchling (*Lathyrus aphaca*), and tall thistle (*Cirsium altissimum*). Grasses in the herbaceous layer include foxtail grass (*Alopecurus* sp.), switchgrass (*Panicum virgatum*), and dactylis (*Dactylis* sp.). The shrub layer is dominated by bush honeysuckle (*Lonicera* sp), multiflora rose (*Rosa multiflora*), common red raspberry (*Rubus idaeus*), and autumn olive (*Elaeagnus umbellata*).

The woodland consists of two fragments of successional southern hardwood forest on the east and west sides of the property that are separated by the successional old field. The forest-field edges are feathered with transitional zones of woody shrubs. The dominant canopy tree species near the edges include eastern cottonwood (*Populus deltoides*), American sycamore (*Platanus occidentalis*), and black walnut (*Juglans nigra*). Red panicled dogwood (*Cornus racemosa*) dominates the shrub layer, and grape (*Vitis* sp.), poison ivy (*Toxicodendron radicans*), and Virginia creeper (*Parthenocissus quinquefolia*) are abundant vines. The more interior portions of the forest fragments are dominated by black cherry (*Prunus serotina*), honey locust (*Gleditsia triacanthos*), sugar maple (*Acer saccharum*), and red maple (*Acer rubrum*). Bush honeysuckle, barberry (*Berberis* sp.), and wineberry (*Rubus phoenicolasius*) are the dominant shrub species and Virginia creeper is the predominant vine. Garlic mustard (*Alliaria petiolata*) and common jewelweed (*Impatiens capensis*) are dominant in the herbaceous layer. The woodland fragments on the eastern and western sides of the property include riparian and floodplain forest where they border Cheechunk Creek and the Wallkill River, respectively. There, green ash (*Fraxinus pennsylvanica*), American sycamore, eastern cottonwood, and pin oak (*Quercus palustris*) are the dominant canopy tree species and the herbaceous layer consists of primarily jewelweed, stinging nettle (*Urtica dioica*), moneywort (*Lysimachia nummularia*), and beggar's tick (*Bidens frondosa*). The forest bordering Cheechunk Creek extends towards the southern end of the property, forming a narrow peninsula of young trees that divides the old field to the east and west. This early seral stage area is composed of several species of young and small trees, including shagbark hickory, black cherry, slippery elm, ash (*Fraxinus* sp.), and butternut hickory.

Wetland investigations of the ver Hage property have confirmed the presence of a narrow band of wetlands habitat along the Wallkill River, a small depressional wetland at the southern property boundary (Wetland "A"), and a larger forested wetland in the floodplain of Cheechunk Creek. Dominant plant species in the wetlands bordering the Wallkill River include American sycamore, eastern cottonwood, and northern white violet. The small depressional wetland at the southern property boundary is dominated by reed canary grass and eastern cottonwood. The forested wetlands within the Cheechunk Creek floodplain contain green ash, grape vines, with moneywort and jewelweed in the understory. The federal jurisdictional determination conducted on November 17, 2015 by the US Army Corps of Engineers (USACE) determined that the isolated wetland (Wetland "A") on the Ver Hage property is not federally-regulated because it lacks a significant nexus to other waters of the United States (see **Figure 5**).

LIPOFF PROPERTY (EAST)

The Lipoff property is bordered to the south by Echo Lake Road, to the west by the Wallkill River, to the north by the Strong Farm property, and to the east by residential properties. The property primarily consists of successional old field, woodland, and wetlands. The successional old field represents a small portion of the property, in the northwestern corner (**Figure 4**). The herbaceous layer of the field is predominantly orchard grass (*Dactylis glomerata*), switchgrass, common milkweed, and common mugwort. The limited shrub layer is dominated by common red raspberry.

The woodland includes successional southern hardwood and beech-maple mesic forest. The successional southern hardwoods community occupies more than 50 percent of the property and is located both north and south of Cheechunk Creek. Dominant trees include green ash, European black alder (*Alnus glutinosa*), honey locust, and American sycamore. There is a well-developed shrub layer consisting primarily of wineberry, bush honeysuckle, common red raspberry, and spicebush (*Lindera benzoin*). The herbaceous layer is predominantly Virginia creeper and garlic mustard, with grape in the vine layer. The beech-maple mesic forest occupies a small portion of the property on a steep hill that runs parallel to Cheechunk Creek on its north side. The tree canopy predominantly consists of American beech (*Fagus grandifolia*), sugar maple, red oak (*Quercus rubra*), black cherry, and black birch (*Betula lenta*). The shrub layer is sparse and primarily consists of barberry. The herbaceous layer is equally sparse and dominated by common yellow wood sorrel (*Oxalis stricta*).The floodplain forest along the Wallkill River and Cheechunk Creek, identified as wetlands during wetland investigations of the Lipoff property, is narrow and dominated by pin oak, green ash, honey locust, and red maple. The shrub layer is primarily a mixture of multiflora rose and hawthorn (*Crataegus* sp.). The herbaceous layer is primarily stinging nettle, poison ivy, and sedge (*Carex* sp.). The northeastern corner of the property contains a shallow emergent marsh with sedges (*Carex* sp.) and rushes (*Juncus* sp.) (Wetland "D").The federal jurisdictional determination conducted on November 17, 2015 by USACE determined that the isolated wetland (Wetland "D") on the Lipoff property is not federally-regulated because it lacks a significant nexus to other waters of the United States (See **Figure 5**).

STRONG FARM

The Strong Farm property is bordered to the south by the Lipoff property (east), to the west by the Wallkill River, to the north by primarily forested land, and to the east by Owens Road. The Strong Farm property consists of primarily successional old field, active crop fields, woodland, and wetlands (**Figure 1**). The majority of the property contains successional old fields that are divided by shelter belts and dominated by common mugwort, common milkweed, tall thistle, and orchard grass.

The upland portion of the woodland is successional southern hardwood forest, and is located primarily in the northwestern portion of the property and in narrow strips separating the fields. The predominant tree species in this area include eastern cottonwood, silver maple (*Acer saccharinum*), red maple, and American sycamore. The shrub layer is dominated by multiflora rose and common red raspberry. The most common species within the herbaceous layer are Virginia creeper and garlic mustard. The upland forest transitions to floodplain forest along the Wallkill River. There, the tree canopy is predominantly a mixture of eastern cottonwood, green ash, black willow (*Salix nigra*), and American sycamore. The shrub layer is dominated by European black alder, while the herbaceous layer is commonly Japanese stiltgrass (*Microstegium vimineum*).

The northern end of the property contains a sedge meadow, identified as wetlands during wetland investigations of the Strong Farm property, that has a shrub layer of mostly red panicled dogwood and elderberry (*Sambucus canadensis*) and a herbaceous layer of sedge, rush, sensitive fern (*Onoclea sensibilis*), and purple loosestrife (*Lythrum salicaria*).

The active crop fields include a corn field and a hayfield dominated by orchard grass, switchgrass, foxtail grass, and red clover (*Trifolium pratense*).

ECHO LAKE

The Echo Lake property is bordered to the south by the New York State Mid-Hudson Psychiatric Center and New York State Route 17M; to the north and west by the Goshen Town Line, Echo Lake, and Echo Lake Road; and to the east by the Wallkill River. The Echo Lake property consists of primarily successional old field, forest, shrubland, and wetlands (**Figure 1**).

Successional old field covers 46 acres (26 percent) of the property. This habitat type extends south from Echo Lake Road into an area that was previously mined and was reclaimed. Dominant plants include spotted knapweed (*Centaurea maculosa*), red clover, Canada goldenrod, common mugwort, sweet vernal grass (*Anthoxanthum odoratum*), perennial rye (*Lolium perenne*), tall fescue (*Lolium arundinaceum*), and orchard grass. Successional shrubland covers 26 acres (15 percent), primarily in the north-central portion of the property. Rock walls and hedgerows of trees also occur in this area. The dominant shrubs are common buckthorn (*Rhamnus cathartica*), blackhaw (*Viburnum prunifolium*), gray-stem dogwood (*Cornus foemina*), blackberry (*Rubus allegheniensis*), multiflora rose, and young red maple. Red maple and tree-of-heaven (*Ailanthus altissima*) are common tree species in the area. In more open portions, sweet vernal grass, rough-stem goldenrod (*Solidago rugosa*), poison ivy, and Virginia creeper are common. Many of the species found in the successional old field community also occur in the successional shrubland community.

The forested uplands within the Echo Lake property consist of successional southern hardwoods. This is the most common cover type on the property, occupying approximately 99 acres (57 percent). It is common along the slopes adjacent to the Wallkill River and in the western and southern portions of the property. The woodland varies somewhat in dominant tree species and tree sizes, but significant trees over 12 inches DBH are prevalent. The forest in the western portion of the site has evidence of past disturbance and contains stone walls and old hedgerows. Large trees occur along the stone walls, but young forest with a dense shrub layer occurs in some areas. The dominant tree species are tree-of-heaven, eastern cottonwood, black cherry, and sugar maple. There are also areas heavily dominated by red maple saplings. Honeysuckle (*Lonicera morrowii*), common buckthorn, blackhaw, and multiflora rose are abundant shrubs, and poison

ivy, Virginia creeper, clearweed (*Pilea pumila*), and hound's tongue (*Cynoglossum officinale*) occur in the herbaceous layer.

Eastern cottonwood is abundant in the southern portion of the site and the areas near the Wallkill River, where American sycamore also occurs. Black cherry, sugar maple, and white ash (*Fraxinus americana*) are common on the drier slopes.

Nine (9) delineated wetlands totaling approximately 19.3 acres exist on the Echo Lake property (see **Figure 5**). Three (3) of the nine (9) totaling approximately 10 acres are located on the portion of the Echo Lake property north of the Heritage Trail and are associated with NYSDEC wetland MD-24. (Wetland C is not associated with NYSDEC wetland MD-24). (See **Figure 6**).

Based on an initial field visit by USACE in November 2015, it was indicated that two (2) wetlands (Wetlands J and K) totaling approximately 4.8 acres are likely to be under the jurisdiction of the USACE. Wetland J is the Wallkill River and associated drainage channels and occupies approximately 3.7 acres of open water or drainage channels. Wetland K is a small red maple-hardwood swamp that occurs in the southern portion of the property and occupies approximately 1.13 acres. Red maple and green ash are the dominant tree species in this area. Many of the trees in this area are mature and over 12 inches DBH. Spicebush is abundant in some places and forms a dense, tall shrub layer. Common herbaceous species include skunk cabbage (*Symplocarpus foetidus*), common jewelweed, poison ivy, cinnamon fern (*Osmunda cinnamomea*), and Virginia creeper.

The remaining four (4) individual emergent wetlands totaling approximately 4.5 acres exist on the Echo Lake property as a result of past mining activities. Due to their isolated landscape position, USACE has preliminarily determined based on an initial field visit in November 2015, that these four (4) wetlands are not under USACE jurisdiction. Dominant plants identified in these wetlands include rice cut grass (*Leersia oryzoides*), spike rush (*Eleocharis* sp), fox sedge (*Carex vulpinoides*), hop sedge (*C. lupulina*), late goldenrod (*Solidago gigantea*), burreed (*Sparganium* sp.), reed canary grass (*Phalaris arundinacea*), purple-leaf willow herb (*Epilobium coloratum*), soft rush (*Juncus effusus*), ironweed (*Veronia noveboracensis*), water willow (*Decodon verticillatus*), purple loosestrife (*Lythrum salicaria*), and aster (*Aster sp*.).

AKRF, Inc. conducted field inspections for vernal pools in May and June of 2015, and in April 2016. Isolated wetlands D and H on the Echo Lake property had no standing water at the time of the April inspection, and do not, therefore, provide habitat for pond-breeding amphibians. Isolated wetlands D and F had a maximum depth of water of between 1 and 1.5 feet. These wetlands had full exposure to the sun, were heavily choked with algal mats, gave off an odor indicating organic decay, and were lacking or had limited woody debris to which amphibians could attach egg masses. On the basis of the dense algae, high sun exposure, shallow water depth and lack of or limited woody debris, these wetland areas were determined to not provide viable vernal pool habitat support successful breeding of endemic vernal pool species (wood frog, mole salamanders, fairy shrimp).

ADDITIONAL AREAS

HERITAGE TRAIL UTILITY CORRIDOR

The Heritage Trail Utility Corridor itself contains habitat of little value. The level area formerly occupied by railroad tracks consists of compacted fill soils roughly 10 feet in width with little vegetation. The margins of the embankment (or cut in certain sections) are predominantly characterized by pole-sized deciduous saplings and vines. The Heritage Trail Utility Corridor runs through a mix of forested upland and wetland habitats, including primarily successional southern

hardwood and red maple/green ash swamp. West of I-84, the Heritage Trail Utility Corridor forms a narrow corridor lined with trees through cleared farm lands and wetland meadows. Corridors such as the Heritage Trail may provide a conduit for the movement of plants/animals over time and provides foraging opportunities for edge-dependent species, such as white-tailed deer, goldfinch and other common perching birds, and may be used as foraging habitat by Indiana bats.

The final approximately 0.3 mile segment of the proposed utility corridor route runs adjacent to an agricultural field and beneath a powerline easement prior to reaching the Middletown wastewater treatment plant. Portions of this area consist of bare soil adjacent to cultivated portions of the farm fields and within the powerline easement. Other areas consist of shrubby upland hedgerow habitat and areas dominated by early successional weedy species, including *Phragmites australis*, within potential wetland areas.

NYSDEC has mapped two (2) freshwater wetlands adjacent to the Heritage Trail, as shown in **Figure 6**. These are NYSDEC Wetland MD-24, located south of Echo Lake Road, and east of County Route 50; and Wetland MD-19, located north and west of Dolsontown Road. The 100-foot regulated adjacent area for these two (2) wetlands extends into the Heritage Trail. As such, utility line installation within the Heritage Trail Utility Corridor would require a State Freshwater Wetland Permit (ECL Article 24) from the NYSDEC prior to construction.

The Heritage Trail crosses four (4) NYSDEC-mapped streams all classified "C", via bridges and culverts. Because these streams are class "C," the provisions of the NYS Protection of Waters Program (ECL Article 15) do not apply to disturbance within the Heritage Trail Utility Corridor provided no work is necessary to the bridge footings or culvert crossings.

Eleven (11) emergent freshwater wetlands, and five (5) forested freshwater wetlands are mapped by NWI adjacent to the Heritage Trail Utility Corridor (see **Figure 7**). Three (3) of these wetlands cross under the Heritage Trail Utility Corridor by way of a culvert or a bridge: one wetland, east of County Route 50, is a mapped palustrine forested/emergent wetland (PFO1/EM1E), characterized by broad-leaved deciduous plants, persistent standing water, and seasonal flooding; the second, located west of I-84, is a persistent, seasonally flooded palustrine emergent wetland (PEM1E); the third, located west of Dolsontown Road, is a persistent, seasonally flooded, broad-leaf deciduous Palustrine Forested/Scrub-shrub wetland (PFO1/SS1E), connected by culvert to a palustrine emergent wetland, also persistent and seasonally flooded. Site inspection confirms these mapped wetland types and approximate locations. These wetland areas, including the NYSDEC-mapped wetlands along the Heritage Trail Utility Corridor, were field delineated and are shown in Figures 8a through 8o in the context of the proposed water and sewer conveyance lines.

In addition to the NYSDEC-mapped and NWI mapped wetlands, three (3) wetlands adjacent to the Middletown wastewater treatment plant (WWTP) (and on City of Middletown property) were delineated. Wetland A is Monhagan Brook which flows along the west side of the WWTP, across which there is an existing driveway from Dolson Avenue to the WWTP. Wetland B is a small isolated emergent wetland on the east side of the WWTP. Wetland C is a drainage channel northeast of the WWTP, within a transmission line right-of-way, which flows south to join Monhagan Brook south of the WWTP. No wetlands were identified on the adjacent properties owned by Orange & Rockland Utilities.

ACCESS ROAD IMPROVEMENT AREA

The Access Road Improvement Area contains a "successional shrubland" community similar to the shrubland within portions of the Echo Lake property. The habitat contains such plant species

as red cedar (*Juniperis virginiana*), common buckthorn (*Rhamnus cathartica*), blackhaw (*Viburnum prunifolium*), gray-stem dogwood (*Cornus foemina*), blackberry (*Rubus allegheniensis*), multiflora rose (Rosa multiflora), and young red maple (*Acer rubrum*). South of NYS Route 17M, the Access Road Improvement Area crosses more open field, maintained more recently and therefore dominated by grasses and herbaceous species.

Wildlife that can be expected to occur within the access road improvement area is not substantially different from animals expected to occur elsewhere on the Project Site with the exception of breeding habitat for amphibians that require prolonged inundation, such as mole salamanders or spotted turtle. Ponds/pools do not occur within the Access Road Improvement Area. The Area's succesional shrubland and old field habitats provide habitat for small mammals, nesting habitat for some song birds, hunting habitat for raptors (hawks) and other predators, and grazing habitat for deer.

No NWI mapped wetlands are present within the footprint of the proposed access road improvements. Nor has the NYSDEC mapped any wetlands within the footprint of the proposed access road improvements. The only Federally-mapped wetland in the vicinity of this area is a palustrine emergent wetland (PEM1Cd) that is mapped on the south side of NYS Route 17M and further south than the proposed access road improvement. Most of the footprint of the access road improvement area is north of NYS Route 17M and within areas mapped as predominantly moderately well-drained soil.

No wetlands were identified within the area north of NYS Route 17M. The area south of NYS Route 17M is outside of the NWI-mapped area and appears not to be wetland.

NEW CONSERVATION PROPERTIES

HARTLEY ROAD PROPERTY

The Hartley Road property is a triangular parcel of land that is bound by Echo Lake and Hartley Roads to the north, and the Heritage Trail alignment to the south. A power line and the Cheechunk Creek traverse the property. The habitat of the property is characterized by riparian vegetation, successional southern hardwoods, and successional old field within a transmission line right-of-way, that are similar to those described for the Ver Hage property.

LIPOFF PROPERTY (WEST)

The Lipoff property west is bound by the Wallkill River to the east, agricultural fields to the north, Echo Lake Road to the south, and forested areas to the west. Similar to the Lipoff property east of the Wallkill River, this property primarily consists of successional old field, woodland, riparian habitat and wetlands. The woodland includes successional southern hardwood and floodplain forest. A swath of successional old field habitat is located along the southern portion of the property within a transmission line right-of-way.

WAWAYANDA PROPERTY

The Wawayanda property is bound by Echo Lake Road to the north and west, Echo Lake to the east, the Echo Lake property to the south. Similar to the portion of the Echo Lake property north of the Heritage Trail, this property is characterized by southern successional hardwoods, riparian habitats and wetland areas similar to the portion of the Echo Lake property to the south, as described in Section F, *Echo Lake Property Preservation Areas*.

F. FOREST COMPOSITION AND BAT HABITAT CHARACTERIZATION

PROJECT SITE

Woodland habitat within the Project Site was characterized on December 9, 15, and 16, 2015 following the methods described by James and Shugart (1970) for the purposes of assessing potential impacts to Indiana bat and northern long-eared bat habitat due to construction and operation of the Proposed Project, as well as the net conservation benefit to the two bat species that would result from the protection of undeveloped portions of the properties. Twenty three 0.1 acre (0.04 ha) circular plots were randomly established within wooded portions of the Ver Hage, Echo Lake, and Lipoff properties, both within and outside of the Proposed Project's limits of disturbance (LOD) in order to characterize the woodland habitat that would be lost to construct the Proposed Project as well as the remaining woodland habitat on these three properties that would be preserved (see **Figure 4a and 4b**). Within each plot, all shrubs (woody stems < 3 inches diameter at breast height [DBH]) that were intersected while walking two perpendicular transects across the 0.1 acre circle were identified to species and counted. All trees (woody stems ≥ 3 inches DBH) within each plot were counted, identified to species, and measured. Additionally, all living trees and snags within the plots that were considered to have the potential to be a quality roost tree for either Indiana or northern long-eared bats were recorded. Criteria for a quality potential roost tree for either species included DBH greater than or equal to (≥) 4 inches, height greater than (>) 10 feet, and the presence of significantly peeling/sloughing bark or cavities that were visible from the ground (USFWS 2014). Distance to the nearest edge and degree of sun exposure were not considered because Indiana bats prefer roosts near edges and with direct sun exposure (Callahan et al. 1997, Menzel et al. 2001, USFWS 2014), but northern long-eared bats usually do not (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005, USFWS 2014). Therefore, all trees that are considered to be quality potential roost trees are trees that are thought to be quality potential roost trees for Indiana bats, northern long-eared bats, or both.

The shrub and tree data collected within the plots were used to calculate the following standard parameters that describe forest structure: (1) shrub density (stems/acre), (2) relative shrub density (%), (3) tree density (trees/acre), (4) relative tree density (%), (5) tree basal area (ft^2/acre), and (6) percentage of total basal area per tree species (i.e., dominance). Data from plots within and outside the LOD were analyzed independently to separately describe the woodland areas that would be lost and preserved. Because of the heterogeneity of the Project Site's woodlands, both within and outside of the LOD, and their fragmented distribution among multiple properties, plots were grouped into the areas described below rather than pooling them together and extrapolating the results across the entire Project Site.

VER HAGE PROPERTY

Area of Disturbance

Two sampling plots were located within the narrow peninsula of trees at the southern end of the Ver Hage property that would be removed to construct the main building of the Amy's Kitchen manufacturing facility (Plots 20-21, **Figure 10**). This approximately 1.6 acre woodland fragment is in a very early seral stage, with tree DBH averaging 6.3 inches. The maximum DBH of any tree within the two sampling plots in this location was only 15 inches. No species are overwhelmingly dominant; the area is composed of a nearly even mix of several young trees, including shagbark hickory, black cherry, slippery elm, ash (*Fraxinus* sp.), and butternut hickory (**Table 5**). Invasive and/or domesticated tree species are also present, including tree of heaven,

Bradford pear, and apple (*Malus* sp.). The understory shrub community is dominated by invasive multiflora rose, Tatarian honeysuckle, and common buckthorn (**Table 6**). Three quality potential roost trees were found within the two sampling plots, two of which were small snags (4 and 7 inch DBH) and a 15 inch DBH shagbark hickory. This equates to an average density of 15 quality potential roost trees per acre, and 24 total quality potential roost trees when extrapolated to the approximately 1.6 acre area that would be cleared.

Table 5
Tree Composition In the Area of Disturbance of the Proposed Amy's Kitchen Manufacturing Facility

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Shagbark hickory	7.9 ± 4.1	10.4	25	9.8	16.2
Black cherry	7.4 ± 2.2	9.7	30	11.8	15.1
Slippery elm	5.5 ± 2.7	9.0	45	17.6	14.1
Unidentified ash sp.	6.5 ± 3.4	7.0	25	9.8	11.0
Butternut hickory	9.8 ± 6.7	6.4	10	3.9	10.0
White ash	4.8 ± 0.9	6.4	50	19.6	10.0
Tree of heaven	6.5 ± 0.5	3.5	15	5.9	5.4
Bradford pear	6.5 ± 2.1	2.4	10	3.9	3.8
Eastern red cedar	6.0 ± 2.1	2.1	10	3.9	3.3
Pin oak	7.5	2.1	5	2.0	3.3
Red maple	5.8 ± 1.1	1.8	10	3.9	2.9
Apple	5.0 ± 2.8	1.6	10	3.9	2.5
Red oak	6.5	1.2	5	2.0	1.8
Sugar maple	7.0 ± 0.0	2.7	10	3.9	1.0
Common buckthorn	4.0	0.4	5	2.0	0.7

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 20-21 shown in Figure 10. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 6
Shrub Composition In the Area of Disturbance of the Proposed Amy's Kitchen Manufacturing Facility

Species	Density (stems/acre)	Relative density (%)
Multiflora rose	120	28.2
Common buckthorn	110	25.9
Tatarian honeysuckle	70	16.5
Gray dogwood	30	7.1
Black raspberry	20	4.7
Japanese barberry	15	3.5
White ash	15	3.5
Wineberry	15	3.5
Privet	10	2.4
Burning bush	5	1.2
Shagbark hickory	5	1.2
Slippery elm	5	1.2
Unidentified shrub	5	1.2
Total	425	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 20-21 shown in Figure 10. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Preservation Area

Portions of the Ver Hage property that would be outside of the area of disturbance and protected would provide potential habitat for Indiana and northern long-eared bats (**Figure 4**). On the Ver Hage property, this includes the floodplain/riparian forest bordering Cheechunk Creek where it makes a sharp bend in the northeastern corner of the property. This approximately 5.4 acre area within and outside the bend is young forest that is generally composed of green ash, American sycamore, eastern cottonwood, and pin oak. Indiana bats were identified in this area during the August 2015 acoustic bat survey that was conducted for the Proposed Project. A minimum of 75 feet, and in most places, more than 200 feet, of this floodplain/riparian forest would remain between the Cheechunk Creek corridor and the LOD for the food manufacturing facility and warehouse in order to maintain commuting routes and foraging habitat quality for Indiana and northern long-eared bats. Similarly, the approximately 0.35 mile long segment of riparian forest currently bordering the eastern side of the Wallkill River along the Ver Hage property's western boundary would remain as potential foraging habitat and a commuting route for Indiana and northern long-eared bats. The mix of woodland and old field at the northern end of the Ver Hage property would also remain undeveloped and preserved. Altogether, approximately 27 acres of the Ver Hage property would be left undeveloped after construction of the approximately 37 acre food manufacturing facility and approximately 6 acre warehouse.

ECHO LAKE PROPERTY

SoS Orchard Parking Area, Guest House, and Guest House Driveway Disturbance Areas

The orchard parking area that would be for regional and national events, the guest house, and the guest house driveway would all be located on the western side of the Echo Lake property, which consists of a large area of successional southern hardwoods to the south and a large area of shrubland/early seral stage forest to the north. The footprints of the orchard parking area and its adjacent clearings, guest house, and guest house driveway would occupy approximately 16 total acres that are currently wooded while the remaining areas of disturbance for these elements presently contain shrubland. Eleven sampling plots were distributed on this western half of the Echo Lake property, including seven plots within and four plots outside the limits of disturbance of the parking area, guest house, and guest house driveway to accurately characterize this large area. Nine of the eleven plots were within the successional southern hardwood forest (Plots 1-6 and 9-11) while the other two plots were within the shrubland/early seral stage forest in the northwestern portion of the property (Plots 7-8; **Figure 10**).

Sugar maple is the most dominant tree in the successional southern hardwood forest, comprising 36 percent of the basal area, followed by pin oak, which represents 14 percent (**Table** 7). Total tree density averages 204 trees per acre and tree size averages 7.8 inches, although several trees > 12 inches are present. Quality potential roost trees occur at an overall density of 40 per acre, which extrapolates to an estimate of 736 total quality potential roost trees that would be removed within the approximately 18.4 acre area of woodland disturbance. The shrub layer is overwhelmingly dominated by privet, followed by smaller amounts common buckthorn, gray dogwood, multiflora rose, bush honeysuckle, and 18 other species (**Table 8**).

Table 7

Tree Composition in the Hardwood Forest Within and Adjacent to the Areas of Disturbance of the Proposed SoS Event Parking Area, Guest House and Guest House Driveway

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Sugar maple	11.0 ± 6.8	31.1	34.4	16.9	35.7
Pin oak	8.4 ± 6.4	11.9	20.0	9.8	13.7
Red maple	5.8 ± 3.1	10.0	43.3	21.2	11.5
White oak	18.3 ± 14.8	8.8	3.3	1.6	10.1
White ash	6.7 ± 4.3	6.0	17.8	8.7	6.9
Ironwood	6.8 ± 2.2	2.7	10.0	4.9	3.1
Red oak	8.2 ± 4.6	2.6	5.6	2.7	2.9
Yellow birch	11.3 ± 3.4	2.5	3.3	1.6	2.8
Black cherry	6.4 ± 2.6	1.7	6.7	3.3	2.0
Eastern hemlock	16.0	1.6	1.1	0.5	1.8
Black birch	5.3 ± 2.0	1.5	8.9	4.4	1.8
Common buckthorn	3.8 ± 1.0	1.3	15.4	7.5	1.5
Slippery elm	3.1 ± 2.3	0.8	4.4	2.2	1.0
Butternut hickory	11.5	0.8	1.1	0.5	0.9
White pine	10.5	0.7	1.1	0.5	0.8
American beech	9.0	0.5	1.1	0.5	0.6
Hawthorn	5.0 ± 2.0	0.5	3.3	1.6	0.6
Paper birch	5.2 ± 0.8	0.5	3.3	1.6	0.6
Gray birch	4.3 ± 1.6	0.5	4.4	2.2	0.5
Privet	3.5 ± 0.7	0.5	6.7	3.3	0.5
Musclewood	3.5 ± 0.7	0.2	2.2	1.1	0.2
Eastern cottonwood	4.7	0.1	1.1	0.5	0.2
Shagbark hickory	4.5	0.1	1.1	0.5	0.1
Norway maple	3.1 ± 0.1	0.1	2.2	1.1	0.1
Flowering dogwood	4.0	0.1	1.1	0.5	0.1
Eastern red cedar	7.5	0.0	1.1	0.5	0.0

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 1-6 and 9-11 shown in Figure 10. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 8
Shrub Composition in the Hardwood Forest Within and Adjacent to the Areas of Disturbance of the Proposed SoS Event Parking Area, Guest House and Guest House Driveway

Species	Density (stems/acre)	Relative density (%)
Privet	74.4	33.0
Common buckthorn	20.0	8.9
Gray dogwood	20.0	8.9
Multiflora rose	20.0	8.9
Bush honeysuckle	18.9	8.4
Red maple	11.1	4.9
Slippery elm	10.0	4.4
Japanese barberry	8.9	3.9
Musclewood	5.6	2.5
Witch hazel	5.6	2.5
American beech	3.3	1.5
Black locust	3.3	1.5
Hawthorn	3.3	1.5
Hickory sp.	3.3	1.5
Norway maple	3.3	1.5
Pin oak	3.3	1.5
Spicebush	3.3	1.5
Unidentified	2.2	1.0
Black cherry	1.1	0.5
Highbush blueberry	1.1	0.5
Ironwood	1.1	0.5
Red oak	1.1	0.5
White oak	1.1	0.5
Total	225.3	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 1-6 and 9-11 shown in Figure 10. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

The northwestern portion of the Echo Lake property consists of shrubland mixed with areas of former shrubland that has recently succeeded into very early seral stage forest and has a high density of saplings. Among the two sampling plots surveyed in this area, the tree community was dominated by red maple and white ash, both averaging < 5 inches DBH (**Table 9**). Overall, DBH averaged only 4.2 inches and there were only three trees with a DBH over 6 inches. Red maple saplings < 3 inches DBH dominated the understory, with a density of 120 stems per acre. Common buckthorn was also abundant in the understory (**Table 10**). There were no quality potential roost trees within the plots.

Table 9
Tree Composition in the Shrubland and Early Seral Stage Forest Within and Adjacent to the Areas of Disturbance of the Proposed SoS Event Parking Area, Guest House and Guest House Driveway

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Red maple	4.2 ± 1.4	1.6	155.0	62.0	44.7
White ash	4.3 ± 0.5	1.0	10.0	4.0	28.6
Hawthorn	3.8 ± 0.6	0.2	30.0	12.0	7.0
Common buckthorn	4.1 ± 0.8	0.2	25.0	10.0	6.9
Pin oak	7.6	0.2	5.0	2.0	4.6
Southern catalpa	5.9	0.1	5.0	2.0	2.7
Black cherry	3.8 ± 0.9	0.1	10.0	4.0	2.3
Slippery elm	3.8 ± 0.9	0.1	10.0	4.0	2.3

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 7-8 shown in Figure 10. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 10
Shrub Composition in the Shrubland and Early Seral Stage Forest Within and Adjacent to the Areas of Disturbance of the Proposed SoS Event Parking Area, Guest House and Guest House Driveway

Species	Density (stems/acre)	Relative density (%)
Red maple	120.0	45.3
Common buckthorn	80.0	30.2
Bush honeysuckle	30.0	11.3
Multiflora rose	20.0	7.5
White ash	10.0	3.8
Bush honeysuckle	5.0	1.9
Total	265.0	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 7-8 shown in Figure 10. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

SoS Bus Parking Area Disturbance Area

One sampling plot was surveyed within the area of disturbance of the SoS bus parking area, on the eastern side of the Echo Lake property, adjacent to the Wallkill River (Plot 16, **Figure 10**). The tree community is dominated by sugar maple and black cherry (**Table 11**) and has an average DBH of 8.0 inches. Five quality potential roost trees were found within the sampling plot, which equates to an estimated density of 50 quality potential roost trees per acre and an estimate of 130 quality potential roost trees that would be removed from this approximately 2.6 acre area of woodland. The understory is relatively dense and consists of mostly red maple saplings and common buckthorn (**Table 12**).

Table 11
Tree Composition in the SoS Bus Parking Area

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Black cherry	11.4 ± 4.5	31.5	40.0	19.0	35.2
Sugar maple	7.4 ± 4.4	27.0	70.0	33.3	30.2
Red maple	6.0 ± 3.4	9.7	40.0	19.0	10.9
White oak	7.8 ± 3.9	7.4	20.0	9.5	8.3
Pin oak	11.5	7.2	10.0	4.8	8.1
Red oak	6.5 ± 0.7	4.6	20.0	9.5	5.1
White ash	6.0	2.0	10.0	4.8	2.2

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plot 16 shown in Figure 10. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 12
Shrub Composition in the SoS Bus Parking Area

Species	Density (stems/acre)	Relative density (%)
Red maple	60.0	19.4
Common buckthorn	50.0	16.1
Sugar maple	40.0	12.9
Red oak	30.0	9.7
Musclewood	30.0	9.7
Pin oak	20.0	6.5
White ash	20.0	6.5
Privet	20.0	6.5
American beech	20.0	6.5
Japanese barberry	10.0	3.2
Hickory sp.	10.0	3.2
Total	310.0	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plot 16 shown in Figure 10. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Echo Lake Property Preservation Areas

Approximately 35 acres of successional southern hardwood forest and shrubland/early seral stage forest on the western side of the Echo Lake property would be outside of the limits of disturbance of the SoS orchard parking area, guest house, and guest house driveway, and would be preserved (**Figure 4**). Tree and understory composition and structure in these areas were characterized in sampling plots 1 through 11 and are summarized in **Tables 7 through 12**, above. Tree size in the successional southern hardwood forest averages 7.8 inches, larger diameter trees are abundant, and quality potential roost trees occur at an estimated density of 40 per acre. At the southern end of the Echo Lake property, where sampling plots 12-15 were located, approximately 21 acres of woodland would be outside of the limits of disturbance of the entry road and preserved. Here, quality potential roost trees occur at an average density of 15 per acre.

The northernmost portion of the property consists of shrubland mixed with areas of former shrubland that has recently succeeded into very early seral stage forest and has a high density of saplings. No quality roost trees are currently present and the habitat is unlikely to be used for foraging by Indiana or northern long-eared bats. However, over time, as the forest matures, it will be expected to eventually represent suitable roosting and foraging habitat for both species.

In addition, the Echo Lake property includes an approximately 24 acre area that is north of the Heritage Trail alignment, up to the Goshen Town line, that would also be preserved as potential foraging and/or roosting habitat for the Indiana and northern long-eared bat. The habitat in this area was characterized in three sampling plots (Plots 17-19; **Figure 10**). A large portion of this wooded area is dominated by a stand of eastern hemlocks, many of which are > 12 inches DBH. White oak and American sycamore are dominant in the more deciduous portions of the woodland (**Table 13**), and the shrub layer is mostly privet and highbush blueberry (**Table 14**). Quality potential roost trees occur at an estimated density of 10 per acre. Outside of the sampling plots, but within the area that would be preserved, two large (>20 inch DBH, > 30 feet tall) snags that have direct sun exposure, hollows, cavities, and crevices, and are adjacent to Echo Lake were noted. There is also a 56 inch DBH white oak tree in this area that has several cavities, peeling bark, and crevices. These trees are considered to have strong potential to host maternity colonies of Indiana bats and northern long-eared bats.

Table 13

Tree Composition in the Preservation Area on the Far Western Side of the Echo Lake Property

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Eastern hemlock	8.7 ± 4.9	69.8	133.2	46.0	46.6
White oak	17.9 ± 9.5	35.6	16.5	5.7	23.8
American sycamore	23.5	10.0	3.3	1.1	6.7
Tree of heaven	7.4 ± 1.6	8.2	26.6	9.2	5.5
Common buckthorn	5.1 ± 1.9	8.2	50.0	17.3	5.4
Ash sp.	8.9 ± 1.7	5.9	13.3	4.6	3.9
Sugar maple	9.3 ± 7.4	4.1	6.6	2.3	2.7
Gray birch	8.2 ± 2.9	3.8	10.0	3.5	2.5
Red oak	9.5	1.6	3.3	1.1	1.1
Elm sp.	4.0 ± 1.0	0.9	10.0	3.5	0.6
Musclewood	4.5 ± 2.1	0.8	6.7	2.3	0.6
Privet	4.0	0.3	3.3	1.1	0.2
White ash	4.0	0.3	3.3	1.1	0.2
Black cherry	3.5	0.2	3.3	1.1	0.2

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 17-19 shown in Figure 10. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 14
Shrub Composition in the Preservation Area on the Far Western Side of the Echo Lake Property

Species	Density (stems/acre)	Relative density (%)
Privet	183.2	48.2
Highbush blueberry	53.3	14.0
Multiflora rose	40.0	10.5
Tatarian honeysuckle	26.6	7.0
Burning bush	23.3	6.1
Common buckthorn	13.3	3.5
Japanese honeysuckle	6.7	1.8
Sugar maple	6.7	1.8
White oak	3.3	0.9
Unidentified tree	3.3	0.9
Highbush blueberry	3.3	0.9
Unidentified shrub	3.3	0.9
Eastern hemlock	3.3	0.9
Sugar maple	3.3	0.9
Eastern hemlock	3.3	0.9
Japanese barberry	3.3	0.9
Total	379.6	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 17-19 shown in Figure 10. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

LIPOFF PROPERTY (EAST)

Two plots were sampled on the Lipoff property—one on the east side of Cheechunk Creek and one on the west side (Plots 22-23; **Figure 10**). The forest on the east side of the creek is dominated by pin oak and red oak saplings, whereas the forest on the west side of the creek is mostly pignut hickory saplings and large-diameter honey locust trees. Overall, honey locust is the most dominant tree in the area on the basis of basal area (**Table 15**), and overall tree DBH across both areas of forest averages 6.7 inches. Two quality potential roost trees were noted within the two sampling plots, which extrapolates to an average density of 10 quality potential roost trees per acre and a total of 93 quality potential roost trees in this approximately 9.3 acre area. The understory is dominated by tatarian honeysuckle and red oak saplings (**Table 16**).

Table 15
Tree Composition on the Lipoff Property (East) Preservation Area

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Honey locust	16.1 ± 8.4	51.9	30	9.7	44.2
Pin oak	5.7 ± 4.5	29.5	105	33.9	25.1
Red oak	5.1 ± 2.1	14.5	90	29.0	12.3
Pignut hickory	7.7 ± 2.4	12.3	35	11.3	10.5
Ash sp.	11.0	3.3	5	1.6	2.8
Shagbark hickory	8.0	1.7	5	1.6	1.5
Black oak	5.5 ± 0.0	1.6	10	3.2	1.4
Black cherry	5.5	0.8	5	1.6	0.7
American sycamore	4.5	0.6	5	1.6	0.5
Honeysuckle	3.5	0.3	5	1.6	0.3
Unidentified tree	3.5	0.3	5	1.6	0.3
American beech	3.0	0.2	5	1.6	0.2
White oak	3.0	0.2	5	1.6	0.2

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 22 and 23 shown in Figure 10. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 16
Shrub Composition on the Lipoff Property (East) Preservation Area

Species	Density (stems/acre)	Relative density (%)
Tatarian honeysuckle	100	37.7
Red oak	90	34.0
Green ash	15	5.7
Black cherry	10	3.8
Privet	10	3.8
Japanese barberry	10	3.8
Unidentified shrub	5	1.9
White oak	5	1.9
Common buckthorn	5	1.9
American beech	5	1.9
Multiflora rose	5	1.9
Total	260	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 7-8 shown in Figure 10. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

STRONG FARM PROPERTY

The Strong Farm property includes wooded areas that would be outside of the project's area of disturbance, and would be protected to provide potential habitat for Indiana and northern long-eared bats (**Figure 4**). The Strong Farm property contains approximately 5.8 acres of successional southern hardwood forest fragments distributed within a mix of cropland, old field, sedge meadow, and successional shrubland. Included is the floodplain forest that stretches nearly 0.4 miles along the eastern bank of the Wallkill River on the property's western boundary. High

levels of Indiana and northern long-eared bat activity that were found at the junction of the Wallkill River and Cheechunk Creek, just south of the Strong Farm property, during the August 2015 acoustic bat survey suggests that this forested river corridor is a heavily used commuting route and/or foraging habitat for both species. No development would occur on the Strong Farm property, and its use for the Proposed Project would be limited to volunteer, and potential overflow, parking on the fields a few days of the year during the SoS National event.

ADDITIONAL AREAS

ACCESS ROAD IMPROVEMENT AREA

Forest composition was sampled in four plots in the forested areas through which the proposed entry road would pass on the Echo Lake property (Plots 12-15, **Figure 10**). Dominant trees in these areas include red maple, white oak, and American sycamore (**Table 17**), and the understory shrub layer is primarily composed of Japanese barberry and privet (**Table 18**). DBH averages 9 inches across all tree species, and several large-diameter, saw-timber trees (> 10 inches DBH) are present. Six quality potential roost trees were counted in the four sampling plots, which equates to an average density of 15 quality potential roost trees per acre and an estimate of 210 total quality potential roost trees that would be removed within the approximately 14.0 acre area of woodland disturbance.

Table 17
Tree Composition In the Vicinity of the Proposed Access Road Improvement Area

Tree Species	Mean DBH (in)± SD	Basal area (sqft/acre)	Density (trees/acre)	Relative density (%)	Proportion of total basal area (%)
Red maple	10.3 ± 5.4	44.0	60.0	24.7	30.5
White oak	8.9 ± 4.5	24.3	45.0	18.6	16.9
American sycamore	20.0 ± 5.1	22.9	10.0	4.1	15.9
White ash	10.0 ± 6.4	16.8	22.5	9.3	11.6
Black cherry	7.6 ± 2.7	13.2	37.5	15.5	9.2
Sugar maple	6.9 ± 3.9	6.6	20.0	8.2	4.6
Eastern red cedar	5.8 ± 2.9	6.2	27.5	11.3	4.3
Red oak	13.3 ± 4.6	5.1	5.0	2.1	3.5
Pin oak	11.0 ± 3.5	3.5	5.0	2.1	2.4
Pignut hickory	8.0	0.9	2.5	1.0	0.6
Black oak	4.5 ± 2.5	0.8	7.5	3.1	0.6

Notes: Species are listed in descending order of dominance (percentage of total basal area). Data are from sampling plots 12-15 shown in Figure 10. Trees are defined as woody stems ≥ 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

Table 18
Shrub Composition In the Vicinity of the Proposed Access Road Improvement Area

Species	Density (stems/acre)	Relative density (%)
Japanese barberry	75.0	30.0
Privet	37.5	15.0
Red raspberry	20.0	8.0
Lowbush blueberry	17.5	7.0
Spicebush	17.5	7.0
Tatarian honeysuckle	17.5	7.0
Multiflora rose	12.5	5.0
Wineberry	10.0	4.0
Gray dogwood	7.5	3.0
Japanese honeysuckle	7.5	3.0
Black cherry	5.0	2.0
Common buckthorn	5.0	2.0
Alder	2.5	1.0
American beech	2.5	1.0
Eastern red cedar	2.5	1.0
Oak sp.	2.5	1.0
Unidentified shrub	2.5	1.0
White oak	2.5	1.0
Witch hazel	2.5	1.0
Total	250	

Notes: Species are listed in descending order of dominance (relative density) in the shrub layer. Data are from sampling plots 12-15 shown in Figure 10. Shrubs are defined as woody stems < 3 inches DBH.
Source: Forest composition and bat habitat characterization survey conducted December 2015.

G. POTENTIAL IMPACTS OF THE PROPOSED PROJECT

Elements of the Proposed Project's construction and/or operation that would have the potential to affect Indiana and northern long-eared bats, evaluated below, include: loss of foraging and potential roosting habitat, fragmentation of foraging and potential roosting habitat, and disturbances from noise, nighttime lighting, and human activity.

CONSTRUCTION IMPACTS

Construction of the Proposed Project would not have any direct or indirect effects on hibernating Indiana or northern long-eared bats, or their hibernacula, because the closest hibernaculum to the Project Site is approximately 9.25 miles away (NYSDEC 2015).

All tree clearing for the Proposed Project would be conducted during the October 31 to March 31 hibernation period of Indiana and northern long-eared bats to avoid removal of a potentially active roost tree or actively used fall swarming habitat. As such, construction of the Proposed Project would not have any direct impacts to Indiana or northern long-eared bats. Potential impacts caused by the construction of the Proposed Project would therefore be limited to indirect effects from the loss and fragmentation of foraging and potential roosting habitat within and around the project's areas of disturbance, and construction noise disturbances to bats occurring in the vicinity of the Project Site.

HABITAT LOSS AND FRAGMENTATION

As discussed above, construction of the Proposed Project would directly disturb approximately 151 total acres, consisting primarily of successional southern hardwood forest (51.7 acres) and successional old field and shrubland (94.7 acres). For Amy's Kitchen, the warehouse subdivision, and SoS, the LOD would be centered on the large expanses of old field and shrubland on the Ver Hage and Echo Lake properties, respectively, in order to minimize tree removal and encroachment into wooded areas. Tree removal on the Ver Hage property for Amy's Kitchen would be limited to approximately 7.2 acres of trees in the center of the property, as well as 0.4 acres on both sides of the Wallkill River where the entry road and bridge would be constructed (see **Figures 1 and 4**). Another 0.1 acres of trees would be removed near Cheechunk Creek for the warehouse. The SoS Conference Center on the Echo Lake property would require a larger amount of tree removal to accommodate the orchard parking area described above and the guest house and its driveway that would run north-south through the forest on the western side of the property (see **Figure 3c**). The entry road that would support both Amy's Kitchen and SoS would also require approximately 14 acres of tree removal within the forest that occurs between the southern end of the Echo Lake property and Route 17M (**Figure 3a**). There would be no tree removal or any other construction disturbances on the Lipoff (east and west) or Strong Farm properties, and as discussed below in **Section I**, these properties would be preserved through a conservation easement or similar legal agreement to provide protected roosting and foraging habitat for the Indiana and northern long-eared bat.

Amy's Kitchen

Foraging habitat

The Amy's Kitchen food manufacturing facility would have a footprint of approximately 37 acres, not including the facility's entry road that would be constructed through the Echo Lake property to connect to Route 17M. The majority of the facility would be sited on what is now old field bordered by narrow woodland fragments to the east and west, and would include the removal of the narrow peninsula of trees that currently bisects the area of old field at the southern end of the Project Site. Indiana bats are expected to currently use these areas of the Ver Hage property as foraging habitat given their association with foraging over open areas of early successional vegetation and along woodland edges in fragmented, agricultural landscapes (e.g., Watrous et al. 2006, USFWS 2007). Northern long-eared bats, in contrast, often avoid foraging along forest edges or over open fields (e.g., Owen et al. 2003, Patriquin and Barclay 2003), and potential foraging by northern long-eared bats within the Ver Hage property is therefore likely to be limited primarily to the Cheechunk Creek and Wallkill River corridors.

Construction of the Amy's Kitchen facility would remove approximately 30 acres of open field foraging habitat for Indiana bats and would be expected to displace Indiana bats from foraging along most of the property's remaining woodland edges. With the Proposed Project, the woodland fragments on the eastern and western sides of the property would be bordered by buildings and surface parking areas rather than the old field and shrubland habitat that is there now, making it unlikely that Indiana bats would forage along these approximately 4,000 linear feet of woodland edge. However, the Cheechunk Creek corridor and the majority of the Wallkill River corridor, which are likely areas of high foraging activity of both Indiana bats and northern long-eared bats within the Ver Hage property, would not be directly disturbed by the Proposed Project. Approximately 200 feet of existing woodland and successional old field/shrubland would remain between Cheechunk Creek and the facility's LOD, providing a buffer between the developed areas of the property and the high quality foraging habitat likely provided by the

creek's corridor. Indiana and northern long-eared bats would be expected to continue using the creek's corridor for foraging and/or as a commuting route to the same extent as at present. The approximately 0.35 mile long segment of riparian forest currently bordering the eastern side of the Wallkill River along the Ver Hage property's western boundary would also be undeveloped and remain as potential foraging habitat and a potential commuting route for both Indiana and northern long-eared bats.

The entry road that would be constructed for the Amy's Kitchen facility would extend northeast from Route 17M, through the shrubland and forested areas at the southern end of the Echo Lake property, and along a forested ridge paralleling the Wallkill River before crossing the river on a bridge that would be constructed to bring the entry road into the southwestern corner of the Ver Hage property (see **Figure**s **3 and 4**). Construction of the entry road through these areas would entail grading and clearing of approximately 14.0 acres of forest and 3.3 acres of shrubland. The forest at the southern end of the Echo Lake property through which the entry road would be constructed is approximately 0.35 miles long and approximately 0.35 miles wide at its widest point, and is connected to the large forested area on the western side of the Echo Lake property and beyond. This area may therefore provide forest interior foraging habitat for northern long-eared bats (approximately 35 acres). Construction of the entry road would be expected to cause this area to no longer have the potential to be used as foraging habitat for northern long-eared bats, given their sensitivity to forest fragmentation and well-documented avoidance of the sharp edges created by roads (Owen et al. 2003, Patriquin and Barclay 2003, Henderson et al. 2008, Morris et al. 2010, Segers and Broders 2014). Road noise has an interfering, masking effect on the prey detection abilities of clutter-adapted, gleaning bat species, such as the northern long-eared bat, which degrades foraging conditions in roadside habitats (reviewed by Altringham and Kerth 2016) and may largely account for the avoidance of roads by northern long-eared bats.

Foraging Indiana bats are also known to avoid roads, often reversing course when a road is encountered, and this appears to be due more so to the presence of vehicles and the noise they emit than the physical presence of the road itself (Zurcher et al. 2010, Bennett et al. 2013). Zurcher et al. (2010) found that Indiana bats reversed course 32% of the time when they approached a road and no vehicles were present, whereas they reversed course 60% of the time when there was a passing vehicle. A similar study also found that gaps in commuting routes caused by roads alone (with no vehicles) often caused multiple species of bats, including the Indiana bat and northern long-eared bat, to turn away from the road upon approach, and the likelihood of a bat turning away from a road significantly increased with the presence of a vehicle (Bennett et al. 2013).

Based on operations at Amy's Kitchen's comparable food manufacturing facility in Medford, OR, approximately 530 employee automobiles would be expected to enter or exit the facility via the entry road between the hours of 7 pm and 6 am, when bats in the area would be active. Presence of the proposed entry road and these vehicles along the eastern side of the Echo Lake property, where it would parallel remnant old field/shrubland to the west and the Wallkill River to the east, would be expected to cause Indiana bats to avoid foraging along this approximately 700 linear foot segment of field-woodland edge and approximately 700 foot segment of riparian corridor. Along this segment of the proposed road, an approximately 200 foot wide, wooded buffer would separate the road from the Wallkill River to the west and potentially attenuate some of the vehicle noise and filter some of the light emitted from the vehicles' headlights and the motion-activated road lighting (described in detail under "Lighting"), but the crossing of the entry road over the Wallkill River by way of the proposed bridge would introduce vehicle noise and lighting directly to the river's corridor. Passage of approximately 530 vehicles along the

river and over the proposed bridge at night, along with the road lighting on both sides of the bridge, would be expected to displace Indiana and northern long-eared bats from potentially using this segment of the Wallkill River corridor as a commuting route and/or foraging area, and require them to use alternative areas up- or down-river.

Roosting Habitat

Removal of the 1.6 acre, linear peninsula of trees that is part of the woodland fragment to the east and currently bisects the area of old field at the southern end of the Ver Hage property would not be expected to directly eliminate roosting habitat for either Indiana bats or northern long-eared bats given its extremely narrow width (< 100 feet), small size, and young seral stage. Indiana bats prefer to roost in large-diameter, tall trees, and northern long-eared bats prefer to roost in mature, interior forest, away from edges. On the northern fringe of the peninsula, however, there are four large-diameter (18.5 - 32 inch DBH) shagbark hickory trees that would be within the LOD and require removal. Shagbark hickory is a preferred roost tree species of Indiana bats (USFWS 2014), and the 4 trees have excessive peeling bark and direct solar exposure that Indiana bats prefer.

The proposed entry road for the Amy's Kitchen facility would require grading and clearing of approximately 14 acres of forest on the Echo Lake property. The route of the proposed entry road extends north from Route 17M through successional southern hardwood forest, then runs parallel along the Wallkill River on a steep ridge of successional southern hardwood forest that would be graded, before crossing the proposed bridge into the Ver Hage property. Dominant trees in these areas include red maple, white oak, and American sycamore (**Table 5**). Several large-diameter, sawtimber trees (> 10 inches DBH) are present. The habitat characterization survey indicated that quality potential roost trees occur at a density of 15 per acre; when extrapolated to the total acreage of disturbance for the proposed entry road, it is estimated that approximately 210 quality potential roost trees would be removed.

Simultaneous loss of roosting and foraging habitat may have negative impacts on the social structure of Indiana bat colonies, but in landscapes with relatively large amounts of tree cover, such as that in which the Project Site is located, it is expected that bats can disperse only short distances to locate new roosts and successfully maintain the social network (Silvis et al. 2014a). The same likely holds true for the northern long-eared bat (Silvis et al. 2014b). Social networks of Indiana and northern long-eared bats have been shown to be robust to the removal of more than 20% of their roost trees, and this adaptability to roost loss is likely due to the ephemeral nature of the dead and dying trees that they usually use as roost sites (Silvis et al. 2014a,b). Both species are known to change roost trees daily or every few days on a scale of hundreds of feet to more than a mile (Kurta et al. 2002, Menzel et al. 2002, Owen et al. 2002, Johnson et al. 2009), and when primary roosts are lost, the bats relocate the concentration of their network's activity to the vicinity of a new primary roost (Silvis et al. 2014a,b).

Indiana bats would continue to have the potential to roost in the areas of remaining forest on either side of the entry road because they are tolerant of fragmented landscapes and, as noted above, are known to sometimes acclimate to roosting in close proximity to places with high levels of anthropogenic activity, such as highways, airports, and active construction sites (Sparks et al. 1998, ESI 2008, Niver 2009, USFS 2011, U.S. Army 2011). In contrast, northern long-eared bats are notably sensitive to fragmentation and sharp edges created by roads, and would no longer be expected to have the potential to roost in this forested area at the southern portion of the property following construction of the entry road. Any northern long-eared bats that

potentially roost in the roughly 35 acres of forest interior in this area would be expected to be displaced by the presence of the proposed entry road and required to relocate.

Losses of potential roosting habitat to construct the entry road would not be expected to significantly impact Indiana or northern long-eared bat populations because roost tree availability is unlikely to currently be a limiting factor in the regulation of their population sizes now that there are so few tree-roosting bats in the landscape due to WNS. Even prior to the recent loss of more than 90% of Indiana and northern long-eared bats to WNS, it was uncertain whether roost tree availability limited population sizes of these or other tree-roosting bat species (Sedgeley and O'Donnell, 1999, Crampton and Barclay 1998, Kunz and Lumsden, 2003, Hayes and Loeb 2007). As WNS has greatly reduced the size of bat populations, unoccupied roosting habitat has become increasingly available for remaining bats (USFWS 2016a). The USFWS recently concluded that loss of roosting habitat to forest conversion activities will not jeopardize populations or the continued existence of the northern long-eared bat in the near future (USFWS 2016a,b).

Warehouse

Foraging Habitat

The warehouse would be sited on what is now old field, with the exception of an approximately 0.1 acre area of trees that is within the northwestern corner of the warehouse's LOD. Indiana bats are expected to currently use this area of old field and bordering woodland along Cheechunk Creek as foraging habitat given their association with foraging over open areas of early successional vegetation and along woodland edges in fragmented, agricultural landscapes (e.g., Watrous et al. 2006, USFWS 2007). Northern long-eared bats, however, often avoid foraging along forest edges or over open fields (e.g., Owen et al. 2003, Patriquin and Barclay 2003). Potential foraging by northern long-eared bats in the vicinity of the warehouse would likely be limited to the Cheechunk Creek corridor, which would be buffered from the warehouse by floodplain forest that would be approximately 75 feet wide at its narrowest point.

As discussed above for Amy's Kitchen, the presence of the warehouse along with the food manufacturing facility would be expected to displace Indiana bats from potentially foraging over the open fields and woodland edges in this portion of the Ver Hage property. However, the adjacent Cheechunk Creek corridor and the majority of the Wallkill River corridor on the opposite side of the property, which are likely areas of high foraging activity of both Indiana bats and northern long-eared bats, would not be directly disturbed by the Proposed Project. At least 75 feet of existing floodplain forest would remain between Cheechunk Creek and the warehouse's LOD at the closest point, providing a buffer between the developed areas of the property and the high quality foraging habitat likely provided by the creek's corridor. Indiana and northern long-eared bats would be expected to continue using the creek's corridor for foraging and/or as a commuting route to the same extent as at present after the warehouse was constructed.

Roosting Habitat

Construction of the warehouse would require removal of approximately 0.1 acres of trees that are part of the floodplain forest and successional southern hardwoods between Cheechunk Creek and the area of old field to the east. At the widest point, the tree removal would extend roughly 75 feet into the woodland from its existing edge with the old field. Given that northern long-eared bats typically avoid roosting near forest edges in favor of more interior forest (Menzel et al. 2002, Owen et al. 2003, Carter and Feldhammer 2005), tree removal for the warehouse would not be expected to eliminate any viable roosting habitat for northern long-eared bats. Indiana

bats, in contrast, may roost near edges where trees receive direct solar exposure, and would have the potential to roost in this area if suitable roost trees are present. Clearing of 0.1 acres of trees for the warehouse would represent a negligible reduction in potential roosting habitat available to Indiana bats in the surrounding landscape area. As discussed above for Amy's Kitchen, Indiana bats are robust to roost tree loss (Silvis et al. 2014a) and are adapted to frequently relocating to new roost sites (Kurta et al. 2002, Menzel et al. 2002, Owen et al. 2002, Johnson et al. 2009).

Science of the Soul

Foraging Habitat

The SoS Conference Center would have a total area of approximately 82 acres on the Echo Lake property, not including the shared entry road analyzed above for Amy's Kitchen. Several different portions of the property are expected to currently provide foraging habitat for either Indiana or northern long-eared bats. Much of the Conference Center would be sited on what is now old field bordered by woodland to the south, east, and west. Indiana bats are expected to currently forage over the old field and along the field-woodland edges because of their association with these habitat types for foraging (Watrous et al. 2006, USFWS 2007). They may also forage for emergent aquatic insects over the old storm water basin and isolated emergent wetlands that are within the expanses of old field and shrubland on the Echo Lake property Northern long-eared bats are not expected to forage along the edges or over the open expanses of old field and isolated wetlands given their general avoidance of edges and open habitats in favor of interior forest (e.g., Owen et al. 2003, Patriquin and Barclay 2003). Indiana bats, and to a lesser extent, northern long-eared bats, may currently forage in the area of successional southern hardwood forest bordering the Wallkill River to the east and old field to the west, where the Conference Center's bus parking area would be constructed. Approximately 17.1 acres of successional southern hardwood forest that is expected to currently provide foraging habitat for northern long-eared bats and Indiana bats would be cleared and graded within and around the area in which the orchard parking area would be located on the western side of the Conference Center. The guest house and driveway would also be constructed in this forest on the property's western side and involve clearing of approximately 1.3 acres of trees. The orchard parking area and guest house driveway would also eliminate a few existing openings in the forest that were created by past disturbances and now contain successional shrubland that are expected to be used as foraging areas by Indiana bats.

Construction of the Conference Center's open air pavilion and ancillary buildings on the area of successional old field, combined with the removal of most of the wooded area on the eastern side of the property to construct the bus parking area, would remove roughly 56 total acres of open field, field-woodland edge, shallow emergent marsh, and shrubland habitat that is expected to currently be used for foraging by Indiana bats. East of the bus parking area, however, a wooded buffer would remain between the Conference Center and the Wallkill River corridor, and Indiana bats would be expected to forage and commute along this approximately 0.3 mile long segment of the river corridor between the proposed entry road bridge over the river and the northern boundary of the property at Echo Lake Road. On the basis of the acoustic bat survey conducted in August 2015, the Wallkill/Cheechunk Creek corridors appear to be areas of much greater Indiana bat foraging activity than the Project Site's open field and field-woodland edges (**Appendix A**). Additionally, the open air pavilion and ancillary buildings would not occupy the entire expanse of old field; some undeveloped portions in between the buildings would be maintained as manicured lawn, which would retain some open space within the Conference Center grounds over which Indiana bats might forage. The storm water detention basin that

would be created at the north end of the Echo Lake property to service SoS would include a mix of native plant species around its margins, would not be treated with insecticides, and would therefore be expected to provide quality foraging habitat for Indiana bats.

The 29.6 acre orchard parking area and adjacent clearing would require pushing the existing forest edge northwest by approximately 900 feet and would replace the existing edge of the forest that is expected to be traveled by foraging and commuting Indiana bats. To increase the likelihood that the new edge that would be created between the orchard parking area and the remnant forest to the north and west would be used for foraging and/or commuting by Indiana bats, the parking area would have an impervious surface, be heavily planted with native trees, and kept unlit at night except for a small portion farthest from the forest (see "Lighting" below). This would also soften the eastern edge of the orchard parking area with undeveloped portions of old field to the east that would be left in a natural state and increase its potential use as edge habitat by foraging Indiana bats. The rows of trees within the parking area could possibly provide additional foraging habitat for Indiana bats since the trees would be a mix of native species that would be expected to host invertebrate prey.

The guest house and long driveway would bisect the area of shrubland in the northwestern corner of the Echo Lake property and pass through existing gaps in the forest created by past disturbances. As noted above, the orchard parking area would also eliminate a previously-disturbed, linear area that is regenerating and is currently in a successional shrubland stage. Gaps with early successional vegetation within forests are a preferred foraging habitat of Indiana bats (USFWS 2007). Loss of potential foraging habitat for Indiana bats from the construction of the guest house and driveway would be expected to include the forest and successional shrubland removed within the limits of disturbance, as well as potential secondary effects on immediately adjacent areas. As discussed above, under "Amy's Kitchen," roads can disrupt foraging and commuting behaviors of Indiana bats (Zurcher et al. 2010, Bennett et al. 2013), like many other bat species (Altringham and Kerth 2016). However, the infrequent passage of vehicles along the driveway by guests, who would be expected to occupy the house only three days a year, would be likely to greatly reduce potential effects of the driveway on Indiana bat foraging and commuting behaviors since the presence of vehicles is thought to account for the observed effects of roads on Indiana bats more so than the presence of the roads themselves (Zurcher et al. 2010, Bennett et al. 2013). The driveway would also be unlit at night to further reduce the effects that roads can have on Indiana bats. As such, Indiana bats would be expected to continue to have the potential to forage in the remnant forest and shrubland to the northwest and southeast of the guest house driveway.

As noted above, northern long-eared bats are expected to currently forage in the area of successional southern hardwood forest that borders the Wallkill River to the east and old field to the west, where the Conference Center's bus parking area would be constructed, and in the interior of the large area of successional southern hardwood forest on the property's western side, where the orchard parking area, guest house, and guest house driveway would be constructed. Northern long-eared bats would no longer be expected to occur in the vicinity of the bus parking area following its construction due to the removal of the majority of the area's trees. However, a wooded buffer would remain between the bus parking area and the Wallkill River to the east, which would be part of an approximately 0.3 mile long contiguous segment of forested river corridor between the proposed entry road bridge and the northern boundary of the property. The acoustic bat survey conducted in August 2015 documented northern long-eared bats at the junction of the Wallkill River with Cheechunk Creek, just north of the Echo Lake property

(**Appendix A**), and this maintained segment of wooded river corridor would be expected to provide northern long-eared bats with quality foraging habitat in the area.

Construction of the guest house driveway would bisect the shrubland that would remain between the orchard parking area and the northwestern boundary of the Echo Lake property (see **Figure 3c**). The driveway would terminate only just beyond the edge of the southern successional forest area to the southwest, resulting in approximately 1.3 acres of woodland clearing along with the footprint of the house, thereby avoiding significant forest fragmentation. This would maintain approximately 8.2 acres of southern successional hardwood forest to the south and west of the guest house. As discussed previously, the northern long-eared bat is an interior forest species that typically avoids roads and other sharp edges, and is therefore sensitive to forest fragmentation (Foster and Kurta 1999, Broders et al. 2006, Henderson et al. 2008, Segers and Broders 2014). Northwest of the guest house and driveway, another approximately 32 acres of nearly contiguous undeveloped forest would extend for approximately 1,000 feet all the way to Echo Lake Road. This nearly contiguous forested area would be interrupted only by a defunct railroad track that is currently overgrown with shrubby vegetation and will eventually be improved as part of the Heritage Trail system, and would likely be of sufficient size to provide interior foraging habitat for northern long-eared bats. Altogether, there would be approximately 44 acres of nearly contiguous forest remaining on this portion of the Echo Lake property, and as discussed under **Sections F** and **I**, this area, excepting the railroad corridor, would be preserved as habitat for northern long-eared bats and Indiana bats to partially offset impacts from the Proposed Project.

Roosting Habitat

Tree removal would occur in the areas in which the bus parking area, orchard parking area and its adjacent clearings, and guest house and driveway would be constructed. Not including the entry road evaluated under "Amy's Kitchen," approximately 21 total acres of woodland would be cleared on the Echo Lake property for the SoS Conference Center. All wooded portions of the Echo Lake property are considered to represent potential Indiana bat roosting habitat given that Indiana bats will roost in large tracts of forest as well as in small fragments and along edges (Callahan et al. 1997, Menzel et al. 2001, USFWS 2007). Northern long-eared bats, in contrast, are only considered to have the potential to roost in the large area of contiguous forest that occupies the western and southern portions of the property. This area is expected to be sufficiently large to provide interior forest habitat that northern long-eared bats use for roosting (Foster and Kurta 1999, Broders et al. 2006, Henderson et al. 2008).

As detailed in **Section F**, the bus parking area is presently a sugar maple and black cherry dominated fragment of successional southern hardwood forest between a large expanse of old field and shrubland to the west and the Wallkill River to the east. Several mature trees are present, and the habitat characterization survey indicated that the area has an average of 50 quality potential roost trees per acre. The bus parking area would have a footprint of 3.4 acres, of which 2.6 acres is woodland, and would therefore be estimated to remove roughly 130 quality potential roost trees. Construction of the orchard parking area and its adjacent clearings would remove approximately 17.1 acres of mostly successional southern hardwood forest that is estimated to have an average of 40 quality potential roost trees per acre, and the guest house and driveway would remove an additional 1.3 acres of this forested area.

Given that Indiana bats are not sensitive to fragmentation and are known to sometimes roost in close proximity to areas with high levels of disturbance and human activity, they would be expected to have the potential to roost in the forested areas that would remain outside of the

limits of disturbance of the bus parking area, orchard parking area, and guest house and driveway. As discussed under "Foraging Habitat," a wooded corridor would remain to the east of the bus parking area, along a 0.3 mile segment of the Wallkill River, and approximately 36 acres on the western side of the property, adjacent to the orchard parking area, guest house, and driveway, would remain forested and would be preserved. Potential roosting sites are abundant in these areas, and given the robustness of Indiana bats to the loss of roost trees (Silvis et al. 2014a), any Indiana bats that previously roosted in the areas in which the bus parking area, orchard parking area, guest house, and driveway would be constructed would likely be able to acquire alternative roosts. In areas with abundant tree cover, such as that in which the Project Site is located, Indiana bats are thought to have to disperse only short distances to locate new roosts and maintain their social network (Silvis et al. 2014a).

In contrast to Indiana bats, northern long-eared bats are sensitive to fragmentation of their roosting habitat, and do not roost near sharp forest edges. Construction of the orchard parking area, guest house, and driveway would therefore have greater effects on roosting habitat for northern long-eared bats than those discussed above for the Indiana bat. The orchard parking area and adjacent clearings would push the existing forest edge west by approximately 900 feet, reducing the size of the forest by approximately 17.1 acres. The guest house driveway would pass through successional shrubland and terminate at the location of the proposed guest house just beyond the edge of the southern successional forest area to the southwest. By siting the guest house and driveway in this location, only 1.3 acres of woodland would be cleared and there would be no fragmentation of the approximately 8.2 acres of southern successional hardwood forest remaining to the south and west. This would maintain potential interior forest roosting habitat for northern long-eared bats. Additionally, another 40 acres of nearly contiguous forest would remain for approximately 1,000 feet northwest of the driveway all the way to Echo Lake Road. This nearly contiguous forested area would only be interrupted by a defunct railroad track that is currently overgrown with ruderal vegetation and will eventually be improved as part of the Heritage Trail system, and would likely be of sufficient size to provide interior roosting habitat for northern long-eared bats. As discussed in **Sections F** and **I**, this approximately 40 acre woodland between the guest house driveway and Echo Lake to the northwest is part of the Echo Lake property, has numerous quality potential roost trees, and would be preserved as habitat for northern long-eared bats to partially offset impacts from the Proposed Project. Altogether, there would be approximately 44 acres of nearly contiguous forest remaining on this portion of the Echo Lake property. As with Indiana bats, any northern long-eared bats that previously roosted in the areas of forest that would be directly and indirectly affected by the orchard parking area, guest house, and driveway would potentially be able to relocate to this preserved portion of the property.

WETLAND IMPACTS

Disturbance to wetland habitat acreage is included in the assessment of overall impacts to foraging and roosting habitats described above. Wetland impacts are summarized here separately for clarity.

Ver Hage Property

Development of the Ver Hage property for the Amy's Kitchen Manufacturing Facility will avoid impacts to wetlands with the exception of approximately 0.115 acres of disturbance to a small depressional wetland dominated by reed canary grass (*Phalaris arundinacea*) and eastern cottonwood (*Populus deltoides*), flagged as wetland A. USACE has determined that this wetland is non-jurisdictional. In addition, a small amount of disturbance to floodplain forested wetland,

0.020 acres, is necessary to construct the bridge crossing over the Wallkill River, designated wetland B.

Echo Lake Property

The access road off Route 17M would require approximately 0.039 acres of wetland disturbance to Federally-regulated forested wetland K. Construction of the proposed bridge crossing over the Wallkill River would require approximately 0.032 acres of disturbance to floodplain forested wetland J. Construction of the SoS facility itself, including interior drives and parking, would require disturbance to non-federally regulated wetlands D, E, F, H and I totaling 4.45 acres of disturbance to these herbaceous emergent wetlands.

Lipoff Property (East)

There are no proposed physical improvements or modifications to the Lipoff property. No wetland disturbance would occur on the Lipoff property.

Strong Farm Property

Wetland investigation of the Strong Farm property identifies sedge meadow wetlands and open water ponds within the northern portion of the property. The Strong Farm will be protected through a Conservation Easement to be enforced by the Town of Goshen. Activities on Strong Farm will be limited to farming and existing residential uses. Repair or replacement of existing buildings, as well as construction of new agricultural buildings, will be permitted only within the existing developed farmstead area in the southeast corner of the property. No new development will occur within wetland or floodplain areas, and foraging habitat for the Indiana bat and northern long-eared bat will be preserved. Temporary volunteer parking and overflow parking (if needed) will also be allowed in designated areas of the hayfields during the three-day annual SoS National Event.

HERITAGE TRAIL UTILITY CORRIDOR

In order to provide a conduit for the conveyance of wastewater generated by the Proposed Project to the Town of Middletown's wastewater treatment plant located approximately 2.5 miles to the west, and to connect to the Town's drinking water supply, a portion of the former Erie Railroad rail line will be used for the installation of a new sewer line and new water supply line. Construction of the utility corridor would involve the excavation of an approximately four (4)-foot-wide trench for installation of the wastewater and water supply conveyance lines. This would involve temporary construction period disturbance to the rail line bed which is largely devoid of vegetation except low grasses/forbs and small saplings along the edges of the former rail alignment. After construction, the trench would be backfilled and restored to its former condition. Potential impacts to Indiana bat and northern long-eared bat foraging or roosting habitat would be limited to the construction period and minimal due to the nature of the Heritage Trail utility connection work.

The Erie Railroad rail line is also proposed to be reutilized by Orange County as a recreational multi-use trail in the future, to be known as the "Heritage Trail". Any improvements to the rail bed to enable it to be used as a public trail would occur after the Amy's Kitchen water/sewer pipe installation and are not part of the Proposed Project.

The former rail line right-of-way is approximately twenty (20) feet wide. The right-of-way is improved with a raised embankment, the top of which is approximately ten (10) feet wide, flat, and sparsely vegetated with low grasses/forbs and small saplings. The sides of the embankment,

which are fairly steep, contain deciduous saplings and vines. The raised embankment was the rail line ballast. It is comprised of fill, and served to elevate the former rail line tracks.

Surrounding habitat through which the former rail line runs is a mix of forested lands east of I-84 including primarily successional southern hardwood and red maple/green ash swamp habitats. West of I-84, the Heritage Trail Utility Corridor runs through cleared agricultural lands and wetland meadows. The USFWS National Wetlands Inventory and NYSDEC have mapped several emergent and forested freshwater wetlands adjacent to the rail line, including NYSDEC wetlands MD-24 and MD-19, as shown in **Figures 5** and **6**. Short bridge spans and culverts convey wetland and streams beneath the rail line, including Cheechunk Creek, the Wallkill River, Echo Lake stream/wetland, and two additional wetland/stream crossings west of Route 50. However, site inspection has confirmed that the rail line itself is entirely upland and installation of the water/sewer lines within the bed of the rail line would not disturb any wetland habitats.

The route of the water/sewer line must leave the Heritage Trail alignment for its final approximately 0.3 mile segment to reach the Middletown wastewater treatment plant. This segment of the proposed utility lines would run through an agricultural field and beneath a powerline easement prior to reaching City of Middletown property and the WWTP. This final segment of the utility corridor consists of cultivated portions of the farm fields, powerline easement, as well as shrubby upland hedgerow habitat and areas dominated by early successional weedy species. Wetland C is a drainage channel within an electric transmission line right-of-way. The proposed utility lines would not disturb any portion of Wetland C. Wetland B is an isolated emergent wetland the dominant species of which include common reed and silky dogwood. The utility would cross through a portion of Wetland B and would result in minimal temporary disturbance. The proposed utility lines would cross under Wetland A (Monhagan Brook) in the vicinity of the existing driveway from Dolson Avenue to the Middletown WWTP. By crossing under the stream there would be no disturbance to Wetland A.

Once the water/sewer lines are installed, the trench will be backfilled, restored to the original topography, and stabilized. Supplemental seeding or planting of wetland species will be conducted if necessary. Potential impacts to Indiana bat foraging habitat would be temporary and minimal.

CONSTRUCTION NOISE

In contrast to the well-documented sensitivity of bats during hibernation, the sensitivity of bats to disturbances during the summer is poorly understood. As with most animals, it is likely that non-hibernating bats initially experience increased acute stress levels in response to new and unfamiliar disturbances, such as loud noises (Bowles 1995, Niver 2009), but any effects this may subsequently have on their condition, reproduction, or survival are unknown. Some studies outside of the hibernation season have shown foraging and nursing behaviors of bats to be easily disrupted by disturbances from human activities, including cave tourism (Mann et al. 2002), music concerts (Shirley et al. 2001), and even minor vegetation clearing near roost trees (Callahan 1993). Bats have also been shown to avoid foraging in noisy environments, including roadside areas that are subjected to traffic noise (Schaub et al. 2008, Murphy et al. 2009, Siemers and Schaub 2011, Bennett et al. 2013). Reductions in maternity colony size and complete colony abandonment following disturbances have been reported (Barbour and Davis 1969, Stihler and Hall 1993). Other studies, however, have found loud, low frequency noises and reverberations associated with aircrafts and military training activities to have no noticeable effect on foraging or roosting locations of bats (Shapiro and Hohmann 2005, Le Roux 2010). Some bats, including

the Indiana bat, are known to roost along interstate highways, near airports, and under bridges (Sparks et al. 1998, Keeley and Tutle 1999, Niver 2009), suggesting they are tolerant of roosting amidst some noises and vibrations associated with human activity. The foraging behaviors and roosting locations of Indiana bats on military bases were found to be similar between nights with and without loud artillery training exercises (Shapiro and Hohmann 2005), which also suggests that they are not easily disturbed by certain loud noises outside of the hibernation period. Similarly, Indiana bats have been found to continue to roost adjacent to areas with active construction activities, which indicates an ability to acclimate to construction noises (ESI 2008, USFS 2011, U.S. Army 2011). To our knowledge, there have not been any studies of the sensitivity of northern long-eared bats to construction noises or other forms of noise disturbance. However, northern long-eared bats have been observed roosting in areas with substantial noise levels, such as at the Indianapolis International Airport (Sparks et al. 1998), which is anecdotal evidence that they can be tolerant of certain noise disturbances during roosting. Foraging northern long-eared bats, in contrast, are expected to be sensitive and vulnerable to acoustic habitat degradation caused by road traffic noise (Schaub et al. 2008), like other gleaning *Myotis* bats are (Schaub et al. 2008, Siemers and Schaub 2011).

The hearing ranges of the Indiana and northern long-eared bat have not been described, but are likely similar to that of the congeneric little brown bat. Little brown bats detect sounds of 10-130 kHz (Moss and Schnitzler 1995), with peak sensitivity between 35 and 40 kHz (Grinnell 1963). Echolocation calls of Indiana and northern long-eared bats range 41-75 kHz and 49-117 kHz, respectively (Fenton and Bell 1981, Miller and Treat 1993). Noises from heavy construction equipment (e.g., rock crushers, graders, dozers and loaders) typically fall well below these frequency ranges (Delaney and Grubb 2004, Niver 2009), and are therefore unlikely to be highly audible to *Myotis* bats or interfere with their ability to echolocate (Niver 2009). However, higher frequency noises that might be generated during construction, such as those that are comparable to passing cars and light trucks, can displace *Myotis* bats from foraging and affect foraging efficiency (Schaub et al. 2008, Siemers and Schaub 2011). Nighttime construction activity for the Proposed Project would not occur during the non-hibernation period when Indiana and northern long-eared bats may be present (April through October), and therefore would not have the potential to disturb their foraging activity. Potential effects of construction noise on Indiana and northern long-eared bats would be limited to the daytime when the bats are inactive and occupying their day roosts.

All tree removal for the Proposed Project would be conducted during the winter hibernation period, when Indiana and northern long-eared bats would not be present. As such, no roosting habitat would be available to Indiana or northern long-eared bats within the construction areas when they return in the spring, and construction noises would only have the potential to affect Indiana or northern long-eared bats potentially roosting in areas of remnant forest adjacent to the project's limits of disturbance. As discussed above under "Habitat Loss and Fragmentation," Indiana bats would be expected to have the potential to roost in several wooded areas of the Project Site that would be outside of the limits of disturbance for the Amy's Kitchen facility, warehouse, and SoS Conference Center, whereas northern long-eared bats would likely be limited to roosting in the largest area of remnant forest, between the SoS guest house driveway and western boundary of the Echo Lake property.

Because much of the construction noise would likely be below their hearing range and Indiana bats have been observed roosting near active construction sites (ESI 2008, USFS 2011, U.S. Army 2011) and comparably noisy areas (e.g., Sparks et al. 1998, Shapiro and Hohmann 2005), any Indiana bats potentially roosting in close proximity to the project's areas of disturbance

during construction may habituate to and tolerate the noise and continue using the same roost sites. It is also possible that some individuals would flee from their roost and seek alternative roosting sites farther away from the construction. Given that Indiana bats have large home ranges and naturally change roost sites daily or every few days throughout the non-hibernating seasons (Kurta et al. 2002), they would be expected to be able to relocate away from the disturbances.

Northern long-eared bats potentially roosting in the remnant forest on the western side of the Echo Lake property would only have the potential to experience construction noises generated by the construction of the guest house and the grading and paving of the driveway. All other elements of the Proposed Project would likely be far from this area, and noises from their construction would be attenuated by the woodland fragment between the driveway and orchard parking area. Similarly, because northern long-eared bats do not usually roost near edges, construction noises from the guest house and driveway would be greatly attenuated by the forest before reaching northern long-eared bats that would be potentially roosting towards the interior. Additionally, observations of northern long-eared bats roosting near airports (Sparks et al. 1998) and under bridges (Feldhamer et al. 2003) suggest that they may not have a high level of sensitivity to noises that would be generated by the construction of a house and driveway while they are roosting. Overall, construction noises generated by the Proposed Project would not be expected to significantly impact daytime roosting behaviors or roosting habitat of the northern long-eared bat.

OPERATIONS IMPACTS

LIGHTING

Within the same landscape and ecosystem, artificial nighttime lighting can simultaneously benefit some bat species while being detrimental to others. The species that benefit are those that forage in illuminated areas to take advantage of the increased density and weakened predator avoidance abilities of insects that are attracted to the light. Both foraging activity and food intake rates of such species can be substantially greater in artificially illuminated areas than in dark areas (Geggie and Fenton 1985, Rydell, 1992, Blake et al., 1994, Azam et al. 2015), although there is sometimes a tradeoff with a higher risk of predation and vehicle collision mortality (Rydell, 1991, Stone et al. 2015). Most of the bat species that are attracted to, and can benefit from artificial night lighting are "fast-flying" species that are adapted to foraging over large open spaces, with many belonging to the genera *Pipistrellus* and *Eptesicus* (Geggie and Fenton 1985, Murphy et al. 2009, Patriarca and Debernardi 2010, Stone 2013).

Many other species of bats, in contrast, avoid foraging in areas with artificial night lighting and are often otherwise adversely affected by lights (Furlonger et al. 1987; Rydell, 1992; Stone et al. 2009, 2012; Polak et al. 2011). Common among them are "slow-flying" species of the genus *Myotis*, which includes the Indiana bat and northern long-eared bat (Furlonger et al. 1987; Murphy et al. 2009; Stone et al. 2009, 2011, 2012; McGuire and Fenton 2010, Azam et al. 2015, Rowse et al. 2016). Lighting can disrupt commuting routes and/or delay emergence of *Myotis* bats, and in turn, shorten their feeding time in a given night and reduce the growth rates of juveniles (Downs et al. 2003, Boldogh et al. 2007, Patriarca and Debernardi 2010). The avoidance of night lighting by some bat species and the attraction to it by others within the same community can lead to a competitive advantage for the latter and competitive exclusion of the former, as the species that are able to benefit can sometimes proliferate in abundance at the others' expense (Arlettaz et al. 2000). Indirectly, lighting can also negatively affect bat species that avoid lighting by drawing their prey away from dark areas, reducing insect reproduction

(Perkin et al. 2011), and altering insect community composition and trophic interactions (Stone 2013).

The effects of artificial night lighting on the Indiana bat and northern long-eared bat have not been directly studied. As noted above, both species belong to the genus *Myotis*, which contains several species in North America and Europe that have been shown to be adversely affected by artificial light. However, Indiana bats are known to occur where there is abundant light pollution, including within suburban residential neighborhoods (Bellwood et al. 2002), along interstate highways (USFWS 2008), and at major international airports (Sparks et al. 1998, 2005), suggesting that this species may not strongly avoid artificial illumination, at least at a broad spatial scale. Indiana bats radio-tracked at the Indianapolis International Airport exhibited a significant preference for foraging in dark versus light areas of the airport, but it could not be determined whether this was due to differences in lighting rather than differences in habitat type and natural prey availability (Sparks et al. 2005).

The northern long-eared bat tends to avoid foraging and roosting near edges and open areas in favor of interior forest (Owen et al. 2003, Patriquin and Barclay 2003, Carter and Feldhammer 2005, Morris et al. 2010, Segers and Broders 2014). As such, exposure of northern long-eared bats to light pollution is likely to be limited to general sky glow rather than direct, local light sources in most cases, and is therefore less likely to have either beneficial or adverse effects to this species than bats that forage in open areas where artificial night lighting is most prevalent.

Amy's Kitchen

Outdoor nighttime lighting for the proposed food preparation facility on the Ver Hage property would include 78 pole-mounted, white light-emitting diode (LED) lights in parking areas and roadways, and 12 wall-mounted, warm white LED lights on the sides of the building. White LED lights have been recommended over more traditional metal halide and mercury lights for minimizing impacts to bats because they do not produce light in the ultraviolet spectrum and are therefore expected to be less attractive to insects (Patriarca and Debernardi 2010, Stone 2013). White LED lights nevertheless have strong emissions in blue-green spectra and have been found in some cases to be highly attractive to insects (Pawson and Bader 2014) and negatively affect commuting and foraging conditions for *Myotis* bats (Stone et al. 2012, Rowse et al. 2016). Yet, LED lights are energy efficient and can help minimize the breadth of light pollution because they are highly directional, easily dimmable, and well-suited to being switched on and off in concert with demand since they operate at full efficiency with no time required to warm up (Gaston et al. 2012).

The outdoor lighting plan for the Amy's Kitchen manufacturing facility would incorporate Best Management Practices (BMPs) to minimize potential impacts to bats (Gaston et al. 2012, Stone 2013). First, a Variable Lighting Regime (VLR; Gaston et al. 2012, Stone et al. 2015) would be implemented, and include the use of motion sensors and the dimming of lights to 50 percent illumination between motion sensor activations. Second, the majority of the pole-mounted lights (64) would be only 15 feet tall (the remaining 14 pole-mounted lights would be 19 feet tall) in order to keep the light close to the ground and reduce the volume of illuminated space, allowing bats the ability to still fly through the dark air space above the lights (Stone 2013). Third, all lighting would be downward directional and angled no more than 30 degrees above the horizontal plane to limit spill outside of the intended areas (Gaston et al. 2012, Stone 2013). Additionally, the 12 wall-mounted fixtures on the sides of the building would use warm white LED lighting, which has lesser negative impact to bats than bright white LED lighting (Stone 2013, Rowse et al. 2016). With these BMPs in place, lighting would be greatly minimized and

highly constrained within the boundaries of the facility, where Indiana and northern long-eared bats would not be expected to occur regardless of lighting because no suitable foraging habitat would be present following the development of the facility. These BMPs, in combination with the maintenance of a wooded buffer between the manufacturing facility and Cheechunk Creek to the east and the Wallkill River to the west, would limit the facility's outdoor lighting from reaching the creek and river. Riparian corridors are highly preferred foraging habitat for Indiana bats, and to a lesser extent, northern long-eared bats, and the acoustic bat survey conducted for the Proposed Project found activity levels of these and other bat species to be substantially greater at the two survey locations along Cheechunk Creek than the upland survey location (**Appendix A**). With wooded buffers remaining in place, outdoor lighting around the manufacturing facility would not be expected to affect the use of the Cheechunk and Wallkill riparian corridors as foraging habitat by Indiana and northern long-eared bats.

The entry road that would be constructed for the Amy's Kitchen facility would extend northeast from Route 17M, through the forested area at the southern end of the Echo Lake property, and along a forested ridge paralleling the Wallkill River before crossing the river on a bridge that would be constructed to bring the entry road into the southwestern corner of the Ver Hage property (see **Figures 3a** and **4**). The proposed lighting plan for the entry road would include 13 pole-mounted, white LED lights between the new entrance to the Mid-Hudson Psychiatric Center that would split off from the entry road near its southern end, and the new bridge that would cross the Wallkill River to bring the entry road into the Ver Hage property. Three of these lights would be clustered together along the western side of the bridge; the other 10 lights would be spaced approximately every 385 feet along the road and have non-overlapping distribution such that there would be approximately 255 feet of non-illuminated roadway between each light.

The entry road lights would turn on at dusk to 50% illumination and have motion sensors that would increase illumination to 100% when activated. Based on operations at Amy's Kitchen's comparable food manufacturing facility in Medford, OR, it is estimated that approximately 530 employee automobiles would enter or exit the facility via the entry road between the hours of 7pm and 6am, when bats in the area would be active. As such, the road lights would be frequently activated to 100% illumination, and when combined with the emissions of the automobiles' headlights, would potentially cause Indiana and/or northern long-eared bats to avoid foraging in the vicinity of the roadway. Further, *Myotis* bats are known to avoid LED lights even when they are dimmed (Rowse et al. 2016), although dimming still reduces the spatial extent of the affected area. An approximately 200 foot wide, wooded buffer that would separate a long segment of the road from the Wallkill River to the west before crossing the proposed bridge would block much of the light from reaching the river corridor (both at full illumination and when dimmed), where foraging activity of the bats is expected to be the greatest. The effects of isolated light sources on bats are not far reaching when the light is filtered by forest vegetation (Altringham and Kerth 2016). Where the entry road would approach and cross the Wallkill River, however, some direct illumination of this segment of the river corridor would be caused by the road lights on the approaches and the headlights of automobiles crossing the bridge. This lighting, combined with the physical presence of the road and the noise of the automobiles (discussed above under "Habitat Loss and Fragmentation") would be expected to have cumulative effects (Altringham and Kerth 2016) that would displace Indiana and northern long-eared bats from using this segment of the Wallkill River corridor as a commuting route and/or foraging area, and require them to use alternative areas up- or down-river. To minimize any such potential effects, the entry road lights would have a maximum mounting height of 19 feet to help keep the light close to the ground and reduce the volume of

illuminated space so bats might still fly through the dark air space above the lights (Stone 2013), and the lights would be downward directional and angled no more than 30 degrees above the horizontal plane to reduce spill outside of the roadway (Gaston et al. 2012, Stone 2013).

Warehouse

The future warehouse has not been designed in detail and no lighting plan has been developed. However, the warehouse's frontage, parking area, and tractor trailer loading docks would face Hartley Road immediately to the east and the Amy's Kitchen food manufacturing facility immediately to the west, such that areas in which most outdoor nighttime lighting would likely be needed would not be in close proximity to foraging or roosting habitat for either Indiana or northern long-eared bats. The rear of the building that would abut the floodplain forest along Cheechunk Creek would be expected to have minimal, if any, outdoor lighting, which would not be likely to reach the creek's corridor and affect foraging conditions for Indiana or northern long-eared bats.

Science of the Soul

Excluding the entry road, outdoor lighting infrastructure for the SoS Conference Center would include 48 pole-mounted, white LED lights and 12 wall-mounted warm white LED lights. The lights would be concentrated around the open air pavilion, ancillary buildings and their small parking areas, internal roads, and the southeastern quadrant of the orchard parking area.

Operation of outdoor lights for the proposed SoS Conference Center would be minimal because large nighttime events are not anticipated and nighttime uses would be infrequent. Nighttime uses would be limited to preparation for the National and Regional events, night watch, and the periodic evening Study Sessions. These Study Sessions are held once or twice during the week, starting at approximately 7:00 PM and ending at approximately 8:00 PM, with attendance of 20 to 25 people who live locally and would leave the property promptly after the session ends. Other than preparation for the National and Regional events, all activities would cease and the Conference Center would close at 9:00 PM. Outdoor lighting for these uses would generally be limited to pathways, roads, and small portions of the parking areas that are the closest to the center's buildings. Three fourths of the orchard parking area would lack light fixtures and be dark at night year-round. The hours of the outdoor lighting and maximum lighting levels would be regulated by the Town of Goshen Planning Board's Site Plan approval.

As with the Amy's Kitchen facility, all lighting would be downward directional and angled no more than 30 above the horizontal plane in order to limit spill and follow recommended BMPs for minimizing the effects of artificial lighting on bats (Stone 2013) and wildlife in general (Gaston et al. 2012). The pole-mounted lights would have a height of only 15-19 feet which would help keep the light close to the ground and reduce the volume of illumination so bats might still fly through the dark air space above the lights (Stone 2013), In addition, the proposed lighting would be zoned so that only those fixtures needed to support site activities would be turned on. Other than preparation for the National and Regional events, all activities would cease and the Center would close at 9:00 pm.

Given this limited usage of outdoor artificial lighting during operation of the Conference Center, both spatially and temporally, it is unlikely that foraging or roosting conditions for Indiana bats and northern long-eared bats would be significantly degraded in the adjacent, undeveloped portions of the property. Lighting would be directional and downward such that it would be contained within the limits of the conference facility, where both species may be unlikely to forage or roost regardless of lighting. Adjacent, undeveloped portions of the property, where

potential foraging and roosting habitat for both species would remain, would be exposed to little to no artificial lighting coming from the grounds of the Conference Center. The orchard parking area would be unlit as to encourage its potential use as foraging habitat and to buffer any light from the Conference Center from reaching the remnant forest to the west. Therefore, any Indiana or northern long-eared bats foraging adjacent to the Conference Center would not be expected to be affected by the nighttime lights operated within the Center's grounds.

NOISE AND HUMAN ACTIVITY

Motor vehicle noise from Hartley Road, Cheechunk Road, Route 17M, and Echo Lake Road are the predominant sources of anthropogenic noise to which the four properties of the Project Site are exposed. In addition, heavy truck and machinery activity associated with the operation of a waste processing facility, adjacent to the Ver Hage and Echo Lake properties, is a significant contribution of noise under existing conditions. A noise analysis conducted for the Proposed Project's SEQRA Draft Environmental Impact Statement determined that operation of the Amy's Kitchen manufacturing facility would result in a negligible increase of 2.1 dBA above current daytime ambient noise levels. Operation of the SoS Conference Center would also result in a negligible daytime increase of 2.0 dBA, except during the national and regional events, when the maximum predicted noise level increment would be 7.6 dBA. However, because the national and regional events would only take place a few days each year, operation of the Conference Center would not produce a continuous and regular increase in noise levels. Nighttime noise associated with the operation of the Amy's Kitchen manufacturing facility would be primarily limited to the entry and exit of an estimated 530 employee vehicles and 9 delivery trucks along the entry road between the hours of 7 pm and 6 am. The rooftop HVAC system would also be operational. The warehouse is largely conceptual at this time, but minimal nighttime activity and noise would be expected. The SoS Conference Center would not be operational after 9 pm, and as such, would not cause a measurable increase in existing nighttime noise levels on the Echo Lake property.

As discussed under "Construction Noise," roosting Indiana bats have demonstrated a tolerance of high levels of certain anthropogenic noises, including those associated with interstate highways, major airports, and military artillery ranges. The small incremental increases in daytime and nighttime noises that would be generated by the operation of the Proposed Project would not be expected to cause roost site abandonment or other significant effects to roosting Indiana bats. It should be noted that the projected increases in existing noise levels do not consider attenuation factors, such as ground, air absorption, and vegetation, and are therefore highly conservative. Wooded portions of the Project Site used for roosting by Indiana bats would greatly attenuate noises coming from the food manufacturing facility, entry road, and Conference Center such that the increases in many portions of the Project Site would be even further negligible. Similarly, roosting northern long-eared bats, which tend to avoid open areas and edges, and would be most likely to occur in the forest interior, would be expected to perceive little if any change in anthropogenic noise levels during the operation of the Proposed Project.

Road noise and the physical presence of vehicles can disrupt foraging behaviors of Indiana bats (Zurcher et al. 2010, Bennett et al. 2013) and likely northern long-eared bats as well given the effects of road noise on other gleaning bat species of the same genus (Schaub et al. 2008, Siemers and Schaub 2011, Altringham and Kerth 2016). Nighttime operation of the entry road would therefore potentially displace Indiana bats from foraging in the vicinity of the road; northern long-eared bats would not be expected to occur in the roadside habitat regardless of the

road's operation because of their common avoidance of sharp edges like those that would be created by constructing the road through this forested area. Road noise effects on Indiana and northern long-eared bats would likely be greatest where the proposed bridge would cross the Wallkill River. There, road noise, combined with the nighttime lighting (discussed above) would potentially affect usage of this segment of the river corridor as a foraging area and require the bats to forage up- or down-river. While vehicle noise would potentially degrade foraging conditions for Indiana bats elsewhere along the entry road, these effects would likely be limited to within about 200 feet of the road (Schaub et al. 2008, Siemers and Schaub 2011) due to the attenuation of the sound provided by the bordering woodland. Assuming a 200 foot effect zone extending from both sides of the road, the road would be expected to impact approximately 41.3 acres of potential foraging habitat for Indiana bats. Large amounts of foraging habitat in this portion of the Echo Lake property would therefore be expected to be unaffected by noises generated by the nighttime operation of the entry road, and remain available to Indiana bats.

H. ALTERNATIVES

The Proposed Project considered the following alternatives to minimize potential impacts to bat habitat.

ALTERNATIVE TO BRIDGE

Due to limitations on access to the Project Site from local roads, the Applicant determined that access to both Amy's Kitchen and the SoS Conference Center would be most suitable from NYS Route 17M. The existing local roadways surrounding the Project Site are rural and residential in nature, and the geometry of these roads is not suited for the long-term truck traffic associated with the Amy's Kitchen Manufacturing Facility. The use of Hartley Road, in particular, is not a long-term practicable solution as the use of this road would require the acquisition of additional land to accommodate widening and restructuring of the roadbed, as well as physical improvements to the intersection of Hartley Road and NYS Route 17M. Hartley Road is currently in a deteriorated condition and requires extensive repair and restructuring. Any use of Hartley Road for access to Amy's Kitchen has been considered to be temporary in nature, and for emergency access purposes. During the planning of the Proposed Project, due to the limitations of Hartley Road, the Town of Goshen stated that it wanted both construction and permanent principal access for the Proposed Project from NYS Route 17M.

A realigned intersection with NYS Route 17M, Training Center Lane, and the Project Site driveway would provide beneficial safety improvements along Route 17M and would provide necessary access to the Project Site. Accessing the Amy's Kitchen manufacturing facility from NYS Route 17M requires an additional bridge over the Wallkill River. This bridge also serves to provide secondary access to the SoS Conference Center in an emergency situation.

By constructing the bridge in the earliest phases of construction, significant volumes of construction traffic would not use local roadways, thus further minimizing potential impacts to local roadways. Should the bridge not be constructed in the first stages of construction, as is currently proposed, approximately 90 truck trips per day over a six (6) month period would be required to travel along local roads (Echo Lake Road and Hartley Road) between the Echo Lake property and the Ver Hage property (see DEIS at page III.S-5).

GUEST HOUSE LOCATION

The SoS Guest House will be utilized by the organization's visiting speakers and special guests during the National Conference and Board meetings. The Guest House location was chosen

because of its isolation from the main portion of the Conference Center and its elevation, both of which facilitate quiet contemplation and commune with nature. These locational elements further and enhance the spiritual practices central to the organization and provide a location where both visiting speakers and guests can appropriately prepare for delivering discourse to the National Conference attendees. No other site on the property provides a better combination of isolation and elevation. Nevertheless, in response to agency comment, the Applicant has relocated the Guest House to a point lower on the ridgeline where elements of isolation and elevation are present and would still be adequate to achieve the spiritual purpose. This newly proposed location reduces the length of the driveway to the Guest House by approximately 40 percent and reduces the total amount of clearing by approximately 3.1 acres.

OVERALL FOOTPRINT

Both the Amy's Kitchen manufacturing facility and the SoS Conference Center are sized to achieve the objectives and purpose and need for both Amy's Kitchen and SoS. Amy's Kitchen could not achieve its production goals with a smaller plant. SoS could not achieve the desired capacity to host 12,000 people three (3) days per year with a smaller Conference Center. Nor would reductions in total footprint necessarily reduce the overall limits of disturbance or loss of habitat as the areas proposed to be developed are predominantly in those portions of the Project Site that have already been disturbed by previous mining activities. Reducing the footprint of the Amy's Kitchen manufacturing facility would not, for instance, reduce the size of the required access road to reach the plant.

I. HABITAT CONSERVATION PLAN

Construction and operation of the Proposed Project would affect a total of approximately 198 acres of potential foraging habitat and approximately 63 acres of potential roosting habitat for the Indiana bat and/or northern long-eared bat species (**Table 19**). This includes direct impacts due to clearing and grading of existing habitat, as well as indirect impacts to 41 acres of potential foraging habitat for the Indiana bat, and 29 acres of potential foraging and roosting habitat for the northern long-eared bat due to fragmentation, motor vehicle traffic and noise, and nighttime lighting (see **Table 20** and **Table 21**). **Table 19** presents the total approximate acreage of bat habitat that would be affected by the Proposed Project. It is important to note that the values in **Table 20** and **Table 21** should not be summed due to the significant overlap in habitat utilized by both species.

A direct impact to potential foraging habitat of the Indiana bat includes the removal of woodland and old field/shrubland within the limits of disturbance. A direct impact to potential foraging habitat of the northern long-eared bat includes the removal of woodland within the limits of disturbance.

Direct impacts to potential roosting habitat for the Indiana bat include all woodland within the limits of disturbance. For the northern long-eared bat, direct impacts to potential roosting habitat include only the limits of disturbance within woodland areas with interior forest (i.e., western side of Echo Lake property).

Indirect impacts to foraging habitat of Indiana bats include a 200 foot area in each direction of the entry road that is expected to be degraded by motor vehicle noise. Indirect impacts to foraging habitat of northern long-eared bats include area of woodland that would be fragmented, such as the area between the SoS guest house driveway and the orchard parking area. Indirect impacts to Indiana bat roosting habitat assumes no avoidance of roosting near edges or in

fragmented woodland. Indirect impacts to northern long-eared bat roosting habitat was evaluated as noted above for foraging habitat (e.g., considers fragmentation effects and edge avoidance during roosting).

Table 19
Approximate Acreage of Bat Habitat Affected by the Proposed Project

Impact	Foraging	Roosting
Direct Common Habitat	35	32
Direct Indiana Bat Only	93	3
Direct Northern Long-Eared Bat Only	0	0
Total Direct	***128***	***35***
Indirect Common Habitat	0	0
Indirect Indiana Bat Only	41	0
Indirect Northern Long-Eared Bat Only	28.8	27.8
Total Indirect	***69.8***	***27.8***
Total Impact	**197.8**	**62.8**

Notes: Total impact cannot be obtained through summing foraging and roosting habitat as significant overlap exists between functions.

Table 20
Approximate Acreage of Indiana Bat Habitat Affected by the Proposed Project

Impact	Foraging	Roosting
Directly Affected Habitat	128	35
Indirectly Affected Habitat	41	0
Total	**169**	**35**

Table 21
Approximate Acreage of Northern Long-Eared Bat Habitat Affected by the Proposed Project

Impact	Foraging	Roosting
Directly Affected Habitat	35	32
Indirectly Affected Habitat	28.8	27.8
Total	**63.8**	**59.8**

To offset any incidental take of the Indiana and northern long-eared bat under the ESA, comply with the Habitat Conservation Plan requirements of section 10 of the ESA, and result in a net conservation benefit to both bat species, the Proposed Project would include the preservation of approximately 165 total acres of woodland (successional southern hardwood forest, floodplain forest, red maple-hardwood swamp, and beech-maple mesic forest combined) that would provide Indiana and northern long-eared bats with potential foraging and roosting habitat (**Figure 4**). This would exceed the 3:1 ratio of preserved woodland area (approximately 165 acres) to developed woodland area (approximately 52 acres) that is a recommended Indiana bat

conservation guideline of the USFWS (2011). In particular, the approximately 44 acres of nearly contiguous undeveloped forest that would extend for approximately 1,000 feet from the guest house driveway all the way to Echo Lake Road would provide interior foraging and roosting habitat that is preferred by northern long-eared bats. In addition to the woodland preservation areas, approximately 22 acres of old field, 11 acres of shrubland, 6 acres of sedge meadow, 1 acre of shallow emergent marsh, and 62 acres of cropland would also be preserved on the Project Site and represent additional potential foraging habitat for Indiana bats (**Figure 4**). By preserving these undeveloped portions of the Project Site, indirect impacts would be reduced and both species of bats would be expected to continue to occupy the Project Site in the future. The project would not jeopardize the continued existence of either bat species. Post-construction acoustic monitoring would be conducted in consultation with USFWS and NYSDEC to determine continued usage of the Project Site by Indiana and northern long-eared bats.

The three New Conservation Properties total 27.8 acres comprising a mix of old field, successional southern hardwood forest, and floodplain forest. These habitats may provide foraging habitat for both bat species. The Wawayanda and Lipoff west properties may also provide roosting habitat for Indiana bat, and the Wawayanda property roosting habitat for northern long-eared bat. In total, the Proposed Project would preserve approximately 273 acres of land.

Preservation of the Strong Farm and Lipoff properties, along with the large portions of the Echo Lake and Ver Hage properties that would be outside of the Proposed Project's limits of disturbance (**Figure 4**), would contribute to the USFWS goal of maintaining a minimum of 35 percent forest cover in the landscapes surrounding Indiana bat maternity colonies (USFWS 2012). A Geographic Information Systems analysis using the U.S. Geological Survey's National Land Cover Database showed that forest (i.e., combined categories of "Deciduous Forest", "Evergreen Forest", and "Mixed Forest") currently covers approximately 42.5 percent of the land within 2.5 miles of the center point of the Project Site; following the removal of approximately 47 acres of forest to construct the Proposed Project, that percentage would only decrease to 41.9. The approximately 165 total acres of woodland that would be preserved would represent a sizable amount of forest cover in Goshen that would be protected from development and ensure the availability of potential foraging and roosting habitat for both Indiana and northern long-eared bats. As discussed in **Section F**, the majority of the wooded areas, including the smaller fragments, would be expected to be suitable roosting and foraging habitat for Indiana bats, and the far western side of the Echo Lake property would be expected to be a large enough tract of nearly contiguous forest to provide interior foraging and roosting habitat for northern long-eared bats. The wooded margins of the Wallkill River and Cheechunk Creek that would be preserved within the Project Site would also be expected to provide foraging and commuting corridors for both species. As detailed in **Section F**, forest composition and structure, and the availability of quality potential roost trees in the majority of these portions of the Project Site that would be preserved are characteristic of the habitat associations of Indiana and/or northern long-eared bats.

Other features of the Proposed Project and measures that would be implemented to minimize potential impacts to Indiana and northern long-eared bats would include:

- **Wintertime tree clearing**: By limiting all tree clearing for the Proposed Project to the October 31 to March 31 hibernation period, there would be no potential for the removal of an active roost tree or other direct impacts to Indiana and northern long-eared bats.
- **Project footprints centered on old field and shrubland:** The design layout of the Amy's Kitchen manufacturing facility and SoS Conference Center is centered on existing areas of old field and shrubland in order to minimize tree removal and encroachment into wooded areas.

- **Best Management Practices for outdoor nighttime lighting**: As detailed in **Section F**, the outdoor lighting plan for the Proposed Project would include several Best Management Practices that are recommended for reducing effects on bats (Patriarca and Debernardi 2010, Gaston et al. 2012, Stone 2013). All lights would have motion sensors and dimmers, pole heights would be limited to a maximum of 19 feet in order to keep the light close to the ground and allow bats to potentially still fly through the dark air space above, the lights would be downward directional and angled no more than 30 degrees above the horizontal plane to limit spill outside of the intended areas, and wall-mounted lights on the sides of the building would use warm white LED lighting.
- **Minimal nighttime operation of the SoS Conference Center**: Operation of the SoS Conference Center would end by 9 pm and nighttime lighting would be limited to small parking areas, paths, and internal roads, which would leave the vast majority of the Echo Lake property dark and minimize potential lighting effects on bats.
- **Orchard-style design of the SoS parking area:** The orchard-style parking area for the SoS Conference Center would be heavily planted with native trees and kept unlit at night except for a small portion in order to soften the edge between the Conference Center's grounds and the preserved woodland area to the west, buffering the preserved woodland from sound and light associated with the Conference Center.
- **Porous Pavement and Gravel/Grass Parking Spaces**: Porous pavement would be installed in a strip at the downslope end of parking aisles, with standard asphalt pavement used for the remainder of the parking area. Porous pavement consists of high permeability asphalt pavement with layers of stone beneath the pavement, designed to temporarily hold the water quality volume and allow for infiltration. The SoS Conference Center parking would also include 1,280 gravel and/or grass parking spaces (out of approximately 1,940 parking spaces). These measures reduce runoff and minimize the need for site clearing to accommodate additional stormwater management facilities, thereby contributing to preservation of bat foraging and roosting habitat onsite.
- **Integrated Pest Management (IPM):** To minimize the use of pesticides/herbicides, all Amy's Kitchen and SoS Conference Center landscaping will utilize IPM practices. IPM focuses on long-term prevention of plant pests and pathogens by managing the ecosystem to keep pests from becoming a problem. IPM uses a combination of methods, including: cultural controls (practices to reduce pest establishment such as growing a healthy crop that can withstand pest attacks, using disease-resistant plants, modifications to irrigation or fertilizer application); biological controls (use of natural enemies and competitors); mechanical controls (such as mulches for weed management and physical barriers to exclude wildlife pests); and lastly, chemical controls (use of pesticides only when needed, spot treatment rather than prophylactic or broad spraying, to minimize their use). The use of IPM will minimize the potential for harm to bats from chemical spraying or the consumption of insects that have absorbed pesticides.

These protective steps would greatly exceed the two conservation measures imposed on tree removal projects by the USFWS' Final 4(d) Rule for the northern long-eared bat, which only prohibit tree removal within 0.25 miles of a known hibernaculum and removal of a known maternity roost tree or any trees within 150 feet of a known maternity roost tree during the pup season (June 1-July 31) (USFWS 2016a). The Project Site is approximately 9.25 miles from the closest hibernaculum and contains no known maternity roost trees (NYNHP 2015, NYSDEC 2015). In addition, while the Proposed Project would result in the loss and fragmentation of northern long-eared bat foraging habitat and potential roosting habitat, the USFWS expects that

such forest conversion activities do not have the potential to jeopardize the continued existence of the northern long-eared bat in the near future (USFWS 2016a,b). Regarding the Indiana bat, nearly 42 percent of the land within 2.5 miles of the center point of the Project Site would remain forested following construction of the Proposed Project and the preservation of the undeveloped portions of its four properties, which would meet the USFWS' conservation goal of maintaining a minimum of 35 percent forest cover in the landscapes surrounding Indiana bat maternity colonies (USFWS 2012). By preserving approximately 165 total acres of woodland habitat for Indiana and northern long-eared bats through a conservation easement or similar legal agreement, the Proposed Project would be expected to offset any incidental take under the ESA and result in a net conservation benefit to these species and also exceed the 3:1 ratio of preserved to developed woodland that is recommended by the USFWS for the conservation of the Indiana bat. The three conservation parcels provide an additional 27.8 acres of potential foraging habitat. Collectively, these project features and measures constitute the project's Habitat Conservation Plan.

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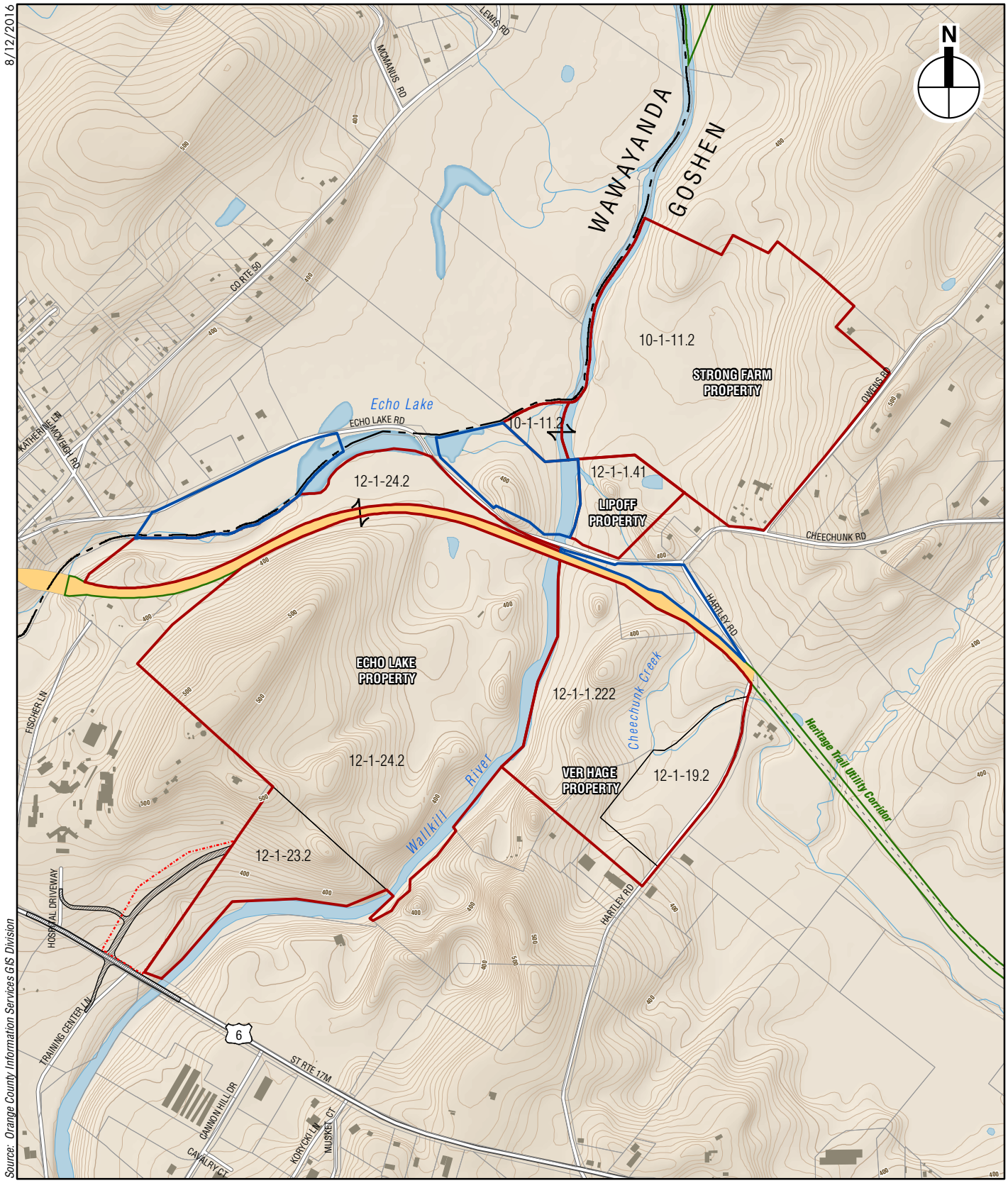


Project Site
Off-Site Conservation Properties
NYS Land Transfer Parcel
Project Parcel Boundaries (with parcel #)
Additional Areas for Roadway Modifications
Utility Corridor

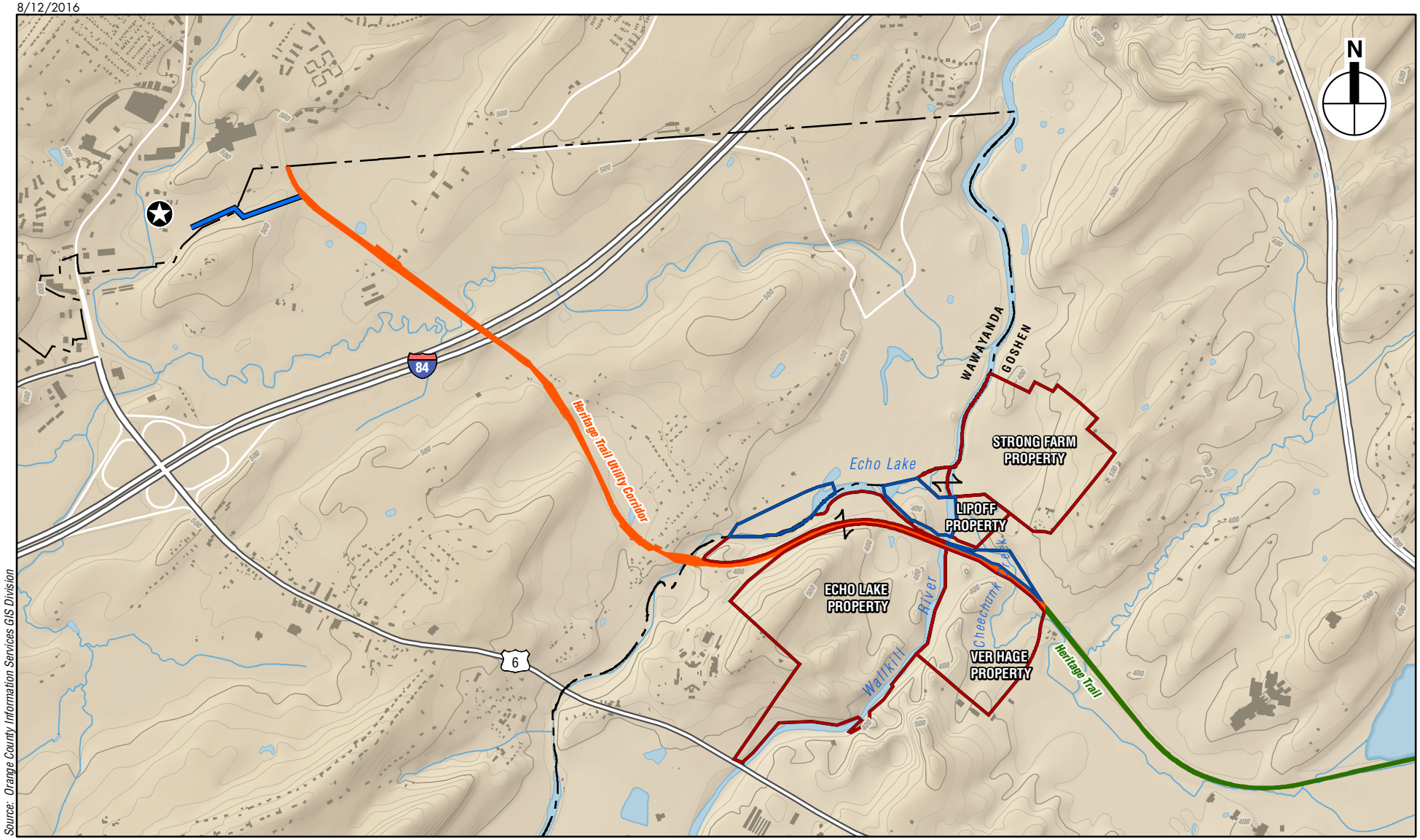
0 1,000 FEET

Amy's Kitchen
Science of the Soul

Project Site and Ancillary Properties

Figure 1

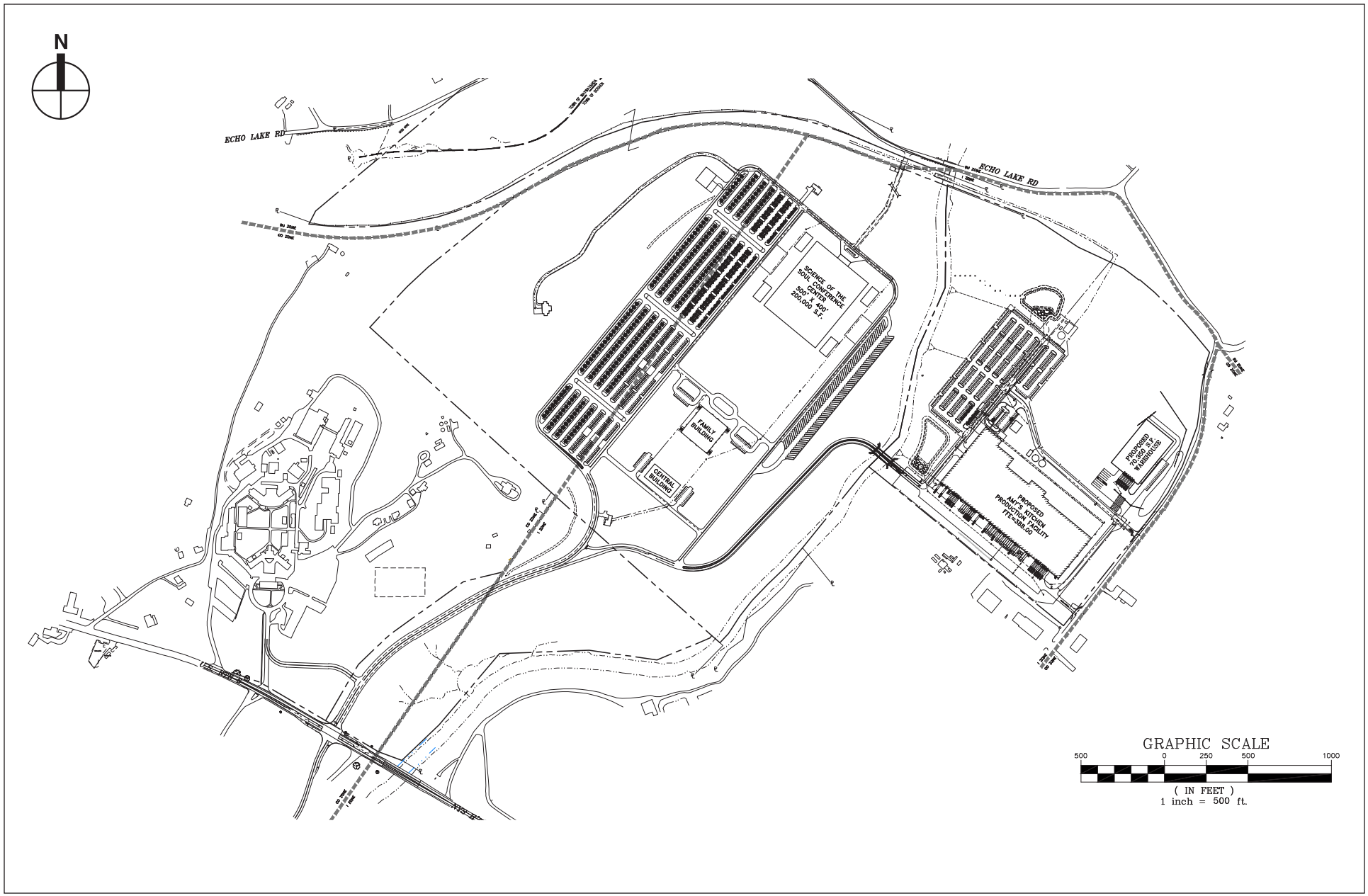
8/12/2016



Amy's Kitchen
Science of the Soul

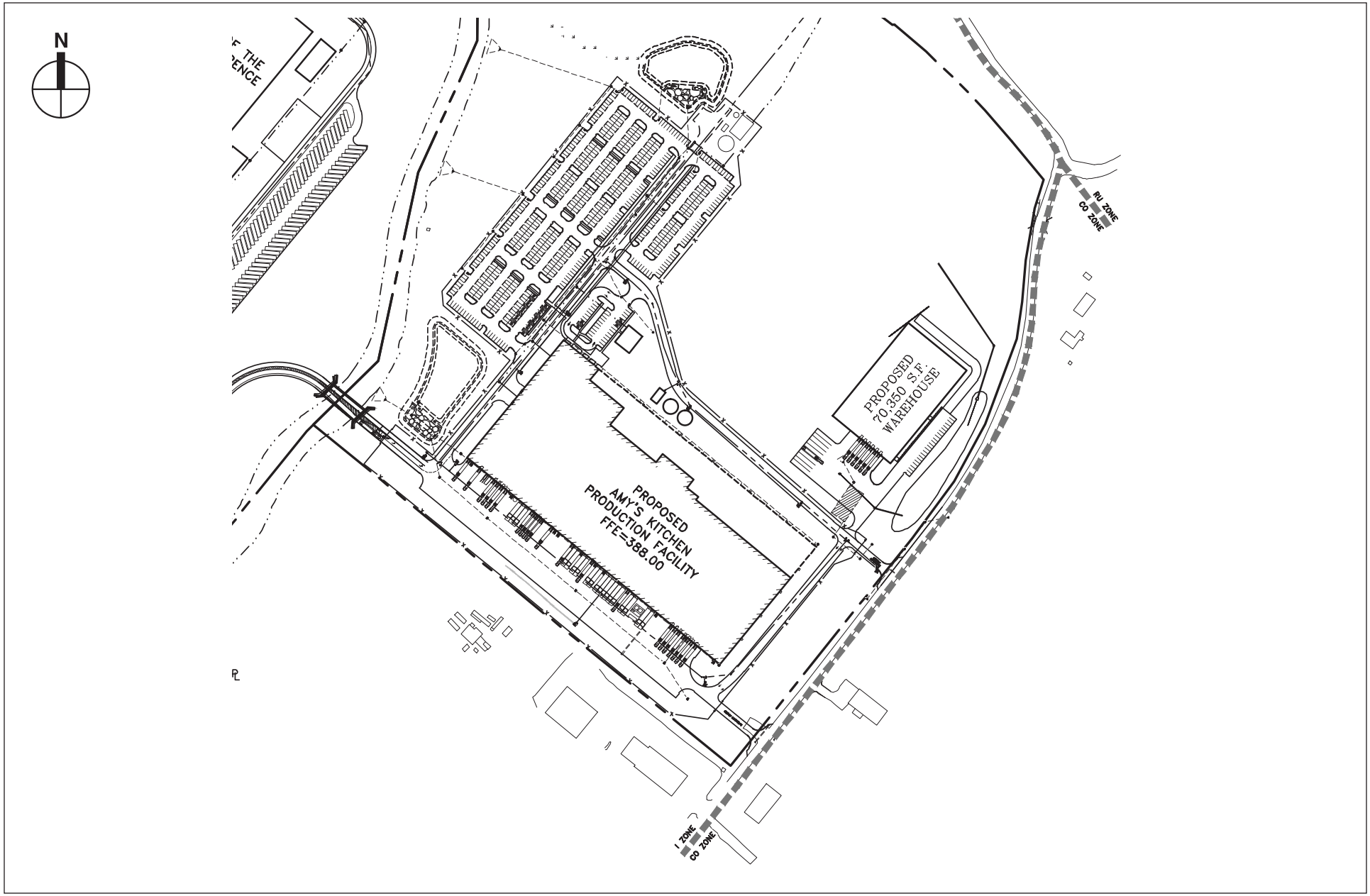
Heritage Trail Utility Corridor
Figure 2

8.16.16



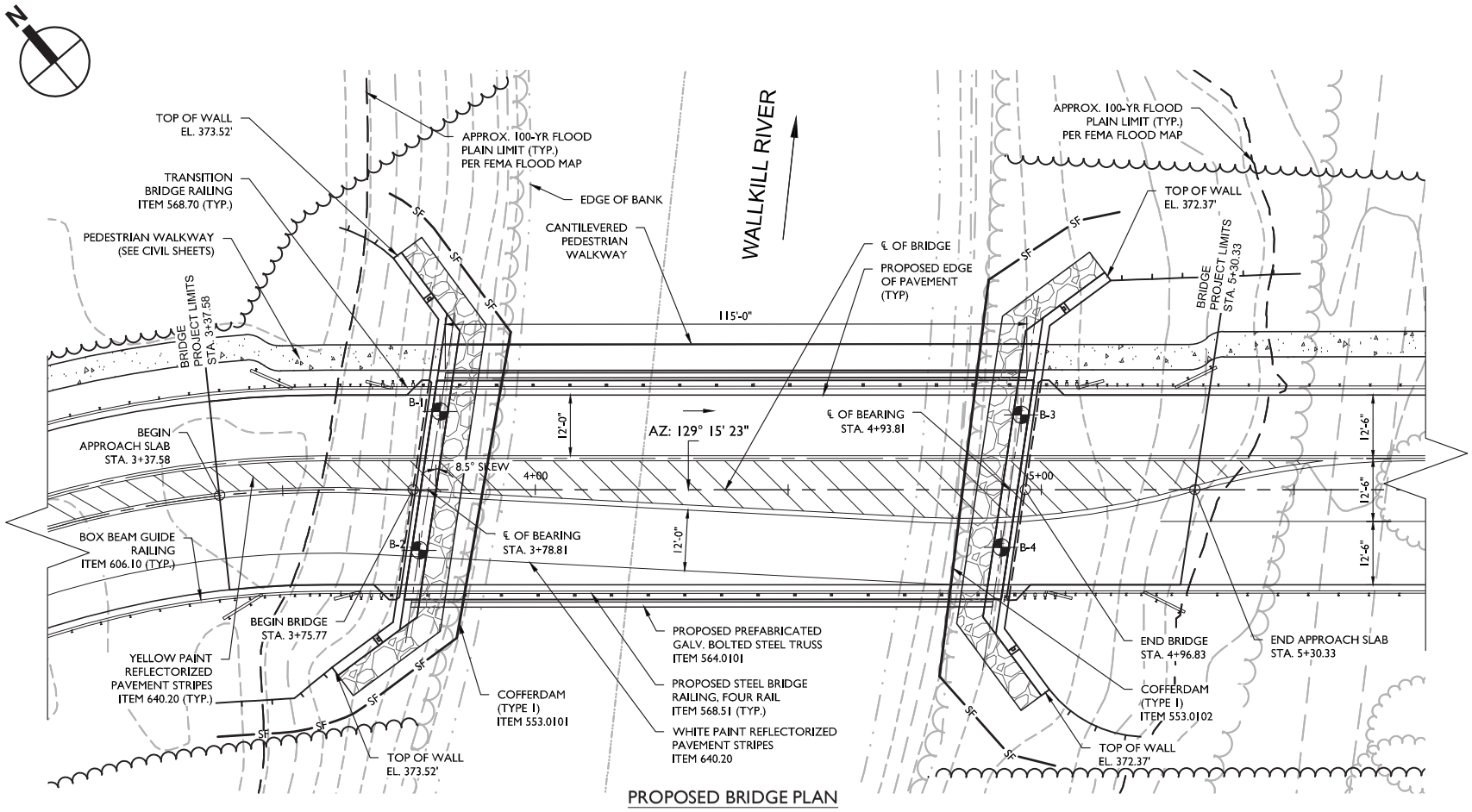
Amy's Kitchen
Science of the Soul

Overall Site Layout
Figure 3a



Amy's Kitchen
Science of the Soul

Amy's Kitchen Site Plan
Figure 3b



PROPOSED BRIDGE PLAN

NOTE

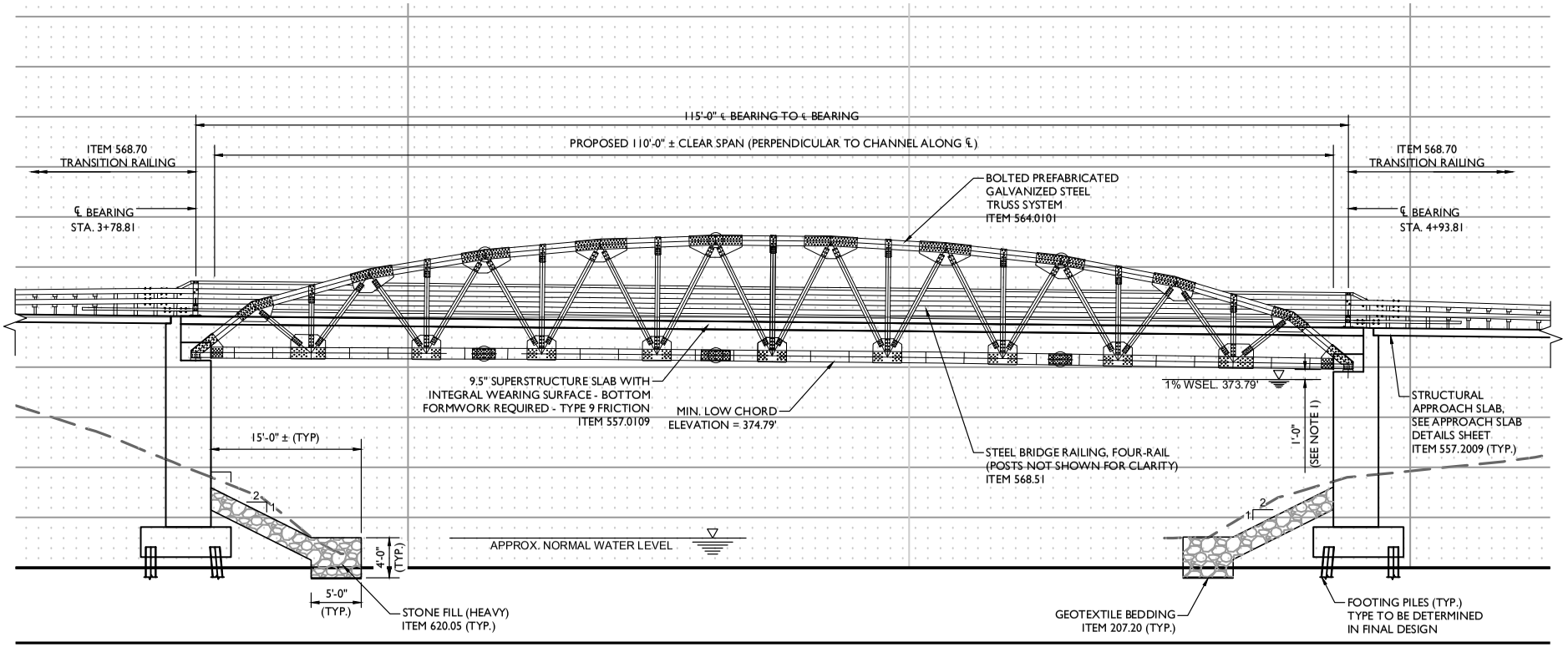
1. BRIDGE ALIGNMENT STA. 3+00 MATCHES WEST VERHAGE ALIGNMENT STA. 22+00
2. BRIDGE ALIGNMENT STA. 5+95.55 MATCHES AMY'S TRUCK DOCK ALIGNMENT STA. 12+50
3. BRIDGE PROJECT LIMITS ARE FROM STA. 3+37.58 TO STA. 5+30.33. ALL ROADWORK OUTSIDE OF BRIDGE LIMITS TO BE DONE BY OTHERS.

20 16 12 8 4 0 10 20

SCALE : 1" = 20'

Amy's Kitchen
Science of the Soul

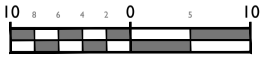
Proposed Wallkill River Bridge Plan
Figure 3c



PROPOSED BRIDGE ELEVATION

NOTES:

1. THE PROPOSED FREEBOARD CLEANING = 1.0 FT FOR THE 1% FLOOD EVENT. CRITICAL POINT IS LOCATED AT THE INTERSECTION OF THE EAST ABUTMENT STEM AND THE BOTTOM OF THE TRUSS BOTTOM CHORD.

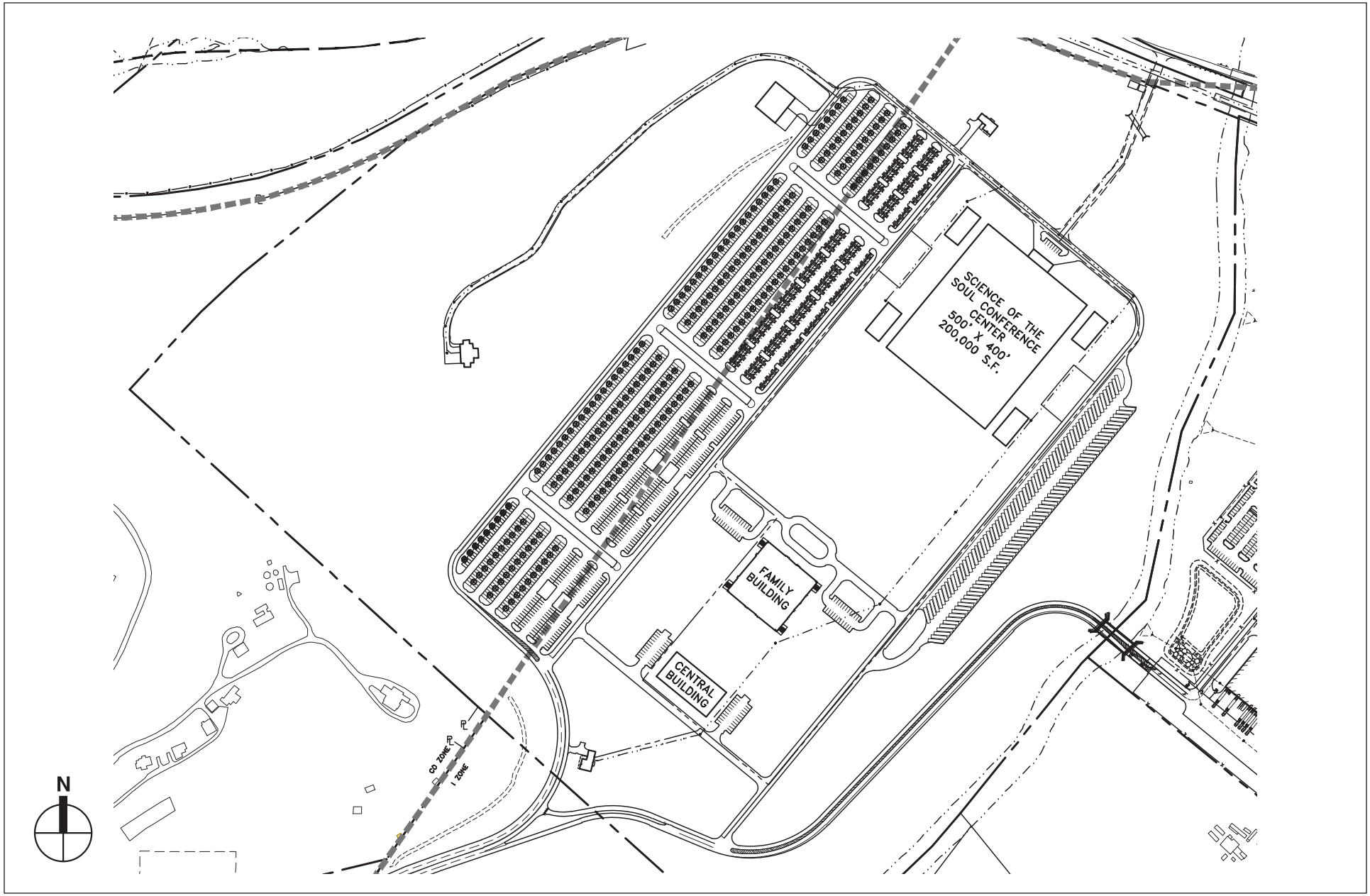


SCALE : 1" = 10'

Proposed Wallkill River Bridge Elevation

Figure 3d

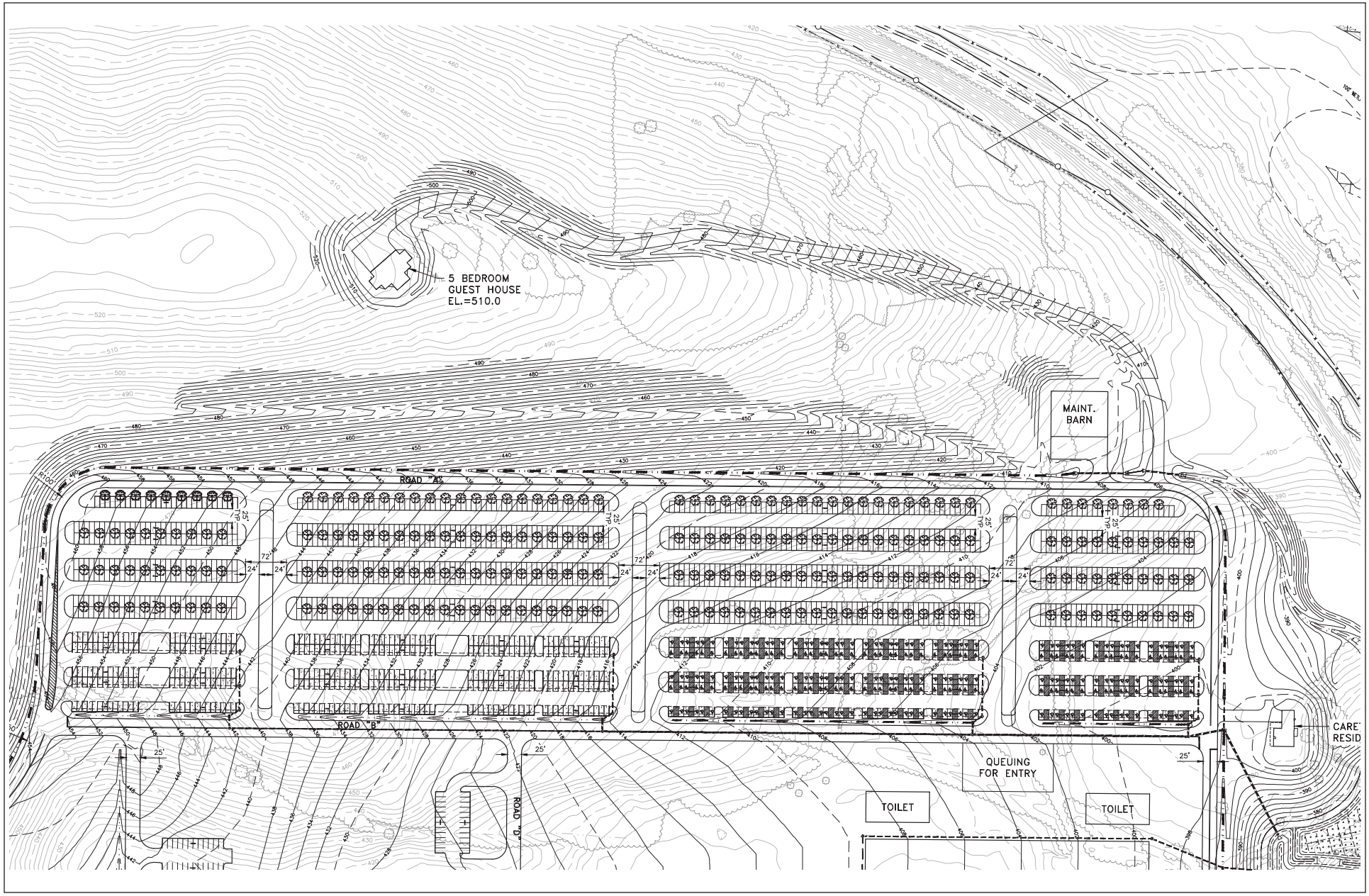
8.16.16



Amy's Kitchen
Science of the Soul

SoS Site Plan
Figure 3e

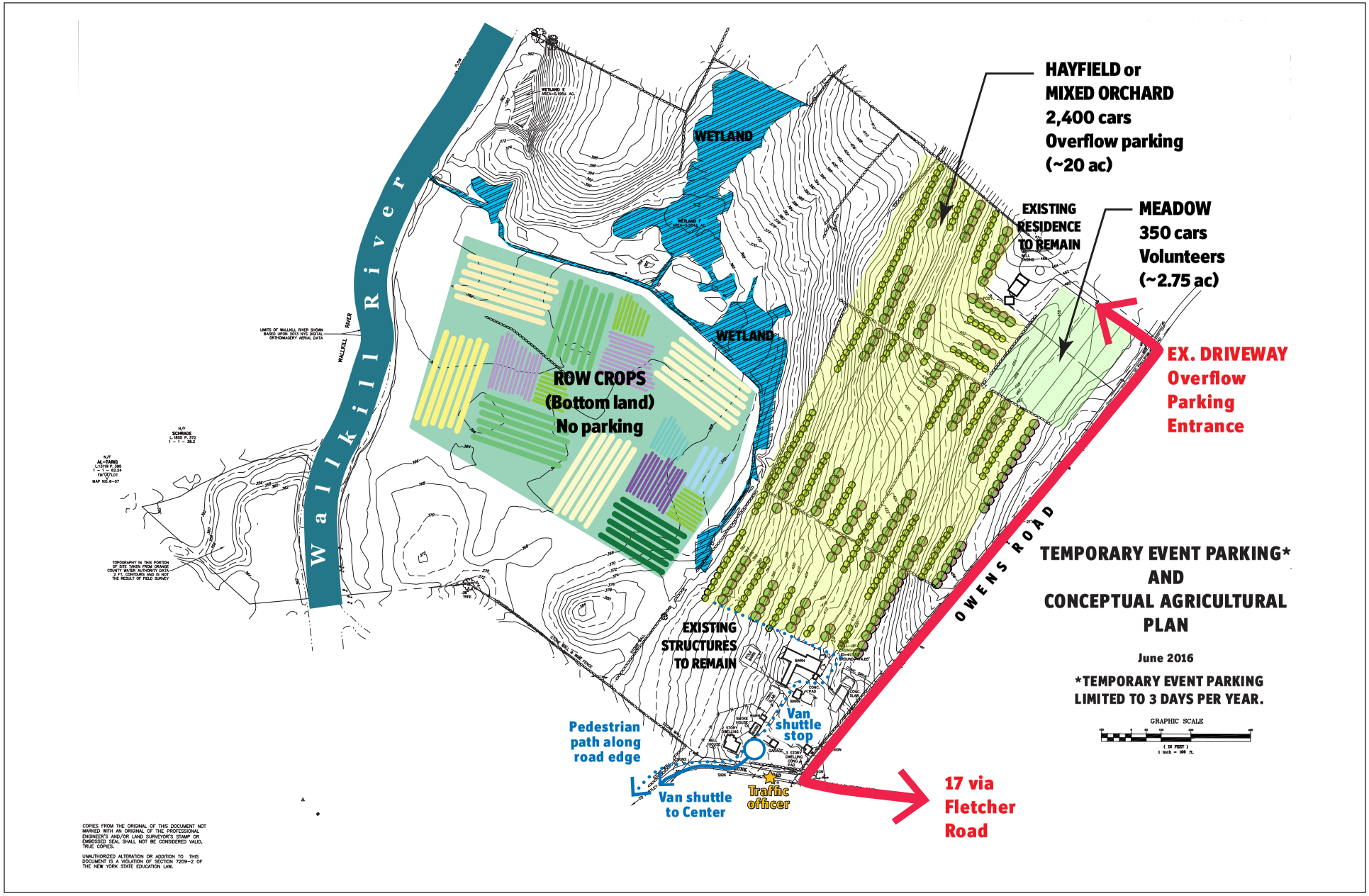
8.16.16



Amy's Kitchen
Science of the Soul

SoS Guest House and Driveway
Figure 3f

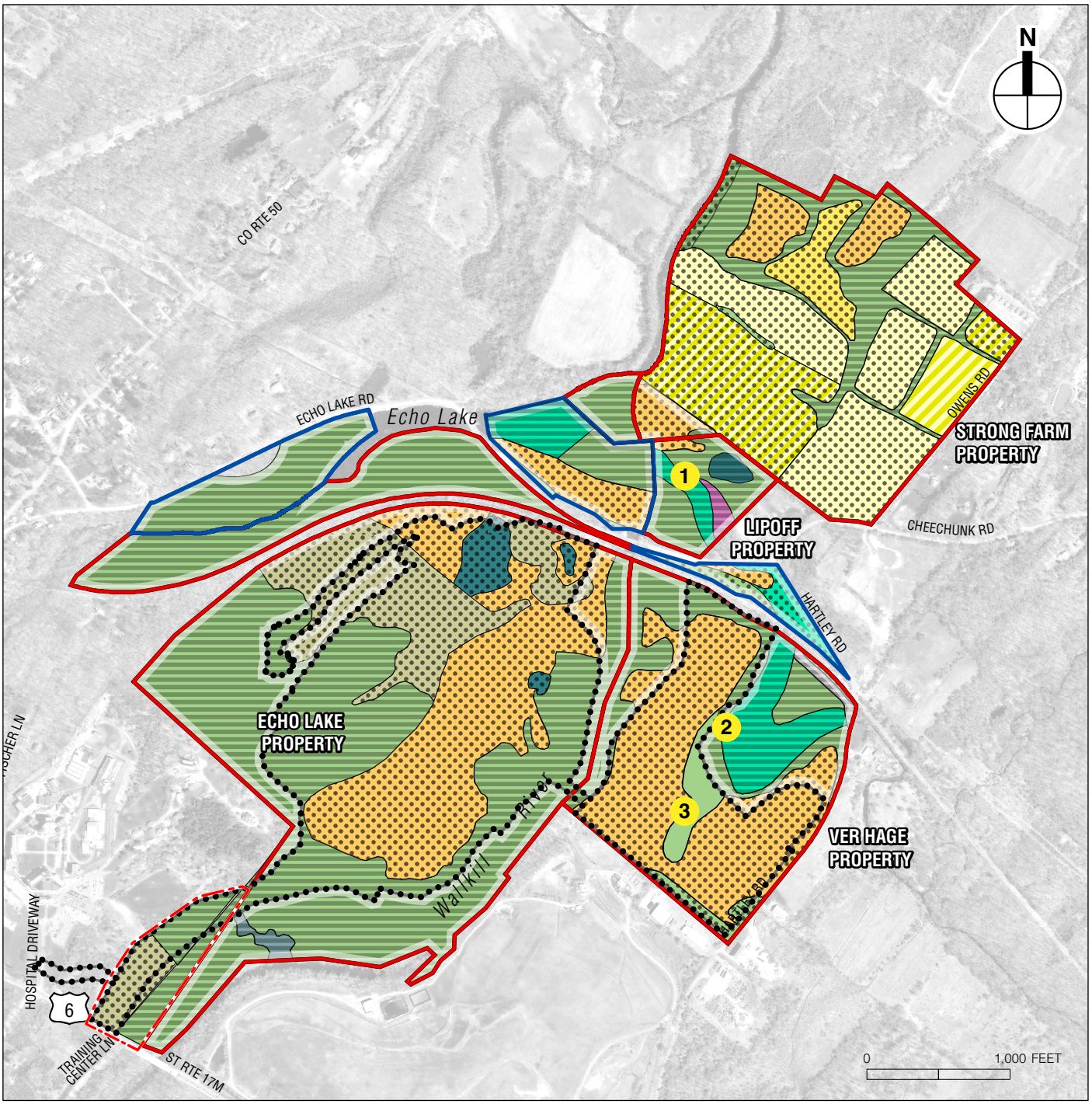
8.16.16



Amy's Kitchen
Science of the Soul

Strong Farm Parking Layout
Figure 3g

8.15.16



Source: Vegetation Communities - AKRF field survey, Limit of Disturbance - Amy's Kitchen SoS Concept Plan (7/1/15)

NOTE: *For Illustrative Purposes Only. Shaded areas are approximate based on best professional judgement*

- *Project Site*
- *Off-Site Habitat Conservation Properties*

Ecological Communities

- *Beech-Maple Mesic Forest*
- *Cropland/Field Crops*
- *Cropland/Row Crops*
- *Ditch/Artificial Intermittent Stream*
- *Floodplain Forest*
- *Red Maple - Hardwood Swamp*
- *Sedge Meadow*
- *Shallow Emergent Marsh*
- *Successional Old Field*
- *Successional Shrubland*
- *Successional Southern Hardwoods*

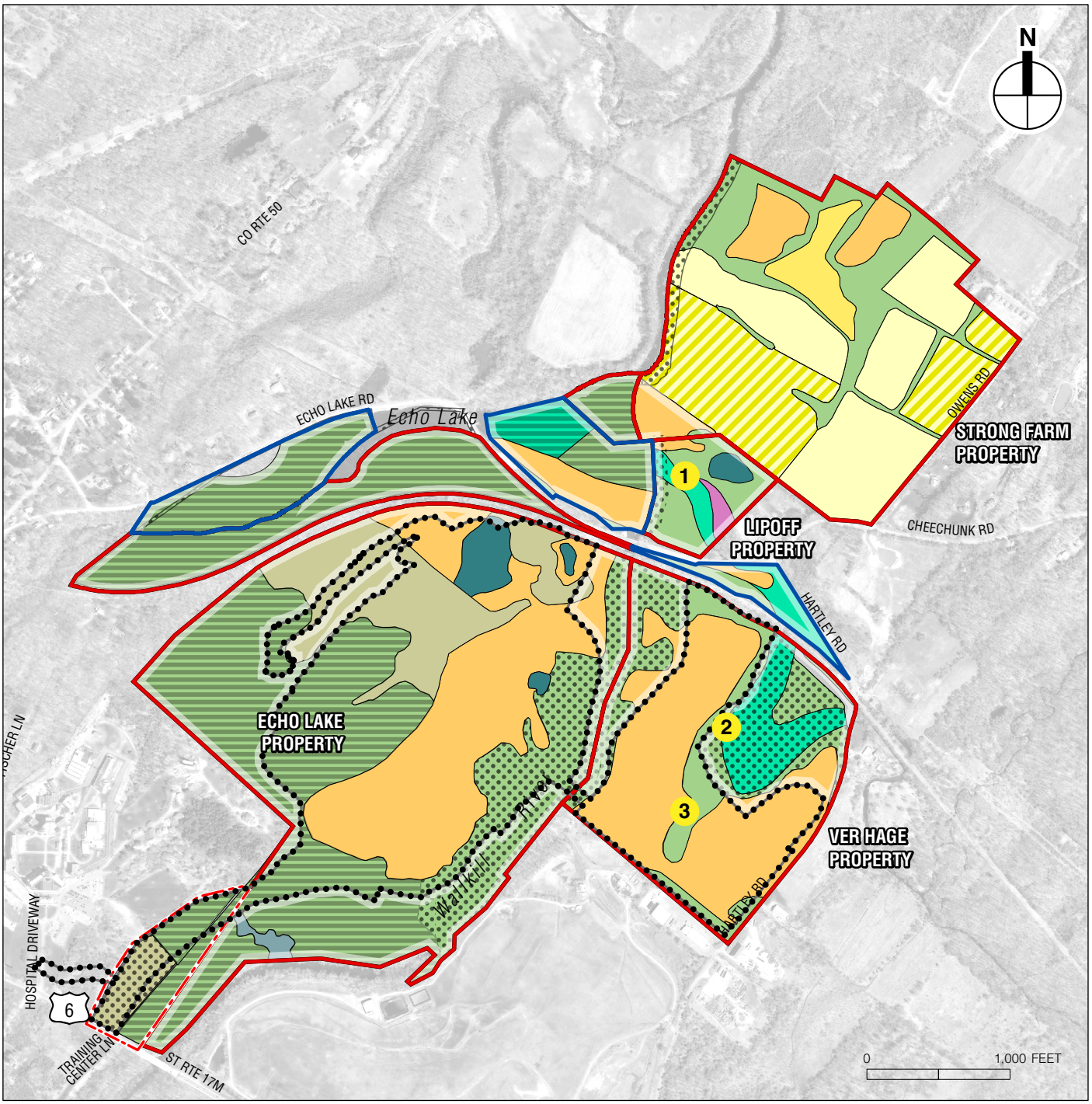
- *Approximate Limit of Disturbance*
- *NYS Land Transfer/Project Site*
- *Habitat Conservation Area*
- *Foraging*
- *Foraging and Roosting*

1 *Bat Recording Location Site*

	Coordinates	Start Date	End Date
Site 1	41° 24' 48.3" N, 74° 22' 35.9" W	8/6/2015	8/9/2015
Site 2	41° 24' 31.6" N, 74° 22' 28.4" W	8/10/2015	8/12/2015
Site 3	41° 24' 24.7" N, 74° 22' 34.9" W	8/12/2015	8/15/2015

Amy's Kitchen
Science of the Soul

Indiana Bat Habitat
Figure 4A



NOTE: *For Illustrative Purposes Only. Shaded areas are approximate based on best professional judgement*

- *Project Site*
- *Off-Site Habitat Conservation Properties*

Ecological Communities

- *Beech-Maple Mesic Forest*
- *Cropland/Field Crops*
- *Cropland/Row Crops*
- *Ditch/Artificial Intermittent Stream*
- *Floodplain Forest*
- *Red Maple - Hardwood Swamp*
- *Sedge Meadow*
- *Shallow Emergent Marsh*
- *Successional Old Field*
- *Successional Shrubland*
- *Successional Southern Hardwoods*

- *Approximate Limit of Disturbance*
- *NYS Land Transfer/Project Site*
- *Habitat Conservation Area*
- *Foraging*
- *Foraging and Roosting*

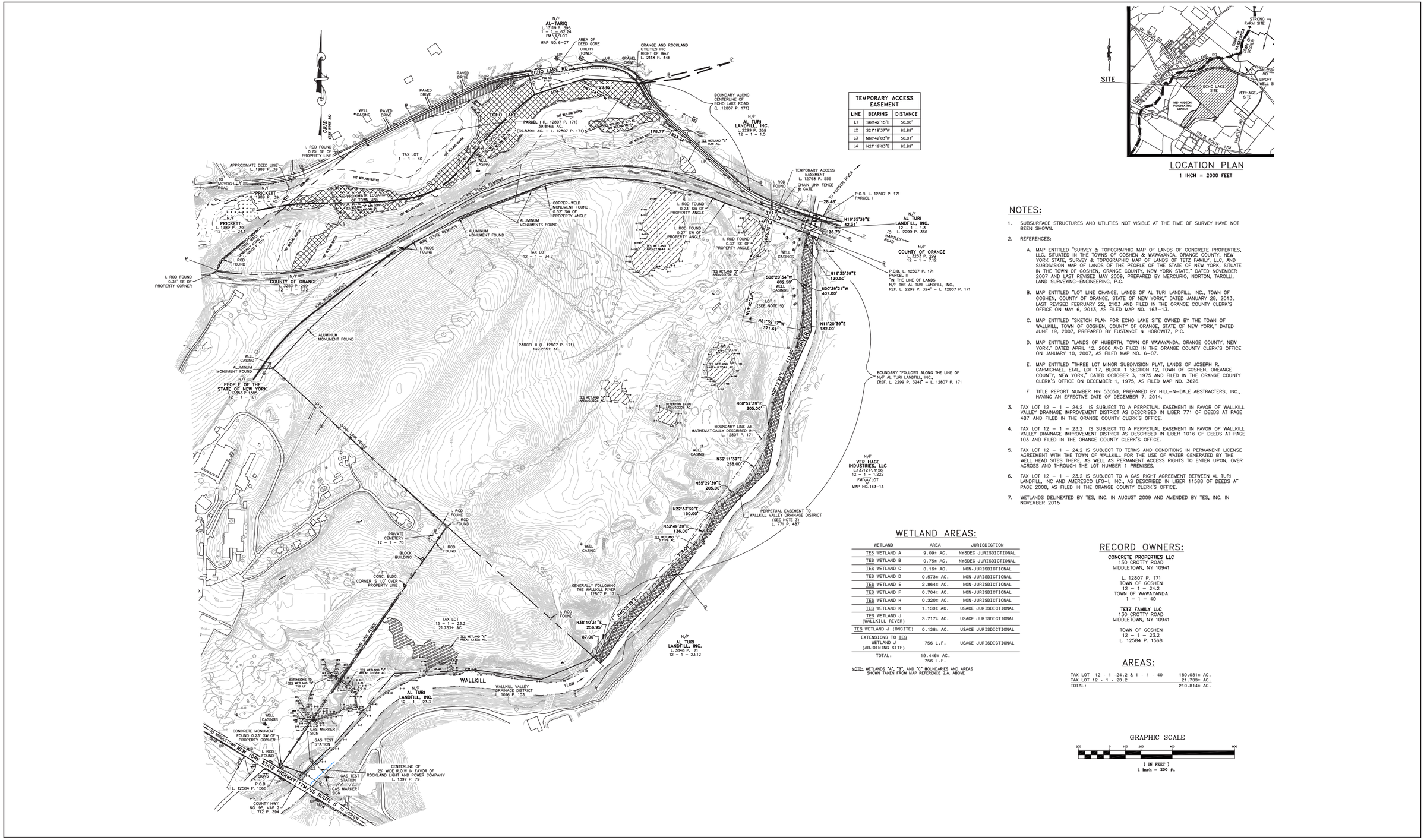
1 *Bat Recording Location Site*

	Coordinates	Start Date	End Date
Site 1	41° 24' 48.3" N, 74° 22' 35.9" W	8/6/2015	8/9/2015
Site 2	41° 24' 31.6" N, 74° 22' 28.4" W	8/10/2015	8/12/2015
Site 3	41° 24' 24.7" N, 74° 22' 34.9" W	8/12/2015	8/15/2015

Amy's Kitchen
Science of the Soul

Northern Long-Eared Bat Habitat

Figure 4B



LOCATION PLAN

1 INCH = 2000 FEET

NOTES:

1. SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
2. REFERENCES:
   A. MAP ENTITLED "SURVEY & TOPOGRAPHIC MAP OF LANDS OF CONCRETE PROPERTIES, LLC, SITUATED IN THE TOWNS OF GOSHEN & WAWAYANDA, ORANGE COUNTY, NEW YORK STATE, SURVEY & TOPOGRAPHIC MAP OF LANDS OF TETZ FAMILY, LLC, AND SUBDIVISION MAP OF LANDS OF THE PEOPLE OF THE STATE OF NEW YORK, SITUATE IN THE TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK STATE," DATED NOVEMBER 2007 AND LAST REVISED MAY 2009, PREPARED BY MERCURIO, NORTON, TAROLLI, LAND SURVEYING-ENGINEERING, P.C.
   B. MAP ENTITLED "LOT LINE CHANGE, LANDS OF AL TURI LANDFILL, INC., TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JANUARY 28, 2013, LAST REVISED FEBRUARY 22, 2103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON MAY 6, 2013, AS FILED MAP NO. 163-13.
   C. MAP ENTITLED "SKETCH PLAN FOR ECHO LAKE SITE OWNED BY THE TOWN OF WALLKILL, TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JUNE 19, 2007, PREPARED BY EUSTANCE & HOROWITZ, P.C.
   D. MAP ENTITLED "LANDS OF HUBERTH, TOWN OF WAWAYANDA, ORANGE COUNTY, NEW YORK," DATED APRIL 12, 2006 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON JANUARY 10, 2007, AS FILED MAP NO. 6-07.
   E. MAP ENTITLED "THREE LOT MINOR SUBDIVISION PLAT, LANDS OF JOSEPH R. CARMICHAEL, ETAL, LOT 17, BLOCK 1 SECTION 12, TOWN OF GOSHEN, OREANGE COUNTY, NEW YORK," DATED OCTOBER 3, 1975 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON DECEMBER 1, 1975, AS FILED MAP NO. 3626.
   F. TITLE REPORT NUMBER HN 53050, PREPARED BY HILL-N-DALE ABSTRACTERS, INC., HAVING AN EFFECTIVE DATE OF DECEMBER 7, 2014.
3. TAX LOT 12 - 1 - 24.2 IS SUBJECT TO A PERPETUAL EASEMENT IN FAVOR OF WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT AS DESCRIBED IN LIBER 771 OF DEEDS AT PAGE 487 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE.
4. TAX LOT 12 - 1 - 23.2 IS SUBJECT TO A PERPETUAL EASEMENT IN FAVOR OF WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT AS DESCRIBED IN LIBER 1016 OF DEEDS AT PAGE 103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE.
5. TAX LOT 12 - 1 - 24.2 IS SUBJECT TO TERMS AND CONDITIONS IN PERMANENT LICENSE AGREEMENT WITH THE TOWN OF WALLKILL FOR THE USE OF WATER GENERATED BY THE WELL HEAD SITES THERE, AS WELL AS PERMANENT ACCESS RIGHTS TO ENTER UPON, OVER ACROSS AND THROUGH THE LOT NUMBER 1 PREMISES.
6. TAX LOT 12 - 1 - 23.2 IS SUBJECT TO A GAS RIGHT AGREEMENT BETWEEN AL TURI LANDFILL, INC AND AMERESCO LFG-1, INC., AS DESCRIBED IN LIBER 11588 OF DEEDS AT PAGE 2008, AS FILED IN THE ORANGE COUNTY CLERK'S OFFICE.
7. WETLANDS DELINEATED BY TES, INC. IN AUGUST 2009 AND AMENDED BY TES, INC. IN NOVEMBER 2015

WETLAND AREAS:

WETLAND	AREA	JURISDICTION
TES WETLAND A	9.09± AC.	NYSDEC JURISDICTIONAL
TES WETLAND B	0.75± AC.	NYSDEC JURISDICTIONAL
TES WETLAND C	0.16± AC.	NON-JURISDICTIONAL
TES WETLAND D	0.573± AC.	NON-JURISDICTIONAL
TES WETLAND E	2.864± AC.	NON-JURISDICTIONAL
TES WETLAND F	0.704± AC.	NON-JURISDICTIONAL
TES WETLAND H	0.320± AC.	NON-JURISDICTIONAL
TES WETLAND K	1.130± AC.	USACE JURISDICTIONAL
TES WETLAND J (WALLKILL RIVER)	3.717± AC.	USACE JURISDICTIONAL
TES WETLAND J (ONSITE)	0.138± AC.	USACE JURISDICTIONAL
EXTENSIONS TO TES WETLAND J (ADJOINING SITE)	756 L.F.	USACE JURISDICTIONAL
TOTAL:	19.446± AC. 756 L.F.	

NOTE: WETLANDS "A", "B", AND "C" BOUNDARIES AND AREAS SHOWN TAKEN FROM MAP REFERENCE 2.A. ABOVE

RECORD OWNERS:

CONCRETE PROPERTIES LLC
130 CROTTY ROAD
MIDDLETOWN, NY 10941

L. 12807 P. 171
TOWN OF GOSHEN
12 - 1 - 24.2
TOWN OF WAWAYANDA
1 - 1 - 40

TETZ FAMILY LLC
130 CROTTY ROAD
MIDDLETOWN, NY 10941

TOWN OF GOSHEN
12 - 1 - 23.2
L. 12584 P. 1568

AREAS:

TAX LOT 12 - 1 -24.2 & 1 - 1 - 40	189.081± AC.
TAX LOT 12 - 1 - 23.2	21.733± AC.
TOTAL:	210.814± AC.

GRAPHIC SCALE

200 0 100 200 400 800

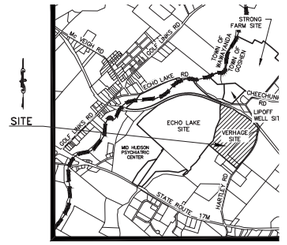
(IN FEET)
1 inch = 200 ft.

Amy's Kitchen
Science of the Soul

Project Site Wetlands
Figure 5a

8.15.16

EASEMENT GRANTED TO THE TOWN OF GOSHEN		
LINE	BEARING	DISTANCE
L1	N80°45'15"W	50.00'
L2	N9°14'45"E	100.00'
L3	S80°45'15"E	52.98'
L4	S17°46'18"W	20.12'
L5	S9°14'45"W	80.10'



LOCATION PLAN
1 INCH = 2000 FEET

NOTES:

1. SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
2. REFERENCES:

   MAP ENTITLED "LOT LINE CHANGE, LANDS OF AL TURI LANDFILL, INC., TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JANUARY 28, 2013, LAST REVISED FEBRUARY 22, 2103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON MAY 6, 2013, AS FILED MAP NO. 163-13.

   MAP ENTITLED "THREE LOT MINOR SUBDIVISION PLAT, LANDS OF JOSEPH R. CARMICHAEL, ETAL, LOT 17, BLOCK 1 SECTION 12, TOWN OF GOSHEN, OREANGE COUNTY, NEW YORK," DATED OCTOBER 3, 1975 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON DECEMBER 1, 1975, AS FILED MAP NO. 3626.

   MAP ENTITLED "SURVEY PREPARED FOR SASSFRAS MOUNTAIN LLC, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED MARCH 20, 2015, LAST REVISED APRIL 9, 2015, PREPARED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C.

   MAP ENTITLED "SITE PLAN, PROPOSED WOOD MULCH FACILITY RVH MULCH SUPPLY, LLC, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED OCTOBER 24, 2012, LAST REVISED MARCH 6, 2013, PREPARED BY T.M. DEPUY, ENGINEERING AND LAND SURVEYING, P.C.

   MAP ENTITLED "RIGHT OF WAY AND TRACK MAP, ERIE RAILROAD COMPANY," OPERATED BY ERIE RAILROAD COMPANY, NEW YORK DIVISION,STATION 3221+80 TO STATION 3274+60, DATED JUNE 30, 1918, OFFICE OF VALUATION ENGINEER, NEW YORK, MAP NUMBER V-2-NY./49.

   TITLE REPORT NUMBER HN 53031A, HAVING AN EFFECTIVE DATE OF DECEMBER 6, 2014, PREPARED BY HILL-N-DALE ABSTRACTERS, INC.

   TITLE REPORT NUMBER HN 53031B, HAVING AN EFFECTIVE DATE OF DECEMBER 6, 2014, PREPARED BY HILL-N-DALE ABSTRACTERS, INC.
3. TAX LOT 12 - 1 - 19.2 SUBJECT TO A DECLARATION OF COVENANTS & RESTRICTIONS AND GRANT OF EASEMENT AS RECORDED IN LIBER 13782 OF DEEDS AT PAGE 1900.
4. TAX LOT 12 - 1 - 1.222 SUBJECT TO A RESERVATION OF EASEMENT AS RECORDED IN LIBER 13712 OF DEEDS AT PAGE 1138.
5. TAX LOT 12 - 1 - 1.222 SUBJECT TO A DECLARATION OF COVENANTS & RESTRICTIONS AND GRANT OF EASEMENT AS RECORDED IN LIBER 13712 OF DEEDS AT PAGE 1144.
6. TAX LOTS 12 - 1 - 19.2 & 12 - 1 - 1.222 SUBJECT TO RESTRICTED USES AS DESCRIBED THE MEADOW PROPERTY IN LIBER 6174 OF DEEDS AT PAGE 146.
7. TOPOGRAPHY SHOWN IS THE RESULT OF AN AERIAL MANUSCRIPT PROVIDED BY GEODETIC ASSOCIATES INTERNATIONAL, LLC. AND FIELD UPDATED BY LANC AND TULLY ENGINEERING AND SURVEYING IN THE LOCATION OF THE ARTIFICIAL CHANNEL. CONTOUR ELEVATIONS SHOWN ARE BASED ON NAVD 88 DATUM.
8. THE APPROXIMATE LOCATION OF FLOODPLAIN LIMITS SHOWN HEREON HAVE BEEN ADOPTED TO MATCH TOPOGRAPHY BASED UPON ELEVATIONS SHOWN ON FEMA FLOOD INSURANCE RATE MAPS PANELS 0267E, 0269E, & 0286E DATED EFFECTIVE AUGUST 3, 2009.
9. WETLANDS SHOWN AS FIELD DELINEATED BY AKRF, INC., ENVIRONMENTAL, PLANNING, AND ENGINEERING CONSULTANTS, AND FIELD LOCATED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C. ON JULY 6, 2015.

WETLAND AREAS:

WETLAND	AREA	JURISDICTION
WETLAND A	0.118± AC.	NON-JURISDICTIONAL
WETLAND B	1.893± AC.	USACE JURISDICTIONAL
WETLAND C	4.653± AC.	USACE JURISDICTIONAL
TOTAL:	6.664± AC.	

RECORD OWNER:

VER HAGE INDUSTRIES LLC
455 WEST MAIN STREET
WYCOFF, NJ 07481

L.13712 P. 1156
12 - 1 - 1.222
LOT A FILED MAP
NO. 163-13

L. 13782 P. 1911
12 - 1 - 19.2
LOT B FILED MAP
NO. 163-13

AREAS:

TAX LOT 12 - 1 - 19.2	17.145± AC.
TAX LOT 12 - 1 - 1.222	54.616± AC.
TOTAL:	71.761± AC.

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

Amy's Kitchen
Science of the Soul

Project Site Wetlands
Figure 5b

NOTES:

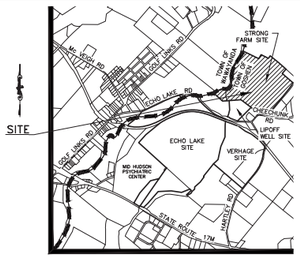
1. THIS SURVEY IS SUBJECT TO ANY FINDINGS OF A TITLE SEARCH.
2. SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
3. REFERENCES:

   MAP ENTITLED "SURVEY PREPARED FOR SASSAFRAS MOUNTAIN LLC, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED APRIL 7, 2015, LAST REVISED APRIL 16, 2015, PREPARED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C.

   MAP ENTITLED "SURVEY PREPARED FOR SASSAFRAS MOUNTAIN LLC, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED APRIL 7, 2015, PREPARED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C.

   MAP ENTITLED "SUBDIVISION OF LANDS OF WILLIAM H. STRONG & JEAN S. STRONG, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED MARCH 9, 1987, LAST REVISED MARCH 30, 1987 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON MAY 12, 1987 AS FILED MAP NO. 8270.

   MAP ENTITLED "LANDS OF WILLIAM & ALICE HUTT, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED JANUARY 22, 1974, PREPARED BY FLOYD CARR L.S.
5. CONTOURS SHOWN ARE THE RESULT OF AN ACTUAL FIELD SURVEY PERFORMED BY LANC TULLY ENGINEERING AND SURVEYING, P.C. ELEVATIONS ARE BASED ON NAVD 88 DATUM.
6. WETLANDS SHOWN AS FIELD DELINEATED BY AKRF, INC., ENVIRONMENTAL, PLANNING, AND ENGINEERING CONSULTANTS. FIELD LOCATED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C. ON JULY 6, 2015.



LOCATION PLAN

1 INCH = 2000 FEET

WETLAND AREAS:

WETLAND	AREA	JURISDICTION
WETLAND B (WALLKILL RIVER)	NONE WITHIN PROPERTY BOUNDARY	USACE JURISDICTIONAL
WETLAND E	0.195± AC.	USACE JURISDICTIONAL
WETLAND F	5.504± AC.	USACE JURISDICTIONAL
TOTAL:	5.699± AC.	

RECORD OWNER:

RADHA SOAMI SOCIETY BEAS AMERICA
4115 GILLESPIE STREET
FAYETTEVILLE, NC 28306

L. 13894 P. 199
10 – 1 – 11.2

AREA:

96.914± AC.

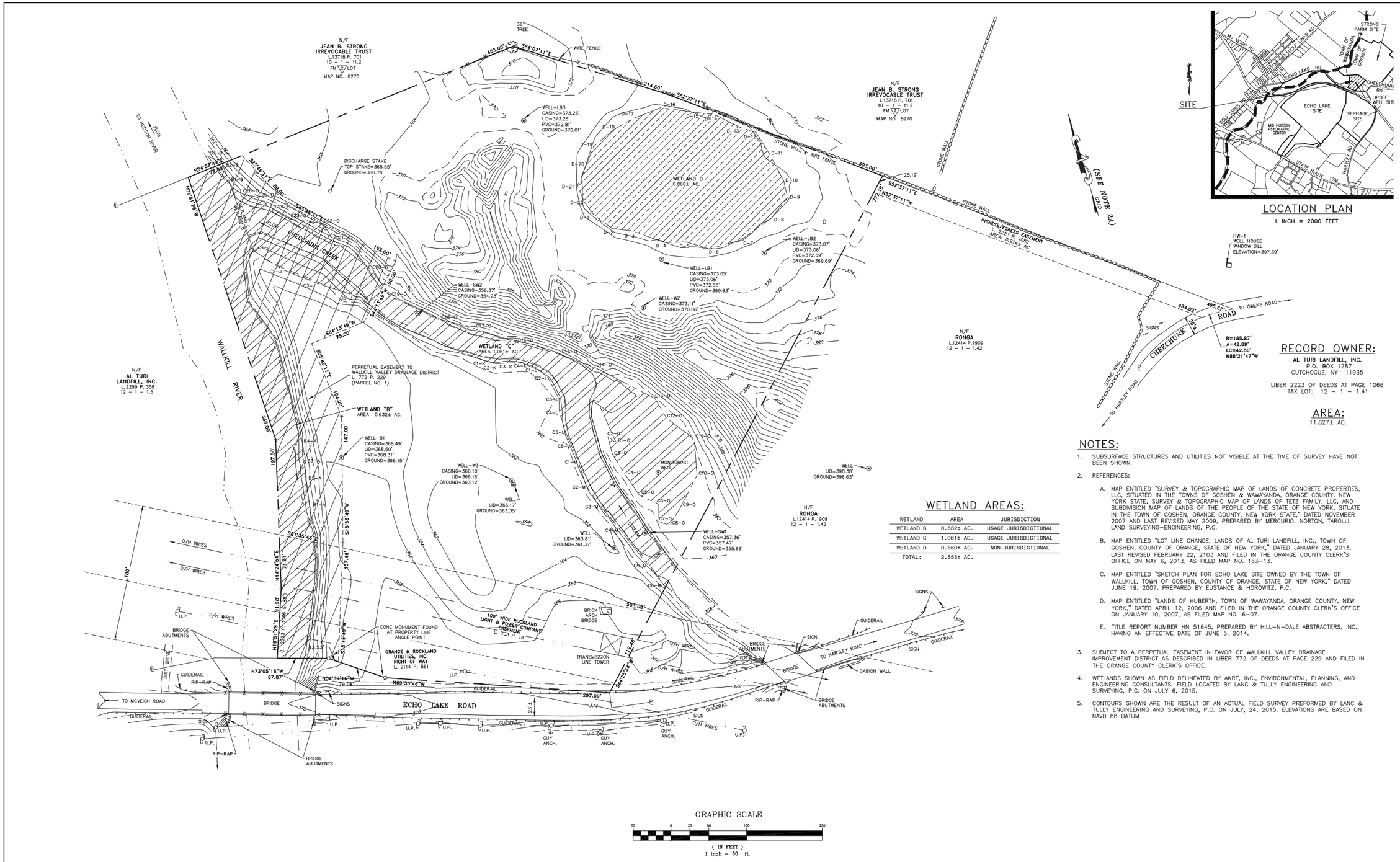
GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

Amy's Kitchen
Science of the Soul

Project Site Wetlands
Figure 5c

8.15.16



LOCATION PLAN

1 INCH = 2000 FEET

RECORD OWNER:

AL TURI LANDFILL, INC.
P.O. BOX 1287
CUTCHOGUE, NY 11935

LIBER 2223 OF DEEDS AT PAGE 1066
TAX LOT: 12 – 1 – 1.41

AREA:

11.827± AC.

WETLAND AREAS:

WETLAND	AREA	JURISDICTION
WETLAND B	0.632± AC.	USACE JURISDICTIONAL
WETLAND C	1.061± AC.	USACE JURISDICTIONAL
WETLAND D	0.860± AC.	NON-JURISDICTIONAL
TOTAL:	2.553± AC.	

NOTES:

1. SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
2. REFERENCES:
   A. MAP ENTITLED "SURVEY & TOPOGRAPHIC MAP OF LANDS OF CONCRETE PROPERTIES, LLC, SITUATED IN THE TOWNS OF GOSHEN & WAWAYANDA, ORANGE COUNTY, NEW YORK STATE, SURVEY & TOPOGRAPHIC MAP OF LANDS OF TETZ FAMILY, LLC, AND SUBDIVISION MAP OF LANDS OF THE PEOPLE OF THE STATE OF NEW YORK, SITUATE IN THE TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK STATE," DATED NOVEMBER 2007 AND LAST REVISED MAY 2009, PREPARED BY MERCURIO, NORTON, TAROLLI, LAND SURVEYING–ENGINEERING, P.C.
   B. MAP ENTITLED "LOT LINE CHANGE, LANDS OF AL TURI LANDFILL, INC., TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JANUARY 28, 2013, LAST REVISED FEBRUARY 22, 2103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON MAY 6, 2013, AS FILED MAP NO. 163–13.
   C. MAP ENTITLED "SKETCH PLAN FOR ECHO LAKE SITE OWNED BY THE TOWN OF WALKILL, TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JUNE 19, 2007, PREPARED BY EUSTANCE & HOROWITZ, P.C.
   D. MAP ENTITLED "LANDS OF HUBERTH, TOWN OF WAWAYANDA, ORANGE COUNTY, NEW YORK," DATED APRIL 12, 2006 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON JANUARY 10, 2007, AS FILED MAP NO. 6–07.
   E. TITLE REPORT NUMBER HN 51645, PREPARED BY HILL–N–DALE ABSTRACTERS, INC., HAVING AN EFFECTIVE DATE OF JUNE 5, 2014.
3. SUBJECT TO A PERPETUAL EASEMENT IN FAVOR OF WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT AS DESCRIBED IN LIBER 772 OF DEEDS AT PAGE 229 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE.
4. WETLANDS SHOWN AS FIELD DELINEATED BY AKRF, INC., ENVIRONMENTAL, PLANNING, AND ENGINEERING CONSULTANTS. FIELD LOCATED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C. ON JULY 6, 2015.
5. CONTOURS SHOWN ARE THE RESULT OF AN ACTUAL FIELD SURVEY PREFORMED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C. ON JULY, 24, 2015. ELEVATIONS ARE BASED ON NAVD 88 DATUM

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

Amy's Kitchen
Science of the Soul

Project Site Wetlands
Figure 5d

8.15.16

NOTES:

1. THIS MAP IS SUBJECT TO ANY FINDINGS OF A TITLE SEARCH.
2. SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
3. WETLAND FLAGS SHOWN AS FIELD DELINEATED BY AKRF, INC. AND FIELD LOCATED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C. ON JULY 28, 2016.

GRAPHIC SCALE

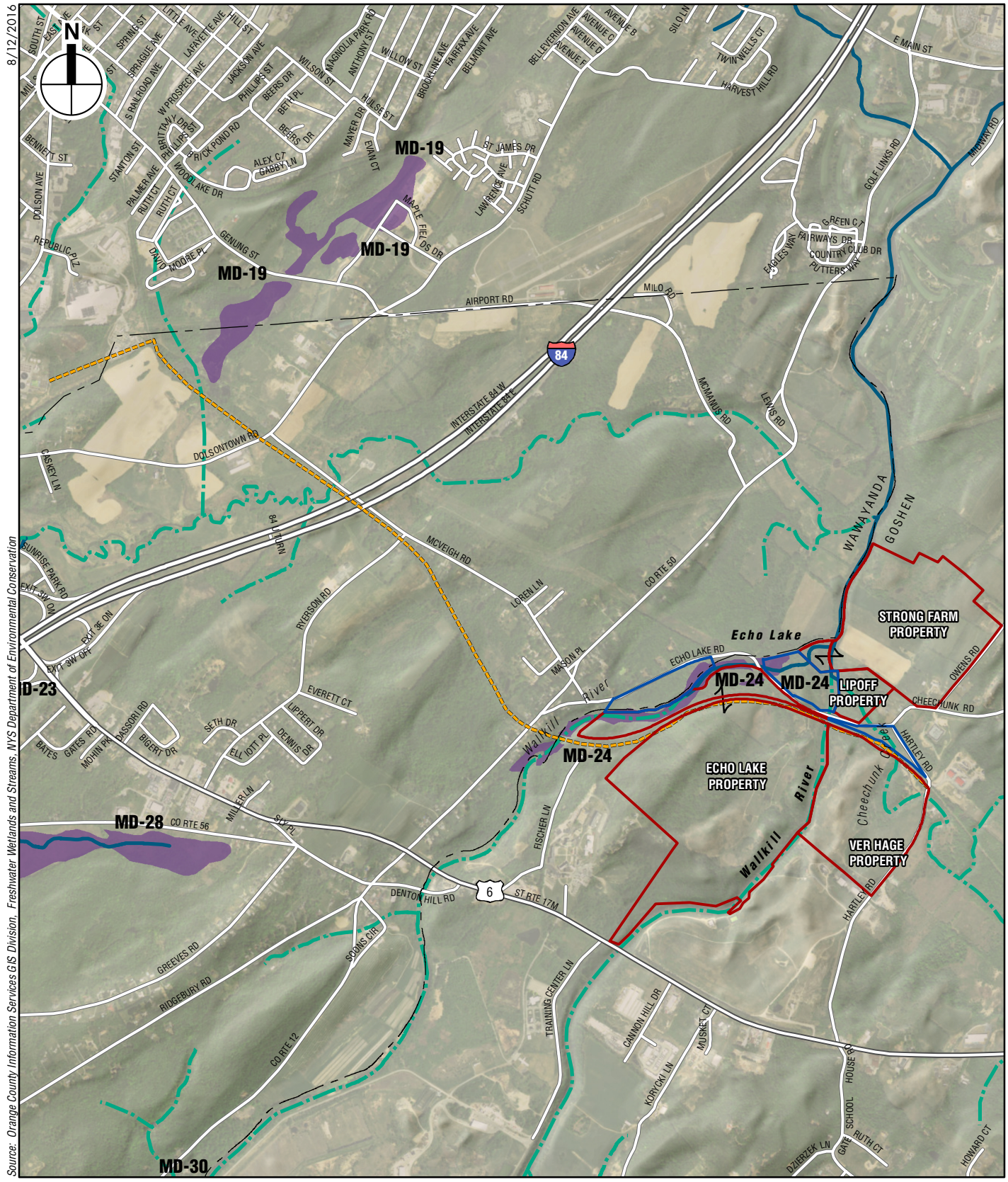
500 0 250 500 1000 2000

(IN FEET)

1 inch = 500 ft.

Amy's Kitchen
Science of the Soul

Heritage Trail Utility Corridor Wetlands
Figure 5e



Project Site

Off-Site Conservation Properties

Investigation Area/Heritage Trail

NYSDEC Freshwater Wetlands (w/ Wetland ID)

NYSDEC Stream Water Quality

Class B

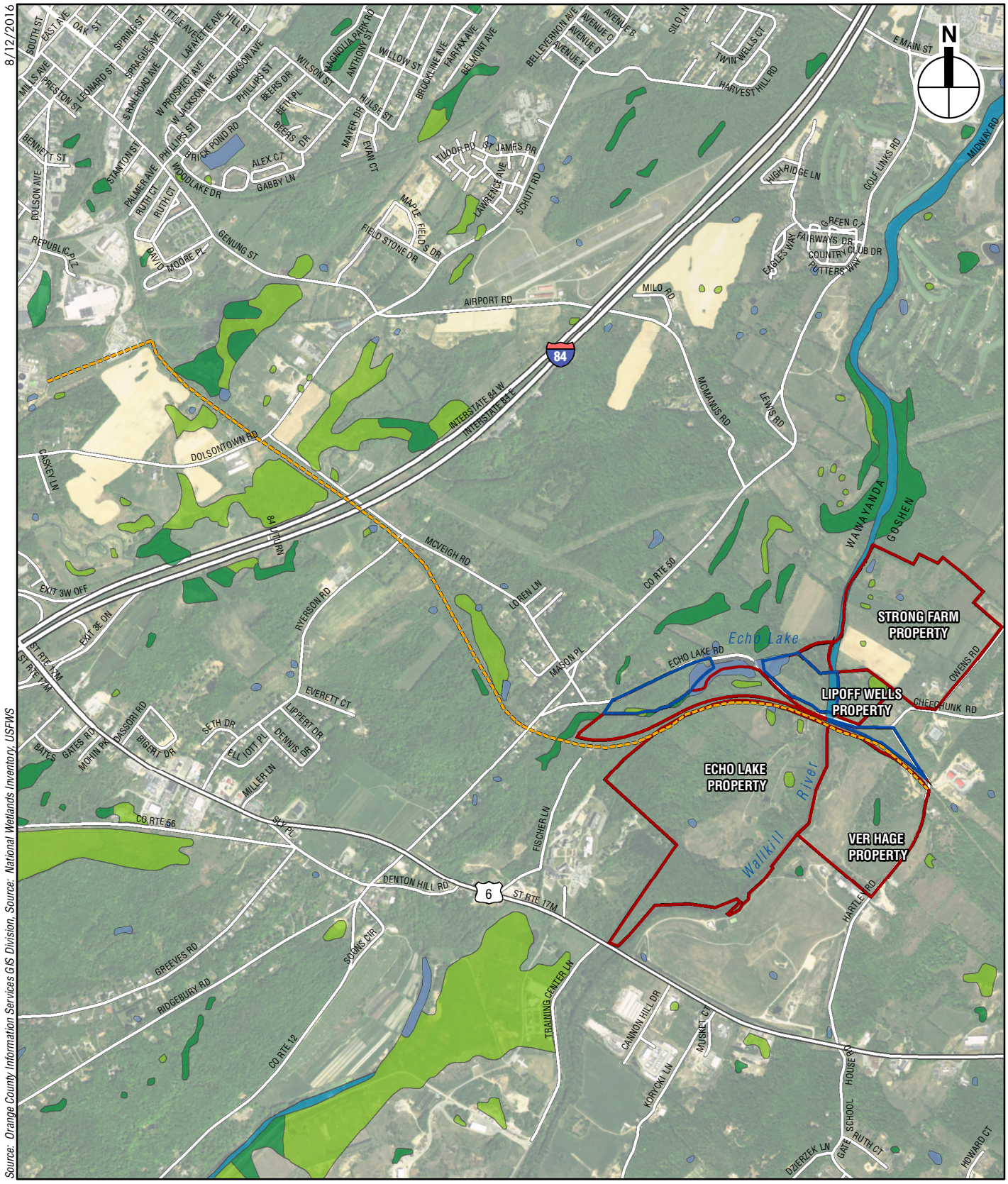
Class C

0 2,000 FEET

Amy's Kitchen
Science of the Soul

NYSDEC Freshwater Wetlands and Stream Classification

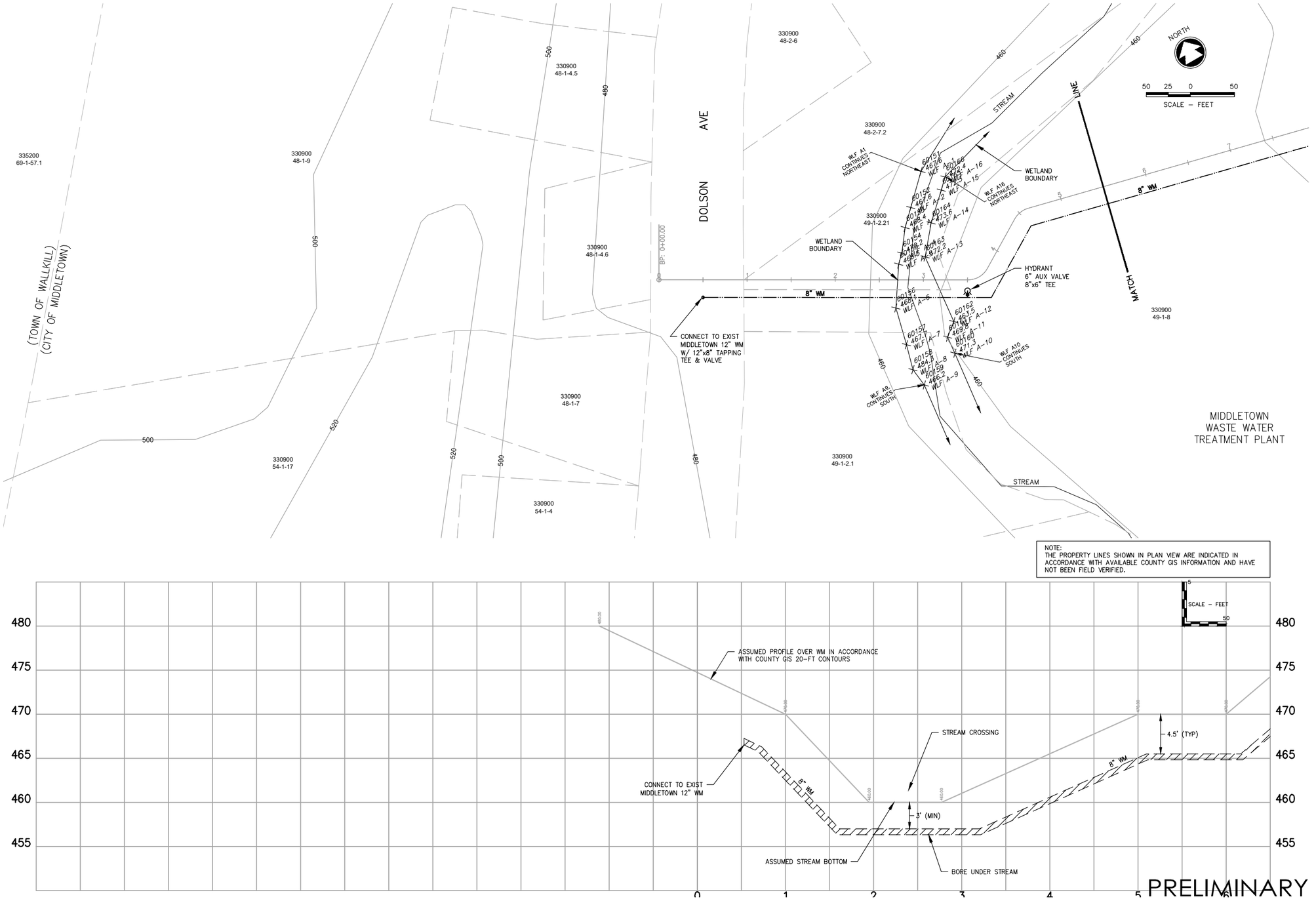
Figure 6



Amy's Kitchen
Science of the Soul

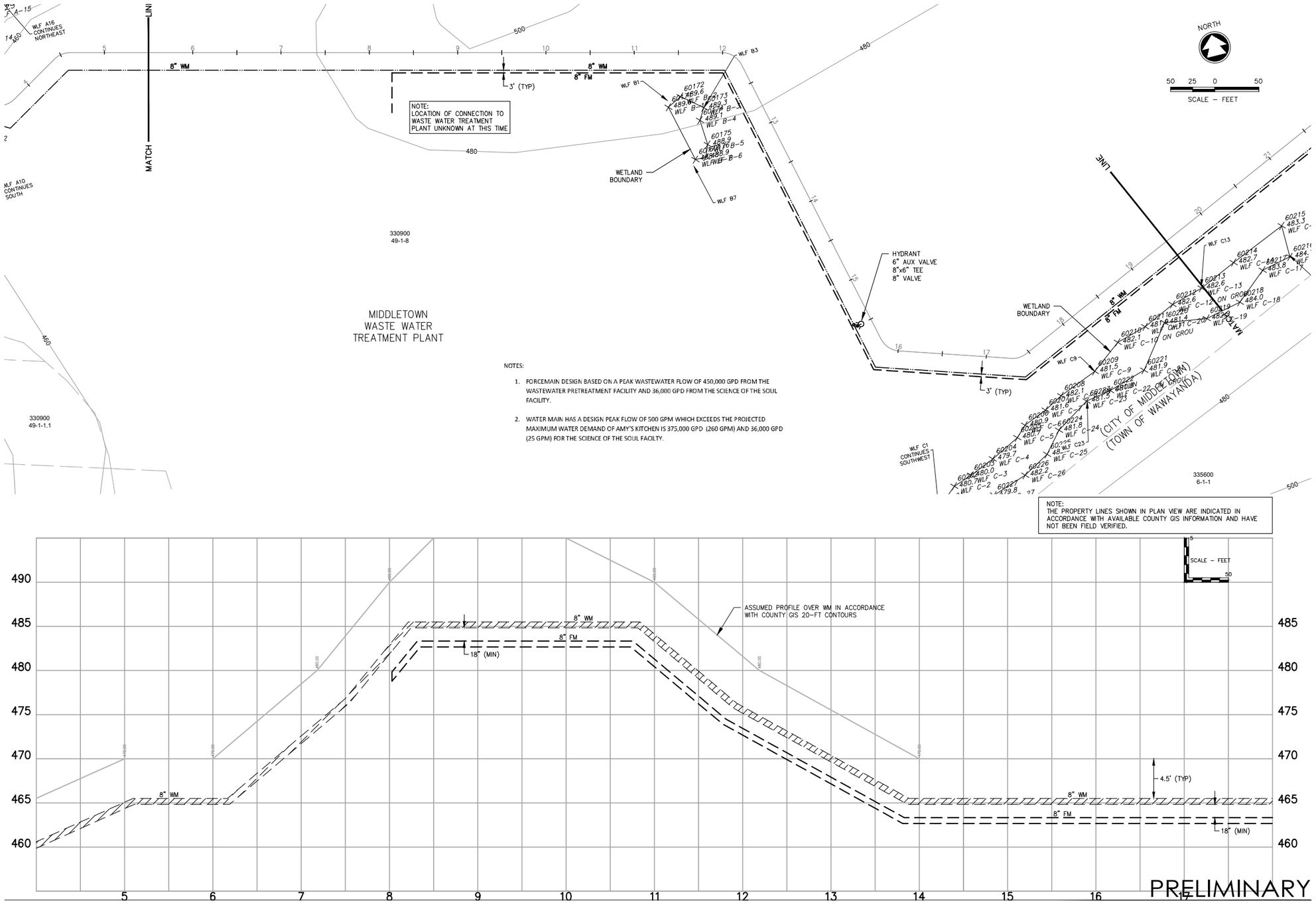
NWI Wetlands
Figure 7

8.12.16



Amy's Kitchen
Science of the Soul

Proposed Utility Line
Figure 8a

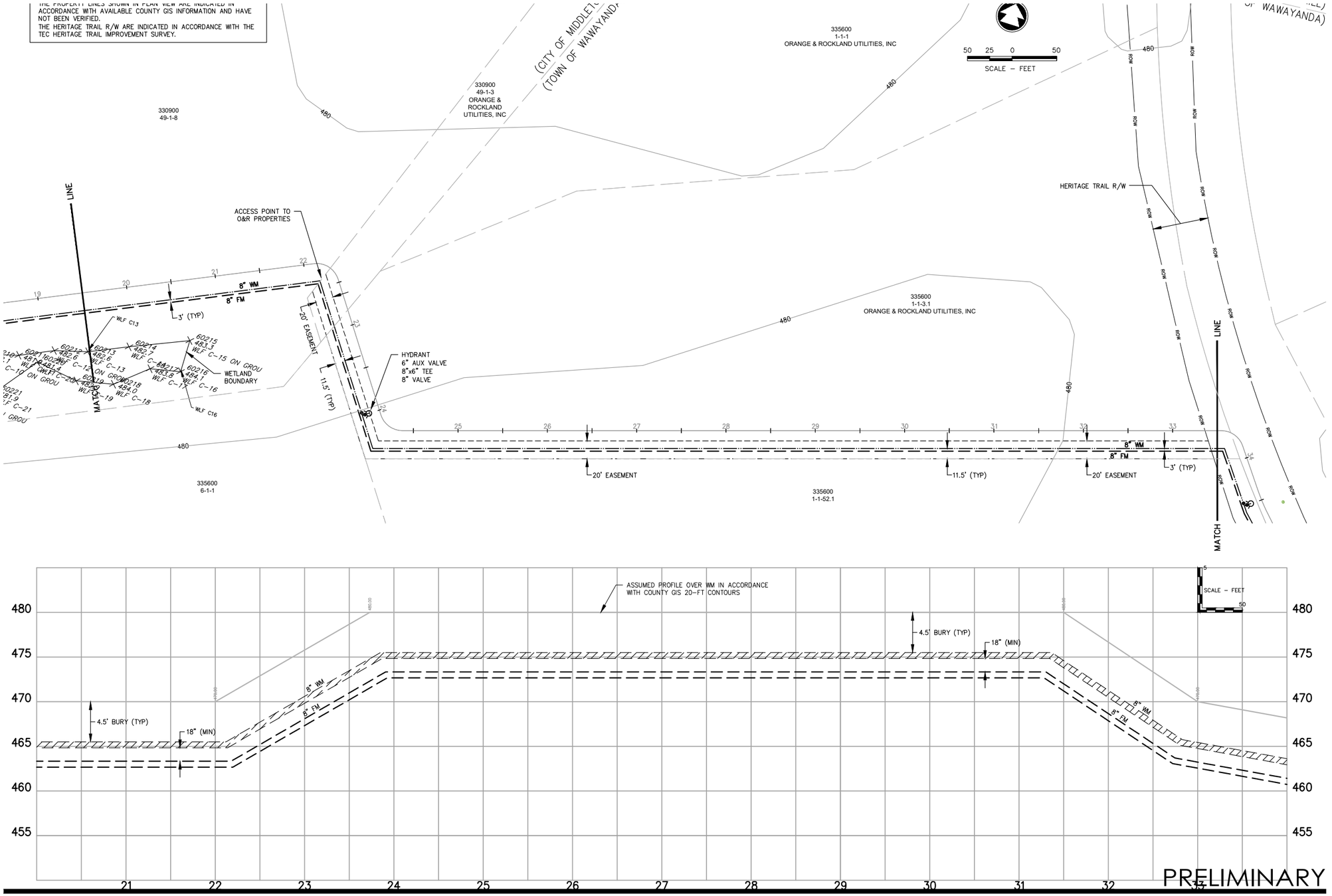


PRELIMINARY

Amy's Kitchen
Science of the Soul

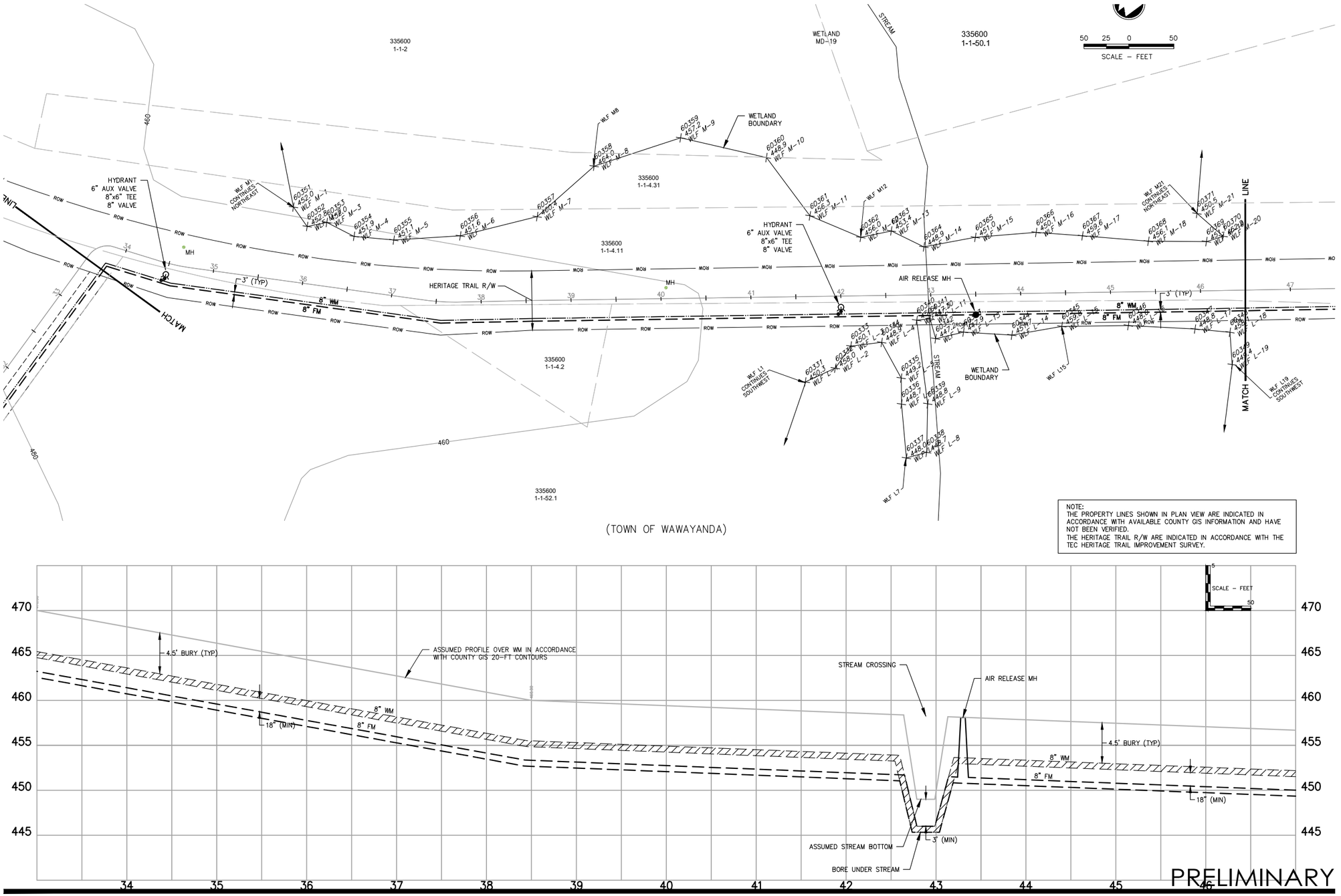
Proposed Utility Line
Figure 8b

THE PROPERTY LINES SHOWN IN PLAN VIEW ARE INDICATED IN ACCORDANCE WITH AVAILABLE COUNTY GIS INFORMATION AND HAVE NOT BEEN VERIFIED.
THE HERITAGE TRAIL R/W ARE INDICATED IN ACCORDANCE WITH THE TEC HERITAGE TRAIL IMPROVEMENT SURVEY.



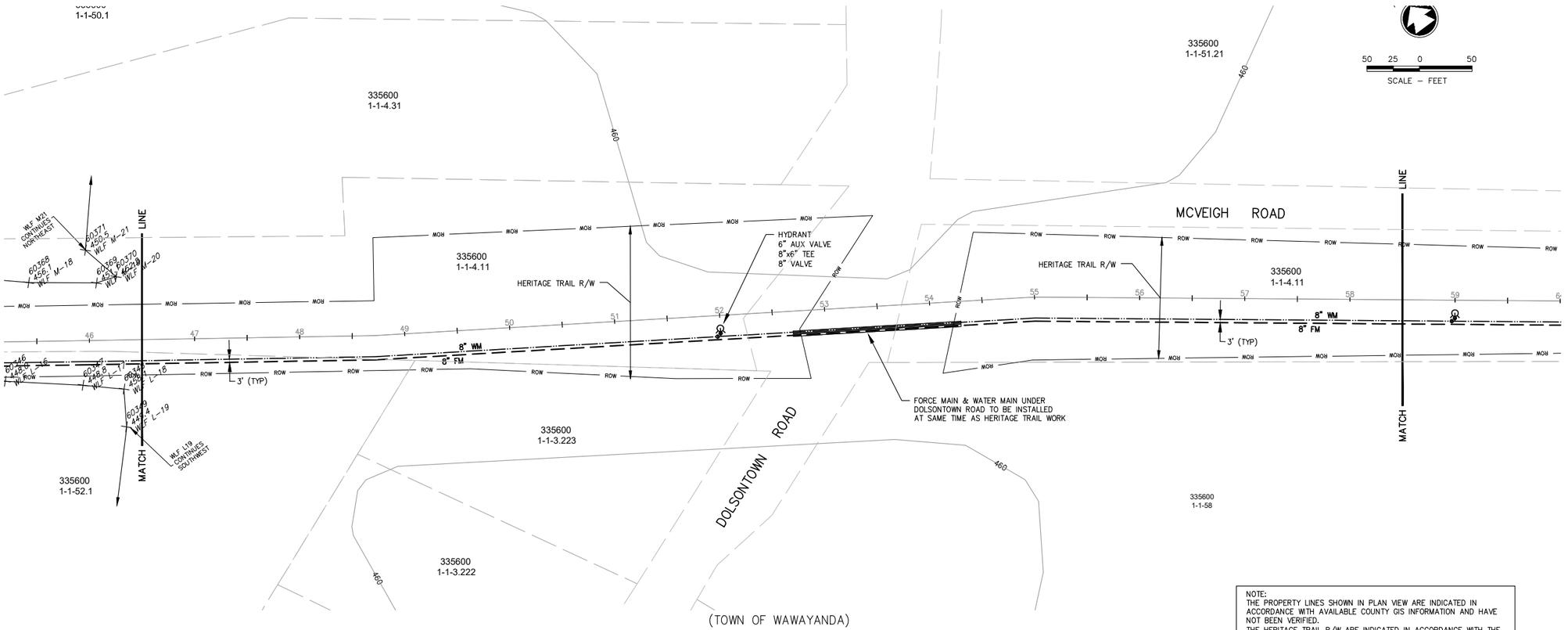
Amy's Kitchen
Science of the Soul

Proposed Utility Line
Figure 8c



Amy's Kitchen
Science of the Soul

Proposed Utility Line
Figure 8d



NOTE:
THE PROPERTY LINES SHOWN IN PLAN VIEW ARE INDICATED IN ACCORDANCE WITH AVAILABLE COUNTY GIS INFORMATION AND HAVE NOT BEEN VERIFIED.
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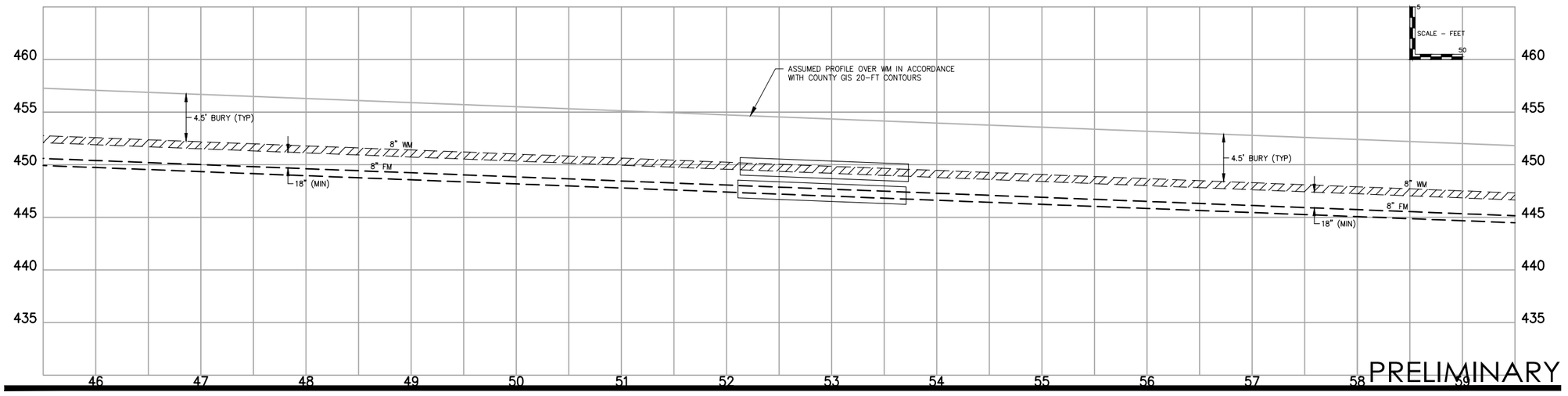


PRELIMINARY

Amy's Kitchen
Science of the Soul

Proposed Utility Line
Figure 8e

NOT BEEN VERIFIED.
THE HERITAGE TRAIL R/W ARE INDICATED IN ACCORDANCE WITH THE TEC HERITAGE TRAIL IMPROVEMENT SURVEY.

335600
1-1-51.21

335600
1-1-51.22

335600
1-1-4.11

335600
1-1-58

MCVEIGH ROAD

MONHAGEN BROOK

SCALE – FEET
50 25 0 50

I-84

MATCH LINE

HYDRANT
6" AUX VALVE
8"x6" TEE
8" VALVE

HERITAGE TRAIL R/W

WETLAND BOUNDARY

WLF K1 CONTINUES NORTHEAST

WLF J3 CONTINUES NORTHEAST

WLF K3 CONTINUES SOUTHWEST

WLF J1 CONTINUES SOUTHWEST

60294 456.4 WLF K-1
60293 458.3 WLF J-3
60295 458.0 WLF K-2
60292 458.3 WLF J-2
60296 456.5 WLF K-3
60291 461.0 WLF J-1

MH

AIR RELEASE MH

8" WM
8" FM

3' (TYP)

ROW

58 59 60 61 62 63 64 65 66 67 68 69 70 71 72

440 420

(TOWN OF WAWAYANDA)

SCALE – FEET
5 50

455 450 445 440 435 430

ASSUMED PROFILE OVER WM IN ACCORDANCE WITH COUNTY GIS 20-FT CONTOURS

MONHAGEN BROOK CROSSING

AIR RELEASE MH

4.5' BURY (TYP)

18" (MIN)

3' (MIN)

ASSUMED BROOK BOTTOM

BORE UNDER BROOK

59 60 61 62 63 64 65 66 67 68 69 70 71

PRELIMINARY

Amy's Kitchen
Science of the Soul

Proposed Utility Line
Figure 8f

NOT BEEN VERIFIED.
THE HERITAGE TRAIL ROW ARE INDICATED IN ACCORDANCE WITH THE TEC HERITAGE TRAIL IMPROVEMENT SURVEY.

335600
1-1-54

335600
1-1-53

335600
1-1-6

335600
1-1-7

335600
1-1-8

335600
1-1-4.11

335600
1-1-4.12

335600
1-1-51.11

335600
1-1-5

335600
6-2-3

MCVEIGH ROAD

RYERSON ROAD

I-84

I-84

HYDRANT
6" AUX VALVE
8"x6" TEE
8" VALVE

HYDRANT
6" AUX VALVE
8"x6" TEE
8" VALVE

HERITAGE TRAIL R/W

HERITAGE TRAIL R/W

8" WM
8" FM

3' (TYP)

3' (TYP)

MH

MH

MH

ROW

MOW

LINE MATCH

LINE MATCH

N

50 25 0 50
SCALE – FEET

(TOWN OF WAWAYANDA)

ASSUMED PROFILE OVER WM IN ACCORDANCE WITH COUNTY GIS 20-FT CONTOURS

4.5' BURY (TYP)

4.5' BURY (TYP)

8" WM
8" FM
18" (MIN)

8" WM
8" FM
18" (MIN)

5
SCALE – FEET
50

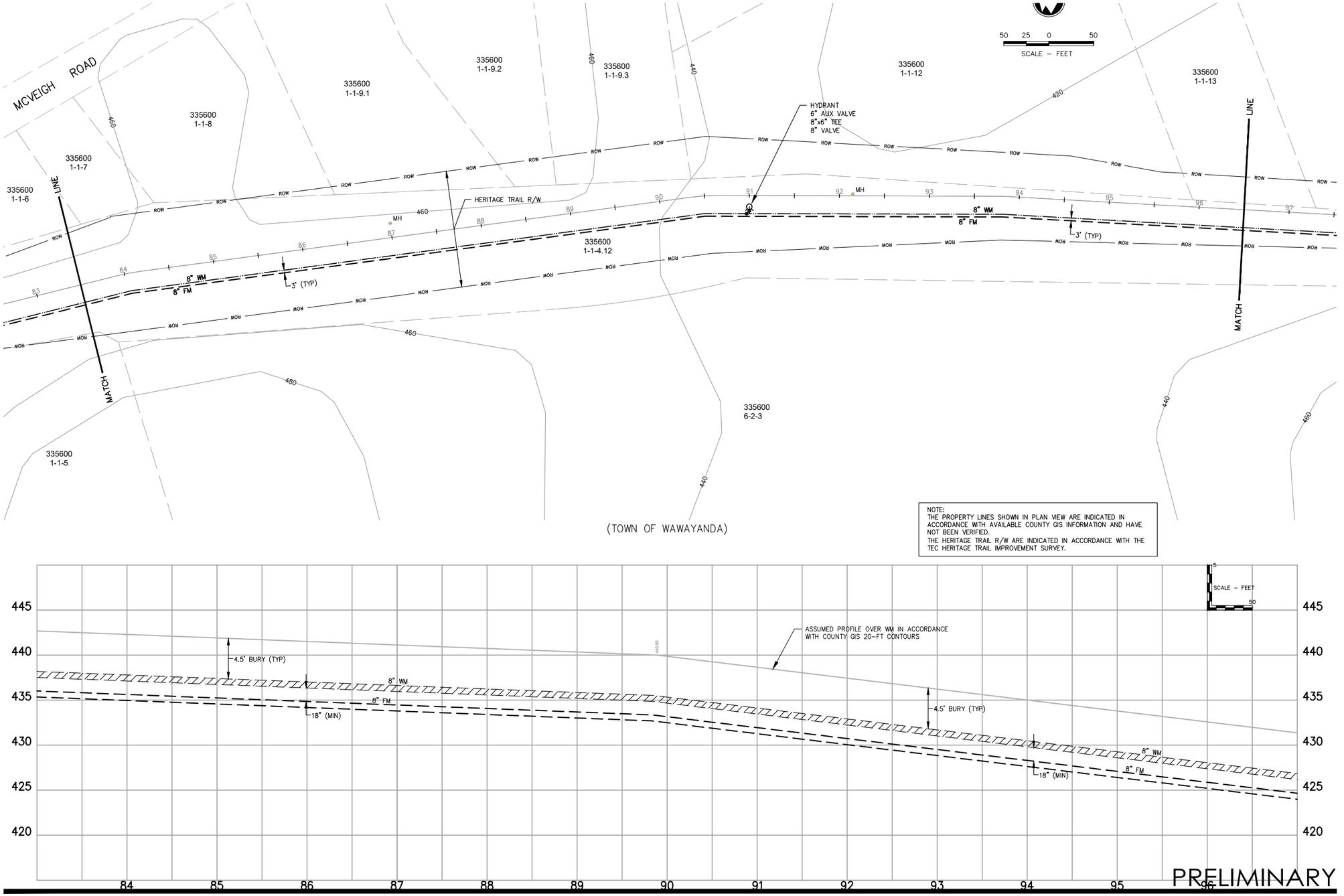
450
445
440
435
430
425

71 72 73 74 75 76 77 78 79 80 81 82 83 84

PRELIMINARY

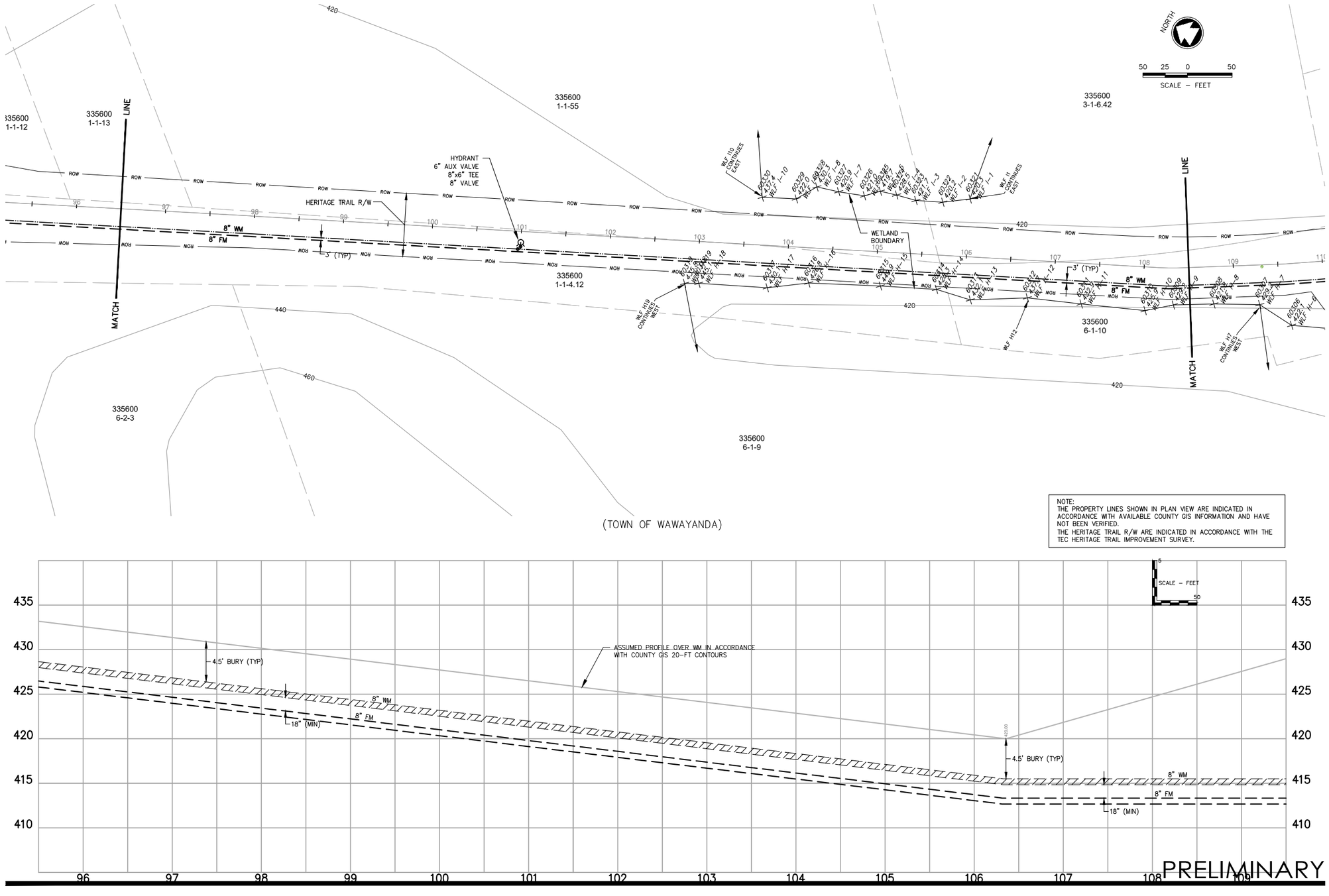
Amy's Kitchen
Science of the Soul

Proposed Utility Line
Figure 8g



Amy's Kitchen
Science of the Soul

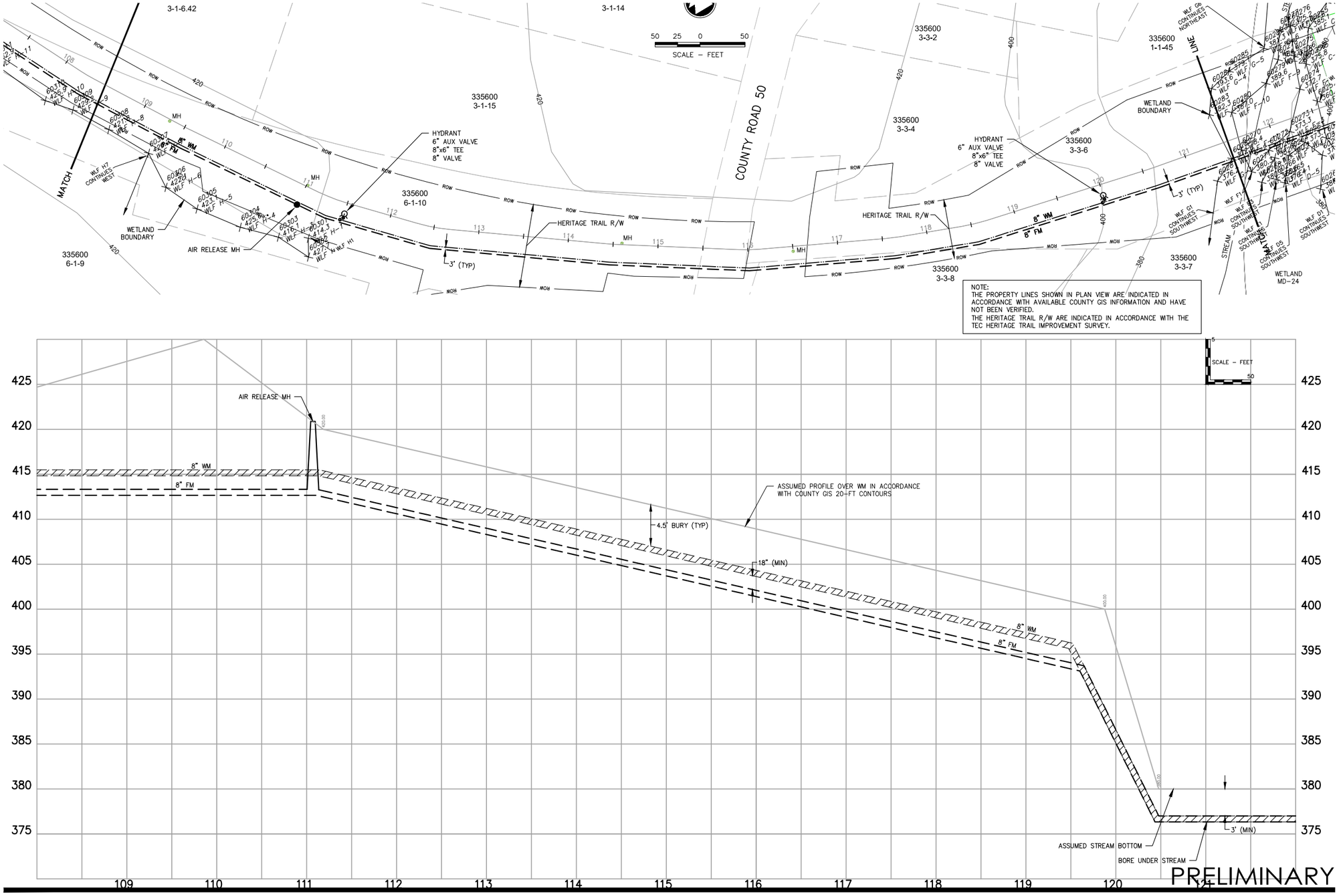
Proposed Utility Line
Figure 8h



PRELIMINARY

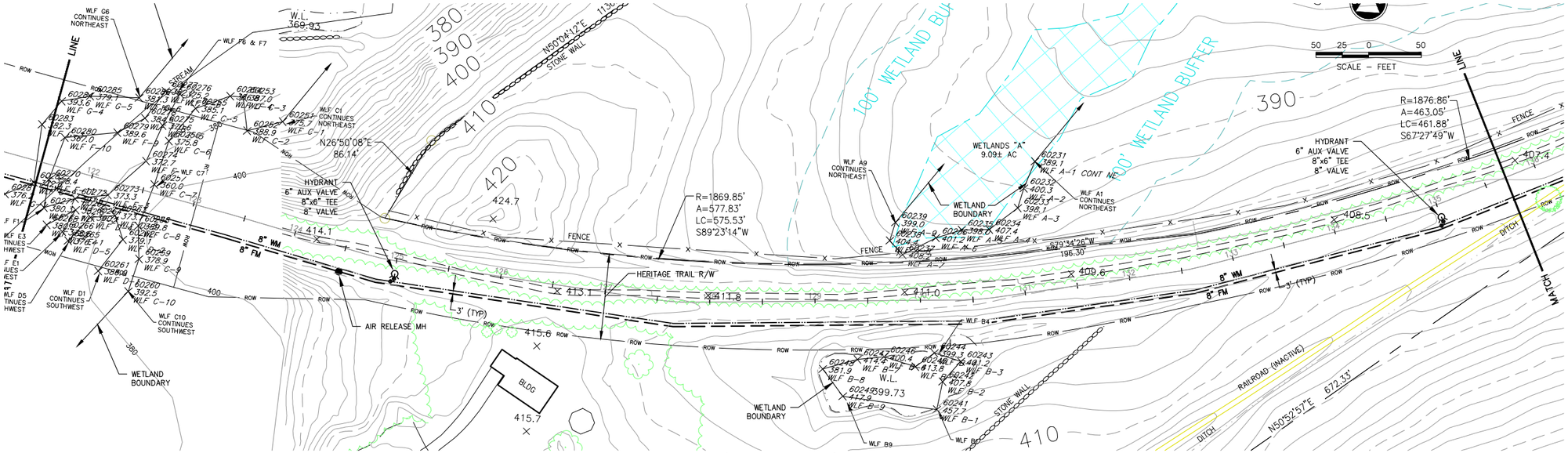
Amy's Kitchen
Science of the Soul

Proposed Utility Line
Figure 8i

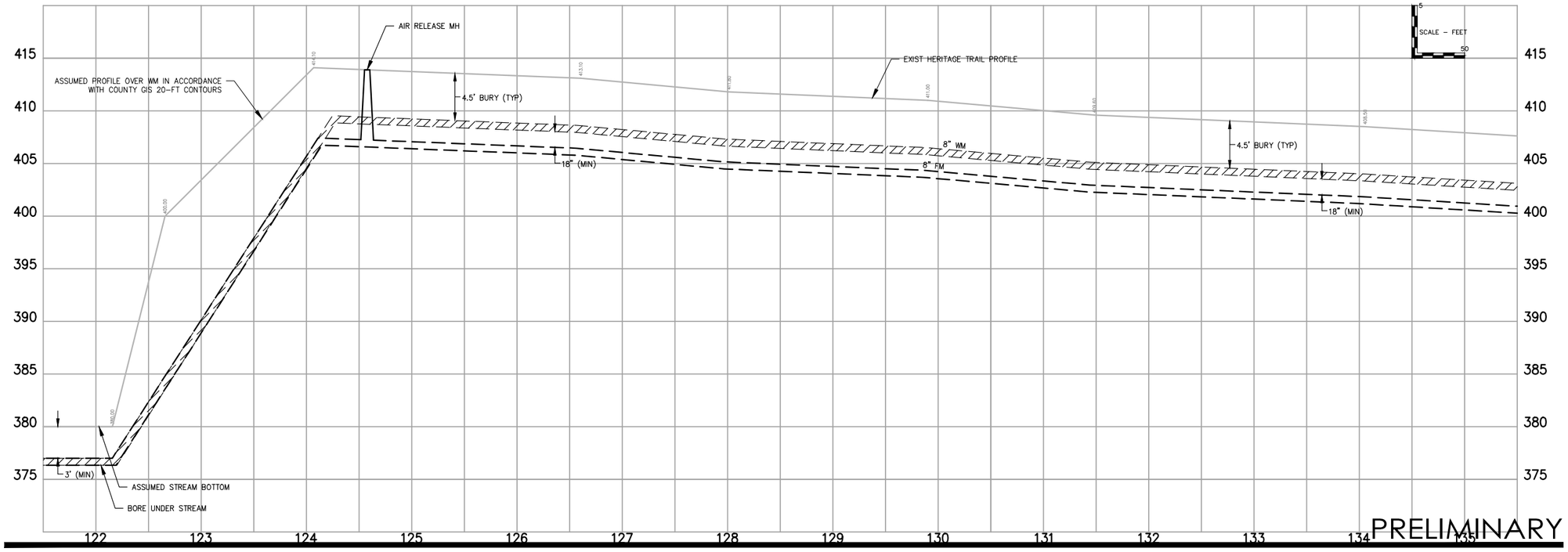


Amy's Kitchen
Science of the Soul

Proposed Utility Line
Figure 8j



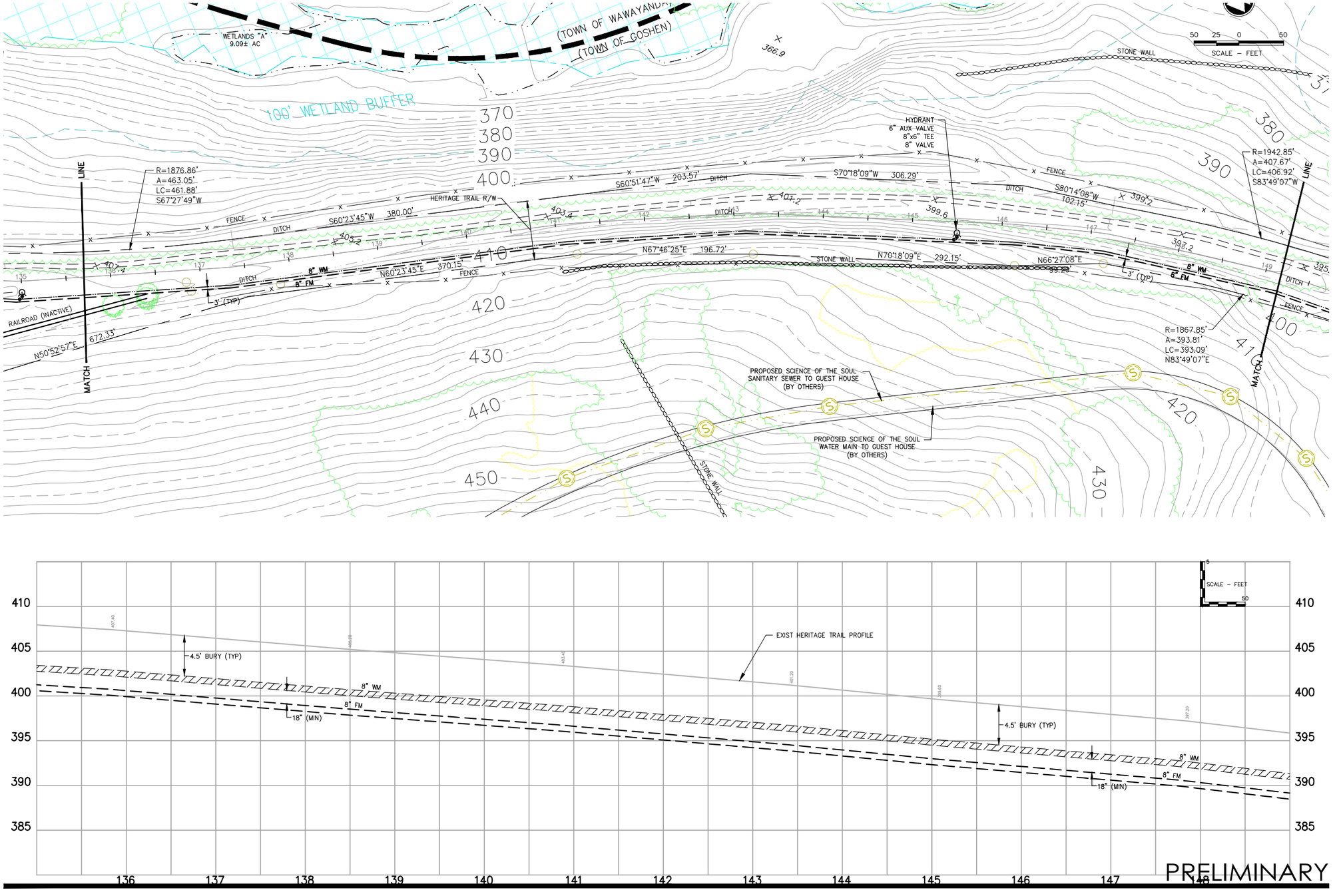
(TOWN OF GOSHEN)



PRELIMINARY

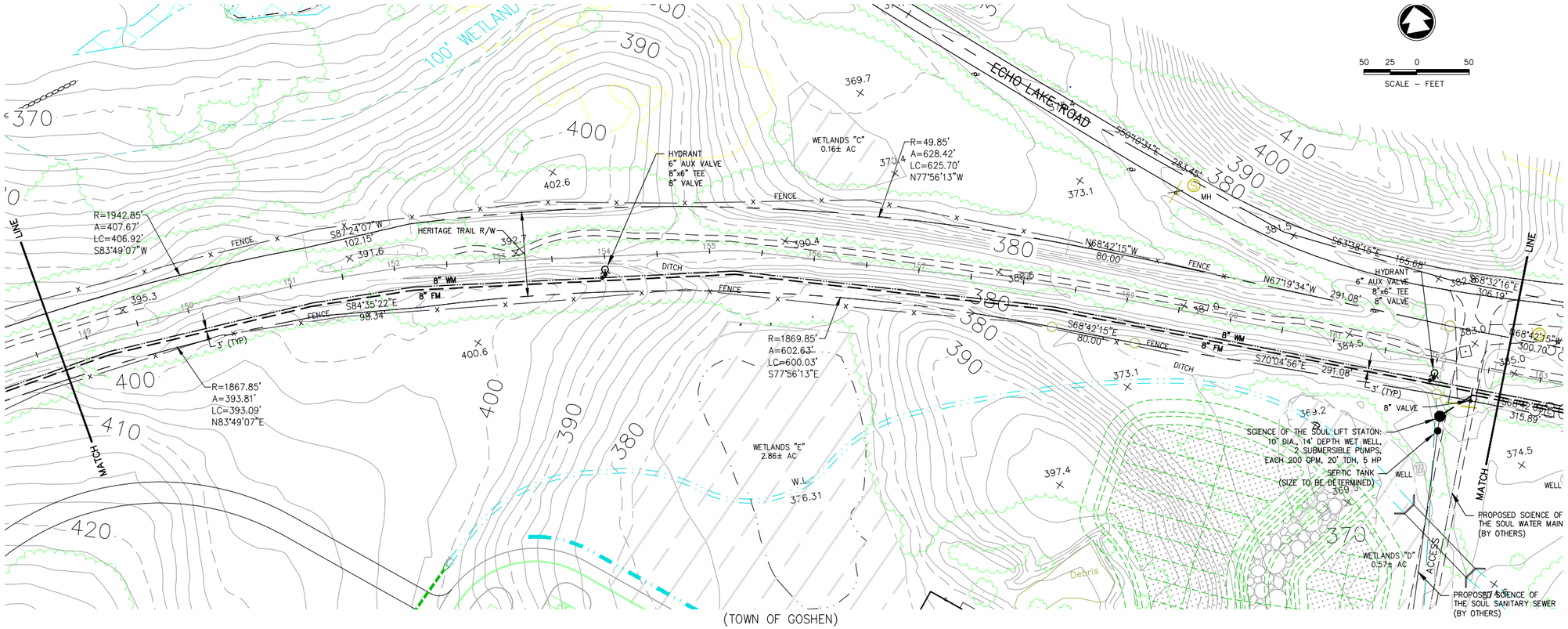
Amy's Kitchen
Science of the Soul

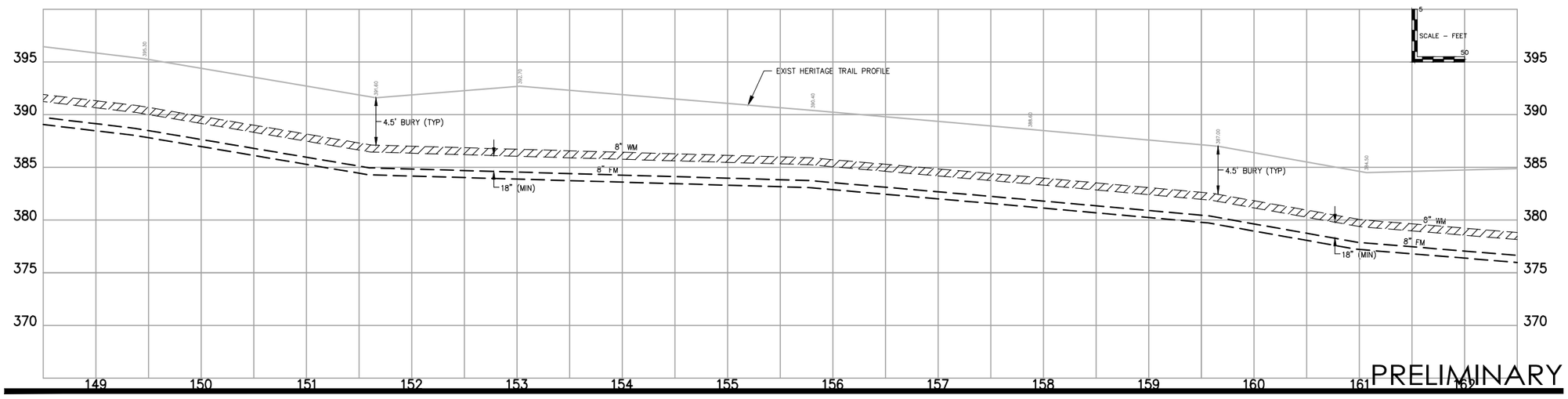
Proposed Utility Line
Figure 8k



Amy's Kitchen
Science of the Soul

Proposed Utility Line
Figure 8I

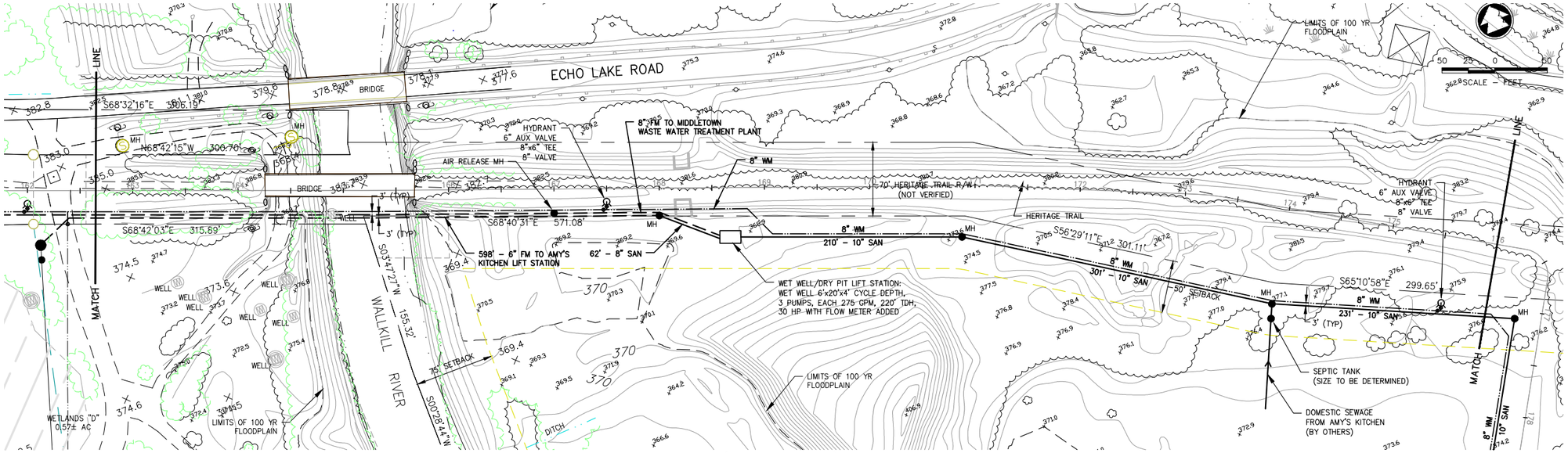


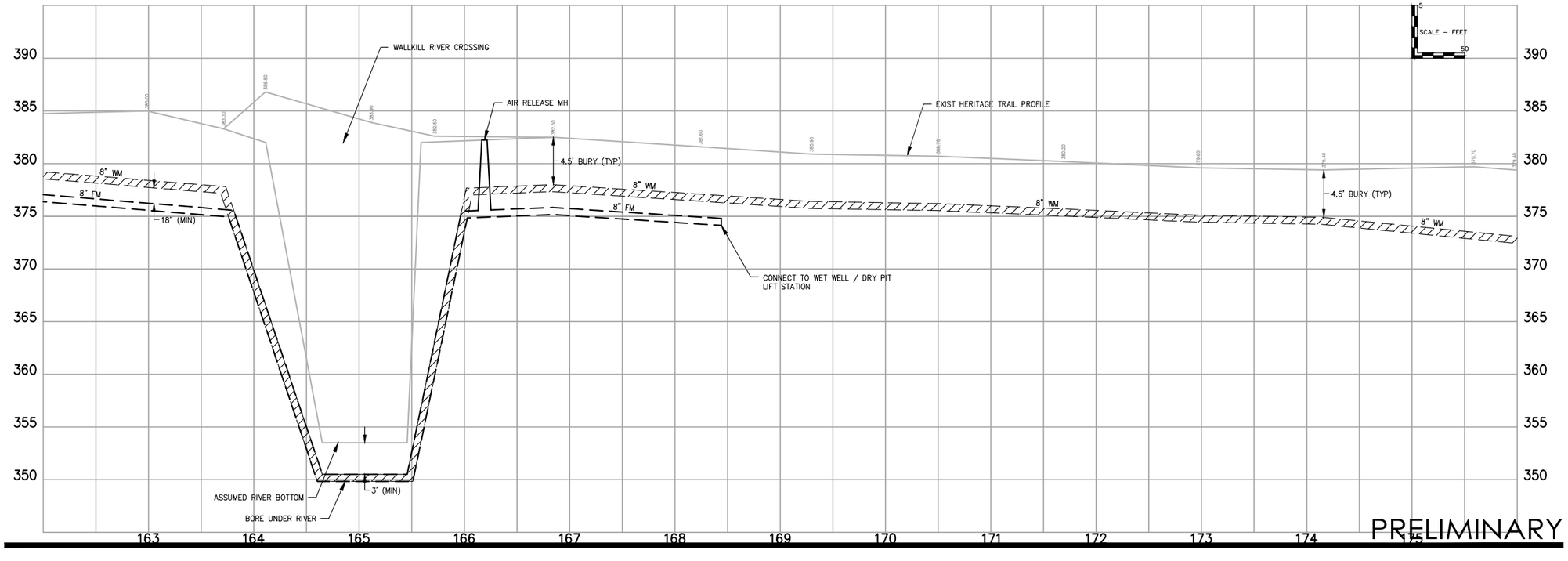


PRELIMINARY

Amy's Kitchen
Science of the Soul

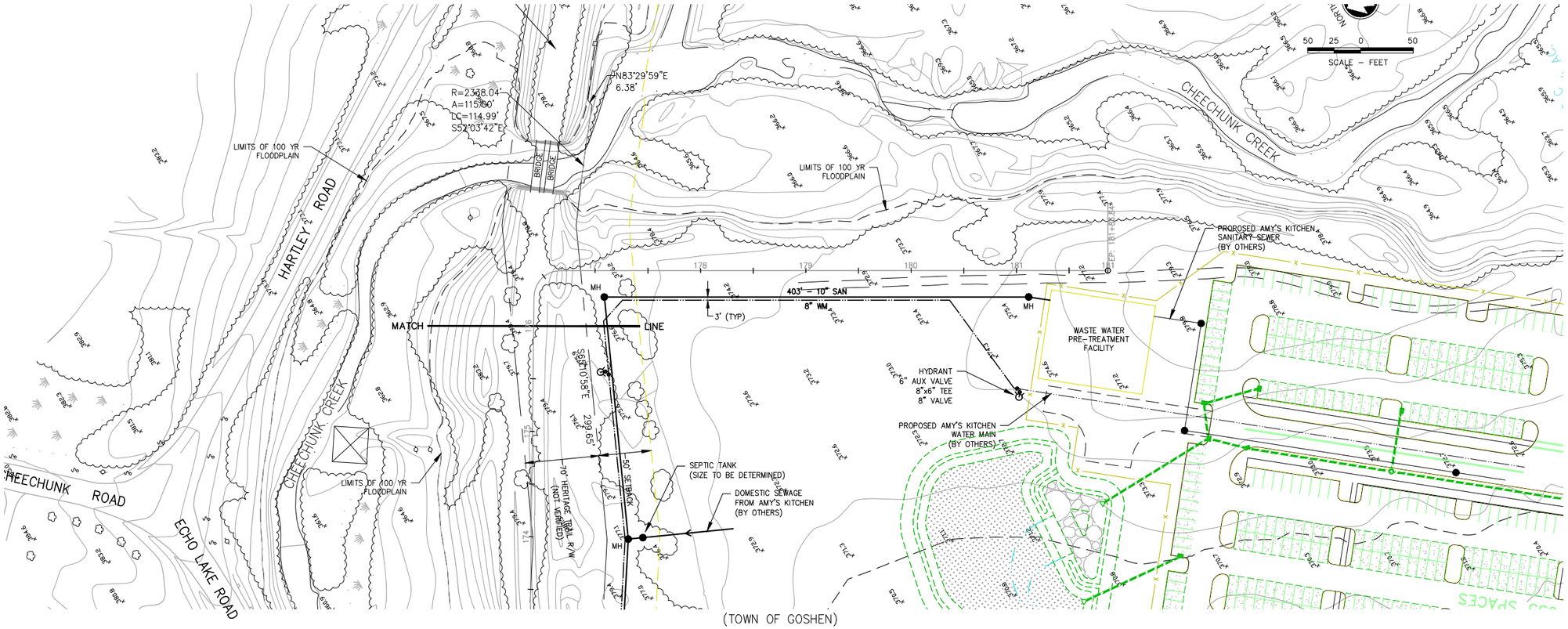
Proposed Utility Line
Figure 8m





Amy's Kitchen
Science of the Soul

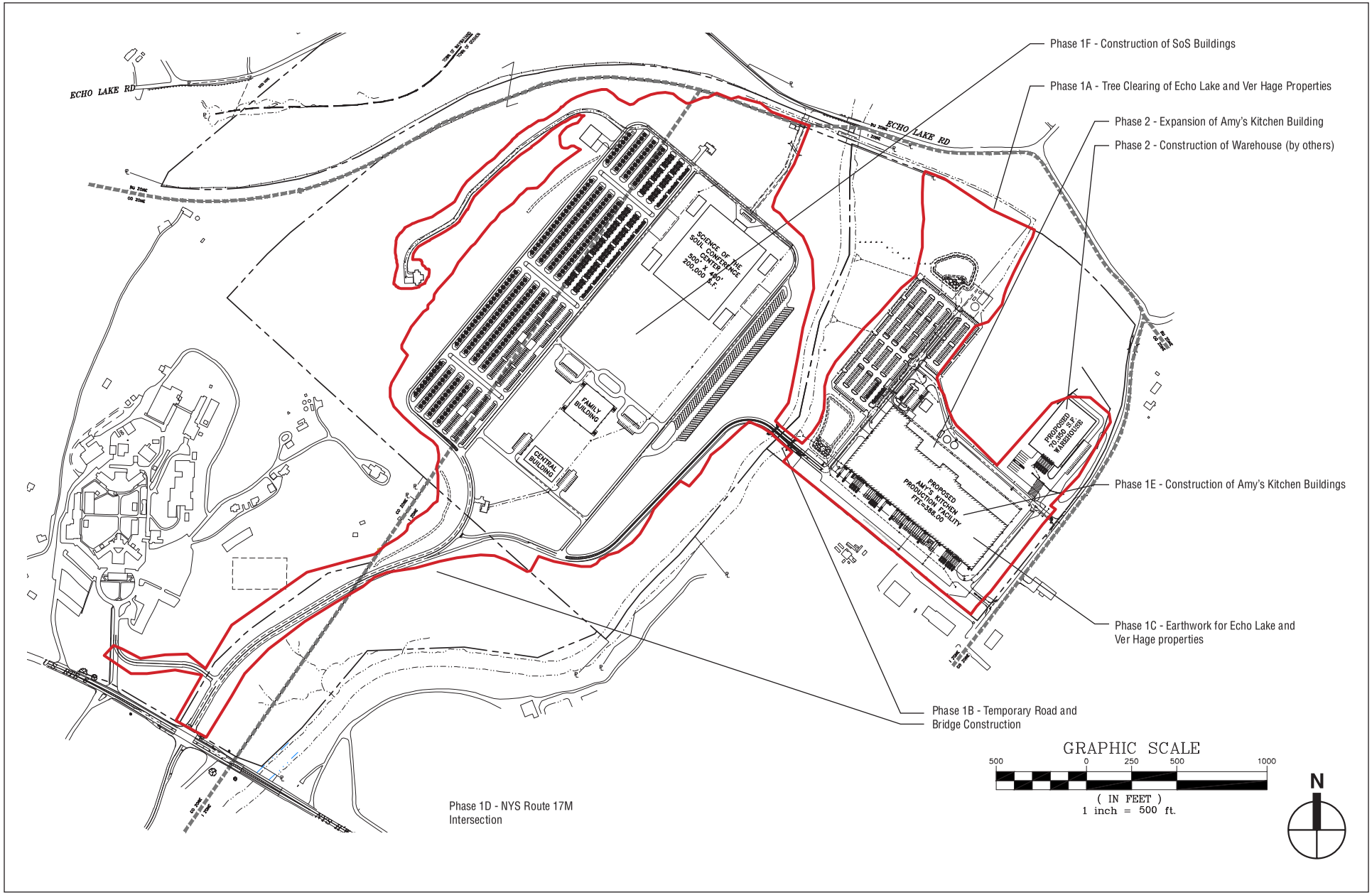
Proposed Utility Line
Figure 8n



Amy's Kitchen
Science of the Soul

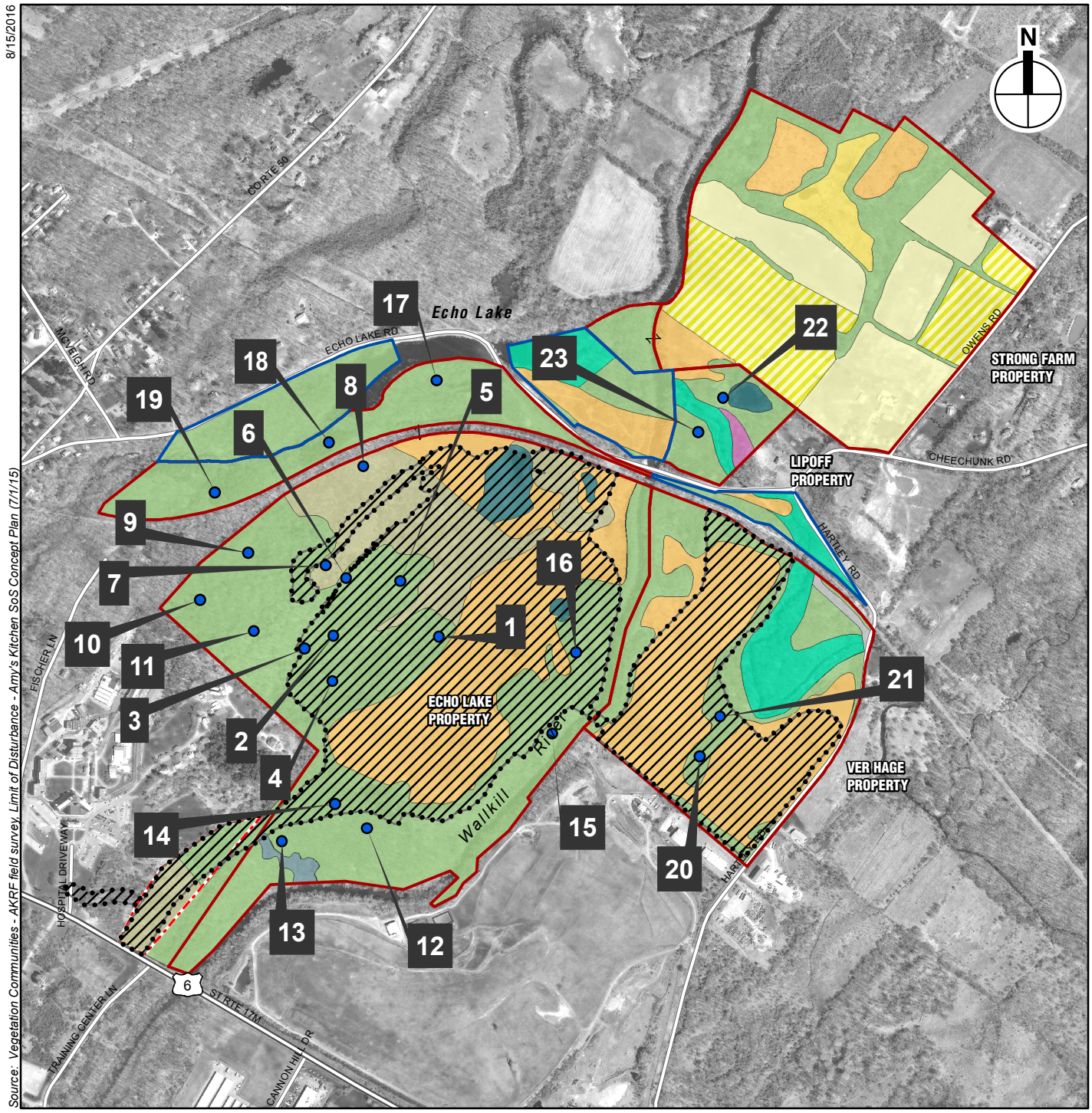
Proposed Utility Line
Figure 8o

8.18.16



Amy's Kitchen
Science of the Soul

Construction Phasing
Figure 9



Amy's Kitchen
Science of the Soul

Vegetation Communities and Bat Habitat Sampling Plot Locations

Figure 10

Appendix E

Science of the Soul Conference Center
Goshen, New York

General Traffic Management Plan

prepared 10 August 2016

In Science of the Soul's largest US centers, Fayetteville (NC) and Petaluma (CA), we have achieved our goal of achieving 20% of arrivals by bus (shuttle or long range) and 3 or more persons per car. At Goshen we expect 40% to arrive by charter or shuttle buses, because, this being a National Conference, a large portion of attendees will arrive by air (for contingency plan for low bus utilization, see page 3).

We have a national transportation team that organizes long haul charter buses and local shuttles. This team will work with local members to determine the location of hotel clusters and transportation hubs. The transportation plan will have the following components:

1. **Car Pool-** we have been successful in encouraging car pooling. We have a high vehicle occupancy history of 3.78 persons per vehicle in Fayetteville and 3.33 in Petaluma. We expect Goshen to exceed 3.5 persons per vehicle.
2. **Shuttle Buses**- In both Fayetteville and Petaluma we have a history of using shuttle buses to deliver guests from hotel clusters. In the case of Goshen, we are hoping to arrange shuttles from the closest train stations if we find that trains arrive from N.Y./N.J early enough for our attendees.
3. **Charter Buses**- We expect two types of charters. Day charters from regional locations and long haul charters from places such as Chicago, Washington and Boston. We also expect that we will have charters organized by groups coming from long distances by air. For example, in Petaluma, groups from Texas arrive on one flight and arrange a bus to take them to a particular hotel and then to and from the venue daily.

Mitigation of Peak Traffic Volume: Guests arrive over a long period in the morning and exit over a long period in the afternoon. This mitigates peak volume. On-site flow is naturally more diffused, as guests seeking better seats arrive early, and arrivals are spread over a long period of time. The off-site flow is naturally more concentrated, as attendees disburse more rapidly. To dampen this peak, we offer a packed lunch after the event, and encourage attendees whose schedule allows to linger on site. This minimizes the exiting peak traffic flow and facilitates on-site traffic management after the event.

Parking flow and management (internal circulation):

Our organization relies on trained volunteers to manage on-site traffic, parking and pedestrian flow. These teams have over 15 years of experience with our large events (6,000-10,000). They spend many months developing detailed management plans and practicing implementation prior to the National Conference.

Our internal traffic plans use the following elements:

Bus-Car Separation- All traffic enters the Center from the 17M intersection. At the first fork in the entry road, buses are separated from cars. This facilitates the smooth flow of traffic and allows high-capacity buses to move freely.

Pedestrian-Vehicle Separation- Guests are directed to park in spaces close to the venue first and then farther out, row by row. This separates pedestrians from moving cars, as attendees getting out of their cars walk only past other parked cars. Buses park in a separate area so that those unloading from buses do not have to cross traffic. The main Loop Road around the campus is also generally free from cars, making these large paved areas available for pedestrians to move safely.

Special Needs Separation- Upon entry vehicles with elderly or mobility-impaired passengers are separated from general traffic. This includes the infirm as well as those with state-issued disabled person (DP) placards. These vehicles are allowed to drop-off infirm passengers on the Loop Road at the Main Hall, and then driven to Special Needs parking areas nearby. These Special Needs vehicles are also parked close-in first to avoid pedestrian-vehicle conflict.

Shuttle- for those parking far away, we utilize shuttle vans within the property.

Emergency Service Access- Emergency service vehicles will have a separate access from Echo Lake Road and will be able use the internal Loop Road if necessary to reach any location at any time. As the internal Loop Road is generally closed to traffic, except for shuttles, emergency service vehicles can move freely. An additional emergency access point is available from the bridge over the Wallkill to Hartley Road. This would be particularly useful to move large numbers of people in the event of a major incident on campus or accident at the 17M intersection, as the Echo Lake access point is small.

Off-site traffic will be managed by local law enforcement. At our Fayetteville and Petaluma Centers we typically employ five or more off-duty police or highway patrol to direct traffic during peak hour entry and exiting, and we confer with local law enforcement to determine the locations and timing of their operation.

The proposed site plan embodies the lessons learned from our twenty-year experience with traffic and pedestrian flow, and we are confident that it will enable the National Conference traffic, parking and pedestrians to be managed safely and efficiently.

Prior to the National Conference we will be developing detailed plans in consultation with local law enforcement and emergency service providers.

Contingency plan for overflow parking.

In the contingency that bus utilzation or automobile occupancy targets are not met and additional parking is needed, overflow parking will be provided on Strong Farm, which has already been identified for parking approximately 350 volunteer cars (~600 people[*]) on 2.75 acres of hayfield meadow.

As shown on the attached diagram, an additional ~2,400 cars can be accommodated on approximately 20 acres of mowed hayfields or in between trees of a future orchard. These temporary parking areas are located in dry uplands only, completely avoiding lower fields of row crops and wetlands. Of the total 90 acres on Strong Farm, approximately 75% would never be used at any time for temporary parking.

Assuming a reduced occupancy rate of 2.5 persons/car, well below the historical average at either Petaluma or Fayetteville, this yields parking for 6,000 attendees. These cars can be accommodated for a few hours on three mornings per year without impacting either agricultural productivity or bat foraging, which occurs at night.

As low bus utilization would be known well in advance of the event, some portion of attendees could be directed to the overflow parking via Fletcher Road exit off route 17, thereby avoiding the entrance at 17M. Autos would access Strong Farm at the existing driveway to the north on Owens Road, and then either walk to Echo Lake site along the edge of Cheechunk/Echo Lake Road, or along Heritage Trail, or take shuttle vans[†]. This pedestrian traffic could be separated from vehicluar traffic by temporary cones or other delineators, with details to be worked out with local law enforcement as part of the detailed Traffic Management Plan to be developed prior to the National Conference. A traffic officer can be posted at the Owens Road/Echo Lake Road intersection to ensure safety and smooth flow.

It should also be recognized that the peak attendance of the three-day National Conference is typically on the Sunday, whether the event is Friday-Saturday-Sunday or Saturday-Sunday-Monday. This means that overflow parking will most likely be needed, if at all, only on a weekend morning, and then only for a few hours, one or two days per year.

In this way the SoS Traffic Management Plan has sufficient additional parking capacity to adequately meet either contingency of low bus utilization or low vehicle occupancy.

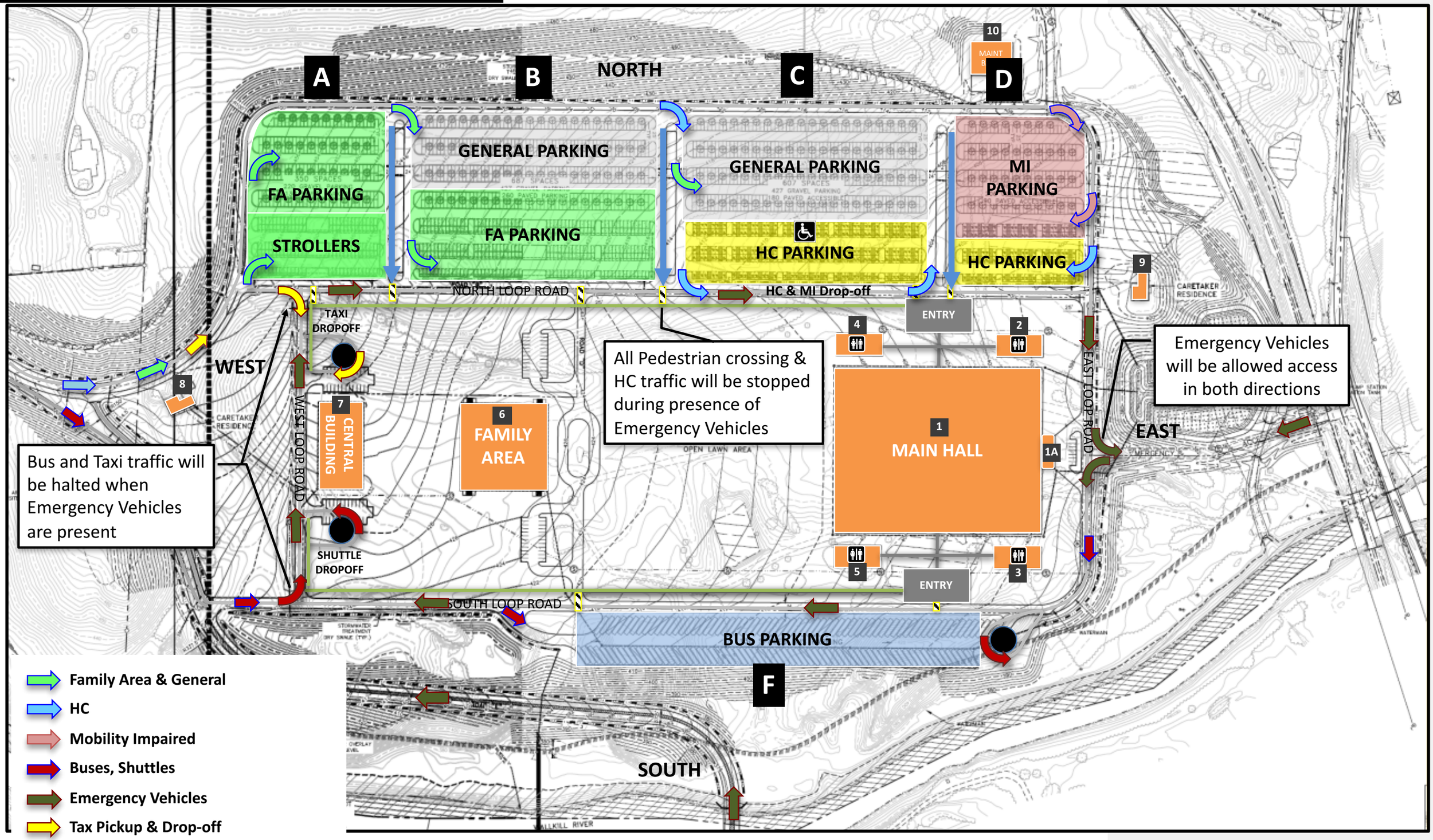
prepared by R. Popkin, A. Sadarangani, T. Richman

[*] note that automobile occupancy for volunteers is projected to be lower than 2.0 occupants/car, as volunteers come early and stay late.

[†] shuttle van access would be through Echo Lake Road gate, which requires approval of Orange County Legislature.

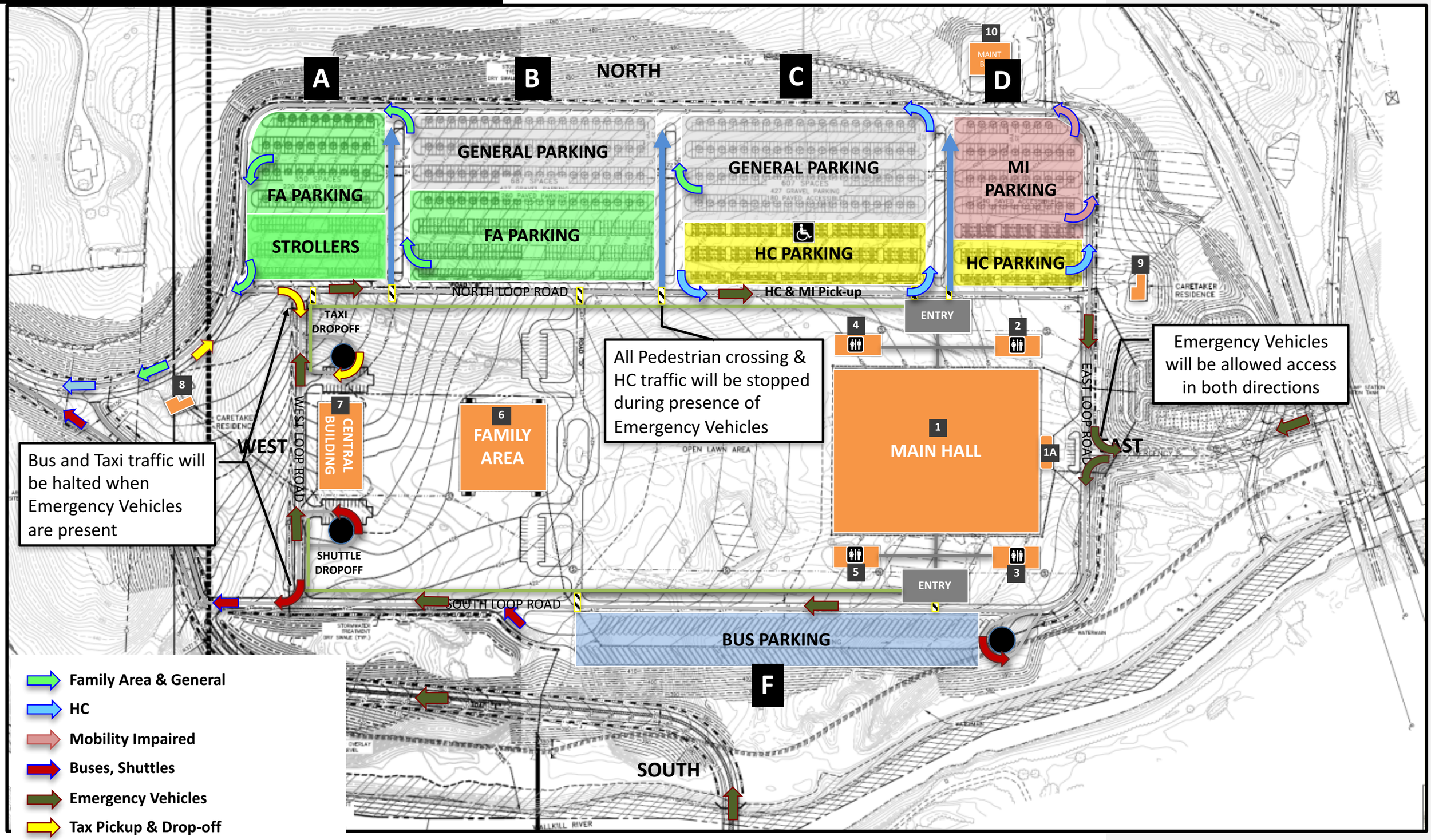
ONSITE TRAFFIC PLAN

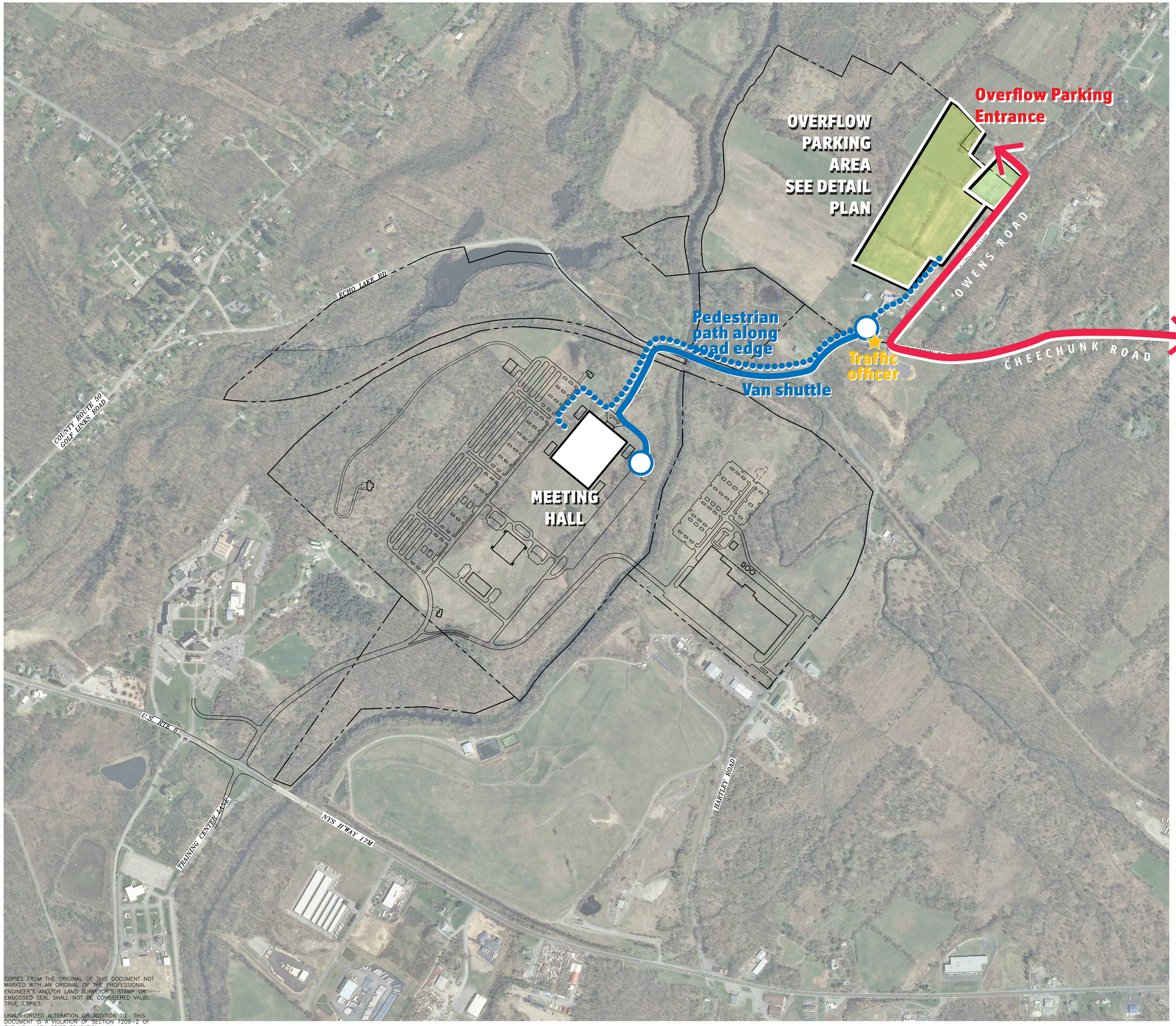
PARKING PLAN - INFLOW



ONSITE TRAFFIC PLAN

PARKING PLAN - OUTFLOW





TEMPORARY EVENT PARKING* CONTEXT PLAN

June 2016

***TEMPORARY EVENT PARKING LIMITED TO 3 DAYS PER YEAR.**

GRAPHIC SCALE

300 0 150 300 600 1200

(IN FEET)
1 inch = 300 ft.

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P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

PROJECT SITE MAP

AMY'S KITCHEN
SCIENCE OF THE SOUL
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	JUNE 15, 2016
Revisions:	
CAD File:	ARCA BASEMAP
Layout:	ARCA BASEMAP Aelze
Sheet No.:	1 OF 1
Drawn By:	MK
Checked By:	
Scale:	1" = 300'
Tax Map No.:	–
Drawing No.:	C3D A – 13 – 0070 – 01

TEMPORARY EVENT PARKING* AND CONCEPTUAL AGRICULTURAL PLAN

June 2016

*TEMPORARY EVENT PARKING LIMITED TO 3 DAYS PER YEAR.

HAYFIELD or
MIXED ORCHARD
2,400 cars
Overflow parking
(~20 ac)

MEADOW
350 cars
Volunteers
(~2.75 ac)

EX. DRIVEWAY
Overflow
Parking
Entrance

17 via
Fletcher
Road

ROW CROPS
(Bottom land)
No parking

EXISTING
RESIDENCE
TO REMAIN

EXISTING
STRUCTURES
TO REMAIN

Pedestrian
path along
road edge

Van
shuttle
stop

Van shuttle
to Center

Traffic
officer

WETLAND

WETLAND

WETLAND E
AREA=0.195± AC.

WETLAND F
AREA=5.504± AC.

Wallkill River

LIMITS OF WALLKILL RIVER SHOWN BASED UPON 2013 NYS DIGITAL ORTHOIMAGERY AERIAL DATA

WALLKILL RIVER

N/F
SCHRADE
L.1855 P.372
1 – 1 – 38.2

N/F
AL–TARIQ
L.13319 P. 395
1 – 1 – 62.24
FM 4/7 LOT
MAP NO. 6–07

TOPOGRAPHY IN THIS PORTION OF SITE TAKEN FROM ORANGE COUNTY WATER AUTHORITY DATA 2 FT. CONTOURS AND IS NOT THE RESULT OF FIELD SURVEY

OWENS ROAD

STONE WALL & WIRE FENCE

STONE WALL

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

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Goshen, N.Y. 10924
(845) 294-3700

BASE MAP FOR

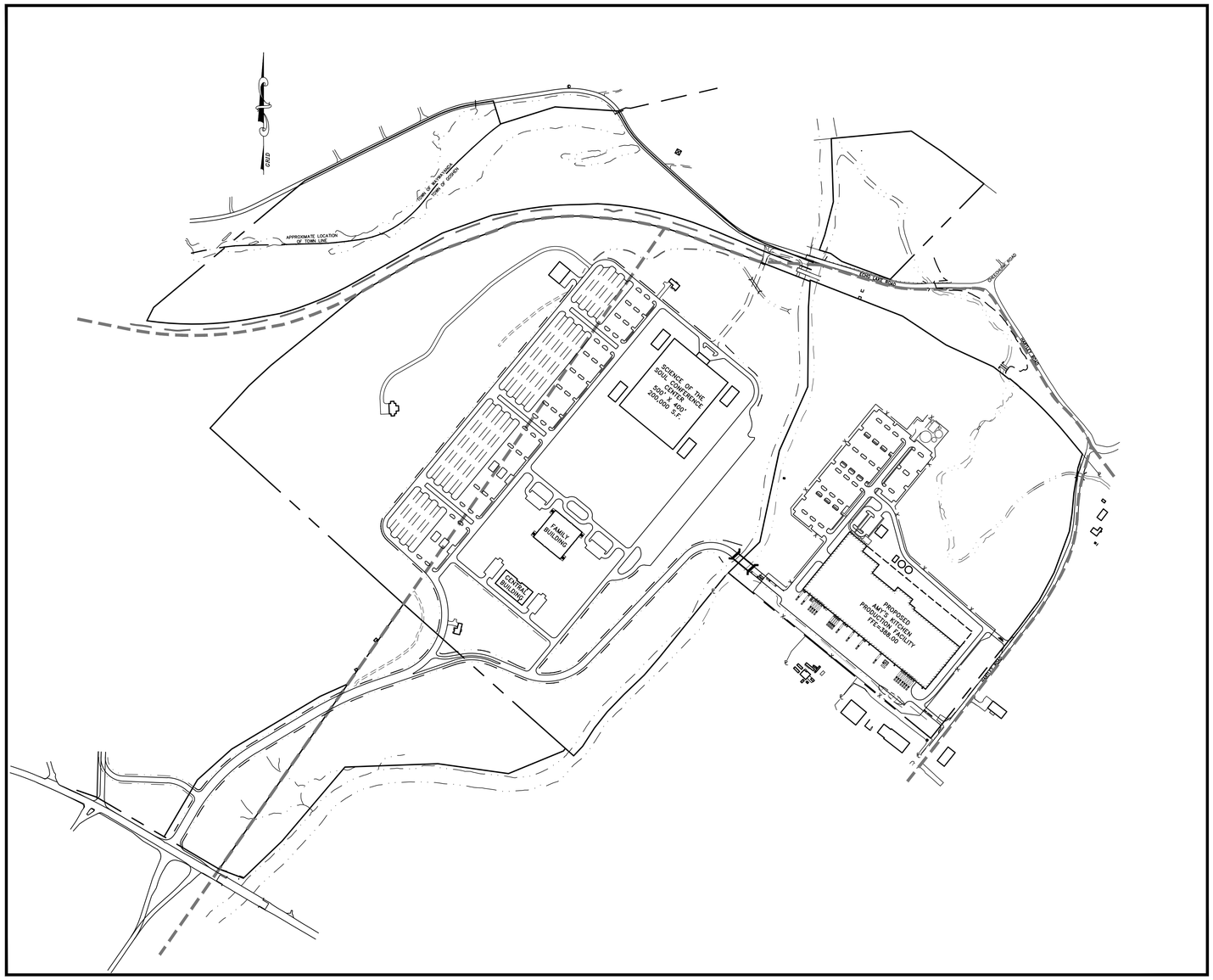
STRONG FARM &
51 OWENS ROAD
RADHA SOAMI SOCIETY
BEAS AMERICA
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

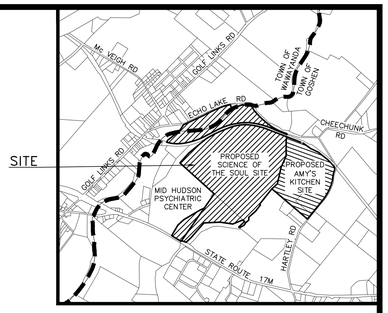
Date:	SEPTEMBER 30, 2016
Revisions:	
CAD File:	51 OWENS OCWA MAP
Layout:	BASEMAP
Sheet No.:	1 OF 1
Drawn By:	MK
Checked By:	
Scale:	1" = 50'
Tax Map No.:	10 – 1 – 11.1
Drawing No.:	C3D B – 13 – 0070 – 01

Appendix F

AMY'S KITCHEN, INC.
&
SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK
SEPTEMBER 25, 2015





LOCATION PLAN
1 INCH = 2,000± FEET
(Taken from OCWA Mapping)

PROJECT APPLICANT
AMY'S KITCHEN, INC.
1□□□ □□ □□□□ □□□□ □□□□ □□□□□□□□ □□□
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□□□□□□□1□□□1□

PROJECT ENGINEER
LANC & TULLY ENGINEERING AND SURVEYING, P.C.
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□□□□□□□□□□ □□□□ 1□□4
□□4□□□□4□□□□

PROJECT ATTORNEY
JACOBOWITZ AND GUBITS LLP
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□ □□□□□□□ 1□□□□
□□4□□□4□□□□

PROJECT ARCHITECT
STELLAR
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□□□□□□□□□□□□□□□□□□□□□□ □□□□ □□□
□□4□□□□□□□□

PROJECT PLANNER
AKRF, INC.
□4 □□□□□ □□□□□□ □□□□□□□□ 4□1
□ □□□□ □□□□□□□□ 1□□□1
□□14□□□□□□□□

DRAWING INDEX

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	C 1-02 OF 4	OVERALL SITE CONCEPT PLAN
	C 1-03 OF 4	AMY'S KITCHEN CONCEPT PLAN
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	C 2-07 OF 17	CONCEPTUAL LANDSCAPING PLAN
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	C 2-14 OF 17	EROSION & SEDIMENT CONTROL DETAILS
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	C 2-16 OF 17	CONSTRUCTION DETAILS 1 OF 2
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	C 3-06 OF 28	GRADING & UTILITY 3 OF 8
	C 3-07 OF 28	GRADING & UTILITY 4 OF 8
	C 3-08 OF 28	GRADING & UTILITY 5 OF 8
	C 3-09 OF 28	GRADING & UTILITY 6 OF 8
	C 3-10 OF 28	GRADING & UTILITY 7 OF 8
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	C 3-12 OF 28	CONCEPTUAL LANDSCAPING PLAN 1 OF 2
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	C 3-16 OF 28	LIGHTING PLAN SHEET 2 OF 2
	C 3-17 OF 28	PROFILE SHEET 1
	C 3-18 OF 28	PROFILE SHEET 2
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	C 3-21 OF 28	CONSTRUCTION PHASING PLAN SHEET 1
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	C 3-23 OF 28	EROSION & SEDIMENT CONTROL PLAN 1 OF 2
	C 3-24 OF 28	EROSION & SEDIMENT CONTROL PLAN 2 OF 2
	C 3-25 OF 28	EROSION & SEDIMENT CONTROL DETAILS
	C 3-26 OF 28	DRAINAGE DETAILS
	C 3-27 OF 28	CONSTRUCTION DETAILS 1 OF 2
	C 3-28 OF 28	CONSTRUCTION DETAILS 2 OF 2

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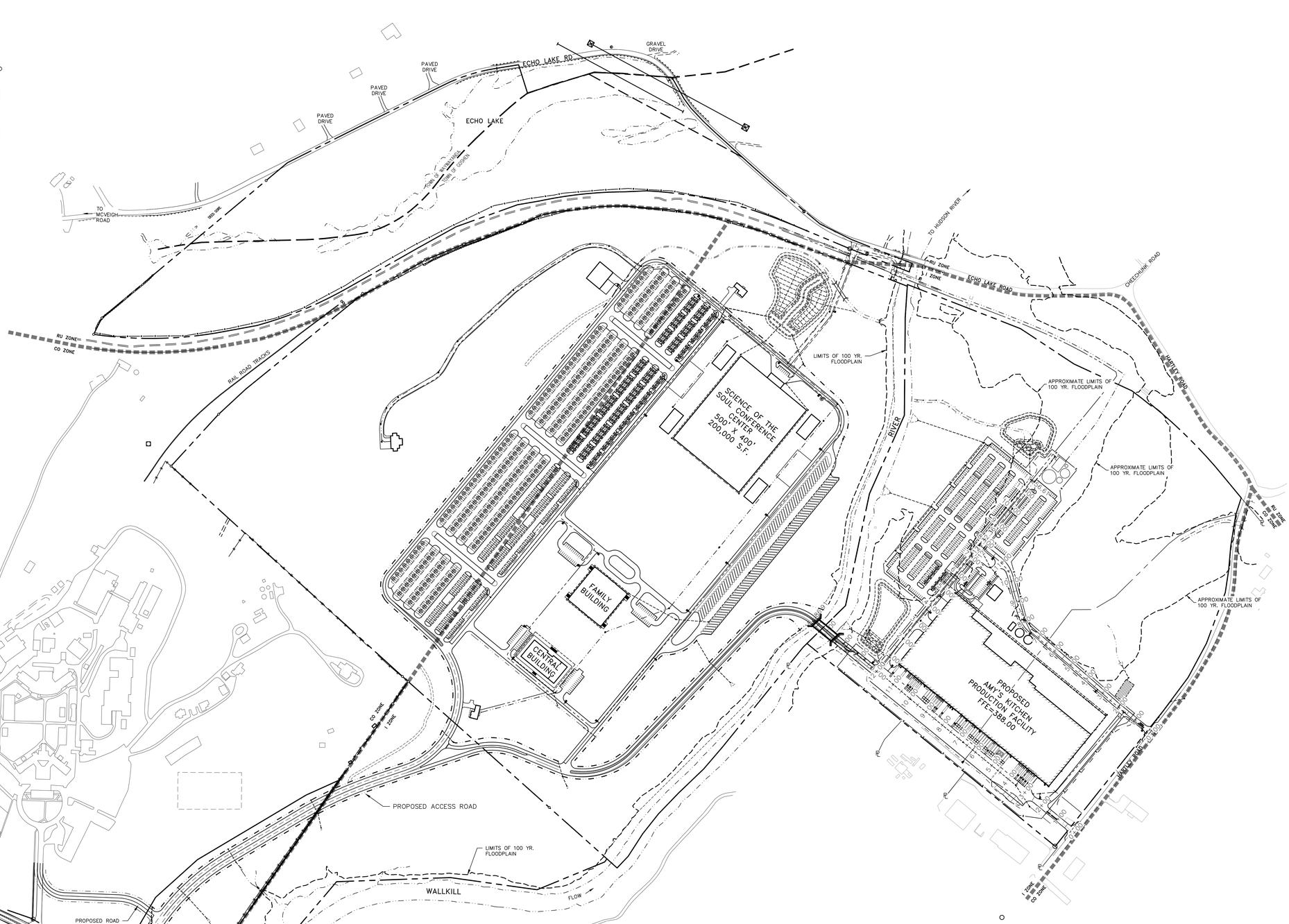
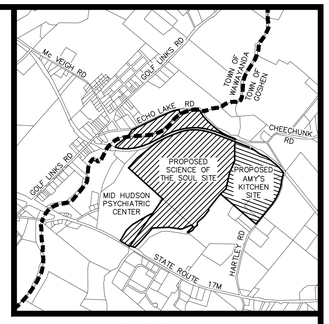
(845) 294-3700

AMY'S KITCHEN, INC.
&
SCIENCE OF THE SOUL
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

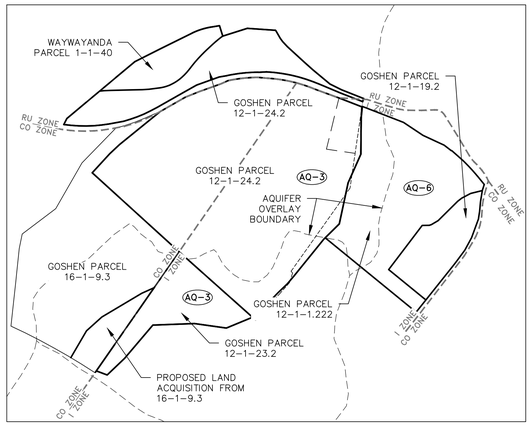
REVISIONS
MARCH 7, 2016
APRIL 22, 2016
AUGUST 24, 2016





LOCATION PLAN

1 INCH = 2000 FEET



TAX PARCEL KEY MAP

NOT TO SCALE

TABLE OF ZONING REQUIREMENTS

TOWN OF GOSHEN

COMMERCIAL/OFFICE MIXED-USE (CO)
INDUSTRIAL (I)
RURAL (RU)

MINIMUM	"CO" ZONING DISTRICT REQUIRED	"I" ZONING DISTRICT REQUIRED	"RU" ZONING DISTRICT REQUIRED (AQ-3 OVERLAY)
LOT AREA	1 AC.	5 AC.	NO PROPOSED DEVELOPMENT IN RU ZONE
ROAD FRONTAGE	200 FT.	200 FT.	
FRONT YARD SETBACK ON TOWN ROAD	50 FT.	100 FT.	
FRONT YARD SETBACK ON COUNTY/STATE ROAD	150 FT.	200 FT.	
SIDE YARD SETBACK	30 FT.	50 FT.	
REAR YARD SETBACK	50 FT.	75 FT.	
MAXIMUM			
IMPERVIOUS SURFACE COVERAGE	70%	70%	
BUILDING HEIGHT	35 FT.	45 FT.	
FOOTPRINT FOR NON-RESIDENTIAL STRUCTURES	200,000	-	
APPLICABLE OVERLAY DISTRICTS:			
AQ-3			
FLOODPLAIN & PONDING AREA OVERLAY			
STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY			

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

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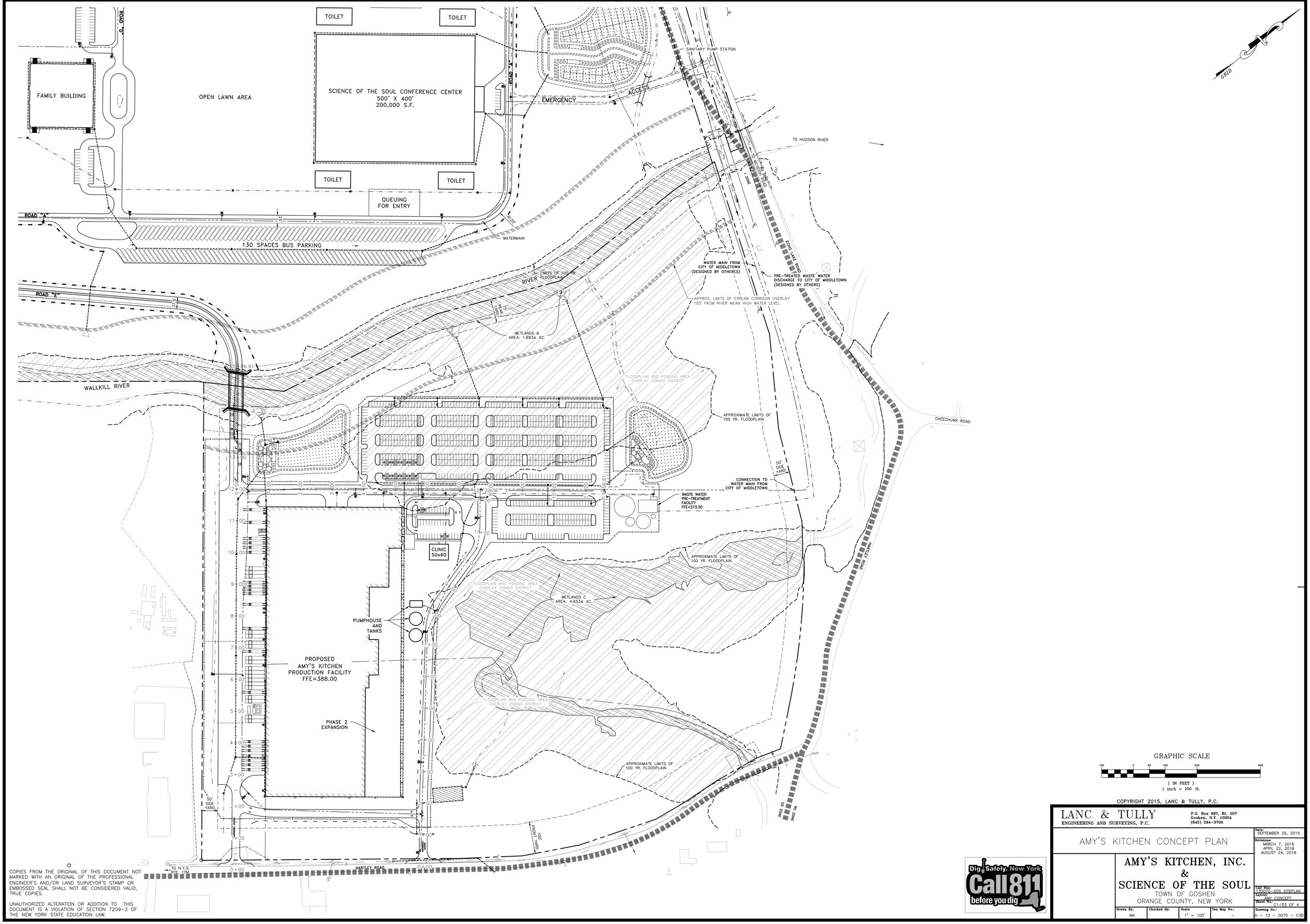
OVERALL SITE CONCEPT PLAN

AMY'S KITCHEN, INC. & SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: 10070-SITEPLAN
Layout: SP 200SC
Sheet No.: C1-02 OF 4
Drawn By: MK
Checked By:
Scale: 1" = 200'
Tax Map No.: -
Drawing No.: A - 13 - 0070 - C30



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AMY'S KITCHEN CONCEPT PLAN

AMY'S KITCHEN, INC.
&
SCIENCE OF THE SOUL
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
AUGUST 24, 2016

CAD File: 130070-SOS SITEPLAN
Layout: AMY CONCEPT
Sheet No.: C1-03 OF 4

Drawn By:	Checked By:	Scale:	Tax Map No.:	Drawing No.:
MK		1" = 100'	–	A – 13 – 0070 – C3D

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5 BEDROOM
GUEST HOUSE
EL.=510.0

MAINT.
BARN

STORMWATER
TREATMENT
DRY SWALE (TYP.)

ROAD "A"

350 SPACES
220 GRAVEL PARKING
130 PAVED PARKING

687 SPACES
427 GRAVEL PARKING
260 PAVED PARKING

607 SPACES
427 GRAVEL PARKING
180 PAVED ACCESSIBLE

296 SPACES
206 GRAVEL PARKING
90 PAVED ACCESSIBLE

ROAD "B"

CO ZONE
I ZONE

CARETAKER
RESIDENCE

QUEUING
FOR ENTRY

TOILET

TOILET

ROAD "D"

CENTRAL
BUILDING

FAMILY BUILDING

OPEN LAWN AREA

SCIENCE OF THE SOUL CONFERENCE CENTER
500' X 400'
200,000 S.F.

ROAD "C"

ROAD "A"

EMERGENCY ACCESS

SANITARY PUMP STATION

CARETAKER
RESIDENCE

ARCHAEOLOGICAL
SITE 2 BOUNDARY

ROAD "C"

TOILET

TOILET

QUEUING
FOR ENTRY

ROAD "A"

STORMWATER
TREATMENT
DRY SWALE (TYP.)

130 SPACES BUS PARKING

WATERMAIN

WALLKILL RIVER

ROAD "E"

ARCHAEOLOGICAL
SITE 3 BOUNDARY

APPROX. LIMITS OF STREAM CORRIDOR OVERLAY
150' FROM RIVER MEAN HIGH WATER LEVEL

LIMITS OF 100 YR
FLOODPLAIN

WALLKILL RIVER

LIMITS OF 100 YR
FLOODPLAIN

WATER MAIN FROM
CITY OF MIDDLETOWN
(DESIGNED BY OTHERES)

PRE-TREATED WASTE WATER
DISCHARGE TO CITY OF MIDDLETOWN
(DESIGNED BY OTHERS)

APPROX. LIMITS OF STREAM CORRIDOR OVERLAY
150' FROM RIVER MEAN HIGH WATER LEVEL

EGRO LAKE ROAD

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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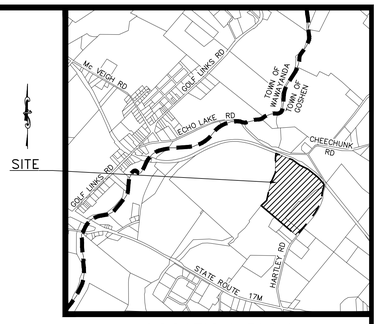
SCIENCE OF THE SOUL CONCEPT PLAN

AMY'S KITCHEN, INC.
&
SCIENCE OF THE SOUL
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
AUGUST 24, 2016
CAD File: 13007D-SOS SITEPLAN
Layout: SOS CONCEPT
Sheet No.: C1-04 OF 4
Drawing No.: A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 100'	SEE SHEET C1-02

EASEMENT GRANTED TO THE TOWN OF GOSHEN		
LINE	BEARING	DISTANCE
L1	N80°45'15"W	50.00'
L2	N9°14'45"E	100.00'
L3	S80°45'15"E	52.98'
L4	S17°46'16"W	20.12'
L5	S9°14'45"W	80.10'



LOCATION PLAN

1 INCH = 2000 FEET

NOTES:

1. SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
2. REFERENCES:

   MAP ENTITLED "LOT LINE CHANGE, LANDS OF AL TURI LANDFILL, INC., TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JANUARY 28, 2013, LAST REVISED FEBRUARY 22, 2103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON MAY 6, 2013, AS FILED MAP NO. 163-13.

   MAP ENTITLED "THREE LOT MINOR SUBDIVISION PLAT, LANDS OF JOSEPH R. CARMICHAEL, ETAL, LOT 17, BLOCK 1 SECTION 12, TOWN OF GOSHEN, OREANGE COUNTY, NEW YORK," DATED OCTOBER 3, 1975 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON DECEMBER 1, 1975, AS FILED MAP NO. 3626.

   MAP ENTITLED "SURVEY PREPARED FOR SASSFRAS MOUNTAIN LLC, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED MARCH 20, 2015, LAST REVISED APRIL 9, 2015, PREPARED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C.

   MAP ENTITLED "SITE PLAN, PROPOSED WOOD MULCH FACILITY RVH MULCH SUPPLY, LLC, TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK," DATED OCTOBER 24, 2012, LAST REVISED MARCH 6, 2013, PREPARED BY T.M. DEPUY, ENGINEERING AND LAND SURVEYING, P.C.

   MAP ENTITLED "RIGHT OF WAY AND TRACK MAP, ERIE RAILROAD COMPANY," OPERATED BY ERIE RAILROAD COMPANY, NEW YORK DIVISION,STATION 3221+80 TO STATION 3274+60, DATED JUNE 30, 1918, OFFICE OF VALUATION ENGINEER, NEW YORK, MAP NUMBER V-2-N.Y./49.

   TITLE REPORT NUMBER HN 53031A, HAVING AN EFFECTIVE DATE OF DECEMBER 6, 2014, PREPARED BY HILL-N-DALE ABSTRACTERS, INC.

   TITLE REPORT NUMBER HN 53031B, HAVING AN EFFECTIVE DATE OF DECEMBER 6, 2014, PREPARED BY HILL-N-DALE ABSTRACTERS, INC.

3. TAX LOT 12 – 1 – 19.2 SUBJECT TO A DECLARATION OF COVENANTS & RESTRICTIONS AND GRANT OF EASEMENT AS RECORDED IN LIBER 13782 OF DEEDS AT PAGE 1900.
4. TAX LOT 12 – 1 – 1.222 SUBJECT TO A RESERVATION OF EASEMENT AS RECORDED IN LIBER 13712 OF DEEDS AT PAGE 1138.
5. TAX LOT 12 – 1 – 1.222 SUBJECT TO A DECLARATION OF COVENANTS & RESTRICTIONS AND GRANT OF EASEMENT AS RECORDED IN LIBER 13712 OF DEEDS AT PAGE 1144.
6. TAX LOTS 12 – 1 – 19.2 & 12 – 1 – 1.222 SUBJECT TO RESTRICTED USES AS DESCRIBED THE MEADOW PROPERTY IN LIBER 6174 OF DEEDS AT PAGE 146.
7. TOPOGRAPHY SHOWN IS THE RESULT OF AN AERIAL MANUSCRIPT PROVIDED BY GEODETIC ASSOCIATES INTERNATIONAL, LLC. AND FIELD UPDATED BY LANC AND TULLY ENGINEERING AND SURVEYING IN THE LOCATION OF THE ARTIFICIAL CHANNEL. CONTOUR ELEVATIONS SHOWN ARE BASED ON NAVD 88 DATUM.
8. THE APPROXIMATE LOCATION OF FLOODPLAIN LIMITS SHOWN HEREON HAVE BEEN ADOPTED TO MATCH TOPOGRAPHY BASED UPON ELEVATIONS SHOWN ON FEMA FLOOD INSURANCE RATE MAPS PANELS 0267E, 0269E, & 0286E DATED EFFECTIVE AUGUST 3, 2009.
9. WETLANDS SHOWN AS FIELD DELINEATED BY AKRF, INC., ENVIRONMENTAL, PLANNING, AND ENGINEERING CONSULTANTS, AND FIELD LOCATED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C. ON JULY 6, 2015.

WETLAND AREAS:

WETLAND	AREA	JURISDICTION
WETLAND A	0.118± AC.	NON-JURISDICTIONAL
WETLAND B	1.893± AC.	USACE JURISDICTIONAL
WETLAND C	4.653± AC.	USACE JURISDICTIONAL
TOTAL:	6.664± AC.	

RECORD OWNER:

VER HAGE INDUSTRIES LLC
455 WEST MAIN STREET
WYCOFF, NJ 07481

L.13712 P. 1156
12 – 1 – 1.222
LOT A FILED MAP
NO. 163-13

L. 13782 P. 1911
12 – 1 – 19.2
LOT B FILED MAP
NO. 163-13

AREAS:

TAX LOT 12 - 1 - 19.2	17.145± AC.
TAX LOT 12 - 1 - 1.222	54.616± AC.
TOTAL:	71.761± AC.

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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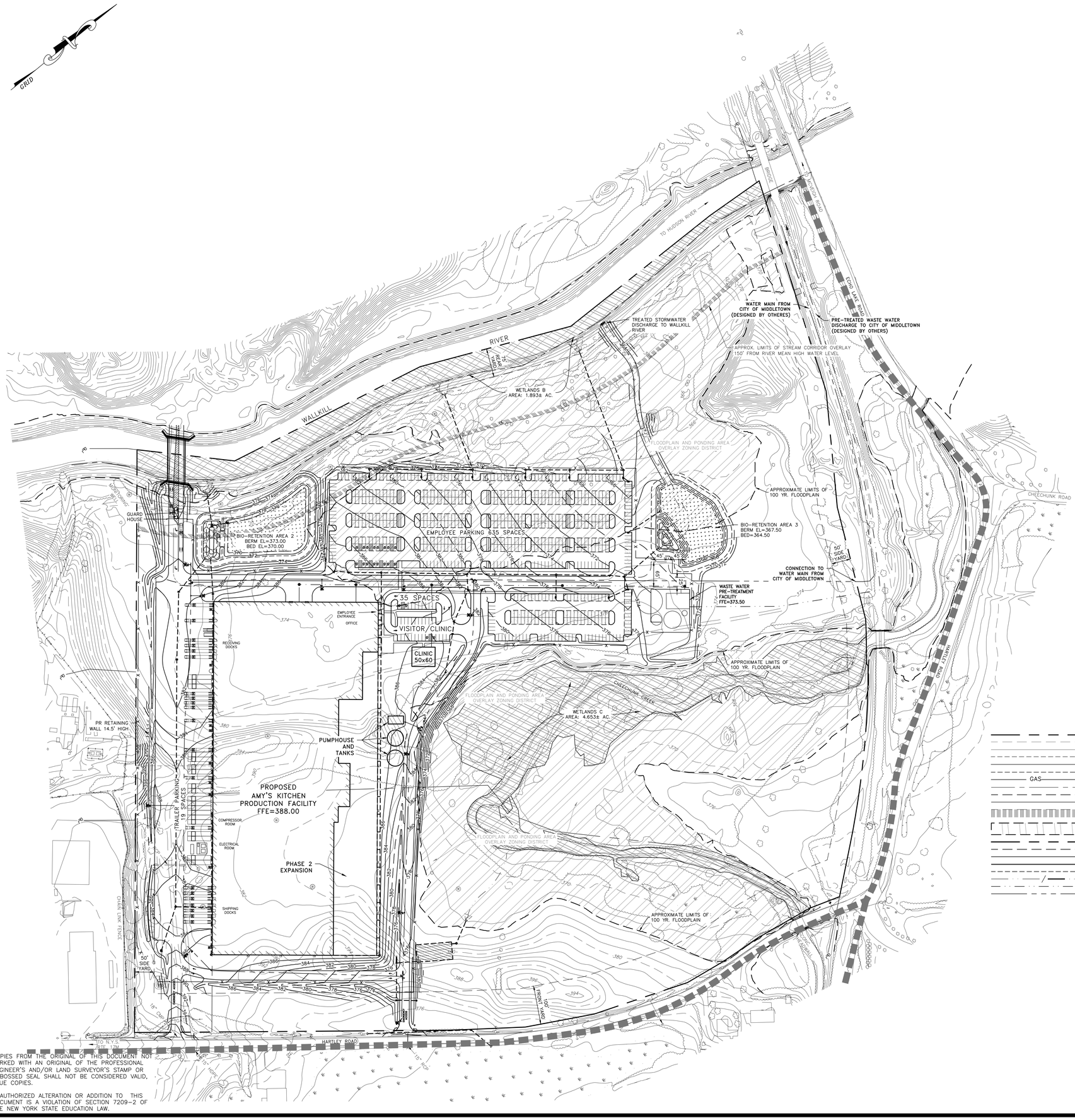
(845) 294-3700

EXISTING CONDITIONS MAP

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 AUGUST 24, 2016
CAD File:	140040-SVY.DWG
Layout:	EX CONDITION
Sheet No.:	C2-01 OF 17
Drawing No.:	C30 A – 15 – 0040 – 01
Drawn By:	JW
Checked By:	
Scale:	1" = 100'
Tax Map No.:	12 – 1 – 19.2 12 – 1 – 1.222



GENERAL NOTES:

1. ANY CLEARING OF TREES GREATER THAN 4" CALIPER SHALL OCCUR BETWEEN OCTOBER 31ST THROUGH MARCH 31ST.
2. ANY POTENTIAL FUTURE SITE DEVELOPMENT SHALL HAVE THE RIGHT TO CONNECT TO AVAILABLE SANITARY SEWER AND POTABLE WATER UTILITIES ON THE SITE. ACCESS AND USE AGREEMENTS SHALL BE DEVELOPED AT THE TIME AN ADDITIONAL DEVELOPMENT IS PROPOSED. FUTURE DEVELOPER SHALL BE RESPONSIBLE FOR ANY/ALL COSTS ASSOCIATED WITH ANY UTILITY EXTENSIONS REQUIRED FOR CONNECTION.

FIRE DEPARTMENT REQUIREMENTS:

1. FIRE DEPARTMENT KNOX BOX ENTRY SYSTEM TO BE PROVIDED AT MAIN ENTRY OF ALL BUILDINGS.
2. FIRE DEPARTMENT KNOX BOX ENTRY SHALL BE PROVIDED ON ANY AND ALL GATES AROUND THE FACILITY INCLUDING EMERGENCY ACCESS GATES
2. SPRINKLER SIAMESE CONNECTIONS SHALL BE PROVIDED WITH 5" STORZ CONNECTION FITTING.
3. AMY'S KITCHEN SHALL PROVIDE MATERIAL SAFETY DATA SHEETS TO THE FIRE DEPARTMENT FOR ALL CHEMICALS USED IN BOTH THE MANUFACTURING PLANT AND THE WASTE WATER PRE-TREATMENT PLANT.
4. FIRE PANELS SHALL BE REVIEWED AND COORDINATED WITH THE LOCAL FIRE DEPARTMENT PRIOR TO BEING FINALIZED AND INSTALLED.
5. A DETAILED ZONE MAP SHALL BE PROVIDED COORDINATED TO MATCH THE FIRE CONTROL PANEL AND BUILDING FLOOR PLAN.
6. AN EMERGENCY EVACUATION PLAN SHALL BE DEVELOPED FOR THE FACILITY AND PROVIDED TO THE FIRE DEPARTMENT.
7. PRIOR TO FACILITY OPENING FOR OPERATION A BUILDING AND SITE WALK-THRU SHALL BE HELD WITH THE LOCAL FIRE DEPARTMENT TO FAMILIARIZE THE DEPARTMENT WITH THE FACILITY LAYOUT, CONTENTS, AND EQUIPMENT.

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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Goshen, N.Y. 10924
(845) 294-3700

OVERALL GRADING PLAN

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: AMY ON VERHAGE SP
Layout: GRAD 100
Sheet No.: C2-02 OF 17
Drawing No.: A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 100'	SEE SHEET C2-01

MATCHLINE SHEET 2
MATCHLINE SHEET 1

PR RETAINING WALL 14.5' HIGH

PR-CB-3
GR=386.38
36" INV=375.88

PR-DMH-4
RIM=387.97
INV=383.97

PR-DMH-3
RIM=387.97
INV=383.97

PR-DMH-2
RIM=383.95
INV=380.35

91' - 24" HDPE @ 2.04%

PR-CB-2
GR=382.06
24" INV=378.46
36" INV=377.46

117' - 24" HDPE @ 1.09%

PR-CB-1
GR=383.95
18" INV=380.35

50' SIDE YARD

PR-DMH-1
RIM=387.87
INV=383.87

117' - 36" HDPE @ 0.5%

345' - 18" HDPE @ 1.32%

PARKING
19 SPACES

EMERGENCY GENERATOR WITH DUAL WALL FUEL TANK BASE SIZE T.B.D. BASED ON DEMAND

COMPRESSOR ROOM

ELECTRICAL ROOM

SHIPPING DOCKS

PROPOSED
AMY'S KITCHEN
PRODUCTION FACILITY
FFE=388.00

PHASE 2
EXPANSION

PUMPHOUSE
AND TANKS

PR-DMH-7
RIM=386.16
INV=382.41

52' - 15" HDPE @ 1.0%

PR-CB-29
GR=373.85
15" INV=368.50

PR-CB-28
GR=373.04
15" INV=369.44

50' - 15" HDPE @ 1.0%

12X8 TEE STUB & CAP FOR POTENTIAL FUTURE ADDITIONAL SITE DEVELOPMENT

12X6 REDUCER

PROPOSED ACCESS GATE WITH KNOX-BOX LOCK

PROPOSED ACCESS GATE WITH KNOX-BOX LOCK

PROPOSED 8' TALL CHAIN LINK FENCE

DRY SWALE 2
BOTTOM WIDTH=54"
DEPTH=18"

EMERGENCY ACCESS

EMERGENCY ACCESS

DRY SWALE 1
BOTTOM WIDTH=24"
DEPTH=18"

OUTLET SW
INV OUT=

FLOODPLAIN AND PONDING AREA OVERLAY ZONING DISTRICT

OUTLET SWALE
BOTTOM WIDTH=2'
DEPTH=1'
SLOPE=0.5%

PR-FES-7
6" INV OUT=367.42

92' - 6" HDPE @ 0.5%

PR-DMH-6
RIM=375.00
24" INV IN=367.73
6" INV OUT=367.73

UNDERGROUND STORMWATER SYSTEM
CULTEC VBHD
8 ROWS X 13 CHAMBERS
STONE INV=367.48
CHAMBER INV=367.98
TOP OF STONE=371.73

PR-CB-27
GR=372.74
15" INV=369.94

PR-CB-30
GR=375.30
INV=373.67

90' - 15" HDPE @ 0.5%

PR-CB-31
GR=375.80
INV=373.21

PR-FES-8
INV=374.52

172' - 15" HDPE @ 0.5%

PR-FES-9
INV=372.90

HARTLEY ROAD

TO N.Y.S. RTE. 17M

0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00

GRID

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- GAS — EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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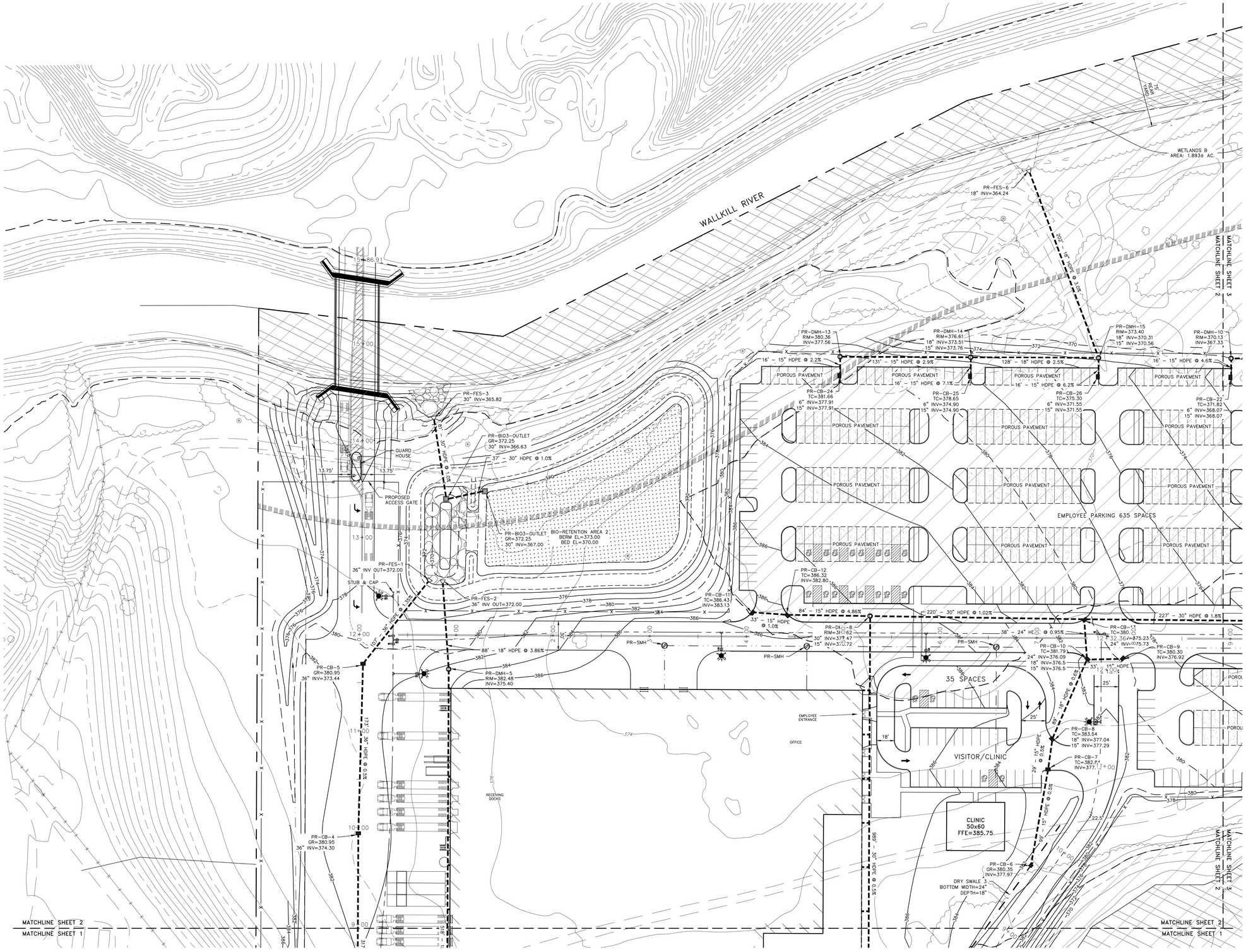
GRADING AND UTILITY PLAN 1 OF 3

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: AMY ON VERHAGE SP
Layout: GU40-1
Sheet No.: C2-03 OF 17
Drawing No.: A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 40'	SEE SHEET C2-01



LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
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- EXISTING DRAINAGE
- GAS — EXISTING GAS
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GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
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GRADING AND UTILITY PLAN 2 OF 3

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 AUGUST 24, 2016
CAD File:	AMY_ON_VERHAGE_SP
Layout:	GU40-2
Sheet No.:	C2-04 OF 17
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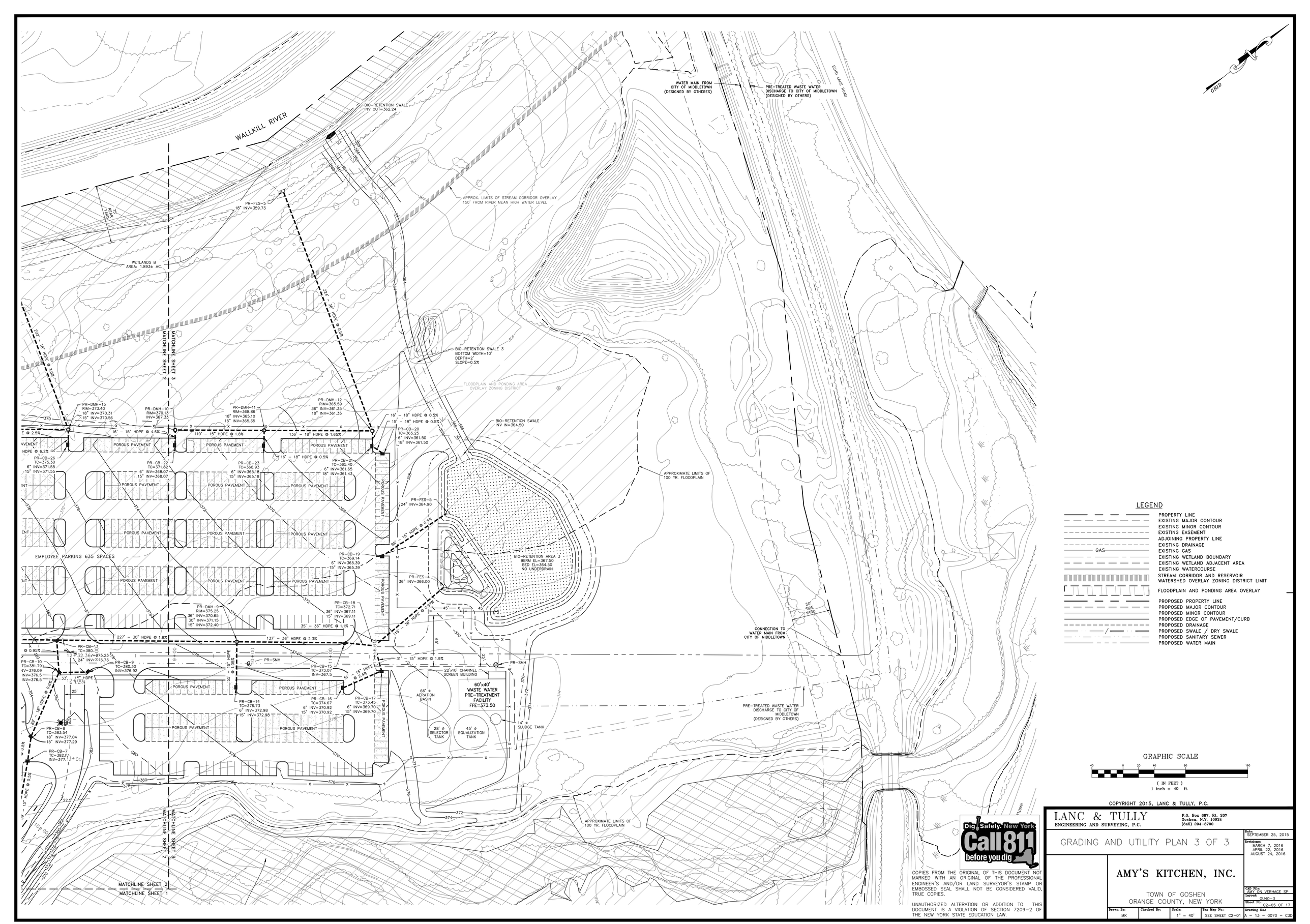

LEGEND

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GRAPHIC SCALE

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GRADING AND UTILITY PLAN 3 OF 3

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: AMY ON VERHAGE SP
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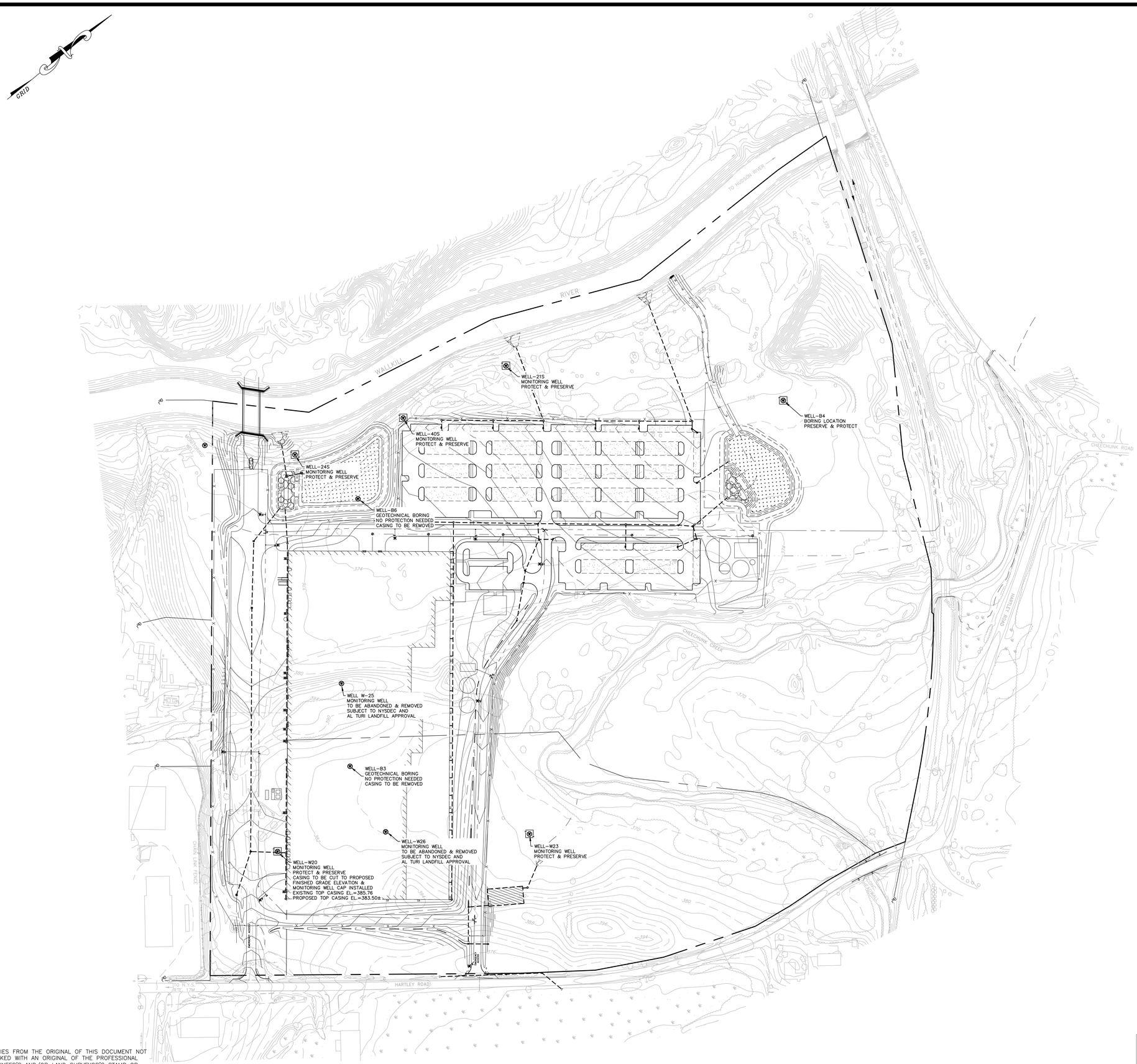

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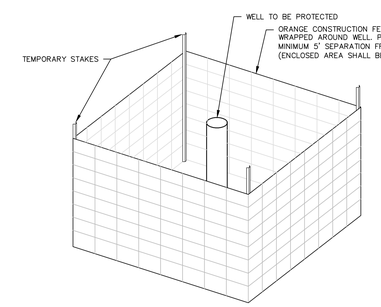

NOTE:
1. TEMPORARY WELL PROTECTION SHALL BE MAINTAINED THROUGHOUT THE DURATION OF PROJECT CONSTRUCTION.
2. CONSTRUCTION FENCING SHALL BE PROVIDED AT A MINIMUM FOR WELL PROTECTION. THE CONTRACTOR MAY ELECT TO PROVIDE ADDITIONAL PROTECTION MEASURES AS NEEDED SUCH AS LARGE PRECAST CONCRETE BLOCKS, TEMPORARY BOLLARDS, OR OTHER METHODS AS DEEMED APPROPRIATE.

TEMPORARY WELL PROTECTION DETAIL
NOT TO SCALE

GRAPHIC SCALE

100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

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MONITORING WELL PROTECTION PLAN

Date: SEPTEMBER 25, 2015
Revision: MARCH 7, 2016
APRIL 22, 2016
AUGUST 24, 2016

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

CAD File: AMY_MNTR_WELL PROT
Layout: WELL PROTECT
Sheet No.: C2-06 OF 17
Drawing No.: A - 13 - 0070 - C30
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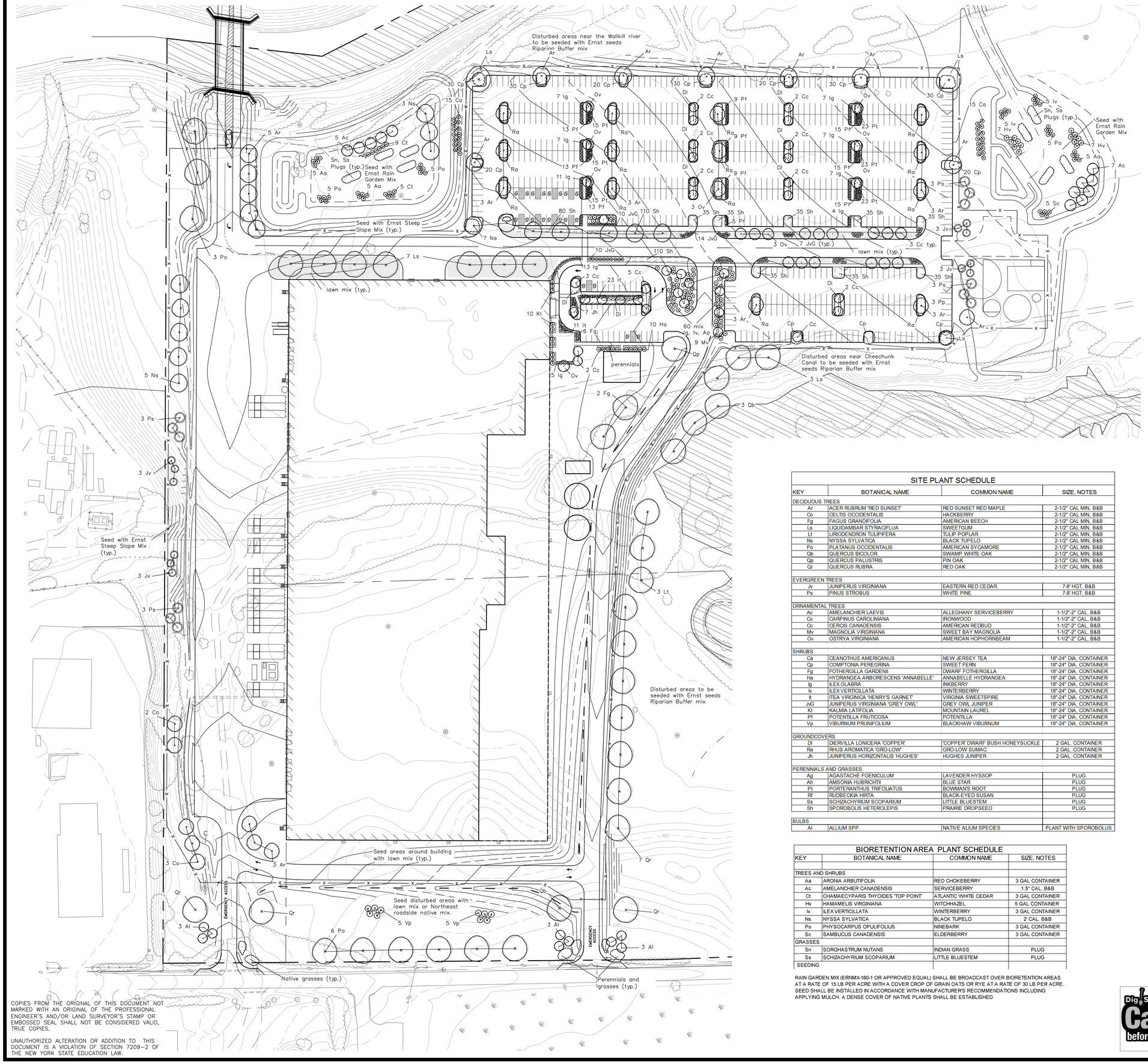

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SITE PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE, NOTES
DECIDUOUS TREES			
Ar	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	2-1/2" CAL MIN, B&B
Co	CELTIS OCCIDENTALIS	HACKBERRY	2-1/2" CAL MIN, B&B
Fg	FAGUS GRANDIFOLIA	AMERICAN BEECH	2-1/2" CAL MIN, B&B
Ls	LIQUIDAMBAR STYRACIFLUA	SWEETGUM	2-1/2" CAL MIN, B&B
Lt	LIRIODENDRON TULIPIFERA	TULIP POPLAR	2-1/2" CAL MIN, B&B
Ns	NYSSA SYLVATICA	BLACK TUPELO	2-1/2" CAL MIN, B&B
Po	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	2-1/2" CAL MIN, B&B
Qb	QUERCUS BICOLOR	SWAMP WHITE OAK	2-1/2" CAL MIN, B&B
Qp	QUERCUS PALUSTRIS	PIN OAK	2-1/2" CAL MIN, B&B
Qr	QUERCUS RUBRA	RED OAK	2-1/2" CAL MIN, B&B
EVERGREEN TREES			
Jv	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	7-8' HGT, B&B
Ps	PINUS STROBUS	WHITE PINE	7-8' HGT, B&B
ORNAMENTAL TREES			
Ac	AMELANCHIER LAEVIS	ALLEGHANY SERVICEBERRY	1-1/2"-2" CAL, B&B
Cc	CARPINUS CAROLINIANA	IRONWOOD	1-1/2"-2" CAL, B&B
Cc	CERCIS CANADENSIS	AMERICAN REDBUD	1-1/2"-2" CAL, B&B
Mv	MAGNOLIA VIRGINIANA	SWEET BAY MAGNOLIA	1-1/2"-2" CAL, B&B
Ov	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	1-1/2"-2" CAL, B&B
SHRUBS			
Ca	CEANOTHUS AMERICANUS	NEW JERSEY TEA	18"-24" DIA, CONTAINER
Cp	COMPTONIA PEREGRINA	SWEET FERN	18"-24" DIA, CONTAINER
Fg	FOTHERGILLA GARDENII	DWARF FOTHERGILLA	18"-24" DIA, CONTAINER
Ha	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	18"-24" DIA, CONTAINER
Ig	ILEX GLABRA	INKBERRY	18"-24" DIA, CONTAINER
Iv	ILEX VERTICILLATA	WINTERBERRY	18"-24" DIA, CONTAINER
It	ITEA VIRGINICA 'HENRY'S GARNET'	VIRGINIA SWEETSPIRE	18"-24" DIA, CONTAINER
JvG	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL JUNIPER	18"-24" DIA, CONTAINER
Kl	KALMIA LATIFOLIA	MOUNTAIN LAUREL	18"-24" DIA, CONTAINER
Pf	POTENTILLA FRUTICOSA	POTENTILLA	18"-24" DIA, CONTAINER
Vp	VIBURNUM PRUNIFOLIUM	BLACKHAW VIBURNUM	18"-24" DIA, CONTAINER
GROUNDCOVERS			
Dl	DIERVILLA LONICERA 'COPPER'	'COPPER' DWARF BUSH HONEYSUCKLE	2 GAL. CONTAINER
Ra	RHUS AROMATICA 'GRO-LOW'	GRO-LOW SUMAC	2 GAL. CONTAINER
Jh	JUNIPERUS HORIZONTALIS 'HUGHES'	HUGHES JUNIPER	2 GAL. CONTAINER
PERENNIALS AND GRASSES			
Ag	AGASTACHE FOENICULUM	LAVENDER HYSSOP	PLUG
Ah	AMSONIA HUBRICHTII	BLUE STAR	PLUG
Pt	PORTERANTHUS TRIFOLIATUS	BOWMANS ROOT	PLUG
Rf	RUDBECKIA HIRTA	BLACK-EYED SUSAN	PLUG
Ss	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	PLUG
Sh	SPOROBOLIS HETEROLEPIS	PRAIRIE DROPSEED	PLUG
BULBS			
Al	ALLIUM SPP.	NATIVE ALIUM SPECIES	PLANT WITH SPOROBOLUS

BIORETENTION AREA PLANT SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE, NOTES
TREES AND SHRUBS			
Aa	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	3 GAL CONTAINER
Ac	AMELANCHIER CANADENSIS	SERVICEBERRY	1.5" CAL, B&B
Ct	CHAMAECYPARIS THYOIDES 'TOP POINT'	ATLANTIC WHITE CEDAR	3 GAL CONTAINER
Hv	HAMAMELIS VIRGINIANA	WITCHHAZEL	5 GAL CONTAINER
Iv	ILEX VERTICILLATA	WINTERBERRY	3 GAL CONTAINER
Ns	NYSSA SYLVATICA	BLACK TUPELO	2" CAL. B&B
Po	PHYSOCARPUS OPULIFOLIUS	NINEBARK	3 GAL CONTAINER
Sc	SAMBUCUS CANADENSIS	ELDERBERRY	3 GAL CONTAINER
GRASSES			
Sn	SORGHASTRUM NUTANS	INDIAN GRASS	PLUG
Ss	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	PLUG
SEEDING			

RAIN GARDEN MIX (ERNMX-180-1 OR APPROVED EQUAL) SHALL BE BROADCAST OVER BIORETENTION AREAS AT A RATE OF 15 LB PER ACRE WITH A COVER CROP OF GRAIN OATS OR RYE AT A RATE OF 30 LB PER ACRE. SEED SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS INCLUDING APPLYING MULCH. A DENSE COVER OF NATIVE PLANTS SHALL BE ESTABLISHED.

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
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- EXISTING EASEMENT
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- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

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CONCEPTUAL LANDSCAPING PLAN

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: AMY LANDSCAPE
Layout: LSCAPE 60
Sheet No.: C2-07 OF 17
Drawn By: MK
Checked By:
Scale: 1" = 60'
Tax Map No.: SEE SHEET C2-01
Drawing No.: A - 13 - 0070 - C30

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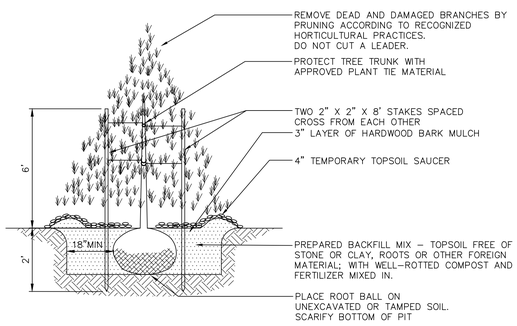
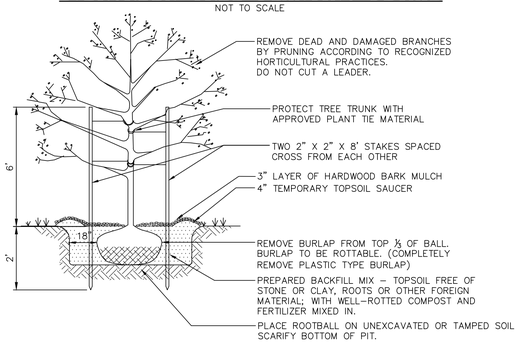


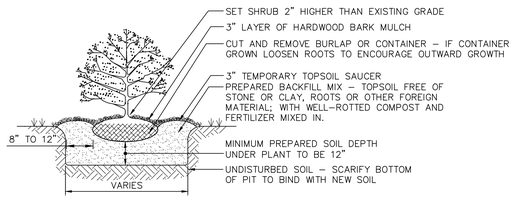
EVERGREEN TREE PLANTING DETAIL

NOT TO SCALE



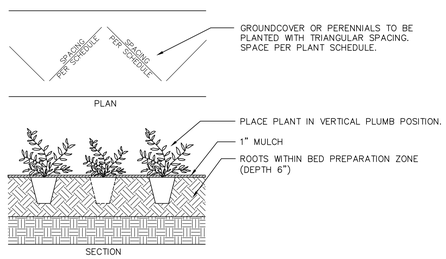
DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE



GROUNDCOVER/PERENNIAL/GRASS PLANTING DETAIL

NOT TO SCALE

GENERAL LANDSCAPING NOTES:

1. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE TO LOCATE AND VERIFY LOCATION OF ALL UTILITIES ON SITE PRIOR TO CONSTRUCTION OR INSTALLATION.
2. ALL PLANT MATERIAL SHALL BE NURSERY GROWN AND SHALL CONFORM TO THE STANDARDS OF AMERICAN STANDARD FOR NURSERY STOCK, THE AMERICAN ASSOCIATION OF NURSERYMEN, LATEST EDITION.
3. ALL PLANTS AND WORKMANSHIP SHALL BE UNCONDITIONALLY GUARANTEED FOR 2 CALENDAR YEARS. CONTRACTOR SHALL REMOVE STAKING AND GUYING AT END OF GUARANTEE PERIOD.
4. ALL LANDSCAPE INSTALLATIONS SHALL BE MAINTAINED ON A REGULAR BASIS, AND SHALL NOT BE ALLOWED TO TAKE ON AN UNSIGHTLY APPEARANCE (EXCEPT FOR NATURAL AREAS WHICH SHALL BE ALLOWED TO GROW NATURALLY WITH A MINIMUM OF MAINTENANCE).
5. CONTRACTOR SHALL FIELD STAKE THE LOCATIONS OF ALL PLANT MATERIAL PRIOR TO INITIATING INSTALLATION FOR THE REVIEW AND APPROVAL OF THE OWNER'S REPRESENTATIVE.
6. ALL LANDSCAPING PLANT MATERIALS – TREES, SHRUBS, GROUNDCOVERS AND PERENNIALS SHALL BE PLANTED AS SHOWN IN DETAILS. BACKFILL MIX FOR PLANTING BEDS SHALL BE A MIX OF TOPSOIL, WELL-ROTTED COMPOST AND FERTILIZER. PROVIDE PLANTING PITS AS INDICATED ON PLANTING DETAILS. IF WET SOIL CONDITIONS EXIST THEN PLANTING PITS SHALL BE EXCAVATED AN ADDITIONAL 12" AND FILLED WITH CRUSHED STONE.
7. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THAT WHICH EXISTED IN THE NURSERY.
8. ALL PLANTS SHALL BE ORIENTED AT THEIR PROPOSED LOCATION TO PRESENT THEIR BEST SIDE.
9. NEWLY INSTALLED PLANT MATERIAL SHALL BE WATERED AT THE TIME OF INSTALLATION. REGULAR WATERING SHALL BE PROVIDED TO ENSURE THE ESTABLISHMENT, GROWTH AND SURVIVAL ALL PLANTS.
10. ALL LAWN/GRASSED AREAS ARE TO BE TOPSOILED TO A DEPTH OF 4" AND SEEDED AS PER THE PERMANENT SEEDING RATE. A MINIMUM OF 12" OF TOPSOIL IN ALL PLANTING AREAS. IF POOR SOILS OR ROCK ARE ENCOUNTERED IN AREAS OF CUT, PROPOSED TREES SHALL BE PLANTED IN A MINIMUM OF 18" TOPSOIL COMPOST MIX.
11. MULCH ALL PLANTING BEDS AND TREES WITH A 3 INCH MINIMUM DEPTH OF HARDWOOD BARK MULCH. NO MULCH SHALL BE PLACED AGAINST THE ROOT COLLAR OF THE PLANTINGS. ALL TREES PLANTED IN LAWN AREAS SHALL RECEIVE A 3' DIAMETER MULCH RING OR TO THE LIMIT OF THE ADJACENT LAWN AREA.
12. SHRUB AND PERENNIAL PLANTINGS ARE MASS PLANTING BEDS AND SHALL BE MULCHED CONTINUOUSLY.

LANDSCAPING SEEDING SCHEDULE

TEMPORARY SEEDING DISTURBED AREAS

SEASON	TYPE OF COVER & SPECIES OF MIXTURES	SEEDING RATES IN LBS. 1,000 SF	LBS. PER ACRE
SPRING/SUMMER/EARLY FALL	ANNUAL RYEGRASS	0.7	30
LATE FALL/EARLY WINTER	AROOSTOOK WINTER RYE	2.5	100

MULCH WITH HAY OR STRAW AT 2 TONS/ACRE OR 90 LBS. PER 1,000 SF

PERMANENT LAWN SEEDING RATES

PERMANENT LAWN SEEDING SHALL CONSIST OF 30% CREEPING RED FESCUE, 50% KENTUCKY BLUE GRASS, 10% ANNUAL RYEGRASS, AND 10% PERENNIAL RYEGRASS – ERNST 5311 CONSERVATION MIX (ERNST-114) OR APPROVED EQUAL – AT A RATE OF 200 POUNDS PER ACRE OR 5 POUNDS PER 1,000 SQ. FT.

NOTES:
1. TOPSOIL SURFACE SHALL BE FINELY GRADED AND LOOSENED BY MECHANICAL RAKES TO ENSURE SEED ACCEPTANCE AND SEED TO SOIL CONTACT.
2. SEEDING AREA TO BE PREPARED WITH THE APPLICATION OF LIMESTONE AT THE RATE OF 800 LBS. PER 1,000 SY AND FERTILIZED WITH 10-20-20 AT THE RATE OF 140 LBS. PER 1,000 SY AFTER SEEDING, HAY MULCH IS TO BE APPLIED AT A RATE OF 2½ TO 3 TONS PER ACRE.

SEEDING FOR SLOPES, RIPARIAN AREA AND PERIMETER

A. NATIVE STEEP SLOPE MIX WITH GRAIN OATS OR GRAIN RYE (ERNMX-181-1 OR ERNMX-181-2 OR APPROVED EQUAL) SHALL BE BROADCAST OVER ALL STEEP SLOPES ON THE PLANS AT A RATE OF 30 LBS PER ACRE OR 1 LB PER 1,000 SQ FT. THE FORMULA USED (GRAIN OATS OR RYE) SHALL MATCH THE TIME OF PLANTING. REFER TO ERNST INSTALLATION GUIDELINES.

B. RIPARIAN BUFFER MIX (ERNMX-178 OR APPROVED EQUAL) SHALL BE APPLIED AT A RATE OF 20 LB PER ACRE WITH A COVER CROP AT 30 LB PER ACRE. THE COVER CROP SHALL BE GRAIN OATS OR GRAIN RYE. REFER TO ERNST SEED INSTALLATION GUIDELINES FOR DETAILS.

C. NORTHEASTERN U.S. ROADSIDE NATIVE MIX (ERNMX-105 OR APPROVED EQUAL) SHALL BE BROADCAST OVER DISTURBED AREAS ALONG ROAD SIDES AT A RATE OF 20 POUNDS PER ACRE.

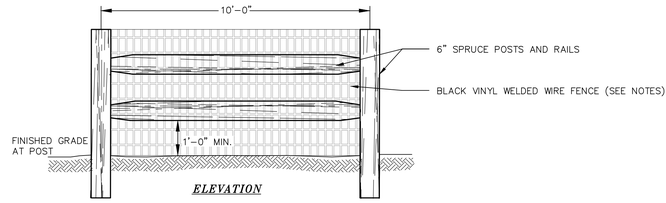
PLANTING SCHEDULE

	SPRING PLANTING	FALL PLANTING
TREES AND SHRUBS;		
EVERGREEN	APRIL 1 – JUNE 30	SEPT. 1 – OCT. 15
DECIDUOUS	MARCH 1 – JUNE 30	OCT. 1 – DEC. 1
SEEDING;	APRIL 1 – MAY 31	SEPT. 1 – OCT. 15

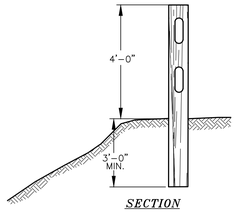
ESTABLISHMENT GUIDELINES

A. ALL SEED MIXES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS INCLUDING COVER CROPS APPROPRIATE FOR THE SEASON.

B. MAINTENANCE IN THE FIRST AND SECOND GROWING SEASON IS CRITICAL TO ESTABLISHMENT OF THE SEED MIX. MOWING AND WEEDING RECOMMENDATIONS SHALL BE STRICTLY FOLLOWED. EQUIPMENT SHALL BE IN ACCORDANCE WITH THE SEED MANUFACTURER'S RECOMMENDATIONS.



ELEVATION



SECTION

NOTES:
1. TWO RAIL RUSTIC SPLIT POST AND RAIL FENCING TO BE SPRUCE.
2. 2"X4" X 14 GAUGE PVC BLACK VINYL COATED WELDED WIRE FENCE TO BE ATTACHED TO INTERIOR OF SPLIT RAIL FENCING.
3. FENCE TO BE INSTALLED AROUND STORMWATER FACILITIES AS INDICATED ON PLAN.

RUSTIC SPLIT POST AND RAIL FENCE DETAIL

NOT TO SCALE

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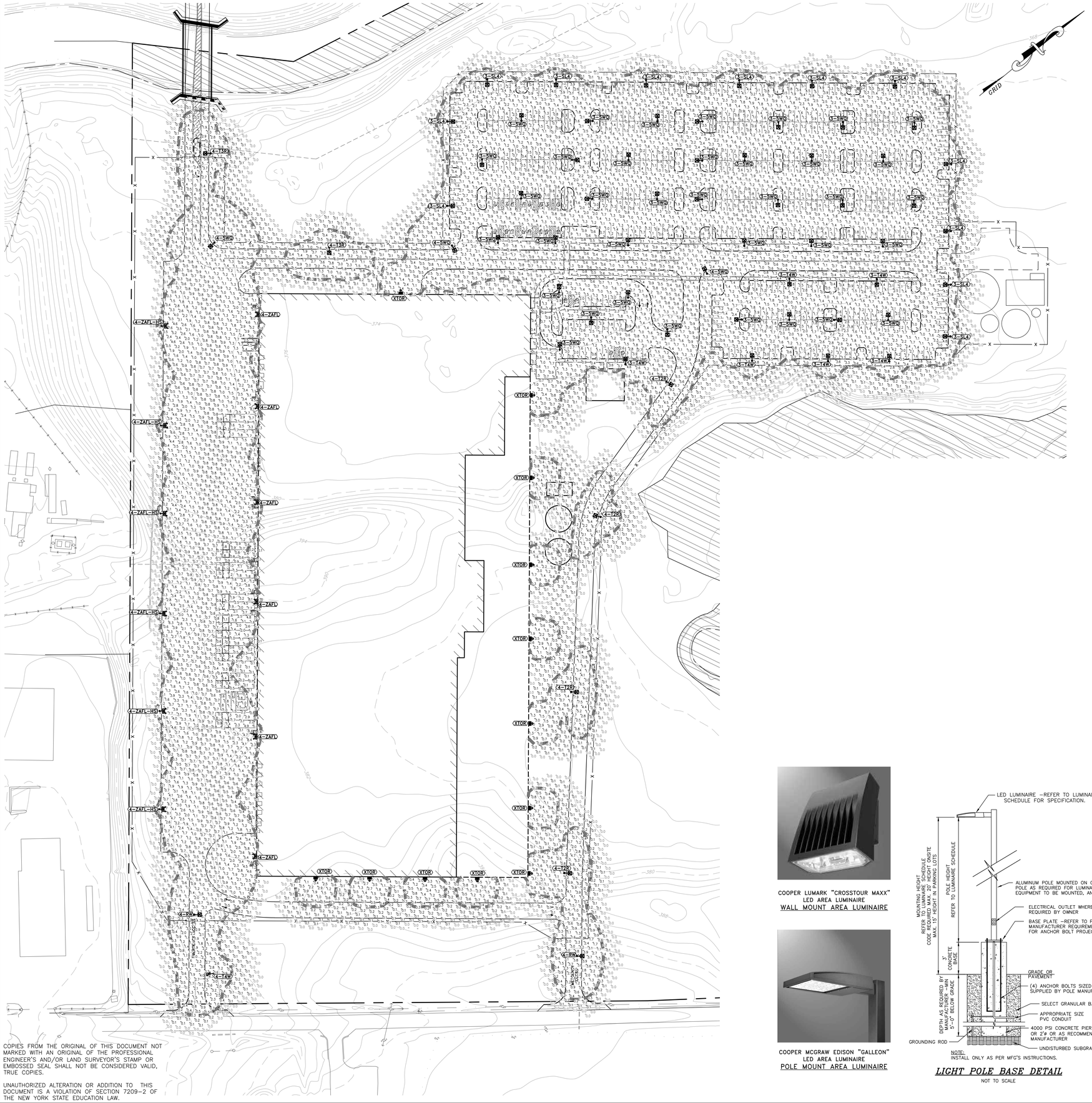
(845) 294-3700

LANDSCAPING DETAILS

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: L10070-LANDSCAPING
Layout: LANDSCAPE DETAILS
Sheet No.: C2-08 OF 17
Drawn By: LMC
Checked By:
Scale: N/A
Tax Map No.: SEE SHEET C2-01
Drawing No.: A - 13 - 0070 - C3D



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LUMINAIRE SCHEDULE

SYMBOL	QTY	POLE HEIGHT / MOUNTING HEIGHT	DESCRIPTION	CATALOG NUMBER	LAMP	LUMENS	LDF
3-T4W	6	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES TYPE T4W DISTRIBUTION WITH DIMMING*	GLEON-AE-03-LED-XXX-T4W-XX-700 -MS/DIM-L20-MT	LED ARRAY	11,370±	.92
3-SWQ	36	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES-700mA TYPE SWQ DISTRIBUTION WITH DIMMING*	GLEON-AE-03-LED-XXX-SWQ-XX-700 -MS/DIM-L20-MT	LED ARRAY	12,061±	.92
3-SL4	12	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES-700mA TYPE SL4 DISTRIBUTION WITH DIMMING*	GLEON-AE-03-LED-XXX-SL4-XX-700 -MS/DIM-L20-MT	LED ARRAY	10,880±	.92
4-T2R	4	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T2R DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-T2R-XX-700 -MS/DIM-L20-MT	LED ARRAY	15,762±	.92
4-T3R	2	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T3R DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-T3R-XX-700 -MS/DIM-L20-MT	LED ARRAY	15,469±	.92
4-T4W	1	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE T4W DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-T4W-XX-700 -MS/DIM-L20-MT	LED ARRAY	15,221±	.92
4-SWQ	3	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE SWQ DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-SWQ-XX-700 -MS/DIM-L20-MT	LED ARRAY	15,936±	.92
4-RW	2	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-700mA TYPE RW DISTRIBUTION WITH DIMMING*	GLEON-AE-04-LED-XXX-RW-XX-700 -MS/DIM-L20-MT	LED ARRAY	15,465±	.92
4-ZAFL	6	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON FLOOD" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES TYPE AFL DISTRIBUTION-1A HEAD TILTED 30° FROM HORIZONTAL WITH DIMMING*	GLEON-AE-04-LED-XXX-AFL-XX-ADJA-WM -MS/DIM-L20-MT	LED ARRAY	21,236±	.92
4-ZAFL-HS	6	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON FLOOD" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES-1A TYPE AFL DISTRIBUTION W/ HOUSE SIDE SHIELD HEAD TILTED 30° FROM HORIZONTAL WITH DIMMING*	GLEON-AE-04-LED-XXX-AFL-XX-ADJA-WM -MS/DIM-L20-MT-HSS	LED ARRAY	21,236±	.92
XTOR	12	MOUNTING HEIGHT=20' ABOVE FINISH FLOOR	COOPER LUMARK "CROSSTOUR MAXX" L.E.D. FULL CUTOFF TYPE XTOR5A NEUTRAL WARM WHITE 3500K	XTOR5A-N-XX	LED ARRAY	4,136±	.92

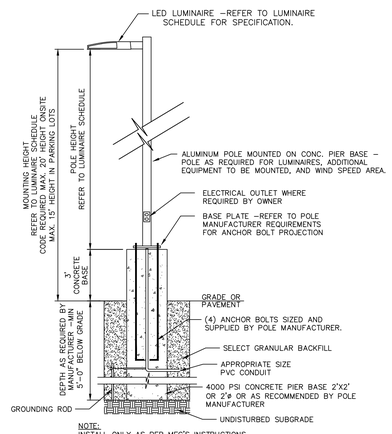
* ADJUSTMENTS TO DIMMING SETTINGS REQUIRES USE OF WIRELESS CONFIGURATION TOOL ACCESSORY # FSIR-100 FOR OCCUPANCY SENSOR PROVIDED BY COOPER LIGHTING. CONTRACTOR SHALL SUPPLY ONE FSIR-100 WIRELESS CONFIGURATION TOOL TO THE OWNER PRIOR TO COMPLETION OF PROJECT.

NOTES:

1. REFER TO LUMINAIRE SCHEDULE FOR CATALOG NUMBER.
2. LIGHT POLES SHALL BE:
   FOR 19' MOUNTING HEIGHT: HAPCO SSA16D4-4-
   FOR 15' MOUNTING HEIGHT: HAPCO SSA12D4-4-
   OR APPROVED EQUIVALENT
3. TOWN OF GOSHEN CODE REQUIRES MAXIMUM LIGHT POLE HEIGHT OF 20' ON-SITE AND 15' WITHIN PARKING AREAS.
4. CONTRACTOR SHALL CONFIRM OPERATING VOLTAGE FOR SITE LIGHTING PRIOR TO ORDERING ANY EQUIPMENT AND ADJUST LUMINAIRE SPECIFICATION AS NEEDED.
5. THIS LIGHTING PLAN PROPOSES INSTALLATION OF DIMMING CONTROLS WITH MOTION SENSORS ON EACH LIGHT POLE TO ALLOW DIMMING OF LIGHTS DURING PERIODS OF INACTIVITY. LIGHTING SHALL BE CONTROLLED AS FOLLOWS:
   5.1. ALL LUMINAIRES SHALL BE MASTER CONTROLLED BY AN ASTRONOMICAL TIME CLOCK FOR ON/OFF TIMES. CONTRACTOR SHALL PROVIDE CONTROL EQUIPMENT SUBMITTAL FOR REVIEW BY THE OWNER PRIOR TO ORDERING EQUIPMENT. COORDINATE WITH OWNER AND/OR ARCHITECTURAL TEAM FOR INSTALLATION LOCATION OF TIME CLOCK & CONTROL PANEL.
   5.2. ROADWAY AND PARKING LUMINAIRES WILL ILLUMINATE AT DUSK TO 50% CAPACITY WITH MOTION SENSING TURNING SPECIFIC LOCAL LUMINAIRES TO 100% ILLUMINATION POWER. BUILDING LUMINAIRES MOUNTED OVER EMERGENCY EXIT DOORS WILL OPERATE AT 100% POWER AT ALL TIMES.
   5.3. AT THE OWNERS DISCRETION CERTAIN PORTIONS OF THE SITE MAY BE TURNED OFF DURING OVERNIGHT HOURS IN CONSIDERATION OF SITE SECURITY NEEDS AND ENERGY SAVINGS GOALS.
6. NO ADDITIONAL EQUIPMENT OR ATTACHMENTS SHALL BE PERMITTED ON LIGHT POLES WITHOUT APPROVAL OF DESIGN ENGINEER. EQUIPMENT INCLUDES BUT IS NOT LIMITED TO BANNERS, FLAGS, ADDITIONAL LUMINAIRES OTHER THAN SPECIFIED ON THIS PLAN, AND SECURITY CAMERAS.
7. FINISH OF ALL LUMINAIRES AND POLES SHALL BE SELECTED BY OWNER.
8. THIS LIGHTING PLAN DOES NOT TAKE INTO ACCOUNT ANY ARCHITECTURAL BUILDING MOUNTED LUMINAIRES OTHER THAN THOSE SHOWN SPECIFICALLY ON THIS PLAN.
9. CALCULATION VALUES SHOWN ON THIS PLAN ARE TAKEN ON A HORIZONTAL PLAIN AT GROUND LEVEL USING A 92% LAMP LUMEN DEPRECIATION FACTOR. TOPOGRAPHICAL INFORMATION HAS NOT BEEN ACCOUNTED FOR IN THESE CALCULATIONS.
10. LIGHTING CALCULATIONS SHOWN ARE BASED UPON DATA FILES PROVIDED BY THE LUMINAIRE MANUFACTURER. ACTUAL PERFORMANCE OF LUMINARIES AFTER INSTALLATION MAY VARY DUE TO UNCONTROLLABLE FIELD CONDITIONS.

COOPER LUMARK "CROSSTOUR MAXX" LED AREA LUMINAIRE
WALL MOUNT AREA LUMINAIRE

COOPER MCGRAW EDISON "GALLEON" LED AREA LUMINAIRE
POLE MOUNT AREA LUMINAIRE



NOTE: INSTALL ONLY AS PER MFG'S INSTRUCTIONS.

LIGHT POLE BASE DETAIL
NOT TO SCALE

Dig Safely. New York Call 811 before you dig

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- GAS — EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

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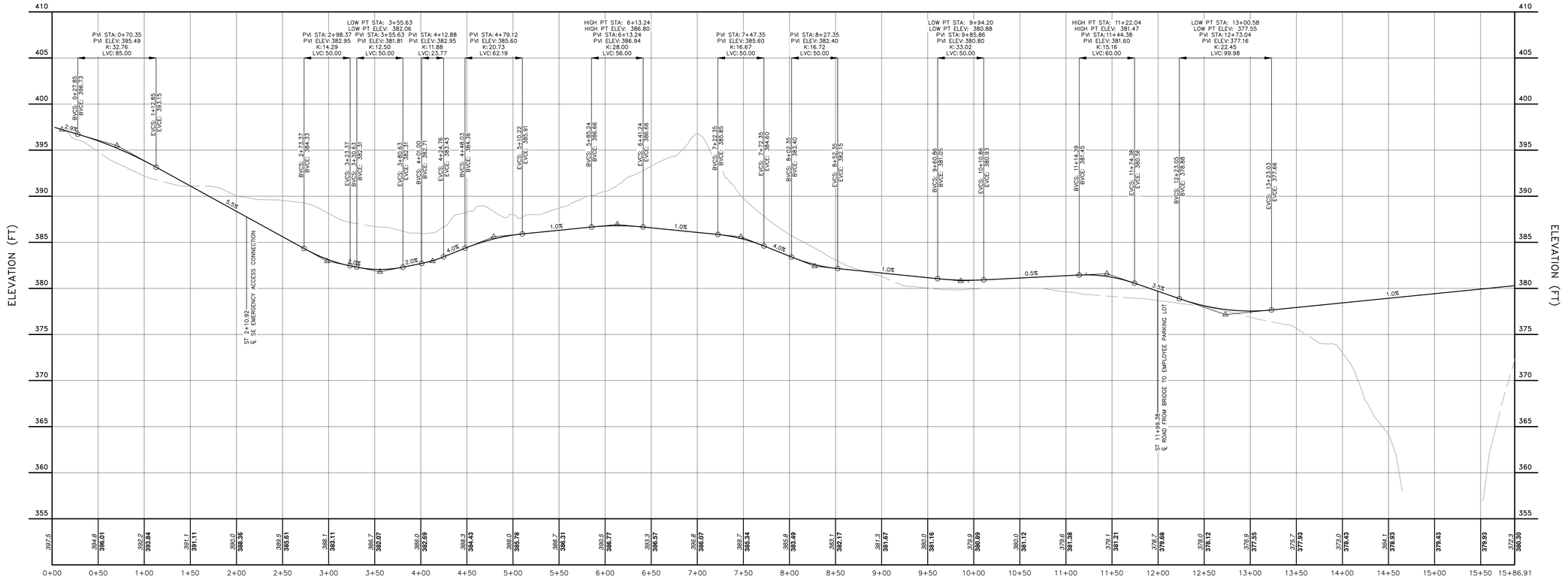
LIGHTING PLAN FOR

AMY'S KITCHEN, INC.

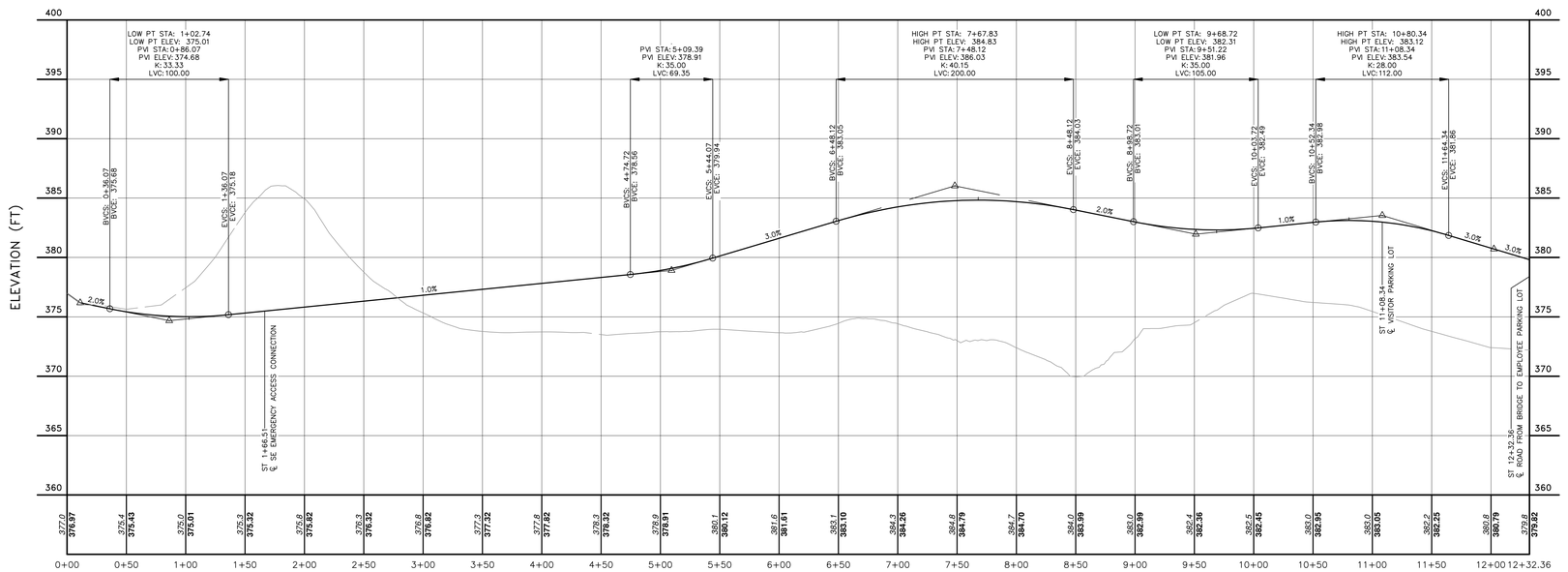
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: AMY LIGHTING
Layout: LIGHTING
Sheet No.: C2-09 OF 17
Drawing No.: A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 60'	SEE SHEET C2-01



PROFILE: SW TRUCK DOCKS DRIVE
ST 0+00 THRU ST 15+86.91
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'



PROFILE: NE EMERGENCY ENTRANCE DRIVE
ST 0+00 THRU ST 12+32.36
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'

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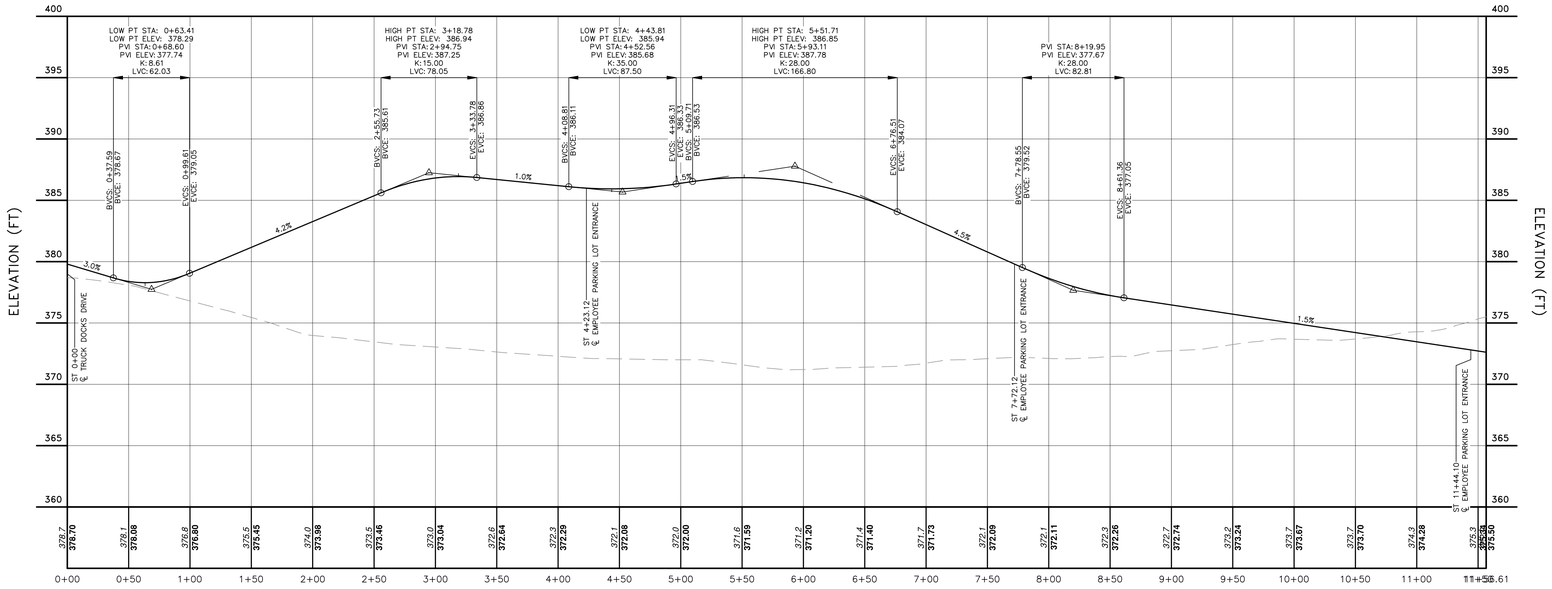
PROFILE SHEET 1: SW TRUCK DOCK DRIVE, NE EMERGENCY ENTRANCE DRIVE

AMY'S KITCHEN, INC.

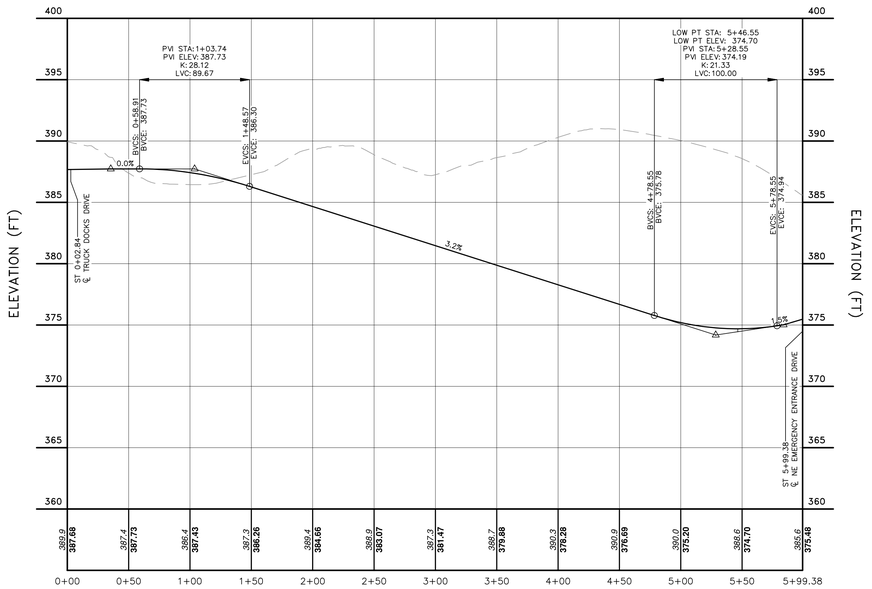
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: AMYS PROFILES
Layout: PROFILE 1 ROADS
Sheet No.: C2-10 OF 17
Drawing No.: A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
SS / MK		N/A	SEE SHEET C2-01



PROFILE: ROAD FROM BRIDGE TO EMPLOYEE PARKING LOT
ST 0+00 THRU ST 11+56.61
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'



PROFILE: SE EMERGENCY ACCESS CONNECTION
ST 0+00 THRU ST 5+99.38
SCALE: HORIZONTAL 1"=50'
VERTICAL 1"=5'

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PROFILE SHEET 2: ROAD FROM BRIDGE TO EMPLOYEE PARKING LOT & SW EMERGENCY CONNECTION

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: AMYS PROFILES
Layout: PROFILE 2 ROADS
Sheet No.: C2-11 OF 17
Drawing No.: A - 13 - 0070 - C3D

Drawn By:	Checked By:	Scale:	Tax Map No.:
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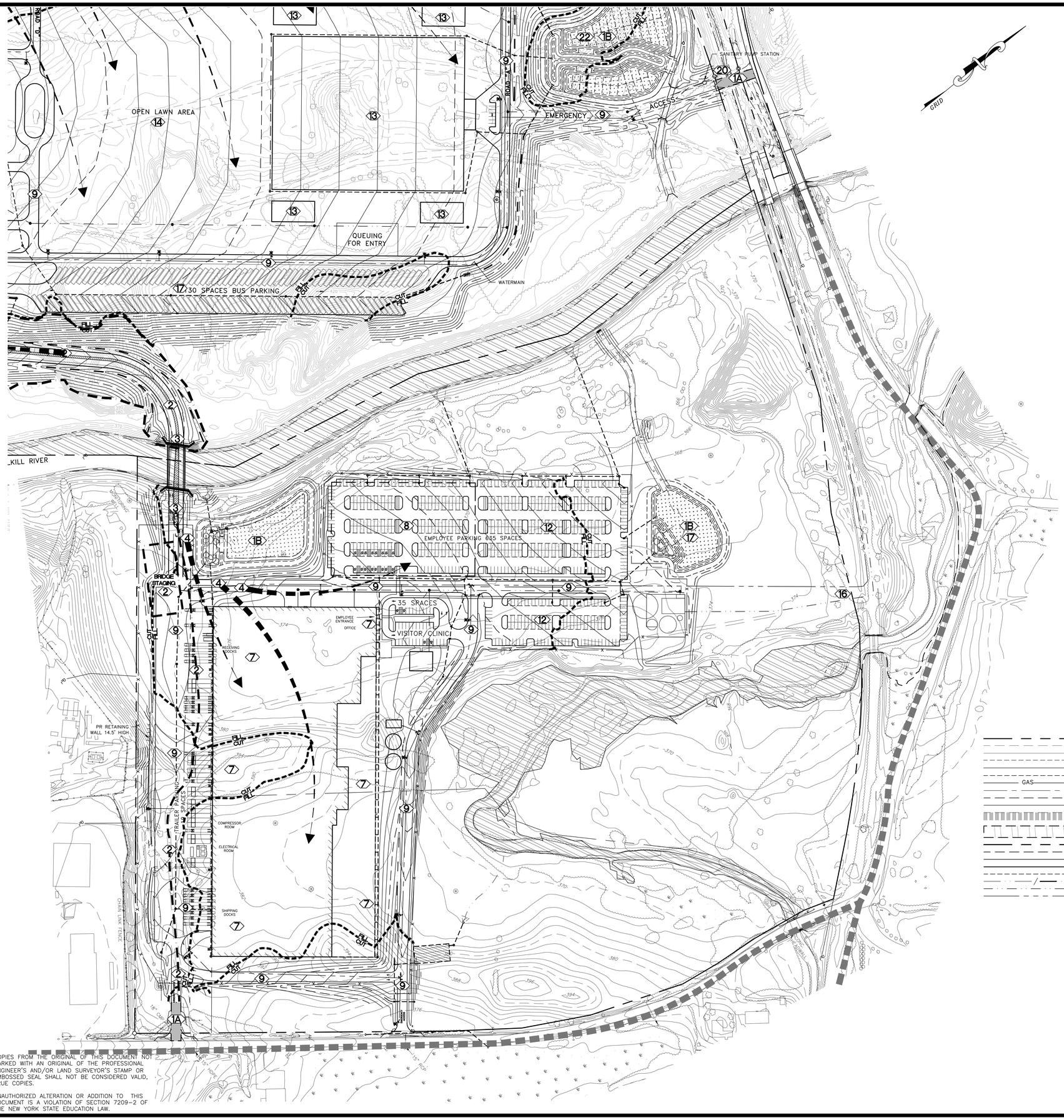

PROJECT SEQUENCING / PHASING		
Phase	Science of the Soul Site - Echo Lake	Amy's Kitchen Site - Ver Hage
1A	Install stabilized construction entrance. Clear trees from entire site - Leave stumps in place, no grubbing.	
1B	Install erosion control measures. Silt fence, Diversion Swales, Temporary Sediment Traps, etc...	
2	Remove stumps & grub access road from proposed bridge to location of entrance road split between Science of Soul and Amy's Kitchen access points. Strip and stockpile topsoil. Excavate to proposed road sub-grade elevation, stockpile material in fill zone on Science of Soul site. Prepare access and staging areas for bridge construction	Prepare construction access and staging areas to proposed bridge and prepare for bridge construction.
3	Construct proposed bridge	
4	Transport stockpiled fill materials from Echo Lake Science of the Soul Site across bridge to VerHage Amy's Kitchen Site and place & grade areas requiring proposed fill.	
5	Construct access road from RT 17M to newly constructed bridge. Excavated materials to be placed in fill zone on Science of the Soul Site. Road construction includes road-side swales, drainage utilities, final slope stabilization. Construct new Mid-Hudson Psychiatric driveway, leave current Mid-Husdson Psychiatric driveway in-service, place binder course asphalt, temporary stripe lanes on new access road	
6	Construct all NYSDOT approved offsite traffic improvements on RT 17M including new turn lanes, new entrance road to Fire Training Lane, and traffic signals. After traffic signal is operational, switch Mid-Hudson Psychiatric driveway to use new entrance. Demolish existing Mid-Hudson Psychiatric driveway entrance.	
7	Continue cut & fill / mass-haul operations on Science of the Soul Site to bring site to proposed sub-grade elevation. Provide and maintain temporary stabilization for all areas as proposed sub-grade elevation is achieved.	Prepare Amy's Kitchen proposed building areas to sub-grade. Continue grading site to proposed sub-grade elevation.
8	Install drainage swales and final stablize all site slopes with topsoil, seed, & stabilization matting as work progresses and slope reaches final grade.	Prepare project staging areas and install temporary contractor parking areas within proposed employee parking areas. Stabilize all areas with item 4 sub-base.
9	Construct site access and circulation roadways and road-side swales to sub-grade elevation. Install item 4 sub-base.	Prepare project access roads to sub-grade elevation. Install proposed Item 4 sub-base. Install site access control gates at all entrances.
10	Construct staging areas and temporary contractor parking areas within proposed parking lots.	Commence construction on Amy's Kitchen proposed manufacturing plant, clinic, and waste water treatment plant
11	Commence construction on proposed Central Building, Family Building, and Maintenance Barn	Install proposed water, sewer, and drainage utilities
12	Install proposed water, sewer, and drainage utilities. Provide stubs for building connections as needed	Install proposed employee parking areas to sub-grade elevation. Install item 4 sub-base. Install site lighting
13	Commence construction on conference center and toilet buildings	Construct gate house and vehicle barriers at bridge.
14	Install drainage needed within large open lawn area SW of conference center, spread topsoil and seed. Establish final lawn area growth	Install curbing within roadways and parking lots, Install porous asphalt sub-base materials, pave employee parking areas with binder course asphalt. Do not install porous asphalt. Protect porous asphalt areas with silt fence
15	Contruct guest house access driveway, install water and sewer utility lines to guest house area, install item 4 sub-base, and rough grade proposed guest house building area. Rough grade proposed caretaker residence building areas.	Install binder course asphalt on all proposed project roads
16	Commence construction on Guest House and Caretake Residences	Make connection to water main from off-site at Heritage Trail. Connect waste water treatment plant to off-site sewer
17	Construct final parking lots for Conference Center and Bus Parking. Construct Orchard Parking lot including tree planting, final topsoil & seed and gravel drive aisles. Install site lighting, install item 4 sub-base, install porous asphalt sub-base materials. protect porous asphalt areas with silt fence. Do Not install porous asphalt.	Convert temporary sediment ponds to final permanent bio-retention areas
18	Construct and install parking lots at Central Building and Family Building including item 4 sub-base and binder course asphalt	Install all site landscaping
19	Final topsoil and seed lawn areas between Family Building, Central Building, and Caretaker residences.	Install top course asphalt in all final parking areas and road ways as appropriate, install porous asphalt, stripe parking stalls and roadways.
20	Make connection to water main from off-site at Heritage Trail. Connect sewer to proposed pump station.	Amy's Kitchen Project Closeout
21	Final grade item 4 on all roadways and install binder course asphalt on road ways and all parking areas.	
22	Convert temporary sediment ponds to final permanent bio-retention area.	
23	Install all site landscaping	
24	Install top course asphalt in all final parking areas and road ways as appropriate, install porous asphalt, stripe parking stalls and roadways.	
25	Install top course asphalt and final striping on Entrance Road from Rt 17M	
26	Complete Project Closeout	

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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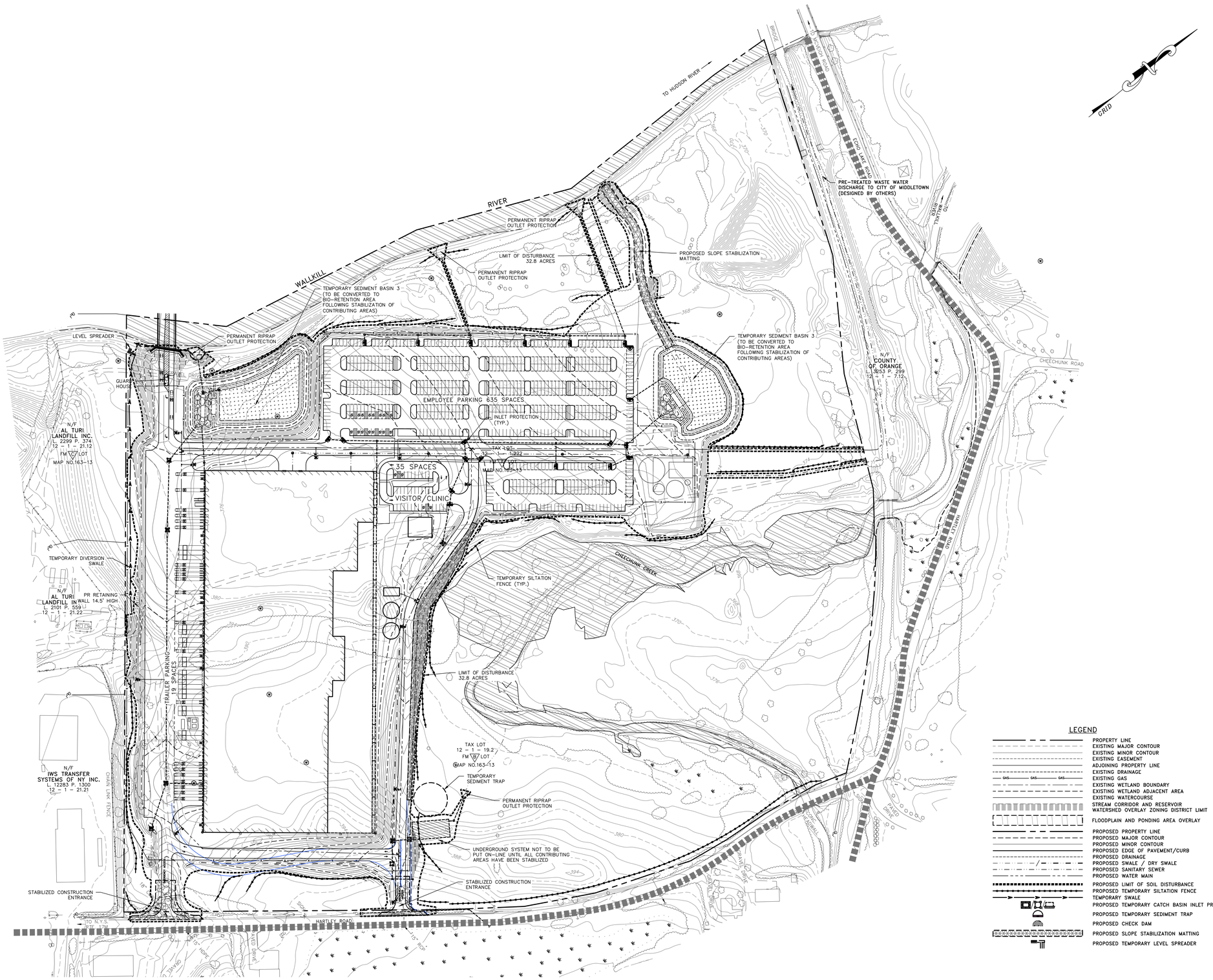
CONSTRUCTION PHASING PLAN FOR

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: PHASING COMBINED
Layout: AMY PHASING
Sheet No.: C2-12 OF 17
Drawing No.: A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 100'	SEE SHEET C2-01



LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED LIMIT OF SOIL DISTURBANCE
- PROPOSED TEMPORARY SILTATION FENCE
- TEMPORARY SWALE
- PROPOSED TEMPORARY CATCH BASIN INLET PROTECTION
- PROPOSED TEMPORARY SEDIMENT TRAP
- PROPOSED CHECK DAM
- PROPOSED SLOPE STABILIZATION MATTING
- PROPOSED TEMPORARY LEVEL SPREADER

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

EROSION AND SEDIMENT CONTROL NOTES AND SPECIFICATIONS

1. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.
2. ALL SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN AND THE "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
3. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNT NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS.
4. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
5. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF FOUR INCHES PRIOR TO PLACEMENT OF TOPSOIL.
6. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
7. ALL FILL TO BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
8. EXCEPT FOR APPROVED LANDFILLS, FILL MATERIAL SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
9. FROZEN MATERIALS OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED IN FILLS.
10. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
11. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
12. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
13. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.
14. STOCKPILES, BORROW AREAS AND SPOIL AREAS SHALL BE SHOWN ON THE PLANS AND SHALL BE SUBJECT TO THE PROVISIONS OF THIS STANDARD AND SPECIFICATION.
15. SEED ALL DISTURBED AREAS WHICH WILL REMAIN UNDISTURBED FOR A PERIOD OF 15 DAYS OR MORE AND WHICH WILL NOT BE UNDER CONSTRUCTION WITHIN 30 DAYS WITH TEMPORARY RYEGRASS COVER, AS FOLLOWS (METHOD OF SEEDING IS OPTIONAL):
    - A. LOOSEN SEEDBED BY DISCING TO A 4" DEPTH.
    - B. SEED WITH SUMMER – PERENNIAL OR ANNUAL RYEGRASS AT 30 LBS PER ACRE FALL/WINTER – AROOSTOOK WINTER RYE AT 100 LBS PER ACRE
    - C. MULCH WITH 2 TONS PER ACRE OF BLOWN AND CHOPPED HAY.
    - D. WHERE NOTED ON THE PLAN, AND ON SLOPES GREATER THAN OR EQUAL TO 3:1, PROVIDE SOIL STABILIZATION MATTING.
16. AFTER COMPLETION OF SITE CONSTRUCTION, FINE GRADE AND SPREAD TOPSOIL ON ALL LAWN AREAS AND SEED WITH PERMANENT LAWN MIX AS FOLLOWS (SEE LANDSCAPE PLAN FOR OTHER PLANTING INFORMATION):
    - A. LIME TOPSOIL TO pH 6.0.
    - B. FERTILIZE WITH 600 LBS PER ACRE OF 5-10-10.
    - C. SEED REQUIREMENTS – SEE LANDSCAPING PLAN.
    - D. MULCH AS DESCRIBED FOR TEMPORARY SEEDING (NOTE 15C ABOVE).
17. DURING THE PROGRESS OF CONSTRUCTION, AND ESPECIALLY AFTER RAIN EVENTS, MAINTAIN ALL SEDIMENT TRAPS, BARRIERS, AND FILTERS AS NECESSARY TO PREVENT THEIR BEING CLOGGED WITH SEDIMENT. RE-STABILIZE ANY AREAS THAT MAY HAVE ERODED.
18. MAINTAIN ALL SEEDED AND PLANTED AREAS TO INSURE A VIABLE STABILIZED VEGETATIVE COVER.
19. MAINTAIN COPIES OF THE CONSTRUCTION LOGBOOK, STORMWATER POLLUTION PREVENTATION PLAN (SWPPP) NOTICE OF INTENT (NOI), PERMITS, AND SITE PLANS ON-SITE AT ALL TIMES DURING CONSTRUCTION.
20. A RAIN GAUGE WILL BE MAINTAINED ON-SITE AT ALL TIMES. READINGS SHALL BE TAKEN ON A DAILY BASIS AND LOGGED.

CONSTRUCTION SEQUENCE

1. PRE-CONSTRUCTION MEETING: BEFORE CONSTRUCTION ACTIVITIES AN EVALUATION OF THE SITE WILL BE PERFORMED WITH THE SITE CONTRACTOR, TOWN PERSONNEL AND SITE DESIGN ENGINEER TO DISCUSS GENERAL CONSTRUCTION PROCEDURES AND SEQUENCING. DURING THIS MEETING SENSITIVE AREAS OF THE PROPERTY SHALL BE DELINEATED AND MARKED-OUT WITH ORANGE CONSTRUCTION FENCE (I.E.: TREES, WETLANDS, WELLS, ETC.).
2. DELINEATE TOTAL SITE DISTURBANCE LIMITS: PLACEMENT OF ORANGE CONSTRUCTION FENCING ALONG THE LIMIT OF DISTURBANCE THROUGHOUT THE SITE.
3. PROTECT EXISTING BUFFERS: PLACE EROSION CONTROL DEVICES (SILT FENCING, DIVERSION BERMS, ETC.) UPSTREAM OF ANY EXISTING WATERCOURSE WITHIN OR OUTSIDE OF CONSTRUCTION AREAS, PRIOR TO THE START OF ANY CONSTRUCTION.
4. CONSTRUCTION ENTRANCES/SILTATION CONTROLS: TEMPORARY CONSTRUCTION ENTRANCES WILL BE INSTALLED AT THE ENTRANCES TO THE SITE ON NYS ROUTE 17M AND ECHO LAKE ROAD AS SHOWN. DURING WET WEATHER, IT MAY NECESSARY TO WASH VEHICLE TIRES AT THIS LOCATION. THEREFORE, THIS ENTRANCE IS TO BE GRADED SO THAT RUNOFF IS DIRECTED TO THE ADJACENT SEDIMENT TRAP. IN ADDITION, ANY OTHER SILTATION CONTROL DEVICES, AS SHOWN ARE TO BE INSTALLED ADJACENT TO THE TEMPORARY ENTRANCE AND STAGING AREA. INSTALL TEMPORARY CULVERT DIVERTING THE EXISTING ROADSIDE SWALE AT THE NYS ROUTE 17M ENTRANCE.
5. CONSTRUCTION OF TEMPORARY SEDIMENT BASINS: CONSTRUCTION OF THE TEMPORARY SEDIMENT BASINS PRIOR TO THE START OF ANY MAJOR EARTHWORK MOVEMENT OR SITE CONSTRUCTION.
6. CONSTRUCTION OF TEMPORARY DIVERSION SWALES: THE INSTALLATION OF TEMPORARY DIVERSION SWALES TO CONVEY STORMWATER AROUND THE CONSTRUCTION AREA.
7. STAGING AREA: THE STAGING AREA WILL BE GRADED FOR STORAGE OF EQUIPMENT AND PLACEMENT OF CONSTRUCTION TRAILERS.
8. STRIP TOPSOIL: TOPSOIL WILL BE STRIPPED FROM THE ACTIVE WORK AREAS AND WILL BE STOCKPILED FOR LATER REUSE.
9. LAND GRADING: BULK SOIL GRADING WILL COMMENCE, SOIL TO BE MOVED FROM THE WESTERN SIDE OF THE PROJECT AREA AND PLACED IN THE FILL AREA ALONG THE EAST SIDE OF THE PROJECT AREA. AT THIS TIME, TEMPORARY STOCKPILE AREAS SHOULD BE UTILIZED. THE PRODUCTION FACILITY PAD AREA WILL BE GRADED.
10. BUILDING FOUNDATION CONSTRUCTION: UPON COMPLETION OF GRADING IN BUILDING FOOTPRINT AREA, BUILDING FOUNDATION CONSTRUCTION FOR THE PRODUCTION FACILITY BUILDING WILL COMMENCE.
11. UTILITY INSTALLATION: INSTALL WATER, SEWER, AND STORMWATER THROUGHOUT THE PROJECT. INLET PROTECTION WILL BE INSTALLED AT ALL STORMWATER CATCH BASINS.
12. PAVEMENT CONSTRUCTION: CONSTRUCT PAVED AREAS AND CONCRETE PARKING AREAS.
13. STORMWATER INSTALLATION: INSTALL POROUS PAVEMENT AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. CONVERT TEMPORARY SEDIMENT BASINS TO BIO-RETENTION AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. RIPRAP OUTLET PROTECTION AREAS WILL BE INSTALLED.
14. EROSION CONTROL PRACTICE REMOVAL: REMOVE ANY REMAINING EROSION CONTROL PRACTICES INCLUDING INLET PROTECTION, AND TEMPORARY DIVERSIONS SWALES WHEN AREAS HAVE BEEN TEMPORARILY STABILIZED.
15. LANDSCAPING AND FINAL STABILIZATION: ALL OPEN AREAS TO BE STABILIZED WITH TOPSOIL AND SEEDED AS PER THE SEEDING SCHEDULE SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLANS. REMOVAL OF ALL TEMPORARY MEASURES, FLUSHING/CLEANING OF ALL CATCH BASINS AND PIPE, AND REMOVAL AND DISPOSAL OF ALL TRAPPED SEDIMENT ON SITE SHALL BE COMPLETED.
16. FINAL SITE INSPECTION AND CERTIFICATION: AT THE END OF CONSTRUCTION A SITE EVALUATION OF THE SITE WILL BE PERFORMED WITH SITE CONTRACTOR, TOWN PERSONNEL, AND SITE ENGINEER TO ENSURE THAT ALL STORMWATER FACILITIES WERE CONSTRUCTED AS PER THE SWPPP DESIGN AND THAT THE SITE HAS BEEN STABILIZED. A NOTICE OF TERMINATION WILL BE SUBMITTED TO THE NYSDEC.

EROSION AND SEDIMENT CONTROL NOTES

1. THE OWNER OR OPERATOR SHALL HAVE A QUALIFIED INSPECTOR CONDUCT AT LEAST TWO (2) SITE INSPECTIONS IN ACCORDANCE WITH PART IV.C EVERY SEVEN (7) CALENDAR DAYS, FOR AS LONG AS GREATER THAN FIVE (5) ACRES OF SOIL REMAIN DISTURBED. THE TWO (2) INSPECTIONS SHALL BE SEPARATED BY A MINIMUM OF TWO (2) FULL CALENDAR DAYS.
2. IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS BEEN TEMPORARILY OR PERMANENTLY CEASED, TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES SHALL BE INSTALLED AND/OR IMPLEMENTED WITHIN SEVEN (7) DAYS FROM THE DATE OF SOIL DISTURBANCE ACTIVITY CEASED.
3. TEMPORARY STABILIZATION MEANS THAT EXPOSED SOIL HAS BEEN COVERED WITH MATERIALS AS SET FORTH IN THE TECHNICAL STANDARD, NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, TO PREVENT THE EXPOSED SOIL FROM ERODING. THE MATERIALS CAN INCLUDE, BUT ARE NOT LIMITED TO, MULCH, SEED AND MULCH, AND EROSION CONTROL MATS (E.G. JUTE TWISTED YARN, EXCELSIOR WOOD FIBER MATS).
4. FINAL STABILIZATION MEANS THAT ALL SOIL DISTURBANCE ACTIVITIES HAVE CEASED AND A UNIFORM, PERENNIAL VEGETATIVE COVER WITH A DENSITY OF EIGHTY (80) PERCENT OVER THE ENTIRE PERVIOUS SURFACE HAS BEEN ESTABLISHED; OR OTHER EQUIVALENT STABILIZATION MEASURES, SUCH AS PERMANENT LANDSCAPE MULCHES, ROCK RIP-RAP OR WASHED/CRUSHED STONE HAVE BEEN APPLIED ON ALL DISTURBED AREAS THAT ARE NOT COVERED BY PERMANENT STRUCTURES, CONCRETE OR PAVEMENT.

SOIL RESTORATION REQUIREMENTS

1. ALL DISTURBED AREAS WHERE ONLY TOPSOIL STRIPPING HAS OCCURRED REQUIRE AERATION OF THE SUBGRADE BEFORE SPREADING TOPSOIL.
2. ALL DISTURBED ARES WHERE CUT AND FILL OPERATIONS OCCURRED REQUIRE FULL SOIL RESTORATION AS SPECIFIED IN NYSDEC MANUAL PUBLICATION ENTITLED "DEEP RIPPING AND DE-COMPACTION."

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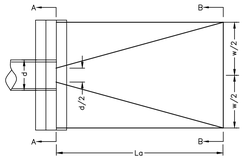
EROSION AND SEDIMENT CONTROL PLAN

AMY'S KITCHEN, INC.

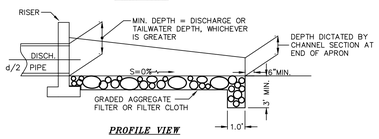
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Drawn By:	Checked By:	Scale:	Tax Map No.:
ESR		1" = 100'	-

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: 13-0070-DRAINAGE-COMBINED
Layout: EROSION AMY
Sheet No.: C2-13 OF 17
Drawing No.: A - 13 - 0070 - C3D



PLAN VIEW



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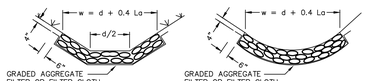
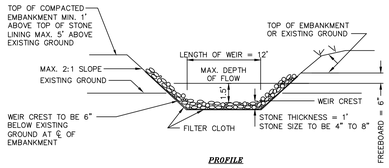


SECTION A-A
(AT END OF CULVERT)

SECTION B-B
(AT END OF APRON)

NOTE:
SEE RIPRAP STANDARDS AND SPECIFICATIONS
MAXIMUM TAILWATER CONDITIONS

RIP RAP OUTLET PROTECTION
NOT TO SCALE



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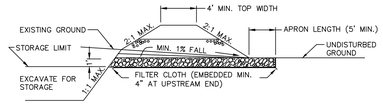

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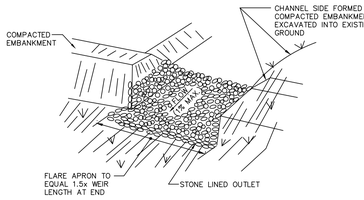
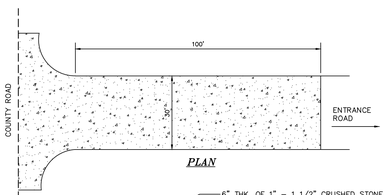


PERSPECTIVE VIEW

RIP-RAP OUTLET SEDIMENT TRAP
NOT TO SCALE



PLAN

SECTION

NOTE:
ENTRANCE SHALL BE MAINTAINED AS CONDITIONS DEMAND TO PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS.

A CRUSHED STONE, VEHICLE WHEEL-CLEANING BLANKET WILL BE INSTALLED WHENEVER A CONSTRUCTION ACCESS ROAD INTERSECTS ANY PAVED ROADWAY. SAID BLANKET WILL BE COMPOSED OF 6" DEPTH OF 1"-1 1/2" CRUSHED STONE, WILL BE AT LEAST 30' X 100' AND SHOULD BE PLACED ON COMPACTED SUB-GRADE AND SHALL BE MAINTAINED.

ALL DRIVEWAYS MUST BE STABILIZED WITH 1" – 1½" CRUSHED STONE OR SUB-BASE PRIOR TO INDIVIDUAL HOME CONSTRUCTION.

PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.

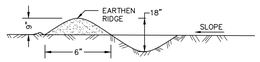
ALL CATCH BASIN INLETS WILL BE PROTECTED WITH A CRUSHED STONE OR HAYBALE FILTER (FILTER DETAILS APPEAR ON PLAN).

ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED, AS REQUIRED, BEFORE DISCHARGE POINTS BECOME OPERATIONAL.

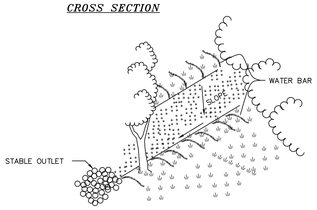
ALL SOIL EROSION AND SEDIMENT CONTROL STRUCTURES MUST BE DETAILED ON THE PLAN.

CONSTRUCTION SPECIFICATIONS

1. THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF OF EMBANKMENT SHALL BE FIVE (5) FEET, MEASURED AT CENTERLINE OF EMBANKMENT.
3. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER, CUT SLOPES 1:1 OR FLATTER.
4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF EMBANKMENT.
5. STORAGE AREA PROVIDED SHALL BE FIGURED BY COMPUTING THE VOLUME AVAILABLE BEHIND THE OUTLET CHANNEL UP TO AN ELEVATION OF ONE (1) FOOT BELOW THE LEVEL WEIR CREST.
6. FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTIONS OF FABRIC MUST OVERLAP AT LEAST ONE (1) FOOT WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNEL.
7. STONE USED IN THE OUTLET CHANNEL SHALL BE FOUR (4) TO EIGHT (8) INCH RIPRAP. TO PROVIDE A FILTERING EFFECT, A LAYER OF FILTER CLOTH SHALL BE EMBEDDED ONE (1) FOOT WITH SECTION NEAREST ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
8. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
9. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRED AS NEEDED.
10. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
11. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
12. DRAINAGE AREA FOR THIS PRACTICE IS LIMITED TO 15 ACRES OR LESS.



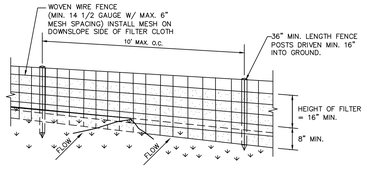
CROSS SECTION



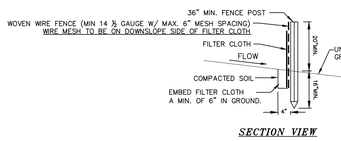
CONSTRUCTION SPECIFICATIONS

1. INSTALL THE WATER BAR AS SOON AS THE RIGHT OF WAY IS CLEARED AND GRADED.
2. DISK OR STRIP THE SOD FROM THE BASE FOR THE CONSTRUCTED RIDGE BEFORE PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FIELD SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL AREAS ARE NOT ADEQUATE.
5. VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL. EXPOSED AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED.
6. PERIODICALLY INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS AS NEEDED TO RESTORE OPERATION.

WATER BARS DETAIL
NOT TO SCALE



PERSPECTIVE VIEW

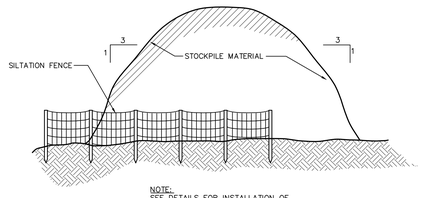


SECTION VIEW

CONSTRUCTION SPECIFICATIONS

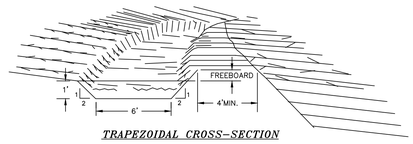
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILTATION FENCE
NOT TO SCALE



NOTE:
SEE DETAILS FOR INSTALLATION OF SILTATION FENCE

TYPICAL STOCKPILE DETAIL
NOT TO SCALE

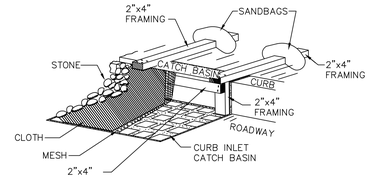


TRAPEZOIDAL CROSS-SECTION

CONSTRUCTION SPECIFICATIONS

1. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIVERSION.
2. THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETE DIVERSION.
4. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE STOCKPILED FOR RESTORATION OF THE AREA SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIVERSION.
5. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE STANDARD AND SPECIFICATIONS FOR VEGETATIVE PRACTICES.
   A. FOR DESIGN VELOCITIES OF MORE THAN 3.5 FT. PER. SEC., THE DIVERSION SHALL BE STABILIZED WITH SOD, WITH SEEDING PROTECTED BY JUTE OR EXCELSIOR MATTING OR WITH SEEDING AND MULCHING INCLUDING TEMPORARY DIVERSION OF THE WATER UNTIL THE VEGETATION IS ESTABLISHED.

TEMPORARY DIVERSION SWALE
NOT TO SCALE

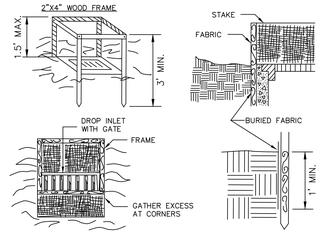


CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85.
2. WOODEN FRAME SHALL BE CONSTRUCTED OF 2"x4" CONSTRUCTION GRADE LUMBER.
3. THE ASSEMBLY SHALL BE PLACED AGAINST THE INLET AND SECURED BY 2"x4" ANCHORS 2 FEET LONG EXTENDING ACROSS THE TOP OF THE CURB AND SIDEWALK AND HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHTS.

MAXIMUM DRAINAGE AREA 1 ACRE

STORM DRAIN INLET FILTER DETAIL FOR CURB INLETS
NOT TO SCALE

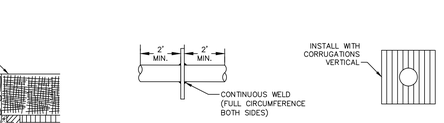


CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2"x4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED, IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2"x4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

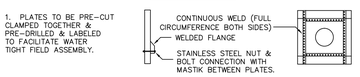
MAXIMUM DRAINAGE AREA 1 ACRE

FILTER FABRIC DROP INLET PROTECTION
NOT TO SCALE

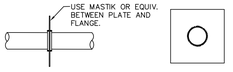


COLLAR WELDED IN PLACE BARREL SECTION

1. PLATES TO BE PRE-CUT CLAMPED TOGETHER & PRE-DRILLED & LABELED TO FACILITATE WATER TIGHT FIELD ASSEMBLY.



MULTI-PIECE COLLAR FOR LARGE PIPES

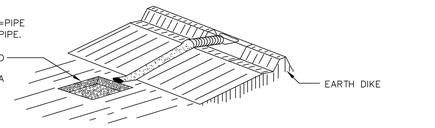


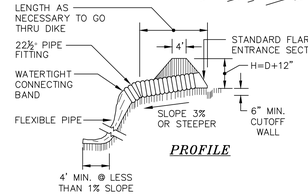
COLLAR FOR FLANGE JOINT PIPE

TYPICAL ANTI-SEEP COLLARS
NOT TO SCALE

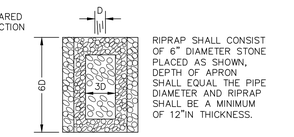
NOTE:
SIZE DESIGNATION IS:
PSD-PIPE DIA. (EX., PSD-18=PIPE SLOPE DRAIN WITH 18"DIAM. PIPE.

DISCHARGE INTO A STABILIZED WATERCOURSE, SEDIMENT TRAPPING DEVICE, OR ONTO A STABILIZED AREA.





PROFILE



RIPRAP SHALL CONSIST OF 6" DIAMETER STONE PLACED AS SHOWN, DEPTH OF APRON SHALL EQUAL THE PIPE DIAMETER AND RIPRAP SHALL BE A MINIMUM OF 12"IN THICKNESS.

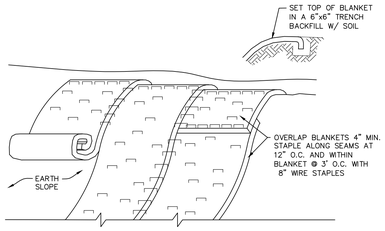
RIPRAP APRON PLANVIEW

CONSTRUCTION SPECIFICATIONS

1. THE INLET PIPE SHALL HAVE A SLOPE OF 3% OR STEEPER.
2. THE TOP OF THE EARTH DIKE OVER THE INLET PIPE AND THOSE DIKES CARRYING WATER TO THE PIPE SHALL BE AT LEAST 1' HIGHER AT ALL POINTS THAN THE TOP OF THE INLET PIPE.
3. THE INLET PIPE SHALL BE CORRUGATED METAL PIPE WITH WATERTIGHT CONNECTING BANDS.
4. THE FLEXIBLE TUBING SHALL BE THE SAME DIAMETER AS THE INLET PIPE AND SHALL BE CONSTRUCTED OF A DURABLE MATERIAL WITH HOLD-DOWN GROMMETS SPACED AT 10' ON CENTER.
5. THE FLEXIBLE TUBING SHALL BE SECURELY FASTENED TO THE CORRUGATED METAL PIPE WITH METAL STRAPPING OR WATERTIGHT CONNECTING COLLARS.
6. THE FLEXIBLE TUBING SHALL BE SECURELY ANCHORED TO THE SLOPE BY STAKING AT THE GROMMETS PROVIDED.
7. A RIPRAP APRON SHALL BE PROVIDED AT THE OUTLET. THIS SHALL CONSIST OF 6" DIAMETER STONE PLACED AS SHOWN.
8. THE SOIL AROUND AND UNDER INLET PIPE AND ENTRANCE SECTION SHALL BE HAND TAMPED IN 4" LIFTS TO THE TOP OF EARTH DIKE.
9. FOLLOW-UP INSPECTION AND ANY NEEDED MAINTENANCE SHALL BE PERFORMED AFTER EACH STORM.

* DRAINAGE AREA MUST NOT EXCEED 5 ACRES.

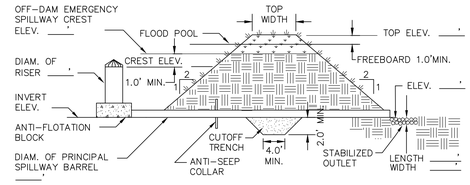
PIPE SLOPE DRAIN FLEXIBLE DETAIL
NOT TO SCALE



SLOPE STABILIZATION DETAIL
NOT TO SCALE

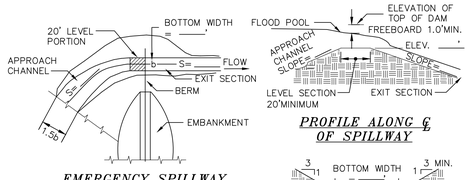
NOTES:

1. SLOPE STABILIZATION TO BE USED ON ALL CREATED OR DISTURBED SLOPES GREATER THAN 33% AND WHERE SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLAN.
2. STABILIZE PREPARED EARTHEN SLOPE WITH A BIODEGRADABLE NATURAL FIBER NETTING. APPROVED TYPES AS FOLLOWS:
   –S150BN – NORTH AMERICAN GREEN 1-800-772-2040
   –ECS-2B – EAST COAST EROSION BLANKET 1-800-582-4005
   –APPROVED EQUAL
3. ALL SLOPE RESTORATION MUST INCLUDE 4" TOPSOIL.
4. PREPARE THE SOIL SURFACE INCLUDING RAKING, SEEDING AND FERTILIZING PRIOR TO INSTALLING EROSION CONTROL NETTING.
5. AFTER NETTING IS INSTALLED, PLANT ANY PROPOSED LANDSCAPING/GROUND COVER THROUGH SLITS CUT IN FABRIC.



PRINCIPAL SPILLWAY PROFILE

MAXIMUM DRAINAGE AREA = 100 ACRES

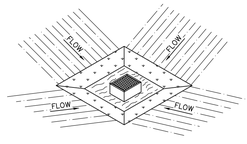


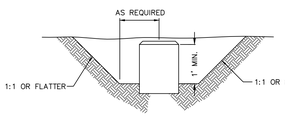
EMERGENCY SPILLWAY PLAN VIEW

PROFILE ALONG ℄ OF SPILLWAY

CROSS SECTION AT CONTROL SECTION

SEDIMENT BASIN DETAILS
NOT TO SCALE

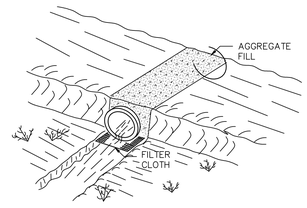


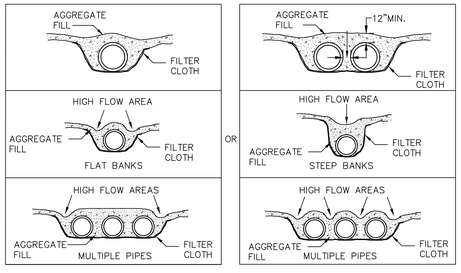


CATCH BASIN SEDIMENT TRAP
NOT TO SCALE

CONSTRUCTION SPECIFICATION FOR ST-III

1. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
2. THE VOLUME OF SEDIMENT STORAGE SHALL BE 3600 CUBIC FEET PER ACRE OF CONTRIBUTORY DRAINAGE. THE MAXIMUM DRAINAGE ARE IS 3 ACRES.
3. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
5. THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE CONSTRUCTED DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
6. ALL CUT SLOPES SHALL BE 1:1 OR FLATTER.





TEMPORARY ACCESS CULVERT DETAIL
NOT TO SCALE

Dig Safely. New York Call 811 before you dig

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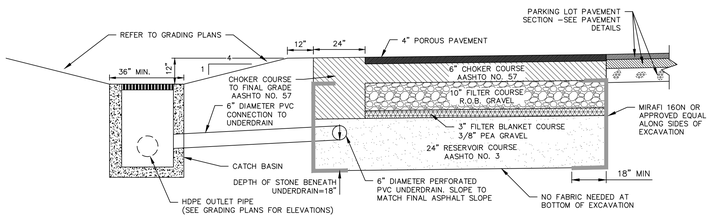
EROSION AND SEDIMENT CONTROL DETAILS

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: 130070-DETAILS
Layout: EROSION DETAILS
Sheet No.: C2-14 OF 17
Drawn By: ESR
Checked By:
Scale: N/A
Tax Map No.: SEE SHEET C2-01
Drawing No.: A – 13 – 0070 – C30



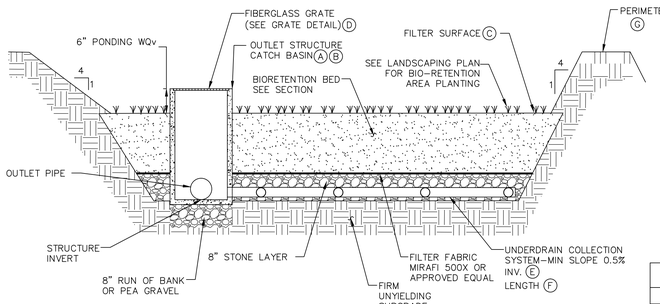
POROUS ASPHALT PAVEMENT CROSS-SECTION

NOT TO SCALE

NOTES:
1. POROUS ASPHALT MIX SHALL BE PG 64-28 OR 76-22 WITH SBS (STYRENE BUTADIENE STYRENE) OR SBR (STYRENE BUTADIENE RUBBER) AND 5 POUNDS OF FIBER PER TON.
2. REFER TO THE UNIVERSITY OF NEW HAMPSHIRE DESIGN SPECIFICATION FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS FOR RECOMMENDED INSTALLATION AND QUALITY CONTROL PROCEDURES.
3. ALTERNATE MIX DESIGNS MAY BE ACCEPTABLE PENDING SUBMISSION TO AND REVIEW BY THE DESIGN ENGINEER. FINAL MIX DESIGN MUST BE APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION.

R.O.B. GRAVEL GRADATION	
SIEVE SIZE	PERCENT PASSING BY WEIGHT
2-INCH	100%
1/4-INCH	25% TO 65%
NO. 40	5% TO 40%
NO. 200	0% TO 10%

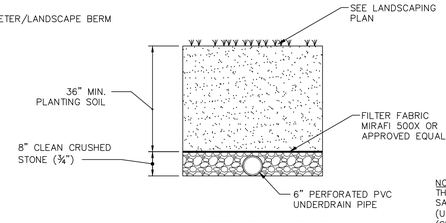
POROUS ASPHALT MIX DESIGN	
SIEVE SIZE (INCH/MM)	***PERCENT PASSING (%)***
0.75/19	100
0.50/12.5	85-100
0.375/9.5	55-75
No. 4/4.75	10-25
No. 8/2.36	5-10
No. 200/0.075	2-4
PROPERTY	***VALUE***
BINDER CONTENT (AASHTO T164)	6 - 6.5%
FIBER CONTENT BY TOTAL MIXTURE MASS	0.3% CELLULOSE OR 0.4% MINERAL
SBR CONTENT BY WEIGHT OF BITUMENT	1.5 - 3%
IN-PLACE AIR VOID CONTENT (ASTM D6752/AASHTO T275)	16.0 - 19.0%



SECTION

BIO-RETENTION AREA DETAIL

NOT TO SCALE

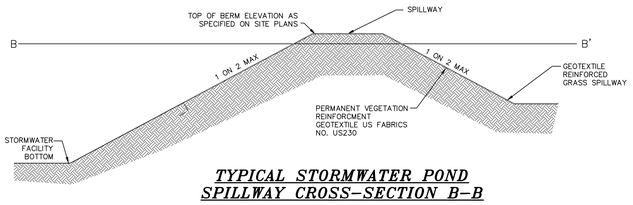


BIORETENTION SECTION

NOTES:
THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BY LESS THAN 25% BY VOLUME. SOILS SHOULD FALL WITHIN THE SM, OR ML CLASSIFICATIONS OF THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5"/HR) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12 TO 18", LOOSELY COMPACTED (TAMPED LIGHTLY WITH A DOZER OR BACKHOE BUCKET).

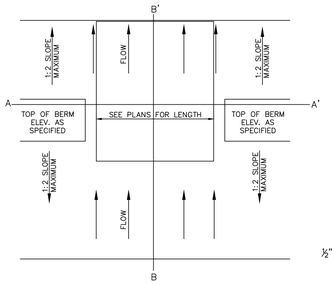
BIO-RETENTION AREA DATA

	BIO-RETENTION AREA OUTLET STRUCTURE	A	B	C
A	OUTLET STRUCTURE DIMENSIONS (OUTSIDE)	48"x48"	48"x48"	48"x48"
B	TOP OF STRUCTURE ELEVATION	409.50	400.50	396.50
C	FILTER SURFACE ELEVATION	409.00	400.00	396.00
D	FIBERGLASS GRATE DIMENSION	42"x42"	42"x42"	42"x42"
E	UNDERDRAIN INVERT ELEVATION	405.00	396.00	392.00
F	UNDERDRAIN SYSTEM LENGTH	900'	1,100'	1,500'
G	TOP OF PERIMETER BERM	413.25	404.25	400.25



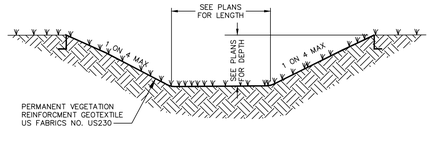
TYPICAL STORMWATER POND SPILLWAY CROSS-SECTION B-B

NOT TO SCALE



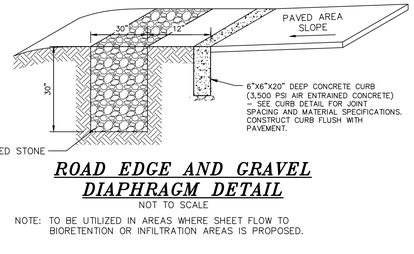
TYPICAL STORMWATER POND SPILLWAY PLAN VIEW

NOT TO SCALE



TYPICAL STORMWATER POND SPILLWAY CROSS-SECTION A-A

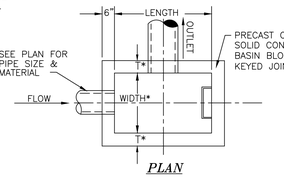
NOT TO SCALE



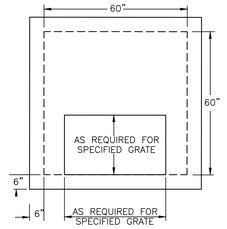
ROAD EDGE AND GRAVEL DIAPHRAGM DETAIL

NOT TO SCALE

NOTE: TO BE UTILIZED IN AREAS WHERE SHEET FLOW TO BIORETENTION OR INFILTRATION AREAS IS PROPOSED.

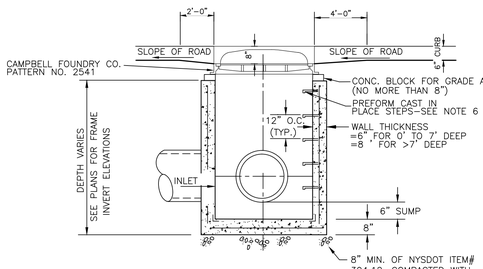


PLAN

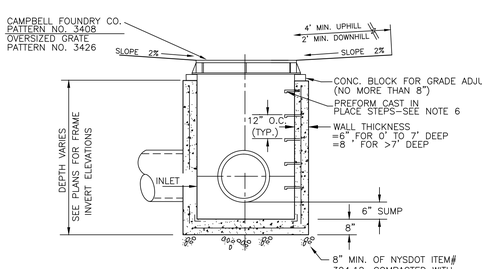


ROOF SLAB FOR OVERSIZED STRUCTURE

ROOF TO BE 8" THICK, WITH STEEL REINF. DESIGNED FOR H-20 LOADING.



CURB TOP CATCH BASIN



FLAT TOP CATCH BASIN

CATCH BASIN DETAIL

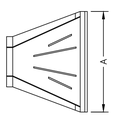
NOT TO SCALE

PRECAST BASIN SCHEDULE			
*PRECAST SIZE	INTERIOR LENGTH	INTERIOR WIDTH	ROOF SLAB
TYPICAL	48"	30"	NO
OVERSIZED	60"	60"	YES

*SEE NOTE 7

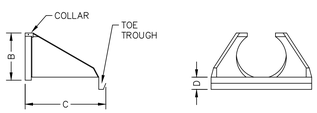
PLAN LEGEND
(OSS) = CATCH BASIN WITH OVERSIZED STRUCTURE AND STANDARD SIZE GRATE
(OSG) = CATCH BASIN WITH OVERSIZED STRUCTURE AND OVERSIZED GRATE

NOTES:
1. CONCRETE STRENGTH: 4000 P.S.I. @ 28 DAYS.
2. BACKFILL AROUND CATCH BASIN IS TO BE ACCEPTABLE DRY RUN OF BANK GRAVEL, FREE OF ANY STONES LARGER THAN 3" IN DIAMETER, COMPACTED IN 8" MAX. LIFTS WITH JUMPING JACK COMPACTOR, ACHIEVING 95% COMPACTION.
3. SPECIFIED CATCH BASINS ARE TO HAVE FLAT GRATES, SEE PLAN LABELS.
4. PIPES TO BE CUT FLUSH WITH INSIDE WALLS OF CATCH BASIN.
5. PIPES SHALL BE PARGED AROUND INTERIOR AND EXTERIOR PRIOR TO BACKFILLING OF STRUCTURE.
6. STEPS ARE TO BE CAMPBELL FOUNDRY CO. PATTERN NO. 2593 2254, OR APPROVED EQUAL.
7. SEE PLAN LABELS FOR SIZE OF STRUCTURE AND GRATE.



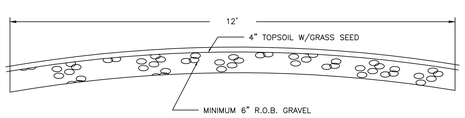
PIPE DIAMETER						
DIMENSION	10/12	15	18	24	30	36
A	42	41	49	59.5	88	88
B	14.5	19	22	28	36	43
C	33	34	43	48	63.5	66.5
D	6	6	6	6	6	6

NOTE: ALL MEASUREMENTS IN INCHES



HDPE FLARED END SECTION

NOT TO SCALE

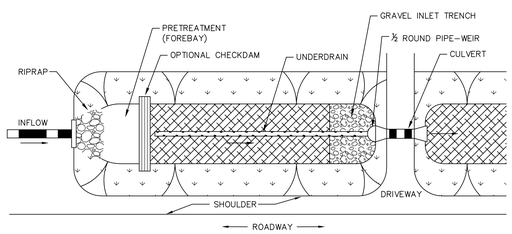


GRAVEL SHALL CONFROM TO THE FOLLOWING GRADATION REQUIREMENTS:

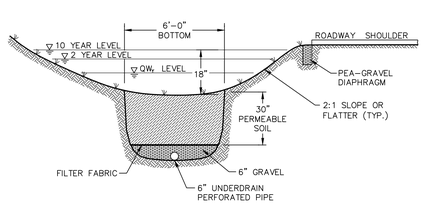
SIEVE SIZE	% PASSING BY WEIGHT
2"	100
1/4"	30-65
NO 200	10-20

POND MAINTENANCE ACCESS DETAIL

NOT TO SCALE



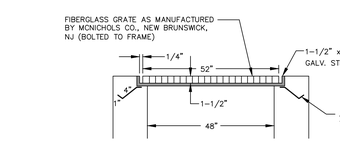
PLAN VIEW



SECTION

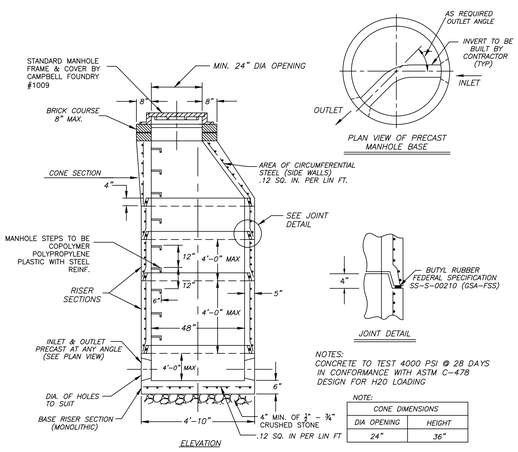
DRY SWALE DETAIL

NOT TO SCALE



GRATE DETAIL

NOT TO SCALE



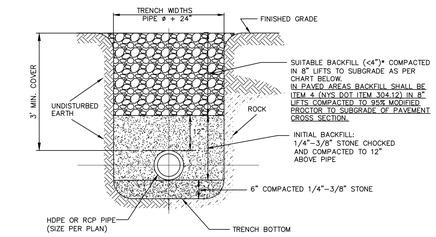
NOTES:
CONCRETE TO TEST 4000 PSI @ 28 DAYS IN CONFORMANCE WITH ASTM C-478
DESIGN FOR H20 LOADING

NOTE:

CONE DIMENSIONS	
DIA OPENING	HEIGHT
24"	36"

PRE CAST CONCRETE STORM MANHOLE DETAIL

NOT TO SCALE



EARTH OR ROCK EXCAVATION

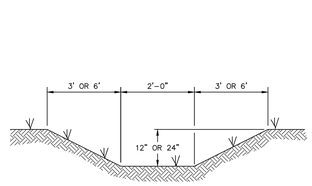
ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
DESCRIPTION	SOIL CLASSIFICATION ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, CRUSHED STONE, GRAVEL	CLASS I	-	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

* BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.

STORM SEWER TRENCH CROSS SECTION

NOT TO SCALE



SWALE DETAIL

NOT TO SCALE

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P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294-3700

DRAINAGE DETAILS

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016, APRIL 22, 2016, AUGUST 24, 2016

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

CAD File: 130070-DETAILS
Layout: DRAINAGE DETAILS
Sheet No.: C2-15 OF 17
Drawing No.: A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
ESR		N/A	SEE SHEET C2-01

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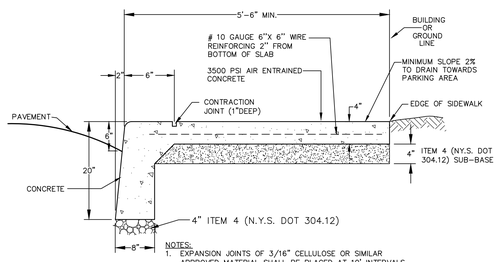
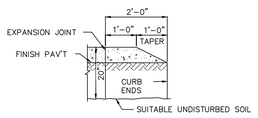
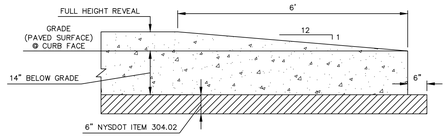


NOTES:
1. EXPANSION JOINTS OF 3/16" CELLULOSE OR SIMILAR APPROVED MATERIAL SHALL BE PLACED AT 10' INTERVALS
2. CONTRACTION JOINTS 1" DEEP HAVING 1/4" RADIUS EDGES SHALL BE PLACED AT 5'-0" INTERVALS IN SIDEWALK.
3. EDGES SHALL HAVE 1/2" RADIUS.
4. USE 3500 PSI AIR ENTRAINED CONCRETE.
5. BROOM FINISH TOP SURFACE.

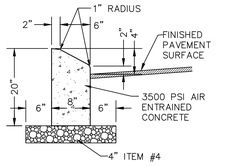
MONOLITHIC CURB AND SIDEWALK DETAIL
NOT TO SCALE



BULLNOSE CURB TERMINAL
NOT TO SCALE

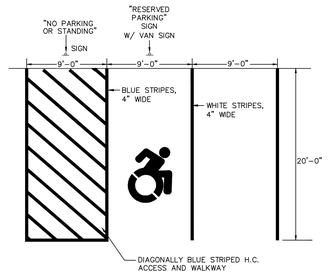


NYSDOT CURB TERMINAL
NOT TO SCALE

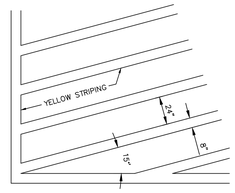


CONTRACTOR TO PROVIDE 1/2" PREFORMED BITUMINOUS – IMPREGNATED FIBER JOINT FILLER EVERY 10'. JOINT FILLER TO COMPLY WITH A.A.S.H.T.O. SPEC. M-213. FILLER TO BE RECESSED IN FROM FRONT FACE AND TOP OF CURB 1/4".

CONCRETE CURB DETAIL (MOUNTABLE)
NOT TO SCALE



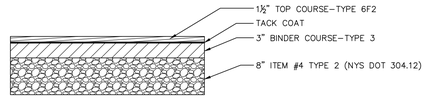
HANDICAP AND TYPICAL PARKING SPACE STRIPING DETAIL
NOT TO SCALE



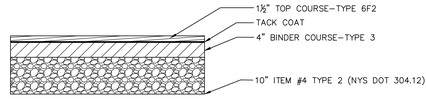
HATCH LINES
261.13(b)

NOTE: DETAIL SHALL BE USED FOR ALL ON-SITE LOCATIONS WHERE PAVEMENT HATCHING IS SPECIFIED

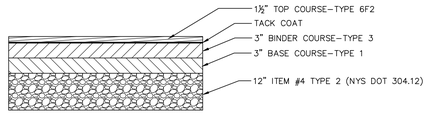
STRIPING DETAIL
NOT TO SCALE



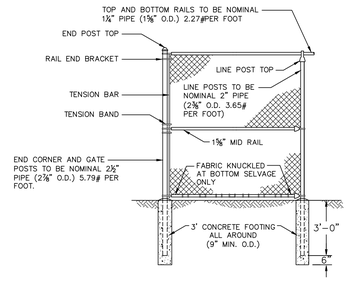
PAVEMENT SECTION 1
PASSENGER TRAFFIC AND PARKING AREAS
NOT TO SCALE



PAVEMENT SECTION 2
MEDIUM DUTY TRUCK TRAFFIC AREAS
NOT TO SCALE



PAVEMENT SECTION 3
HEAVY DUTY TRUCK TRAFFIC AREAS
NOT TO SCALE



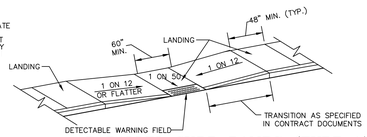
FENCE SPECIFICATIONS:

1. FENCING MATERIAL SHALL BE CYCLONE TYPE 1 FENCE AS MANUFACTURED BY USS OR EQUAL.
2. FABRIC HEIGHT IS TO BE 8'.
3. FABRIC SHALL BE 2" MESH 11 GAUGE (MIN.).
4. GATE SHALL HAVE POSITIVE TYPE LATCHING DEVISES WITH PROVISIONS FOR PADLOCKING.
5. ALL POSTS, RAILS, AND APPURTENANCES SHALL BE GALVANIZED STEEL. PIPE POSTS SHALL HAVE TOPS WHICH EXCLUDE MOISTURE.
6. END, CORNER, PULL, AND GATE POSTS ARE TO BE BRACED WITH THE SAME MATERIAL AS TOP RAIL. ALL POSTS SHALL BE SET IN A CONCRETE FOUNDATION OF 1:2:4 MIX. LINE POSTS SHALL BE EVENLY SPACED 10' OR LESS.
7. FENCE IS TO BE INSTALLED IN A PROFESSIONAL MANNER TO ENHANCE THE APPEARANCE OF THE INSTALLATION, TO PREVENT ENTRANCE OF PERSONS AND ANIMALS AND TO PROTECT EQUIPMENT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN THAT THE GRADE AT THE FENCE LINE IS CORRECT, LEVEL AND FINAL BEFORE THE FENCE IS INSTALLED. ALL POSTS SHALL BE ALIGNED TOP RAIL SHALL BE HELD LEVEL.
8. EXPERIENCED PERSONNEL IN THE FENCE INDUSTRY SHALL INSTALL THE FENCE.

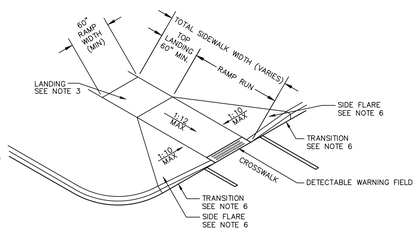
TYPICAL CHAIN LINK FENCE
NOT TO SCALE

GENERAL SIDEWALK NOTES:

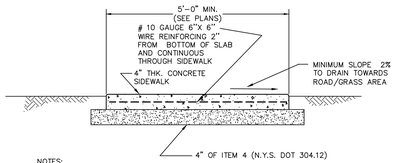
1. THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCATIONS. FIELD CONDITIONS AT INDIVIDUAL LOCATIONS MAY REQUIRE SPECIFIC DESIGNS. DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF THIS SHEET TO THE MAXIMUM EXTENT FEASIBLE ON ALTERATION PROJECTS AND WHEN STRUCTURALLY PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE AMERICAN'S WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.
2. THERE SHALL BE A LANDING AT THE TOP OF EACH CURB RAMP. THERE SHALL BE A LANDING AT THE TOP AND AT THE BOTTOM OF EACH PARALLEL AND PARALLEL/PERPENDICULAR RAMP.
3. LANDINGS SHALL HAVE A MINIMUM CLEAR DIMENSION OF A 60" BY 60" SQUARE. THE MAXIMUM CROSS SLOPE AT LANDINGS IS 2 PERCENT IN ANY DIRECTION. LANDINGS MAY OVERLAP WITH ADJACENT LANDINGS OR A SINGLE LANDING LANDINGS MAY OVERLAP WITH THE CLEAR GROUND SPACE REQUIRED AT PEDESTRIAN SIGNAL PUSH BUTTONS.
4. CROSS SLOPES. THE MAXIMUM CROSS SLOPE OF CURB RAMPS SHALL BE 2 PERCENT. CURB RAMP SURFACES SHALL GENERALLY LIE IN CONTINUOUS PLANES WITH A MINIMUM OF SURFACE WARP.
5. THE RUNNING GRADE OF CURB RAMPS SHOULD BE AS FLAT AS PRACTICABLE. THE MAXIMUM RUNNING GRADE OF ANY PORTION OF ANY CURB RAMP SHALL BE 1:12 (8.3%). CURB RAMPS ARE NOT REQUIRED TO BE LONGER THAN 15'.
6. CURB RAMPS LOCATED WHERE PEDESTRIANS MAY WALK ACROSS THE CURB RAMP SHALL HAVE FLARED SIDES. THE LENGTH OF THE FLARES SHALL BE AT LEAST TEN (10) TIMES THE CURB HEIGHT, MEASURED ALONG THE CURB LINE. WHEN INFEASIBLE OR IMPRACTICABLE TO PROVIDE A LANDING THAT IS AT LEAST 60" WIDE (MEASURED FROM THE TOP OF THE RAMP TO THE BACK OF THE SIDEWALK), THE LENGTH OF THE FLARES SHALL BE TWELVE (12) TIMES THE CURB HEIGHT MEASURED ALONG THE CURB LINE.
7. THE SURFACE OF ALL CURB RAMPS SHALL BE STABLE, FIRM AND SLIP RESISTANT. A COARSE BROOM FINISH RUNNING PERPENDICULAR TO THE SLOPE IS RECOMMENDED ON CONCRETE RAMP SURFACES, EXCLUSIVE OF THE DETECTABLE WARNING FIELDS.
8. RAMP TRANSITIONS BETWEEN WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT VERTICAL CHANGES (1/4" MAX.).
9. COORDINATE ALL TRAFFIC CONTROL DEVICES, UTILITY LOCATIONS, SIGNS, STREET FURNITURE AND DRAINAGE TO ENSURE A CONTINUOUS PEDESTRIAN ACCESS ROUTE AT ALL CURB RAMP LOCATIONS. GUIDANCE FOR CROSSWALK MARKINGS AND TRAFFIC CONTROL DEVICES IS PROVIDED IN THE MUTCD. DRAINAGE GRATES AND UTILITY ACCESS COVERS ARE NOT ALLOWED IN RAMP WALKING SURFACES OR LANDINGS.
10. WHERE FEASIBLE, E.G. WHERE R.O.W. WIDTH PROVIDES SUFFICIENT SPACE TO INSTALL SIDEWALKS SET BACK FROM THE CURBS, RAMP TYPES 2A AND 3A SHOULD BE INSTALLED AS THE SEPARATION PROVIDED BETWEEN SIDEWALK AND CURB OR TRAVELWAY MAKE FOR AS GREATER PEDESTRIAN SAFETY AND COMFORT.
11. AT MARKED CROSSINGS, THE FULL WIDTH OF THE RAMP SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS. THE SIDES OF THE RAMPS (THE FLARES) NEED NOT BE WITHIN THE WIDTH OF THE MARKINGS.
12. DETAILS ILLUSTRATE THAT DETECTABLE WARNINGS ARE REQUIRED. SEE THE CURRENT DETECTABLE WARNING STANDARD SHEET FOR SPECIFIC DETECTABLE WARNING REQUIREMENTS. DETAILS DO NOT SHOW DROPPED CURBS AT BOTTOMS OF CURB RAMPS. DROP CURBS MAY BE SPECIFIED.
13. SLOPES ON BLENDED TRANSITIONS SHALL NOT BE STEEPER THAN 2% (1 ON 50) IN ANY DIRECTION.



PARALLEL CURB RAMPS (TYPE A)
NOT TO SCALE



PERPENDICULAR SIDEWALK CURB RAMP (TYPE B)
NOT TO SCALE



NOTES:
1. EXPANSION JOINTS OF 3/16" CELLULOSE OR SIMILAR APPROVED MATERIAL SHALL BE PLACED AT 10' INTERVALS
2. CONTRACTION JOINTS 1" DEEP HAVING 1/4" RADIUS EDGES SHALL BE PLACED AT 5'-0" INTERVALS IN SIDEWALK.
3. EDGES SHALL HAVE 1/2" RADIUS.
4. USE 3500 PSI AIR ENTRAINED CONCRETE.
5. BROOM FINISH TOP SURFACE.

STANDARD SIDEWALK DETAIL
NOT TO SCALE

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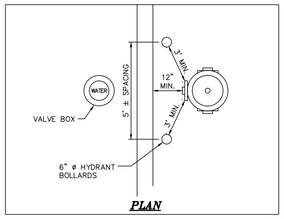
Goshen, N.Y. 10924
(845) 294-3700

CONSTRUCTION DETAILS – 1

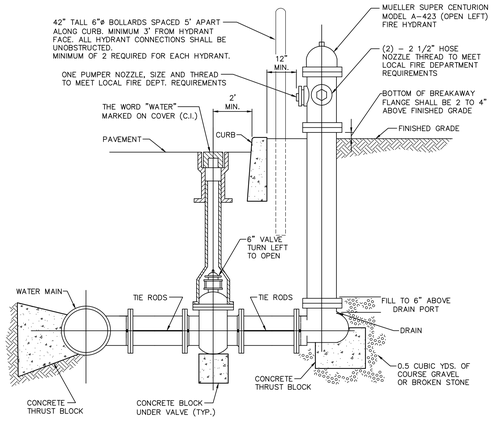
AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 AUGUST 24, 2016
CAD File:	L-0070-DETAILS
Layout:	CONS DETAILS-1
Sheet No.:	C2-16 OF 17
Drawn By:	ESR
Checked By:	
Scale:	N/A
Tax Map No.:	SEE SHEET C2-01
Drawing No.:	A – 13 – 0070 – C3D



PLAN

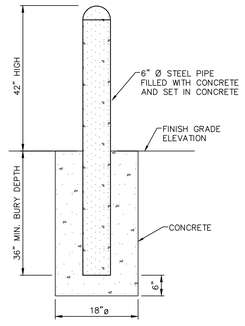


HYDRANT DETAIL

NOT TO SCALE

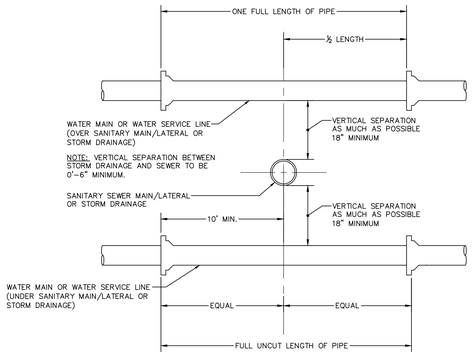
NOTES:

1. HYDRANT SHALL BE MUELLER SUPER CENTURION MODEL A-423 (OPEN LEFT).
2. HYDRANT SHALL BE PAINTED IN ACCORDANCE WITH AWWA STANDARDS (C502, SEC. 4.13)
3. WHERE GROUND WATER RISES TO WITHIN 2 FEET OF A FIRE HYDRANT BASE, THE DRAIN PORT SHALL BE PLUGGED. ANY HYDRANT THAT IS PLUGGED SHALL BE LABELED IN A MANNER SATISFACTORY TO THE LOCAL FIRE DEPARTMENT AND WATER DEPARTMENT TO ENSURE THAT THE HYDRANT IS PUMPED OUT AFTER EACH USE.



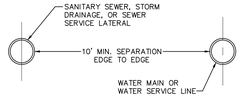
HYDRANT BOLLARD DETAIL

NOT TO SCALE



WATER & SEWER CROSSING DETAIL

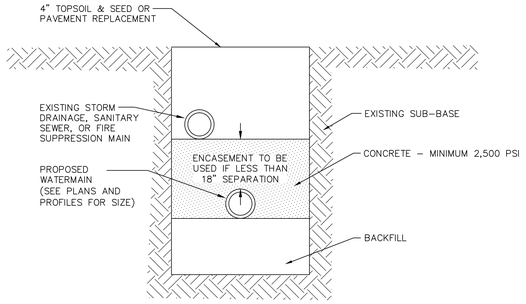
NOT TO SCALE



WATER & SEWER HORIZONTAL SEPARATION

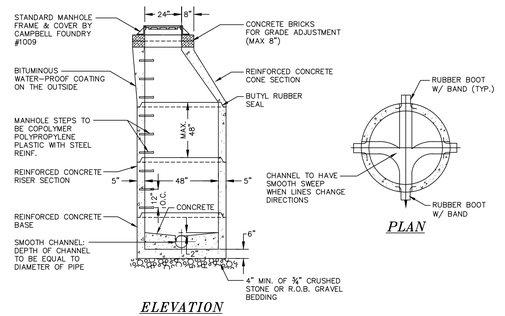
NOT TO SCALE

NOTE:
THE SEPARATION REQUIREMENT SHALL CONFORM TO CURRENT ORANGE COUNTY DEPARTMENT OF HEALTH STATUTES, CODES, RULES, REGULATIONS AND LAWS AS THEY APPLY. ANY DEVIATION FROM THE ABOVE SEPARATION REQUIREMENTS SHALL REQUIRE WRITTEN APPROVAL FROM THE ORANGE COUNTY DEPARTMENT OF HEALTH.



CONCRETE ENCASEMENT DETAIL

NOT TO SCALE



ELEVATION

PLAN

PRE-CAST MANHOLE

NOT TO SCALE

NOTES:

1. SMOOTH CHANNEL INVERT TO BE PAVED WITH CEMENT MORTAR.
2. PIPE JOINTS SHALL BE A MINIMUM OF 2' FROM OUTSIDE WALL OF MANHOLE.
3. SANITARY SEWER TO EXTEND INTO THE MANHOLE ONLY TO A POINT WHERE OUTSIDE OF SEWER MEETS INSIDE WALL OF MANHOLE.
4. OPENING FOR PIPE SHALL BE PRE-CAST. CONNECTIONS TO EXISTING MANHOLES SHALL BE MACHINE CORED.
5. MANHOLE COVERS TO BE STAMPED "SANITARY".
6. PRECAST REINFORCED CONCRETE MANHOLE SHALL BE DESIGNED FOR H20 LIVE LOAD.

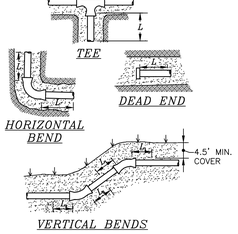
ELEVATION
SEWER CLEAN OUT DETAIL

NOT TO SCALE

NOTES:

1. CLEAN OUT INSTALLATION SHALL CONFORM TO CLEAN OUT DETAIL (C.O.) FIGURE 4 FROM ORANGE COUNTY DEPT. OF EF&S, OCSD NO.1, AND NOTE 5 BELOW.
2. CLEAN OUT LOCATION TO BE SHOWN ON AS-BUILT DRAWINGS WITH DISTANCE FROM BUILDING CORNERS.
3. MINIMUM COVER OVER 6" ABS SERVICE PIPE IS 4.0 FEET.
4. FOR BACKFILL SPECIFICATIONS, SEE TYPICAL TRENCH DETAIL (SANITARY SEWER) FIGURE 1 (FROM ORANGE COUNTY DEPT. OF EF&S, OCSD NO.).
5. EACH BUILDING SEWER SHALL HAVE A CLEANOUT INSTALLED APPROXIMATELY 2' DOWNSTREAM OF THE BUILDING PIPE TO BUILDING SEWER CONNECTION. THEREAFTER, CLEANOUTS SHALL BE INSTALLED ALONG THE BUILDING SEWER APPROXIMATELY EVERY 100' (MAXIMUM). FOR THE PURPOSE OF CLEANOUT LOCATIONS, DISTANCE SHALL BE MEASURED FROM THE FIRST CLEANOUT LOCATED DOWNSTREAM OF THE HOUSE PIPE TO BUILDING SEWER CONNECTION, THENCE DOWNSTREAM ALONG THE BUILDING SEWER TO THE CENTER OF THE SEWER MAIN LINE (GENERALLY LOCATED IN THE CENTER OF THE STREET).

NOTE:
LENGTH OF RESTRAINED JOINTS BASED UPON:
a. 4.5' MINIMUM COVER
b. TEST PRESSURE = 150 PSI
c. TYPE 5 TRENCH
d. 1.5 TO 1 SAFETY FACTOR

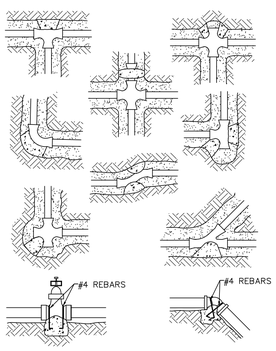


RESTRAINED JOINT TABLE	
MINIMUM LENGTH REQUIRED IN L.F.	
FITTING	*LENGTH IN L.F. (L)*
TEES & DEAD ENDS	
6"	22
8"	29
10"	34
12"	40
14"	46
16"	52
90° BEND	
6"	10
8"	12
10"	15
12"	17
14"	20
16"	22
45° BEND	
6"	4
8"	5
10"	6
12"	7
14"	8
16"	9
22½° BEND	
6"	2
8"	3
10"	3
12"	4
14"	4
16"	5
VERTICAL BENDS	L_1 / L_2
6"	9 / 4
8"	12 / 5
10"	14 / 6
12"	17 / 7
14"	19 / 8
16"	22 / 9

ALL REQUIRED JOINT RESTRAINT SHALL BE MEGALUG RETAINING GLANDS AS MANUFACTURED BY EBAA IRON, OR APPROVED EQUAL.

RESTRAINED JOINT DETAILS

NOT TO SCALE



FOR VALVES 12" AND LARGER ANCHOR VALVE AS ABOVE

AT VERT. BENDS, ANCHOR TO RESIST OUTWARD THRUSTS

NOTES:

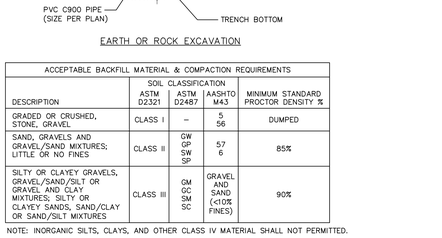
1. KEEP NUTS AND BOLTS FREE OF CONCRETE THROUGH THE USE OF PLASTIC COVERS.
2. ANCHORING OF VALVES AND VERTICAL BENDS SHALL BE DONE WITH #4 REBARS WITH A MINIMUM ENGAGEMENT DEPTH OF 3" INCHES AND 3 INCHES OF THE TERMINUS END OF THE REBAR BEING BENT AT 90° ORIENTATION AS SHOWN.

THRUST BLOCK DETAILS

NOT TO SCALE

THRUST BLOCK SIZING TABLE					
BEARING AREA OF THRUST BLOCK IN SQUARE FEET					
FITTING	*THRUST * (POUNDS)*	*HARD SHALE*	*SAND & GRAVEL*	*SAND*	*SOFT CLAY*
TEES AND DEAD ENDS					
6"	5,700	1 1	2	3	6
8"	9,870	2	3.5	5	10
10"	16,125	2.5	5.5	8.5	16.5
12"	22,965	3.5	8	11.5	23
14"	31,155	4.5	10.5	16.0	31.5
16"	40,320		13.5	20.5	40.5
90° BEND					
6"	8,055	1	3	4	8
8"	13,950	1.5	5	9	14
10"	22,800	2.5	8 11	11.5	23
12"	32,460	3.5	15.0	16.5	32.5
14"	44,040	4.5	19.5	22.5	44.5
16"	57,015	6		29	57.5
45° BEND					
6"	4,365	1	1.5	2.5	4.5
8"	7,560	1	2.5	4	8
10"	12,360	1.5	4.5	6.5	12.5
12"	17,580	2	6	9	18
14"	23,865	2.5	8.0	12.0	24
16"	30,885	3.5	10.5	15.5	31
22½° BEND					
6"	2,205	1 1	1	1.5	2.5
8"	3,825	1 1	1.5	2	4
10"	6,255	1.5	2	3.5	6.5
12"	8,910	2	3	4.5	9
14"	12,090		4.5	6.5	12.5
16"	15,645		5.5	8	16

* THRUST AT 150 PSI OF WATER PRESSURE



EARTH OR ROCK EXCAVATION

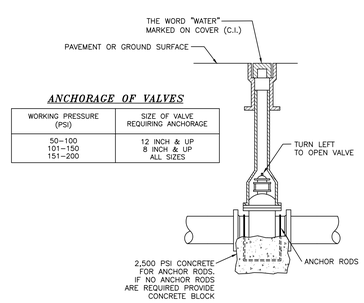
ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
	SOIL CLASSIFICATION			
DESCRIPTION	ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, STONE, GRAVEL	CLASS I	–	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

WATERMAIN TRENCH CROSS SECTION

NOT TO SCALE

*BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.

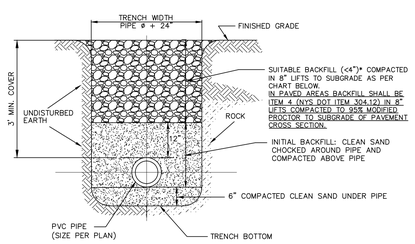


ANCHORAGE OF VALVES

WORKING PRESSURE (PSI)	SIZE OF VALVE REQUIRING ANCHORAGE
50–100 101–150 151–200	12 INCH & UP 8 INCH & UP ALL SIZES

VALVE DETAIL

NOT TO SCALE



EARTH OR ROCK EXCAVATION

ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
	SOIL CLASSIFICATION			
DESCRIPTION	ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, STONE, GRAVEL	CLASS I	–	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

SANITARY SEWER TRENCH CROSS SECTION

NOT TO SCALE

*BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.

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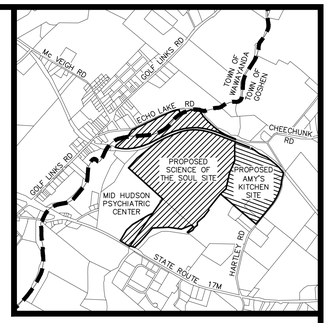
Goshen, N.Y. 10924
(845) 294-3700

CONSTRUCTION DETAILS – 2

AMY'S KITCHEN, INC.

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: 130070-DETAILS
Layout: CONS DETAILS-2
Sheet No.: C2-17 OF 17
Drawing No.: A – 13 – 0070 – C30
Drawn By: ESR
Checked By:
Scale: N/A
Tax Map No.: SEE SHEET C2-01



LOCATION PLAN

1 INCH = 2000 FEET

TEMPORARY ACCESS EASEMENT		
LINE	BEARING	DISTANCE
L1	S68°42'15"E	50.00'
L2	S21°18'37"W	65.89'
L3	N68°42'03"W	50.01'
L4	N21°19'03"E	65.89'

BOUNDARY SURVEY NOTES:

1. SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
2. REFERENCES:
   - A. MAP ENTITLED "SURVEY & TOPOGRAPHIC MAP OF LANDS OF CONCRETE PROPERTIES, LLC, SITUATED IN THE TOWNS OF GOSHEN & WAWAYANDA, ORANGE COUNTY, NEW YORK STATE, SURVEY & TOPOGRAPHIC MAP OF LANDS OF TETZ FAMILY, LLC, AND SUBDIVISION MAP OF LANDS OF THE PEOPLE OF THE STATE OF NEW YORK, SITUATE IN THE TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK STATE," DATED NOVEMBER 2007 AND LAST REVISED MAY 2009, PREPARED BY MERCURIO, NORTON, TAROLLI, LAND SURVEYING–ENGINEERING, P.C.
   - B. MAP ENTITLED "LOT LINE CHANGE, LANDS OF AL TURI LANDFILL, INC., TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JANUARY 28, 2013, LAST REVISED FEBRUARY 22, 2103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON MAY 6, 2013, AS FILED MAP NO. 163–13.
   - C. MAP ENTITLED "SKETCH PLAN FOR ECHO LAKE SITE OWNED BY THE TOWN OF WALLKILL, TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JUNE 19, 2007, PREPARED BY EUSTANCE & HOROWITZ, P.C.
   - D. MAP ENTITLED "LANDS OF HUBERTH, TOWN OF WAWAYANDA, ORANGE COUNTY, NEW YORK," DATED APRIL 12, 2006 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON JANUARY 10, 2007, AS FILED MAP NO. 6–07.
   - E. MAP ENTITLED "THREE LOT MINOR SUBDIVISION PLAT, LANDS OF JOSEPH R. CARMICHAEL, ETAL, LOT 17, BLOCK 1 SECTION 12, TOWN OF GOSHEN, OREANGE COUNTY, NEW YORK," DATED OCTOBER 3, 1975 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON DECEMBER 1, 1975, AS FILED MAP NO. 3626.
   - F. TITLE REPORT NUMBER HN 53050, PREPARED BY HILL–N–DALE ABSTRACTERS, INC., HAVING AN EFFECTIVE DATE OF DECEMBER 7, 2014.
3. TAX LOT 12 – 1 – 24.2 IS SUBJECT TO A PERPETUAL EASEMENT IN FAVOR OF WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT AS DESCRIBED IN LIBER 771 OF DEEDS AT PAGE 487 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE.
4. TAX LOT 12 – 1 – 23.2 IS SUBJECT TO A PERPETUAL EASEMENT IN FAVOR OF WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT AS DESCRIBED IN LIBER 1016 OF DEEDS AT PAGE 103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE.
5. TAX LOT 12 – 1 – 24.2 IS SUBJECT TO TERMS AND CONDITIONS IN PERMANENT LICENSE AGREEMENT WITH THE TOWN OF WALLKILL FOR THE USE OF WATER GENERATED BY THE WELL HEAD SITES THERE, AS WELL AS PERMANENT ACCESS RIGHTS TO ENTER UPON, OVER ACROSS AND THROUGH THE LOT NUMBER 1 PREMISES.
6. TAX LOT 12 – 1 – 23.2 IS SUBJECT TO A GAS RIGHT AGREEMENT BETWEEN AL TURI LANDFILL, INC AND AMERESCO LFG–I, INC., AS DESCRIBED IN LIBER 11588 OF DEEDS AT PAGE 2008, AS FILED IN THE ORANGE COUNTY CLERK'S OFFICE.

ADDITIONAL MAP NOTES:

1. WETLANDS DELINEATED BY TES, INC. IN AUGUST 2009 AND AMENDED BY TES, INC. IN NOVEMBER 2015.
2. 100 YR. FLOOD PLAIN LIMITS SHOWN ARE COORDINATED TO ALIGN WITH ACTUAL FIELD TOPOGRAPHY BASED UPON FLOOD ELEVATIONS DEPICTED ON FEMA FIRM PANELS 36071C0267E AND 36071C0269E DATED 8/3/2009.

WETLAND AREAS:

WETLAND	AREA	JURISDICTION
TES WETLAND A	9.09± AC.	NYSDEC JURISDICTIONAL
TES WETLAND B	0.75± AC.	NYSDEC JURISDICTIONAL
TES WETLAND C	0.16± AC.	NON–JURISDICTIONAL
TES WETLAND D	0.573± AC.	NON–JURISDICTIONAL
TES WETLAND E	2.864± AC.	NON–JURISDICTIONAL
TES WETLAND F	0.704± AC.	NON–JURISDICTIONAL
TES WETLAND H	0.320± AC.	NON–JURISDICTIONAL
TES WETLAND K	1.130± AC.	USACE JURISDICTIONAL
TES WETLAND J (WALLKILL RIVER)	3.717± AC.	USACE JURISDICTIONAL
TES WETLAND J (ONSITE)	0.138± AC.	USACE JURISDICTIONAL
EXTENSIONS TO TES WETLAND J (ADJOINING SITE)	756 L.F.	USACE JURISDICTIONAL
TOTAL:	19.446± AC. 756 L.F.	

NOTE: WETLANDS "A", "B", AND "C" BOUNDARIES AND AREAS SHOWN TAKEN FROM MAP REFERENCE 2.A. ABOVE

RECORD OWNERS:

CONCRETE PROPERTIES LLC
130 CROTTY ROAD
MIDDLETOWN, NY 10941

L. 12807 P. 171
TOWN OF GOSHEN
12 – 1 – 24.2
TOWN OF WAWAYANDA
1 – 1 – 40

TETZ FAMILY LLC
130 CROTTY ROAD
MIDDLETOWN, NY 10941

TOWN OF GOSHEN
12 – 1 – 23.2
L. 12584 P. 1568

AREAS:

TAX LOT 12 - 1 -24.2 & 1 - 1 - 40	189.081± AC.
TAX LOT 12 - 1 - 23.2	21.733± AC.
TOTAL:	210.814± AC.

PEOPLE OF THE STATE OF NY
515 BROADWAY
ALBANY, NY 12077
16 – 1 – 9.3
12 – 1 – 101
L. 13353 P.1385

PROPOSED LAND ACQUISITION = 7.578± AC.

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GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

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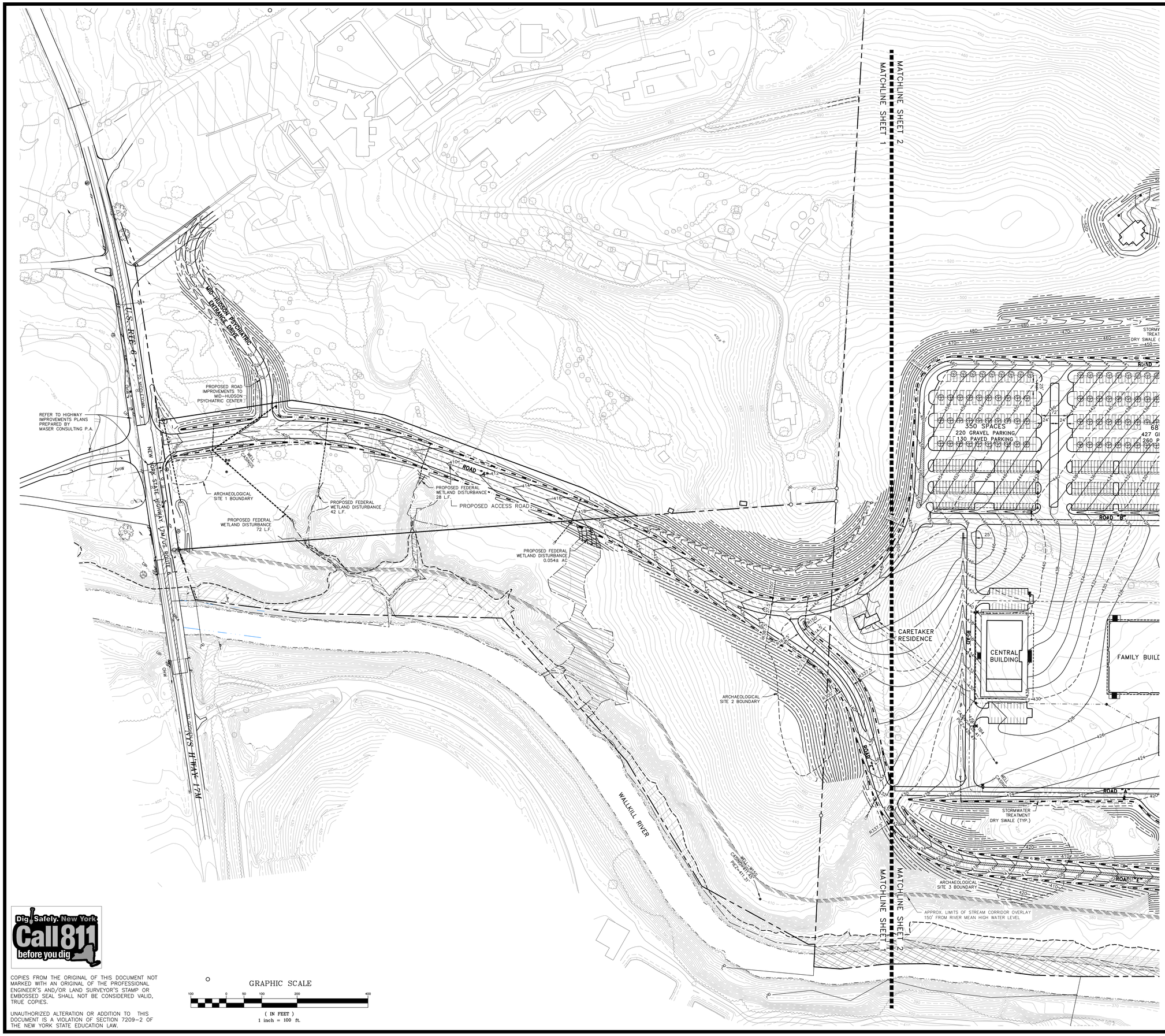
EXISTING CONDITIONS MAP

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016, APRIL 22, 2016, AUGUST 24, 2016
CAD File: Echo EXISTING COND.
Layout: EX CONDITIONS
Sheet No.: C3–01 OF 28
Drawing No.: A – 13 – 0070 – C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 200'	SEE ABOVE



GENERAL NOTES:

1. ANY CLEARING OF TREES GREATER THAN 4" CALIPER SHALL OCCUR BETWEEN OCTOBER 31ST THROUGH MARCH 31ST.

FIRE DEPARTMENT REQUIREMENTS:

1. FIRE DEPARTMENT KNOX BOX ENTRY SYSTEM TO BE PROVIDED AT MAIN ENTRY OF ALL BUILDINGS INCLUDING THE GUEST HOUSE AND CARETAKER HOMES.
2. FIRE DEPARTMENT KNOX BOX ENTRY SHALL BE PROVIDED ON ANY AND ALL GATES AROUND THE FACILITY INCLUDING EMERGENCY ACCESS GATES.
3. ANY SPRINKLER SIAMESE CONNECTIONS INSTALLED SHALL BE PROVIDED WITH 5" STORZ CONNECTION FITTING.
4. AN EMERGENCY EVACUATION PLAN SHALL BE DEVELOPED FOR THE FACILITY AND PROVIDED TO THE FIRE DEPARTMENT.
5. PRIOR TO FACILITY OPENING FOR OPERATION A BUILDING AND SITE WALK-THRU SHALL BE HELD WITH THE LOCAL FIRE DEPARTMENT TO FAMILIARIZE THE DEPARTMENT WITH THE FACILITY LAYOUT, CONTENTS, AND EQUIPMENT.

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMI
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

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GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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Goshen, N.Y. 10924
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OVERALL GRADING PLAN 1 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
PROPERTY ACQUISITION LINE ADJUSTMENT JUNE 6, 2016
CAD File: SOS ON ECHO SP
Layout: SP 100-1
Sheet No.: C3-02 OF 28
Drawn By: MK
Checked By:
Scale: 1" = 100'
Tax Map No.: SEE SHEET C3-01
Drawing No.: A - 13 - 0070 - C30

MATCHLINE SHEET 2
MATCHLINE SHEET 1

TOWN OF WAYWAYANDA
TOWN OF GOSHEN
WELL CANNING
35± WETLAND "A" 3.09 ACRES
NYS WETLAND MO-24
ECHO LAKE RD
UTILITY TOWER
GRAVEL DRIVE
100' WETLAND BUFFER
GRID

5 BEDROOM
GUEST HOUSE
EL.=510.0

MAINT. BARN

STORMWATER TREATMENT
DRY SWALE (TYP.)

ROAD "B"

350 SPACES
220 GRAVEL PARKING
130 PAVED PARKING

687 SPACES
427 GRAVEL PARKING
260 PAVED PARKING

607 SPACES
427 GRAVEL PARKING
180 PAVED ACCESSIBLE

296 SPACES
206 GRAVEL PARKING
90 PAVED ACCESSIBLE

CARETAKER RESIDENCE

QUEUING FOR ENTRY

TOILET

ROAD "D"

ROAD "C"

CARETAKER RESIDENCE

CENTRAL BUILDING

FAMILY BUILDING

OPEN LAWN AREA

SCIENCE OF THE SOUL CONFERENCE CENTER
500' X 400'
200,000 S.F.

SANITARY PUMP STATION

EMERGENCY ACCESS

ROAD "A"

STORMWATER TREATMENT
DRY SWALE (TYP.)

130 SPACES BUS PARKING

WATERMAIN

ECHO LAKE RD

TO HARLEY ROAD

ROAD "E"

ARCHAEOLOGICAL SITE 3 BOUNDARY

APPROX. LIMITS OF STREAM CORRIDOR OVERLAY
150' FROM RIVER MEAN HIGH WATER LEVEL

35± WETLAND "C"

WALLKILL RIVER

MATCHLINE SHEET 2
MATCHLINE SHEET 1

GENERAL NOTES:

1. ANY CLEARING OF TREES GREATER THAN 4" CALIPER SHALL OCCUR BETWEEN OCTOBER 31ST THROUGH MARCH 31ST.

FIRE DEPARTMENT REQUIREMENTS:

1. FIRE DEPARTMENT KNOX BOX ENTRY SYSTEM TO BE PROVIDED AT MAIN ENTRY OF ALL BUILDINGS INCLUDING THE GUEST HOUSE AND CARETAKER HOMES.
2. FIRE DEPARTMENT KNOX BOX ENTRY SHALL BE PROVIDED ON ANY AND ALL GATES AROUND THE FACILITY INCLUDING EMERGENCY ACCESS GATES.
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5. PRIOR TO FACILITY OPENING FOR OPERATION A BUILDING AND SITE WALK-THRU SHALL BE HELD WITH THE LOCAL FIRE DEPARTMENT TO FAMILIARIZE THE DEPARTMENT WITH THE FACILITY LAYOUT, CONTENTS, AND EQUIPMENT.

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
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- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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OVERALL GRADING PLAN 2 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 AUGUST 24, 2016
CAD File:	SOS ON ECHO SP
Layout:	SP 100-2
Sheet No.:	C3-03 OF 28
Drawn By:	MK
Checked By:	
Scale:	1" = 100'
Tax Map No.:	SEE SHEET C3-01
Drawing No.:	A - 13 - 0070 - C30

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
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- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

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GRID

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GRADING AND UTILITY PLAN 1 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 PROPERTY ACQUISITION LINE ADJUSTMENT JUNE 6, 2016
CAD. File:	SOS ON ECHO SP
Layout:	GU 40-1
Sheet No.:	C3-04 OF 28
Drawn By:	MK
Checked By:	
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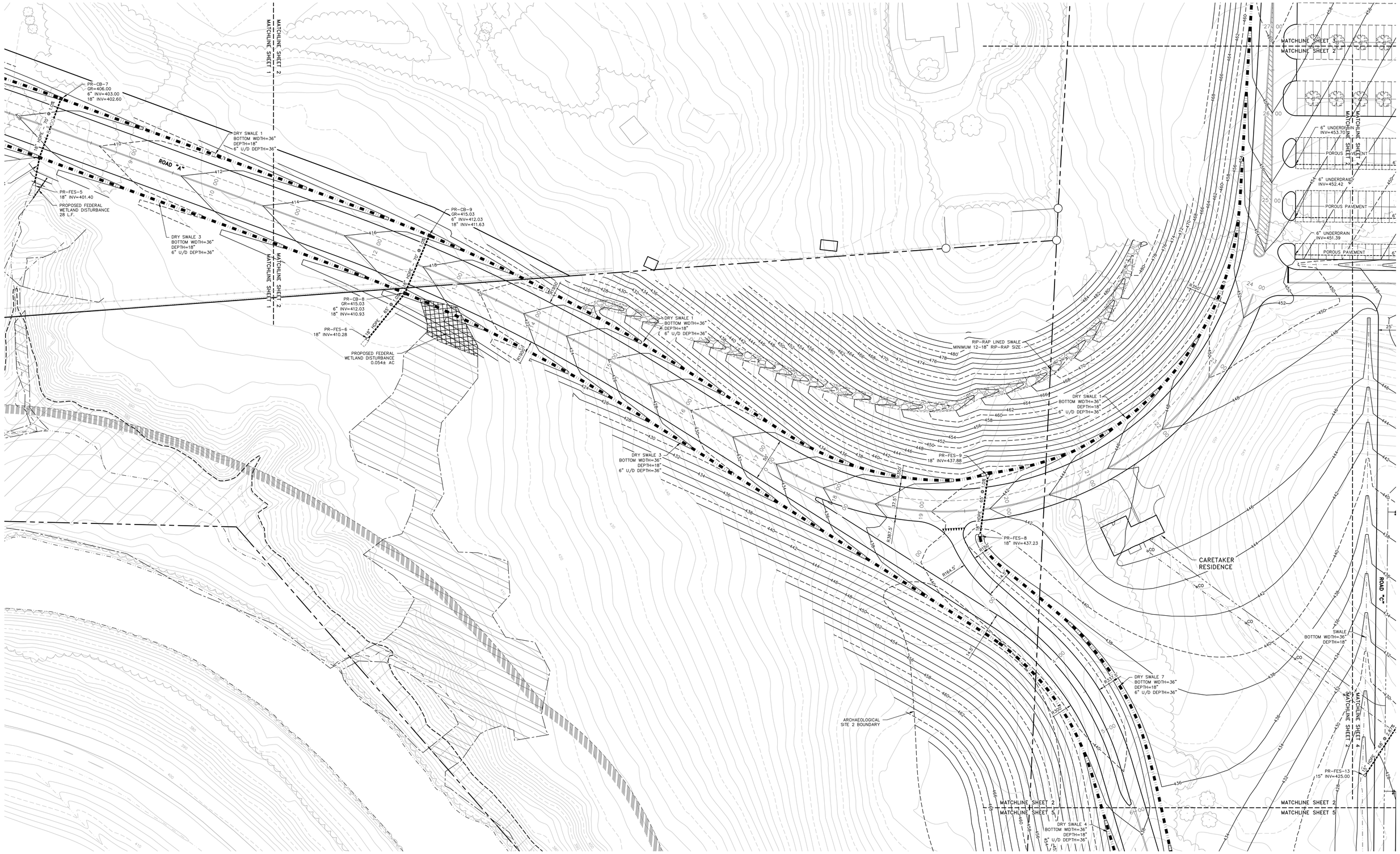
Drawing No.:	A - 13 - 0070 - C30



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GRID

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
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- PROPOSED SANITARY SEWER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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GRADING AND UTILITY PLAN 2 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 AUGUST 24, 2016
CAD File:	SOS ON ECHO SP
Layout:	GU 40-2
Sheet No.:	C3-05 OF 28
Drawn By:	MK
Checked By:	
Scale:	1" = 40'
Tax Map No.:	SEE SHEET C3-01
Drawing No.:	A - 13 - 0070 - C30

MATCHLINE SHEET 6
MATCHLINE SHEET 3

5 BEDROOM GUEST HOUSE
EL.=510.0

DRY SWALE 13
BOTTOM WIDTH=36"
DEPTH=18"
SIDE U/D DEPTH=36"

ROAD "A"

ITEM 4 DRIVE AISLE

MATCHLINE SHEET 3
MATCHLINE SHEET 2

MATCHLINE SHEET 3
MATCHLINE SHEET 4

MATCHLINE SHEET 3
MATCHLINE SHEET 4

MATCHLINE SHEET 3

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GRID

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- GAS GAS GAS — EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIM
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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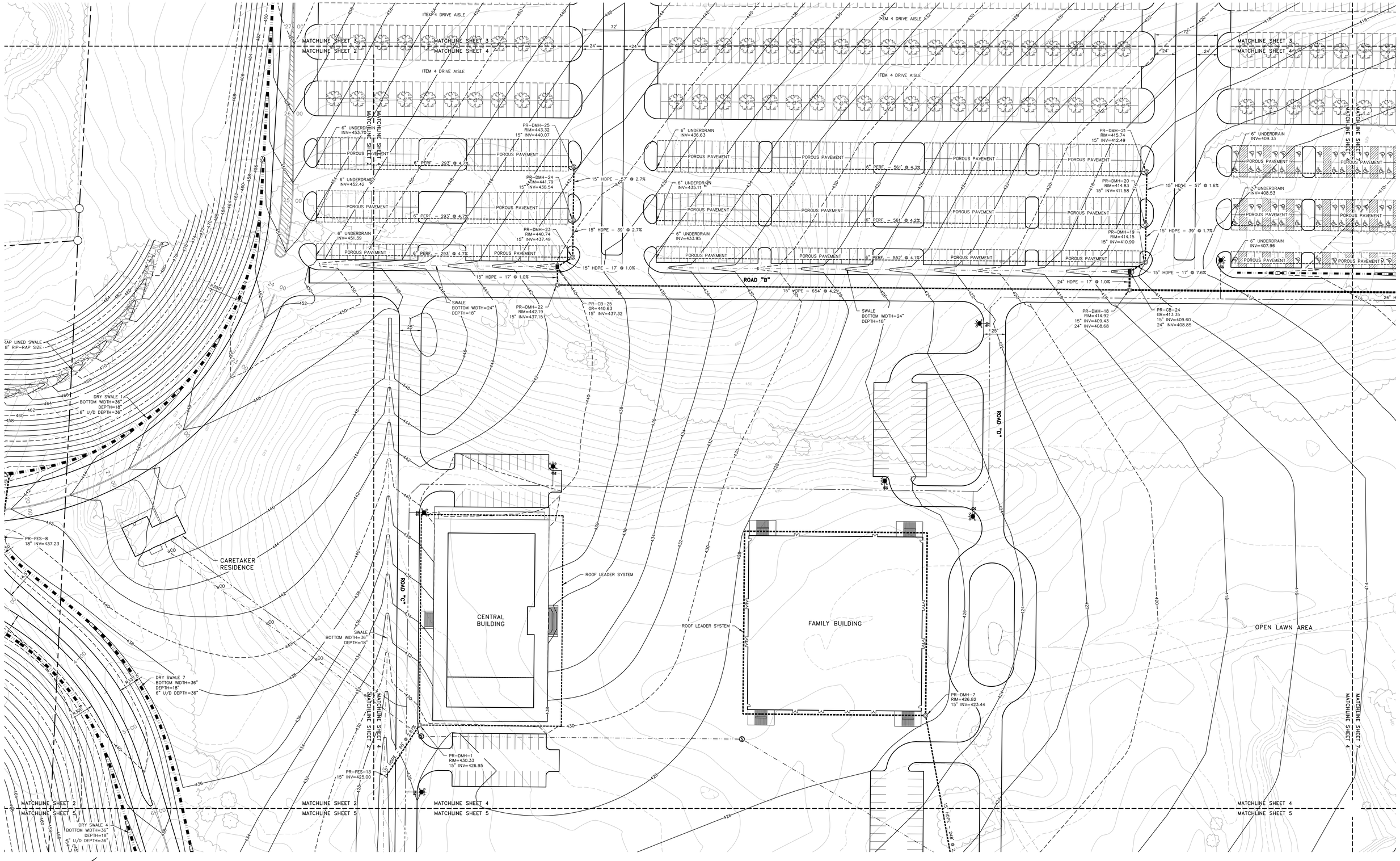
GRADING AND UTILITY PLAN 3 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 AUGUST 24, 2016
CAD File:	SOS ON ECHO SP
Layout:	GU 40-3
Sheet No.:	C3-06 OF 28
Drawing No.:	A - 13 - 0070 - C30
Drawn By:	MK
Checked By:	
Scale:	1" = 40'
Tax Map No.:	SEE SHEET C3-01



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LEGEND

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- EXISTING EASEMENT
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- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMI
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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GRADING AND UTILITY PLAN 4 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 AUGUST 24, 2016
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Sheet No.:	C3-07 OF 28
Drawing No.:	A - 13 - 0070 - C30
Drawn By:	MK
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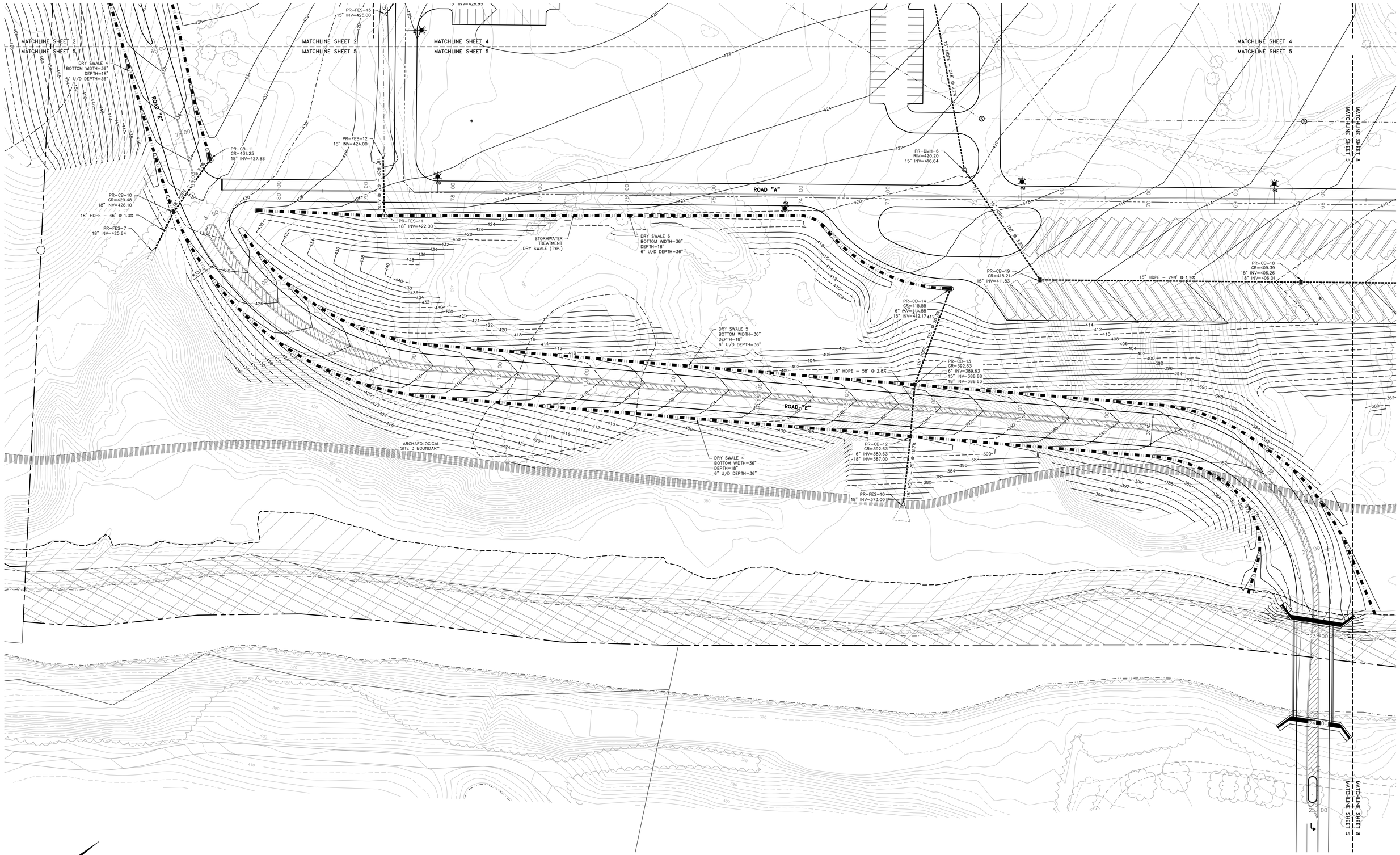
Tax Map No.:	SEE SHEET C3-01



GRID

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LEGEND

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- EXISTING GAS
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GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
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GRADING AND UTILITY PLAN 5 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
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AUGUST 24, 2016
CAD File: SOS ON ECHO SP
Layout: GU 40-5
Sheet No.: C3-08 OF 28
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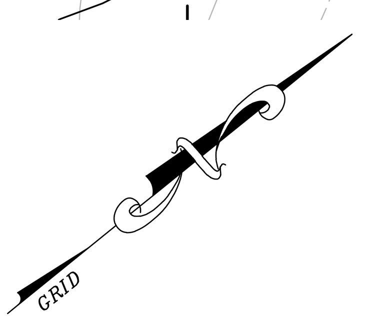

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- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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GRADING AND UTILITY PLAN 6 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

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CAD File: SOS ON ECHO SP
Layout: GU 40-6
Sheet No.: C3-09 OF 28

MATCHLINE SHEET 6
MATCHLINE SHEET 7

ITEM 4 DRIVE AISLE

POROUS PAVEMENT
6" PERF. – 552' @ 1.4%

PR-DMH-17
RIM=405.02
15" INV=401.77

PR-DMH-16
RIM=404.18
15" INV=400.93

PR-DMH-15
RIM=403.60
15" INV=400.35

6" UNDERDRAIN
INV=399.02

6" UNDERDRAIN
INV=398.04

6" UNDERDRAIN
INV=397.35

PR-DMH-13
RIM=401.07
15" INV=396.82

PR-DMH-12
RIM=399.38
15" INV=396.13

PR-DMH-11
RIM=398.86
15" INV=395.61

6" PERF. – 280' @ 0.8%
6" PERF. – 280' @ 0.7%
6" PERF. – 280' @ 0.6%

12" HDPE – 57' @ 1.5%
15" HDPE – 39' @ 1.5%
15" HDPE – 16' @ 10.8%
24" HDPE – 17' @ 3.7%
24" HDPE – 649' @ 1.8%
30" HDPE – 377' @ 1.6%
15" HDPE – 57' @ 1.2%
15" HDPE – 39' @ 1.3%
15" HDPE – 55' @ 4.0%
15" HDPE – 17' @ 17.6%
24" HDPE – 17' @ 3.7%
62' @ 1.2%
15" HDPE – 506' @ 1.5%
18" HDPE – 132' @ 5.0%
18" HDPE – 93' @ 16.4%
18" HDPE – 121' @ 8.0%
18" HDPE – 150' @ 2.5%
15" HDPE – 506' @ 2.0%

PR-DMH-14
RIM=403.58
24" INV=397.25
30" INV=396.75

PR-CB-23
GR=402.00
6" INV=399.00
15" INV=398.62
24" INV=397.87

PR-CB-22
GR=396.00
6" INV=393.00
15" INV=392.62
24" INV=391.87

PR-DMH-10
RIM=398.40
24" INV=391.25
30" INV=390.75

PR-DMH-9
RIM=409.43
15" INV=406.05

PR-DMH-8
RIM=399.37
15" INV=396.24
18" INV=395.99

PR-CB-20
GR=394.11
6" INV=391.11
18" INV=390.73

PR-DMH-2
RIM=399.32
18" INV=391.94

PR-DMH-5
RIM=409.45
15" INV=406.07

PR-DMH-3
RIM=396.30
15" INV=396.17
18" INV=395.92

PR-CB-21
GR=397.13
6" INV=394.13
15" INV=391.25
30" INV=390.00

PR-FES-18
15" INV=397.73

PR-FES-17
30" INV=375.00

PR-FES-16
18" INV=375.50

PR-FES-14
24" INV=375.5

PR-CB-15
GR=386.76
6" INV=383.76
18" INV=382.76
24" INV=382.26

DRY SWALE 12
BOTTOM WIDTH=24"
DEPTH=18"
6" U/D DEPTH=36"

DRY SWALE 11
BOTTOM WIDTH=24"
DEPTH=18"
6" U/D DEPTH=36"

DRY SWALE 10
BOTTOM WIDTH=36"
DEPTH=18"
6" U/D DEPTH=36"

DRY SWALE 9
BOTTOM WIDTH=36"
DEPTH=18"
6" U/D DEPTH=36"

UPPER DISCHARGE SWALE
BOTTOM WIDTH=4'
DEPTH=3'

LOWER DISCHARGE SWALE
BOTTOM WIDTH=12'
DEPTH=3'

BIO-RETENTION AREA 1
BERM EL=378.00
BED EL=375.00

QUEUING
FOR ENTRY

CARETAKER
RESIDENCE

TOILET

TOILET

SCIENCE OF THE SOUL CONFERENCE CENTER
500' X 400'
200,000 S.F.

ROAD "A"

EMERGENCY

ACCESS

TRENCH DRAIN

TRENCH DRAIN

WATER MAIN FROM
CITY OF MIDDLETOWN

AMY'S KITCHEN PRE-TREATMENT
WASTEWATER FORCEMAIN TO
CITY OF MIDDLETOWN (DESIGNED
BY OTHERS)

SANITARY PUMP STATION

CONNECTION TO
PROPOSED FORCEMAIN
FROM AMY'S KITCHEN
SEWER FORCEMAIN

EASEMENT TO BE PREPARE
TO THE CITY OF MIDDLETOI
WATER TREATMENT PLANT

GRID

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LEGEND

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GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

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GRADING AND UTILITY PLAN 7 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
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APRIL 22, 2016
AUGUST 24, 2016
CAD File: SOS ON ECHO SP
Layout: GU 40-7
Sheet No.: C3-10 OF 28
Drawn By: MK
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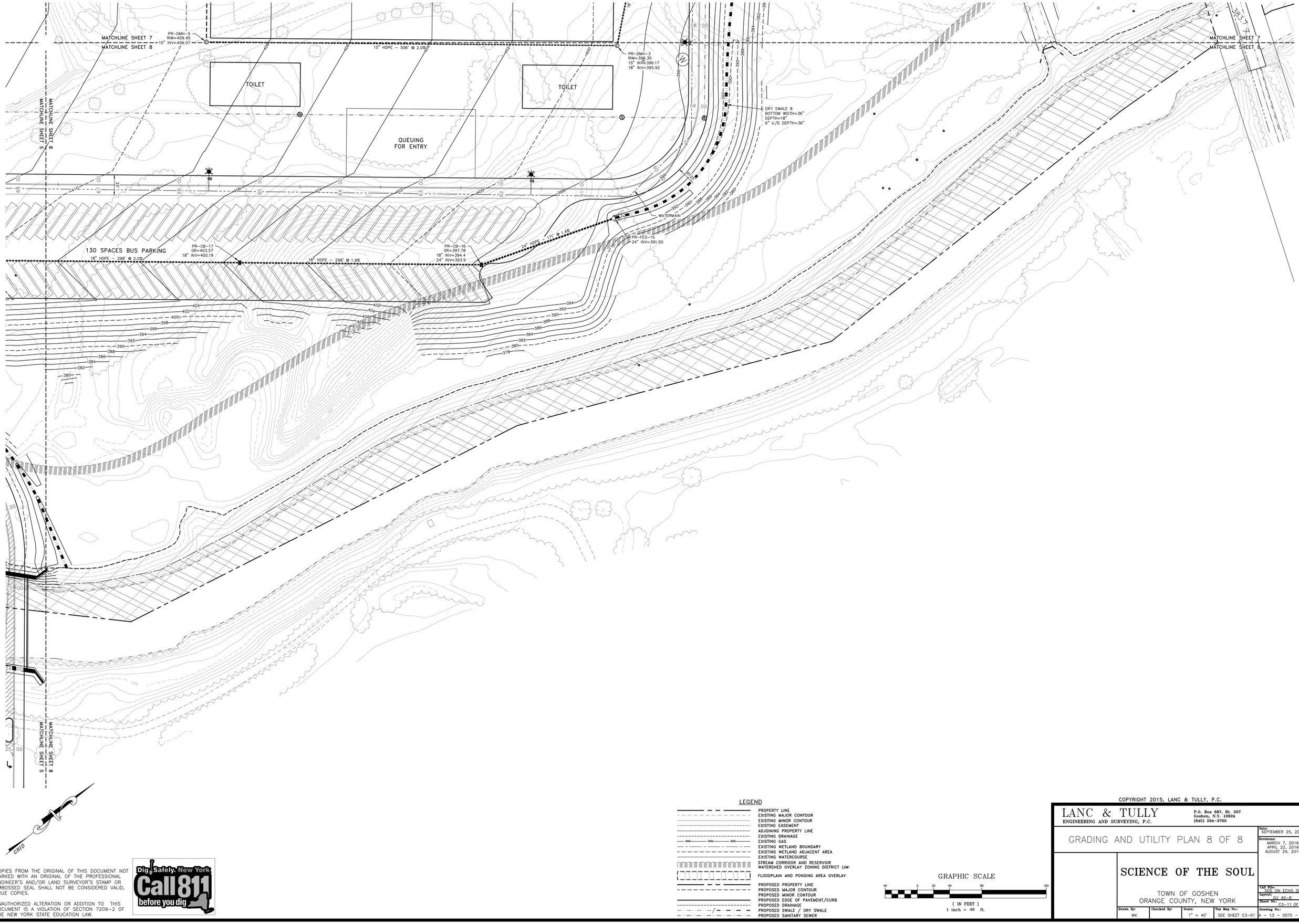
Scale: 1" = 40'
Tax Map No.: SEE SHEET C3-01
Drawing No.: A - 13 - 0070 - C3D



LEGEND

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GRADING AND UTILITY PLAN 8 OF 8

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 AUGUST 24, 2016
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Layout:	GU 40-8
Sheet No.:	C3-11 OF 28
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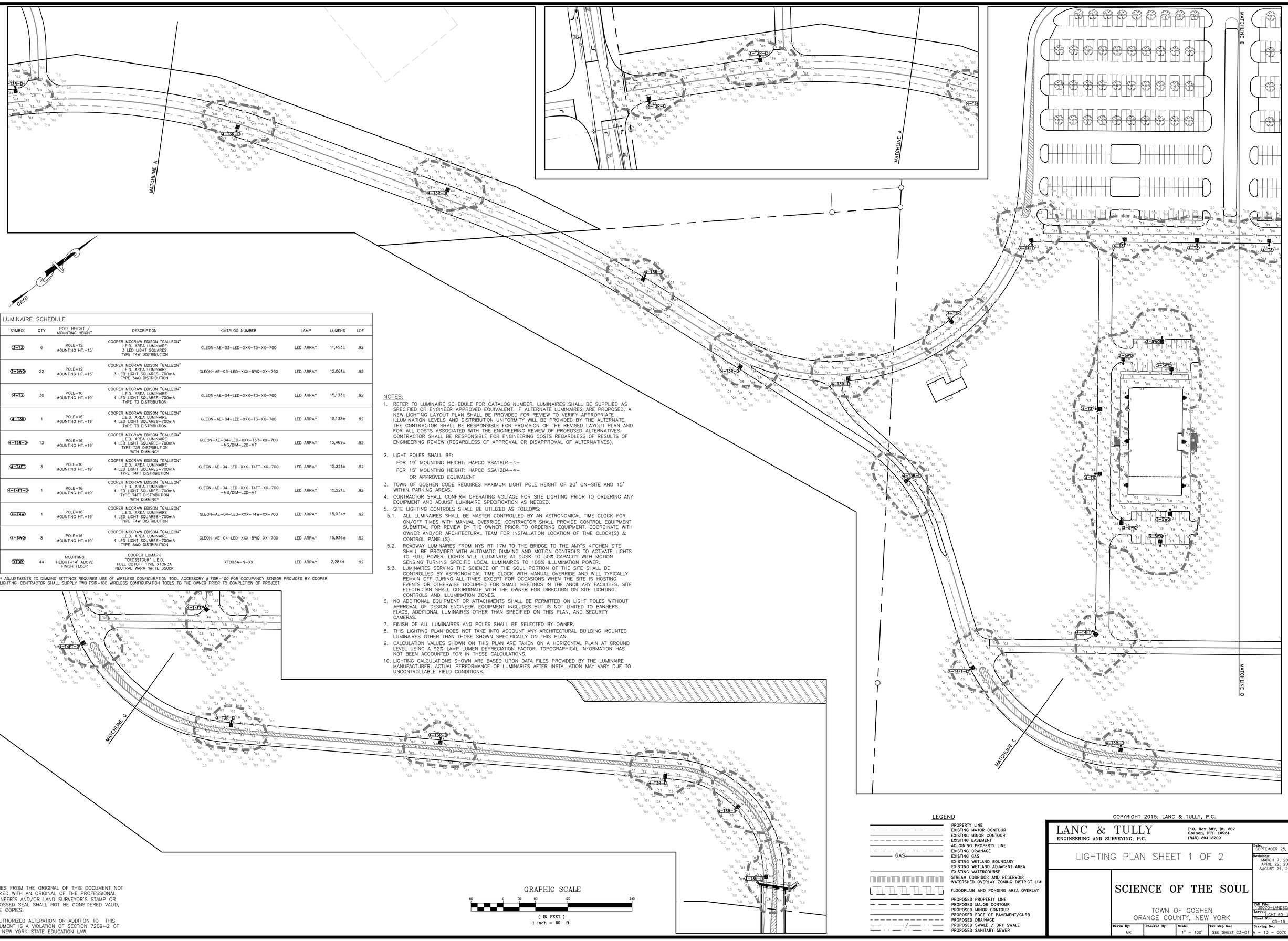

LUMINAIRE SCHEDULE

SYMBOL	QTY	POLE HEIGHT / MOUNTING HEIGHT	DESCRIPTION	CATALOG NUMBER	LAMP	LUMENS	LDF
4–T4	6	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES TYPE T4W DISTRIBUTION	GLEON–AE–03–LED–XXX–T3–XX–700	LED ARRAY	11,453±	.92
4–5WQ	22	POLE=12' MOUNTING HT.=15'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 3 LED LIGHT SQUARES–700mA TYPE 5WQ DISTRIBUTION	GLEON–AE–03–LED–XXX–5WQ–XX–700	LED ARRAY	12,061±	.92
4–T3	30	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T3 DISTRIBUTION	GLEON–AE–04–LED–XXX–T3–XX–700	LED ARRAY	15,133±	.92
4–T3R	1	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T3 DISTRIBUTION	GLEON–AE–04–LED–XXX–T3–XX–700	LED ARRAY	15,133±	.92
4–T3R–D	13	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T3R DISTRIBUTION WITH DIMMING*	GLEON–AE–04–LED–XXX–T3R–XX–700 –MS/DIM–L20–MT	LED ARRAY	15,469±	.92
4–T4FT	3	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T4FT DISTRIBUTION	GLEON–AE–04–LED–XXX–T4FT–XX–700	LED ARRAY	15,221±	.92
4–T4FT–D	1	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T4FT DISTRIBUTION WITH DIMMING*	GLEON–AE–04–LED–XXX–T4FT–XX–700 –MS/DIM–L20–MT	LED ARRAY	15,221±	.92
4–T4W	1	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE T4W DISTRIBUTION	GLEON–AE–04–LED–XXX–T4W–XX–700	LED ARRAY	15,024±	.92
4–5WQ	8	POLE=16' MOUNTING HT.=19'	COOPER MCGRAW EDISON "GALLEON" L.E.D. AREA LUMINAIRE 4 LED LIGHT SQUARES–700mA TYPE 5WQ DISTRIBUTION	GLEON–AE–04–LED–XXX–5WQ–XX–700	LED ARRAY	15,936±	.92
XTOR	44	MOUNTING HEIGHT=14' ABOVE FINISH FLOOR	COOPER LUMARK "CROSSTOUR" L.E.D. FULL CUTOFF TYPE XTOR3A NEUTRAL WARM WHITE 3500K	XTOR3A–N–XX	LED ARRAY	2,284±	.92

* ADJUSTMENTS TO DIMMING SETTINGS REQUIRES USE OF WIRELESS CONFIGURATION TOOL ACCESSORY # FSIR–100 FOR OCCUPANCY SENSOR PROVIDED BY COOPER LIGHTING. CONTRACTOR SHALL SUPPLY TWO FSIR–100 WIRELESS CONFIGURATION TOOLS TO THE OWNER PRIOR TO COMPLETION OF PROJECT.

NOTES:

1. REFER TO LUMINAIRE SCHEDULE FOR CATALOG NUMBER. LUMINAIRES SHALL BE SUPPLIED AS SPECIFIED OR ENGINEER APPROVED EQUIVALENT. IF ALTERNATE LUMINAIRES ARE PROPOSED, A NEW LIGHTING LAYOUT PLAN SHALL BE PROVIDED FOR REVIEW TO VERIFY APPROPRIATE ILLUMINATION LEVELS AND DISTRIBUTION UNIFORMITY WILL BE PROVIDED BY THE ALTERNATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVISION OF THE REVISED LAYOUT PLAN AND FOR ALL COSTS ASSOCIATED WITH THE ENGINEERING REVIEW OF PROPOSED ALTERNATIVES. CONTRACTOR SHALL BE RESPONSIBLE FOR ENGINEERING COSTS REGARDLESS OF RESULTS OF ENGINEERING REVIEW (REGARDLESS OF APPROVAL OR DISAPPROVAL OF ALTERNATIVES).
2. LIGHT POLES SHALL BE:
   FOR 19' MOUNTING HEIGHT: HAPCO SSA16D4–4–
   FOR 15' MOUNTING HEIGHT: HAPCO SSA12D4–4–
   OR APPROVED EQUIVALENT
3. TOWN OF GOSHEN CODE REQUIRES MAXIMUM LIGHT POLE HEIGHT OF 20' ON–SITE AND 15' WITHIN PARKING AREAS.
4. CONTRACTOR SHALL CONFIRM OPERATING VOLTAGE FOR SITE LIGHTING PRIOR TO ORDERING ANY EQUIPMENT AND ADJUST LUMINAIRE SPECIFICATION AS NEEDED.
5. SITE LIGHTING CONTROLS SHALL BE UTILIZED AS FOLLOWS:
   5.1. ALL LUMINAIRES SHALL BE MASTER CONTROLLED BY AN ASTRONOMICAL TIME CLOCK FOR ON/OFF TIMES WITH MANUAL OVERRIDE. CONTRACTOR SHALL PROVIDE CONTROL EQUIPMENT SUBMITTAL FOR REVIEW BY THE OWNER PRIOR TO ORDERING EQUIPMENT. COORDINATE WITH OWNER AND/OR ARCHITECTURAL TEAM FOR INSTALLATION LOCATION OF TIME CLOCK(S) & CONTROL PANEL(S).
   5.2. ROADWAY LUMINAIRES FROM NYS RT 17M TO THE BRIDGE TO THE AMY'S KITCHEN SITE SHALL BE PROVIDED WITH AUTOMATIC DIMMING AND MOTION CONTROLS TO ACTIVATE LIGHTS TO FULL POWER. LIGHTS WILL ILLUMINATE AT DUSK TO 50% CAPACITY WITH MOTION SENSING TURNING SPECIFIC LOCAL LUMINAIRES TO 100% ILLUMINATION POWER.
   5.3. LUMINAIRES SERVING THE SCIENCE OF THE SOUL PORTION OF THE SITE SHALL BE CONTROLLED BY ASTRONOMICAL TIME CLOCK WITH MANUAL OVERRIDE AND WILL TYPICALLY REMAIN OFF DURING ALL TIMES EXCEPT FOR OCCASIONS WHEN THE SITE IS HOSTING EVENTS OR OTHERWISE OCCUPIED FOR SMALL MEETINGS IN THE ANCILLARY FACILITIES. SITE ELECTRICIAN SHALL COORDINATE WITH THE OWNER FOR DIRECTION ON SITE LIGHTING CONTROLS AND ILLUMINATION ZONES.
6. NO ADDITIONAL EQUIPMENT OR ATTACHMENTS SHALL BE PERMITTED ON LIGHT POLES WITHOUT APPROVAL OF DESIGN ENGINEER. EQUIPMENT INCLUDES BUT IS NOT LIMITED TO BANNERS, FLAGS, ADDITIONAL LUMINAIRES OTHER THAN SPECIFIED ON THIS PLAN, AND SECURITY CAMERAS.
7. FINISH OF ALL LUMINAIRES AND POLES SHALL BE SELECTED BY OWNER.
8. THIS LIGHTING PLAN DOES NOT TAKE INTO ACCOUNT ANY ARCHITECTURAL BUILDING MOUNTED LUMINAIRES OTHER THAN THOSE SHOWN SPECIFICALLY ON THIS PLAN.
9. CALCULATION VALUES SHOWN ON THIS PLAN ARE TAKEN ON A HORIZONTAL PLAIN AT GROUND LEVEL USING A 92% LAMP LUMEN DEPRECIATION FACTOR. TOPOGRAPHICAL INFORMATION HAS NOT BEEN ACCOUNTED FOR IN THESE CALCULATIONS.
10. LIGHTING CALCULATIONS SHOWN ARE BASED UPON DATA FILES PROVIDED BY THE LUMINAIRE MANUFACTURER. ACTUAL PERFORMANCE OF LUMINARIES AFTER INSTALLATION MAY VARY DUE TO UNCONTROLLABLE FIELD CONDITIONS.

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)

1 inch = 60 ft.

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- GAS — EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIM
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

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LIGHTING PLAN SHEET 1 OF 2

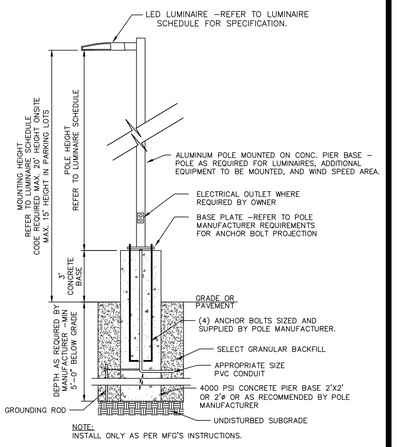
SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016, APRIL 22, 2016, AUGUST 24, 2016
CAD File: L:\00070–LANDSCAPING
Layout: LIGHT 60–1
Sheet No.: C3–15 OF 28
Drawn By: MK
Checked By:
Scale: 1" = 100'
Tax Map No.: SEE SHEET C3–01
Drawing No.: A – 13 – 0070 – C30

MATCHLINE B

MATCHLINE B



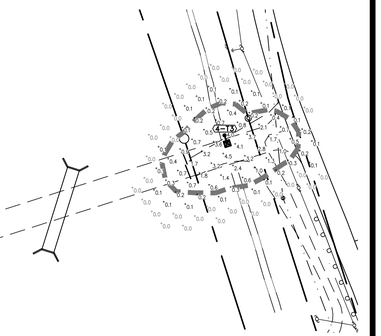
NOTE:
INSTALL ONLY AS PER MFG'S INSTRUCTIONS.

LIGHT POLE BASE DETAIL

NOT TO SCALE

COOPER MCGRAW EDISON "GALLEON"
LED AREA LUMINAIRE
POLE MOUNT AREA LUMINAIRE

COOPER LUMARK "CROSSTOUR"
LED AREA LUMINAIRE
WALL MOUNT AREA LUMINAIRE



GRID

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GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- GAS — EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMI
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

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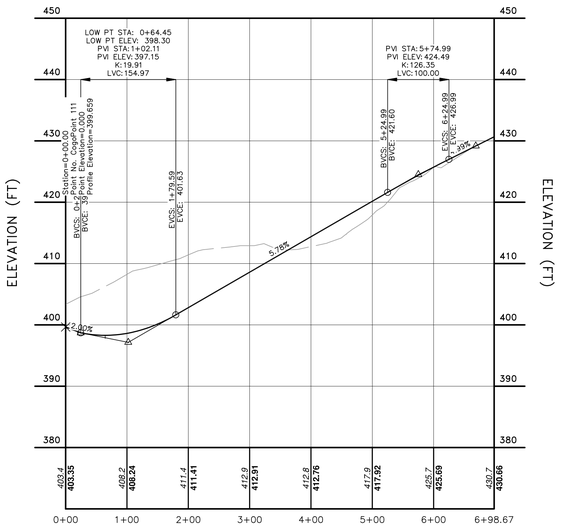
LIGHTING PLAN SHEET 2 OF 2

SCIENCE OF THE SOUL

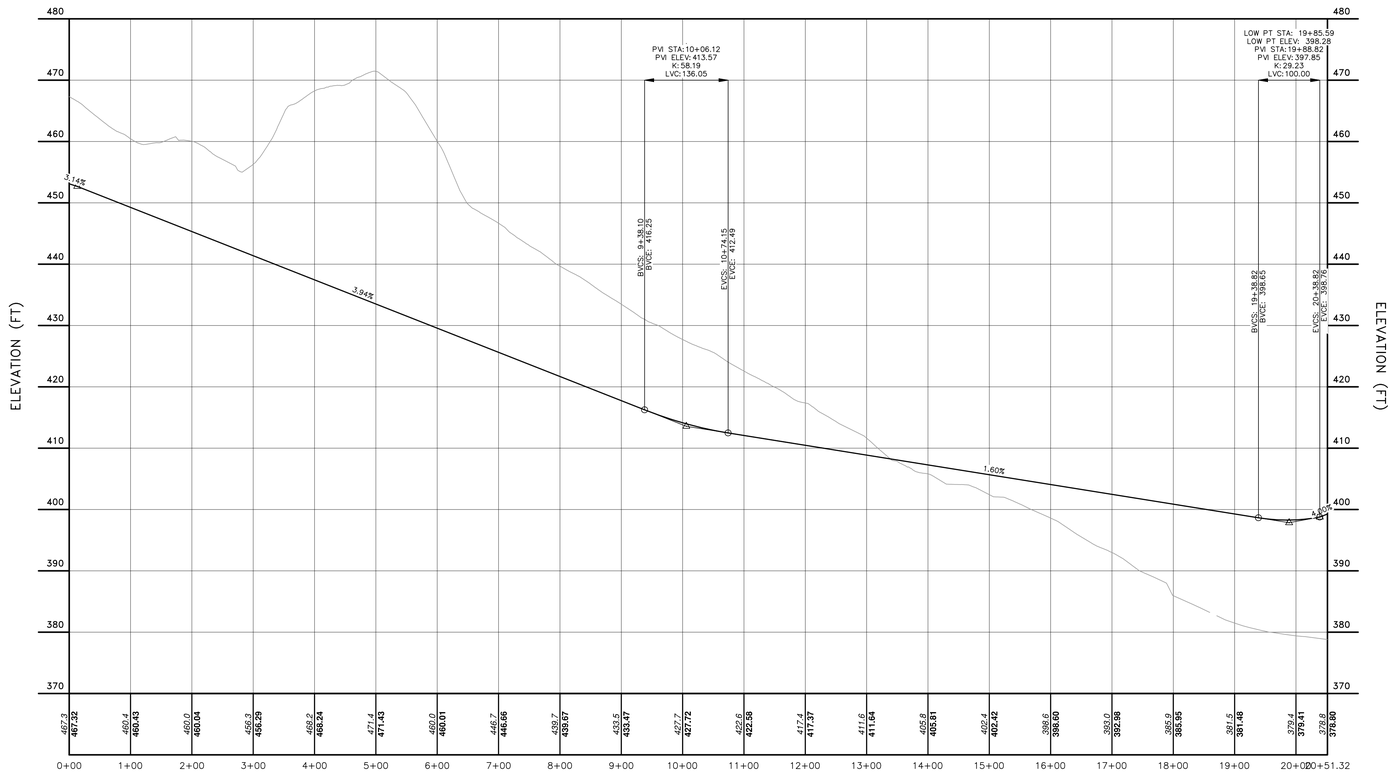
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 60'	SEE SHEET C3–01

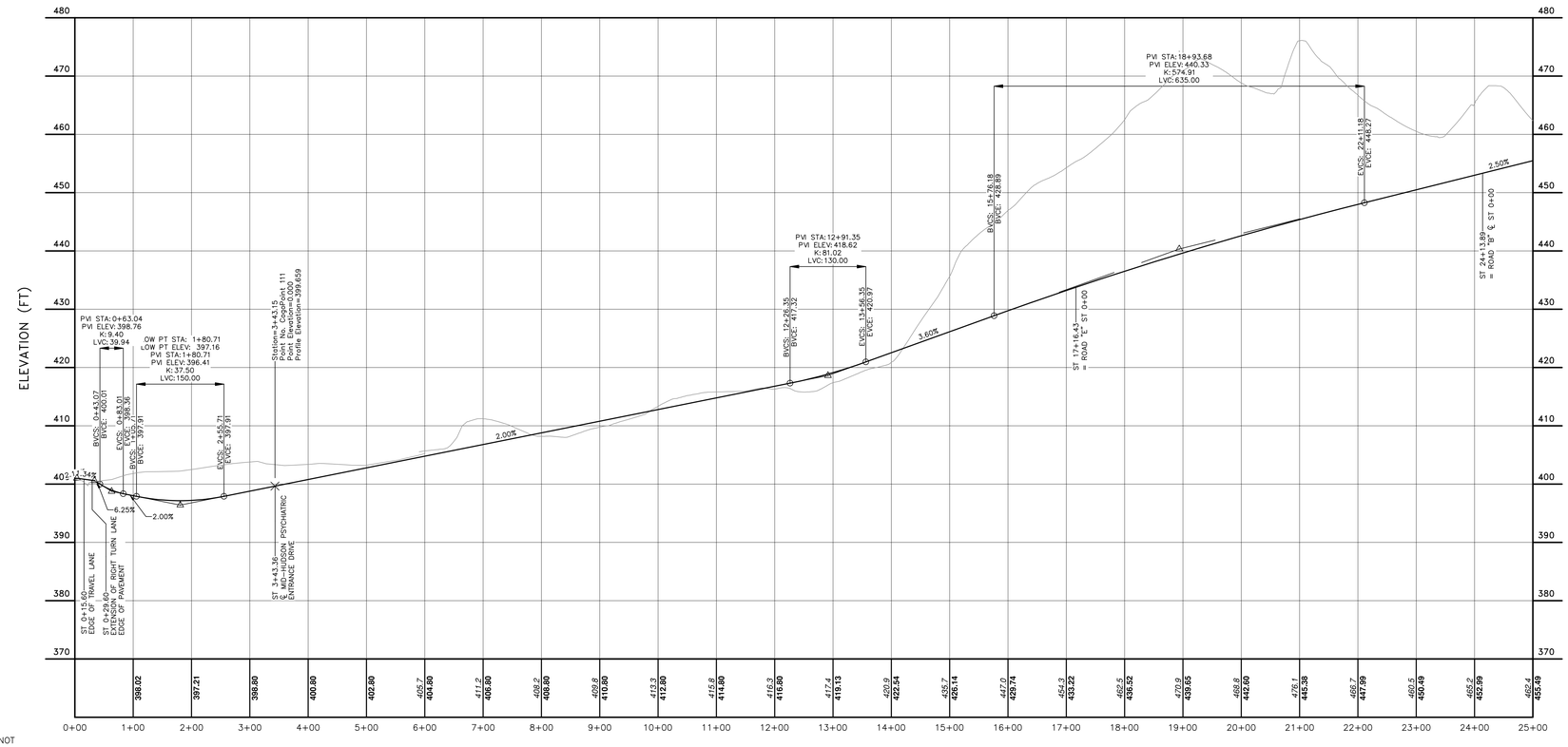
Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: 130070–LANDSCAPING
Layout: LIGHT 60–2
Sheet No.: C3–16 OF 28
Drawing No.: A – 13 – 0070 – C3D



MID–HUDSON PSYCHIATRIC ENTRANCE DRIVE
ST 0+00 THRU ST 6+98.67
SCALE: HORIZONTAL 1"=100'
VERTICAL 1"=10'



PROFILE: ROAD B (NW PARKING DRIVE AISLE)
ST 0+00 THRU ST 20+51.32
SCALE: HORIZONTAL 1"=100'
VERTICAL 1"=10'



PROFILE: ROAD A (ENTRANCE FROM 17M SECTION)
ST 0+00 THRU ST 25+00
SCALE: HORIZONTAL 1"=100'
VERTICAL 1"=10'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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PROFILE SHEET 1: 17M ENTRANCE ROAD,
MID–HUDSON PSYCHIATRIC DRIVEWAY, & ROAD B NW PARKING DRIVE AISLE

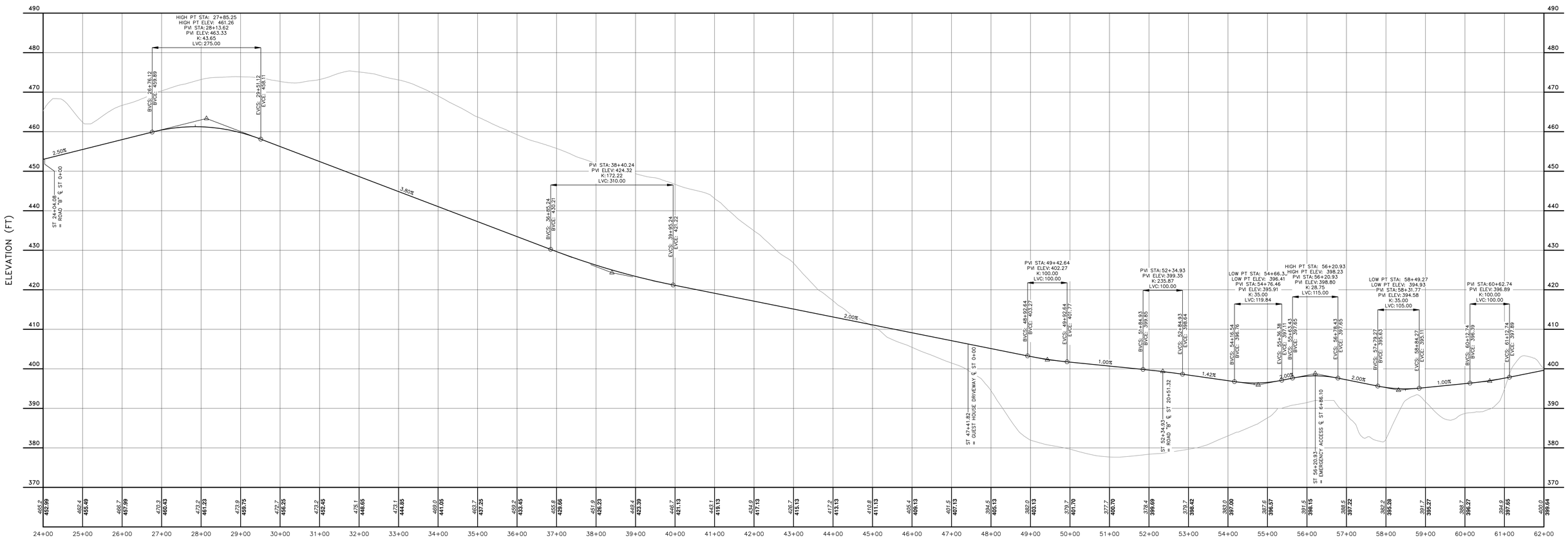
Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
AUGUST 24, 2016

SCIENCE OF THE SOUL

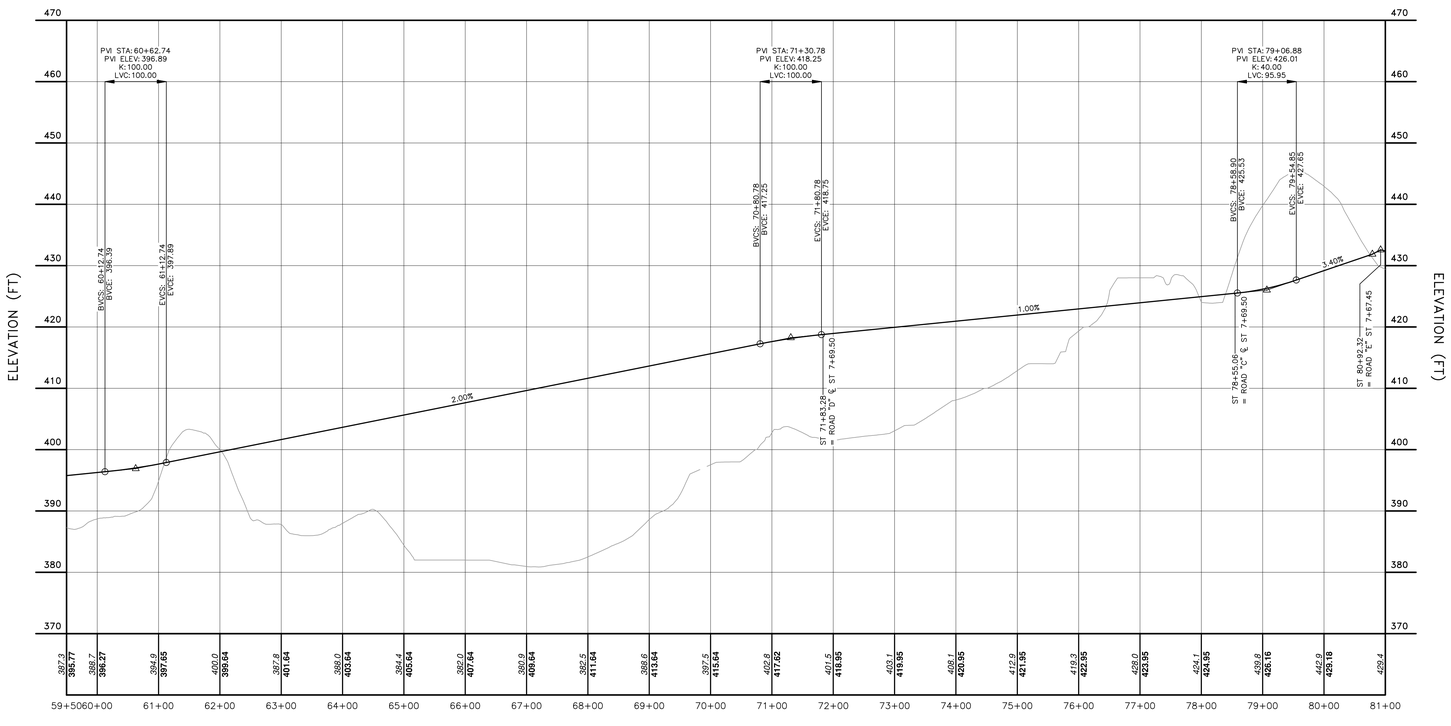
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

CAD File: SOS_ON_ECHO_PROFILES
Layout: PROFILE 1
Sheet No.: C3-17 OF 28

Drawn By:	Checked By:	Scale:	Tax Map No.:	Drawing No.:
MK		1" = 40'	SEE SHEET C3-01	A - 13 - 0070 - C3D



PROFILE: ROAD A (ONSITE LOOP ROAD PART 1)
ST 24+00 THRU ST 62+00
SCALE: HORIZONTAL 1"=100'
VERTICAL 1"=10'



PROFILE: ROAD A (ONSITE LOOP ROAD PART 2)
ST 59+50 THRU ST 81+00
SCALE: HORIZONTAL 1"=100'
VERTICAL 1"=10'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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PROFILE SHEET 2: ROAD A ONSITE LOOP ROAD

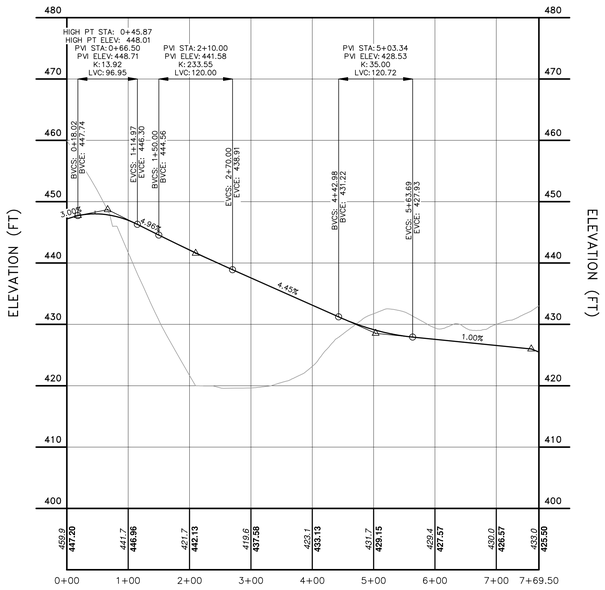
Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016

SCIENCE OF THE SOUL

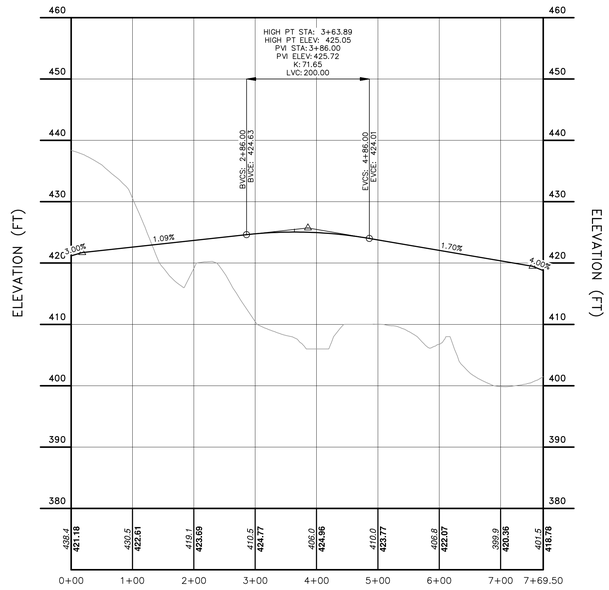
TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

CAD File: SOS_ON ECHO PROFILES
Layout: PROFILE 2
Sheet No.: C3-18 OF 28
Drawing No.: A - 13 - 0070 - C30

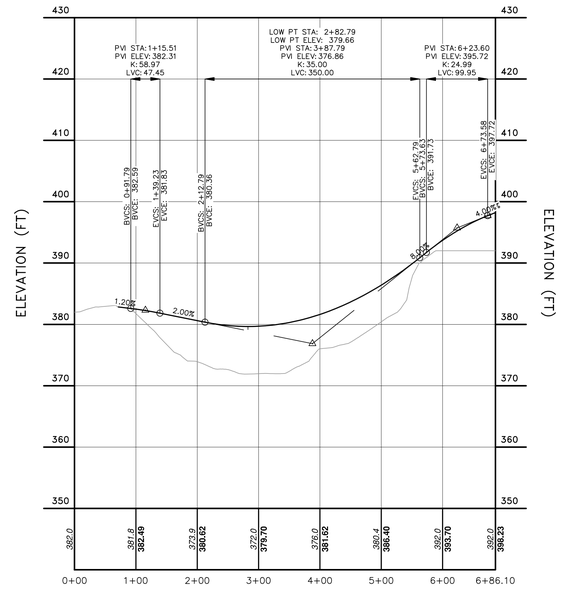
Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 40'	SEE SHEET C3-01



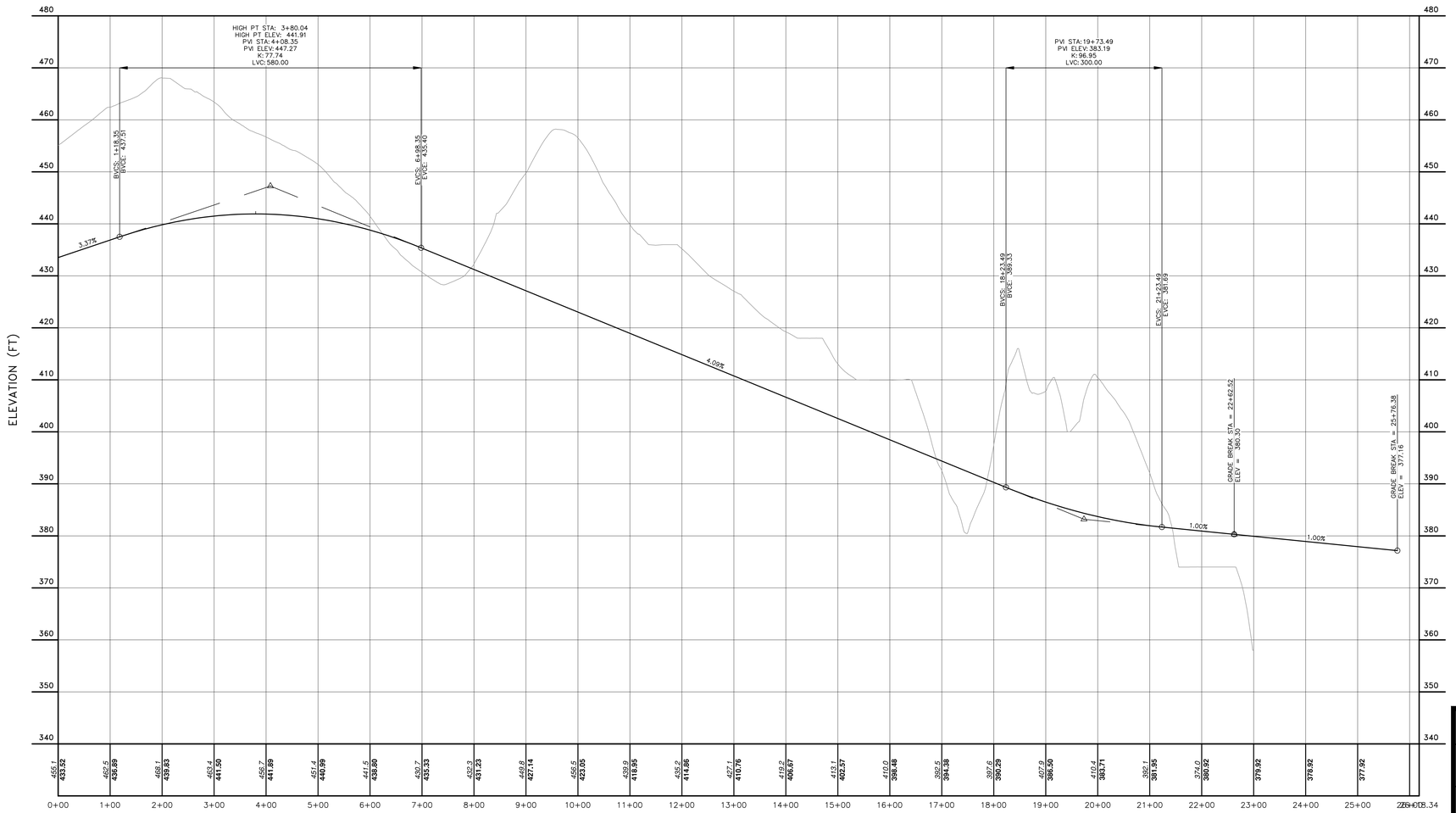
PROFILE: ROAD C (CENTRAL BUILDING ROAD)
ST 0+00 THRU ST 7+69.50
SCALE: HORIZONTAL 1"=100'
VERTICAL 1"=10'



PROFILE: ROAD D (FAMILY BUILDING DRIVE)
ST 0+00 THRU ST 7+69.50
SCALE: HORIZONTAL 1"=100'
VERTICAL 1"=10'



PROFILE: EMERGENCY ACCESS DRIVE TO ECHO LAKE ROAD
ST 0+00 THRU ST 6+86.10
SCALE: HORIZONTAL 1"=100'
VERTICAL 1"=10'



PROFILE: ROAD E (AMY'S ACCESS ROAD)
ST 0+00 THRU ST 26+18.34
SCALE: HORIZONTAL 1"=100'
VERTICAL 1"=10'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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PROFILE SHEET 3: ROAD C CENTRAL BUILDING, ROAD D FAMILY BUILDING, ROAD E AMY'S ACCESS ROAD, & EMERGENCY ACCESS TO ECHO LAKE ROAD

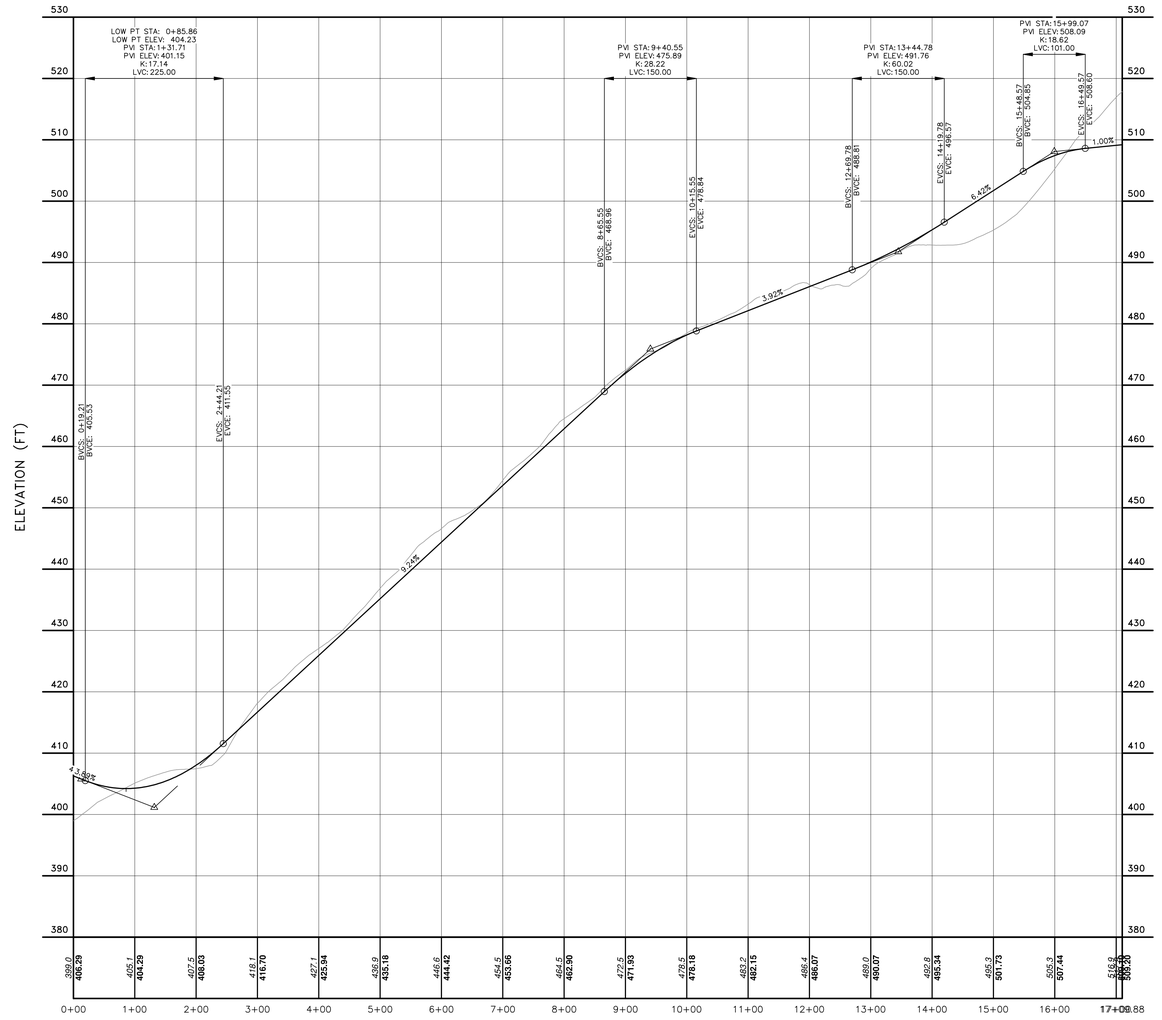
Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
AUGUST 24, 2016

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

CAD File: PROFILES ON ECHO PROFILES
Layout: PROFILE 3
Sheet No.: C3-19 OF 28

Drawn By:	Checked By:	Scale:	Tax Map No.:	Drawing No.:
MK		1" = 40'	SEE SHEET C3-01	A - 13 - 0070 - C30



PROFILE: GUEST HOUSE DRIVEWAY
ST 0+00 THRU ST 17+09.88
SCALE: HORIZONTAL 1"=100'
VERTICAL 1"=10'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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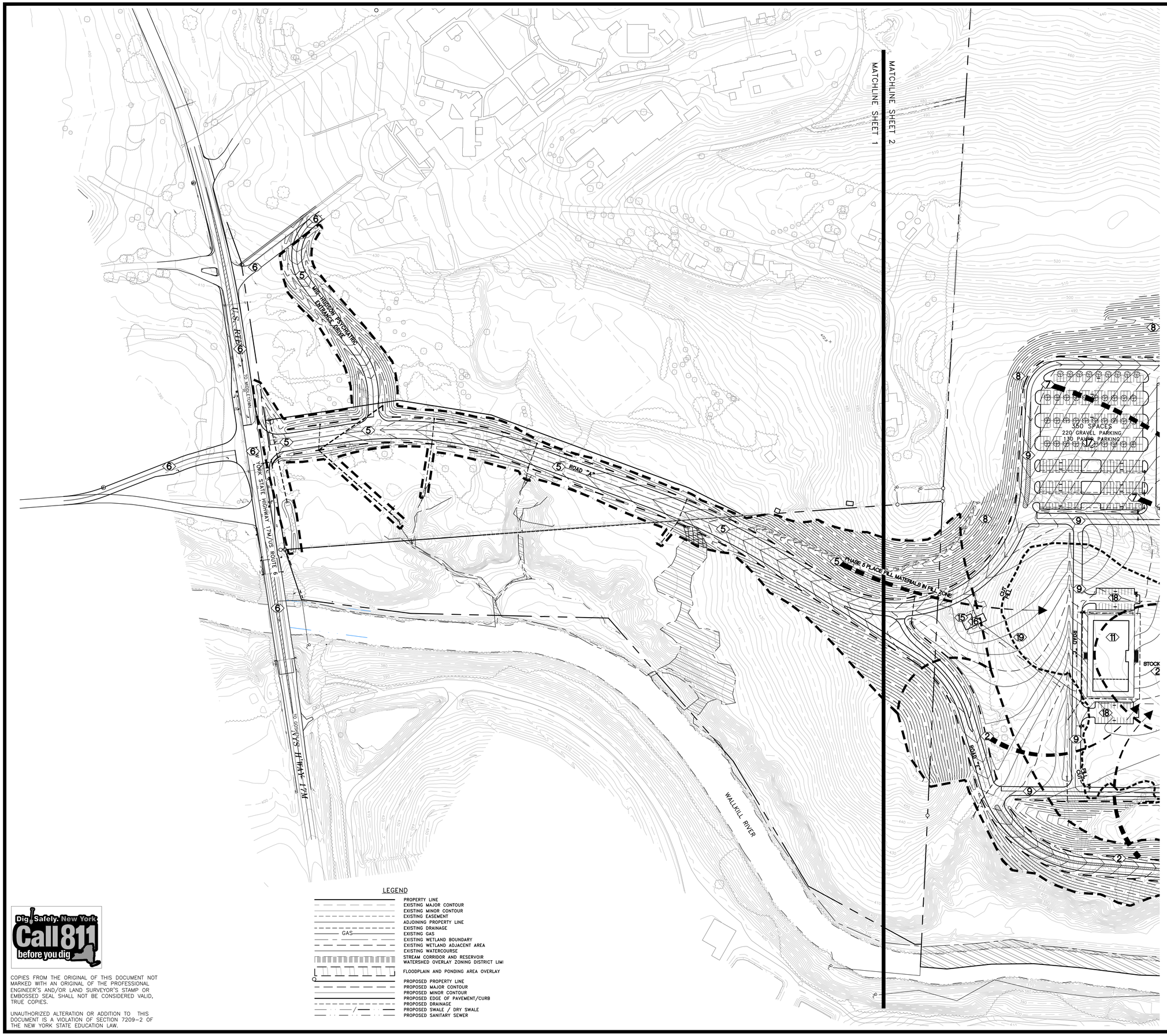
PROFILE SHEET 4: GUEST HOUSE DRIVEWAY

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
AUGUST 24, 2016
CAD File: CAD ON ECHO PROFILES
Layout: PROFILE 4
Sheet No.: C3-20 OF 28
Drawing No.: A - 13 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
MK		1" = 40'	SEE SHEET C3-01



GRAID

PROJECT SEQUENCING / PHASING		
Phase	Science of the Soul Site - Echo Lake	Amy's Kitchen Site - Ver Hage
1A	Install stabilized construction entrance. Clear trees from entire site - Leave stumps in place, no grubbing.	
1B	Install erosion control measures. Silt fence, Diversion Swales, Temporary Sediment Traps, etc...	
2	Remove stumps & grub access road from proposed bridge to location of entrance road split between Science of Soul and Amy's Kitchen access points. Strip and stockpile topsoil. Excavate to proposed road sub-grade elevation, stockpile material in fill zone on Science of Soul site. Prepare access and staging areas for bridge construction	Prepare construction access and staging areas to proposed bridge and prepare for bridge construction.
3	Construct proposed bridge	
4	Transport stockpiled fill materials from Echo Lake Science of the Soul Site across bridge to VerHage Amy's Kitchen Site and place & grade areas requiring proposed fill.	
5	Construct access road from RT 17M to newly constructed bridge. Excavated materials to be placed in fill zone on Science of the Soul Site. Road construction includes road-side swales, drainage utilities, final slope stabilization. Construct new Mid-Hudson Psychiatric driveway, leave current Mid-Husdson Psychiatric driveway in-service, place binder course asphalt, temporary stripe lanes on new access road	
6	Construct all NYSDOT approved offsite traffic improvements on RT 17M including new turn lanes, new entrance road to Fire Training Lane, and traffic signals. After traffic signal is operational, switch Mid-Hudson Psychiatric driveway to use new entrance. Demolish existing Mid-Hudson Psychiatric driveway entrance.	
7	Continue cut & fill / mass-haul operations on Science of the Soul Site to bring site to proposed sub-grade elevation. Provide and maintain temporary stabilization for all areas as proposed sub-grade elevation is achieved.	Prepare Amy's Kitchen proposed building areas to sub-grade. Continue grading site to proposed sub-grade elevation.
8	Install drainage swales and final stablize all site slopes with topsoil, seed, & stabilization matting as work progresses and slope reaches final grade.	Prepare project staging areas and install temporary contractor parking areas within proposed employee parking areas. Stabilize all areas with item 4 sub-base.
9	Construct site access and circulation roadways and road-side swales to sub-grade elevation. Install item 4 sub-base.	Prepare project access roads to sub-grade elevation. Install proposed Item 4 sub-base. Install site access control gates at all entrances.
10	Construct staging areas and temporary contractor parking areas within proposed parking lots.	Commence construction on Amy's Kitchen proposed manufacturing plant, clinic, and waste water treatment plant
11	Commence construction on proposed Central Building, Family Building, and Maintenance Barn	Install proposed water, sewer, and drainage utilities
12	Install proposed water, sewer, and drainage utilities. Provide stubs for building connections as needed	Install proposed employee parking areas to sub-grade elevation. Install item 4 sub-base. Install site lighting
13	Commence construction on conference center and toilet buildings	Construct gate house and vehicle barriers at bridge.
14	Install drainage needed within large open lawn area SW of conference center, spread topsoil and seed. Establish final lawn area growth	Install curbing within roadways and parking lots, install porous asphalt sub-base materials, pave employee parking areas with binder course asphalt. Do not install porous asphalt. Protect porous asphalt areas with silt fence
15	Contruct guest house access driveway, install water and sewer utility lines to guest house area, install item 4 sub-base, and rough grade proposed guest house building area. Rough grade proposed caretaker residence building areas.	Install binder course asphalt on all proposed project roads
16	Commence construction on Guest House and Caretake Residences	Make connection to water main from off-site at Heritage Trail. Connect waste water treatment plant to off-site sewer
17	Construct final parking lots for Conference Center and Bus Parking. Construct Orchard Parking lot including tree planting, final topsoil & seed and gravel drive aisles. Install site lighting, install item 4 sub-base, install porous asphalt sub-base materials. protect porous asphalt areas with silt fence. Do Not install porous asphalt.	Convert temporary sediment ponds to final permanent bio-retention areas
18	Construct and install parking lots at Central Building and Family Building including item 4 sub-base and binder course asphalt	Install all site landscaping
19	Final topsoil and seed lawn areas between Family Building, Central Building, and Caretaker residences.	Install top course asphalt in all final parking areas and road ways as appropriate, install porous asphalt, stripe parking stalls and roadways.
20	Make connection to water main from off-site at Heritage Trail. Connect sewer to proposed pump station.	Amy's Kitchen Project Closeout
21	Final grade item 4 on all roadways and install binder course asphalt on road ways and all parking areas.	
22	Convert temporary sediment ponds to final permanent bio-retention area.	
23	Install all site landscaping	
24	Install top course asphalt in all final parking areas and road ways as appropriate, install porous asphalt, stripe parking stalls and roadways.	
25	Install top course asphalt and final striping on Entrance Road from Rt 17M	
26	Complete Project Closeout	

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- GAS — EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMI
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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CONSTRUCTION PHASING PLAN
SHEET 1 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 AUGUST 24, 2016
CAD File:	PHASING_COMBINED
Layout:	SOS_PHASE_1
Sheet No.:	C3-21 OF 28
Drawn By:	MK
Checked By:	
Scale:	1" = 100'
Tax Map No.:	SEE SHEET C3-01
Drawing No.:	A - 13 - 0070 - C30

MATCHLINE SHEET 1

MATCHLINE SHEET 2

GRID

ROAD "A"

ROAD "B"

ROAD "C"

ROAD "D"

ROAD "E"

ROAD "F"

350 SPACES
220 GRAVEL PARKING
130 PAVED PARKING

687 SPACES
427 GRAVEL PARKING
260 PAVED PARKING

607 SPACES
427 GRAVEL PARKING
180 PAVED ACCESSIBLE

296 SPACES
206 GRAVEL PARKING
90 PAVED ACCESSIBLE

QUEUING FOR ENTRY

QUEUING FOR ENTRY

OPEN LAWN AREA

STOCKPILE

EMERGENCY ACCESS

SANITARY PUMP STATION

WATERMAIN

30 SPACES BUS PARKING

WALLKILL RIVER

5 PLACE FILL MATERIALS IN FILL ZONE

CUT

FILL

PROJECT SEQUENCING / PHASING		
Phase	Science of the Soul Site - Echo Lake	Amy's Kitchen Site - Ver Hage
1A	Install stabilized construction entrance. Clear trees from entire site - Leave stumps in place, no grubbing.	
1B	Install erosion control measures. Silt fence, Diversion Swales, Temporary Sediment Traps, etc...	
2	Remove stumps & grub access road from proposed bridge to location of entrance road split between Science of Soul and Amy's Kitchen access points. Strip and stockpile topsoil. Excavate to proposed road sub-grade elevation, stockpile material in fill zone on Science of Soul site. Prepare access and staging areas for bridge construction	Prepare construction access and staging areas to proposed bridge and prepare for bridge construction.
3	Construct proposed bridge	
4	Transport stockpiled fill materials from Echo Lake Science of the Soul Site across bridge to VerHage Amy's Kitchen Site and place & grade areas requiring proposed fill.	
5	Construct access road from RT 17M to newly constructed bridge. Excavated materials to be placed in fill zone on Science of the Soul Site. Road construction includes road-side swales, drainage utilities, final slope stabilization. Construct new Mid-Hudson Psychiatric driveway, leave current Mid-Husdson Psychiatric driveway in-service, place binder course asphalt, temporary stripe lanes on new access road	
6	Construct all NYSDOT approved offsite traffic improvements on RT 17M including new turn lanes, new entrance road to Fire Training Lane, and traffic signals. After traffic signal is operational, switch Mid-Hudson Psychiatric driveway to use new entrance. Demolish existing Mid-Hudson Psychiatric driveway entrance.	
7	Continue cut & fill / mass-haul operations on Science of the Soul Site to bring site to proposed sub-grade elevation. Provide and maintain temporary stabilization for all areas as proposed sub-grade elevation is achieved.	Prepare Amy's Kitchen proposed building areas to sub-grade. Continue grading site to proposed sub-grade elevation.
8	Install drainage swales and final stablize all site slopes with topsoil, seed, & stabilization matting as work progresses and slope reaches final grade.	Prepare project staging areas and install temporary contractor parking areas within proposed employee parking areas. Stabilize all areas with item 4 sub-base.
9	Construct site access and circulation roadways and road-side swales to sub-grade elevation. Install item 4 sub-base.	Prepare project access roads to sub-grade elevation. Install proposed Item 4 sub-base. Install site access control gates at all entrances.
10	Construct staging areas and temporary contractor parking areas within proposed parking lots.	Commence construction on Amy's Kitchen proposed manufacturing plant, clinic, and waste water treatment plant
11	Commence construction on proposed Central Building, Family Building, and Maintenance Barn	Install proposed water, sewer, and drainage utilities
12	Install proposed water, sewer, and drainage utilities. Provide stubs for building connections as needed	Install proposed employee parking areas to sub-grade elevation. Install item 4 sub-base. Install site lighting
13	Commence construction on conference center and toilet buildings	Construct gate house and vehicle barriers at bridge.
14	Install drainage needed within large open lawn area SW of conference center, spread topsoil and seed. Establish final lawn area growth	Install curbing within roadways and parking lots, install porous asphalt sub-base materials, pave employee parking areas with binder course asphalt. Do not install porous asphalt. Protect porous asphalt areas with silt fence
15	Contruct guest house access driveway, install water and sewer utility lines to guest house area, install item 4 sub-base, and rough grade proposed guest house building area. Rough grade proposed caretaker residence building areas.	Install binder course asphalt on all proposed project roads
16	Commence construction on Guest House and Caretake Residences	Make connection to water main from off-site at Heritage Trail. Connect waste water treatment plant to off-site sewer
17	Construct final parking lots for Conference Center and Bus Parking. Construct Orchard Parking lot including tree planting, final topsoil & seed and gravel drive aisles. Install site lighting, install item 4 sub-base, install porous asphalt sub-base materials. protect porous asphalt areas with silt fence. Do Not install porous asphalt.	Convert temporary sediment ponds to final permanent bio-retention areas
18	Construct and install parking lots at Central Building and Family Building including item 4 sub-base and binder course asphalt	Install all site landscaping
19	Final topsoil and seed lawn areas between Family Building, Central Building, and Caretaker residences.	Install top course asphalt in all final parking areas and road ways as appropriate, install porous asphalt, stripe parking stalls and roadways.
20	Make connection to water main from off-site at Heritage Trail. Connect sewer to proposed pump station.	Amy's Kitchen Project Closeout
21	Final grade item 4 on all roadways and install binder course asphalt on road ways and all parking areas.	
22	Convert temporary sediment ponds to final permanent bio-retention area.	
23	Install all site landscaping	
24	Install top course asphalt in all final parking areas and road ways as appropriate, install porous asphalt, stripe parking stalls and roadways.	
25	Install top course asphalt and final striping on Entrance Road from Rt 17M	
26	Complete Project Closeout	

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- GAS — EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMI
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EDGE OF PAVEMENT/CURB
- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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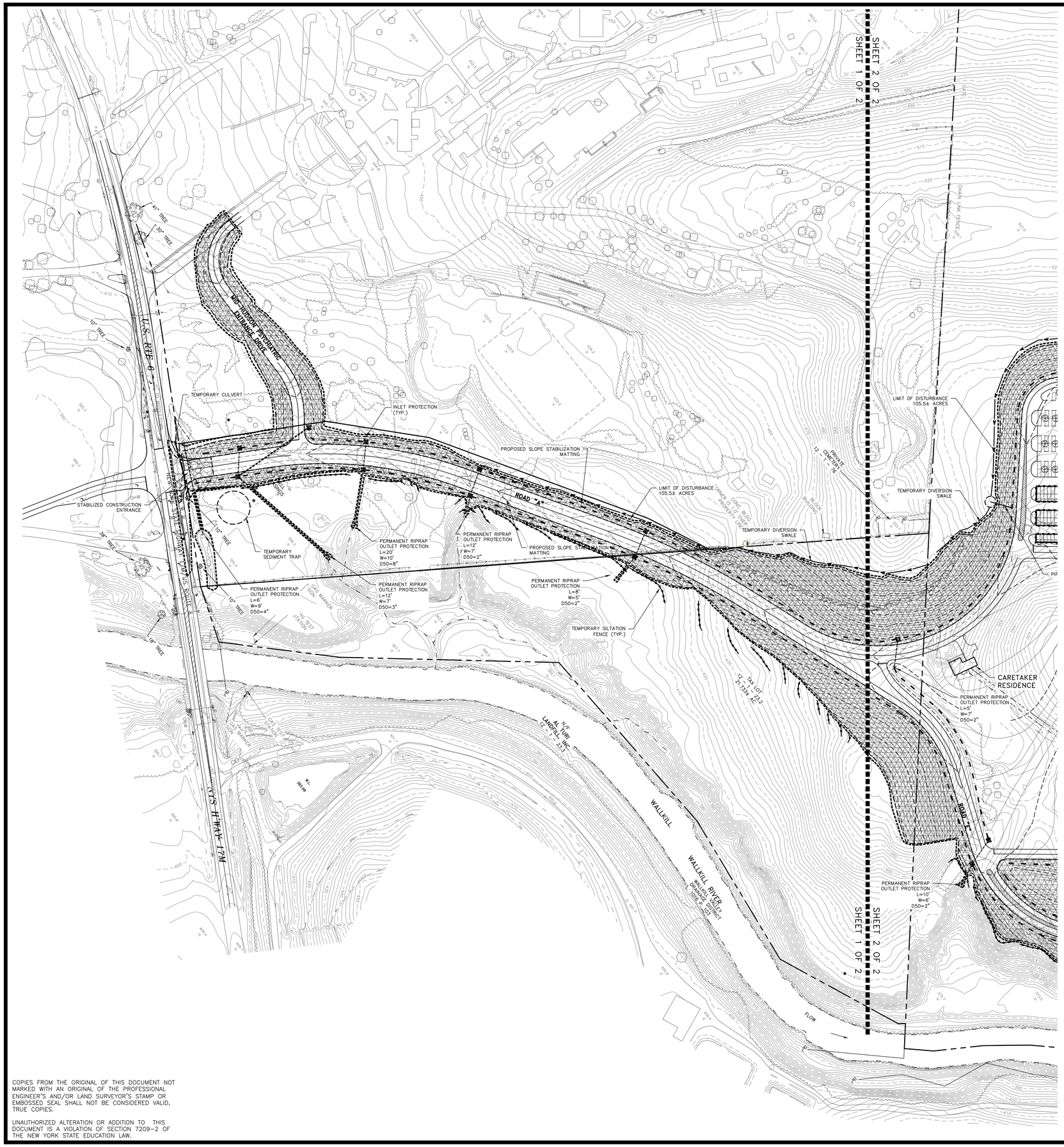
CONSTRUCTION PHASING PLAN
SHEET 2 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016, APRIL 22, 2016, AUGUST 24, 2016
CAD File: PHASING COMBINED
Layout: SOS PHASE 2
Sheet No.: C3-22 OF 28
Drawn By: MK
Checked By:
Scale: 1" = 100'
Tax Map No.: SEE SHEET C3-01
Drawing No.: A - 13 - 0070 - C30



EROSION AND SEDIMENT CONTROL NOTES

1. THE OWNER OR OPERATOR SHALL HAVE A QUALIFIED INSPECTOR CONDUCT AT LEAST TWO (2) SITE INSPECTIONS IN ACCORDANCE WITH PART IV.C EVERY SEVEN (7) CALENDAR DAYS, FOR AS LONG AS GREATER THAN FIVE (5) ACRES OF SOIL REMAIN DISTURBED. THE TWO (2) INSPECTIONS SHALL BE SEPARATED BY A MINIMUM OF TWO (2) FULL CALENDAR DAYS.
2. IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS BEEN TEMPORARILY OR PERMANENTLY CEASED, TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES SHALL BE INSTALLED AND/OR IMPLEMENTED WITHIN SEVEN (7) DAYS FROM THE DATE OF SOIL DISTURBANCE ACTIVITY CEASED.
3. TEMPORARY STABILIZATION MEANS THAT EXPOSED SOIL HAS BEEN COVERED WITH MATERIALS AS SET FORTH IN THE TECHNICAL STANDARD, NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, TO PREVENT THE EXPOSED SOIL FROM ERODING. THE MATERIALS CAN INCLUDE, BUT ARE NOT LIMITED TO, MULCH, SEED AND MULCH, AND EROSION CONTROL MATS (E.G. JUTE TWISTED YARN, EXCELSIOR WOOD FIBER MATS).
4. FINAL STABILIZATION MEANS THAT ALL SOIL DISTURBANCE ACTIVITIES HAVE CEASED AND A UNIFORM, PERENNIAL VEGETATIVE COVER WITH A DENSITY OF EIGHTY (80) PERCENT OVER THE ENTIRE PERVIOUS SURFACE HAS BEEN ESTABLISHED; OR OTHER EQUIVALENT STABILIZATION MEASURES, SUCH AS PERMANENT LANDSCAPE MULCHES, ROCK RIP-RAP OR WASHED/CRUSHED STONE HAVE BEEN APPLIED ON ALL DISTURBED AREAS THAT ARE NOT COVERED BY PERMANENT STRUCTURES, CONCRETE OR PAVEMENT.

SOIL RESTORATION REQUIREMENTS

1. ALL DISTURBED AREAS WHERE ONLY TOPSOIL STRIPPING HAS OCCURRED REQUIRE AERATION OF THE SUBGRADE BEFORE SPREADING TOPSOIL.
2. ALL DISTURBED ARES WHERE CUT AND FILL OPERATIONS OCCURRED REQUIRE FULL SOIL RESTORATION AS SPECIFIED IN NYSDEC MANUAL PUBLICATION ENTITLED "DEEP RIPPING AND DE-COMPACTION."

EROSION AND SEDIMENT CONTROL NOTES AND SPECIFICATIONS

1. PRE-CONSTRUCTION MEETING: BEFORE CONSTRUCTION ACTIVITIES AN EVALUATION OF THE SITE WILL BE PERFORMED WITH THE SITE CONTRACTOR, TOWN PERSONNEL AND SITE DESIGN ENGINEER TO DISCUSS GENERAL CONSTRUCTION PROCEDURES AND SEQUENCING. DURING THIS MEETING SENSITIVE AREAS OF THE PROPERTY SHALL BE DELINEATED AND MARKED-OUT WITH ORANGE CONSTRUCTION FENCE (I.E.: TREES, WETLANDS, WELLS, ETC.).
2. DELINEATE TOTAL SITE DISTURBANCE LIMITS: PLACEMENT OF ORANGE CONSTRUCTION FENCING ALONG THE LIMIT OF DISTURBANCE THROUGHOUT THE SITE.
3. PROTECT EXISTING BUFFERS: PLACE EROSION CONTROL DEVICES (SILT FENCING, DIVERSION BERMS, ETC.) UPSTREAM OF ANY EXISTING WATERCOURSE WITHIN OR OUTSIDE OF CONSTRUCTION AREAS, PRIOR TO THE START OF ANY CONSTRUCTION.
4. CONSTRUCTION ENTRANCES/SILTATION CONTROLS: TEMPORARY CONSTRUCTION ENTRANCES WILL BE INSTALLED AT THE ENTRANCES TO THE SITE ON HARTLEY ROAD AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS. DURING WET WEATHER, IT MAY NECESSARY TO WASH VEHICLE TIRES AT THIS LOCATION. THEREFORE, THIS ENTRANCE IS TO BE GRADED SO THAT RUNOFF IS DIRECTED TO THE ADJACENT SEDIMENT TRAP. IN ADDITION, ANY OTHER SILTATION CONTROL DEVICES, AS SHOWN ON THE EROSION CONTROL PLAN ARE TO BE INSTALLED ADJACENT TO THE TEMPORARY ENTRANCE AND STAGING AREA.
5. CONSTRUCTION OF TEMPORARY SEDIMENT BASINS: CONSTRUCTION OF THE TEMPORARY SEDIMENT BASINS PRIOR TO THE START OF ANY MAJOR EARTHWORK MOVEMENT OR SITE CONSTRUCTION.
6. CONSTRUCTION OF TEMPORARY DIVERSION SWALES: THE INSTALLATION OF TEMPORARY DIVERSION SWALES TO CONVEY STORMWATER AROUND THE CONSTRUCTION AREA.
7. STAGING AREA: THE STAGING AREA WILL BE GRADED FOR STORAGE OF EQUIPMENT AND PLACEMENT OF CONSTRUCTION TRAILERS.
8. STRIP TOPSOIL: TOPSOIL WILL BE STRIPPED FROM THE ACTIVE WORK AREAS AND WILL BE STOCKPILED FOR LATER REUSE.
9. LAND GRADING: BULK SOIL GRADING WILL COMMENCE, SOIL TO BE MOVED FROM THE WESTERN SIDE OF THE PROJECT AREA AND PLACED IN THE FILL AREA ALONG THE EAST SIDE OF THE PROJECT AREA. AT THIS TIME, TEMPORARY STOCKPILE AREAS SHOULD BE UTILIZED. THE BUILDING PAD AREAS WILL BE DIKED.
10. BUILDING FOUNDATION CONSTRUCTION: UPON COMPLETION OF GRADING IN BUILDING FOOTPRINT AREAS, BUILDING FOUNDATION CONSTRUCTION FOR THE BUILDINGS WILL COMMENCE.
11. UTILITY INSTALLATION: INSTALL WATER, SEWER, AND STORMWATER THROUGHOUT THE PROJECT. INLET PROTECTION WILL BE INSTALLED AT ALL STORMWATER CATCH BASINS.
12. PAVEMENT CONSTRUCTION: CONSTRUCT PAVED AREAS AND CONCRETE PARKING AREAS.
13. STORMWATER INSTALLATION: INSTALL POROUS PAVEMENT AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. CONVERT TEMPORARY SEDIMENT BASINS TO BIO-RETENTION AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. RIPRAP OUTLET PROTECTION AREAS WILL BE INSTALLED.
14. EROSION CONTROL PRACTICE REMOVAL: REMOVE ANY REMAINING EROSION CONTROL PRACTICES INCLUDING INLET PROTECTION, AND TEMPORARY DIVERSIONS SWALES WHEN AREAS HAVE BEEN TEMPORARILY STABILIZED.
15. LANDSCAPING AND FINAL STABILIZATION: ALL OPEN AREAS TO BE STABILIZED WITH TOPSOIL AND SEEDED AS PER THE SEEDING SCHEDULE SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLANS. REMOVAL OF ALL TEMPORARY MEASURES, FLUSHING/CLEANING OF ALL CATCH BASINS AND PIPE, AND REMOVAL AND DISPOSAL OF ALL TRAPPED SEDIMENT ON SITE SHALL BE COMPLETED.
16. FINAL SITE INSPECTION AND CERTIFICATION: AT THE END OF CONSTRUCTION A SITE EVALUATION OF THE SITE WILL BE PERFORMED WITH SITE CONTRACTOR, TOWN PERSONNEL, AND SITE ENGINEER TO ENSURE THAT ALL STORMWATER FACILITIES WERE CONSTRUCTED AS PER THE SWPPP DESIGN AND THAT THE SITE HAS BEEN STABILIZED. A NOTICE OF TERMINATION WILL BE SUBMITTED TO THE NYSDEC.

CONSTRUCTION SEQUENCE

1. PRE-CONSTRUCTION MEETING: BEFORE CONSTRUCTION ACTIVITIES AN EVALUATION OF THE SITE WILL BE PERFORMED WITH THE SITE CONTRACTOR, TOWN PERSONNEL AND SITE DESIGN ENGINEER TO DISCUSS GENERAL CONSTRUCTION PROCEDURES AND SEQUENCING. DURING THIS MEETING SENSITIVE AREAS OF THE PROPERTY SHALL BE DELINEATED AND MARKED-OUT WITH ORANGE CONSTRUCTION FENCE (I.E.: TREES, WETLANDS, WELLS, ETC.).
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4. CONSTRUCTION ENTRANCES/SILTATION CONTROLS: TEMPORARY CONSTRUCTION ENTRANCES WILL BE INSTALLED AT THE ENTRANCES TO THE SITE ON NYS ROUTE 17M AND ECHO LAKE ROAD AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS. DURING WET WEATHER, IT MAY NECESSARY TO WASH VEHICLE TIRES AT THIS LOCATION. THEREFORE, THIS ENTRANCE IS TO BE GRADED SO THAT RUNOFF IS DIRECTED TO THE ADJACENT SEDIMENT TRAP. IN ADDITION, ANY OTHER SILTATION CONTROL DEVICES, AS SHOWN ON THE EROSION CONTROL PLAN ARE TO BE INSTALLED ADJACENT TO THE TEMPORARY ENTRANCE AND STAGING AREA. INSTALL TEMPORARY CULVERT DIVERTING THE EXISTING ROADSIDE SWALE AT THE NYS ROUTE 17M ENTRANCE.
5. CONSTRUCTION OF TEMPORARY SEDIMENT BASINS: CONSTRUCTION OF THE TEMPORARY SEDIMENT BASINS PRIOR TO THE START OF ANY MAJOR EARTHWORK MOVEMENT OR SITE CONSTRUCTION.
6. CONSTRUCTION OF TEMPORARY DIVERSION SWALES: THE INSTALLATION OF TEMPORARY DIVERSION SWALES TO CONVEY STORMWATER AROUND THE CONSTRUCTION AREA.
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12. PAVEMENT CONSTRUCTION: CONSTRUCT PAVED AREAS AND CONCRETE PARKING AREAS.
13. BRIDGE CONSTRUCTION: CONSTRUCT BRIDGE ACROSS WALLKILL RIVER TO THE AMY'S KITCHEN SITE.
14. STORMWATER INSTALLATION: INSTALL POROUS PAVEMENT AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. CONVERT TEMPORARY SEDIMENT BASINS TO BIO-RETENTION AREAS WHEN ALL CONTRIBUTING AREAS HAVE BEEN STABILIZED. RIPRAP OUTLET PROTECTION AREAS WILL BE INSTALLED.
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LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EASEMENT
- ADJOINING PROPERTY LINE
- EXISTING DRAINAGE
- EXISTING GAS
- EXISTING WETLAND BOUNDARY
- EXISTING WETLAND ADJACENT AREA
- EXISTING WATERCOURSE
- STREAM CORRIDOR AND RESERVOIR WATERSHED OVERLAY ZONING DISTRICT LIMIT
- FLOODPLAIN AND PONDING AREA OVERLAY
- PROPOSED PROPERTY LINE
- PROPOSED MAJOR CONTOUR
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- PROPOSED DRAINAGE
- PROPOSED SWALE / DRY SWALE
- PROPOSED SANITARY SEWER
- PROPOSED WATER MAIN
- PROPOSED LIMIT OF SOIL DISTURBANCE
- PROPOSED TEMPORARY SILTATION FENCE
- TEMPORARY SWALE
- PROPOSED TEMPORARY CATCH BASIN INLET PROTECTION
- PROPOSED TEMPORARY SEDIMENT TRAP
- PROPOSED CHECK DAM
- PROPOSED SLOPE STABILIZATION MATTING
- PROPOSED TEMPORARY LEVEL SPREADER

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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EROSION AND SEDIMENT CONTROL PLAN
1 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: X:\2070-DRAINAGE-COMBINED
Layout: EROSION SOS 1
Sheet No.: C3-23 OF 28
Drawing No.: A - 1.3 - 0070 - C30

Drawn By:	Checked By:	Scale:	Tax Map No.:
ESR		1" = 100'	-

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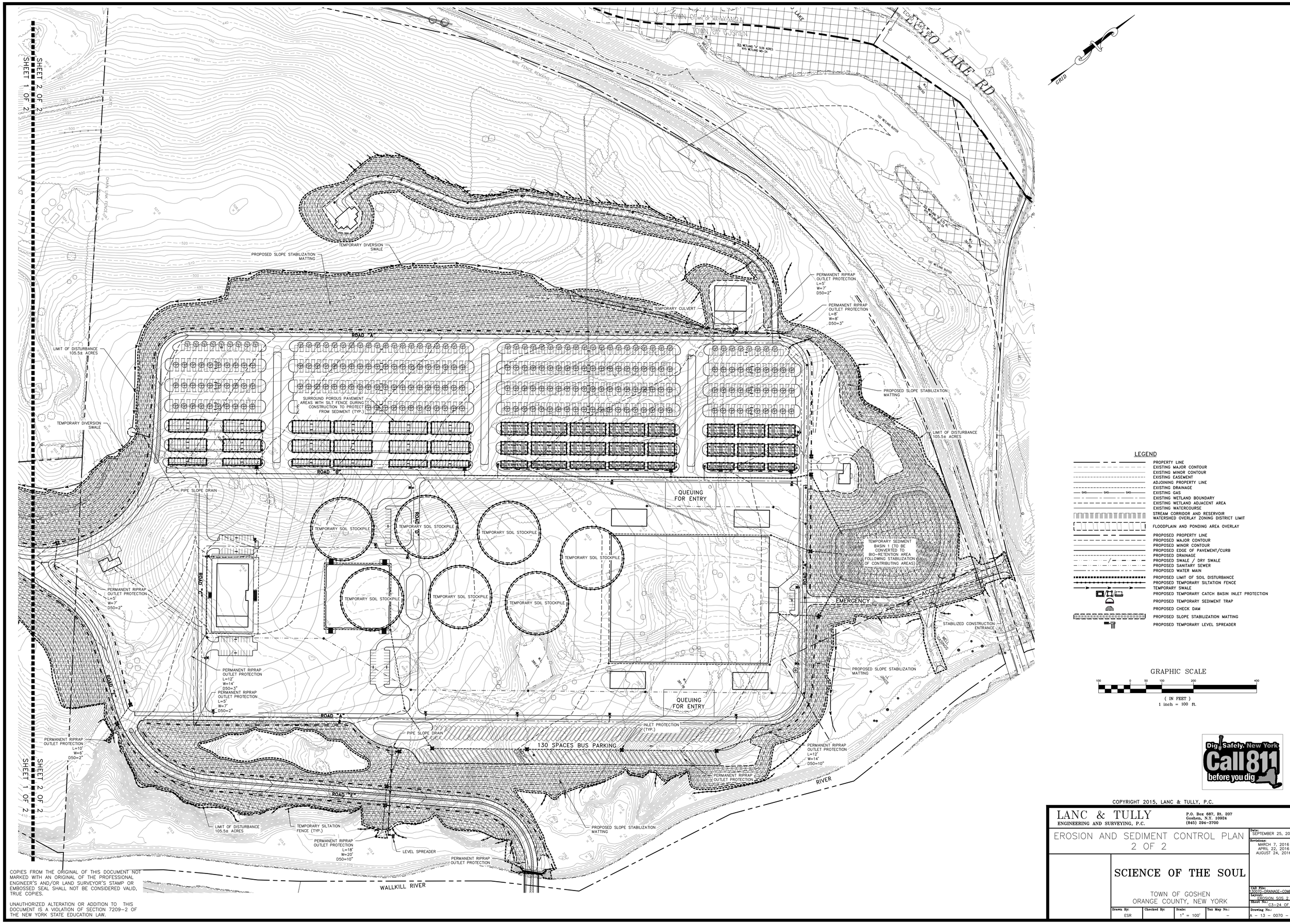

LEGEND

- PROPERTY LINE
- EXISTING MAJOR CONTOUR
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- PROPOSED WATER MAIN
- PROPOSED LIMIT OF SOIL DISTURBANCE
- PROPOSED TEMPORARY SILTATION FENCE
- TEMPORARY SWALE
- PROPOSED TEMPORARY CATCH BASIN INLET PROTECTION
- PROPOSED TEMPORARY SEDIMENT TRAP
- PROPOSED CHECK DAM
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(IN FEET)
1 inch = 100 ft.

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EROSION AND SEDIMENT CONTROL PLAN
2 OF 2

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016
APRIL 22, 2016
AUGUST 24, 2016

CAD File: 0070-DRAINAGE-COMBINED
Layout: EROSION SOS 2
Sheet No.: 23-24 OF 28
Drawing No.: A - 13 - 0070 - C3D

Drawn By:	Checked By:	Scale:	Tax Map No.:
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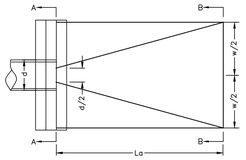
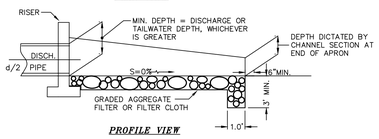
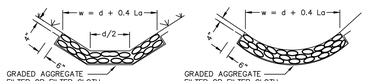


PLAN VIEW



PROFILE VIEW

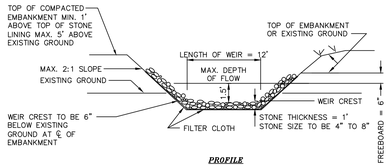


SECTION A-A
(AT END OF CULVERT)

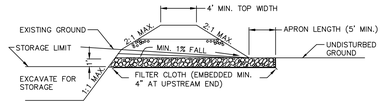
SECTION B-B
(AT END OF APRON)

NOTE:
SEE RIPRAP STANDARDS AND SPECIFICATIONS
MAXIMUM TAILWATER CONDITIONS

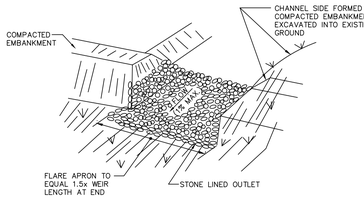
RIP RAP OUTLET PROTECTION
NOT TO SCALE



PROFILE

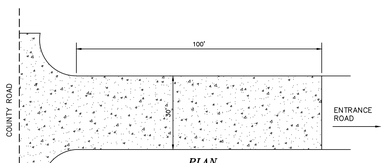


CROSS SECTION



PERSPECTIVE VIEW

RIP-RAP OUTLET SEDIMENT TRAP
NOT TO SCALE



PLAN

SECTION

NOTE:
ENTRANCE SHALL BE MAINTAINED AS CONDITIONS DEMAND TO PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

ALL SEDIMENTATION STRUCTURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS.

A CRUSHED STONE, VEHICLE WHEEL-CLEANING BLANKET WILL BE INSTALLED WHENEVER A CONSTRUCTION ACCESS ROAD INTERSECTS ANY PAVED ROADWAY. SAID BLANKET WILL BE COMPOSED OF 6" DEPTH OF 1"-1 1/2" CRUSHED STONE, WILL BE AT LEAST 30' X 100' AND SHOULD BE PLACED ON COMPACTED SUB-GRADE AND SHALL BE MAINTAINED.

ALL DRIVEWAYS MUST BE STABILIZED WITH 1" - 1½" CRUSHED STONE OR SUB-BASE PRIOR TO INDIVIDUAL HOME CONSTRUCTION.

PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.

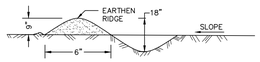
ALL CATCH BASIN INLETS WILL BE PROTECTED WITH A CRUSHED STONE OR HAYBALE FILTER (FILTER DETAILS APPEAR ON PLAN).

ALL STORM DRAINAGE OUTLETS WILL BE STABILIZED, AS REQUIRED, BEFORE DISCHARGE POINTS BECOME OPERATIONAL.

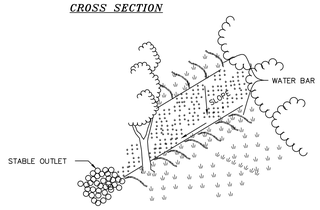
ALL SOIL EROSION AND SEDIMENT CONTROL STRUCTURES MUST BE DETAILED ON THE PLAN.

CONSTRUCTION SPECIFICATIONS

1. THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF OF EMBANKMENT SHALL BE FIVE (5) FEET, MEASURED AT CENTERLINE OF EMBANKMENT.
3. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER, CUT SLOPES 1:1 OR FLATTER.
4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF EMBANKMENT.
5. STORAGE AREA PROVIDED SHALL BE FIGURED BY COMPUTING THE VOLUME AVAILABLE BEHIND THE OUTLET CHANNEL UP TO AN ELEVATION OF ONE (1) FOOT BELOW THE LEVEL WEIR CREST.
6. FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTIONS OF FABRIC MUST OVERLAP AT LEAST ONE (1) FOOT WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNEL.
7. STONE USED IN THE OUTLET CHANNEL SHALL BE FOUR (4) TO EIGHT (8) INCH RIPRAP. TO PROVIDE A FILTERING EFFECT, A LAYER OF FILTER CLOTH SHALL BE EMBEDDED ONE (1) FOOT WITH SECTION NEAREST ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
8. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
9. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRED AS NEEDED.
10. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
11. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
12. DRAINAGE AREA FOR THIS PRACTICE IS LIMITED TO 15 ACRES OR LESS.



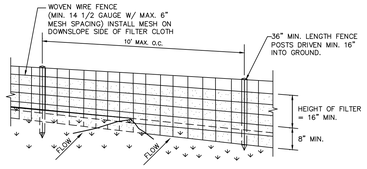
CROSS SECTION



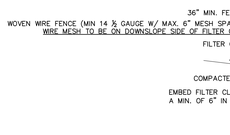
CONSTRUCTION SPECIFICATIONS

1. INSTALL THE WATER BAR AS SOON AS THE RIGHT OF WAY IS CLEARED AND GRADED.
2. DISK OR STRIP THE SOD FROM THE BASE FOR THE CONSTRUCTED RIDGE BEFORE PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FIELD SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL AREAS ARE NOT ADEQUATE.
5. VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL. EXPOSED AREAS SHALL BE IMMEDIATELY SEEDED AND MULCHED.
6. PERIODICALLY INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS AS NEEDED TO RESTORE OPERATION.

WATER BARS DETAIL
NOT TO SCALE



PERSPECTIVE VIEW

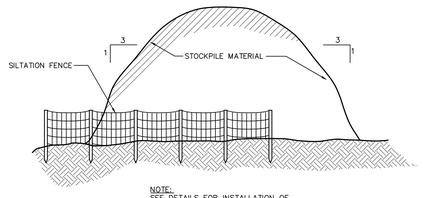


SECTION VIEW

CONSTRUCTION SPECIFICATIONS

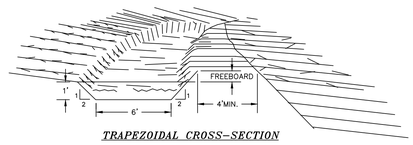
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILTATION FENCE
NOT TO SCALE



NOTE:
SEE DETAILS FOR INSTALLATION OF SILTATION FENCE

TYPICAL STOCKPILE DETAIL
NOT TO SCALE

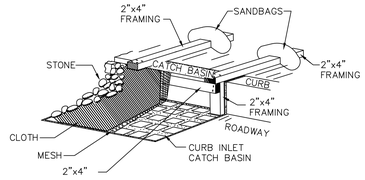


TRAPEZOIDAL CROSS-SECTION

CONSTRUCTION SPECIFICATIONS

1. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIVERSION.
2. THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETE DIVERSION.
4. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE STOCKPILED FOR RESTORATION OF THE AREA SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIVERSION.
5. STABILIZATION SHALL BE DONE ACCORDING TO THE APPROPRIATE STANDARD AND SPECIFICATIONS FOR VEGETATIVE PRACTICES.
   A. FOR DESIGN VELOCITIES OF MORE THAN 3.5 FT. PER. SEC., THE DIVERSION SHALL BE STABILIZED WITH SOD, WITH SEEDING PROTECTED BY JUTE OR EXCELSIOR MATTING OR WITH SEEDING AND MULCHING INCLUDING TEMPORARY DIVERSION OF THE WATER UNTIL THE VEGETATION IS ESTABLISHED.

TEMPORARY DIVERSION SWALE
NOT TO SCALE

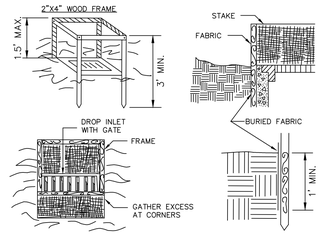


CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85.
2. WOODEN FRAME SHALL BE CONSTRUCTED OF 2"x4" CONSTRUCTION GRADE LUMBER.
3. THE ASSEMBLY SHALL BE PLACED AGAINST THE INLET AND SECURED BY 2"x4" ANCHORS 2 FEET LONG EXTENDING ACROSS THE TOP OF THE CURB AND SIDEWALK AND HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHTS.

MAXIMUM DRAINAGE AREA 1 ACRE

STORM DRAIN INLET FILTER DETAIL FOR CURB INLETS
NOT TO SCALE

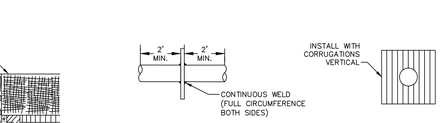


CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2"x4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED, IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2"x4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

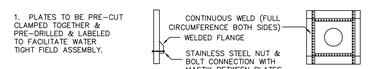
MAXIMUM DRAINAGE AREA 1 ACRE

FILTER FABRIC DROP INLET PROTECTION
NOT TO SCALE

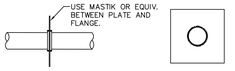


COLLAR WELDED IN PLACE BARREL SECTION

1. PLATES TO BE PRE-CUT CLAMPED TOGETHER & PRE-DRILLED & LABELED TO FACILITATE WATER TIGHT FIELD ASSEMBLY.



MULTI-PIECE COLLAR FOR LARGE PIPES

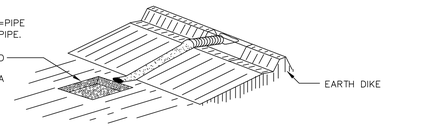


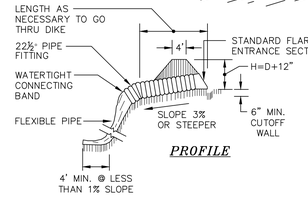
COLLAR FOR FLANGE JOINT PIPE

TYPICAL ANTI-SEEP COLLARS
NOT TO SCALE

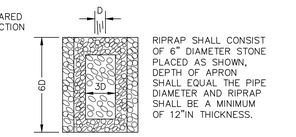
NOTE:
SIZE DESIGNATION IS:
PSD-PIPE DIA. (EX., PSD-18=PIPE SLOPE DRAIN WITH 18"DIAM. PIPE.

DISCHARGE INTO A STABILIZED WATERCOURSE, SEDIMENT TRAPPING DEVICE, OR ONTO A STABILIZED AREA.





PROFILE



RIPRAP SHALL CONSIST OF 6" DIAMETER STONE PLACED AS SHOWN, DEPTH OF APRON SHALL EQUAL THE PIPE DIAMETER AND RIPRAP SHALL BE A MINIMUM OF 12"IN THICKNESS.

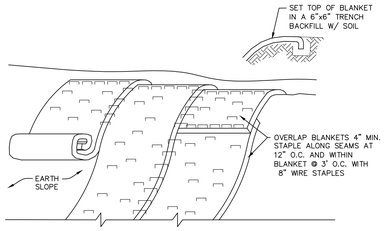
RIPRAP APRON PLANVIEW

CONSTRUCTION SPECIFICATIONS

1. THE INLET PIPE SHALL HAVE A SLOPE OF 3% OR STEEPER.
2. THE TOP OF THE EARTH DIKE OVER THE INLET PIPE AND THOSE DIKES CARRYING WATER TO THE PIPE SHALL BE AT LEAST 1' HIGHER AT ALL POINTS THAN THE TOP OF THE INLET PIPE.
3. THE INLET PIPE SHALL BE CORRUGATED METAL PIPE WITH WATERTIGHT CONNECTING BANDS.
4. THE FLEXIBLE TUBING SHALL BE THE SAME DIAMETER AS THE INLET PIPE AND SHALL BE CONSTRUCTED OF A DURABLE MATERIAL WITH HOLD-DOWN GROMMETS SPACED AT 10' ON CENTER.
5. THE FLEXIBLE TUBING SHALL BE SECURELY FASTENED TO THE CORRUGATED METAL PIPE WITH METAL STRAPPING OR WATERTIGHT CONNECTING COLLARS.
6. THE FLEXIBLE TUBING SHALL BE SECURELY ANCHORED TO THE SLOPE BY STAKING AT THE GROMMETS PROVIDED.
7. A RIPRAP APRON SHALL BE PROVIDED AT THE OUTLET. THIS SHALL CONSIST OF 6" DIAMETER STONE PLACED AS SHOWN.
8. THE SOIL AROUND AND UNDER INLET PIPE AND ENTRANCE SECTION SHALL BE HAND TAMPED IN 4" LIFTS TO THE TOP OF EARTH DIKE.
9. FOLLOW-UP INSPECTION AND ANY NEEDED MAINTENANCE SHALL BE PERFORMED AFTER EACH STORM.

* DRAINAGE AREA MUST NOT EXCEED 5 ACRES.

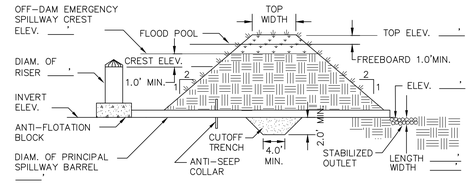
PIPE SLOPE DRAIN FLEXIBLE DETAIL
NOT TO SCALE



SLOPE STABILIZATION DETAIL
NOT TO SCALE

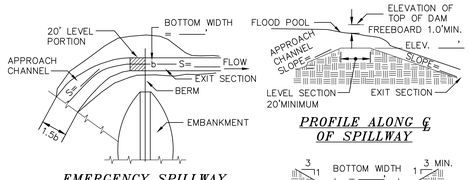
NOTES:

1. SLOPE STABILIZATION TO BE USED ON ALL CREATED OR DISTURBED SLOPES GREATER THAN 33% AND WHERE SPECIFIED ON THE EROSION AND SEDIMENT CONTROL PLAN.
2. STABILIZE PREPARED EARTHEN SLOPE WITH A BIODEGRADABLE NATURAL FIBER NETTING. APPROVED TYPES AS FOLLOWS:
   -S150BN - NORTH AMERICAN GREEN 1-800-772-2040
   -ECS-2B - EAST COAST EROSION BLANKET 1-800-582-4005
   -APPROVED EQUAL
3. ALL SLOPE RESTORATION MUST INCLUDE 4" TOPSOIL.
4. PREPARE THE SOIL SURFACE INCLUDING RAKING, SEEDING AND FERTILIZING PRIOR TO INSTALLING EROSION CONTROL NETTING.
5. AFTER NETTING IS INSTALLED, PLANT ANY PROPOSED LANDSCAPING/GROUND COVER THROUGH SLITS CUT IN FABRIC.



PRINCIPAL SPILLWAY PROFILE

MAXIMUM DRAINAGE AREA = 100 ACRES

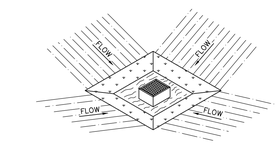


EMERGENCY SPILLWAY PLAN VIEW

PROFILE ALONG ℄ OF SPILLWAY

CROSS SECTION AT CONTROL SECTION

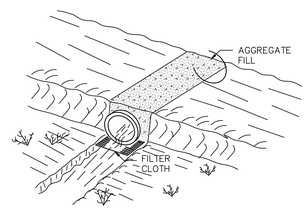
SEDIMENT BASIN DETAILS
NOT TO SCALE

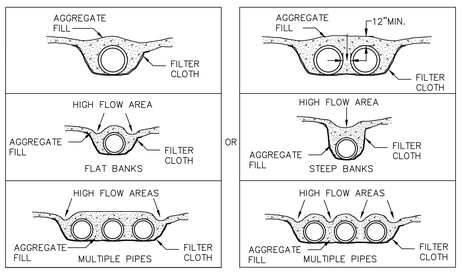


CATCH BASIN SEDIMENT TRAP
NOT TO SCALE

CONSTRUCTION SPECIFICATION FOR ST-III

1. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
2. THE VOLUME OF SEDIMENT STORAGE SHALL BE 3600 CUBIC FEET PER ACRE OF CONTRIBUTORY DRAINAGE. THE MAXIMUM DRAINAGE ARE IS 3 ACRES.
3. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
4. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
5. THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE CONSTRUCTED DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
6. ALL CUT SLOPES SHALL BE 1:1 OR FLATTER.





TEMPORARY ACCESS CULVERT DETAIL
NOT TO SCALE

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EROSION AND SEDIMENT CONTROL DETAILS

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	SEPTEMBER 25, 2015
Revisions:	MARCH 7, 2016 APRIL 22, 2016 AUGUST 24, 2016
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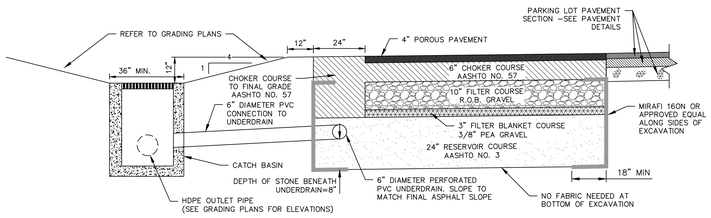


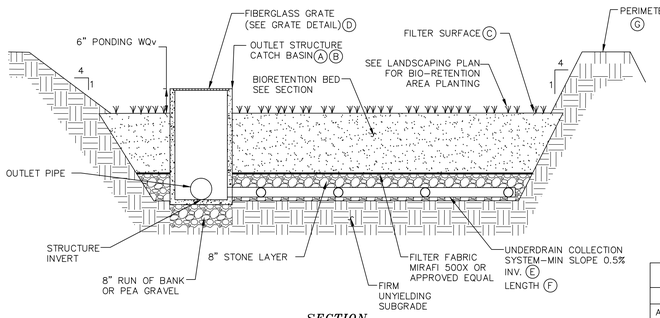
POROUS ASPHALT PAVEMENT CROSS-SECTION

NOT TO SCALE

NOTES:
1. POROUS ASPHALT MIX SHALL BE PG 64-28 OR 76-22 WITH SBS (STYRENE BUTADIENE STYRENE) OR SBR (STYRENE BUTADIENE RUBBER) AND 5 POUNDS OF FIBER PER TON.
2. REFER TO THE UNIVERSITY OF NEW HAMPSHIRE DESIGN SPECIFICATION FOR POROUS ASPHALT PAVEMENT AND INFILTRATION BEDS FOR RECOMMENDED INSTALLATION AND QUALITY CONTROL PROCEDURES.
3. ALTERNATE MIX DESIGNS MAY BE ACCEPTABLE PENDING SUBMISSION TO AND REVIEW BY THE DESIGN ENGINEER. FINAL MIX DESIGN MUST BE APPROVED BY THE DESIGN ENGINEER PRIOR TO INSTALLATION.

R.O.B. GRAVEL GRADATION	
SIEVE SIZE	PERCENT PASSING BY WEIGHT
2-INCH	100%
1/4-INCH	25% TO 65%
NO. 40	5% TO 40%
NO. 200	0% TO 10%

POROUS ASPHALT MIX DESIGN	
SIEVE SIZE (INCH/MM)	***PERCENT PASSING (%)***
0.75/19	100
0.50/12.5	85-100
0.375/9.5	55-75
No. 4/4.75	10-25
No. 8/2.36	5-10
No. 200/0.075	2-4
PROPERTY	***VALUE***
BINDER CONTENT (AASHTO T164)	6 - 6.5%
FIBER CONTENT BY TOTAL MIXTURE MASS	0.3% CELLULOSE OR 0.4% MINERAL
SBR CONTENT BY WEIGHT OF BITUMENT	1.5 - 3%
IN-PLACE AIR VOID CONTENT (ASTM D6752/AASHTO T275)	16.0 - 19.0%



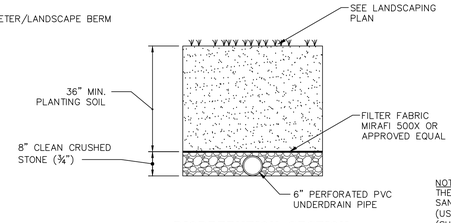
SECTION

BIO-RETENTION AREA DETAIL

NOT TO SCALE

BIORETENTION AREA MAINTENANCE REQUIREMENTS:
INSPECTION SHALL BE MADE WEEKLY BY A LICENSED PROFESSIONAL AND AFTER EVERY ½" RAINFALL EVENT BY THE OWNER OR CONTRACTOR DURING CONSTRUCTION. DURING THE FIRST GROWING SEASON INSPECTIONS SHALL BE CONDUCTED MONTHLY AND BI ANNUALLY THEREAFTER. THE FOLLOWING TASKS SHALL BE PERFORMED AS NEEDED:

1. REMOVAL OF ACCUMULATED SEDIMENT AND CLEANING AND/OR RESTORATION OF THE FILTER BED AREAS WHENEVER ACCUMULATED SEDIMENT REACHES A DEPTH OF 1 INCH.
2. RESTORATION OF ANY DISTURBED PLANT MATERIAL AND ANY ERODED EMBANKMENTS. REPLACEMENT OF PROPOSED PLANTS SHALL OCCUR IF MORE THEN 50% OF THE COVERAGE OF THE FACILITY IS NOT ACHIEVED.
3. REMOVAL OF ACCUMULATED DEBRIS WITHIN THE FILTER BED AREAS AND AT ALL INLET AND OUTFALL STRUCTURES.
4. ANNUAL MOWING (EARLY WINTER) OF THE BASINS. TRIMMING AND PRUNING OF BUSHES. REMOVAL OF ANY FALLEN TREES OR LIMBS.
5. WHEN THE FILTERING CAPACITY OF THE FILTER DIMINISHES SUBSTANTIALLY (I.E., WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 48 HOURS), THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REMOVED AND SHALL BE REPLACED WITH FRESH MATERIAL. THE REMOVED SEDIMENTS SHALL BE DISPOSED IN AN ACCEPTABLE MANNER (I.E., LANDFILL).
6. REFER TO LANDSCAPING PLANS FOR PLANTING REQUIREMENTS. IF FOR ANY REASON A CONFLICT OF PLANT MATERIAL OR PLANT MAINTENANCE SHOULD OCCUR, THE LANDSCAPE PLANS ARE TO TAKE PRECEDENCE.

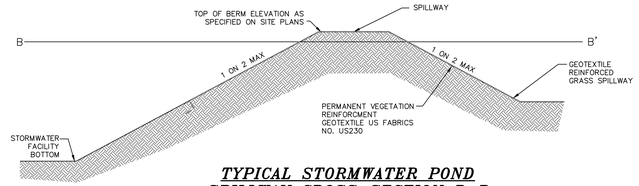


BIORETENTION SECTION

NOTES:
THE PLANTING SOIL SHOULD BE A SANDY LOAM, LOAMY SAND, LOAM (USDA), OR A LOAM/SAND MIX (SHOULD CONTAIN A MINIMUM 35 TO 60% SAND, BY VOLUME). THE CLAY CONTENT FOR THESE SOILS SHOULD BY LESS THAN 25% BY VOLUME. SOILS SHOULD FALL WITHIN THE SM, OR ML CLASSIFICATIONS OF THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS). A PERMEABILITY OF AT LEAST 1.0 FEET PER DAY (0.5"/HR) IS REQUIRED (A CONSERVATIVE VALUE OF 0.5 FEET PER DAY IS USED FOR DESIGN). THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OR OTHER WOODY MATERIAL OVER 1" IN DIAMETER. BRUSH OR SEEDS FROM NOXIOUS WEEDS. PLACEMENT OF THE PLANTING SOIL SHOULD BE IN LIFTS OF 12 TO 18", LOOSELY COMPACTED (TAMPED LIGHTLY WITH A DOZER OR BACKHOE BUCKET).

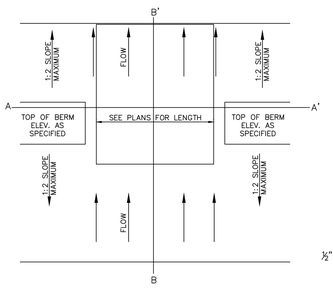
BIO-RETENTION AREA DATA

	BIO-RETENTION AREA OUTLET STRUCTURE	A	B	C
A	OUTLET STRUCTURE DIMENSIONS (OUTSIDE)	48"x48"	48"x48"	48"x48"
B	TOP OF STRUCTURE ELEVATION	409.50	400.50	396.50
C	FILTER SURFACE ELEVATION	409.00	400.00	396.00
D	FIBERGLASS GRATE DIMENSION	42"x42"	42"x42"	42"x42"
E	UNDERDRAIN INVERT ELEVATION	405.00	396.00	392.00
F	UNDERDRAIN SYSTEM LENGTH	900'	1,100'	1,500'
G	TOP OF PERIMETER BERM	413.25	404.25	400.25



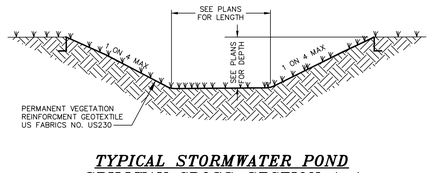
TYPICAL STORMWATER POND SPILLWAY CROSS-SECTION B-B

NOT TO SCALE



TYPICAL STORMWATER POND SPILLWAY PLAN VIEW

NOT TO SCALE



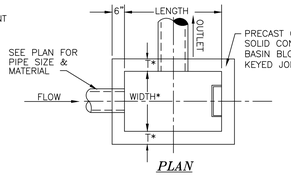
TYPICAL STORMWATER POND SPILLWAY CROSS-SECTION A-A

NOT TO SCALE

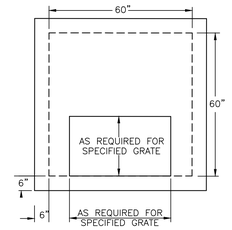
ROAD EDGE AND GRAVEL DIAPHRAGM DETAIL

NOT TO SCALE

NOTE: TO BE UTILIZED IN AREAS WHERE SHEET FLOW TO BIORETENTION OR INFILTRATION AREAS IS PROPOSED.

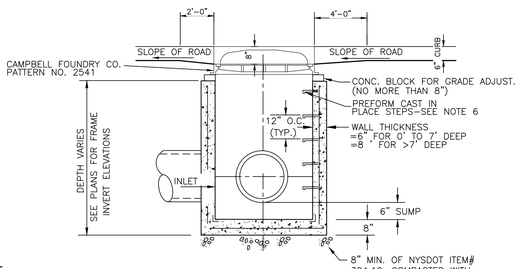


PLAN

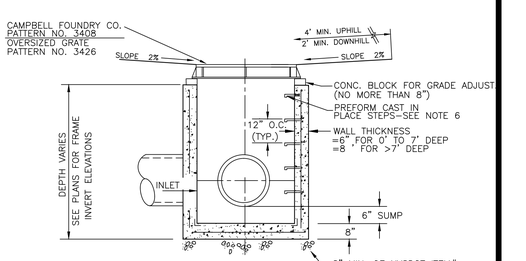


ROOF SLAB FOR OVERSIZED STRUCTURE

ROOF TO BE 8" THICK, WITH STEEL REINF. DESIGNED FOR H-20 LOADING.



CURB TOP CATCH BASIN



FLAT TOP CATCH BASIN

CATCH BASIN DETAIL

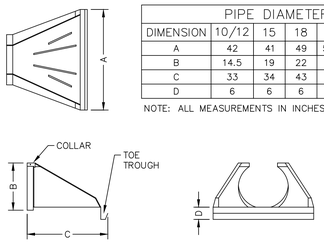
NOT TO SCALE

PRECAST BASIN SCHEDULE			
*PRECAST SIZE	INTERIOR LENGTH	INTERIOR WIDTH	ROOF SLAB
TYPICAL	48"	30"	NO
OVERSIZED	60"	60"	YES

*SEE NOTE 7

PLAN LEGEND
(OSS) = CATCH BASIN WITH OVERSIZED STRUCTURE AND STANDARD SIZE GRATE
(OSG) = CATCH BASIN WITH OVERSIZED STRUCTURE AND OVERSIZED GRATE

NOTES:
1. CONCRETE STRENGTH: 4000 P.S.I. @ 28 DAYS.
2. BACKFILL AROUND CATCH BASIN IS TO BE ACCEPTABLE DRY RUN OF BANK GRAVEL, FREE OF ANY STONES LARGER THAN 3" IN DIAMETER, COMPACTED IN 8" MAX. LIFTS WITH JUMPING JACK COMPACTOR, ACHIEVING 95% COMPACTION.
3. SPECIFIED CATCH BASINS ARE TO HAVE FLAT GRATES, SEE PLAN LABELS.
4. PIPES TO BE CUT FLUSH WITH INSIDE WALLS OF CATCH BASIN.
5. PIPES SHALL BE PARGED AROUND INTERIOR AND EXTERIOR PRIOR TO BACKFILLING OF STRUCTURE.
6. STEPS ARE TO BE CAMPBELL FOUNDRY CO. PATTERN NO. 2593 2254, OR APPROVED EQUAL.
7. SEE PLAN LABELS FOR SIZE OF STRUCTURE AND GRATE.

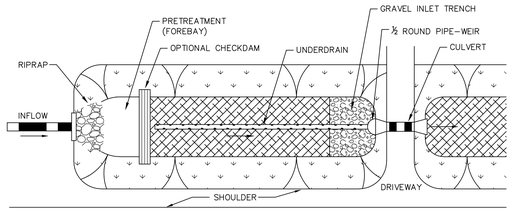


PIPE DIAMETER						
DIMENSION	10/12	15	18	24	30	36
A	42	41	49	59.5	88	88
B	14.5	19	22	28	36	43
C	33	34	43	48	63.5	66.5
D	6	6	6	6	6	6

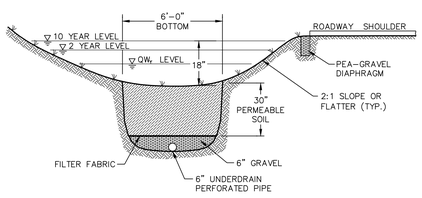
NOTE: ALL MEASUREMENTS IN INCHES

HDPE FLARED END SECTION

NOT TO SCALE



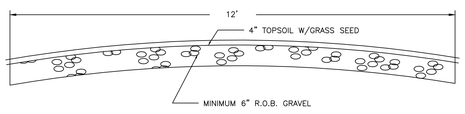
PLAN VIEW



SECTION

DRY SWALE DETAIL

NOT TO SCALE



GRAVEL SHALL CONFROM TO THE FOLLOWING GRADATION REQUIREMENTS:

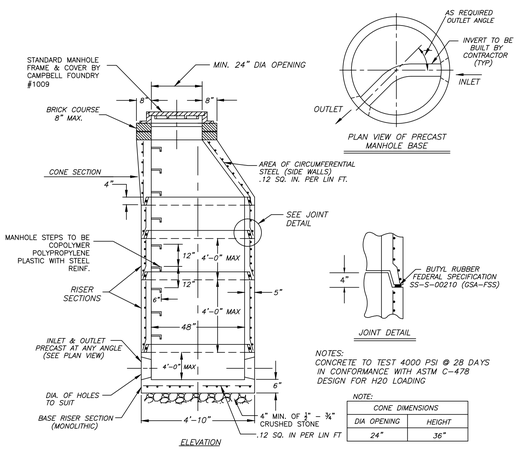
SIEVE SIZE	% PASSING BY WEIGHT
2"	100
1/4"	30-65
NO 200	10-20

POND MAINTENANCE ACCESS DETAIL

NOT TO SCALE

GRATE DETAIL

NOT TO SCALE



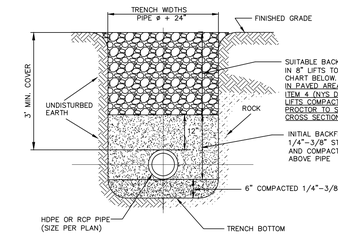
NOTES:
CONCRETE TO TEST 4000 PSI @ 28 DAYS IN CONFORMANCE WITH ASTM C-478
DESIGN FOR H20 LOADING

NOTE:

CONE DIMENSIONS	
DIA OPENING	HEIGHT
24"	36"

PRE CAST CONCRETE STORM MANHOLE DETAIL

NOT TO SCALE



EARTH OR ROCK EXCAVATION

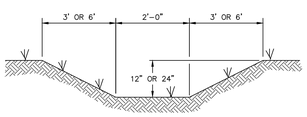
ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
DESCRIPTION	SOIL CLASSIFICATION ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, CRUSHED STONE, GRAVEL	CLASS I	–	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

* BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.

STORM SEWER TRENCH CROSS SECTION

NOT TO SCALE



SWALE DETAIL

NOT TO SCALE

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Goshen, N.Y. 10924
(845) 294-3700

DRAINAGE DETAILS

SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: 130070-DETAILS
Layout: DRAINAGE DETAILS
Sheet No.: C3-26 OF 28
Drawn By: ESR
Checked By:
Scale: N/A
Tax Map No.: SEE SHEET C3-01
Drawing No.: A - 13 - 0070 - C30

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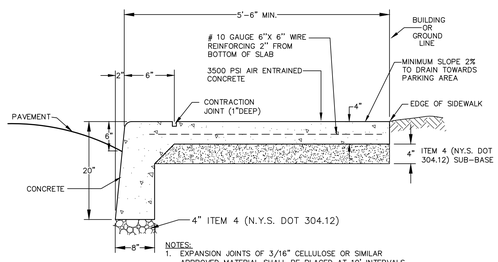
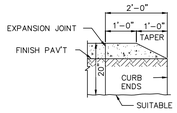
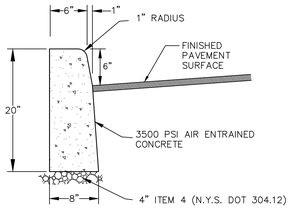


NOTES:
1. EXPANSION JOINTS OF 3/16" CELLULOSE OR SIMILAR APPROVED MATERIAL SHALL BE PLACED AT 10' INTERVALS
2. CONTRACTION JOINTS 1" DEEP HAVING 1/4" RADIUS EDGES SHALL BE PLACED AT 5'-0" INTERVALS IN SIDEWALK.
3. EDGES SHALL HAVE 1/2" RADIUS.
4. USE 3500 PSI AIR ENTRAINED CONCRETE.
5. BROOM FINISH TOP SURFACE.

MONOLITHIC CURB AND SIDEWALK DETAIL
NOT TO SCALE

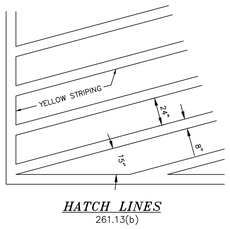


BULLNOSE CURB TERMINAL
NOT TO SCALE



CONTRACTOR TO PROVIDE 1/2" PREFORMED BITUMINOUS – IMPREGNATED FIBER JOINT FILLER EVERY 10'. JOINT FILLER TO COMPLY WITH A.A.S.H.O. SPEC. M-213. FILLER TO BE RECESSED IN FROM FRONT FACE AND TOP OF CURB 1/4".

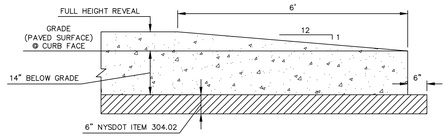
CONCRETE CURB
NOT TO SCALE



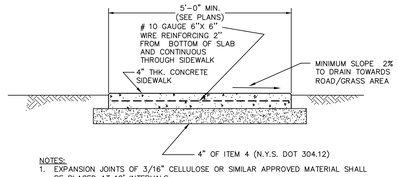
HATCH LINES
261.13(b)

NOTE: DETAIL SHALL BE USED FOR ALL ON-SITE LOCATIONS WHERE PAVEMENT HATCHING IS SPECIFIED

STRIPING DETAIL
NOT TO SCALE

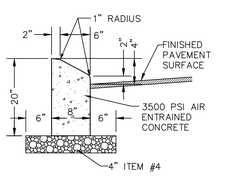


NYSDOT CURB TERMINAL
NOT TO SCALE



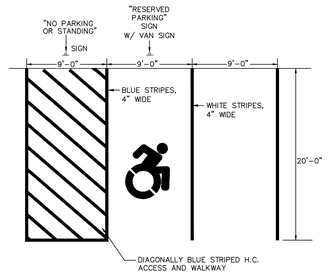
NOTES:
1. EXPANSION JOINTS OF 3/16" CELLULOSE OR SIMILAR APPROVED MATERIAL SHALL BE PLACED AT 10' INTERVALS
2. CONTRACTION JOINTS 1" DEEP HAVING 1/4" RADIUS EDGES SHALL BE PLACED AT 5'-0" INTERVALS IN SIDEWALK.
3. EDGES SHALL HAVE 1/2" RADIUS.
4. USE 3500 PSI AIR ENTRAINED CONCRETE.
5. BROOM FINISH TOP SURFACE.

STANDARD SIDEWALK DETAIL
NOT TO SCALE

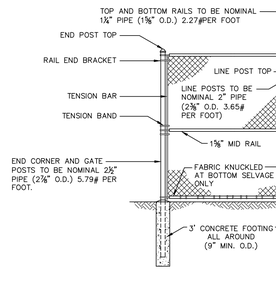


CONTRACTOR TO PROVIDE 1/2" PREFORMED BITUMINOUS – IMPREGNATED FIBER JOINT FILLER EVERY 10'. JOINT FILLER TO COMPLY WITH A.A.S.H.T.O. SPEC. M-213. FILLER TO BE RECESSED IN FROM FRONT FACE AND TOP OF CURB 1/4".

CONCRETE CURB DETAIL (MOUNTABLE)
NOT TO SCALE



HANDICAP AND TYPICAL PARKING SPACE STRIPING DETAIL
NOT TO SCALE



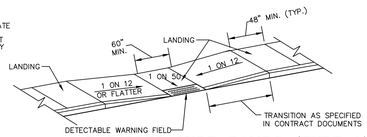
TYPICAL CHAIN LINK FENCE
NOT TO SCALE

FENCE SPECIFICATIONS:

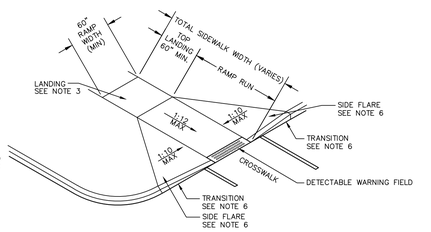
1. FENCING MATERIAL SHALL BE CYCLONE TYPE 1 FENCE AS MANUFACTURED BY USS OR EQUAL.
2. FABRIC HEIGHT IS TO BE 8'.
3. FABRIC SHALL BE 2" MESH 11 GAUGE (MIN.).
4. GATE SHALL HAVE POSITIVE TYPE LATCHING DEVISES WITH PROVISIONS FOR PADLOCKING.
5. ALL POSTS, RAILS, AND APPURTENANCES SHALL BE GALVANIZED STEEL. PIPE POSTS SHALL HAVE TOPS WHICH EXCLUDE MOISTURE.
6. END, CORNER, PULL, AND GATE POSTS ARE TO BE BRACED WITH THE SAME MATERIAL AS TOP RAIL. ALL POSTS SHALL BE SET IN A CONCRETE FOUNDATION OF 1:2:4 MIX. LINE POSTS SHALL BE EVENLY SPACED 10' OR LESS.
7. FENCE IS TO BE INSTALLED IN A PROFESSIONAL MANNER TO ENHANCE THE APPEARANCE OF THE INSTALLATION, TO PREVENT ENTRANCE OF PERSONS AND ANIMALS AND TO PROTECT EQUIPMENT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN THAT THE GRADE AT THE FENCE LINE IS CORRECT, LEVEL AND FINAL BEFORE THE FENCE IS INSTALLED. ALL POSTS SHALL BE ALIGNED TOP RAIL SHALL BE HELD LEVEL.
8. EXPERIENCED PERSONNEL IN THE FENCE INDUSTRY SHALL INSTALL THE FENCE.

GENERAL SIDEWALK NOTES:

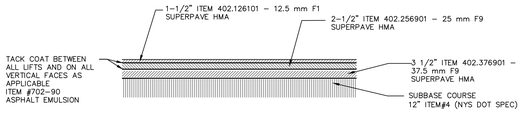
1. THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCATIONS. FIELD CONDITIONS AT INDIVIDUAL LOCATIONS MAY REQUIRE SPECIFIC DESIGNS. DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF THIS SHEET TO THE MAXIMUM EXTENT FEASIBLE ON ALTERATION PROJECTS AND WHEN STRUCTURALLY PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE AMERICAN'S WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.
2. THERE SHALL BE A LANDING AT THE TOP OF EACH CURB RAMP. THERE SHALL BE A LANDING AT THE TOP AND AT THE BOTTOM OF EACH PARALLEL AND PARALLEL/PERPENDICULAR RAMP.
3. LANDINGS SHALL HAVE A MINIMUM CLEAR DIMENSION OF A 60" BY 60" SQUARE. THE MAXIMUM CROSS SLOPE AT LANDINGS IS 2 PERCENT IN ANY DIRECTION. LANDINGS MAY OVERLAP WITH ADJACENT LANDINGS OR A SINGLE LANDING LANDINGS MAY OVERLAP WITH THE CLEAR GROUND SPACE REQUIRED AT PEDESTRIAN SIGNAL PUSH BUTTONS.
4. CROSS SLOPES. THE MAXIMUM CROSS SLOPE OF CURB RAMPS SHALL BE 2 PERCENT. CURB RAMP SURFACES SHALL GENERALLY LIE IN CONTINUOUS PLANES WITH A MINIMUM OF SURFACE WARP.
5. THE RUNNING GRADE OF CURB RAMPS SHOULD BE AS FLAT AS PRACTICABLE. THE MAXIMUM RUNNING GRADE OF ANY PORTION OF ANY CURB RAMP SHALL BE 1:12 (8.3%). CURB RAMPS ARE NOT REQUIRED TO BE LONGER THAN 15'.
6. CURB RAMPS LOCATED WHERE PEDESTRIANS MAY WALK ACROSS THE CURB RAMP SHALL HAVE FLARED SIDES. THE LENGTH OF THE FLARES SHALL BE AT LEAST TEN (10) TIMES THE CURB HEIGHT, MEASURED ALONG THE CURB LINE. WHEN INFEASIBLE OR IMPRACTICABLE TO PROVIDE A LANDING THAT IS AT LEAST 60" WIDE (MEASURED FROM THE TOP OF THE RAMP TO THE BACK OF THE SIDEWALK), THE LENGTH OF THE FLARES SHALL BE TWELVE (12) TIMES THE CURB HEIGHT MEASURED ALONG THE CURB LINE.
7. THE SURFACE OF ALL CURB RAMPS SHALL BE STABLE, FIRM AND SLIP RESISTANT. A COARSE BROOM FINISH RUNNING PERPENDICULAR TO THE SLOPE IS RECOMMENDED ON CONCRETE RAMP SURFACES, EXCLUSIVE OF THE DETECTABLE WARNING FIELDS.
8. RAMP TRANSITIONS BETWEEN WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT VERTICAL CHANGES (1/4" MAX.).
9. COORDINATE ALL TRAFFIC CONTROL DEVICES, UTILITY LOCATIONS, SIGNS, STREET FURNITURE AND DRAINAGE TO ENSURE A CONTINUOUS PEDESTRIAN ACCESS ROUTE AT ALL CURB RAMP LOCATIONS. GUIDANCE FOR CROSSWALK MARKINGS AND TRAFFIC CONTROL DEVICES IS PROVIDED IN THE MUTCD. DRAINAGE GRATES AND UTILITY ACCESS COVERS ARE NOT ALLOWED IN RAMP WALKING SURFACES OR LANDINGS.
10. WHERE FEASIBLE, E.G. WHERE R.O.W. WIDTH PROVIDES SUFFICIENT SPACE TO INSTALL SIDEWALKS SET BACK FROM THE CURBS, RAMP TYPES 2A AND 3A SHOULD BE INSTALLED AS THE SEPARATION PROVIDED BETWEEN SIDEWALK AND CURB OR TRAVELWAY MAKE FOR AS GREATER PEDESTRIAN SAFETY AND COMFORT.
11. AT MARKED CROSSINGS, THE FULL WIDTH OF THE RAMP SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS. THE SIDES OF THE RAMPS (THE FLARES) NEED NOT BE WITHIN THE WIDTH OF THE MARKINGS.
12. DETAILS ILLUSTRATE THAT DETECTABLE WARNINGS ARE REQUIRED. SEE THE CURRENT DETECTABLE WARNING STANDARD SHEET FOR SPECIFIC DETECTABLE WARNING REQUIREMENTS. DETAILS DO NOT SHOW DROPPED CURBS AT BOTTOMS OF CURB RAMPS. DROP CURBS MAY BE SPECIFIED.
13. SLOPES ON BLENDED TRANSITIONS SHALL NOT BE STEEPER THAN 2% (1 ON 50) IN ANY DIRECTION.



PARALLEL CURB RAMPS (TYPE A)
NOT TO SCALE

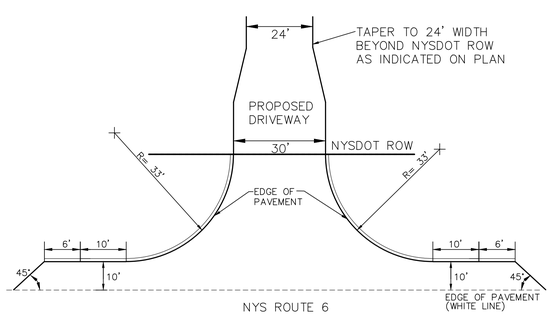


PERPENDICULAR SIDEWALK CURB RAMP (TYPE B)
NOT TO SCALE

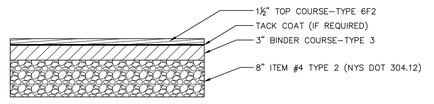


NOTES:
1. NYSDOT PAVEMENT SPECIFICATION SHALL BE UTILIZED TO RIGHT-OF-WAY LINE.

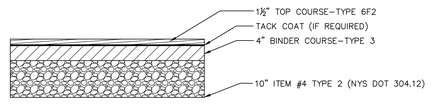
NYSDOT PAVEMENT CROSS SECTION
NOT TO SCALE



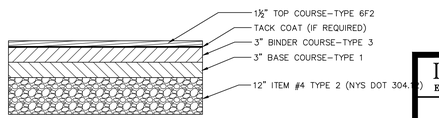
ROADWAY ENTRANCE DETAIL STATE HWY.
NOT TO SCALE



PAVEMENT SECTION 1
PASSENGER TRAFFIC AND PARKING AREAS
NOT TO SCALE



PAVEMENT SECTION 2
MEDIUM DUTY TRUCK TRAFFIC AREAS
NOT TO SCALE



PAVEMENT SECTION 3
HEAVY DUTY TRUCK TRAFFIC AREAS
NOT TO SCALE

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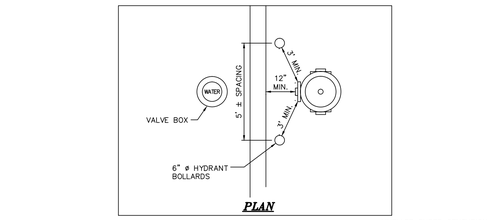
Goshen, N.Y. 10924
(845) 294-3700

CONSTRUCTION DETAILS – 1

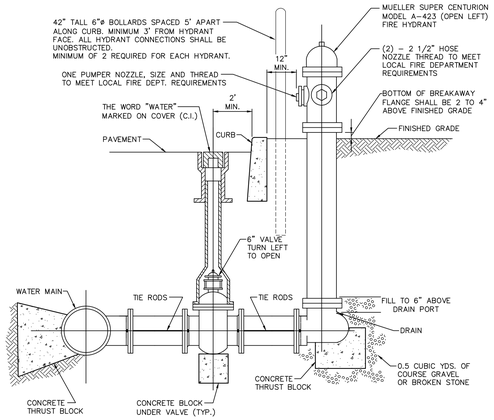
SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016; APRIL 22, 2016; AUGUST 24, 2016
CAD File: 13070-DETAILS
Layout: CONS DETAILS-1
Sheet No.: C3-27 OF 28
Drawn By: ESR
Checked By:
Scale: N/A
Tax Map No.: SEE SHEET C3-01
Drawing No.: A – 13 – 0070 – C30



PLAN

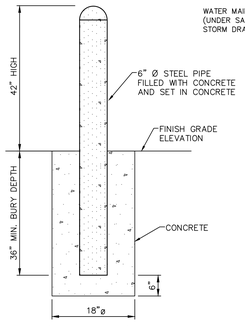


HYDRANT DETAIL

NOT TO SCALE

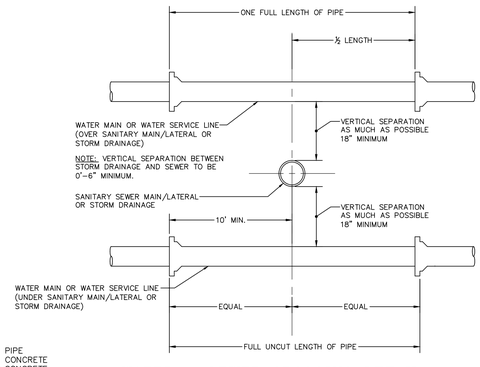
NOTES:

1. HYDRANT SHALL BE MUELLER SUPER CENTURION MODEL A-423 (OPEN LEFT).
2. HYDRANT SHALL BE PAINTED IN ACCORDANCE WITH AWWA STANDARDS (C502, SEC. 4.13)
3. WHERE GROUND WATER RISES TO WITHIN 2 FEET OF A FIRE HYDRANT BASE, THE DRAIN PORT SHALL BE PLUGGED. ANY HYDRANT THAT IS PLUGGED SHALL BE LABELED IN A MANNER SATISFACTORY TO THE LOCAL FIRE DEPARTMENT AND WATER DEPARTMENT TO ENSURE THAT THE HYDRANT IS PUMPED OUT AFTER EACH USE.



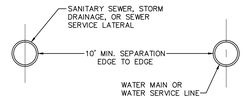
HYDRANT BOLLARD DETAIL

NOT TO SCALE



WATER & SEWER CROSSING DETAIL

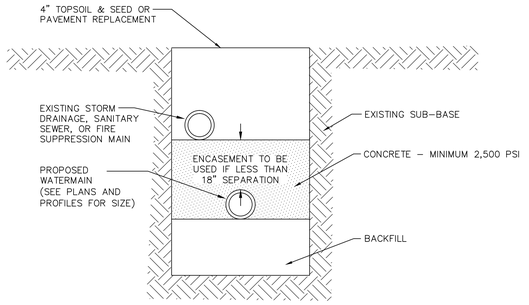
NOT TO SCALE



WATER & SEWER HORIZONTAL SEPARATION

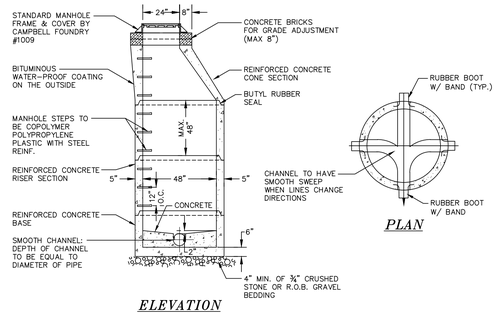
NOT TO SCALE

NOTE:
THE SEPARATION REQUIREMENT SHALL CONFORM TO CURRENT ORANGE COUNTY DEPARTMENT OF HEALTH STATUTES, CODES, RULES, REGULATIONS AND LAWS AS THEY APPLY. ANY DEVIATION FROM THE ABOVE SEPARATION REQUIREMENTS SHALL REQUIRE WRITTEN APPROVAL FROM THE ORANGE COUNTY DEPARTMENT OF HEALTH.



CONCRETE ENCASEMENT DETAIL

NOT TO SCALE



ELEVATION

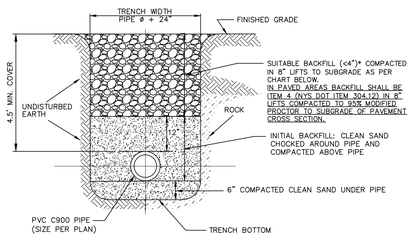
PLAN

PRE-CAST MANHOLE

NOT TO SCALE

NOTES:

1. SMOOTH CHANNEL INVERT TO BE PAVED WITH CEMENT MORTAR.
2. PIPE JOINTS SHALL BE A MINIMUM OF 2' FROM OUTSIDE WALL OF MANHOLE.
3. SANITARY SEWER TO EXTEND INTO THE MANHOLE ONLY TO A POINT WHERE OUTSIDE OF SEWER MEETS INSIDE WALL OF MANHOLE.
4. OPENING FOR PIPE SHALL BE PRE-CAST. CONNECTIONS TO EXISTING MANHOLES SHALL BE MACHINE CORED.
5. MANHOLE COVERS TO BE STAMPED "SANITARY".
6. PRECAST REINFORCED CONCRETE MANHOLE SHALL BE DESIGNED FOR H20 LIVE LOAD.



EARTH OR ROCK EXCAVATION

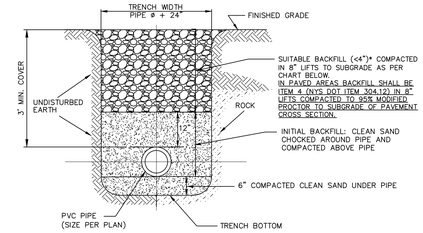
ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
	SOIL CLASSIFICATION			
DESCRIPTION	ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, STONE, GRAVEL	CLASS I	–	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

WATERMAIN TRENCH CROSS SECTION

NOT TO SCALE

*BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.



EARTH OR ROCK EXCAVATION

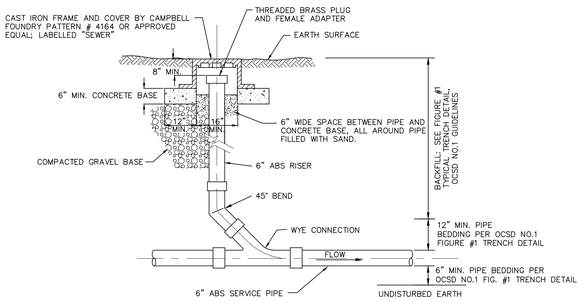
ACCEPTABLE BACKFILL MATERIAL & COMPACTION REQUIREMENTS				
	SOIL CLASSIFICATION			
DESCRIPTION	ASTM D2321	ASTM D2487	AASHTO M43	MINIMUM STANDARD PROCTOR DENSITY %
GRADED OR CRUSHED, STONE, GRAVEL	CLASS I	–	5 56	DUMPED
SAND, GRAVELS AND GRAVEL/SAND MIXTURES; LITTLE OR NO FINES	CLASS II	GW GP SW SP	57 6	85%
SILTY OR CLAYEY GRAVELS, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR SAND/SILT MIXTURES	CLASS III	GM GC SM SC	GRAVEL AND SAND (<10% FINES)	90%

NOTE: INORGANIC SILTS, CLAYS, AND OTHER CLASS IV MATERIAL SHALL NOT PERMITTED.

SANITARY SEWER TRENCH CROSS SECTION

NOT TO SCALE

*BACKFILL SHALL CONTAIN NO STONES OVER 4" IN ANY DIMENSION.

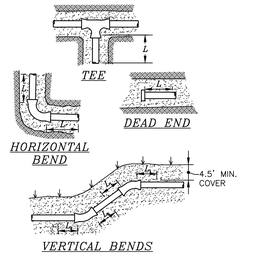


ELEVATION
SEWER CLEAN OUT DETAIL

NOT TO SCALE

NOTES:

1. CLEAN OUT INSTALLATION SHALL CONFORM TO CLEAN OUT DETAIL (C.O.) FIGURE 4 FROM ORANGE COUNTY DEPT. OF EF&S, OCSD NO.1, AND NOTE 5 BELOW.
2. CLEAN OUT LOCATION TO BE SHOWN ON AS-BUILT DRAWINGS WITH DISTANCE FROM BUILDING CORNERS.
3. MINIMUM COVER OVER 6" ABS SERVICE PIPE IS 4.0 FEET.
4. FOR BACKFILL SPECIFICATIONS, SEE TYPICAL TRENCH DETAIL (SANITARY SEWER) FIGURE 1 (FROM ORANGE COUNTY DEPT. OF EF&S, OCSD NO.)
5. EACH BUILDING SEWER SHALL HAVE A CLEANOUT INSTALLED APPROXIMATELY 2' DOWNSTREAM OF THE BUILDING PIPE TO BUILDING SEWER CONNECTION. THEREAFTER, CLEANOUTS SHALL BE INSTALLED ALONG THE BUILDING SEWER APPROXIMATELY EVERY 100' (MAXIMUM). FOR THE PURPOSE OF CLEANOUT LOCATIONS, DISTANCE SHALL BE MEASURED FROM THE FIRST CLEANOUT LOCATED DOWNSTREAM OF THE HOUSE PIPE TO BUILDING SEWER CONNECTION, THENCE DOWNSTREAM ALONG THE BUILDING SEWER TO THE CENTER OF THE SEWER MAIN LINE (GENERALLY LOCATED IN THE CENTER OF THE STREET).



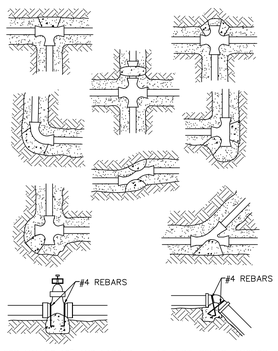
NOTE:
LENGTH OF RESTRAINED JOINTS BASED UPON:
a. 4.5' MINIMUM COVER
b. TEST PRESSURE = 150 PSI
c. TYPE 5 TRENCH
d. 1.5 TO 1 SAFETY FACTOR

RESTRAINED JOINT TABLE			
MINIMUM LENGTH REQUIRED IN L.F.			
FITTING	LENGTH IN L.F. (L)		
TEES & DEAD ENDS			
6"	22		
8"	29		
10"	34		
12"	40		
14"	46		
16"	52		
90° BEND			
6"	10		
8"	12		
10"	15		
12"	17		
14"	20		
16"	22		
45° BEND			
6"	4		
8"	5		
10"	6		
12"	7		
14"	8		
16"	9		
22½° BEND			
6"	2		
8"	3		
10"	3		
12"	4		
14"	4		
16"	5		
VERTICAL BENDS	L_1	L_2	
6"	9	4	
8"	12	5	
10"	14	6	
12"	17	7	
14"	19	8	
16"	22	9	

ALL REQUIRED JOINT RESTRAINT SHALL BE MEGALUG RETAINING GLANDS AS MANUFACTURED BY EBAA IRON, OR APPROVED EQUAL.

RESTRAINED JOINT DETAILS

NOT TO SCALE



FOR VALVES 12" AND LARGER ANCHOR VALVE AS ABOVE

AT VERT. BENDS, ANCHOR TO RESIST OUTWARD THRUSTS

NOTES:

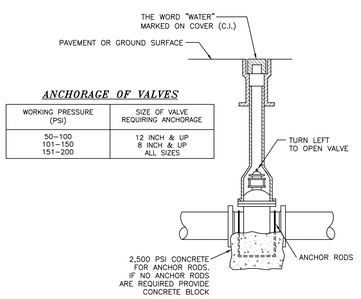
1. KEEP NUTS AND BOLTS FREE OF CONCRETE THROUGH THE USE OF PLASTIC COVERS.
2. ANCHORING OF VALVES AND VERTICAL BENDS SHALL BE DONE WITH #4 REBARS WITH A MINIMUM ENGAGEMENT DEPTH OF 3" INCHES AND 3 INCHES OF THE TERMINUS END OF THE REBAR BEING BENT AT 90° ORIENTATION AS SHOWN.

THRUST BLOCK DETAILS

NOT TO SCALE

THRUST BLOCK SIZING TABLE					
BEARING AREA OF THRUST BLOCK IN SQUARE FEET					
FITTING	THRUST * (POUNDS)	HARD SHALE	SAND & GRAVEL	SAND	SOFT CLAY
TEES AND DEAD ENDS					
6"	5,700	1 1 2	2 3.5 5.5	3 5 8.5	6 10 16.5
8"	9,870				
10"	16,125				
12"	22,965	3.5	8	11.5	23
14"	31,155	4.5	10.5	16.0	31.5
16"	40,320		13.5	20.5	40.5
90° BEND					
6"	8,055	1	3	4	8
8"	13,950	1.5	5	9	14
10"	22,800	2.5	8 11	11.5	23
12"	32,460	3.5	15.0	16.5	32.5
14"	44,040	4.5	19.5	22.5	44.5
16"	57,015	6		29	57.5
45° BEND					
6"	4,365	1	1.5	2.5	4.5
8"	7,560	1	2.5	4	8
10"	12,360	1.5	4.5	6.5	12.5
12"	17,580	2	6	9	18
14"	23,865	2.5	8.0	12.0	24
16"	30,885	3.5	10.5	15.5	31
22½° BEND					
6"	2,205	1 1	1	1.5	2.5
8"	3,825	1	1.5	2	4
10"	6,255	1.5	2	3.5	6.5
12"	8,910	2	3	4.5	9
14"	12,090		4.5	6.5	12.5
16"	15,645		5.5	8	16

* THRUST AT 150 PSI OF WATER PRESSURE



ANCHORAGE OF VALVES

WORKING PRESSURE (PSI)	SIZE OF VALVE REQUIRING ANCHORAGE
50–100	12 INCH & UP
101–150	8 INCH & UP
151–200	ALL SIZES

VALVE DETAIL

NOT TO SCALE

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Goshen, N.Y. 10924
(845) 294-3700

CONSTRUCTION DETAILS – 2

Date: SEPTEMBER 25, 2015
Revisions: MARCH 7, 2016, APRIL 22, 2016, AUGUST 24, 2016

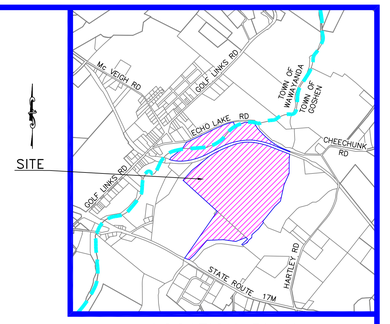
SCIENCE OF THE SOUL

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

CAD File: 130070-DETAILS
Layout: CONS DETAILS-2
Sheet No.: C3-28 OF 28

Drawn By:	Checked By:	Scale:	Tax Map No.:	Drawing No.:
ESR		N/A	SEE SHEET C3-01	A – 13 – 0070 – C30

Appendix G



LOCATION PLAN

1 INCH = 2000 FEET

NOTES:

1. SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
2. REFERENCES:
   A. MAP ENTITLED "SURVEY & TOPOGRAPHIC MAP OF LANDS OF CONCRETE PROPERTIES, LLC, SITUATED IN THE TOWNS OF GOSHEN & WAWAYANDA, ORANGE COUNTY, NEW YORK STATE, SURVEY & TOPOGRAPHIC MAP OF LANDS OF TETZ FAMILY, LLC, AND SUBDIVISION MAP OF LANDS OF THE PEOPLE OF THE STATE OF NEW YORK, SITUATE IN THE TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK STATE," DATED NOVEMBER 2007 AND LAST REVISED MAY 2009, PREPARED BY MERCURIO, NORTON, TAROLLI, LAND SURVEYING–ENGINEERING, P.C.
   B. MAP ENTITLED "LOT LINE CHANGE, LANDS OF AL TURI LANDFILL, INC., TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JANUARY 28, 2013, LAST REVISED FEBRUARY 22, 2103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON MAY 6, 2013, AS FILED MAP NO. 163–13.
   C. MAP ENTITLED "SKETCH PLAN FOR ECHO LAKE SITE OWNED BY THE TOWN OF WALLKILL, TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JUNE 19, 2007, PREPARED BY EUSTANCE & HOROWITZ, P.C.
   D. MAP ENTITLED "LANDS OF HUBERTH, TOWN OF WAWAYANDA, ORANGE COUNTY, NEW YORK," DATED APRIL 12, 2006 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON JANUARY 10, 2007, AS FILED MAP NO. 6–07.
   E. MAP ENTITLED "THREE LOT MINOR SUBDIVISION PLAT, LANDS OF JOSEPH R. CARMICHAEL, ETAL, LOT 17, BLOCK 1 SECTION 12, TOWN OF GOSHEN, OREANGE COUNTY, NEW YORK," DATED OCTOBER 3, 1975 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON DECEMBER 1, 1975, AS FILED MAP NO. 3626.
   F. TITLE REPORT NUMBER HN 53050, PREPARED BY HILL–N–DALE ABSTRACTERS, INC., HAVING AN EFFECTIVE DATE OF DECEMBER 7, 2014.
3. TAX LOT 12 – 1 – 24.2 IS SUBJECT TO A PERPETUAL EASEMENT IN FAVOR OF WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT AS DESCRIBED IN LIBER 771 OF DEEDS AT PAGE 487 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE.
4. TAX LOT 12 – 1 – 23.2 IS SUBJECT TO A PERPETUAL EASEMENT IN FAVOR OF WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT AS DESCRIBED IN LIBER 1016 OF DEEDS AT PAGE 103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE.
5. TAX LOT 12 – 1 – 24.2 IS SUBJECT TO TERMS AND CONDITIONS IN PERMANENT LICENSE AGREEMENT WITH THE TOWN OF WALLKILL FOR THE USE OF WATER GENERATED BY THE WELL HEAD SITES THERE, AS WELL AS PERMANENT ACCESS RIGHTS TO ENTER UPON, OVER ACROSS AND THROUGH THE LOT NUMBER 1 PREMISES.
6. TAX LOT 12 – 1 – 23.2 IS SUBJECT TO A GAS RIGHT AGREEMENT BETWEEN AL TURI LANDFILL, INC AND AMERESCO LFG–I, INC., AS DESCRIBED IN LIBER 11588 OF DEEDS AT PAGE 2008, AS FILED IN THE ORANGE COUNTY CLERK'S OFFICE.

RECORD OWNERS:

CONCRETE PROPERTIES LLC
130 CROTTY ROAD
MIDDLETOWN, NY 10941

L. 12807 P. 171
TOWN OF GOSHEN
12 – 1 – 24.2
TOWN OF WAWAYANDA
1 – 1 – 40

TETZ FAMILY LLC
130 CROTTY ROAD
MIDDLETOWN, NY 10941

TOWN OF GOSHEN
12 – 1 – 23.2
L. 12584 P. 1568

AREAS:

TAX LOT 12 - 1 -24.2 & 1 - 1 - 40	189.081± AC.
TAX LOT 12 - 1 - 23.2	21.733± AC.
TOTAL:	210.814± AC.

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

CERTIFICATION:

I HEREBY CERTIFY TO THE PARTIES OF INTEREST LISTED BELOW THAT THIS MAP SHOWS THE RESULTS OF AN ACTUAL FIELD SURVEY COMPLETED ON MARCH 18, 2015.

CONCRETE PROPERTIES, LLC
TETZ FAMILY LLC
SASSAFRAS MOUNTAIN LLC
AMY'S KITCHEN
ECHO LAKE NY, LLC
FIDELITY NATIONAL TITLE INSURANCE COMPANY
RADHA SOAMI SOCIETY BEAS AMERICA

BY: _____
RODNEY C. KNOWLTON, L.S.
NEW YORK STATE LICENSE NO. 50276

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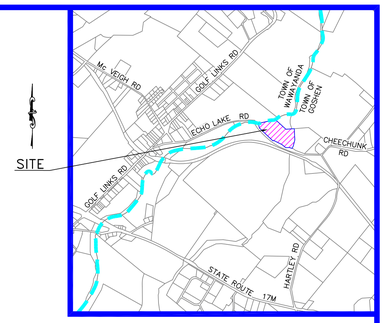
Goshen, N.Y. 10924
(845) 294–3700

SURVEY PREPARED FOR

SASSAFRAS MOUNTAIN LLC

TOWN OF GOSHEN
TOWN OF WAWAYANDA
ORANGE COUNTY, NEW YORK

Date:	MARCH 20, 2015
Revisions:	APRIL 9, 2015
CAD File:	L30070–LT–SVY.DWG
Layout:	SVY
Sheet No.:	1 OF 1
Drawn By:	JW
Checked By:	
Scale:	1" = 200'
Tax Map No.:	AS NOTED
Drawing No.:	C3D A – 13 – 0070 – 01



LOCATION PLAN

1 INCH = 2000 FEET

NOTES:

1. SUBSURFACE STRUCTURES AND UTILITIES NOT VISIBLE AT THE TIME OF SURVEY HAVE NOT BEEN SHOWN.
2. REFERENCES:
   - A. MAP ENTITLED "SURVEY & TOPOGRAPHIC MAP OF LANDS OF CONCRETE PROPERTIES, LLC, SITUATED IN THE TOWNS OF GOSHEN & WAWAYANDA, ORANGE COUNTY, NEW YORK STATE, SURVEY & TOPOGRAPHIC MAP OF LANDS OF TETZ FAMILY, LLC, AND SUBDIVISION MAP OF LANDS OF THE PEOPLE OF THE STATE OF NEW YORK, SITUATE IN THE TOWN OF GOSHEN, ORANGE COUNTY, NEW YORK STATE," DATED NOVEMBER 2007 AND LAST REVISED MAY 2009, PREPARED BY MERCURIO, NORTON, TAROLLI, LAND SURVEYING–ENGINEERING, P.C.
   - B. MAP ENTITLED "LOT LINE CHANGE, LANDS OF AL TURI LANDFILL, INC., TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JANUARY 28, 2013, LAST REVISED FEBRUARY 22, 2103 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON MAY 6, 2013, AS FILED MAP NO. 163–13.
   - C. MAP ENTITLED "SKETCH PLAN FOR ECHO LAKE SITE OWNED BY THE TOWN OF WALLKILL, TOWN OF GOSHEN, COUNTY OF ORANGE, STATE OF NEW YORK," DATED JUNE 19, 2007, PREPARED BY EUSTANCE & HOROWITZ, P.C.
   - D. MAP ENTITLED "LANDS OF HUBERTH, TOWN OF WAWAYANDA, ORANGE COUNTY, NEW YORK," DATED APRIL 12, 2006 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE ON JANUARY 10, 2007, AS FILED MAP NO. 6–07.
   - E. TITLE REPORT NUMBER HN 51645, PREPARED BY HILL–N–DALE ABSTRACTERS, INC., HAVING AN EFFECTIVE DATE OF JUNE 5, 2014.
3. SUBJECT TO A PERPETUAL EASEMENT IN FAVOR OF WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT AS DESCRIBED IN LIBER 772 OF DEEDS AT PAGE 229 AND FILED IN THE ORANGE COUNTY CLERK'S OFFICE.

RECORD OWNER:

AL TURI LANDFILL INC
P.O. BOX 1287
CUTCHOGUE, NY 11935

L. 2299 P. 358
12 – 1 – 1.5

AREA:

14.432± AC.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

ORANGE & ROCKLAND EASEMENT

PERPETUAL EASEMENT TO WALLKILL VALLEY DRAINAGE DISTRICT

CERTIFICATION:

I HEREBY CERTIFY TO THE PARTIES OF INTEREST LISTED BELOW THAT THIS MAP SHOWS THE RESULTS OF AN ACTUAL FIELD SURVEY COMPLETED ON APRIL 4, 2015.

AL TURI LANDFILL, INC.
AMY'S KITCHEN
SASSAFRAS MOUNTAIN LLC
ECHO LAKE NY, LLC
HUDSON VALLEY AREA, LLC
WESTCOR LAND TITLE INSURANCE COMPANY

BY: _____
RODNEY C. KNOWLTON, L.S.
NEW YORK STATE LICENSE NO. 50276

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LANC & TULLY
ENGINEERING AND SURVEYING, P.C.
P.O. Box 687, Rt. 207
Goshen, N.Y. 10924
(845) 294–3700

SURVEY PREPARED FOR

SASSAFRAS MOUNTAIN LLC

TOWN OF GOSHEN
ORANGE COUNTY, NEW YORK

Date:	Revisions:
APRIL 7, 2015	

CAD File: 130070–TL15–SVY.DWG
Layout: SVY
Sheet No.: 1 OF 1

Drawn By:	Checked By:	Scale:	Tax Map No.:	Drawing No.:
JW		1" = 50'	12 – 1 – 1.5	C3D A – 13 – 0070 – 02

HILL-N-DALE ABSTRACTERS, INC.
Where Accuracy is the Best Policy

HILL-N-DALE ABSTRACTERS, INC.
20 Scotchtown Avenue
PO Box 547
Goshen, NY 10924
Tel (845) 294-5110
Fax (845) 294-9581

ESTIMATED TITLE BILL

Closed By _____ Date Closed _____

Title Number **HN 53050**

Closed At The Office Of _____

Record Owner **Tetz Family, LLC and Concrete Properties, LLC**

Purchaser **Sassafras Mountain LLC, a California LLC**

Premises **2832 State Route 17M**

County **Orange** Closing County **Orange**

S/B/L(1) **12/1/23.2**

Title Charges	Total	Purchaser	Seller	Lender
Fee 7,000,000.00	25,648.00	25,648.00		
Municipals*	50.00	50.00		
Bankruptcies*	75.00	75.00		
*Sales Tax on $125.00	10.16	10.16		
Endorsements				
Recording Chgs **				
State Transfer Tax	28,000.00		28,000.00	
Deeds	350.00	350.00		
Mortgages				
Escrow Deps				
Misc. Chgs				
TOTAL	**54,133.16**	**26,133.16**	**28,000.00**	**0.00**

Note: Rates and charges herein are subject to change based on the rates in effect at the time of closing.
** - Recording Charges may also include Service Fees.

Checks to Hill-N-Dale Abstracters,

PAYOR	
TOTAL	

Direct Payment Checks

PAYEE	
TOTAL	

Underwriter: Fidelity National Title Insurance Company

Premium/Endorsement Split: 80% - 20%

	Ag. Split	Und. Split
Fee Prm 25,648.00	20,518.40	5,129.60
Tot. Mtg Prm 0.00	0.00	0.00
Tot. Ends. 0.00	0.00	0.00
Totals 25,648.00	20,518.40	5,129.60

CONSUMER ACKNOWLEDGMENT OF TITLE INSURANCE PREMIUMS, FEES, AND SERVICE CHARGES

This Statement should be attached to all final invoices.

Date: March 10, 2015

Title No: HN 53050

The Property: 2832 State Route 17M

Borrower: Sassafras Mountain LLC, a California LLC

I acknowledge that I have reviewed the premium calculations, fees and service charges being charged to me. I acknowledge that these charges have been explained to me and that I understand them as set forth on this memorandum.

NOTE: You are required to sign this memorandum of acknowledgment pursuant to New York State Insurance Law.

TO BE SIGNED BY BUYER/BORROWER

_____

Buyer/Borrower/Seller/Lenders Representative

_____

Buyer/Borrower/Seller/Lenders Representative

HILL-N-DALE ABSTRACTERS, INC.
20 Scotchtown Avenue
PO Box 547
Goshen, NY 10924
Tel (845) 294-5110
Fax (845) 294-9581

Application Date **02/27/2015**
Report Due **03/06/2015**

Title Number **HN 53050**

Representing **Fidelity National Title Insurance Company**

Applicant

Drake Loeb, PLLC
Marianna R. Kennedy, Attorney
555 Hudson Valley Avenue
Suite 100
New Windsor, New York 12553
Tel (845) 458-7312 Fax (845) 458-7313
mkennedy@drakeloeb.com

Purchaser's Atty **Same As Applicant**

Seller's Atty

Blustein, Shapiro, Rich & Barone, Esqs.
Burt Blustein, Esq.
10 Matthews Street
Goshen, NY 10924
Tel (845) 291-0011 Fax (845) 291-0021

BANKRUPTCY SEARCH

Title Number: HN 53050

Date: 3/4/15

Individual Name: Tetz Family LLC

County of: Orange

The entire NEW YORK SOUTHERN DISTRICT of New York has been checked:

The result of the investigation as per last posted date: 3/4/15

[X] There is no record of a Bankruptcy Filing for the above mentioned individual or company.

Hill-N-Dale Abstracters, Inc. does hereby certify that the records of the above governmental agency was examined and that the information recorded above is a true and accurate abstraction of the information contained therein. This search was conducted for a period of at least five years. This report is submitted for information purposes only. Liability is limited to errors and omissions of information properly indexed, filed and recorded with the above governmental agency. The liability under this search shall not exceed $1,000.00 and shall be confined to the applicant for whom the search was made. This search does not include filings in areas other than the Microfiche or Index Sections of the United States Bankruptcy Clerk's Office.

BANKRUPTCY SEARCH

Title Number: HN 53050

Date: 3/4/15

Individual Name: Concrete Properties LLC

County of: Orange

The entire NEW YORK SOUTHERN DISTRICT of New York has been checked:

The result of the investigation as per last posted date: 3/4/15

[X] There is no record of a Bankruptcy Filing for the above mentioned individual or company.

Hill-N-Dale Abstracters, Inc. does hereby certify that the records of the above governmental agency was examined and that the information recorded above is a true and accurate abstraction of the information contained therein. This search was conducted for a period of at least five years. This report is submitted for information purposes only. Liability is limited to errors and omissions of information properly indexed, filed and recorded with the above governmental agency. The liability under this search shall not exceed $1,000.00 and shall be confined to the applicant for whom the search was made. This search does not include filings in areas other than the Microfiche or Index Sections of the United States Bankruptcy Clerk's Office.

BANKRUPTCY SEARCH

Title Number: HN 53050

Date: 3/4/15

Individual Name: Sassafras Mountain LLC

County of: Orange

The entire NEW YORK SOUTHERN DISTRICT of New York has been checked:

The result of the investigation as per last posted date: 3/4/15

[X] There is no record of a Bankruptcy Filing for the above mentioned individual or company.

Hill-N-Dale Abstracters, Inc. does hereby certify that the records of the above governmental agency was examined and that the information recorded above is a true and accurate abstraction of the information contained therein. This search was conducted for a period of at least five years. This report is submitted for information purposes only. Liability is limited to errors and omissions of information properly indexed, filed and recorded with the above governmental agency. The liability under this search shall not exceed $1,000.00 and shall be confined to the applicant for whom the search was made. This search does not include filings in areas other than the Microfiche or Index Sections of the United States Bankruptcy Clerk's Office.

CERTIFICATION PAGE

Title Number: **HN 53050**
Effective Date: **12/07/2014**
Recertified Date: ____/____/_____

ALTA Owner's Policy 2006 (with N.Y. Endorsement Modifications)	$	**7,000,000.00**
ALTA Loan Policy 2006 (with Endorsement Modifications)	$	

Purchaser **Sassafras Mountain LLC, a California LLC**
Proposed Insured

THIS COMPANY CERTIFIES that a good and marketable title to the premises described in Schedule A, subject to the liens, encumbrances and other matters, if any, set forth in Schedule B in this certificate may be conveyed and/or mortgaged by:

Tetz Family, LLC and Concrete Properties, LLC

Source of Title:

1. **Goshen, Tax Parcel 12-1-23.2 (21.7 acres): Tetz Family, LLC, who acquired title by deed from Al Turi Landfill, Inc., dated 9/18/07 and recorded in the Orange County Clerk's Office on 12/20/07 in Liber 12584 page 1568.**

2. **Goshen, Tax Parcel 12-1-24.2 and Wawayanda, Tax Parcel 1-1-40: Concrete Properties, LLC, who acquired title by deed from Town of Wallkill dated 4/8/09 and recorded in the Orange County Clerk's Office on 4/10/09 in Liber 12807 page 171.**

Title Recertified In:

The land referred to in this Certificate is described as follows:

SCHEDULE "A" DESCRIPTION ATTACHED

HILL-N-DALE ABSTRACTERS, INC.
Where Accuracy is the Best Policy
P.O. Box 547 · 20 Scotchtown Ave · Goshen NY 10924 · Office: 845-294-5110 · Fax: 845-294-9581
Web: www.hillndaleabstracters.com

as agent for:

Fidelity National Title Insurance Company

THIS REPORT IS NOT A TITLE INSURANCE POLICY! PLEASE READ IT CAREFULLY. THE REPORT MAY SET FORTH EXCLUSIONS UNDER THE TITLE INSURANCE POLICY AND MAY NOT LIST ALL LIENS, DEFECTS, AND ENCUMBRANCES AFFECTING TITLE TO THE PROPERTY. YOU SHOULD CONSIDER THIS INFORMATION CAREFULLY.

CERTIFICATION PAGE

Premises	(1) **2832 State Route 17M**		
Town/Village/City	**Town of Goshen**		
County	**Orange**		
	Section **12**	Block **1**	Lot **23.2**
Premises	(2) **41 Echo Lake Road**		
Town/Village/City	**Town of Goshen**		
County	**Orange**		
	Section **12**	Block **1**	Lot **24.2**
Premises	(3) **Echo Lake Road, Wawayanda**		
	Town of Wawayanda		
Town/Village/City	**Wawayanda**		
County	**Orange**		
	Section **1**	Block **1**	Lot **40**

John M. Wood

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Schedule A Description

TOWN OF GOSHEN TAX PARCEL 12-1-24.2 AND TOWN OF WAWAYANDA TAX PARCEL 1-1-40

All that certain plot, piece or parcel of land situate, lying and being in the Towns of Wawayanda and Goshen, County of Orange, State of New York, and being more accurately bounded and described as follows:

PARCEL I

Beginning in the centerline of an existing bridge on Echo Lake Road at its intersection with the centerline of the Wallkill River; thence from said point of beginning following approximately along the Wallkill River on the following two courses and distances: South 21 degrees 47' 31" West 32.20' to an angle point; thence South 07 degrees 48' 14" West 10.16' to a point in the northerly right-of-way line of the former Erie Lackawanna Railroad, now abandoned; thence along the northerly side of said abandoned railroad, said line being marked in part by the remains of an old railroad fence on the following several courses and distances: North 69 degrees 15' 18" West 300.70'; thence North 67degrees 52' 37" West 291.08'; thence North 69 degrees 15' 18" West 80.0'; thence on a curve to the left having a radius of 1,948.85', an arc distance of 628.42' to a point as described by the chord North 78 degrees 29' 16" West 625.70'; thence South 86 degrees 51' 04" West 102.15'; thence on a curve to the left having a radius of 1,942.85', an arc distance of 407.66' to a point as described by the chord South 83 degrees 16' 04" West 406.92'; thence South 79 degrees 41' 05" West 102.15'; thence South 69 degrees 45' 06" West 306.29'; thence South 60 degrees 18' 44" West 203.57'; thence South 59 degrees 50' 42" West 380.0'; thence on a curve to the right having a radius of 1,876.86', an arc distance of 463.05' to a point as described by the chord South 66 degrees 54' 46" West 461.88'; thence South 79 degrees 01' 23" West 196.30'; thence on a curve to the right having a radius of 1,869.85', an arc distance of 577.82' to a point in the end of a stone wall in the line of lands now or formerly of Prickett as described in Liber 1989, page 39, of Orange County Deed Records as described by the chord South 88 degrees 50' 11" West 575.53'; thence along the line of Prickett as marked by a stone wall North 26 degrees 17' 05" East 86.14'; thence on a line which continues along a stone wall North 49 degrees 31' 09" East 335.91' to a point in the end of a stone wall; thence continuing on the same line marked by no physical possession, passing from the Town of Goshen into the Town of Wawayanda, North 49 degrees 31' 09" East 797.25' to a point in the centerline of Echo Lake Road; thence along the centerline of Echo Lake Road on the following several courses and distances: North 62 degrees 50' 56" East 290.08'; thence North 63 degrees 24' 59" East 634.03'; thence North 70 degrees

Continued On Next Page

55' 37" East 75.95'; thence North 76 degrees 43' 34" East 60.44'; thence North 81 degrees 25' 04" East 130.52; thence leaving Echo Lake Road South 17 degrees 56' 19" East 140.0' to a point inside Echo Lake and in the existing town line between the Town of Wawayanda and the Town of Goshen; thence passing through Echo Lake and along the town line between the two towns on the following two courses and distances: North 72 degrees 03' 41" East 330.0'; thence South 86 degrees 41' 19" East 350.33' to a point in the centerline of Echo Lake Road; thence leaving said town line and passing through the Town of Goshen and along the centerline of Echo Lake Road on the remaining courses and distances: South 37 degrees 17' 14" East 225.0'; thence South 46 degrees 08' 58" East 79.42'; thence South 49 degrees 21' 50" East 690.65'; thence South 64 degrees 11' 18" East 165.68'; thence South 69 degrees 05' 19" East 306.19' to the point of beginning.

PARCEL II

Also with the above described parcel goes a second parcel of land situated on the southerly side of the former Erie Lackawanna Railroad in the Town of Goshen, said parcel being more accurately bounded and described as follows:

Beginning at the intersection of the southerly right-of-way line of the former Erie Lackawanna Railroad with the approximate centerline of the Wallkill River, said point of beginning being located South 07 degrees 47' 31" West 67.61' from the end of the second course of the above described 39.839 +/- acre parcel; said point of beginning being in the line of lands of the Al Turi Landfill, Inc. as described in Liber 2299, Page 374 of Orange County Deed Records; thence from said point of beginning and along a line which follows along the line of the Al Turi Landfill, Inc. on the following several courses and distances: South 07 degrees 47' 31" West 1,054.02'; thence South 34 degrees 47' 31" West 1,306.80'; thence South 39 degrees 42' 29" East 29.70'; thence South 17 degrees 02' 31" West 128.70' to a point in the approximate centerline of the Wallkill River; thence on a line which follows the Wallkill River on the following two courses and distances: South 40 degrees 47' 31" West 198.00'; thence South 44 degrees 17' 31" West 446.16' to a point on the extension of an existing fence line; thence North 49 degrees 01' 25" West 1,333.39' to a fence and wall corner marking a corner of lands now or formerly of the Mid-Hudson Psychiatric Center as described in Liber 1838, Page 261, of Orange County Deed Records; thence along the line of lands of Mid-Hudson Psychiatric Center on the following two courses and distances: on a line which follows along a wall North 48 degrees 14' 42" West 1,470.17' to a fence and wall corner; thence continuing along the same lands following along a fence on the following courses and

Continued On Next Page

distances: North 41 degrees 54' 12" East 331.01'; thence North 46 degrees 38' 19" East 172.90'; thence North 50 degrees 19' 54" East passing over the end of the fence at 551.84' a total distance of 672.33' to a point in the southerly right-of-way line of the former Erie Lackawanna Railroad, now abandoned; thence along the line of said railroad as marked in part by a fence post on the remaining courses and distances: North 59 degrees 50' 42" East 370.15'; thence North 67 degrees 13' 22" East 196.72'; thence North 69 degrees 45' 06" East 292.15'; thence North 65 degrees 54' 05" East 99.29; thence on a curve to the right having a radius of 1,876.85', an arc distance of 393.82' to a point as described by the chord North 83 degrees 16' 04" East 393.09'; thence South 85 degrees 08' 25" East 98.34'; thence on a curve to the right having a radius of 1,869.85, and arc distance of 602.63' to a point as described by the chord South 78 degrees 29' 16" East 600.03'; thence South 69 degrees 15' 18" East 80.0'; thence South 70 degrees 37' 59" East 291.08'; thence South 69 degrees 15' 18" East 315.88; to the point of beginning.

TOWN OF GOSHEN TAX PARCEL 12-1-23.2

All that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of Goshen, County of Orange, and State of New York, described as follows:

Beginning at a monument in the Northeasterly sideline of New York State Highway Routes No. 6 and 17M and the Southerly corner of lands now or formerly of the State of New York; and

1. Running thence North 34 degrees 48' 14" East 1860.99 feet along the Southerly line of the above mentioned lands now or formerly State of New York to a point in the Southwesterly line of lands now or formerly Kimberly Land Company;
2. Thence South 48 degrees 15' 47" East 1251.12 feet along said Southwesterly line to a point in the Northerly line of the Wallkill Valley Drainage Improvement District;
3. Thence South 37 degrees 15' 43" West 18.29 feet along said Northerly line to a point;
4. Thence South 67 degrees 37' 43" West 343.00 feet still along said Northerly line to a point;
5. Thence North 82 degrees 00' 17" West 411.00 feet along the same to a point;
6. Thence North 87 degrees 54' 43" West 536.00 feet along the same to a point;
7. Thence South 40 degrees 22' 43" West 559.00 feet along the same to a point;
8. Thence South 46 degrees 11' 45" West 309.89 feet along the same to a

Continued On Next Page

point; in the aforementioned northeasterly sideline of the New York State Highway Routes No. 6 and 17M;
9. Thence North 69 degrees 16' 51" West 148.71 feet along said Northeasterly sideline of said highway to the point or place of beginning.

TAX SEARCH

Account Number:

Title Number: **HN 53050**

Municipality **2832 State Route 17M**
Town of Goshen

Year of Roll **2015**

Section **12** Block **1** Lot **23.2** Grid **333089**

Assessed Valuation **$310,400.00** Full Value **$31,400.00** Full Market Val **$463,300.00**

Assessed To **Tetz Family, LLC and Concrete Properties, LLC**

Lot Size **21.70 acres**

Class **340**

School District **Goshen** Code

Taxes

2015	**State, County and Town Tax**	**$4,665.63 PAID**	**01/30/2015**
2014/15	**School Tax**	**$10,996.24 PAID**	**09/30/2014**

Note: **Proof of payment of all water and sewer charges.**

Town of Goshen
41 Webster Ave
Goshen, New York 10924
(845) 294-6250

Goshen CSD
PO Box 66
Goshen, New York 10924
(845) 294-3637

Our policy does not insure against taxes, water charges, sewer charges, special assessments or other like items which have not become liens up to the date of closing, or installments due after such date. Neither our tax search nor our policy covers any part of the streets on which the premises to be insure abuts.

State, County and Town Taxes: Lien Period 1/1 to 12/31 (Lien Date 1/1 Due Date 1/1)

School Taxes: Lien Period 7/1 to 6/30 (Lien Date 7/1 Due Date 9/1)
Except for Newburgh and Middletown: Due 10/1

Village Taxes: Lien Period 6/1 to 5/31 (Lien Date 6/1 Due Date 6/1)
Except for Cornwall-on-Hudson and Washingtonville: Lien Period 3/1 to 2/28 (Lien Date 3/1 Due Date 3/1)

TAX SEARCH

Account Number:

Title Number: **HN 53050**

Municipality **41 Echo Lake Road**
Town of Goshen

Year of Roll **2015**

Section **12** Block **1** Lot **24.2** Grid **333089**

Assessed Valuation **$471,300.00** Full Value **$480,000.00** Full Market Val **$716,400.00**

Assessed To **Tetz Family, LLC and Concrete Properties, LLC**

Lot Size **172.90 acres**

Class **340**

School District **Goshen CSD** Code

Taxes

2015	**State, County and Town Tax**	**$7,214.89 PAID**	**02/28/2015**
2014/15	**School Tax**	**$17,000.49 PAID**	**09/30/2014**

Note: **Proof of payment of all water and sewer charges.**

Town of Goshen
41 Webster Ave
Goshen, New York 10924
(845) 294-6250

Goshen CSD
PO Box 66
Goshen, New York 10924
(845) 294-3637

TAX SEARCH

Account Number:

Title Number: **HN 53050**

Municipality **Echo Lake Road**
Town of Wawayanda

Year of Roll **2015**

Section **1** Block **1** Lot **40** Grid **335600**

Assessed Valuation **$49,600.00** Full Value **$49,600.00** Full Market Val **$68,400.00**

Assessed To **Tetz Family, LLC and Concrete Properties, LLC**

Lot Size **12.10 acres**

Class **322**

School District **Goshen CSD** Code

Taxes

2015	**State, County and Town Tax**	**$560.97 PAID**	**02/09/2015**
2014/15	**School Tax**	**$1,623.83 PAID**	**09/30/2014**

Note: **Proof of payment of all water and sewer charges.**

Town of Wawayanda
PO Box 106
Slate Hill, NY 10973
(845) 355-5714

Goshen CSD
PO Box 66
Goshen, New York 10924
(845) 294-3637

Mortgages

Title Number **HN 53050**

NONE OF RECORD

Title Company will require a written payoff statement prior to closing.

These mortgage returns, unless the mortgage is to be insured, will appear as exceptions from coverage. The informaton set forth herein is obtained from the recorded instrument. Sometimes the provisions of a mortgage may be modified by agreements which are not recorded. We suggest that you communicate with the mortgagee if you desire any additional information. If there has been a change in the owners and holders of the mortgage, such information should be furnished to us promptly to enable further searches to be made.

Schedule B

Title Number: **HN 53050**

Hereinafter set forth are additional matters which will appear in our policy as exceptions from coverage unless disposed of to our satisfaction prior to the closing or delivery of the policy.

1. Grants, Easements, Rights of Way: None of Record (except as may be set forth herein)
2. Any state of facts a survey of the premises described in Schedule "A" would disclose.
3. The exact acreage of the premises are not insured.
4. The Company does not insure that the building or other erections upon the premises herein, or their use, comply with Federal, State and Municipal Laws, regulations and ordinances.
5. Rights, if any, in favor of an electric light or telephone company to maintain guy wires extending from said premises to poles located on the roads on which said premises abut, but policy will insure, however, that there are no such agreements of record in connection therewith, except as may be shown herein.
6. Underground encroachments and easements, if any, including pipes and drains, and such rights as may exist for entry upon said premises to maintain, and repair the same, but policy will insure, however, that there are no such agreements of record, in connection therewith, except as may be shown herein.
7. Subject to rights and easements, if any, acquired by any public utilities company to maintain its poles and operate its wires, lines, etc., in, to and over the premises herein, and in, to and over the street adjacent thereto.
8. We have not been furnished a certified survey of the premises and, in absence of same, the exact courses, distances and acreage of the premises are not insured.
9. No lands lying in the bed or right of way of any street or road abutting or bounding the premises are insured.
10. TOWN OF GOSHEN, TAX PARCEL 12-1-23.2:
    A. Subject to easement granted to Wallkill Valley Drainage Improvement District in Liber 1016 page 103, Liber 765 page 185, Liber 764 page 589
    B. Excepting lands conveyed to the County of Orange for highway purposes in Liber 649 page 39 and Liber 712 page 394.
    C. Subject to Utility Grant in Liber 1397 page 79, Liber 2271 page 325.
    D. Subject to Pipe Line Easement in Liber 3274 page 107.
    E. Subject to rights granted in Liber 11588 page 2008.

    F. Proof is required that premises under examination is not part of a hazardous waste site as noted in the attached site list of inactive hazardous waste sites dated April, 1994, and April 21, 2004 in Liber 11495 page 183. Copies attached.

Continued On Next Page

Schedule B

Title Number: **HN 53050**

11. TOWN OF GOSHEN, TAX PARCEL 12-1-24
TOWN OF WAWAYANDA, TAX PARCEL 1-1-40

A. Subject to Grant to Wallkill Valley Drainage Improvement District in Liber 771 page 487 and Liber 764 page 538.

B. Subject to and together with terms and conditions as in Temporary Easement Agreement in Liber 12768 page 555.

C. Subject to Terms and Conditions in Permanent License Agreement in Liber 12807 page 1681.

D. Subject to Utility Grant in Liber 720 page 426, Liber 1129 page 123, Liber 2118 page 446.

12. We have conducted a Judgment and Federal Tax Lien Search against the certified owner(s) and shows: nothing found

13. We have conducted a Patriot Search against the certified owner(s) on the Specially Designated Nationals and Blocked Persons List published by the Office of Foreign Assets Control (OFAC) and show: nothing found

14. Your attention is directed to attached sheet "For Information Only".

15. We have been advised that the proposed purchaser is a Limited Liability Company, the following must be resolved prior to closing:

1. Proof of due formation of Sassafras Mountain LLC by production of:

a. The Secretary of State filing receipt
b. Proof of publication, and
c. An affidavit that the LLC is valid and subsisting and has not been terminated or dissolved by the bankruptcy, death, dissolution, expulsion, incapacity or withdrawal of any member or classes of members specified in the Articles of Organization or Operating Agreement (the LLC Agreement), or any other event that, under the terms of the LLC Agreement terminates the LLC, including the entry or a decree of judicial dissolution under 702 of the Limited Liability Company Law.

2. The LLC Agreement for Sassafras Mountain LLC, together with all amendments thereto, must be submitted to the Company for review prior to closing of title to determine:

a. Any limitations imposed on the power of the LLC to acquire, sell, mortgage or lease or otherwise deal in real property.
b. The identity of the member or members of the LLC authorized to execute closing documents on its behalf and to bind the LLC to same; and,

Continued On Next Page

c. Any express requirements with respect to securing the approval, affirmation vote or written consent of the members of the LLC to any action taken on its behalf;
d. If the LLC Agreement does not contain a provision governing the voting rights of members or for obtaining of the written consent of members, the appropriate consent in accordance with the provisions of 402 and 407 of the LLC Law must be obtained.

3. The approval of the members of the LLC by affirmative vote or written consent required under the terms of the LLC Agreement or pursuant to 402 and 407 of the LLC Law, if required, shall be evidenced by a certificate executed by the managing member, financial or recording officer or member. It shall certify that the consent of the members was duly obtained in accordance with the provisions of the LLC agreement or applicable statutory provisions of the LLC Law.

These requirements are of our underwriter and must be complied with prior to closing.

16. Riparian rights of others in and to Wallkill River and Echo Lake are excepted.
17. Parcels are not all contiguous parcels and policy excepts any loss or damage due to premises being so situated.
18. No rights in and to Heritage Trail (former railroad lands) are insured.
19. Portion of premises are wetlands and premises are subject to all rules and regulations pertaining to same.
20. Written resolution is required from the certified owner to sell from herein described premises.

Homeowners Notice and Waiver

Optional Market Value Policy Rider

TITLE NUMBER **HN 53050**

IN ACCORDANCE WITH NEW YORK STATE LAW, FIDELITY NATIONAL TITLE INSURANCE COMPANY IS REQUIRED TO OFFER RESIDENT HOMEOWNERS OF ONE TO FOUR FAMILY DWELLINGS, CONDOS AND CO-OP LEASEHOLD UNITS AN OPTIONAL MARKET VALUE POLICY RIDER. FOR A SMALL ADDITIONAL TITLE INSURANCE PREMIUM, THIS RIDER WILL PROVIDE ADDITIONAL INSURANCE TO PROTECT YOUR HOME FOR ITS FUTURE MARKET VALUE AT THE TIME OF LOSS IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THE RIDER. YOU MAY ELECT TO PURCHASE THIS COVERAGE AT OR BEFORE THE CLOSING. THIS OFFER IS MADE PURSUANT TO CHAPTER 502, LAWS OF 1902 AND AMENDMENTS THEREOF.

THE MARKET VALUE POLICY RIDER HAS BEEN FILED AND APPROVED BY THE NEW YORK INSURANCE DEPARTMENT. THE APPROVED RATE FOR THE ISSUANCE OF THIS RIDER IS 10% OF THE REGULAR FEE OR CO-OP LEASEHOLD PREMIUM APPLICABLE TO THE AMOUNT OF SAID INSURANCE.

PLEASE CHECK A OR B:

A: [ ] I CHOOSE TO ACCEPT THE ADDITIONAL MARKET VALUE POLICY RIDER

DATED:_____

_____ _____

HOMEOWNER HOMEOWNER

B: [ ] I DO NOT WISH TO ACCEPT THE MARKET VALUE POLICY RIDER WHICH WOULD PROVIDE TITLE INSURANCE COVERAGE FOR FUTURE INCREASED MARKET VALUE OF MY HOME IN THE EVENT OF A LOSS.

DATED:_____

_____ _____

HOMEOWNER HOMEOWNER

FOR INFORMATION ONLY

HN 53050

New York State Real Property Transfer Report for the State Board of Real Property Services must accompany each deed for recording.

That for all Deed Transactions, the Social Security Number or TIN Number of all parties will be required for forms which must accompany all Deed Transactions.

Combined Real Estate Transfer Tax Return to be executed on each closing.

Company to be advised if mortgage to be insured hereunder is under Federal Graduated Mortgage Plan and if so the maximum amount to be insured.

Invoice shows amount to be provided for Optional Future Market Value Insurance - fee insured - to initial Yes No if such insurance is requested.

The reporting requirements regarding the transfer of interests in real estate, pursuant to the Tax Reform Act of 1986, must be compiled with to the satisfaction of this company.

All portions (Printed forms, descriptions, acknowledgments, signatures) of all instruments submitted for recording must be CLEAR, SHARP and LEGIBLE or the instruments will be refused by the County Clerk.

Identity of all persons executing the papers delivered on the closing must be established to the satisfaction of the Company.

In order to facilitate the closing of title, please notify the closing department at least 48 hours prior to the closing, of the date and place of closing, so that searches may be continued.

Deeds and mortgages must contain the covenant required by Section 13 of the Lien Law. The covenant is not required in deeds from referees or other persons appointed by a court for the sole purpose of selling property.

SPECIAL NOTE REGARDING FEES

HN 53050

In addition to charges for title insurance, we will impose charges for municipal searches, flood reports, tax searches and any other special searches required by the lender, the purchaser, or the attorney for either. We will also impose appropriate charges for (a) personal inspection and (b) handling payoffs of mortgages and/or other liens. We make every effort to set forth all charges on our original invoice but many times this is not possible to do at the time your title report is prepared.

SPECIAL NOTE REGARDING MUNICIPALS

If requested by applicant or by proposed mortgagee, we will have municipals searches (ie: Street Report, Violation Search, Certificate of Occupancy Search) conducted by the officials of the municipality in which the premises are located. Such Searches are not continued to date of closing. Additional Fees are charges for such Searches when requested. In no event, do we insure that the buildings or other erections upon the premises or their use comply with Federal, State and/or other municipal laws, regulations and ordinances, and therefore assume no liability whatsoever by reason of the ordering of such and do not insure their accuracy.

HN53050

Rate Calculator

Enter the appropriate values below and then click on "Calculate" to view the calculations.

For Premium Calculations

County	Orange
Rate Type	Straight
Purchase Price	7,000,000.00
Mortgage No. 1	
Mortgage No. 2 (if any)	

Property Type

(●) **1-2 Family**	( ) **Residential**
( ) **3 Family**	(●) **Commercial**
( ) **4 Family or More**	
( ) **Vacant Land**	

For Reissues:

Current Mortgage(s)		Enter the larger of current mortgage(s) or purchase price. "Current" means taken within the last ten years and considers original face amounts, not the unpaid balance.

For Mortgage Tax Calculations

Unpaid Balance		If mortgage(s) is/are to be consolidated with existing mortgages, enter the unpaid balance of existing mortgage(s). Mortgage tax is figured on "new" money.
Less than 1 year?		Indicate (for New York City transfers only) if existing mortgage is less than one year old. NYC aggregation rules will be applied.

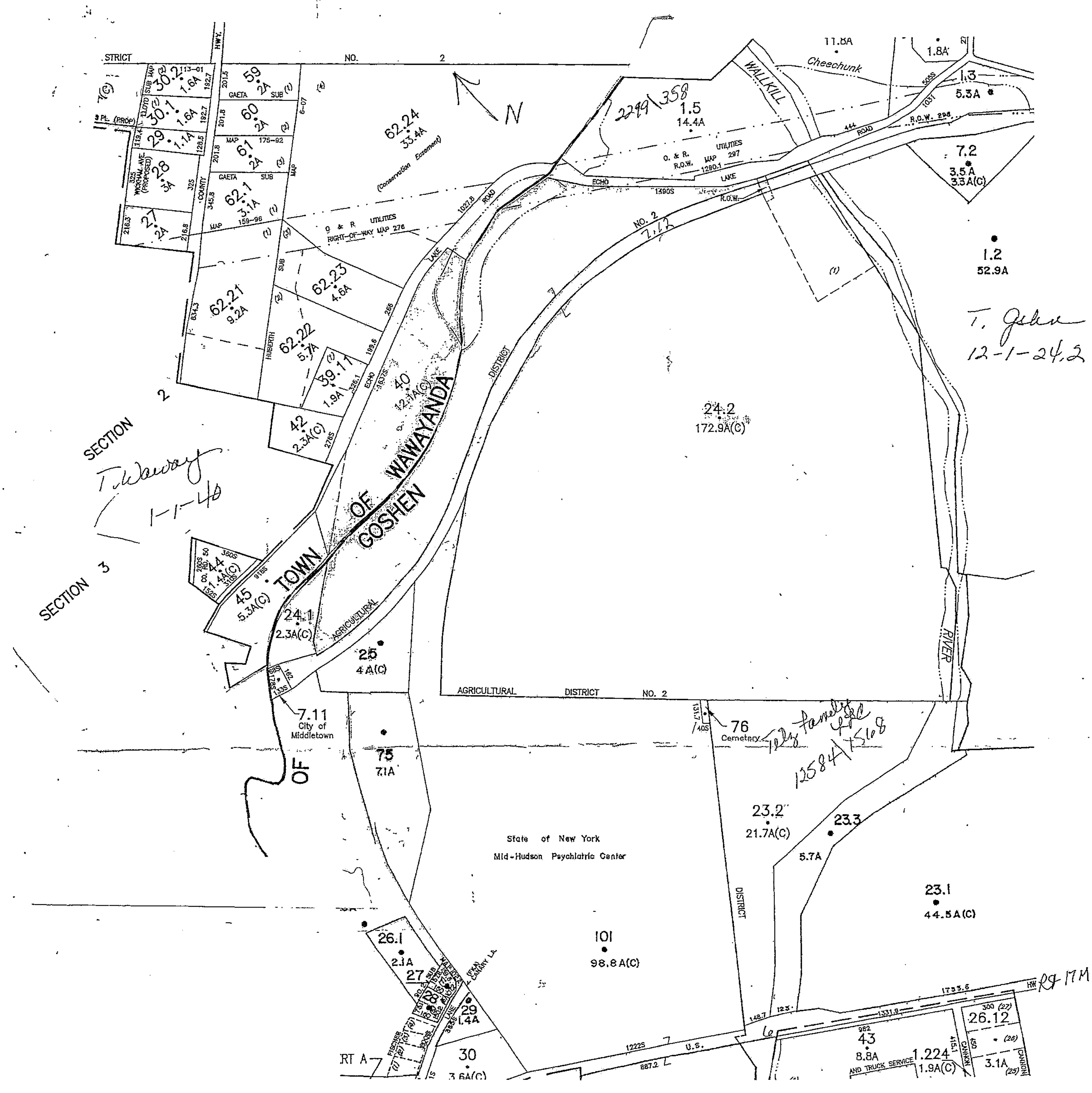
State Transfer Tax

Print | Return

CALCULATION RESULTS	
Premiums, Mortgage & Transfer Taxes	
Owner Premium	25,648.00
Mortgage Premium	0.00
Mortgage Tax	0.00
Lender 1/4 pt.	0.00
State Transfer Tax	28,000.00
RPT (NYC) or Local Transfer Tax	0.00
Mansion Tax	0.00

Apportioned

	Mortgage 1	Mortgage 2
Mortgage Premium	0.00	0.00
Mortgage Tax	0.00	0.00
Lender 1/4 pt.	0.00	0.00



DISTRICT NO. 2
N
62.24
33.4A
(Conservation Easement)
O & R UTILITIES RIGHT-OF-WAY MAP 276
GAETA SUB MAP
HUBERTH SUB MAP
COUNTY HWY.
WICKHAM AVE. (PROPOSED)
LLOYD SUB MAP
2299\358
1.5
14.4A
O. & R. UTILITIES R.O.W. MAP 297
ECHO LAKE ROAD
ECHO LAKE R.O.W.
WALLKILL
Cheechunk
1.3
5.3A
7.2
3.5A
3.3A(C)
1.2
52.9A
T. Goshen
12-1-24.2
24.2
172.9A(C)
62.21
9.2A
62.22
5.7A
62.23
4.6A
39.11
1.9A
42
2.3A(C)
40
12.1A(C)
TOWN OF WAWAYANDA
TOWN OF GOSHEN
SECTION 2
SECTION 3
T. Wawayanda
1-1-40
44
1.4A(C)
45
5.3A(C)
24.1
2.3A(C)
25
4A(C)
AGRICULTURAL DISTRICT NO. 2
7.11
City of Middletown
76
Cemetery
75
7.1A
RIVER
23.2
21.7A(C)
23.3
5.7A
State of New York
Mid-Hudson Psychiatric Center
101
98.8A(C)
23.1
44.5A(C)
26.1
2.1A
27
29
1.4A
30
3.6A(C)
43
8.8A
1.224
1.9A(C)
26.12
3.1A
U.S.
Rt 17M

ORANGE COUNTY CLERK'S OFFICE RECORDING PAGE

THIS PAGE IS PART OF THE INSTRUMENT – DO NOT REMOVE

TYPE IN BLACK INK:

NAME(S) OF PARTY(S) TO DOCUMENT

Al Turi Landfill, Inc.

TO

Tetz Family, ~~LLC~~ LLC

SECTION 12 BLOCK 1 LOT 23.2

RECORD AND RETURN TO:
(name and address)

Burt J. Blustein
Blustein, Shapiro & Rich, LLP
90 Crystal Run Road, Suite 409
Middletown, NY 10941

Cal 10361

THIS IS PAGE ONE OF THE RECORDING

ATTACH THIS SHEET TO THE FIRST PAGE OF EACH RECORDED INSTRUMENT ONLY

DO NOT WRITE BELOW THIS LINE

INSTRUMENT TYPE: DEED ✓ MORTGAGE ___ SATISFACTION ___ ASSIGNMENT ___ OTHER ___

PROPERTY LOCATION

___2089 BLOOMING GROVE (TN)
___2001 WASHINGTONVILLE (VLG)
___2003 SO. BLOOMING GROVE (VLG)
___2289 CHESTER (TN)
___2201 CHESTER (VLG)
___2489 CORNWALL (TN)
___2401 CORNWALL (VLG)
___2600 CRAWFORD (TN)
___2800 DEERPARK (TN)
✓ 3089 GOSHEN (TN)
___3001 GOSHEN (VLG)
___3003 FLORIDA (VLG)
___3005 CHESTER (VLG)
___3200 GREENVILLE (TN)
___3489 HAMPTONBURGH (TN)
___3401 MAYBROOK (VLG)
___3689 HIGHLANDS (TN)
___3601 HIGHLAND FALLS (VLG)
___3889 MINISINK (TN)
___3801 UNIONVILLE (VLG)
___4089 MONROE (TN)
___4001 MONROE (VLG)
___4003 HARRIMAN (VLG)
___4005 KIRYAS JOEL (VLG)
___4289 MONTGOMERY (TN)
___4201 MAYBROOK (VLG)
___4203 MONTGOMERY (VLG)
___4205 WALDEN (VLG)
___4489 MOUNT HOPE (TN)
___4401 OTISVILLE (VLG)
___4600 NEWBURGH (TN)
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___5200 WALLKILL (TN)
___5489 WARWICK (TN)
___5401 FLORIDA (VLG)
___5403 GREENWOOD LAKE (VLG)
___5405 WARWICK (VLG)
___5600 WAWAYANDA (TN)
___5889 WOODBURY (TN)
___5801 HARRIMAN (VLG)
___5809 WOODBURY (VLG)

CITIES

___0900 MIDDLETOWN
___1100 NEWBURGH
___1300 PORT JERVIS

___9999 HOLD

NO. PAGES 5 CROSS REF. ___
CERT. COPY ___ ADD'L X-REF. ___
MAP# ___ PGS. ___

PAYMENT TYPE: CHECK ✓
CASH ___
CHARGE ___
NO FEE ___

Taxable
CONSIDERATION $ 300,000.~
TAX EXEMPT ___
Taxable
MORTGAGE AMT. $ ___

MORTGAGE TAX TYPE:
___ (A) COMMERCIAL/FULL 1%
___ (B) 1 OR 2 FAMILY
___ (C) UNDER $10,000
___ (E) EXEMPT
___ (F) 3 TO 6 UNITS
___ (I) NAT.PERSON/CR. UNION
___ (J) NAT.PER-CR.UN/1 OR 2
___ (K) CONDO

Donna L. Benson
DONNA L. BENSON
ORANGE COUNTY CLERK

Received From Golden Area Abstract

RECORDED/FILED
12/20/2007/ 10:04:16
DONNA L. BENSON
County Clerk
ORANGE COUNTY, NY
FILE # 20070135254
DEED C / BK 12584 PG 1568
RECORDING FEES 210.00
TTX# 003746 T TAX 1,200.00
Receipt#825499 alicev

BARGAIN AND SALE DEED WITH COVENANT AGAINST GRANTOR'S ACTS
(INDIVIDUAL OR CORPORATION)

FORM 8007

CAUTION: THIS AGREEMENT SHOULD BE PREPARED BY AN ATTORNEY AND REVIEWED BY ATTORNEYS FOR SELLER AND PURCHASER BEFORE SIGNING.

THIS INDENTURE, made the 18th day of September, 2007,

between

AL TURI LANDFILL, INC., a New York Corporation, having offices at Route 17M, New Hampton, New York 10958

party of the first part, and

TETZ FAMILY, LLC., a New York Limited Liability Company having an address at 130 Crotty Road, Middletown, New York 10941

party of the second part,

WITNESSETH, that the party of the first part, in consideration of Ten Dollars and No Cents ($10.00), lawful money of the United States, paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of Goshen, County of Orange and State of New York, being more particularly described on the annexed Schedule "A" attached hereto and made a part hereof.

BEING the same premises conveyed to the grantor herein by deed dated January 9, 1981 and recorded January 19, 1981 in Liber 2185 at page 109 as corrected by deed dated September 20, 1991 and recorded March 17, 1992 in Liber 3575 page 343 in the Office of the Clerk of Orange County.

The above described property does not constitute all, or substantially all, of the assets of the party of the first part.

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof,

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part, covenants that the party of the first part has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

AL TURI LANDFILL, INC.

By: Joseph Gambino, President

Schedule A Description

Title Number **AAL10361**

All that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of Goshen, County of Orange, and State of New York, described as follows:

BEGINNING at a monument in the Northeasterly sideline of New York State Highway Routes No. 6 and 17 M and the Southerly corner of lands now or formerly of the State of New York; and

1. RUNNING thence North 45° 46' 30" East 1860.99 feet along the Southerly line of the above mentioned lands now or formerly State of New York to a point in the Southwesterly line of lands now or fomerly Kimberly Land Company;

2. THENCE South 37° 17' 30" East 1251.12 feet along said Southwesterly line to a point in the Northerly line of the Wallkill Valley Drainage Improvement District;

3. THENCE, South 48° 14' 00" West 18.29 feet along said Northerly line to a point;

4. THENCE, South 78° 36' 00" West 343.00 feet still along said Northerly line to a point;

5. THENCE North 71° 02' 00" West 411.00 feet along the same to a point;

6. THENCE North 81° 07' 00" West 536.00 feet along the same to a point;

7. THENCE South 51° 21' 00" West 559.00 feet along the same to a point;

8. THENCE South 54° 44' 00" West 87.00 feet along the same to a point;

9. THENCE South 58° 07' 00" West 223.00 feet still along the same to a point in the aforementioned Northeasterly sideline of New York State Highway Routes No. 6 and 17M;

10. THENCE North 58° 18' 30" West 148.71 feet along said Northeasterly sideline of said Highway to the point or place of BEGINNING.

Said premises being additionally bounded and described in accordance with a survey made by William G. Norton attached hereto and made a part hereof as Schedule A Description - B.

— 17 — TAX 12-1-25.2

Schedule A Description – B

Title Number **AAL10361**

Revised: 12/06/2007

All that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of Goshen, County of Orange, and State of New York, described as follows:

BEGINNING at a monument in the Northeasterly sideline of New York State Highway Routes No. 6 and 17 M and the Southerly corner of lands now or formerly of the State of New York; and

1. RUNNING thence North 34° 48' 14" East 1860.99 feet along the Southerly line of the above mentioned lands now or formerly State of New York to a point in the Southwesterly line of lands now or fomerly Kimberly Land Company;

2. THENCE South 48° 15' 47" East 1251.12 feet along said Southwesterly line to a point in the Northerly line of the Wallkill Valley Drainage Improvement District;

3. THENCE, South 37° 15' 43" West 18.29 feet along said Northerly line to a point;

4. THENCE, South 67° 37' 43" West 343.00 feet still along said Northerly line to a point;

5. THENCE North 82° 00' 17" West 411.00 feet along the same to a point;

6. THENCE North 87° 54' 43" West 536.00 feet along the same to a point;

7. THENCE South 40° 22' 43" West 559.00 feet along the same to a point;

8. THENCE South 46° 11' 45" West 309.89 feet along the same to a point; in the aforementioned Northeasterly sideline of New York State Highway Routes No. 6 and 17M;

9. THENCE North 69° 16' 51" West 148.71 feet along said Northeasterly sideline of said Highway to the point or place of BEGINNING.

ORANGE COUNTY CLERK'S OFFICE RECORDING PAGE

THIS PAGE IS PART OF THE INSTRUMENT – DO NOT REMOVE

TYPE IN BLACK INK:
NAME(S) OF PARTY(S) TO DOCUMENT

Goshen: 12 1 24.2
Wawayanda: 1 1 40
SECTION BLOCK LOT

Town of Wallkill

TO

Concrete Properties, LLC

RECORD AND RETURN TO:
(name and address)

Blustein, Shapiro, Rich & Barone, LLP
Attn: Burt Blustein, Esq.
90 Crystal Run Road, Suite 409
Middletown, New York 10941

THIS IS PAGE ONE OF THE RECORDING

ATTACH THIS SHEET TO THE FIRST PAGE OF EACH
RECORDED INSTRUMENT ONLY

DO NOT WRITE BELOW THIS LINE

INSTRUMENT TYPE: DEED X MORTGAGE ___ SATISFACTION ___ ASSIGNMENT ___ OTHER ___

PROPERTY LOCATION

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___2003 SO. BLOOMING GROVE (VLG)
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___5200 WALLKILL (TN)
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___5405 WARWICK (VLG)
XX 5600 WAWAYANDA (TN)
___5889 WOODBURY (TN)
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CITIES

___0900 MIDDLETOWN
___1100 NEWBURGH
___1300 PORT JERVIS

___9999 HOLD

NO. PAGES 6 CROSS REF. ___
CERT. COPY ___ ADD'L X-REF. ___
MAP# ___ PGS. ___

PAYMENT TYPE: CHECK ✓
CASH ___
CHARGE ___
NO FEE ___

Taxable
CONSIDERATION $ 3,500,002
TAX EXEMPT ___
Taxable
MORTGAGE AMT. $ ___

MORTGAGE TAX TYPE:

___ (A) COMMERCIAL/FULL 1%
___ (B) 1 OR 2 FAMILY
___ (C) UNDER $10,000
___ (E) EXEMPT
___ (F) 3 TO 6 UNITS
___ (I) NAT.PERSON/CR. UNION
___ (J) NAT.PER-CR.UN/1 OR 2
___ (K) CONDO

Donna L. Benson
DONNA L. BENSON
ORANGE COUNTY CLERK

Received From Gill Glat

RECORDED/FILED
04/10/2009/ 11:04:51
DONNA L. BENSON
County Clerk
ORANGE COUNTY, NY
FILE#20090033600
DEED C / BK 12807PG 0171
RECORDING FEES 240.00
TTX# 005052 T TAX 14,000.00
Receipt#1009069 juls

BARGAIN & SALE DEED WITH COVENANT AGAINST GRANTOR'S ACTS

This indenture, made the 8th day of April 2009, between TOWN OF WALLKILL, a municipal corporation of the State of New York, with offices at 99 Tower Drive, Building A, Middletown, New York 10941, party of the first part and CONCRETE PROPERTIES, LLC, with offices at 130 Crotty Road, Middletown, New York 10941, party of the second part,

Witness, that the parties of the first part, in consideration of ONE ($1.00) DOLLAR lawful money of the United States, paid by the party of the second part, grant and release unto the party of the second part, its heirs and assigns forever, a certain real property (the "Premises") located at Echo Lake Road in the Town of Wawayanda and the Town of Goshen, New York, and known as Town of Goshen tax map Section 12 Block 1 Lot 24.2 and Town of Wawayanda tax map Section 1 Block 1 Lot 40. The Premises is more particularly described in **Schedule "A"**, which is annexed hereto and made a part hereof,

Together with the appurtenances and all the estate and rights of the parties of the first part in and to the portion of the Premises described in **Schedule "A"**.

Reserving unto the party of the first part, the right to fully utilize the temporary and permanent easements for ingress and egress as granted to the party of the first part pursuant to an Easement Agreement between the party of the first part and the County of Orange, dated December 15, 2008 and recorded in the Orange County Clerk's Office on January 6, 2009 in Book 12768 at Page 0555. The reservation of this right to utilize the easement to the party of the first part is made for the purpose of granting access to the party of the first part to the wells and water supply located on the Premises. The party of the first part has retained certain rights to the use and benefit from the wells on a portion of the Premises conveyed herein, pursuant to a certain license agreement between the party of the first part and the party of the second part, executed simultaneously herewith and intended to be recorded contemporaneously with this deed in the Orange County Clerk's Office.

To have and to hold the Premises described in **Schedule "A"** granted unto the party of the second part, its heirs and assigns forever. And the parties of the first part covenant that they have not done or suffered anything whereby the Premises described in **Schedule "A"** has been encumbered in any way whatsoever.

AND the parties of the first part, in compliance with Section 13 of the Lien Law, hereby covenant that the parties of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

IN WITNESS WHEREOF, the parties of the first part have duly executed this deed the day and year first above written.

TOWN OF WALLKILL

BY: JOHN F. WARD, JR.,
Supervisor

STATE OF NEW YORK)
) ss:
COUNTY OF ORANGE)

On the 8th day of April the year 2009 before me, the undersigned, personally appeared **JOHN F. WARD, JR.**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he is the Supervisor of the Town of Wallkill, and that he executed the same in his capacity as Supervisor with the authority of the Town Board of the Town of Wallkill, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

NOTARY PUBLIC

Linda Rankin
Notary Public, State of NY
No. 01RA5060258
Qualified in Orange County
Commission Expires May 20, 2010

-A- TA 94.C 40

SCEDULE A Description

Title Number GAC05988

Page 1

ALL that certain plot, piece or parcel of land situate lying and being in the Towns of Waywayanda and Goshen, County of Orange, State of New York, and being more accurately bounded and described as follows:

PARCEL I

BEGINNING in the centerline of an existing bridge on Echo Lake Road at its intersection with the centerline of the Wallkill River; thence from said point of beginning following approximately along the Wallkill River on the following two courses and distances: South 21°-47'-31" West 32.20' to an angle point; thence South 07°-48'-14" West 10.16' to a point in the northerly right-of-way line of the former Erie Lackawanna Railroad, now abandoned; thence along the northerly side of said abandoned railroad, said line being marked in part by the remains of an old railroad fence on the following several courses and distances: North 69°-15'-18" West 300.70'; thence North 67°-52'-37" West 291.08' thence North 69°-15'-18" West 80.0'; thence on a curve to the left having a radius of 1,948.85', an arc distance of 628.42' to a point as described by the chord North 78°-29'-16" West 625.70'; thence South 86°-51'-04" West 102.15'; thence on a curve to the left having a radius of 1,942.85', an arc distance of 407.66' to a point as described by the chord South 83°-16'-04" West 406.92'; thence South 79°-41'-05" West 102.15'; thence South 69°-45'-06" West 306.29'; thence South 60°-18'-44" West 203.57'; thence South 59°-50'-42" West 380.0'; thence on a curve to the right having a radius of 1,876.86', an arc distance of 463.05' to a point as described by the cord South 66°-54'-46" West 461.88'; thence South 79°-01'-23" West 196.30'; thence on a curve to the right having a radius of 1,869.85', an arc distance of 577.82' to a point in the end of a stone wall in the line of lands now or formerly of Prickett as described in Liber 1989, page 39, of Orange County Deed Records as described by the cord South 88°-50'-11" West 575.53'; thence along the line of Prickett as marked by a stone wall North 26°-17'-05" East 86.14'; thence on a line which continues along a stone wall North 49°-31'-09" East 335.91' to a point in the end of a stone wall; thence continuing on the same line marked by no physical possession, passing from the Town of Goshen into the Town of Waywayanda, North 49°-31'-09" East 797.25' to a point in the centerline of Echo Lake Road; thence along the centerline of Echo Lake Road on the following several courses and distances: North 62°-50'-56" East 290.08'; thence North 63° -24'-59" East 634.03'; thence North 70°-55'-37" East 75.95'; thence North 76°-43'-34" East 60.44'; thence North 81°-25'-04" East 130.52'; thence leaving Echo Lake Road South 17°-56'-19" East 140.0' to a point inside Echo Lake and in the existing town line between the Town of Waywayanda and the Town of Goshen; thence passing through Echo Lake and along the town line between the two towns. on the following two

Continued On Next Page

courses and distances: North 72°-03'-41"East 330.0'; thence South 86°-41'-19" East 350.33' to a point in the centerline of Echo Lake Road; thence leaving said town line passing through the Town of Goshen and along the centerline of Echo Lake Road on the remaining courses and distances: South 37°-17'-14" East 225.0'; thence South 46°-08'-58"East 79.42'; thence South 49°-21'-50" East 690.65'; thence South 64°-11'-18" East 165.68'; thence South 69°-05'-19" East 306.19' to the point of beginning.

PARCEL II

Also with the above described parcel goes a second parcel of land situated on the southerly side of the former Erie Lackawanna Railroad in the Town of Goshen, said parcel being more accurately bounded and described as follows:

BEGINNING at the intersection of the southerly right-of-way line of the former Erie Lackawanna Railroad with the approximate centerline of the Wallkill River, said point of beginning being located South 07°-47'-31" West 67.61' from the end of the second course of the above described 39.839 +/- acre parcel; said point of beginning being in the line of lands of the Al Turi Landfill, Inc. as described in Liber 2299, Page 374 of Orange County Deed, Records; thence from said point of beginning and along a line which follows along the line of the Al Turi Landfill, Inc. on the following several courses and distances: South 07°-47'-31" West 1,054.02'; thence South34°-47'-31" West 1,306.80'; thence South 39°-42'-29" East 29.70'; thence South 17°-02'-31" West 128.70' to a point in the approximate centerline of the Wallkill River; thence on a line which follows the Wallkill River on the following two courses and distances: South 40°-47'-31" West 198.00'; thence South 44°-17'-31" West 446.16' to a point on the extension of an existing fence line; thence North 49°-01'-25" West 1,333.39' to a fence and wall corner marking a corner of lands now or formerly of the Mid-Hudson Psychiatric Center as described in Liber 1838, Page 261, of Orange County Deed Records; thence along the line of lands of Mid-Hudson Psychiatric Center on the following two courses and distances: on a line which follows along a wall North 48°-14'-42" West 1,470.17' to a fence and wall corner; thence continuing along the same lands following along a fence on the following courses and distances: North 41°-54'-12" East 331.01'; thence North 46°-38'-19" East 172.90'; thence North 50°-19'-54" East passing over the end of the fence at 551.84' a total distance of 672.33' to a point in the southerly right-of-way line of the former Erie Lackawanna Railroad, now abandoned; thence along the line of said railroad as marked in part by a fence post on the remaining courses and distances: North 59°-50'-42" East 370.15'; thence North 67°-13'-22" East 196.72'; thence North 69°-45'-06" East 292.15'; thence North 65°-54'-05" East 99.29;

Continued On Next Page

SCHEDULE A Description - continued

Title Number GAC05988

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thence on a curve to the right having a radius of 1,876.85', an arc distance of 393.82' to a point as described by the chord North 83°-16'-04" East 393.09'; thence South 85°-08'-25" East 98.34'; thence on a curve to the right having a radius of 1,869.85, and arc distance of 602.63' to a point as described by the chord South 78°-29'-16" East 600.03'; thence South 69°-15'-18" East 80.0'; thence South 70°-37'-59" East 291.08'; thence South 69°-15'-18" East 315.88' to the point of beginning.

Being the same premises conveyed to the grantor herein by deed recorded in L.2848 p.109.

6049-39

This Indenture, Made the 28th day of November in the year one thousand nine hundred and twenty four. Between William E. Mabee and Nettie Mabee his wife of the town of Goshen, County of Orange, State of New York, parties of the first part and The County of Orange one of the Counties of the State of New York, having its principal place for the transaction of business in the Village of Goshen, County of Orange, State of New York, party of the second part. Witnesseth That the said parties of the first part in consideration of the sum of $75.00 lawful money of the United States paid by the said party of the second part do here by grant and release unto the said party of the second part its successors and assigns forever.

All that piece or parcel of land situate in the town of Goshen, County of Orange, State of New York, for the Middletown - Goshen County Highway No. 95 as shown on Map No. 17 filed herewith and described as follows; Beginning at a point on the northerly boundary of the existing Middletown - Goshen Highway said point being 25± feet distant northeasterly measured at right angles from station R 132 + 00 ± of the hereinafter described survey base line of the proposed Middletown - Goshen County Highway No. 95 Orange County, thence S 59° 24' E 106.5± feet to a point 42 feet distant northeasterly measured at right angles, from Station R 133 + 05 of said base line, thence S 41° 38' E 126.4± feet to a point on the northerly boundary of said existing highway, the last mentioned point being 23 feet distant northeasterly measured at right angles from station R 134 + 30 ± of said base line; thence northwesterly along the last mentioned boundary of said existing highway 229 ± feet to the point of beginning; Being 0.048 acres more or less.

Also all that piece or parcel of land situate in the town of Goshen, County of Orange, State of New York, from the Middletown - Goshen County Highway 95 as shown on Map No. 19 filed herewith and described as follows; Beginning at a point on the northerly boundary of the existing Middletown-Goshen Highway, said point being 20± feet distant northeasterly measured at right angles from station R 147+00± of the hereinafter described survey base line of the proposed Middletown-Goshen County Highway No. 95 Orange County, thence S 57° 12' E 100.7± feet to a point 32 feet distant northeasterly measured at right angles, from station R 148+00 of said base line, thence S 50° 21' E 136.0± feet to a point on the division line between the lands of W. Maybee, reputed owner on the west and the lands of Norbert Hartley reputed owner on the east, the last mentioned point being 32 feet distant northeasterly measured at right angles from station R 149+ 36± of the said base line, thence along said division line 7± feet to its intersection with the northerly boundary of said existing highway, the last mentioned point being 25± feet distant northeasterly, measured at right angles from station R 149+35± of the said base line; thence northwesterly along the last mentioned boundary of said existing highway 235± feet to the point of beginning; Being 0.027 acres more or less.

Together with the appurtenances and all the estate and rights of the said parties of the first part in and to said premises. To Have and to Hold the

above granted premises unto the said party of the second part its successors and assigns forever. And the said parties of the first part do covenant with the said party of the second part as follows; First. That the parties of the first part are seized of the said premises in fee simple and have good right to convey the same. Second. That the party of the second part shall quietly enjoy the said premises. Third. That the said premises are free from incumbrances. Fourth. That the parties of the first part will execute or procure any further necessary assurance of the title to said premises. Fifth. That the said parties of the first part will forever warrant the title to said premises. In Witness Whereof th said parties of the first part have hereunto set their hands and seals the day and year first above written. William E. Mabee L.S.

In Presence of C.H.Smith Nettie Mabee L.S.

State of New York } On this 28th day of November in the year one thou-
County of Orange SS. } sand nine hundred and twenty four before me, the subscriber personally appeared William E. Mabee and Nettie Mabee to me personally known to be the same persons described in and who executed the foregoing instrument and they severally duly acknowledged to me that they executed the same. Charles Horton Smith, Notary Public.

A true record entered December 1st 1924 at 9-45 A.M.

Wm. C. Brewster Clerk

Map filed in Orange County Clerk's Office Dec.1,1924 in Plan file of Maps Pocket 9 Folder 33.

This Indenture Made the 28th day of November in the year one thousand nine hundred and twenty four. Between George E. Nash and Ettie B.Nash of the town of Wawayanda, Orange Co. N.Y. of the first part and The County of Orange, one of the Counties of the State of New York, having its principal place for the transaction of business in the Village of Goshen, County of Orange, State of New York, party of the second part. Witnesseth That the said parties of the first part in consideration of the sum of $150.00 lawful money of the United States paid by the said party of the second part, do hereby grant and release unto the said party of the second part its successors and assigns forever.

All that piece or parcel of land in the town of Wawayanda, County of Orange, State of New York, for the Middletown-Goshen County Highway No. 95 as shown on Map No. 14 filed herewith and described as follows; Beginning at a point on the northerly boundary of the existing Middletown-Goshen Highway, said point being 21± feet distant northerly measured at right angles from Station R 90+74± of the hereinafter described survey base line of the proposed Middletown-Goshen County Highway 95, Orange County; thence S 82° 04' E 27.9± feet to a point 31 feet distant northerly measured at right angles from station R 91+00 of said base line, thence S 80° 24' E 180.3 feet to a point 42 feet distant northerly measured at right angles from station R 92 + 80 of said base line; thence S 74° 43' E 341.2 feet to a point 40 feet distant northeasterly measured at right angles from station R 96+15 of said base line, thence S 62° 42' E 65.2± feet to a point on the northerly boundary of said existing highway, the last mentioned point being 35 feet distant northeasterly measured at right angles from station

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of ten dollars lawful money of the United States and other valuable considerations paid by the party of the second part, does hereby remise, release and quitclaim unto the party of the second part, his heirs and assigns forever.

ALL that certain lot, piece or parcel of land situate, lying and being in the City of Newburgh, County of Orange and State of New York, situate upon the south side of First Street, and bounded and described as follows, to wit: BEGINNING on the south side of First Street at the northwest corner of lands now or late of Hannah Allison, and running thence southerly along her lands fifty feet, more or less, to lands formerly of Lewis W. Youngs; thence westerly parallel with First Street along said lands twenty two feet; thence northerly parallel with said First line fifty feet, more or less, to the south side of First Street; thence easterly along the south side of First Street twenty two feet to the place of beginning. Being the same premises heretofore conveyed to Patrick Lynch by Thomas W. White unmarried by deed dated April 11, 1914, and duly recorded in the Orange County Record of Deeds on April 13, 1914, in liber 548 at page 392.

Subject to correction in description as shown by deed from Patrick Lynch to John R. Kilpatrick dated June 14, 1922 and duly recorded in the Orange County Record of Deeds on June 21, 1922 in liber 622 at page 353.

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to the said premises To have and to hold the premises herein granted unto the party of the second part his heirs and assigns forever. In Witness Whereof the party of the first part has hereunto set her hand and seal the day and year first above written.

In presence of Henry Kohl — Anna Lynch. LS

State of New York
County of Orange SS. On the twenty seventh day of November Nineteen Hundred and twenty nine before me came Anna Lynch to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that she executed the same.

Henry Kohl, Notary Public, Orange County

A true record entered Nov. 14, 1930 at 9 A.M.

C. E. Dusenbery Clerk

Map filed in Orange County Clerk's Office Nov. 14, 1930 in Plan File of Maps Pocket 17 Folder 51

This Indenture made the 13th day of November in the year One thousand Nine hundred and thirty. Between William E. Mabee and Nettie Mabee his wife, of the Town of Goshen, County of Orange and State of New York parties of the first part and The County of Orange one of the Counties of the State of New York having its principal place for the transaction of business in the Village of Goshen, County of Orange, State of New York, party of the second part, Witnesseth, that the said parties of the first part in consideration of the sum of $100.00 lawful money of the United States, paid by the said party of the second part, do hereby grant and release unto the said party of the second part its successors and assigns forever.

ALL that piece or parcel of land situate in the Town of Goshen, County of Orange State of New York for the Middletown Goshen County Highway 95, as shown

on Map No. 2 (reconstruction) filed herewith and described as follows: BEGINNING at a point on the northeasterly boundary of the existing Middletown Goshen Highway at the intersection of the said boundary with the division line between the lands of N Y.C. (Dept. of Correction) reputed owner on the northwest, and the lands of W.Maybee reputed owner on the southeast, said point being 24± feet distant northeasterly measured at right angles, from Station R129+20.5± of the hereinafter described survey base line of the proposed reconstruction of the Middletown-Goshen County Highway 95, Orange County; thence northeasterly along said division line 20± feet to a point 44 feet distant northeasterly measured at right angles, from Station R129+19± of said base line; thence S 59° 58' E 156.5± feet to a point 72 feet distant northeasterly measured at right angles, from Station R130+73 of said base line, thence S 49° 40' E 240.0 feet to a point 72 feet distant northeasterly measured at right angles, from Station R133+13 of said base line, thence S 28° 28' E 124.4± feet to a point on the northeasterly boundary of said existing highway, the last mentioned point being 26.5 feet distant northeasterly, measured at right angles from Station R134+29± of said base line, thence northwesterly along the last mentioned boundary of said existing highway 509± feet to the point of beginning, being 0.400 acres more or less. The above mentioned survey base line is a portion of the survey base line for the said proposed reconstruction of the Middletown Goshen County Highway 95, Orange County, and is described as follows: BEGINNING at Station R121+00 thence S 49° 40' E 1300 feet to Station R134+00, thence S 50° 29' E 500.6 feet to Station R139+00.6

TOGETHER with the appurtenances and all the estate and rights of the said parties of the first part in and to said premises. To have and to hold the above granted premises unto the said party of the second part, its successors and assigns forever. And the said William E. Mabee does covenant with the said party of the second part as follows: First. That the parties of the first part are seized of the said premises in fee simple and have good right to convey the same. Second. That the party of the second part shall quietly enjoy the said premises. Third. That the said premises are free from incumbrances. Fourth. That the parties of the first part will execute or procure any further necessary assurance of the title to said premises. Fifth. That the said William E. Mabee will forever warrant the title to said premises. In Witness Whereof the said parties of the first part have hereunto set their hands and seals the day and year first above written.

In presence of C.H.Smith — William E. Mabee — LS

Nettie Mabee — LS

State of New York
County of Orange SS.

On this 13th day of November in the year One thousand nine hundred and thirty before me, the subscriber personally appeared William E. Mabee and Nettie Mabee his wife, to me personally known to be the same persons described in and who executed the foregoing instrument and they severally acknowledged to me that they executed the same.

Charles Horton Smith, Notary Public

free from incumbrances; Fourth. That the party of the first part will execute or procure any further necessary assurance of the title to said premises; Fifth. That the party of the first part will forever warrant the title to said premises; In Witness Whereof, the party of the first part has caused its corporate seal to be hereunto affixed, and these presents to be signed by its duly authorized officer the day and year first above written.

William Stuber Construction Co. Inc. (Corporate seal affixed)
By J. Milton Smith, President

State of New York
County of Westchester SS. On the 31st day of July, nineteen hundred and thirty one before me came J. Milton Smith, to me known, who, being by me duly sworn, did depose and say that he resides in the City of White Plains, Westchester County, N. Y. that he is the President of the William Stuber Construction Co. Inc., the corporation described in, and which executed, the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of directors of said corporation; and that he signed his name thereto by like order.

M. Kruger, Notary Public, Westchester County

State of New York
County of Westchester SS. I, Chas. J. F. Decker, Clerk of the County of Westchester, and also Clerk of the Supreme and County Courts in and for the said County, the same being Courts of Record, do hereby certify that M. Kruger whose name is subscribed to the deposition or certificate of the proof or acknowledgment of the annexed instrument, and thereon written, was, at the time of taking such deposition, or proof and acknowledgment a Notary Public in and for such County, duly commissioned and sworn, and authorized by the laws of said State, to take depositions and to administer oaths to be used in any Court of said State and for general purposes; and also to take acknowledgments and proofs of deeds, of conveyances of land, tenements or hereditaments in said State of New York. And further, that I am well acquainted with the handwriting of such Notary Public, and verily believe that the signature to said deposition or certificate of proof or acknowledgment is genuine. In Testimony Whereof, I have hereunto set my hand and affixed the seal of the said Courts and County the 3 day of Aug. 1931.

Chas. J. F. Decker, Clerk (LS)

A true record entered August 4, 1931 at 9 A. M.

C. J. F. Decker Clerk.

No. 28, 1927 For value received we hereby grant to Orange and Rockland Electric Co., its successors or assigns, the right to erect and maintain its lines with the necessary poles or towers, wires, stubs, guys and anchors for carrying electrical current upon, over and across our lands in the Town of Goshen, County of Orange State of New York, in the following manner:

Starting at Erie R. R. Culvert thence running to buildings of D. W. Hock as now staked out and to the lands of N. Y. City Farms.

Together with the right to trim or remove any or all trees or other

obstructions to keep the said lines clear at least five feet.

Witness H. W. Knolle — Signed D. W. Hock --
Ida May Hock --

State of New York
County of Orange SS.

On this 3rd day of August, 1931 before me personally came H. W. Knolle subscribing witness to the within instrument, with whom I am personally acquainted, who being by me duly sworn, said that he resides in the Village of Monroe, N. Y., that he was acquainted with D. W. Hock and Ida May Hock, and knew them to be the persons described in and who executed the said instrument; and that he saw them execute and deliver the same, and that they acknowledged to him, the said H. W. Knolle that they executed and delivered the same and that the said H. W. Knolle thereupon subscribed his name as a witness thereto.

Ernest F. Eichenberg, Notary Public

A true record entered August 4, 1931 at 9 A. M.

E. C. Duerenberg Clerk.

This Indenture made the third day of November, nineteen hundred and thirty between Harold Thomas (unmarried) of Fishkill on Hudson, Dutchess County, N. Y., party of the first part, and Agatha Hays Whitney of Balmville, Newburgh, Orange County, N. Y. party of the second part, Witnesseth, that the party of the first part, in consideration of One dollar and other good & valuable consideration in dollars ($1.00 &c) lawful money of the United States, paid by the party of the second part, does hereby grant and release unto the party of the second part and assigns forever,

ALL that piece and parcel of land with the residence thereon on the Balmville Road consisting of approximately one acre of land with the residence thereon, on the Balmville Road, with the pond and brook which bound said property on the south; being bounded on the north by the lands of Frederick E. Whitney; and on the east by Bryant Odell's premises; and on the west by the Balmville Road. For a more adequate description, reference is hereby made to the deed thereof to Agatha Whitney recorded in the Orange County Clerk's office.

Together with the appurtenances and all the estate and rights of the part_ of the first part in and to said premises. To have and to hold the premises herein granted unto the part_ of the second part, and assigns forever. And said .... covenant as follows: First. That said ... seized of said premises in fee simple, and ha.. good right to convey the same; Second. That the part_ of the second part shall quietly enjoy the said premises; Third. That the said premises are free from incumbrances; Fourth. That the part_ of the first part will execute or procure any further necessary assurance of the title to said premises; Fifth. That the said ... will forever warrant the title to said premises;
In Witness Whereof, the part_ of the first part ha.. hereunto set hand and seal the day and year first above written.

In presence of ... — Harold L. R. Thomas L. S.

State of New York
County of Dutchess
City of Poughkeepsie SS.

On this third day of November, in the year Nineteen hundred and thirty before me, the

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knowledgment, proof or affidavit, and before whom the same was taken, was at the time of taking such acknowledgment, proof or affidavit, a Notary Public, residing in said County and duly authorized to take and certify the same, and that the same is taken and certified in all respects as required by the laws of said State of New York. That I am well acquainted with the handwriting of said Notary Public and verily believe that the signature to the said certificate is genuine. In Witness Whereof, I have hereunto set my hand and affixed the seal of said Courts at Lockport, in said County, this 29th day of November A. D. 1935.

No. 8670 Jesse Read, Clerk (LS)

A true record entered December 6, 1935 at 9 A. M. C. E. Dusenbury Clerk.

NOTICE OF APPROPRIATION

STATE OF NEW YORK

DEPARTMENT OF CONSERVATION

WATER POWER AND CONTROL COMMISSION

acting for and in behalf of

WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT

Albany, N. Y., November 29, 1935

See Original Notice for map File No. C-7 1934 Special Case #1

TO. Daniel Webster Hock
and all others claiming under him.

TAKE NOTICE that pursuant to Sections 494-c, 494-d and 494-q of the Conservation Law of the State of New York, and acts amendatory thereof and supplemental thereto, that there is hereby appropriated for the use of the said District the right to the temporary and perpetual use and occupancy of the property described upon the annexed map and survey of your land and premises, and that the title to such easement of use and occupancy will be acquired under the provisions of the Condemnation Law, and that copies of this notice, map, survey and description of the premises will be filed in the office of the Clerk of the County of Orange and in the office of the Clerk of the town of Goshen.

WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT
By: WATER POWER AND CONTROL COMMISSION
John T. Gibbs, Chairman

State of New York
County of Orange SS Henry M. Schiller, being duly sworn, deposes and says that he is over the age of twenty one years. That on the 5th day of December 1935, at the Town of Goshen, he served the foregoing notice of appropriation and the annexed map, survey and description of the land and premises appropriated upon Daniel Webster Hock by delivering to and leaving with said Daniel Webster Hock personally true duplicate copies thereof. Deponent further says that he knew the person so served to be the said Daniel Webster Hock, the person mentioned in said notice, map, survey and description. Deponent further says that on the 6th day of December 1935, he filed duplicate originals of said notice, map, survey and description in the office of the Clerk of the County of Orange, and in the office of the Clerk of the Town of Goshen, in which said County

and Town the said property or a portion thereof is located.

Henry M. Schiller --

Subscribed and sworn to before me
this 6th day of December 1935. Leander D. Kenney, Notary Public
A true record entered December 6, 1935 at 11:45 A. M.
C. E. Dusenbery Clerk

NOTICE OF APPROPRIATION

STATE OF NEW YORK

DEPARTMENT OF CONSERVATION

WATER POWER AND CONTROL COMMISSION

acting for and in behalf of

WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT

See Original Notice for Map Filed C7-94 Special Case #1

Albany, N. Y., November 29, 1935

To: MADDEN DECKER
and all others claiming under him.

TAKE NOTICE that pursuant to Sections 494-c, 494-d and 494-q, of the Conservation Law of the State of New York, and acts amendatory thereof and supplemental thereto, that there is hereby appropriated for the use of the said District the right to the temporary and perpetual use and occupancy of the property described upon the annexed map and survey of your land and premises, and that the title to such easement of use and occupancy will be acquired under the provisions of the Condemnation Law, and that copies of this notice, map, survey and description of the premises will be filed in the office of the Clerk of the County of Orange and in the office of the Clerk of the town of Goshen.

WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT
By: WATER POWER AND CONTROL COMMISSION
John T. Gibbs, Acting Chairman

State of New York
County of Orange SS

Henry M. Schiller, being duly sworn, deposes and say that he is over the age of twenty one years. That on the 5th day of December 1935, at the Town of Goshen, he served the foregoing notice of appropriation and the annexed map, survey and description of the land and premises appropriated upon Madden Decker by delivering to and leaving with said Madden Decker personally true duplicate copies thereof. Deponent further says that he knew the person so served to be the said Madden Decker, the person mentioned in said notice, map, survey and description. Deponent further says that on the 6th day of December 1935, he filed duplicate originals of said notice, map, survey and description in the office of the Clerk of the County of Orange, and in the office of the Clerk of the Town of Goshen, in which said County and Town the said property or a portion thereof is located.

Henry M. Schiller --

Subscribed and sworn to before me
this 6th day of December 1935.

Leander D. Keeney, Notary Public

protest notes; to take and certify depositions; to administer oaths and affirmations; to take affidavits and certify the acknowledgment and proof of deeds and other written instruments for lands, tenements and hereditaments, to be read in evidence or recorded in this state; and further, that I am well acquainted with the handwriting of such Notary Public and verily believe that his signature to such proof or acknowledgment is genuine. In Testimony Whereof, I have hereunto set my hand and affixed the seal of said Court at the City of New York, in the County of New York, this 3 day of Dec. 1935.

Albert Marinelli, Clerk (LS)

A true record entered December 9, 1935 at 11:50 A. M. C. E. Dusenbery Clerk.

See iginal tice map le No. -84 ecial se #1

NOTICE OF APPROPRIATION

STATE OF NEW YORK

DEPARTMENT OF CONSERVATION

Water Power and Control Commission

acting for and in behalf of

WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT

Albany, N. Y., November 29, 1935

TO: NETTIE MABEE, HATTIE M. QUACKENBUSH, HARRY MABEE

DONALD K. MABEE AND FERRIS R. QUACKENBUSH

and all others claiming under them.

TAKE NOTICE that pursuant to Sections 494-c, 494-d and 494-q of the Conservation Law of the State of New York, and acts amendatory thereof and supplemental thereto, that there is hereby appropriated for the use of the said District the right to the temporary and perpetual use and occupancy of the property described upon the annexed map and survey of your land and premises, and that the title to such easement of use and occupancy will be acquired under the provisions of the Condemnation Law, and that copies of this notice, map, survey and description of the premises will be filed in the office of the Clerk of the County of Orange and in the office of the Clerk of the town of Goshen.

WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT

By WATER POWER AND CONTROL COMMISSION

John T. Gibbs

Acting Chairman

State of New York

County of Orange SS Henry M. Schiller being duly sworn deposes and says that he is over the age of twenty one years. That on the dates and at the places herein specified, he served the foregoing notice of appropriation and the annexed map, survey and description of the land and premises appropriated upon each of the following persons; viz:

DATE	PERSONS SERVED	PLACE
1. Dec. 6, 1935	Ferris R. Quackenbush	Town of Goshen
2. Dec. 6, 1935	Harry Mabee	Town of Goshen
3. Dec. 7, 1935	Hattie M. Quackenbush	Town of Warwick
4. Dec. 7, 1935	Nettie Mabee	City of Middletown
5.....		

by delivering to and leaving with each of said persons true duplicate copies thereof.

Deponent further says that he knew the persons so served to be the said Ferris R. Quackenbush, Harry Mabee, Hattie M. Quackenbush and Nettie Mabee, the persons mentioned in said notice, map, survey and description.

Deponent further says that on the 9th day of December 1935 he filed duplicate originals of said notice, map, survey and description in the office of the Clerk of the County of Orange, and in the office of the Clerk of the Town of Goshen in which said County and Town the said property or a portion thereof is located.

Henry M. Schiller

Subscribed and sworn to before
me this 9th day of Dec. 1935.

Leander D. Keemey, Notary Public

A true record entered December 9, 1935 at 2 P. M.

C. E. Dusenbury Clerk.

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Federal Savings & Loan Association, the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Corporation; that he signed his name thereto by like order.

William J. Haft, Notary Public, Orange County

A true record entered December 18, 1935 at 2:30 P. M. C. E. Dusenbury Clerk.

NOTICE OF APPROPRIATION

STATE OF NEW YORK

DEPARTMENT OF CONSERVATION

WATER POWER AND CONTROL COMMISSION

acting for and in behalf of

WALLKILL VALLEY DRAINAGE IMPROVEMENT DISTRICT

Albany, N. Y., November 29, 1935

TO: NETTIE MABEE, HATTIE M. QUACKENBUSH,
HARRY MABEE, DONALD K. MABEE AND FERRIS R. QUACKENBUSH
and all other claiming under them.

TAKE NOTICE that pursuant to Sections 494-c, 494-d and 494-q of the Conservation Law of the State of New York, and acts amendatory thereof and supplemental thereto, that there is hereby appropriated for the use of the said District the right to the temporary and perpetual use and occupancy of the property described upon the annexed map and survey of your land and premises, and that the title to such easement of use and occupancy will be acquired under the provisions of the Condemnation Law, and that copies of this notice, map, survey and description of the premises will be filed in the office of the Clerk of the County of Orange and in the office of the Clerk of the town of Goshen.

Wallkill Valley Drainage Improvement District
By: Water Power and Control Commission
John T. Gibbs, Acting Chairman

State of New York
County of Albany SS John C. Thompson, being duly sworn, deposes and says that he is over the age of twenty-one years. That on the 11th day of December, 1935, at the Central School of Greenville, Greene Co. N. Y. he served the foregoing notice of appropriation and the annexed map, survey and description of the land and premises appropriated upon Donald K. Mabee by delivering to and leaving with him personally a true duplicate copy thereof.

Deponent further says that he knew the person so served to be the said Donald K. Mabee, the person mentioned in said notice, map, survey and description.

John C. Thompson

Subscribed and sworn to before me this 14th day of December. P. H. Longthon, Notary Public, Greene County
Certificate filed Albany County

State of New York

County of Orange SS Henry M. Schiller, being duly sworn, deposes and says that he is over the age of twenty one years. That on the 18th day of December 1935, he filed duplicate originals of said notice, map, survey and description in the office of the Clerk of the County of Orange, and in the office of the Clerk of the Town of Goshen, in which said County and Town the said property or a portion thereof is located.

Henry M. Schiller

Subscribed and sworn to before me this
18th day of December 1935.

Henry F. Kenney, Notary Public

A true record entered December 18, 1935 at 3 P. M.

C. E. Dusenbery Clerk.

771-480

In the presence of John H. Flanagan Elizabeth H. Hannan L. S.

One one dollar, one fifty cent, stamps annexed and cancelled.

State of New York
County of Orange SS

On the 1st day of July, Nineteen hundred and thirty six before me personally came Elizabeth Hannah, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that she executed the same.

John H. Flanagan, Notary Public, Orange County

A true record entered July 2, 1936 at 11:10 A. M.

Clerk.

(Map filed July 2, 1936)

This Indenture made this 3rd day of June, in the year One thousand nine hundred and thirty six between Daniel Webster Hock and Ida May Hock, his wife, residing in the Town of Goshen, County of Orange and State of New York, hereinafter referred to as "Grantors" and Wallkill Valley Drainage Improvement District organized under Chapter 348 of the laws of the State of New York of 1935 hereinafter referred to as "District"

Witnesseth, that the grantors in consideration of the sum of Three thousand four hundred ($3400.00) dollars, lawful money of the United States, paid by the District, do hereby grant and release unto the said District, its successors and assigns forever (Parcel No. 1) a perpetual easement for the purpose of constructing, maintaining, enlarging and operating a drainage ditch and other structures appurtenant thereto and in connection therewith in and to

ALL that piece or parcel of land situate, lying and being in the Town of Goshen, County of Orange and State of New York, and bounded and described as follows:

BEGINNING at a point in the center line of the existing river (Chechunk Canal) point also being on the line of lands of Margaret Hartley, runs thence along the lands of Margaret Hartley the following courses and distances: S 9° 55' W. one hundred (100) feet, thence S 43° 16' W. six hundred thirty three (633) feet to the lands of Nettie Mabee, thence along the lands of Nettie Mabee N 49° 30' W. eighty seven (87) feet thence N 37° 35' E. two hundred fifty seven (257) feet, thence N 44° 27' E. seven hundred twenty eight (728) feet, thence N 33° 11' E. one hundred thirty six (136) feet thence N 21° 55' E. one hundred fifty (150) feet, thence N 54° 51' E. two hundred five (205) feet, thence N 31° 33' E. two hundred sixty eight (268) feet, thence N 8° 14' E. three hundred five (350) feet, thence N 22° 41' E. four hundred eleven (411) feet, thence N 10° 42' E. one hundred eighty two (182) feet thence N 1° 18' W. four hundred seven (407) feet thence N 15° 57' E. two hundred thirty (230) feet to a point on the center line of the Goshen-New Hampton Road, which point is also on the line of lands of Joseph A. Hock, thence along the lands of Joseph A. Hock (center line of road (S 78° 40' E. twenty nine (29) feet, to the center line of the existing river (Chechunk Canal) thence along the center line of the existing river (Chechunk Canal) to the point of beginning, containing five and two hundred twenty seven one thousandths (5.227) acres more

or less as shown on a certain map filed in the office of the Water Power and Control Commission on March 3, 1936, bearing file No. 161.3A and Accession No. 12,282 (supersedes Acc. No. 12,248) a blue print copy of which will be filed in the Orange County Clerk's office at the time of the recording of this deed, and being for the present or proposed channel of Wallkill River as shown on blue print 81717480 prepared by United States Engineer's office, First District, New York City and entitled "Wallkill River, N. Y. Phillipsburg to above Pine Id. Plan and Profile River Improvement by Cut-offs and Channel Excavation" and filed in the office of the Water Power Control Commission of the State of New York on July 24, 1935, and also filed in the Orange County Clerk's office on November 4, 1935.

RESERVING to the grantor the right and privilege of using or cultivating his lands which are adjacent to the edge of the ditch, and other structures appurtenant thereto and in connection therewith, constructed or to be constructed on the above described parcel of land providing the exercise of such right and privilege does not interfere with or prevent the user granted herein.

Also hereby granting and releasing unto the said "District " its successors and assigns (Parcel No. 2) a temporary easement for the purpose of entering upon the lands herein described at any and all times and depositing thereon all back-filling, excavated material, dirt, rock, trees, stumps, logs, brush and spoil of all kinds from the Wallkill Drainage Improvement Project for the period ending January 12, 1938, in and to

ALL that piece or parcel of land situate, lying and being in the Town of Goshen, County of Orange and State of New York, and bounded and described as follows:

BEGINNING at the extreme southwest of heretofore described parcel No. 1, point also being on the line of lands of Nettie Mabee, runs thence along the lands of Nettie Mabee N 49° 30' W. sixty four (64) feet, thence N 37° 35' E. two hundred sixty (260) feet, thence N 44° 27' E. three hundred eight (308) feet, thence N 43° 33' W. seventy (70) feet thence N 15° 36' E. one hundred sixty nine (169) feet thence N 42° 12' E. one hundred seventy eight (178) feet thence N 22° 55' E. one hundred ninety eight (198) feet, thence N 83° 07' E. two hundred twenty four (224) feet, thence N 55° 04' E. one hundred seventy three (173) feet, thence N 5° 58' W. one hundred thirty five (135) feet thence N 36° 39' E. one hundred sixty three (163) feet, thence S 71° 50' E. eighty nine (89) feet thence N 8° 14' E. two hundred ninety four (294) feet thence N 22° 41' E. four hundred nineteen (419) feet, thence N 10° 42' E. one hundred fifty six (156) feet thence N 1° 18' W. four hundred sixteen (416) feet, thence N 15° 57' E. two hundred thirty six (236) feet, to a point on the center line of road, which point is also on the line of lands of Joseph A. Hock, thence along the lands of Joseph A. Hock (center line of Road)S. 78° 40' E. sixty five (65) feet, to the northwest extreme of Parcel No. 1, thence along the westerly boundary of Parcel No. 1, the following courses and distances S 15° 57' W. two hundred thirty (230) feet thence S 1° 18' E. four hundred seven (407) feet, thence S 10° 42' W. one hundred eighty two (182) feet, thence S 22° 41' W. four hundred

eleven (411) feet, thence S 8° 14' W. three hundred five (305) feet, thence S 31° 33' W. two hundred sixty eight (268) feet, thence S 54° 51' W. two hundred five (205) feet, thence S 21° 55' W. one hundred fifty (150) feet, thence S 33° 11' W. one hundred thirty six (136) feet, thence S 44° 27' W. seven hundred twenty eight (728) feet, thence S 37° 35' W two hundred fifty seven (257) feet to the point of beginning, containing seven and six hundred thirty seven one-thousandths (7.637) acres more or less, as shown on said map bearing file No. 161.3A and Accession No. 12,282, and also being for the present or proposed channel of Wallkill River as shown onsaid blue print 81717480.

RESERVING to the grantors the right and privilege to use all of the land beyond the edge of the ditch providing the exercise of such right and privilege does not interfere with or prevent the user herein granted.

EXCEPTING from the parcels hereinbefore described any lands of Erie Railroad Company but including such portions of the said described parcels as are used for or in connection with any underpass or underpasses.

RESERVING to the grantors the right to use or cultivate all of the said land beyond the edge of the ditch or outside of any road or highway that may be constructed on such land providing such use or cultivation does not interfere with or prevent the user herein granted, and also reserving to the grantors a suitable access to the river for cattle by two gradual ramps provided by the grantees at convenient points, and further reserving to the grantors the wood cut upon the premises which shall be trimmed and placed by the grantees upon the land of the grantors, excepting as such wood may be needed by the grantees upon the premises in the construction of bridges. Also reserving to said grantors an ease ment for a pipe line from and a pipe line for the flow of water back to the Wallkill River from the gravel washer at the extreme northerly end of the premises, the district agreeing that the centrifugal pump which works the washer shall be undisturbed during the work, or if it necessary to move the same, the District will place it in such a position that it will work with and install the necessary pipe lines or sluiceways from and to the Wallkill River and upon conclusion of the work shall be so left. Also reserving to said grantors, during the progress of the work, access by roadway to the underpass under the railroad at the northerly end of the premises and the District shall leave the premises upon the completion of the work with such access provided.

All bearings are referred to true meridian.

Both of said parcels of land being parts of the same premises which wer conveyed to said Daniel Webster Hock by Elmer H. Stage as executor, etc. of the Estate of Hiram T. Stage, deceased, by deed dated January 18, 1930 and recorded in Orange County Clerk's office in Book 538 of Deeds at page 521, and by New Hampton Ice Company by deed dated November 30, 1928 and recorded in Orange Coun Clerk's office in Book 692 of Deeds at page 527.

TOGETHER with the appurtenances and all the estate and rights of the

grantors in and to the said premises. To have and to hold the above granted pre... Corporati...
ises, unto the said "District" its successors and assigns forever. And the said quitclaim
Daniel Webster Hock, one of the Grantors, does covenant with said "District" as assigns,
follows: First. That the said Daniel Webster Hock, one of the grantors, is seiz... follows:
of the said premises in fee simple, and has good right to convey the same; Secon...
That the "District" shall quietly enjoy the said premises. Third. That the said... by the ab...
premises are free from encumbrances; Fourth. That the grantors will execute or... Orange, S...
procure any further necessary assurance of the title to said premises; Fifth. ...
That the said Daniel Webster Hock, one of the grantors, will forever warrant the... from the ...
title to said premises; Sixth. That, if any improvements, repairs or alterations... improveme...
have been commenced upon the foregoing premises and have not been completed at
least four months before the making and recording of this deed, the grantors will... spoil an...
receive the consideration for this conveyance as a trust fund to be applied first...
for the purpose of paying the cost of the improvements, and that the grantors will...
apply the same first to the payment of the cost of the improvements before using... enlarge,...
any part of the total of the same for any other purpose. In Witness Whereof, ... one (61)...
the said grantors have hereunto set their hands and seals the day and year first... as shown...
above written. Daniel Webster Hock L. S. ... District...
In presence of .... Ida May Hock L. S. ... above Pi...
Three one dollar, one fifty cent, ... tion" ar...
stamps annexed and cancelled.
State of New York On this 3rd day of June, in the year ... on Noven...
County of Orange SS one thousand nine hundred and thirty ...
six before me, the subscriber, personally came Daniel Webster Hock and Ida May ... acres.
Hock to me known to be the persons described in and who executed the within in... on the ...
strument, and they severally duly acknowledged that they executed the same. ... brush a...
Samuel W. Eager, Notary Public ... ment.
A true record entered July 2, 1936 at 11:30 A. M. C. E. Dusenbury Clerk ... edge of...
the lan...

New York
Partial Release
Commissioner NY 2-C-81 Release No. 3465 ... securit...

KNOW ALL MEN BY THESE PRESENTS That the "Land Bank Commissioner, ... and by ...
acting pursuant to Part 3 of the Act of Congress known as the Emergency Farm ... 17, 19...
Mortgage Act of 1933" and all amendments thereto, and the Federal Farm Mortgage ... 522, h...
Corporation, a Corporation established under the laws of the United States of ... missio...
America, holders of a certain mortgage for Five thousand four hundred ($5400.00) ... seal t...
dollars dated April 25, 1934, given by E. Madden Decker and Edith C. Decker to ... agent ...
the Land Bank Commissioner and recorded in the office of the Clerk of Orange ... Treasu...
County, State of New York in Liber 668 of mortgages at page 378 on the 26th day of
April 1934, acting by their duly authorized agent, The Federal Land Bank of
Springfield, having its usual place of business in Springfield, Massachusetts,
in consideration of the sum of One ($1.00) dollar and other valuable considera-
tion to them paid, the said Land Bank Commissioner and Federal Farm Mortgage

1016-103

R- 9/13/46

Map filed Dept. 13-1946

THIS INDENTURE made the 6th day of December in the year One Thousand Nine Hundred Thirty Seven between Nettie Mabee, Harry Mabee and Sara Mabee, his wife, Hattie M. Quackenbush and Ferris R. Quackenbush, her husband, residing in the Town of Goshen, County of Orange and State of New York, and Donald K. Mabee and Genevieve Mabee, his wife, residing in the Village of South Westerlo, County of Albany and State of New York, hereinafter referred to as "grantors" and Wallkill Valley Drainage Improvement District organized under Chapter 348 of the Laws of the State of New York of 1935, hereinafter referred to as "District",

WITNESSETH, That the grantors in consideration of the sum of One Hundred Seventy-One Dollars and Sixty cents, ($171.60), lawful money of the United States paid by the District, do hereby grant and release unto the said District, its successors and assigns forever a perpetual easement for the purpose of constructing, maintaining, enlarging and operating a drainage ditch, such structures as may be necessary for the construction of the two cattle passes provided in paragraph numbered "Second" herein and such structures as may be necessary to preserve the stability of the banks of the Wallkill River including the construction of culverts for the laying of culvert pipes or the construction of ditches and gutters necessary for the draining of the adjoining land in and to all that piece or parcel of land situate, lying and being in the Town of Goshen, County of Orange and State of New York, and bounded and described as follows:

BEGINNING at a point on the highway (C.H.95) R.O.W. Line, runs thence along the R.O.W. line N 58°39' W one hundred fifteen (115) feet more or less to an angle in the R.O.W. line, runs thence along the R.O.W. line N 68°57' W eight (8) feet more or less, thence N 47°28' E two hundred twenty-three (223) feet more or less, thence N 44°05' E eighty-seven (87) feet more or less, runs thence N 40°42' E five hundred fifty-nine (559) feet more or less, runs thence N 88°14' E five hundred thirty-six (536) feet more or less, runs thence S 81°41' E four hundred eleven (411) feet more or less, runs thence

N 67°57' E three hundred forty-three (343) feet more or less, thence N 37°35' E thirty-four (34) feet more or less to the lands of D. W. Hock, thence along the lands of D. W. Hock S 49°30' E eighty-seven (87) feet more or less to the lands of M. Hartley, thence along the lands of M. Hartley S 44°39' W two hundred seventy-six (276) feet more or less, thence continuing along the lands of M. Hartley S 50°39' E sixty-nine (69) feet more or less, thence S 37°35' W nineteen (19) feet more or less; thence N 81°41' W six hundred three (603) feet more or less, thence N 86°43' W one hundred twenty-nine (129) feet more or less, thence S 88°14' W one hundred sixty-seven (167) feet more or less, thence S 64°23' W four hundred thirty-four (434) feet more or less, thence S 40°42' W three hundred nineteen (319) feet more or less, thence S 47°28' W two hundred twenty-nine (229) feet more or less to the point of beginning containing 5.727 acres more or less. Areas between arcs and tangents or chords not included in perpetual easement, as shown on a certain map filed in the Office of the Water Power and Control Commission on the 10th day of February, 1936, bearing file No.161.3 A and Accession No. 12,276, a blueprint copy of which will be filed in the Orange County Clerk's office at the time of the recording of this deed and being for the present or proposed channel of Wallkill River as shown on blueprint 81717480 prepared by United States Engineer's Office, First District, New York City, and entitled "Wallkill River, N.Y., Phillipsburg to above Pine Id. Plan and Profile River Improvement by Cut-Offs and Channel Excavation" and filed in the Office of the Water Power and Control Commission of the State of New York on July 24, 1935, and also filed in the Orange County Clerk's Office on November 4, 1935; a section of the aforesaid map bearing file No. 161.3 A and Accession No. 12,276 showing the aforesaid property and bearing the words, "Nettie Mabee" reputed owner is hereto annexed.

RESERVING to the grantors the right and privilege of using and cultivating their lands which are adjacent to the edge of the ditch, and other structures appurtenant thereto and in connection therewith, constructed or to be constructed on the above described parcel of land providing the exercise of such right and privilege does not interfere with or prevent the user granted herein.

All bearings are referred to true meridian.

Being part of the same premises which were devised to the grantors by and under the Last Will and Testament of William Mabee, deceased, dated November 26, 1930, and recorded in Orange County Surrogate's Office in Book 113 of Wills at page 312.

This conveyance is delivered by the grantors and accepted by the District upon the following agreements, viz:

FIRST: The District, at its own cost and expense and without any levy or assessment against the land therefor, or the owners thereof, will forever maintain said ditch in such a manner as will prevent the erosion of the grantors lands, beyond the limits of the lands above described, and the washing of the soil and the banks thereof into said Wall-

kill River, and if, by reason of floods or for any other reason not attributable to or caused by the owners of the adjacent land, beyond the limits above described, the banks of said stream shall be washed out, and said adjacent land shall be washed out, damaged or destroyed, the said District will, within a reasonable time after notice, repair said damage and restore the land now of the first parties, adjacent to said land above described, to the condition of said lands prior to said erosion beyond the limits of the parcel above described, and will save the first parties harmless from all and every damage by reason thereof.

SECOND: The District will construct two (2) cattle passes or ramps on each side of said Wallkill River, of such material and in such a manner as will enable cattle and animals using the grantors' land, provided the water in said stream shall be low enough for that purpose, to pass across and through said stream from the southerly to the northerly side thereof and return.

THIRD: The grantors will forever, at their own expense, make such repairs to said ramps as may be necessary or occasioned by the use of the said ramps by said cattle.

FOURTH: The District will within a reasonable time after notice, repair said ramps and restore them to the condition they were in prior to damage thereto, in the event said ramps are damaged by floods or any other cause not attributable to the grantors, all at the cost and expense of the District and without levy or assessment against grantors' land.

FIFTH: The grantors reserve all wood cut from the premises, except such as may be needed in the work, the same to be placed in piles by the District on the grantors' lands, and to be cut by the District in lengths and sizes so that

same may be carried by two men.

SIXTH: The easement hereby granted is hereby declared to be a covenant running with the land and all the rights, benefits, privileges and obligations of every kind granted to or reserved by the first parties shall be binding upon the inure to the benefit of their heirs, executors, administrators, successors and assigns and the owners of the remaining land now owned by first parties, and all the agreements and covenants agreed to be performed by said District shall be binding upon and be performed by it and its successors and assigns.

SEVENTH: The drainage ditch to be built upon the land above described, is to be built on each side of the center line of said ditch, as shown upon said map, and within the limits of the parcel thereon designated No. 1.

TOGETHER with the appurtenances and all the estate and rights of the grantors in and to the premises hereinbefore described as granted and agreed upon.

TO HAVE AND TO HOLD the above granted premises unto the said District, its successors and assigns forever.

AND the said grantors do covenant with said District as follows:

FIRST: That the said grantors are seized of the said premises in fee simple and have good right to convey the same.

SECOND: That the District shall quietly enjoy the said premises.

THIRD: That the said premises are free from encumbrances.

FOURTH: That the grantors will execute or procure any further necessary assurance of the title to said premises.

FIFTH: That the grantors will forever warrant the

title to said premises.

SIXTH: That, if any improvements, repairs or alterations have been commenced upon the foregoing premises and have not been completed at least four months before the making and recording of this deed, the grantors will receive the consideration for this conveyance as a trust fund to be applied first for the purpose of paying the cost of the improvements, and that the grantors will apply the same first to the payment of the cost of the improvements before using any part of the total of the same for any other purpose.

IN WITNESS WHEREOF, the said grantors have hereunto set their hands and seals the day and year first above written.

IN PRESENCE OF:

Sarah W. Coleman as to — Hattie Mabee (L.S.)

Russell Higgins as to — Mary Mabee (L.S.)

Sara Mabee (L.S.)

Arethe W. Brooks — Ferris R Quackenbush (L.S.)

[illegible] Quackenbush (L.S.)

Charles E. [illegible] as to — Genevieve Mabee (L.S.)

Donald K. Mabee (L.S.)

STATE OF NEW YORK }
} ss.
COUNTY OF ORANGE }

On this 6th day of December 1957, before me, the subscriber, personally appeared [illegible] HARRY MABEE and SARA MABEE, his wife, to me personally known and known to me to be the same persons described in and who executed the foregoing instrument, and they severally duly acknowledged to me that they executed the same.

Russell Higgins

Notary Public

A true record entered September 13th 1946 at 10-30 A.M.

C. S. [illegible] Clerk

July 17th 1949 123

FOR VALUE RECEIVED We HEREBY GRANT TO ORANGE AND ROCKLAND ELECTRIC COMPANY OF MONROE, N. Y., HAVING NO STREET ADDRESS, ITS SUCCESSORS AND ASSIGNS, THE RIGHT TO ERECT, MAINTAIN, OPERATE, OWN AND REMOVE THE NECESSARY POLES OR TOWERS, WIRES, STUBS, GUYS AND ANCHORS FOR ELECTRIC AND/OR TELEPHONE LINES EXTENDING UPON, OVER, ACROSS OR ADJACENT TO Our LANDS IN THE TOWN OF Goshen COUNTY OF Orange STATE OF NEW YORK, IN THE FOLLOWING MANNER Along Chechunk road from lands of Warren to intersecting road in front of my residence, thence along same to lands of Strong

TOGETHER WITH THE RIGHT TO TRIM OR REMOVE ANY OR ALL TREES OR OTHER OBSTRUCTIONS TO KEEP THE SAID LINES CLEAR AT LEAST 5 FEET.

(SIGNED) J A Hock
Adeline H Hock

WITNESS J E Zimmerman

Town of Goshen but having no street name or number.

FORM 57 5M 7-49 JLA

STATE OF NEW YORK :
: SS:
COUNTY OF ORANGE :

On this 17th day of July, 1949 before me personally came J. E. Zimmerman, subscribing witness to the within instrument, with whom I am personally acquainted, who being by me duly sworn said that he resided in the ~~Village~~ City of Newburgh N. Y., that he was acquainted with J.A. Hock and Adeline H Hock and knew them to be the persons described in and who executed the said instrument; and that he saw them execute and deliver the same, and that they acknowledged to him, the said J. E. Zimmerman, that they executed and delivered the same and that the said J.E. Zimmerman thereupon subscribed his name as a witness thereto.

Alexander Pirchaf
Notary Public

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A true record entered July 22nd 1949 at 9 A.M.

C. E. Dusenbury Clerk.

Parcel map

1397-79

79

GRANT OF RIGHT OF WAY

This GRANT made the 3rd day of August 1956, between MORRIS BERKMAN ~~and PEARL BERKMAN, his wife~~, residing at R. D. ., No Street or Number New Hampton New York, parties of the first part, and ROCKLAND LIGHT AND POWER COMPANY, a domestic corporation having its principal office and place of business at 10 No. Broadway, Nyack, Rockland County, New York, party of the second part, witnesseth that: The parties of the first part do hereby acknowledge the receipt of the sum of Ten ($10.00) Dollars, for which consideration they do hereby grant to the party of the second part, its successors and assigns, forever, the right to enter upon and use part of the premises of the parties of the first part as a twenty-five (25 ft.) foot wide right of way for the purpose of installing, operating, maintaining, replacing or removing a gas pipe line with all necessary appurtenances thereto, for the purpose of transporting gas through the land of the parties of the first part, situated in the Town of Goshen, County of Orange, State of New York, the center line of said right of way being described as follows:

Beginning at a point in the northerly right of way line of former County Highway No. 95, now known as Route 17-M, 110 feet northwesterly, as measured along said highway right of way line, from a monument marking an angle in the said highway line, and running thence on a course North 56° 27' East, 58 feet to a point, thence on a course North 33° 33' West, and crossing the Wallkill River (also known as the Chechunk Canal) 149 feet to a point, thence on a course South 56° 27' West, 104 feet, more or less, to the said northerly highway line.

Together with the right to keep free from and remove all buildings and obstructions, except cattle fences, within twelve and one-half (12.5) feet on either side of any part of said center line both as described above and as continued on adjoining properties, as is more particularly shown on a map

or plan of said property hereto annexed and made a part hereof, entitled: ROCKLAND LIGHT AND POWER COMPANY, Nyack, N. Y. Plan of Center Line of Gas Pipe Line from Goshen to Middletown across property of MORRIS BERKMAN AND PEARL BERKMAN in Town of Goshen, Orange Co., N. Y. Scale 1 inch = 50 feet. Aug. 2, 1956.

SUBJECT to a permanent easement heretofore granted to the Wallkill Valley Drainage Improvement District by the heirs of William E. Mabee, et ux, on December 6, 1937, and recorded September 13, 1946 in the Goshen County Clerk's Office in Liber 1016 at Page 103.

It is further agreed that for construction purposes, for a period of twelve months from the date hereof, the party of the second part may occupy and use a width of 50 feet or an additional width of twelve and one-half feet (12.5 ft.) on each side of the above described center line in order to facilitate installation of the pipe and necessary appurtenances thereto, and further,

Where existing fences must be opened it is understood and agreed that the party of the second part will run temporary fences or gates so that cattle will remain confined to the larger parts of the pastures now used for grazing and the party of the second part will keep said fences or gates secured during the said construction period. The existing gates and fences that may be disturbed during construction are to be restored upon completion of construction work.

The rights herein granted include the right to keep said right of way free from all buildings and obstructions, except for fences.

The parties of the first part warrant that they are the owners in fee simple of the premises across which the herein described right of way is granted and have full right to make such grant, subject, as hereinbefore mentioned, to prior easements granted by predecessors in title.

The party of the second part hereby agrees to pay to the parties of the first part, their heirs, or assigns, within three months of the date hereof, the additional sum of THREE HUNDRED NINETY and 00/100 —Dollars.

IN WITNESS WHEREOF the parties of the first part have hereunto set their hands and seals this day and year as above written.

Signed, sealed and
delivered in the presence of:

George T. McRichard — Morris Berkowitz L.S.

L.S.

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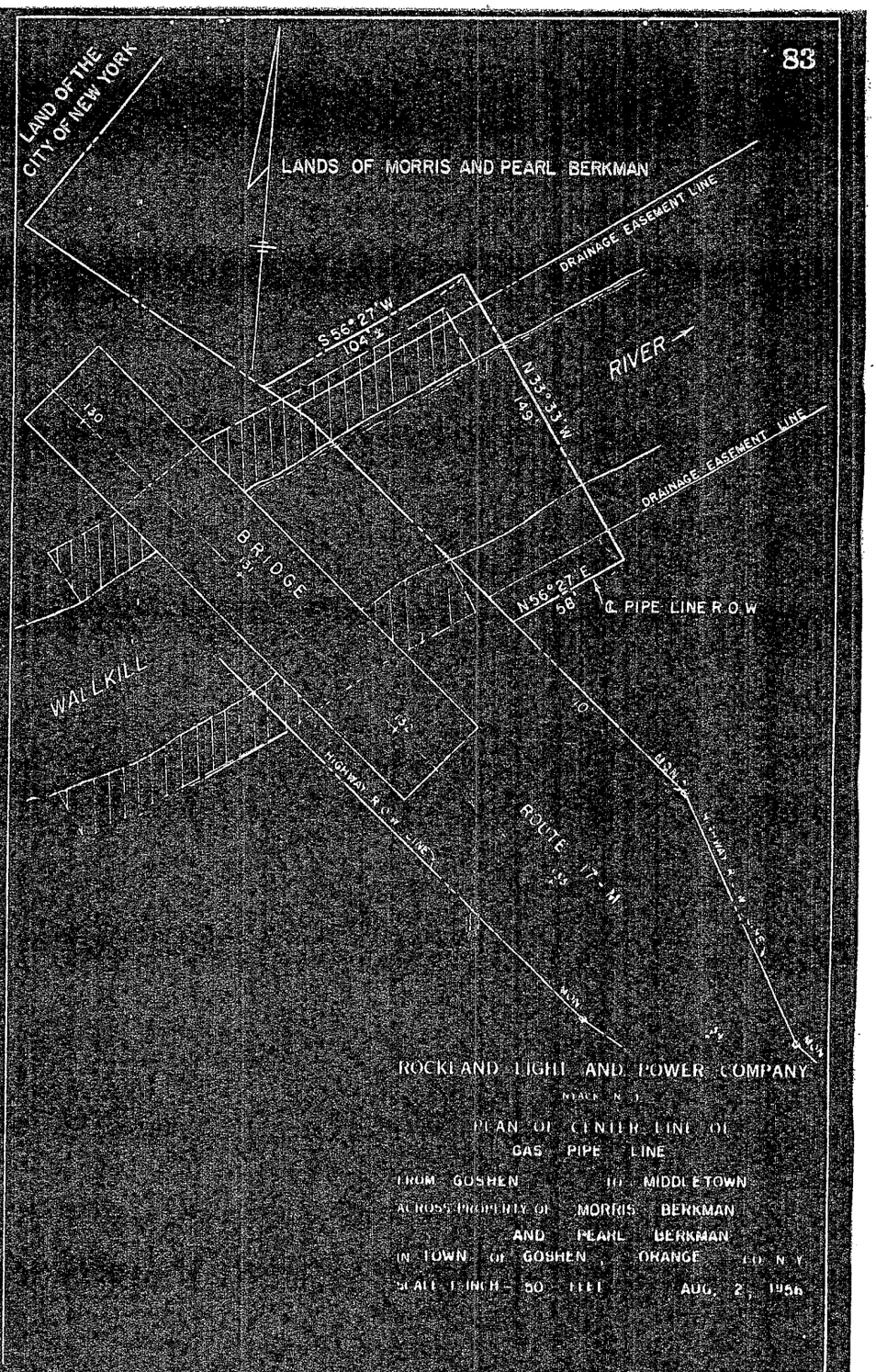
State of New York)
SS.:
County of ORANGE)

On this 3rd day of AUGUST 1956, before me personally came MORRIS BERKMAN to me known and known to me to be the individual described in and who executed the foregoing instrument, and duly acknowledged to me that HE executed the same.

GEORGE T. McRICKARD
NOTARY PUBLIC IN THE STATE OF NEW YORK
Residing in Rockland County
Commission Expires March 30, 1958

George T. McRickard



A true record entered August 14th, 1956 at 9:00 A. M.

A E Gutterson Clerk

GRANT OF RIGHT OF WAY

LIBER 2118 PAGE 446

This GRANT made the 4th day of December 1978, between KIMBERLY LAND COMPANY, a partnership, with its office and principal place of busine located at 20 Scotchtown Avenue, Goshen, New York 10924

party of the first p
ORANGE AND ROCKLAND UTILITIES, INC., a New York transportation corporation having its principal office and business at One Blue Hill Plaza, Pearl River, Rockland County, New York, party of the second part, witnesseth that:
The party of the first part hereto does hereby acknowledge the receipt of the sum of $1.00, for which consi it does grant to the party of the second part, its successors and assigns, forever, the right to enter upon and of the premises of the party of the first part as a right of way area for the purpose, from time to constructing, reconstructing, altering, enlarging, repairing, removing, replacing, relocating, operating, maintaining, ins excavating for, and laying one or more electric transmission and distribution lines, and one or more gas pipe lines, inclu necessary poles, H-frames and/or Towers, conductors, conduits, pipes, cables, guys, counterpoises, markers, vaults, ma and all necessary appurtenances thereto, upon, over, under and across the property of the party of the first part, situated Town of Goshen County of Orange and State of New York, the are of said right of way being described as follows: Beginning at a point in the center of Echo Lake said point also being the southerly edge of a 180' wide right of way, and running th

(1) N 61° 26' 26" W 854.87' along the southerly right of way line to a point in th property line between lands now or formerly of the party of the first part on t south and lands now or formerly of Diversified Industrial Services Corporation the north;

(2) N 73° 23' 43" E 56.11' to an angle point in said property line;

(3) S 85° 21' 17" E 345.90' to a point in the northerly right of way line of the said 180' wide easement;

(4) S 61° 26' 26" E 67.98' along the northerly right of way line to a point in the northerly line of lands now or formerly of Phillip Tandoi;

(5) S 12° 43' 14" E 122.64' along the lands now or formerly of Phillip Tandoi to the centerline of Echo Lake Road;

(6) S 47° 21' 39" E 361.07' along the centerline of Echo Lake Road to the point or place of beginning.

Containing 1.699 acres.

together with the right to trim, cut, chemically treat and/or remove all trees, branches, and underbrush and to keep free fr and remove all buildings and obstructions, including all longitudinal highways whether public or private, within the described above and as continued on adjoining properties, as is more particularly shown on a map or plan of said prope hereto annexed and made part hereof, entitled: ORANGE AND ROCKLAND UTILITIES, INC. Spring Valley, N Plan of Easement Electric Transmission Systems from Sugarloaf Sub.-Sta. to Shoemaker Sub.-Sta. across property of Kimberly Land Company in Town of Goshen, Orange Co. N.Y. Scale 1 inch = 100 feet Dec. 4, 1974. According to Survey by Emilius & Associates Land Surveyor, N.Y. Lic. 38218.

The party of the first part warrants that it is the owner in fee simple of the premises acro which the aforementioned right of way is granted and has full free and unencumbered right to make such grant.

The party of the second part hereby agrees before exercising the privileges herein granted to pay the party of the fir part, its heirs, executors or assigns, the additional sum of $800.00 (Eight Hundred and no/100-- Dollars) within 3 months of date hereo

IN WITNESS WHEREOF the said party of the first part has hereunto set its hand and seal this da and year as first above written.

Signed, sealed and delivered in the presence of:

Kimberly Land Company

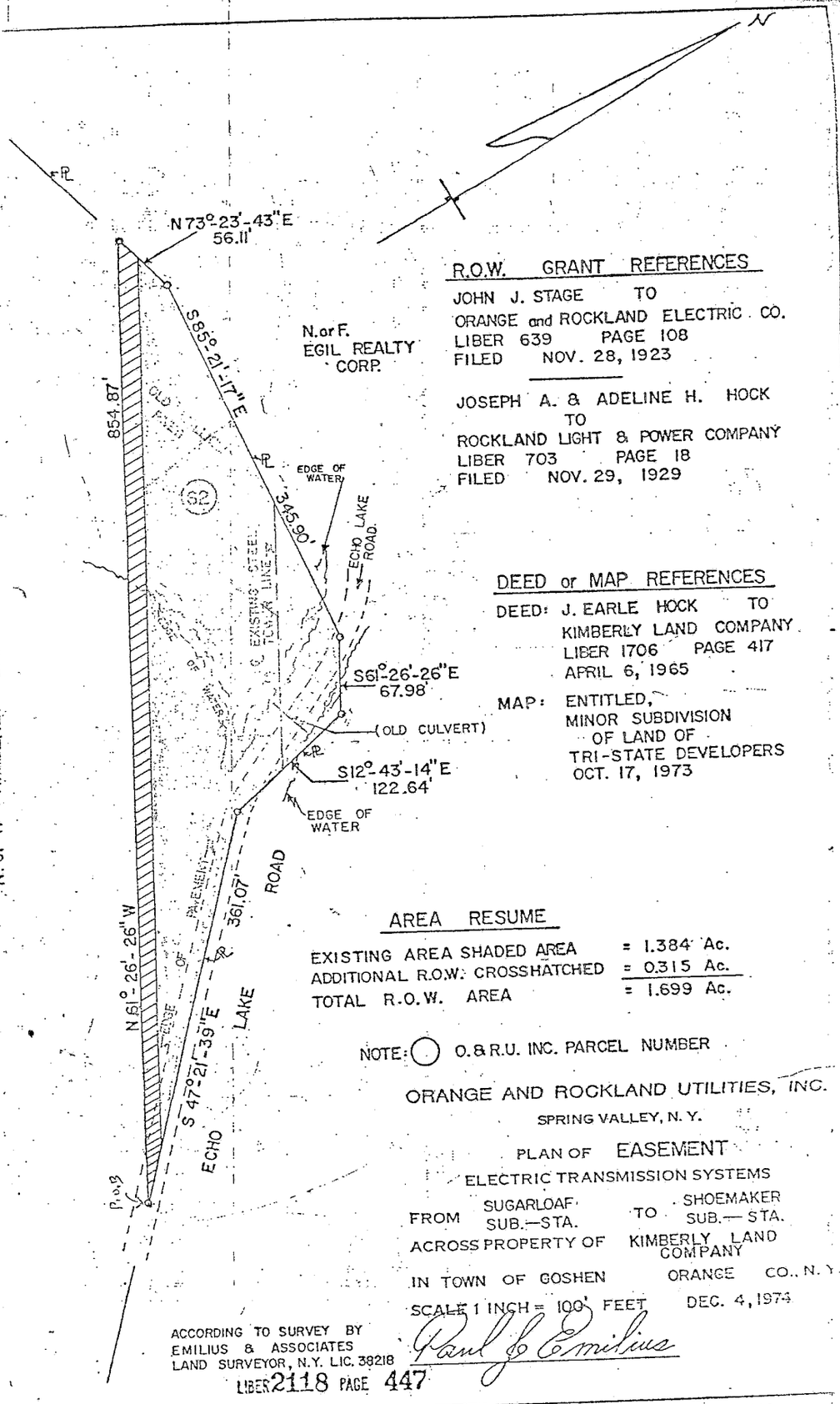
BY: Joseph G. Balsamo, Partn L.S.

L.S.

L.S.

RES 71-03-10.2

A- 12/4/78
R- 12/13/78



R.O.W. GRANT REFERENCES

JOHN J. STAGE TO
ORANGE and ROCKLAND ELECTRIC CO.
LIBER 639 PAGE 108
FILED NOV. 28, 1923

JOSEPH A. & ADELINE H. HOCK
TO
ROCKLAND LIGHT & POWER COMPANY
LIBER 703 PAGE 18
FILED NOV. 29, 1929

DEED or MAP REFERENCES

DEED: J. EARLE HOCK TO
KIMBERLY LAND COMPANY
LIBER 1706 PAGE 417
APRIL 6, 1965

MAP: ENTITLED,
MINOR SUBDIVISION
OF LAND OF
TRI-STATE DEVELOPERS
OCT. 17, 1973

AREA RESUME

EXISTING AREA SHADED AREA	= 1.384 Ac.
ADDITIONAL R.O.W. CROSSHATCHED	= 0.315 Ac.
TOTAL R.O.W. AREA	= 1.699 Ac.

NOTE: ◯ O & R.U. INC. PARCEL NUMBER

ORANGE AND ROCKLAND UTILITIES, INC.
SPRING VALLEY, N. Y.

PLAN OF EASEMENT
ELECTRIC TRANSMISSION SYSTEMS
FROM SUGARLOAF SUB.—STA. TO SHOEMAKER SUB.— STA.
ACROSS PROPERTY OF KIMBERLY LAND COMPANY
IN TOWN OF GOSHEN ORANGE CO., N. Y.
SCALE 1 INCH = 100' FEET DEC. 4, 1974

ACCORDING TO SURVEY BY
EMILIUS & ASSOCIATES
LAND SURVEYOR, N.Y. LIC. 39218
Paul J. Emilius

LIBER 2118 PAGE 447

20-74-116

GRANT OF RIGHT OF WAY

DATE: 10/14 1983

RECEIVED from ORANGE AND ROCKLAND UTILITIES, INC., of 1 Blue Hill Plaza, Pearl River, New York, the sum of One ($1.00) Dollar for which the undersigned hereby grants to the Company, its successors and assigns, the right from time to time to enter upon without notice, to construct, reconstruct, alter, enlarge, repair, remove, replace, relocate, operate, maintain and inspect one or more overhead and/or underground electric distribution and communication lines, including the necessary poles, fixtures, cables, conduits, wires, stubs, guys, anchors and appurtenances; and also the right to excavate for, lay, maintain, operate, replace and/or remove one or more pipe lines for the transmission and distribution of gas – upon, over, along, across and/or under the premises located in the

Town of Goshen County of Orange. State of New York, on the north side of N.Y. State Highway 17M about 2000 feet west of Hartley Road

Said facilities to be placed in a 20' wide strip of land ~~running~~ starting at a point 200' southeast of the most southwesterly property corner extending in a northeasterly direction for 1000'+ thence in an easterly direction for 800'+

. The subject property is shown on the current Tax Map of the Town of Goshen on Sectn. No. 12 Block No. 1 ; as Lot No. 23

and to trim or remove trees and roots from time to time so that they shall not come in contact with the lines and keep the above described easement or right of way free from buildings and obstructions of any kind, and to carry on said poles or in said conduits, wires, facilities, and attachments of other companies and to convey to other companies an interest in said facilities and right of way.

Signed, Sealed and Delivered
In The Presence Of

AL TURI LANDFILL, INC.

Signed: _____ (LS)
Alfred J. DeMarco, President

_____ (LS)

Address: HARTLEY ROAD (no #)
GOSHEN N.Y. 10924

State of New York }
County of } SS:

On this day of , 19 , before me personally came

to me known and known to me to be the individual(s) described in and who executed the foregoing instrument, and duly acknowledged to me executed the same.

_____

INDIVIDUAL

R - 12/15/83

ORANGE COUNTY CLERK'S OFFICE RECORDING PAGE

THIS PAGE IS PART OF THE INSTRUMENT - DO NOT REMOVE

PRINT OR TYPE: BLACK INK ONLY

Al Turi Landfill, Inc.

TO

Orange County Water Authority

SECTION 12 BLOCK 1 LOT 1.2

RECORD AND RETURN TO:
(Name and Address)

Robert F. Bradford, Executive Director
Orange County Water Authority
4 Mathews Street Suite 301
P.O. Box 997
Goshen, N.Y. 10924

ATTACH THIS SHEET TO THE FIRST PAGE OF EACH RECORDED INSTRUMENT ONLY

DO NOT WRITE BELOW THIS LINE

CONTROL NO. 53267 DATE 2/16/90 AFFIDAVIT FILED _____ 19____

INSTRUMENT TYPE: DEED_____ MORTGAGE_____ SATISFACTION_____ ASSIGNMENT_____ OTHER_____

BG20	Blooming Grove	____
CH22	Chester	____
CO24	Cornwall	____
CR26	Crawford	____
DP28	Deerpark	____
GO30	Goshen	X
GR32	Greenville	____
HA34	Hamptonburgh	____
HI36	Highlands	____
MK38	Minisink	____
ME40	Monroe	____
MY42	Montgomery	____
MH44	Mount Hope	____
NT46	Newburgh (T)	____
NW48	New Windsor	____
TU50	Tuxedo	____
WL52	Wallkill	____
WK54	Warwick	____
WA56	Wawayanda	____
WO58	Woodbury	____
MN09	Middletown	____
NC11	Newburgh	____
PJ13	Port Jervis	____
9999	Hold	____

SERIAL NO._____

Mortgage Amount $_____ CHECK____ CASH____ CHARGE____

Exempt Yes_____ No_____

3-6 Cooking Units Yes_____ No_____

Received Tax on above Mortgage

Basic $_____

MTA $_____

Spec. Add. $_____

TOTAL $_____

MORTGAGE TAX $_____

TRANSFER TAX $ EXEMPT

RECORD. FEE $ No Fee

REPORT FORMS $_____

CERT. COPIES $_____

MARION S. MURPHY
Orange County Clerk

by: M. Long

Orange County Water Authority

ORANGE COUNTY CLERK'S OFFICE S.S.

Recorded on APR 5 1990

at 9:00 O'Clock C M.

in Liber/Film 3274 Deed

at page 107 and examined.

Marion S. Murphy
County Clerk

RECEIVED
EXEMPT
$_____
REAL ESTATE
APR 5 1990
TRANSFER TAX
ORANGE COUNTY

LIBER 3274 PAGE 107

[8]

ORG 04/05/90 07:00:00 7250 .00

DEED CONTROL NO: 53267 .00 *

****** SERIAL NUMBER: 005641 ******

Record and Return to:
Orange County Water Authority
P.O. Box 997, Goshen, N.Y. 10924

AGREEMENT - EASEMENT No. 508

This agreement made on the 16th day of February, 19 9* between Al Turi Landfill, Inc., * will officis residing at Hartley Road, Goshen, N.Y. 10924 (hereinafter referred to as the "OWNER") and the Orange County Water Authority, (hereinafter referred to as "OCWA"), a public benefit corporation organized pursuant to the laws of the State of New York and maintaining a principal place of business at 4 Matthews Street, Goshen, New York 10924.

Tax Dsgn. Sect. 12 Block 1 Lot 1.2

WHEREAS, OCWA wishes to construct a pipeline with valves, pipes, and appurtenances, (hereinafter referred to as the "water facilities") necessary for the transmission of water under and through a portion of the OWNER'S premises within the Town of Goshen, County of Orange, State of New York; and

WHEREAS, OCWA desires a Permanent Easement ("PE") for the purpose of constructing, installing, maintaining, using, operating, repairing and replacing said water facilities; and

WHEREAS, OCWA further desires a Temporary Easement ("TE") with the right to enter upon that portion of the OWNER'S land for the purpose of constructing, laying and installing said water facilities within said Permanent Easement.

NOW THEREFORE, in consideration of the sum of Seven Hundred Ninety-two dollars ($792.00) and the mutual promises between the parties and other good and valuable consideration, the parties hereby acknowledge and agree as follows:

FIRST: OWNER hereby delivers, conveys and grants to OCWA, its successors and assigns, and their representatives, agents, and grantees, a Permanent Easement, known as PE-508, permitting ingress and egress on, over, and under the Permanent Easement Area described and shown on the survey map number 508, prepared under the direction of Hazen and Sawyer/Stetson-Harza (the "Joint Venture") and which is annexed hereto, for the purpose of constructing, installing, maintaining, using, operating, repairing and replacing said water facilities necessary for the transmission of water through the Permanent Easement Area.

SECOND: OWNER hereby delivers, conveys and grants to OCWA, its successors and assigns, and their representatives, agents, and grantees, a Temporary Easement, known as TE-508, permitting ingress and egress on and over the Temporary Easement Area described as and shown on the survey map number 508, prepared under the direction of the "Joint Venture" and which is annexed hereto, for the purpose of constructing, laying, and installing said water facilities necessary within

said Permanent Easement. The TE-508 shall automatically expire upon completion of the installation of said water facilities and appurtenances.

THIRD: Title to the water facilities shall at all times remain with OCWA, its successors and assigns as to all or any part thereof. Any and all costs incurred in connection with the constructing, installing, maintaining, using, operating, repairing and/or replacing the water facilities shall be borne by OCWA, its successors and assigns, except as otherwise provided herein.

FOURTH: OCWA, its successors and assigns shall protect, defend, save and keep the OWNER and their successors and assigns forever harmless and indemnified against and from any and all liability for injury to third persons or damage to property whatsoever and from any penalty or damage or charges claimed or imposed for violation of any laws, ordinances, rules or regulations and against and from any and all loss, costs, damage or expense, including reasonable attorneys' fees, that shall result from, arise out of, or be attributable to the exercise of the rights of ingress and egress or any construction, installation, maintenance, use, operation, repair and/or replacement undertaken by OCWA, its agents or employees pursuant to this Agreement. Such indemnification and defense obligations shall be conditioned upon the OWNER

giving OCWA, or its successors and assigns, prompt written notice of any such claim or liability of which owner has received actual notice, and OCWA shall have the right to appoint counsel of its choice and to determine the course of any such litigation. cd 6.

FIFTH: OCWA shall restore all disturbed areas of OWNER'S property to their prior condition after completion of work thereon by OCWA, its successors and assigns, their agents or employees, as soon as possible after the purpose of such entry has been completed, to the extent reasonably practicable, provided, however, OCWA, its successors and assigns shall not be required to replace any plants, trees or other improvements in the Temporary or Permanent Easement Areas, but shall rough grade and reseed any disturbed areas. OCWA shall restore any paved area to its prior condition to the extent reasonably practicable. Nothing contained in this paragraph shall require the replacement or restoration of anything which OCWA is entitled to remove pursuant to the terms of this agreement.

SIXTH: The water facilities shall be maintained in a safe condition by OCWA, its successors and assigns.

SEVENTH: The OWNER, its successor or assigns shall not erect, construct or install any structures or buildings; operate any trucks or heavy equipment; or plant any deep-rooted trees or plants in, on or over the Temporary Easement

Area during the term of the Temporary Easement, and on or over the Permanent Easement Area, or engage in any activities that may endanger the working condition of the water facilities or that are inconsistent with the purposes of this Agreement. The OWNER, its successor and assigns shall not change the elevation of the finished grade established by OCWA at the completion of the project except that up to twelve (12) inches of "clean fill" or "top soil" may be added to the finished elevation.

EIGHTH: OCWA shall have all rights and benefits necessary or convenient for the full enjoyment or use of the rights granted herein, including, but not limited to the right to remove and clear all rocks, trees, brush, limbs, structures, and other obstructions, which may interfere with the water facilities. OCWA shall have the right, without liability for damages, to remove any structure, buildings or other improvements in the Temporary or Permanent Easement Areas that are in violation of the provisions of this Agreement.

NINTH: OCWA shall lay, install and bury any pipe to such depth that it will not interfere with the ordinary cultivation of OWNER'S property.

TENTH: This Declaration shall run with land and be binding upon and inure to the benefit of the parties hereto, their heirs, successors and assigns.

ELEVENTH: It is mutually agreed that this Agreement as written, covers all the agreements and stipulations between the said parties and no representations or statement, oral or written, have been made that are not expressly contained in this Agreement.

LIBER 3274 PAGE 113

IN WITNESS WHEREOF we have hereunto set our hands the first date above written.

X AL Juni Landfill Inc
OWNER ~~President~~

ORANGE COUNTY WATER AUTHORITY

X
OWNER ~~Treasurer~~ Sec.

OWNER

ROBERT F. BRADFORD
Executive Director

OWNER

OWNER

SEAL

SUBSCRIBING WITNESS

CONSENT AND AGREEMENT OF TENANT (if any)

In consideration of the sum of $1.00 in hand paid, the undersigned tenant in possession of the real estate described in the foregoing Easement Agreement, consents to and joins in such Agreement, to the extent of his interest in the real estate described therein.

Dated this ____ day of _____, 19___

Acknowledgement _____

STATE OF NEW YORK)

:ss.

COUNTY OF Westchester

On this 16 day of Feb, 19 9-, before me personally came Thomas Milo to me known, who being by me duly sworn, did depose and say that he resides at 247 Pelhamdale Ave, Pelham, NY 10803; that he is the Secretary of the Al Turf Landfill, Inc., the corporation described in, and which executed the above instrument; that he executed said instrument by order of the Board of Directors of said corporation.

Maryjane DeFiore
Notary Public

MARYJANE DE FIORE
Notary Public, State of New York
No. 60-4604574
Qualified in Westchester County
Commission Expires 2/31/90

LIBER 3274 PAGE 115

STATE OF NEW YORK)

: ss.

COUNTY OF ORANGE)

On this 19 day of March, 1990, before me personally came Robert F. Bradford to me known, who being by me duly sworn, did depose and say that he resides at 4 Matthews St, Goshen, NY 10924; that he is the Executive Director of the Orange County Water Authority, the corporation described in, and which executed the above instrument; that he executed said instrument by order of the Board of Directors of said corporation.

Donna Vanacoro
Notary Public

DONNA VANACORO
Notary Public, State of New York
No. 4956720
Qualified in Orange County
Commission Expires October 2, 19 91

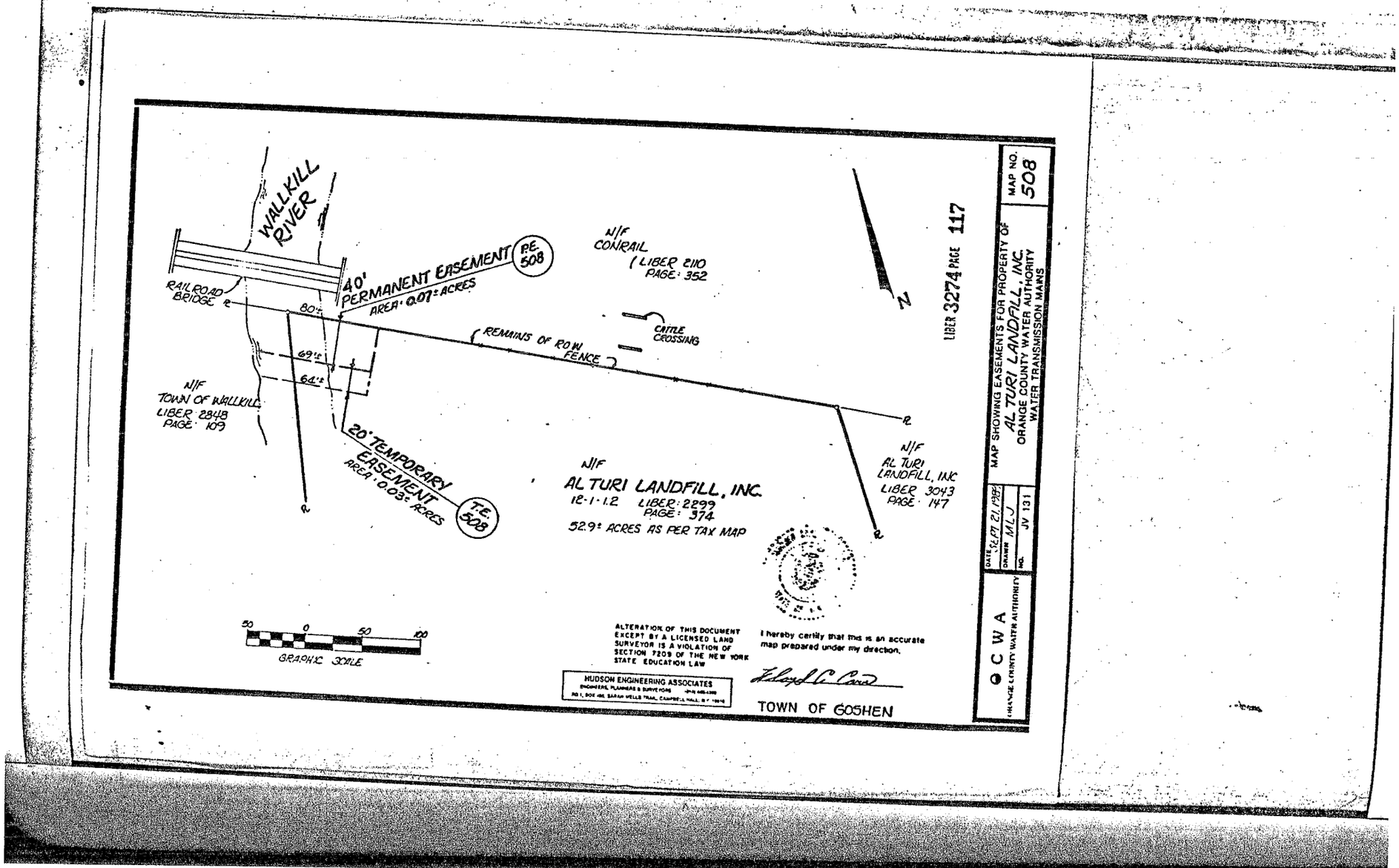
STATE OF NEW YORK)

: ss.

COUNTY OF ORANGE)

On this ___ day of _____, 19___, before me came _____, to me known to be the individual(s) described in, and who executed, the foregoing instrument, and acknowledged that _____ executed the same.

_____
Notary Public


WALLKILL RIVER
RAILROAD BRIDGE
40' PERMANENT EASEMENT
P.E. 508
AREA: 0.07± ACRES
80'±
69'±
64'±
20' TEMPORARY EASEMENT
T.E. 508
AREA: 0.03± ACRES
N/F CONRAIL
(LIBER 2110 PAGE: 352
CATTLE CROSSING
REMAINS OF ROW FENCE
N/F TOWN OF WALLKILL LIBER 2848 PAGE: 109
N/F AL TURI LANDFILL, INC.
12-1-1.2 LIBER: 2299 PAGE: 374
52.9± ACRES AS PER TAX MAP
N/F AL TURI LANDFILL, INC LIBER 3043 PAGE: 147
LIBER 3274 PAGE 117
N
50 0 50 100
GRAPHIC SCALE
ALTERATION OF THIS DOCUMENT EXCEPT BY A LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW
I hereby certify that this is an accurate map prepared under my direction.
HUDSON ENGINEERING ASSOCIATES
TOWN OF GOSHEN
MAP SHOWING EASEMENTS FOR PROPERTY OF
AL TURI LANDFILL, INC.
ORANGE COUNTY WATER AUTHORITY
WATER TRANSMISSION MAINS
MAP NO. 508
DATE SEPT 21, 1984
DRAWN MLJ
NO. JV 131
C W A
ORANGE COUNTY WATER AUTHORITY

ORANGE COUNTY CLERK'S OFFICE RECORDING PAGE

THIS PAGE IS PART OF THE INSTRUMENT – DO NOT REMOVE

TYPE IN BLACK INK:
NAME(S) OF PARTY(S) TO DOCUMENT

Al Turi Landfill Inc

TO

Ameres co LFG-Inc

SECTION 12 BLOCK 1 LOT 12.1 12.2 21.1 22

RECORD AND RETURN TO:
(name and address)

Bridge Services Corp
277 Broadway, #510
N.y N.y

THIS IS PAGE ONE OF THE RECORDING

ATTACH THIS SHEET TO THE FIRST PAGE OF EACH RECORDED INSTRUMENT ONLY

DO NOT WRITE BELOW THIS LINE

INSTRUMENT TYPE: DEED___MORTGAGE___SATISFACTION___ASSIGNMENT___OTHER RtWy

PROPERTY LOCATION

___2089 BLOOMING GROVE (TN)
___2001 WASHINGTONVILLE (VLG)
___2289 CHESTER (TN)
___2201 CHESTER (VLG)
___2489 CORNWALL (TN)
___2401 CORNWALL (VLG)
___2600 CRAWFORD (TN)
_✓_2800 DEERPARK (TN)
___3089 GOSHEN (TN)
___3001 GOSHEN (VLG)
___3003 FLORIDA (VLG)
___3005 CHESTER (VLG)
___3200 GREENVILLE (TN)
___3489 HAMPTONBURGH (TN)
___3401 MAYBROOK (VLG)
___3689 HIGHLANDS (TN)
___3601 HIGHLAND FALLS (VLG)
___3889 MINISINK (TN)
___3801 UNIONVILLE (VLG)
___4089 MONROE (TN)
___4001 MONROE (VLG)
___4003 HARRIMAN (VLG)
___4005 KIRYAS JOEL (VLG)
___4289 MONTGOMERY (TN)
___4201 MAYBROOK (VLG)
___4203 MONTGOMERY (VLG)
___4205 WALDEN (VLG)
___4489 MOUNT HOPE (TN)
___4401 OTISVILLE (VLG)
___4600 NEWBURGH (TN)
___4800 NEW WINDSOR (TN)
___5089 TUXEDO (TN)
___5001 TUXEDO PARK (VLG)
___5200 WALLKILL (TN)
___5489 WARWICK (TN)
___5401 FLORIDA (VLG)
___5403 GREENWOOD LAKE (VLG)
___5405 WARWICK (VLG)
___5600 WAWAYANDA (TN)
___5889 WOODBURY (TN)
___5801 HARRIMAN (VLG)

CITIES

___0900 MIDDLETOWN
___1100 NEWBURGH
___1300 PORT JERVIS

___9999 HOLD

NO PAGES 8 CROSS REF.___
CERT.COPY___ADD'L X-REF.___
MAP#___PGS.___

PAYMENT TYPE: CHECK ✓
CASH___
CHARGE___
NO FEE___

Taxable
CONSIDERATION $ ✓
TAX EXEMPT___

Taxable
MORTGAGE AMT. $___
DATE___

MORTGAGE TAX TYPE:

___ (A) COMMERCIAL/FULL 1%
___ (B) 1 OR 2 FAMILY
___ (C) UNDER $10,000
___ (E) EXEMPT
___ (F) 3 TO 6 UNITS
___ (I) NAT.PERSON/CR. UNION
___ (J) NAT.PER-CR.UN/1 OR 2
___ (K) CONDO

Donna L. Benson
DONNA L. BENSON
ORANGE COUNTY CLERK

RECEIVED FROM: Fidelity National

RECORDED/FILED
08/20/2004/ 15:19:55
DONNA L. BENSON
County Clerk
ORANGE COUNTY, NY

FILE # 20040099941
RT WY / BK 11588 PG 2008
RECORDING FEES 54.00
TTX# 000889 TRANS TAX 0.00
Receipt#309019 dab

Parcel E keeps
12-1-23.1
However, it is
pue 12-1-23.2

CONFIRMATION AGREEMENT RELATING TO GAS RIGHTS AGREEMENT

This Confirmation Agreement Relating to Gas Rights Agreement (the "Confirmation Agreement") is made and entered into this 15 day of March, 2004 by and between AL TURI LANDFILL, INC., whose address is Route 1, Box 14 Hartley Road, Goshen, New York ("Grantor") and AMERESCO LFG-I, INC., a Delaware corporation ("Ameresco" or "Grantee"), whose address is 111 Speen Street, Framingham, Massachusetts (Grantor and Grantee are collectively referred to herein as the "Parties" and individually as a "Party").

BACKGROUND

A. Grantor and Middletown LFG, LTD. entered into that certain Landfill Gas Purchase Agreement dated November 1, 1991 (the "Gas Rights Agreement").

B. On July 23, 2001, Middleton LFG, LTD. assigned its interest under the Gas Rights Agreement to Ameresco and Grantor consented to such assignment and transfer (the "Transfer").

C. Pursuant to the Gas Rights Agreement, the Grantee was granted certain rights to utilize landfill gas located on that certain parcel of land located on and adjacent to that certain piece of property known as the Al Turi Landfill, within the Township of Goshen, County of Orange, State of New York, as more particularly described on Exhibit A attached hereto (the "Property"), and in order to carry out the terms of the Gas Rights Agreement, Grantor granted to Grantee certain rights of way and easements in and across the Property for the Grantee to purchase and utilize landfill gas and to produce electricity and to deliver such electricity from the Property to the power grid, for a term ending upon the expiration or termination of the term of the Gas Rights Agreement.

D. Because the documentation relating to the Transfer was not in recordable form, the Parties are executing this Confirmation Agreement in order to confirm of record the Transfer and Ameresco's succession as Grantee under the Gas Rights Agreement and Ameresco's rights to operate its facilities on the Property.

AGREEMENT

1. The Parties hereby confirm that Ameresco is the Grantee under the Gas Rights Agreement, and in furtherance thereof and for the avoidance of doubt, Grantor hereby confirms it is granting to Ameresco easement rights in and across portions of the Property for purposes of erecting, operating and maintaining Grantee's conversion plant and related facilities, utilizing landfill gas and producing electricity and delivering such electricity to the power grid, and the ingress and egress across the Property necessary to carry out the foregoing, all of such rights of Grantee to be exercised consistent with the Gas Rights Agreement.

2. This Confirmation Agreement may be executed in two or more counterparts, each of which shall be deemed to be an original; but all of which together shall constitute one and the same document.

Please Record & Return to: 383-1659
Bridge Service Corp.
800-225-2736
277 Broadway, #510
New York, NY 10007-2001

In witness whereof, the Parties hereto have executed and delivered this Confirmation Agreement as of the day and year first written above.

AMERESCO LFG-I, INC., a Delaware corporation

By: Ameresco LFG Holdings LLC, its sole shareholder

By: Ameresco, Inc., its sole member

By: _____
Name: Andrew B. Spence
Its: VP/CFO

AL TURI LANDFILL, INC., a NEW YORK corporation

By: _____
Name: Louis C. Coiso
Its: V.P.

03-3706-9044 NY (A)
FIDELITY NATIONAL TITLE
INSURANCE CO. OF N.Y.
TWO PARK AVENUE 3rd FLOOR
NEW YORK, N.Y. 10016
1-212-481-5858

COMMONWEALTH OF MASSACHUSETTS)
) **ACKNOWLEDGMENT**
COUNTY OF MIDDLESEX)

On the 11th day of ~~February~~ March in the year 2004, before me, the undersigned, a notary public in and for said state, personally appeared Andrew B. Spence, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Kathleen C. Devlin
Notary Public

My commission expires:

5-12-07

STATE OF NEW YORK)
) **ACKNOWLEDGMENT**
COUNTY OF ~~ORANGE~~ SUFFOLK)

On the 10 day of ~~February~~ MARCH in the year 2004, before me, the undersigned, a notary public in and for said state, personally appeared Louis C. Colsc, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Brenda L. Strickland
Notary Public

My commission expires:

9-28-06

BRENDA L. STRICKLAND
Notary Public, State of New York
No. 01ST6014034
Qualified in Suffolk County
Commission Expires 09/28/2006

SCHEDULE A

PARCEL A: (LOT 17.1)

ALL that certain plot, piece or parcel of land, situate, lying and being in the Town of Goshen, County of Orange and State of New York being more particularly described and known as Parcel "C" on a certain map entitled "Three Lot Minor Subdivision Plat, Lands of Joseph R. Carmichael, et al.", prepared by Wehran Engineering P.C. under date of October 3, 1975 and filed on December 1, 1975 in the Orange County Clerk's Office as Map #3626.

PARCEL B: (LOT 17.2)

ALL that certain plot, piece or parcel of land, situate, lying and being in the Town of Goshen, County of Orange and State of New York, bounded and described as follows:

BEGINNING at a point on the easterly side of Hartley Road, said point being located at the northerly corner of lands now or formerly of Weber and distant 218.3 feet on a bearing of North 0 degrees 34 minutes West along said easterly side of Hartley Road from the center line of New York State Highway Routes 6 and 17M, and;

RUNNING THENCE North 65 degrees 14 minutes West, 18.3 feet to the center line of said Hartley Road; thence, along the center line of said road, the following four (4) courses:

(1) North 0 degrees 34 minutes West, 380.0 feet more or less to a point;

(2) North 21 degrees 10 minutes East, 99.2 feet more or less to a point;

(3) North 26 degrees 00 minutes East, 720.0 feet more or less to a point;

(4) North 30 degrees 31 minutes East, 325.0 feet more or less to a point in the lands of Alfred R. Turi;

THENCE North 76 degrees 59 minutes West, 333.4 feet more or less along said Turi's lands to a point;

THENCE South 25 degrees 43 minutes 19 minutes West, 316.13 feet along the same to a point; South 57 degrees 08 minutes 00 seconds West, 575.00 feet along the same to a point;

THENCE North 44 degrees 57 minutes 00 seconds West, 725.00 feet along the same to a point in the southeasterly line of lands now or formerly of Berkman; thence

THENCE South 50 degrees 38 minutes West, 1,007.2 feet more or less along said line of Berkman and of Kravchenco to a point in the center line of New York State Highway Routes 6 and 17M; thence, along the center line of said highways, the following four (4) courses,

(1) South 49 degrees 07 minutes East, 354.0 feet to a point;

(2) South 55 degrees 22 minutes East, 160.0 feet to a point;

(3) South 60 degrees 22 minutes East, 470.0 feet to a point;

SCHEDULE A

(4) South 65 degrees 39 minutes 30 seconds East, 1,025.8 feet to a point opposite the easterly side of Hartley Road;

THENCE North 0 degrees 34 minutes West, 218.3 feet across said state highway and along the easterly side of said Hartley Road to the point or place of BEGINNING.

Containing 40.0 acres, more or less, being more particularly described as Parcel "B" on a certain map entitled "Three Lot Minor Subdivision Plat Lands of Joseph R. Carmichael, et al" prepared by Wehran Engineering P.C. under date of October 3, 1975, and filed on December 1, 1975 in the Clerk's Office of Orange County as Map No. 3626.

Excepting 0.170 of an acre more or less conveyed by Margaret Hartley to the County of Orange for highway purposes by deed dated November 28, 1924 and recorded in the Office of the Clerk of Orange County on December 1, 1924 in Liber 649 Cp. 37.

PARCEL C: (LOT 21.1) (tax 23.2)

ALL that certain plot, piece or parcel of land, situate, lying and being in the Town of Goshen, County of Orange and State of New York, bounded and described as follows:

BEGINNING at a point on the northwesterly side of Route 17M, known as Hartley Road, where the same is intersected by the southwesterly line of lands of William F. & E. Alida Dolan, as said land is described in a certain deed recorded in Liber 836 at cp. 72 in the Office of the Clerk of Orange County;

RUNNING THENCE along the said northwesterly side of Hartley Road the following three (3) courses and distances:

1. South 48 degrees 16 minutes 20 seconds West, 82.26 feet;

2. South 40 degrees 30 minutes 20 seconds West, 100.24 feet; and

3. South 28 degrees 48 minutes 50 seconds West, 265.34 feet to a portion of the land of Joseph R. Carmichael, et al., described in a certain deed recorded in Liber 1851 cp. 426 in the Office of the Clerk of Orange County.

THENCE along said land, North 78 degrees 36 minutes 40 seconds West, 1139.15 feet and South 48 degrees 03 minutes 10 seconds, West 152.40 feet to land now or formerly of Dekay and Baird;

THENCE along the same North 41 degrees 09 minutes 10 seconds West, 754.00 feet;

THENCE North 69 degrees 28 minutes 50 seconds East, 162.00 feet;

THENCE North 43 degrees 33 minutes 50 seconds East, 112.61 feet;

THENCE North 65 degrees 18 minutes 50 seconds East, 111.62 feet;

THENCE North 20 degrees 49 minutes 50 seconds East, 121.50 feet;

SCHEDULE A

THENCE North 63 degrees 41 minutes 50 seconds East, 123.48 feet;

THENCE North 56 degrees 53 minutes 50 seconds East, 172.86 feet;

THENCE North 47 degrees 54 minutes 50 seconds East, 242.01 feet to lands now or formerly of George D. Wickam;

THENCE along the same the following three (3) courses and distances:

1. South 28 degrees 15 minutes 50 seconds East, 213.77 feet; and

2. South 57 degrees 09 minutes 20 seconds East, 446.67 feet; and

3.

THENCE along said land South 42 degrees 39 minutes 50 seconds East, 311.17 feet and North 49 degrees 33 minutes 00 seconds East, 19.70 feet to the westerly corner of land now or formerly of William F. and E. Alida Dolan and described in a certain deed recorded in Liber 914 Cp. 135 in the Office of the Clerk of Orange County; and

THENCE along said last mentioned land and other land of the said William F. & E. Alida Dolan as described in deed in Liber 836 Cp. 72 aforementioned, South 39 degrees 20 minutes 00 seconds East, 585.60 feet to the northwesterly side of Hartley Road at the point or place of BEGINNING.

PARCEL D: (LOT 22):

ALL that certain plot, piece or parcel of land, situate, lying and being in the Town of Goshen, County of Orange and State of New York, being more particularly bounded and described as follows:

BEGINNING at a point in the northwesterly line of lands now or formerly of Vernon and Jacobs, said point being located North 48 degrees 28 minutes 30 seconds East 22.23 feet along said northwesterly line from the northeasterly sideline of New York State Highway Routes No. 6 and 17M;

RUNNING THENCE North 50 degrees 07 minutes 30 seconds West 53.32 feet to a point;

RUNNING THENCE North 39 degrees 52 minutes 30 seconds East 387.35 feet to a point;

RUNNING THENCE South 50 degrees 50 minutes 30 seconds East 112.12 feet to a point in the aforementioned northwesterly line of said lands of Vernon and Jacobs;

RUNNING THENCE along the said northwesterly line of said lands of Vernon and Jacobs South 48 degrees 28 minutes 30 seconds West 393.17 feet to the point or place of BEGINNING.

Said premises containing an area of 0.736 acre more or less.

PARCEL E: (LOT 23.1)

SCHEDULE A

ALL that certain plot, piece or parcel of land, situate, lying and being in the Town of Goshen, County of Orange, and State of New York, described as follows:

BEGINNING at a monument in the northeasterly sideline of New York State Highway Routes No. 6 and 17M and the southerly corner of lands now or formerly of the State of New York; and

RUNNING THENCE North 45 degrees 46 minutes 30 minutes East 1860.99 feet along the southerly line of the above mentioned lands now or formerly State of New York to a point in the southwesterly line of lands now or formerly Kimberly Land Company;

THENCE South 37 degrees 17 minutes 30 seconds East 1251.12 feet along said southwesterly line to a point in the northerly line of Wallkill Valley Drainage Improvement District;

THENCE South 48 degrees 14 minutes 00 seconds West 18.29 feet along said northerly line to a point;

THENCE South 78 degrees 36 minutes 00 seconds West 343.00 feet still along said northerly line to a point;

THENCE North 71 degrees 02 minutes 00 seconds West 411.00 feet along the same to a point;

THENCE North 81 degrees 07 minutes 00 seconds West 536.00 feet along the same to a point;

THENCE South 51 degrees 21 minutes 00 seconds West 559.00 feet along the same to a point;

THENCE South 54 degrees 44 minutes 00 seconds West 87.00 feet along the same to a point;

THENCE South 58 degrees 07 minutes 00 seconds West 223.00 feet still along the same to a point in the aforementioned northeasterly sideline of New York State Highway Routes No. 6 and 17M;

THENCE North 58 degrees 18 minutes 30 seconds West 148.71 feet along said northeasterly sideline of said Highway to the point or place of BEGINNING.

ORANGE COUNTY CLERK'S OFFICE RECORDING PAGE

THIS PAGE IS PART OF THE INSTRUMENT – DO NOT REMOVE

TYPE IN BLACK INK:
NAME(S) OF PARTY(S) TO DOCUMENT

COUNTY OF ORANGE

TO

TOWN OF WALLKILL

Goshen 12 1 24.2
SECTION 1 BLOCK 1 LOT 40
Wayarda

RECORD AND RETURN TO:
(name and address)

Greenwald Law Offices
99 Brookside Avenue
Chester, New York 10918
Attn: Karen M. Alt, Esq.

THIS IS PAGE ONE OF THE RECORDING

ATTACH THIS SHEET TO THE FIRST PAGE OF EACH RECORDED INSTRUMENT ONLY

DO NOT WRITE BELOW THIS LINE

INSTRUMENT TYPE: DEED___ MORTGAGE___ SATISFACTION___ ASSIGNMENT___ OTHER X Easement

PROPERTY LOCATION

___2089 BLOOMING GROVE (TN)
___2001 WASHINGTONVILLE (VLG)
___2003 SO. BLOOMING GROVE (VLG)
___2289 CHESTER (TN)
___2201 CHESTER (VLG)
___2489 CORNWALL (TN)
___2401 CORNWALL (VLG)
___2600 CRAWFORD (TN)
___2800 DEERPARK (TN)
✓ 3089 GOSHEN (TN)
___3001 GOSHEN (VLG)
___3003 FLORIDA (VLG)
___3005 CHESTER (VLG)
___3200 GREENVILLE (TN)
___3489 HAMPTONBURGH (TN)
___3401 MAYBROOK (VLG)
___3689 HIGHLANDS (TN)
___3601 HIGHLAND FALLS (VLG)
___3889 MINISINK (TN)
___3801 UNIONVILLE (VLG)
___4089 MONROE (TN)
___4001 MONROE (VLG)
___4003 HARRIMAN (VLG)
___4005 KIRYAS JOEL (VLG)
___4289 MONTGOMERY (TN)
___4201 MAYBROOK (VLG)
___4203 MONTGOMERY (VLG)
___4205 WALDEN (VLG)
___4489 MOUNT HOPE (TN)
___4401 OTISVILLE (VLG)
___4600 NEWBURGH (TN)
___4800 NEW WINDSOR (TN)
___5089 TUXEDO (TN)
___5001 TUXEDO PARK (VLG)
___5200 WALLKILL (TN)
___5489 WARWICK (TN)
___5401 FLORIDA (VLG)
___5403 GREENWOOD LAKE (VLG)
✓ 5405 WARWICK (VLG)
___5600 WAWAYANDA (TN)
___5889 WOODBURY (TN)
___5801 HARRIMAN (VLG)
___5809 WOODBURY (VLG)

CITIES

___0900 MIDDLETOWN
___1100 NEWBURGH
___1300 PORT JERVIS

___9999 HOLD

NO. PAGES 12 CROSS REF.___
CERT. COPY___ ADD'L X-REF.___
MAP#___ PGS.___

PAYMENT TYPE: CHECK___
CASH___
CHARGE ✓
NO FEE___

Taxable
CONSIDERATION $ 0
TAX EXEMPT___
Taxable
MORTGAGE AMT. $___

MORTGAGE TAX TYPE:
___ (A) COMMERCIAL/FULL 1%
___ (B) 1 OR 2 FAMILY
___ (C) UNDER $10,000
___ (E) EXEMPT
___ (F) 3 TO 6 UNITS
___ (I) NAT.PERSON/CR. UNION
___ (J) NAT.PER-CR.UN/1 OR 2
___ (K) CONDO

Donna L. Benson
DONNA L. BENSON
ORANGE COUNTY CLERK

Received From Greenwald Law

RECORDED/FILED
01/06/2009/ 14:33:53
DONNA L. BENSON
County Clerk
ORANGE COUNTY, NY
FILE#20090001260
RT WY / BK 12768PG 0555
RECORDING FEES 105.00
TTX# 003290 T TAX 0.00
Receipt#970509 joanned

EASEMENT AGREEMENT

THIS AGREEMENT, made this 15th day of December 2008, between **ORANGE COUNTY**, having offices at 255 Main Street, Goshen, New York (hereinafter "**COUNTY**") and the **TOWN OF WALLKILL**, having offices at 99 Tower Drive, Middletown, New York (hereinafter "**TOWN**"), is for the purpose of conveying both temporary and permanent easements to the Town over County-owned property to ensure the continuation and preservation of the Town's access rights as set forth in the recitals herein.

WHEREAS, the Town owns property in the Towns of Goshen and Wawayanda, Orange County, New York (the "Echo Lake Property"), designated as Section 12, Block 1, Lot 24.2 on the tax map of the Town of Goshen and as Section 1, Block 1, Lot 40 in the Town of Wawayanda, and as described in Schedule "A" which is annexed hereto and incorporated herein; and

WHEREAS, the County is the owner of certain property located in the Town of Goshen, Orange County, New York (the "Premises"), described in Schedule "B", which is annexed hereto and incorporated herein; and

WHEREAS, historically, the Town for several years has accessed the Echo Lake Property through means of an unpaved pathway that is located near the Premises, and the Town wishes to continue to retain all access rights related to that access that it has possessed in the past; and

WHEREAS, historically, the Town for several years has also accessed the Echo Lake Property by traveling over the Premises with the County's permission; and

WHEREAS, it is in the best interests of the Town and the County that the Town continue to access the Echo Lake Property over the Premises subject to the terms and conditions set forth herein; and

WHEREAS, it is also possible that in the future, a third party may desire to purchase the Echo Lake Property; and

WHEREAS, the Town may need to grant a temporary access easement to a third party purchaser until access is available from the Echo Lake Property to Route 17 M; and

WHEREAS, the County, so as not to hinder access to the Echo Lake Property has agreed to grant the Town and/or its successors in title a temporary easement over the Premises described in Schedule "B" and as depicted on the survey in Schedule "C" for the purpose of giving access to a third party purchaser of the Echo Lake Property, subject to the terms and conditions described herein until such time permanent and viable access as defined herein is available from Route 17M to said third party purchaser or until the County shall commence construction to develop the portion of the Heritage Trail which forms the Premises subject to this easement Agreement; and

WHEREAS, the County has agreed, subject to the terms, conditions and limitations contained in section 2 of this Agreement, to grant the Town, a permanent easement over the Premises described in Schedule "B" and as depicted on the survey in Schedule "C" for the purpose of ingress and egress to the Echo Lake Property for Town purposes, including but not limited to access by employees, agents, invitees, and third party designees for inspection, maintenance, and service of the Echo Lake Property and production wellheads; and

WHEREAS, the County has further agreed, subject to the terms, conditions and limitations contained in section 3 of this Agreement, to grant the Town and/or its successors in title, a permanent easement over the Premises described in Schedule "B" and as depicted on the survey in Schedule "C" for the use of emergency service vehicles, including fire, emergency medical services, police and other law enforcement agencies and emergency management responders; and

WHEREAS, the County and the Town wish to enter into this Agreement in the spirit of cooperation and goodwill, and to ensure the safe and appropriate use of the temporary and permanent easements over the Premises; and

WHEREAS, the County and the Town are authorized to enter the Agreement described herein pursuant to the provisions of Article 5-G of the General Municipal Law of the State of New York;

NOW, THEREFORE, in consideration of the mutual promises and representations contained herein, the County and the Town agree as follows:

1. The County (the "Grantor") hereby grants to the Town (the "Grantee") its agents, representatives, contractors and subcontractors, as well as its successors in title and any third party purchasers, subject to the terms and conditions herein, a temporary easement for ingress and egress over and upon County-owned property known as the

Premises, described in Schedule "B" and as depicted on the survey in Schedule "C" attached hereto and incorporated herein.

The Grantee agrees to request that any third parties utilizing the temporary easement over the Premises do not leave debris or vehicles on the Premises and have appropriate safety features in place, such as fencing, swing gates on the roadside of the crossing, earthened bollards and appropriate signage. It shall be the duty of any third parties utilizing the temporary easement over the Premises, and not the Grantee, to consult with the Orange County Department of Public Works Commissioner regarding which safety measures shall be implemented in utilizing the Premises. It shall further be the duty of any third party utilizing the temporary easement over the Premises, and not the Grantee, to remove any debris or vehicles from the Premises and to have appropriate safety features in place when utilizing the temporary easement.

The temporary easement described in this Agreement shall terminate, upon whichever of the following events occurs earlier: 1) upon completion of an access road from Route 17M to the Echo Lake Property; or 2) at such time as the County shall commence construction on the part of the Heritage Trail within the Premises subject to this easement Agreement. For purposes of this Agreement, the first event set forth in this paragraph shall be defined as complete upon the construction of an approved curb cut onto Route 17M and an access road sufficient to allow vehicles to access the Echo Lake Property.

2. The Grantor hereby grants to Grantee, subject to the terms and conditions herein, a permanent easement to the Town, its employees, agents, invitees, and third party designees to enter over and upon the Premises described in Schedule "B" and as depicted on the survey in Schedule "C" for the purposes of ingress and egress to the Echo Lake Property for Town purposes, including but not limited to access by employees, agents, invitees, and third party designees of the Town for the inspection, maintenance, and service of the Echo Lake Property and production wellheads; and

a. Such permanent easement shall be acceptable to and approved by the Orange County Commissioner of Public Works as to design and specifications.

b. In the event that the Town conveys the Premises or any part thereof, the Town shall retain the permanent easement for Town purposes, as described herein in this section 2. Notwithstanding any other provision of this Agreement to the contrary, the purposes granted by the permanent easement under this section 2 shall not run with the land, and shall be retained by the Town, and not be part of any conveyance of the Premises.

3. The Grantor hereby further grants to Grantee and its successors in title, subject to the terms and conditions herein, a permanent easement to the Town, its employees, agents, invitees, and third party designees to enter over and upon the Premises described in Schedule "B" and as depicted on the survey in Schedule "C" for the use by emergency service vehicles, including fire, emergency medical services, police and other law enforcement agencies and emergency management responders. In the event that the Town conveys the Premises or any part thereof, the permanent easement granted in this section 3 shall run with the land to benefit Grantee's successors in title.

4. This Agreement is made upon the following express conditions and reservations which shall run with the land and be binding upon and inure to the benefit and burden of Grantor and Grantee and/or its successors in title:

a. The Grantee and/or its successors in title, at its own cost and expense, shall be responsible for the design, construction, maintenance and repair of all improvements and modifications associated with this easement, to the site of any crossings of the Premises, including but not limited to the installation and operation of safety devices, lights, signals, gates, signage and other safety measures as deemed reasonably appropriate and necessary by the Orange County Commissioner of Public Works and which may be modified from time to time as determined to by the Commissioner to be reasonably

necessary to protect the public health, welfare and safety. The Grantee retains the right to seek indemnification and recovery of the cost of any damage caused by third parties to any such improvements and modifications to the site of any crossings of the Premises from third parties utilizing the Premises.

b. Grantee, at its own cost and expense, agrees to maintain in full force and effect at all times public liability insurance in an amount of at least $1,000,000 with an insurance company authorized and licensed to do business in the State of New York insuring against bodily injury and property damage which may be caused to person or property as a result of the Grantee's use of the Premises associated with the permanent easement. The County, its officers, employees and agents, shall be named as an additional insured under such policy. Upon execution of this Agreement, the Town shall deliver to Grantor a certificate evidencing the existence of such insurance.

c. Any third party purchaser of the Echo Lake Property, or any agent, designee, or invitee of a third party that utilizes the temporary easement over the Premises shall at its own cost and expense, agree to maintain in full force and effect at all times liability insurance coverage in the amount of $1,000,000, with companies authorized and licensed to do business in the State of New York insuring against bodily injury and property damage which may be caused to person or property as a result of a third party's use of the Premises associated with the temporary easement.

The Town and the County, their officers, employees and agents, shall be named as additional insureds under such policy, and both shall be provided with proof of coverage by delivery of a declaration and a certificate of insurance evidencing the existence of the required coverage.

It shall be the affirmative duty of any third party purchaser of the Echo Lake Property, or any agent, designee, or invitee of a third party that utilizes the temporary easement over the Premises to provide proof of such insurance coverage to the

satisfaction of the Town and the County prior to its use of the Premises. The Town and the County shall not be liable for the failure to assure the existence of or to request proof of adequate insurance coverage from the developer, or any third party that utilizes the Premises by way of the temporary easement. The Town and the County shall also not be liable for any personal injury or property loss accruing during a period of lapsed insurance coverage of developer, or any third party that utilizes the Premises by way of the temporary easement. The Town and the County shall further not be liable to or have the duty to indemnify any third party for any property damage or personal injuries accruing to any of its agents, designees, employees, or invitees who utilize the Premises by way of the temporary easement.

d. Grantee and/or its successors in title, hereby release, indemnify, and hold the County, its officers, employees and agents, harmless from and against any and all costs, liabilities, claims, liens, encumbrances, losses, damages or causes of action arising out of actions taken by Grantee, or its officers, employees, agents, representatives, contractors, and subcontractors in conjunction with Grantee's exercise of its rights arising under this Agreement in conjunction with the temporary or permanent easement, including reasonable attorney's fees and costs incurred in connection with any such claim or action or proceeding brought hereon, except for gross negligence on the part of the County, its officers, employees, agents, contractors and subcontractors. Grantee shall require any third party that may benefit from the use of these easements to indemnify the original Grantor, County of Orange, as well as Grantee Town of Wallkill, as provided for in this sub-paragraph.

e. Upon the execution of a Bargain and Sale Deed by Grantee, and the acceptance of the same by a third-party purchaser within two years from the date of the execution of this Agreement, Grantee shall relinquish all right, title and interest it may have in the "unpaved pathway" referenced on page one (1) of this Agreement. Should Grantee be unable to sell the Echo Lake Property to a third-party purchaser within two years

from the date of the execution of this Agreement, Grantee shall retain all right, title and interest it may have in the "unpaved pathway" referenced on page one (1) of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first written above.

COUNTY OF ORANGE

By: _____
EDWARD A. DIANA
COUNTY EXECUTIVE

TOWN OF WALLKILL

By: _____
JOHN WARD
SUPERVISOR

ACKNOWLEDGMENT

State of New York)
) ss.:
County of Orange)

On the 15th day of December 2008, before me, the undersigned, personally appeared, **EDWARD A. DIANA**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

MARY J. HENRICI
Notary Public, State of New York
Qualified in Orange County
My Commission Expires Dec. 31, 2009

Mary J Henrici
Notary Public

State of New York)
) ss.:
County of Orange)

On the 12 day of December 2008, before me, the undersigned, personally appeared, **JOHN WARD**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Stephanie A. Capria
Notary Public

STEPHANIE A. CAPRIA
NOTARY PUBLIC - STATE OF NEW YORK
NO. 01CA6145533
QUALIFIED IN ORANGE COUNTY
MY COMMISSION EXPIRES MAY 9, 2010

8

TOTAL P.009

SCHEDULE A

PARCEL I

BEGINNING in the centerline of an existing bridge on Echo Lake Road at its intersection with the centerline of the Wallkill River; thence from said point of beginning following approximately along the Wallkill River on the following two courses and distances: South 21°-47'-31" West 32.20' to an angle point; thence South 07°-48'-14" West 10.16' to a point in the northerly right-of-way line of the former Erie Lackawanna Railroad, now abandoned; thence along the northerly side of said abandoned railroad, said line being marked in part by the remains of an old railroad fence, on the following several courses and distances: North 69°-15'-18" West 300.70'; thence North 67°-52'-37" West 291.08'; thence North 69°-15'-18" West 80.0'; thence on a curve to the left having a radius of 1,949.85', an arc distance of 628.42' to a point as described by the cord North 78°-29'-16" West 625.70'; thence South 86°-51'-04" West 102.15'; thence on a curve to the left having a radius of 1,942.85', an arc distance of 407.66' to a point as described by the cord South 83°-16'-04" West 406.92'; thence South 79°-41'-05" West 102.15'; thence South 69°-45'-06" West 306.29'; thence South 60°-18'-44" West 203.57'; thence South 59°-50'-42" West 380.0'; thence on a curve to the right having a radius of 1,876.86', an arc distance of 461.05' to a point as described by the cord South 66°-54'-46" West 461.88'; thence South 79°-01'-23" West 196.30'; thence on a curve to the right having a radius of 1,869.85', an arc distance of 577.82' to a point in the end of a stone wall in the line of lands now or formerly of Prickett as described in Liber 1989, page 39, of Orange County Deed Records as described by the cord South 88°-50'-11" West 575.53'; thence along the line of Prickett as marked by a stone wall North 26°-17'-05" East 86.14'; thence on a line which continues along a stone wall North 49°-31'-09" East 335.91' to a point in the end of a stone wall; thence continuing on the same line marked by no physical possession, passing from the Town of Goshen into the Town of Wawayanda, North 49°-31'-09" East 797.25' to a point in the centerline of Echo Lake Road; thence along the centerline of Echo Lake Road on the following several courses and distances: North 62°-50'-56" East 290.08'; thence North 63°-24'-59" East 634.03'; thence North 70°-55'-37" East 75.95'; thence North 76°-43'34" East 60.44'; thence North 81°-25'-04" East 130.52'; thence leaving Echo Lake Road South 17°-56'-19" East 140.0' to a point inside Echo Lake and in the existing town line between the Town of Wawayanda and the Town of Goshen; thence passing through Echo Lake and along the town line between the two towns on the following two courses and distances: North 72°-03'-41" East 330.0'; thence South 86°-41'-19" East 350.33' to a point in the centerline of Echo Lake Road; thence leaving said town line and passing through the Town of Goshen and along the centerline of Echo Lake Road on the remaining courses and distances: South 37°-17'-14" East 225.0'; thence South 46°-08'-58" East 79.42'; thence South 49°-21'-50" East 690.65'; thence South 64°-11'-18" East 165.68'; thence South 69°-05'-19" East 306.19' to the point of beginning.

Containing 39.839± acres.

PARCEL II

Also with the above described parcel goes a second parcel of land situated on the southerly side of the former Erie Lackawanna Railroad in the Town of Goshen, said parcel being more accurately bounded and described as follows:

BEGINNING at the intersection of the southerly right-of-way line of the former Erie Lackawanna Railroad with the approximate centerline of the Wallkill River, said point of beginning being located South 07°-47'-31" West 67.61' from the end of the second course of the above described 39.839± acre parcel, said point of beginning being in the line of lands of the Al Turi Landfill, Inc. as described in Liber 2299, page 374, of Orange County Deed Records; thence from said point of beginning and along a line which follows along the line of the Al Turi Landfill, Inc. on the following several courses and distances: South 07°-47'-31" West 1,054.02'; thence South 34°-47'-31" West 1,306.80'; thence South 39°-42'-29" East 29.70'; thence South 17°-02'-31" West 128.70' to a point in the approximate centerline of the Wallkill River; thence on a line which follows the Wallkill River on the following two courses and distances: South 40°-47'-31" West 198.00'; thence South 44°-17'-31" West 446.16' to a point on the extension of an existing fence line; thence North 49°-01'-25" West 1,333.39' to a fence and wall corner marking a corner of lands now or formerly of the Mid-Hudson Psychiatric Center as described in Liber 1838, page 261, of Orange County Deed Records; thence along the line of lands of Mid-Hudson Psychiatric Center on the following two courses and distances: on a line which follows along a wall North 48°-14'-42" West 1,470.17' to a fence and wall corner; thence continuing along the same lands following along a fence on the following courses and distances: North 41°-54'-12" East 331.01'; thence North 46°-38'-59" East 172.90'; thence North 50°-19'-54" East passing over the end of the fence at 551.84' a total distance of 672.33' to a point in the southerly right-of-way line of the former Erie Lackawanna Railroad, now abandoned; thence along the line of said railroad as marked in part by a fence post on the remaining courses and distances:North 59°-50'-42" East 370.15'; thence North 67°-13'-22" East 196.72'; thence North 69°-45'-06" East 292.15'; thence North 65°-54'-05" East 99.29'; thence on a curve to the right having a radius of 1,876.85', an arc distance of 393.82' to a point as described by the cord North 83°-16'-04" East 393.09'; thence South 85°-08'-25" East 98.34'; thence on a curve to the right having a radius of 1,869.85, and arc distance of 602.63' to a point as described by the cord South 78°-29'-16" East 600.03'; thence South 69°-15'-18" East 80.0'; thence South 70°-37'-59" East 291.08'; thence South 69°-15'-18" East 315.88' to the point of beginning.

Containing 146.185± acres.

The foregoing description being taken from a survey prepared by Kenneth S. Carmichael, P.L.S., dated August 31, 1987.

SUBJECT to easements and grants of record.

BEING the same premises described in deed from J. Earle Hook to Kimberly Land Company, a partnership, dated April 6, 1965 and recorded in the Orange County Clerk's Office on April 6, 1965 in Liber 1706 of deeds at page 417.

ALSO BEING the same premises described in deeds recorded in Liber 2220 cp 512 and Liber 2620 cp 213, and Liber 2636 cp 292 and Liber 2750 cp 252.

EUSTANCE & HOROWITZ, P.C.
CONSULTING ENGINEERS ■ LAND PLANNERS ■ LAND SURVEYORS

July 16, 2007
Revised December 18, 2008

SCHEDULE B

DESCRIPTION FOR:
50' WIDE ACCESS EASEMENT
TO BE GRANTED TO
THE TOWN OF WALLKILL
BY THE COUNTY OF ORANGE

All that certain that lot, piece or parcel of land situate in the Town of Goshen, County of Orange, State of New York and being more accurately bounded and described as follows:

Beginning at a monument found on the southerly right-of-way line of the former Erie-Lackawanna Railroad, now lands of the County of Orange, said monument marking the westerly corner of a 5.29± acre parcel being retained by the Town of Wallkill as shown on a plan entitled "Echo Lake Site Owned by the Town of Wallkill" dated June 19, 2007 and last revised January 17, 2008 as prepared by Eustance & Horowitz, P.C.; thence from said point of beginning and crossing lands of the County of Orange, North 20°-44'-42" East 65.98' to a point on the northerly right-of-way line of lands of the County of Orange and in the line of other lands owned by the Town of Wallkill; thence along said line, South 69°-15'-18" East 50.00' to a point; thence crossing lands of the County of Orange, South 20°-44'-42" West 65.98' to a point in the southerly right-of-way line of the former Erie-Lackawanna Railroad now lands of the County of Orange and in the northerly line of the 5.29± acre parcel previously mentioned above; thence along said line, North 69°-15'-18" West 50.00' to the point of beginning.

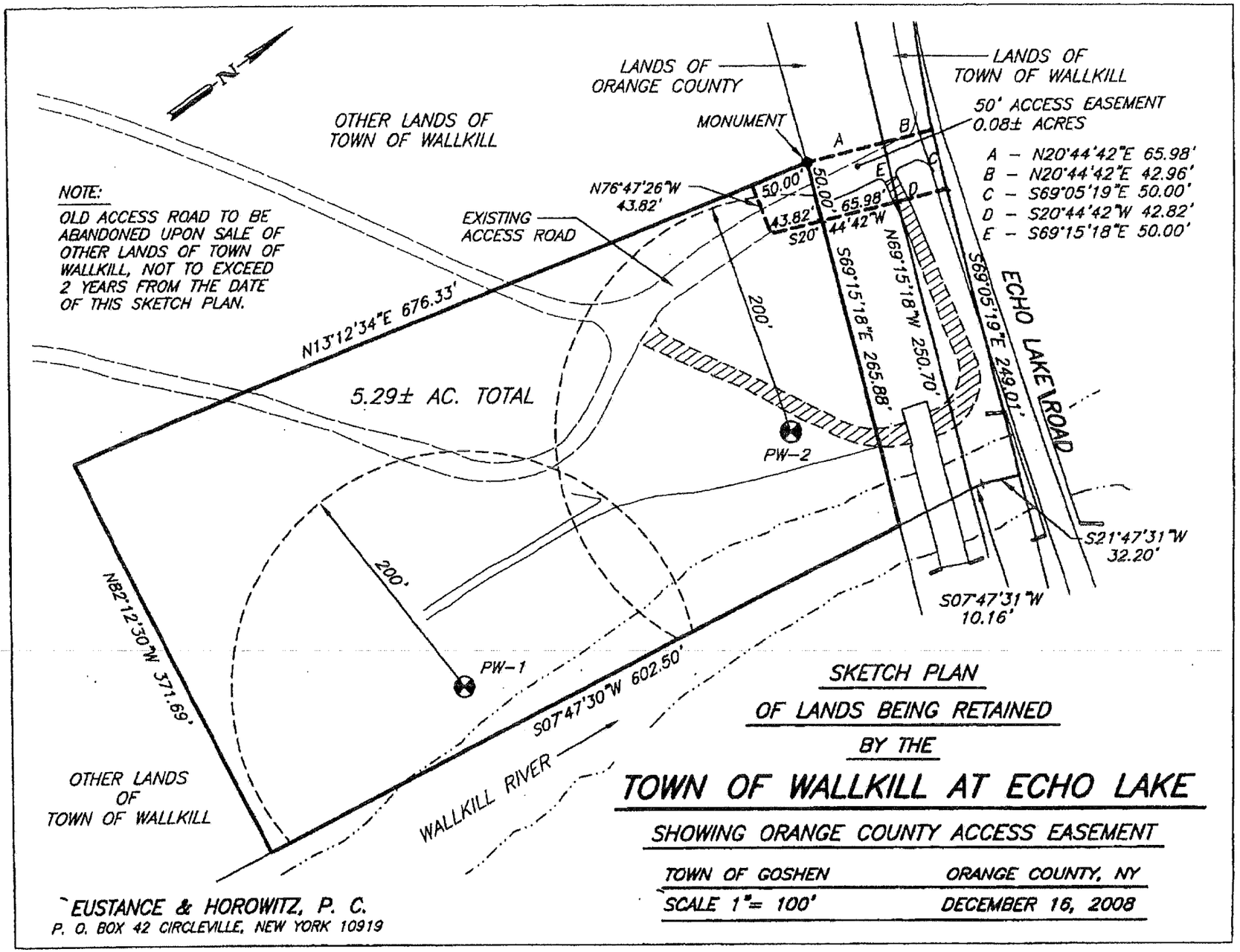
Containing 0.08± acres.

KSC/lk

See Sketch Attached

072357 echo lake lands rev

P.O. BOX 42 CIRCLEVILLE, NY 10919 845-361-4541 FAX 845-361-1045



SKETCH PLAN
OF LANDS BEING RETAINED
BY THE
TOWN OF WALLKILL AT ECHO LAKE
SHOWING ORANGE COUNTY ACCESS EASEMENT

TOWN OF GOSHEN	ORANGE COUNTY, NY
SCALE 1"= 100'	DECEMBER 16, 2008

EUSTANCE & HOROWITZ, P. C.
P. O. BOX 42 CIRCLEVILLE, NEW YORK 10919

ORANGE COUNTY CLERK'S OFFICE RECORDING PAGE

THIS PAGE IS PART OF THE INSTRUMENT – DO NOT REMOVE

TYPE IN BLACK INK:
NAME(S) OF PARTY(S) TO DOCUMENT

Goshen: 12 1 24.2 ~~Wawayanda: 1 1 40~~
SECTION____BLOCK____LOT____

Concrete Properties, LLC

TO

Town of Wallkill

RECORD AND RETURN TO:
(name and address)

Greenwald Law Offices
Attn: Karen M. Alt, Esq.
99 Brookside Avenue
Chester, New York 10918

THIS IS PAGE ONE OF THE RECORDING

ATTACH THIS SHEET TO THE FIRST PAGE OF EACH
RECORDED INSTRUMENT ONLY

DO NOT WRITE BELOW THIS LINE

INSTRUMENT TYPE: DEED____MORTGAGE____SATISFACTION____ASSIGNMENT____OTHER License

PROPERTY LOCATION

____2089 BLOOMING GROVE (TN)
____2001 WASHINGTONVILLE (VLG)
____2003 SO. BLOOMING GROVE (VLG)
____2289 CHESTER (TN)
____2201 CHESTER (VLG)
____2489 CORNWALL (TN)
____2401 CORNWALL (VLG)
____2600 CRAWFORD (TN)
____2800 DEERPARK (TN)
__X__3089 GOSHEN (TN)
____3001 GOSHEN (VLG)
____3003 FLORIDA (VLG)
____3005 CHESTER (VLG)
____3200 GREENVILLE (TN)
____3489 HAMPTONBURGH (TN)
____3401 MAYBROOK (VLG)
____3689 HIGHLANDS (TN)
____3601 HIGHLAND FALLS (VLG)
____3889 MINISINK (TN)
____3801 UNIONVILLE (VLG)
____4089 MONROE (TN)
____4001 MONROE (VLG)
____4003 HARRIMAN (VLG)
____4005 KIRYAS JOEL (VLG)
____4289 MONTGOMERY (TN)
____4201 MAYBROOK (VLG)
____4203 MONTGOMERY (VLG)
____4205 WALDEN (VLG)
____4489 MOUNT HOPE (TN)
____4401 OTISVILLE (VLG)
____4600 NEWBURGH (TN)
____4800 NEW WINDSOR (TN)
____5089 TUXEDO (TN)
____5001 TUXEDO PARK (VLG)
____5200 WALLKILL (TN)
____5489 WARWICK (TN)
____5401 FLORIDA (VLG)
____5403 GREENWOOD LAKE (VLG)
____5405 WARWICK (VLG)
____5600 WAWAYANDA (TN)
____5889 WOODBURY (TN)
____5801 HARRIMAN (VLG)
____5809 WOODBURY (VLG)

CITIES

____0900 MIDDLETOWN
____1100 NEWBURGH
____1300 PORT JERVIS

____9999 HOLD

NO. PAGES 11 CROSS REF.____
CERT. COPY____ ADD'L X-REF.____
MAP#____ PGS.____

PAYMENT TYPE: CHECK CP
CASH____
CHARGE____
NO FEE____

Taxable
CONSIDERATION $ 0
TAX EXEMPT____
Taxable
MORTGAGE AMT. $____

MORTGAGE TAX TYPE:
___ (A) COMMERCIAL/FULL 1%
___ (B) 1 OR 2 FAMILY
___ (C) UNDER $10,000
___ (E) EXEMPT
___ (F) 3 TO 6 UNITS
___ (I) NAT.PERSON/CR. UNION
___ (J) NAT.PER-CR.UN/1 OR 2
___ (K) CONDO

Donna L. Benson
DONNA L. BENSON
ORANGE COUNTY CLERK

Received From Gill Alt

RECORDED/FILED
04/13/2009/ 11:34:23
DONNA L. BENSON
County Clerk
ORANGE COUNTY, NY
FILE#20090034175
RT WY / BK 12807PG 1681
RECORDING FEES 100.00
TTX# 005074 T TAX 0.00
Receipt#1009754 joanned

PERMANENT LICENSE AGREEMENT

THIS AGREEMENT, made this 8th day of April 2009, between **CONCRETE PROPERTIES, LLC**, having offices at 130 Crotty Road, Middletown, New York 10941 (hereinafter "**CONCRETE PROPERTIES**"), and the **TOWN OF WALLKILL**, having offices at 99 Tower Drive, Middletown, New York (hereinafter "**TOWN**"). For purposes of construction of the terms contained herein, any reference to the words "CONCRETE PROPERTIES" or "TOWN" shall be construed to include within its meaning the successors and/or assigns of "CONCRETE PROPERTIES" and/or "TOWN".

The purpose of this Agreement is to set forth the rights, responsibilities, terms and conditions of the parties' use of two well heads located on a five (5) acre well site (the legal description of which is annexed hereto as **Exhibit A**), generally known as Lot Number 1 (the "Lot Number 1 premises"), located on the Echo Lake property on Echo Lake Road, being a portion of the premises described in a deed from the Town to Concrete Properties by a deed dated April 8, 2009 and ~~intended to be~~ recorded ~~simultaneously~~ herewith. **NOW, THEREFORE**, in consideration of the mutual promises and representations contained herein, Concrete Properties and the Town agree as follows:

4/10/09 rec'd, liber 12807 p171 MG

Notwithstanding the conveyance of the Lot Number 1 premises to Concrete Properties, the parties agree that the Town shall retain its rights to use the water resources generated by the well head sites located there, as well as permanent access rights to enter upon, over, across and through the Lot Number 1 premises and avail itself of the water supply located there upon the following terms and conditions:

(a) Concrete Properties hereby grants to the Town, a permanent license for the maintenance, construction, improvement, repair, operation and for the installation of pipes, lines, conduits and other appurtenances and improvements on the Lot Number 1 premises that may be reasonably required to provide, obtain, sell, deliver, truck, pick-up, pump and/or otherwise facilitate the generation and use of the water on the Property or for use at off-site locations in the Town's sole discretion. Said permanent license for the Lot Number 1 premises shall cover the lands and premises shown and described in Exhibit A annexed hereto. The permanent license granted by Concrete Properties to the Town for the Lot Number 1 premises, shall not be interpreted as limiting Concrete Properties from drawing water from the well sites with its own pump or pumps, and Concrete Properties, its successors or assigns shall have the right to utilize the well heads and water located on the Lot Number 1 premises for its on site use on the Property pursuant to the provisions of clause (c) below.

(b) The Town, its successors and assigns shall indemnify and hold harmless Concrete Properties, its successors and assigns from any and all claims for injury and/or damages of any kind or nature whatsoever for injury and damages to any third parties that are not caused by the negligence of Concrete Properties, its successors or assigns, their agents, servants, employees or licensees resulting from the use and occupancy of the described premises by the Town, its successors, assigns, agents, servants, employees and/or licensees. Said indemnification shall be supported by a policy of general liability insurance naming Concrete Properties and its successors or assigns as an additional insured for no less than $1,000,000 for each occurrence of personal injury and $100,000 for

property damage. Should Concrete Properties wish to change said additional insureds in the future, it is the duty of Concrete Properties to notify the Town in writing of said change by furnishing notice to the Town Clerk of the Town of Wallkill by certified mail, return receipt requested, or by means of another nationally recognized delivery service with proof of delivery capability. Concrete Properties, its successors and assigns shall indemnify and hold harmless the Town, its successors and assigns from any and all claims for injury and/or damages of any kind or nature whatsoever for injury and damages to any third parties that are not caused by the negligence of the Town, its successors or assigns, their agents, servants, employees or licensees resulting from the use and occupancy of the described premises by Concrete Properties, its successors, assigns, agents, servants, employees and/or licensees. Said indemnification shall be supported by a policy of general liability insurance naming the Town and its successors or assigns as an additional insured for no less than $1,000,000 for each occurrence of personal injury and $100,000 for property damage. Should the Town wish to change said additional insureds in the future, it is the duty of the Town to notify Concrete Properties in writing of said change by furnishing notice by certified mail, return receipt requested, or by means of another nationally recognized delivery service with proof of delivery capability.

(c) Concrete Properties, its successors and assigns intend to develop the Property, including the premises purchased by Tetz Family, LLC, an affiliated company of Concrete Properties and Assignee, from Al Turi Landfill, Inc. by deed dated September 18, 2007 ("Al Turi parcel"). The Town agrees that Concrete Properties shall have the right to draw water from the Lot Number 1 premises for

use on the Property as well as the Al Turi parcel for all the water needs required pursuant to subdivision and site plan approvals that Concrete Properties, its successors or assigns, may obtain from the Planning Board of the Town of Goshen or any other governmental subdivision or agency from which approvals may be required in order to construct any structures on the Property and the Al Turi parcel. Concrete Properties, its successors or assigns shall have the right to use water resources generated by these well sites for on-site use on the Property as well as for on site use on the Al Turi parcel, but Concrete Properties shall not have the right to use said water resources for off-site purposes or for sale to third parties, other than those who may lease, rent, occupy and/or own the facilities that may be constructed on the Property and the Al Turi parcel. Concrete Properties, its successors and assigns shall have the right to install pumps, pipes, holding tanks, water purification facilities, distribution pipes and any and all other equipment necessary in order to draw water it requires for its development on the Property and the Al Turi parcel. During the period of time that Concrete Properties and its successors and assigns hold title to the Lot Number 1 premises, the Town shall have the right but not the obligation to enter upon the Lot Number 1 premises, for the purposes of the maintenance and repair of the land constituting the Lot Number 1 premises, in order to facilitate the Town's access to and use of the well heads. At no time may Concrete Properties, its successors and assigns sell or permit the use of aforementioned water resources to third parties who do not lease, rent, occupy or own the facilities that may be constructed on the Property and the Al Turi parcel. At the time the Town elects to avail itself of its rights to draw water from the well heads located on the Lot Number 1 premises,

the parties agree to undertake in good faith further negotiations regarding the nature and scope of the water usage by the parties.

(d) If the Town elects to avail itself of its rights pursuant to the permanent license granted herein for the Lot Number 1 premises to draw water from the well heads located on said premises, the Town shall install any and all equipment it requires at its own cost and expense, however, the Town shall not be obligated to pay Concrete Properties any monies for availing itself of its rights. The Town shall be entitled to draw water from the well heads located on the Lot Number 1 premises regardless of whether ownership of the Lot Number 1 premises is ever re-conveyed back to the Town in the future, in accordance with sections (e) – (g) herein. The Town shall have the right to install pumps, pipes, holding tanks, water purification facilities, distribution pipes and any and all other equipment necessary in order to draw the water it requires. If the Town's use requires a larger pump or an additional pump or pumps than the one or ones that are installed by Concrete Properties, its successors or assigns, then that pump or pumps shall be installed at the Town's sole cost and expense. By installing said pump or pumps, the Town shall not be obligated to provide Concrete Properties with water capacity from said pump(s), however the Town's installation of a larger pump or an additional pump or pumps shall not be interpreted as limiting Concrete Properties from drawing water from the well sites with its own pump or pumps. After the Town installs its pump(s), maintenance and repairs with respect to any well head where water is jointly drawn by the parties, as well as the cost of maintaining any jointly used pumps, shall be borne equally by the parties. If the Town and Concrete Properties do not jointly draw water from the same well head,

each party shall only be responsible for the maintenance and repair of any well head that it utilizes. In the event that the Town and Concrete Properties do not share any pump or pumps in the future, each party shall bear its own costs and expenses of maintaining the pump(s) and distribution systems used for their own purposes, along with any and all holding tanks and purification systems that the parties may use for their separate purposes. Nothing contained herein shall limit the parties in the future, from entering into further written agreements for the joint common use of the well heads and the sharing of costs and expenses thereof.

(e) As part of the permanent license to be granted by Concrete Properties, its successors and assigns to the Town for the use and maintenance of the well sites and to draw water from the same for the Town's use and purposes, Concrete Properties, its successors and/or assigns shall grant to the Town a non-assignable right and option to re-purchase the Lot Number 1 premises for the sum of One Hundred and 00/100 ($100.00) Dollars provided that Concrete Properties, or the Town acting as Concrete Properties' agent, is able to obtain subdivision approval from the applicable municipal authority having jurisdiction over the Lot Number 1 premises, prior to the demand for conveyance of said premises. Any costs and expenses encountered by Concrete Properties, its successors and assigns in obtaining subdivision approval shall be reimbursed by the Town, its successors or assigns. Within forty-five (45) days after proof of subdivision approval and any and all other approvals necessary to effectuate a conveyance, and upon payment of the sum of $100.00 by the Town to Concrete Properties, its successors or assigns, Concrete Properties, its successors or assigns shall execute a Bargain and Sale Deed with Covenant Against Grantor's Acts conveying

the Lot Number 1 premises to the Town. This right and option shall run for a period of twenty-one (21) years from the date of the closing of title for the sale of the premises by the Town to Concrete Properties, its successors or assigns. During said 21-year option period, Concrete Properties may not sell, transfer, or convey the Lot Number 1 premises to any other party other than the Town. In the event that the Town elects not to exercise said option within the twenty-one (21) year period specified herein, and/or Concrete Properties, or the Town acting as Concrete Properties' agent, is unable to obtain subdivision approval from the applicable municipal authority having jurisdiction over the Lot Number 1 premises, the Town shall retain in perpetuity all of its permanent license rights described herein. In addition, should Concrete Properties, or the Town acting as Concrete Properties' agent, not be able to obtain said subdivision approval, the Town, under its permanent license rights from Concrete Properties, shall still be entitled in perpetuity to build whatever pumps and/or other infrastructure necessary to avail itself of its permanent water rights from the well heads located on the Lot Number 1 premises.

(f) The Town's right and option to purchase the Lot Number 1 premises referenced in section (e) herein, and the conveyance associated therewith, shall run to the benefit solely of the Town, and no assignment of said rights shall run to any third party or assignee of the Town.

(g) If the Town repurchases the Lot Number 1 premises, Concrete Properties, its successors and assigns shall retain the right to draw its water needs for the Property and the Al Turi parcel as previously set forth herein, and the Town shall grant Concrete Properties, its successors and assigns a permanent license in

perpetuity to continue to use the Lot Number 1 premises in accordance with this Agreement and/or as amended by any other agreements the parties may enter into in the future. Upon purchase by and reconveyance to the Town of the Lot Number 1 premises, the Town shall become responsible for the maintenance and repair of the Lot Number 1 premises; however, Concrete Properties shall remain liable for any and all claims arising out of Concrete Properties' negligent maintenance and repair of the Lot Number 1 premises prior to conveyance of the same to the Town. The parties' respective rights and obligations with respect to the water capacity, pumps, distribution systems, holding tanks, and any other infrastructure associated with the extraction of water from the Lot Number 1 premises shall continue as set forth herein, unless otherwise amended by the parties hereto through subsequent agreement(s).

Dated:April 8, 2009

Town of Wallkill

By: _____
John F. Ward, Jr., Supervisor

Concrete Properties, LLC

By: _____
Gary Tetz, Member

ACKNOWLEDGMENT

State of New York)
) ss.:
County of Orange)

On the 8th day of April 2009, before me, the undersigned, personally appeared, **GARY TETZ**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity as a member of Concrete Properties, LLC, and that by his signature on the instrument, he is authorized to and did execute the same.

Linda Rank
NOTARY PUBLIC

Linda Rankin
Notary Public, State of NY
No. 01RA5060453
Qualified in Orange County
Commission Expires May 20, 2010

STATE OF NEW YORK)
) ss:
COUNTY OF ORANGE)

On the 8th day of April the year 2009 before me, the undersigned, personally appeared **JOHN F. WARD, JR.**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he is the Supervisor of the Town of Wallkill, and that he executed the same in his capacity as Supervisor with the authority of the Town Board of the Town of Wallkill, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Linda Rank
NOTARY PUBLIC

Linda Rankin
Notary Public, State of NY
No. 01RA5060453
Qualified in Orange County
Commission Expires May 20, 2010

EUSTANCE & HOROWITZ, P.C.
CONSULTING ENGINEERS ■ LAND PLANNERS ■ LAND SURVEYORS

June 25, 2007
Revised August 23, 2007
Revised September 17, 2007

EXHIBIT A

DESCRIPTION FOR:
LOT 1
ECHO LAKE SITE
TOWN OF GOSHEN

All that certain lot, piece or parcel of land situate in the Town of Goshen, County of Orange, State of New York, being designated as Lot 1 on map entitled "Sketch Plan for Echo Lake Site Owned by the Town of Wallkill" as prepared by Eustance & Horowitz, P.C. and dated June 19, 2007 and being more accurately bounded and described as follows:

Beginning at a point on the southerly line of the lands of Orange County (formerly lands of the Erie Lackawanna Railroad) and being on the westerly line of the lands N/F of Al Turi Landfill, Inc. (T.M. 12-1-1.2); said point of beginning also being in the approximate centerline of the Wallkill River; thence from said point of beginning and following in part along the Wallkill River, South 07°-47'-30" West 602.50' to a point on the westerly side of the Wallkill River; thence along the lot line between Lots 1 and 2 of the above-mentioned sketch plan on the following two courses and distances: North 82°-12'-30" West 371.69'; thence North 13°-12'-34" East 676.33' to a point in the southerly line of lands of Orange County (former Erie Lackawanna Railroad); thence along a portion of the southerly line of said lands, South 69°-15'-18" East 315.88' to the point or place of beginning.

Containing 5.00± acres.

WLC/TJB/je

072357 echo lane site-lot 1 desc rev-2

P.O. BOX 42 CIRCLEVILLE, NY 10919 845-361-4541 FAX 845-361-1045

ORANGE COUNTY CLERK'S OFFICE RECORDING PAGE

THIS PAGE IS PART OF THE INSTRUMENT – DO NOT REMOVE

TYPE IN BLACK INK:
NAME(S) OF PARTY(S) TO DOCUMENT

Concrete Properties, LLC

TO

Town of Wallkill

Goshen: 12 1 24.2
~~Wawayanda: 1 1 40~~
SECTION ____ BLOCK ____ LOT ____

RECORD AND RETURN TO:
(name and address)

Greenwald Law Offices
Attn: Karen M. Alt, Esq.
99 Brookside Avenue
Chester, New York 10918

THIS IS PAGE ONE OF THE RECORDING

ATTACH THIS SHEET TO THE FIRST PAGE OF EACH RECORDED INSTRUMENT ONLY

DO NOT WRITE BELOW THIS LINE

INSTRUMENT TYPE: DEED ____ MORTGAGE ____ SATISFACTION ____ ASSIGNMENT ____ OTHER License

PROPERTY LOCATION

___2089 BLOOMING GROVE (TN)
___2001 WASHINGTONVILLE (VLG)
___2003 SO. BLOOMING GROVE (VLG)
___2289 CHESTER (TN)
___2201 CHESTER (VLG)
___2489 CORNWALL (TN)
___2401 CORNWALL (VLG)
___2600 CRAWFORD (TN)
___2800 DEERPARK (TN)
X 3089 GOSHEN (TN)
___3001 GOSHEN (VLG)
___3003 FLORIDA (VLG)
___3005 CHESTER (VLG)
___3200 GREENVILLE (TN)
___3489 HAMPTONBURGH (TN)
___3401 MAYBROOK (VLG)
___3689 HIGHLANDS (TN)
___3601 HIGHLAND FALLS (VLG)
___3889 MINISINK (TN)
___3801 UNIONVILLE (VLG)
___4089 MONROE (TN)
___4001 MONROE (VLG)
___4003 HARRIMAN (VLG)
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___4289 MONTGOMERY (TN)
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___4600 NEWBURGH (TN)
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___5001 TUXEDO PARK (VLG)
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___5403 GREENWOOD LAKE (VLG)
___5405 WARWICK (VLG)
X 5600 WAWAYANDA (TN)
___5889 WOODBURY (TN)
___5801 HARRIMAN (VLG)
___5809 WOODBURY (VLG)

CITIES

___0900 MIDDLETOWN
___1100 NEWBURGH
___1300 PORT JERVIS

___9999 HOLD

NO. PAGES 11 CROSS REF. ____
CERT. COPY ____ ADD'L X-REF. ____
MAP# ____ PGS. ____

PAYMENT TYPE: CHECK ✓
CASH ____
CHARGE ____
NO FEE ____

Taxable
CONSIDERATION $ 0
TAX EXEMPT ____
Taxable
MORTGAGE AMT. $ ____

MORTGAGE TAX TYPE:
___ (A) COMMERCIAL/FULL 1%
___ (B) 1 OR 2 FAMILY
___ (C) UNDER $10,000
___ (E) EXEMPT
___ (F) 3 TO 6 UNITS
___ (I) NAT.PERSON/CR. UNION
___ (J) NAT.PER-CR.UNN OR 2
___ (K) CONDO

Donna L. Benson
DONNA L. BENSON
ORANGE COUNTY CLERK

Received From Gil Clet

RECORDED/FILED
04/13/2009/ 11:34:23
DONNA L. BENSON
County Clerk
ORANGE COUNTY, NY
FILE#20090034175
RT WY / BK 12807PG 1681
RECORDING FEES 100.00
TTX# 005074 T TAX 0.00
Receipt#1009754 joanned

PERMANENT LICENSE AGREEMENT

THIS AGREEMENT, made this 8th day of April 2009, between **CONCRETE PROPERTIES, LLC**, having offices at 130 Crotty Road, Middletown, New York 10941 (hereinafter "**CONCRETE PROPERTIES**"), and the **TOWN OF WALLKILL**, having offices at 99 Tower Drive, Middletown, New York (hereinafter "**TOWN**"). For purposes of construction of the terms contained herein, any reference to the words "CONCRETE PROPERTIES" or "TOWN" shall be construed to include within its meaning the successors and/or assigns of "CONCRETE PROPERTIES" and/or "TOWN".

The purpose of this Agreement is to set forth the rights, responsibilities, terms and conditions of the parties' use of two well heads located on a five (5) acre well site (the legal description of which is annexed hereto as **Exhibit A**), generally known as Lot Number 1 (the "Lot Number 1 premises"), located on the Echo Lake property on Echo Lake Road, being a portion of the premises described in a deed from the Town to Concrete Properties by a deed dated April 8, 2009 and ~~intended to be~~ recorded ~~simultaneously~~ herewith. **NOW, THEREFORE**, in consideration of the mutual promises and representations contained herein, Concrete Properties and the Town agree as follows:

4/10/09 incl. liber 12807 p171 TG

Notwithstanding the conveyance of the Lot Number 1 premises to Concrete Properties, the parties agree that the Town shall retain its rights to use the water resources generated by the well head sites located there, as well as permanent access rights to enter upon, over, across and through the Lot Number 1 premises and avail itself of the water supply located there upon the following terms and conditions:

(a) Concrete Properties hereby grants to the Town, a permanent license for the maintenance, construction, improvement, repair, operation and for the installation of pipes, lines, conduits and other appurtenances and improvements on the Lot Number 1 premises that may be reasonably required to provide, obtain, sell, deliver, truck, pick-up, pump and/or otherwise facilitate the generation and use of the water on the Property or for use at off-site locations in the Town's sole discretion. Said permanent license for the Lot Number 1 premises shall cover the lands and premises shown and described in Exhibit A annexed hereto. The permanent license granted by Concrete Properties to the Town for the Lot Number 1 premises, shall not be interpreted as limiting Concrete Properties from drawing water from the well sites with its own pump or pumps, and Concrete Properties, its successors or assigns shall have the right to utilize the well heads and water located on the Lot Number 1 premises for its on site use on the Property pursuant to the provisions of clause (c) below.

(b) The Town, its successors and assigns shall indemnify and hold harmless Concrete Properties, its successors and assigns from any and all claims for injury and/or damages of any kind or nature whatsoever for injury and damages to any third parties that are not caused by the negligence of Concrete Properties, its successors or assigns, their agents, servants, employees or licensees resulting from the use and occupancy of the described premises by the Town, its successors, assigns, agents, servants, employees and/or licensees. Said indemnification shall be supported by a policy of general liability insurance naming Concrete Properties and its successors or assigns as an additional insured for no less than $1,000,000 for each occurrence of personal injury and $100,000 for

property damage. Should Concrete Properties wish to change said additional insureds in the future, it is the duty of Concrete Properties to notify the Town in writing of said change by furnishing notice to the Town Clerk of the Town of Wallkill by certified mail, return receipt requested, or by means of another nationally recognized delivery service with proof of delivery capability. Concrete Properties, its successors and assigns shall indemnify and hold harmless the Town, its successors and assigns from any and all claims for injury and/or damages of any kind or nature whatsoever for injury and damages to any third parties that are not caused by the negligence of the Town, its successors or assigns, their agents, servants, employees or licensees resulting from the use and occupancy of the described premises by Concrete Properties, its successors, assigns, agents, servants, employees and/or licensees. Said indemnification shall be supported by a policy of general liability insurance naming the Town and its successors or assigns as an additional insured for no less than $1,000,000 for each occurrence of personal injury and $100,000 for property damage. Should the Town wish to change said additional insureds in the future, it is the duty of the Town to notify Concrete Properties in writing of said change by furnishing notice by certified mail, return receipt requested, or by means of another nationally recognized delivery service with proof of delivery capability.

(c) Concrete Properties, its successors and assigns intend to develop the Property, including the premises purchased by Tetz Family, LLC, an affiliated company of Concrete Properties and Assignee, from Al Turi Landfill, Inc. by deed dated September 18, 2007 ("Al Turi parcel"). The Town agrees that Concrete Properties shall have the right to draw water from the Lot Number 1 premises for

use on the Property as well as the Al Turi parcel for all the water needs required pursuant to subdivision and site plan approvals that Concrete Properties, its successors or assigns, may obtain from the Planning Board of the Town of Goshen or any other governmental subdivision or agency from which approvals may be required in order to construct any structures on the Property and the Al Turi parcel. Concrete Properties, its successors or assigns shall have the right to use water resources generated by these well sites for on-site use on the Property as well as for on site use on the Al Turi parcel, but Concrete Properties shall not have the right to use said water resources for off-site purposes or for sale to third parties, other than those who may lease, rent, occupy and/or own the facilities that may be constructed on the Property and the Al Turi parcel. Concrete Properties, its successors and assigns shall have the right to install pumps, pipes, holding tanks, water purification facilities, distribution pipes and any and all other equipment necessary in order to draw water it requires for its development on the Property and the Al Turi parcel. During the period of time that Concrete Properties and its successors and assigns hold title to the Lot Number 1 premises, the Town shall have the right but not the obligation to enter upon the Lot Number 1 premises, for the purposes of the maintenance and repair of the land constituting the Lot Number 1 premises, in order to facilitate the Town's access to and use of the well heads. At no time may Concrete Properties, its successors and assigns sell or permit the use of aforementioned water resources to third parties who do not lease, rent, occupy or own the facilities that may be constructed on the Property and the Al Turi parcel. At the time the Town elects to avail itself of its rights to draw water from the well heads located on the Lot Number 1 premises,

the parties agree to undertake in good faith further negotiations regarding the nature and scope of the water usage by the parties.

(d) If the Town elects to avail itself of its rights pursuant to the permanent license granted herein for the Lot Number 1 premises to draw water from the well heads located on said premises, the Town shall install any and all equipment it requires at its own cost and expense, however, the Town shall not be obligated to pay Concrete Properties any monies for availing itself of its rights. The Town shall be entitled to draw water from the well heads located on the Lot Number 1 premises regardless of whether ownership of the Lot Number 1 premises is ever re-conveyed back to the Town in the future, in accordance with sections (e) – (g) herein. The Town shall have the right to install pumps, pipes, holding tanks, water purification facilities, distribution pipes and any and all other equipment necessary in order to draw the water it requires. If the Town's use requires a larger pump or an additional pump or pumps than the one or ones that are installed by Concrete Properties, its successors or assigns, then that pump or pumps shall be installed at the Town's sole cost and expense. By installing said pump or pumps, the Town shall not be obligated to provide Concrete Properties with water capacity from said pump(s), however the Town's installation of a larger pump or an additional pump or pumps shall not be interpreted as limiting Concrete Properties from drawing water from the well sites with its own pump or pumps. After the Town installs its pump(s), maintenance and repairs with respect to any well head where water is jointly drawn by the parties, as well as the cost of maintaining any jointly used pumps, shall be borne equally by the parties. If the Town and Concrete Properties do not jointly draw water from the same well head,

each party shall only be responsible for the maintenance and repair of any well head that it utilizes. In the event that the Town and Concrete Properties do not share any pump or pumps in the future, each party shall bear its own costs and expenses of maintaining the pump(s) and distribution systems used for their own purposes, along with any and all holding tanks and purification systems that the parties may use for their separate purposes. Nothing contained herein shall limit the parties in the future, from entering into further written agreements for the joint common use of the well heads and the sharing of costs and expenses thereof.

(e) As part of the permanent license to be granted by Concrete Properties, its successors and assigns to the Town for the use and maintenance of the well sites and to draw water from the same for the Town's use and purposes, Concrete Properties, its successors and/or assigns shall grant to the Town a non-assignable right and option to re-purchase the Lot Number 1 premises for the sum of One Hundred and 00/100 ($100.00) Dollars provided that Concrete Properties, or the Town acting as Concrete Properties' agent, is able to obtain subdivision approval from the applicable municipal authority having jurisdiction over the Lot Number 1 premises, prior to the demand for conveyance of said premises. Any costs and expenses encountered by Concrete Properties, its successors and assigns in obtaining subdivision approval shall be reimbursed by the Town, its successors or assigns. Within forty-five (45) days after proof of subdivision approval and any and all other approvals necessary to effectuate a conveyance, and upon payment of the sum of $100.00 by the Town to Concrete Properties, its successors or assigns, Concrete Properties, its successors or assigns shall execute a Bargain and Sale Deed with Covenant Against Grantor's Acts conveying

the Lot Number 1 premises to the Town. This right and option shall run for a period of twenty-one (21) years from the date of the closing of title for the sale of the premises by the Town to Concrete Properties, its successors or assigns. During said 21-year option period, Concrete Properties may not sell, transfer, or convey the Lot Number 1 premises to any other party other than the Town. In the event that the Town elects not to exercise said option within the twenty-one (21) year period specified herein, and/or Concrete Properties, or the Town acting as Concrete Properties' agent, is unable to obtain subdivision approval from the applicable municipal authority having jurisdiction over the Lot Number 1 premises, the Town shall retain in perpetuity all of its permanent license rights described herein. In addition, should Concrete Properties, or the Town acting as Concrete Properties' agent, not be able to obtain said subdivision approval, the Town, under its permanent license rights from Concrete Properties, shall still be entitled in perpetuity to build whatever pumps and/or other infrastructure necessary to avail itself of its permanent water rights from the well heads located on the Lot Number 1 premises.

(f) The Town's right and option to purchase the Lot Number 1 premises referenced in section (e) herein, and the conveyance associated therewith, shall run to the benefit solely of the Town, and no assignment of said rights shall run to any third party or assignee of the Town.

(g) If the Town repurchases the Lot Number 1 premises, Concrete Properties, its successors and assigns shall retain the right to draw its water needs for the Property and the Al Turi parcel as previously set forth herein, and the Town shall grant Concrete Properties, its successors and assigns a permanent license in

perpetuity to continue to use the Lot Number 1 premises in accordance with this Agreement and/or as amended by any other agreements the parties may enter into in the future. Upon purchase by and reconveyance to the Town of the Lot Number 1 premises, the Town shall become responsible for the maintenance and repair of the Lot Number 1 premises; however, Concrete Properties shall remain liable for any and all claims arising out of Concrete Properties' negligent maintenance and repair of the Lot Number 1 premises prior to conveyance of the same to the Town. The parties' respective rights and obligations with respect to the water capacity, pumps, distribution systems, holding tanks, and any other infrastructure associated with the extraction of water from the Lot Number 1 premises shall continue as set forth herein, unless otherwise amended by the parties hereto through subsequent agreement(s).

Dated:April 8, 2009

Town of Wallkill

By: _____
John F. Ward, Jr., Supervisor

Concrete Properties, LLC

By: _____
Gary Tetz, Member

ACKNOWLEDGMENT

State of New York)
) ss.:
County of Orange)

On the 8th day of April 2009, before me, the undersigned, personally appeared, **GARY TETZ**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity as a member of Concrete Properties, LLC, and that by his signature on the instrument, he is authorized to and did execute the same.

Linda Rank
NOTARY PUBLIC

Linda Rank
Notary Public, State of NY
No. 01RA5060453
Qualified in Orange County
Commission Expires May 20, 2010

STATE OF NEW YORK)
) ss:
COUNTY OF ORANGE)

On the 8th day of April the year 2009 before me, the undersigned, personally appeared **JOHN F. WARD, JR.**, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he is the Supervisor of the Town of Wallkill, and that he executed the same in his capacity as Supervisor with the authority of the Town Board of the Town of Wallkill, and that by his signature on the instrument, the individual or the person upon behalf of which the individual acted, executed the instrument.

Linda Rank
NOTARY PUBLIC

Linda Rank
Notary Public, State of NY
No. 01RA5060453
Qualified in Orange County
Commission Expires May 20, 2010

EUSTANCE & HOROWITZ, P.C.
CONSULTING ENGINEERS ■ LAND PLANNERS ■ LAND SURVEYORS

June 25, 2007
Revised August 23, 2007
Revised September 17, 2007

EXHIBIT A

DESCRIPTION FOR:
LOT 1
ECHO LAKE SITE
TOWN OF GOSHEN

All that certain lot, piece or parcel of land situate in the Town of Goshen, County of Orange, State of New York, being designated as Lot 1 on map entitled "Sketch Plan for Echo Lake Site Owned by the Town of Wallkill" as prepared by Eustance & Horowitz, P.C. and dated June 19, 2007 and being more accurately bounded and described as follows:

Beginning at a point on the southerly line of the lands of Orange County (formerly lands of the Erie Lackawanna Railroad) and being on the westerly line of the lands N/F of Al Turi Landfill, Inc. (T.M. 12-1-1.2); said point of beginning also being in the approximate centerline of the Wallkill River; thence from said point of beginning and following in part along the Wallkill River, South 07°-47'-30" West 602.50' to a point on the westerly side of the Wallkill River; thence along the lot line between Lots 1 and 2 of the above-mentioned sketch plan on the following two courses and distances: North 82°-12'-30" West 371.69'; thence North 13°-12'-34" East 676.33' to a point in the southerly line of lands of Orange County (former Erie Lackawanna Railroad); thence along a portion of the southerly line of said lands, South 69°-15'-18" East 315.88' to the point or place of beginning.

Containing 5.00± acres.

WLC/TJB/je

072357 echo lane site-lot 1 desc rev-2

P.O. BOX 42 CIRCLEVILLE, NY 10919 845-361-4541 FAX 845-361-1045

Appendix H

BRIDGE DESIGN PLANS

FOR

AMY'S KITCHEN & SCIENCE OF THE SOUL

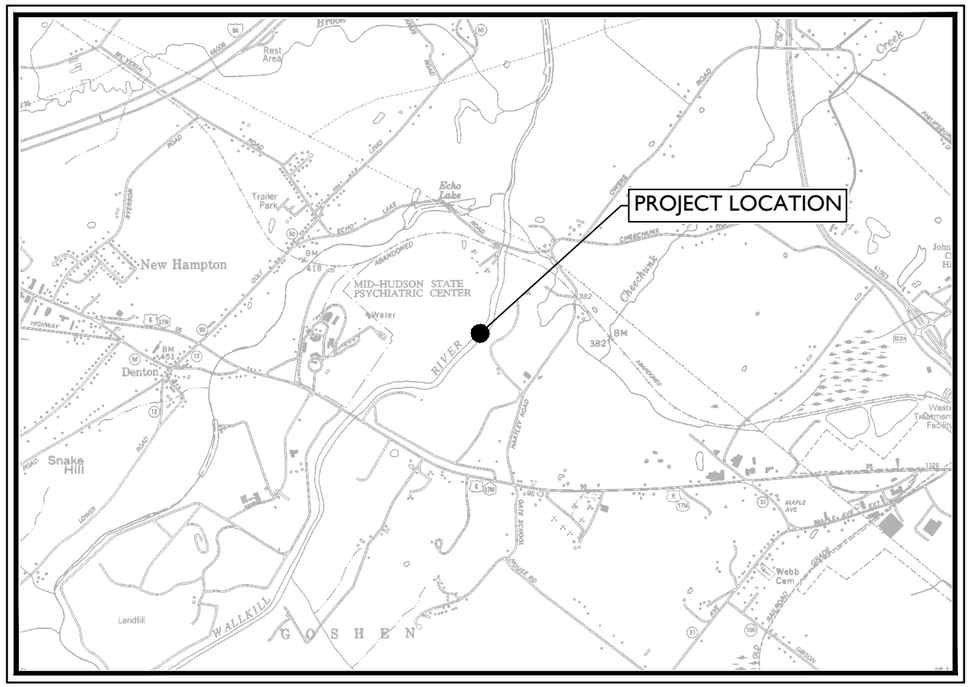
TRAINING CENTER LANE & HARTLEY ROAD

OVER THE WALLKILL RIVER

TOWN OF GOSHEN

ORANGE COUNTY, NEW YORK

PRELIMINARY PLANS



LOCATION MAP

SCALE: 1" = 1000'

INDEX OF SHEETS	
SHEET NUMBERS	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	TYPICAL SECTIONS
4	BRIDGE PLAN
5	BRIDGE PROFILE
6	BRIDGE ELEVATION
7	WEST ABUTMENT PLAN AND ELEVATION
8	EAST ABUTMENT PLAN AND ELEVATION
9	WEST ABUTMENT REINFORCEMENT PLAN
10	EAST ABUTMENT REINFORCEMENT PLAN
11	WEST ABUTMENT TYPICAL REINFORCEMENT SECTIONS
12	EAST ABUTMENT TYPICAL REINFORCEMENT SECTIONS
13	SUPERSTRUCTURE SLAB TRANSVERSE SECTION AND DETAILS
14	SUPERSTRUCTURE SLAB REINFORCEMENT PLAN
15	APPROACH SLAB PLAN AND DETAILS
16	BRIDGE RAILING DETAILS (BR-1)
17	BRIDGE RAILING DETAILS (BR-2)
18	BRIDGE RAILING DETAILS (BR-3)
19	BRIDGE RAILING DETAILS (BR-4)
20	GUIDERAIL LAYOUT PLAN
21	MISCELLANEOUS DETAILS

THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED JANUARY 1, 2016 TO GOVERN.

NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SHEETS DATED JANUARY 1, 2016 ARE APPLICABLE TO THIS PROJECT.

PREPARED BY:
ON:

PRELIMINARY

MASER CONSULTING P.A.
Customer Loyalty *through* Client Satisfaction
www.maserconsulting.com
Engineers ✖ Planners ✖ Surveyors
Landscape Architects ✖ Environmental Scientists
State of N.Y. Cert. of Authorization: 0008671/0008821

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

AS BUILT REVISIONS
DESCRIPTION OF WORK:

SIGNATURE _____ DATE _____

DOCUMENT NAME: C-CVER

AMY'S KITCHEN & SCIENCE OF THE SOUL
BRIDGE DESIGN
TRAINING CENTER LANE AND HARTLEY ROAD
TOWN OF GOSHEN
ORANGE COUNTY
STATE OF NEW YORK

PIN: AW08.03.70P BRIDGE/CULVERT:

CHESTNUT RIDGE OFFICE
777 Chestnut Ridge Road
Suite 202
Chestnut Ridge, NY 10977
Phone: 845.352.0411
Fax: 845.352.2611

NOTE: ALL UTILITY LOCATIONS SHOWN ARE QUALITY LEVEL (QLD).

COVER SHEET

ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

DRAWING No. CV-1

SHEET No. 1 OF 21

PRINT DATE: 6/28/2016

GENERAL NOTES:

1. NOTE: IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSION IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.
2. DESIGN SPECIFICATIONS: NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES WITH ALL PROVISIONS IN EFFECT AS OF _____. (FOR DESIGN PURPOSES, COMPRESSIVE STRENGTH OF CONCRETE FOR SUBSTRUCTURES AND DECK SLABS AT 28 DAYS: f 'c = 3,000S psi.)
3. DESIGN LIVE LOAD: HL-93
4. CONSTRUCTION SPECIFICATIONS: "STANDARD SPECIFICATIONS, CONSTRUCTION AND MATERIALS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, OFFICE OF ENGINEERING, DATED MAY 1, 2008, WITH CURRENT ADDITIONS AND MODIFICATIONS.
5. DETAILS ON THE DRAWINGS LABELED AS "NOT TO SCALE" ARE INTENTIONALLY DRAWN NOT TO SCALE FOR VISUAL CLARITY. ALL OTHER DETAILS FOR WHICH NO SCALE IS SHOWN ARE DRAWN PROPORTIONAL AND ARE FULLY DIMENSIONED.
6. ALL SHOP DRAWINGS SUBMITTED FOR THIS PROJECT SHALL BE IN US CUSTOMARY UNITS.
7. THE COST OF WATER USED FOR COMPACTION OF SELECT FILL ITEMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203.21 - SELECT STRUCTURE FILL.
8. THE COST OF ALL JOINT MATERIAL SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE VARIOUS ITEMS OF THE CONTRACT, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
9. THE LOAD RATINGS ARE IN ACCORDANCE WITH THE AASHTO MANUAL FOR BRIDGE EVALUATION.
10. THE BRIDGE SHALL BE MAINTAINED IN ACCORDANCE WITH THE GUIDELINES CONTAINED IN THE CURRENT EDITION OF THE AASHTO MAINTENANCE MANUAL: THE MAINTENANCE AND MANAGEMENT OF ROADWAYS AND BRIDGES.
11. CLEARING AND GRUBBING SHALL BE REQUIRED WITHIN CONSTRUCTION LIMITS. COST TO BE INCLUDED UNDER ITEM 201.06.
12. WHENEVER ITEMS IN THE CONTRACT REQUIRE MATERIALS TO BE REMOVED AND DISPOSED OF, THE COST OF SUPPLYING A DISPOSAL AREA AND TRANSPORTATION TO THAT AREA SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THOSE ITEMS.
13. THERE SHALL BE NO CLAIM AGAINST THE OWNER MADE BY THE CONTRACTOR FOR WORK PERTAINING TO MODIFICATIONS AS MAY BE REQUIRED DUE TO ANY DIFFERENCE BETWEEN ACTUAL FIELD CONDITIONS AND THOSE SHOWN BY THE DETAILS AND DIMENSIONS ON THE CONTRACT PLANS.
14. THE CONTRACTOR SHALL SURVEY AND STAKEOUT FOR CONSTRUCTION OF STRUCTURE AND APPROACHES. COST TO BE INCLUDED UNDER ITEM 625.01.
15. THE CONTRACTOR IS ADVISED THAT ADDITIONAL "NOTES" WILL BE FOUND ON SUBSEQUENT SHEETS OF THE CONTRACT PLANS AND SUCH "NOTES", WHILE PERTAINING TO THESE SPECIFIC SHEETS THEY ARE PLACED ON, ALSO SUPPLEMENT THE GENERAL NOTES LISTED HEREIN.
16. NO ADDITIONAL PAYMENT WILL BE MADE FOR WORK CALLED FOR BY NOTES ON THE PLANS OR IN THE SPECIFICATIONS FOR WHICH NO ITEM NUMBER IS INDICATED. THE COST OF SUCH WORK SHALL BE INCLUDED IN THE PRICES FOR VARIOUS ITEMS OF THIS CONTRACT.
17. CARE SHALL BE TAKEN TO RETAIN NATURAL GROWTH AND PREVENT DAMAGE TO TREES WITHIN AND OUTSIDE THE LIMITS OF CONSTRUCTION, AND NOT SCHEDULED FOR REMOVAL. ANY DAMAGE CAUSED TO THIS NATURAL GROWTH SHALL BE RESTORED AT THE EXPENSE OF THE CONTRACTOR AS DIRECTED BY THE ENGINEER.
18. THE CONTRACTOR IS TO VISIT THE SITE BEFORE BIDDING, TO FAMILIARIZE THEMSELVES WITH THE FIELD CONDITIONS AND TO JUDGE FOR THEMSELVES THE EXTENT AND NATURE OF THE WORK TO BE DONE UNDER THIS CONTRACT. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF THE CONTRACTORS FAILURE TO INCLUDE IN THEIR BID ALL ITEMS AND MATERIALS WHICH THEY ARE REQUIRED TO FURNISH IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

SUBSTRUCTURE NOTES:

1. ALL PLACEMENT OF SELECT STRUCTURE FILL, ITEM 203.21, SHALL BE COMPACTED TO 95 PERCENT OF STANDARD PROCTOR MAXIMUM DENSITY.
2. WHERE PILES ARE TO BE PLACED THROUGH THE EMBANKMENT (6 INCH TOPSIZE), THE EMBANKMENT SHALL BE COMPACTED TO 95 PERCENT OF STANDARD PROCTOR MAXIMUM DENSITY.
3. HIGHWAY EMBANKMENT MATERIAL(############) AND SELECT STRUCTURE FILL, ITEM 203.21, SHALL BE PLACED SIMULTANEOUSLY, IN CONTACT, ON BOTH SIDES OF THE VERTICAL PAYMENT LINE.
4. SHOULD THE CONTRACTOR ELECT TO LAY BACK A PORTION OF THE EXISTING EARTH ADJACENT TO AN EXCAVATION REQUIRING A COFFERDAM, ANY REQUIRED EXTENSIONS OF THE COFFERDAM NECESSARY TO KEEP WATER FROM ENTERING THE EXCAVATION SHALL BE FURNISHED AND PLACED AT NO COST TO THE OWNER.
5. WHERE A COFFERDAM IS USED, THE COST OF DEWATERING THE ENTIRE EXCAVATION, REGARDLESS OF SOURCE OF WATER, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE COFFERDAM ITEM.
6. SHOULD FIELD CONDITIONS REQUIRE A CHANGE FROM THE TYPE OF COFFERDAM SYSTEM CALLED FOR ON THE PLANS, THE ENGINEER-IN-CHARGE SHALL CONTACT THE D.C.E.S. FOR COORDINATION WITH APPROPRIATE AGENCIES TO APPROVE THE CHANGE.
7. DEWATERING OF THE COFFERDAM SHALL BE ACCOMPLISHED BY PUMPING THE WATER TO AN APPROVED UPLAND VEGETATED AREA OUTSIDE OF THE STREAMBED AS SHOWN ON THE PLANS AND/OR APPROVED BY THE E.I.C. TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL, SUCH AS STRAW BALES OR APPROVED EQUAL, MAY BE REQUIRED AS DETERMINED BY THE ENGINEER-IN-CHARGE. NO SETTLEMENT BASIN SHALL BE CONSTRUCTED.
8. ORDINARY HIGH WATER IS ESTIMATED TO BE _____. THIS IS DEFINED AS THE WATER SURFACE ELEVATION FOR THE MEAN ANNUAL FLOOD, WHICH IS THE FLOOD THAT HAS A RECURRENCE INTERVAL OF 2.33 YEARS.
9. ORDINARY WATER IS ESTIMATED TO BE _____. THIS IS DEFINED AS THE HIGHEST SURFACE WATER ELEVATION LIKELY TO BE ENCOUNTERED DURING ONE CONSTRUCTION SEASON (OTHER THAN MAJOR FLOODS). IT IS ALWAYS LESS THAN THE ORDINARY HIGH WATER ELEVATION AND IT IS USUALLY AN OBSERVED ELEVATION RATHER THAN A COMPUTED ONE.
10. LOW WATER IS ESTIMATED TO BE _____. THIS WATER ELEVATION IS THE NORMAL LOW WATER ELEVATION PREVALENT DURING ONE CONSTRUCTION SEASON FOR MORE THAN 25% OF THE TIME. IT IS AN OBSERVED ELEVATION RATHER THAN A COMPUTED ONE.
11. EXCAVATION BELOW PLANNED BOTTOM OF SUBSTRUCTURE ELEVATION WILL NOT BE ALLOWED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER. BACKFILL OF UNAUTHORIZED EXCAVATIONS BELOW DESIGN SUBGRADES WILL BE AT THE CONTRACTOR'S EXPENSE.
12. GROUND WATER WAS ASSUMED AT ELEVATION ±#######

SPECIAL TRUSS NOTES:

1. THIS STRUCTURE CONTAINS FRACTURE-CRITICAL MEMBERS. THESE MEMBERS ARE INDENTIFIED ON THE PLANS. THE CONTRACTOR SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF SECTION 9 OF THE NEW YORK STATE STEEL CONSTRUCTION MANUAL (SCM).
2. DIMENSIONS FOR THICKNESS OF STEEL ROLLED ANGLE SHAPES AND STRUCTURAL TUBING ARE SHOWN ACCORDING TO THE AISC MANUAL.
3. NO DEVIATION FROM THE HAUNCH DETAILS SHOWN ON THESE PLANS MAY BE MADE WITHOUT THE PERMISSION OF THE ENGINEER.
4. THE CONTRACTOR SHALL PROVIDE FOR THE STABILITY OF THE STRUCTURAL STEEL DURING ALL PHASES OF ERECTION AND CONSTRUCTION, AS PROVIDED IN PARAGRAPH 204.2 OF THE NEW YORK STATE STEEL CONSTRUCTION MANUAL (SCM)
5. THE PEDESTAL ELEVATIONS SHOWN ON THE ABUTMENT DRAWINGS ARE FOR THE TRUSS SYSTEM INDICATED ON SHEET ##. IF A DIFFERENT TRUSS SYSTEM IS SELECTED FOR THIS PROJECT, THE ABUTMENT PEDESTAL ELEVATIONS AND ALL AFFECTED DETAILS SHALL BE MODIFIED ACCORDINGLY AND SUBMITTED TO THE ENGINEER FOR APPROVAL AT NO EXTRA COST TO THE COUNTY. THE E.I.C. SHALL MAKE THE APPROPRIATE REVISIONS FOR THE SELECTED TRUSS TO THE AS-BUILT DRAWINGS.

SUPERSTRUCTURE NOTES:

1. IN-PLANT INSPECTION FOR THE PREFABRICATED BOLTED AND GALVANIZED STEEL TRUSS SYSTEM SHALL BE PROVIDED IN ACCORDANCE WITH THE NEW YORK STATE STEEL CONSTRUCTION MANUAL (NYSSCM).
2. CONCRETE DECK PLACEMENT AND FINISHING OPERATIONS SHALL BE PERFORMED AS RAPIDLY AS POSSIBLE. THE ENGINEER MAY ORDER THE CONTRACTOR TO STOP PLACEMENT OPERATIONS AT ANY TIME IF, IN THE ENGINEERS OPINION, CONCRETE PLACED DURING THE PLACEMENT PROCESS HAS STARTED TO SET, OR IS ABOUT TO SET, AND FURTHER PLACEMENT OF CONCRETE WILL CAUSE DEFLECTION CRACKING.
3. LONGITUDINAL CONSTRUCTION JOINTS IN THE DECK WILL NOT BE PERMITTED.
4. DECK FINISHING MACHINE(S) SHALL BE OPERATED AS CLOSE TO THE SKEW ANGLE AS PRACTICAL.
5. WET BURLAP CURING BLANKETS ARE REQUIRED TO BE PLACED ON THE CONCRETE DECK WITHIN 30 MINUTES OF THE CONCRETE BEING DEPOSITED INTO THE FORMS OR 5 MINUTES AFTER FINISHING, WHICHEVER COMES FIRST. THE PLACEMENT OF THE TURF DRAG TEXTURE SHALL NOT INTERFERE WITH THESE REQUIREMENTS.
6. IN THE EVENT THE CONTRACTOR'S DECK PLACEMENT OPERATION IS STOPPED PRIOR TO COMPLETION, WHETHER BY THE CONTRACTOR'S OWN DECISION OR BY ORDER OF THE ENGINEER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FINISHED DECK GRADE WHICH MATCHES THE PLANNED PROFILE. ANY SUBSEQUENT REVISIONS TO DECK FORMS MADE NECESSARY BUY SUCH ACTION SHALL BE AT THE CONTRACTOR'S EXPENSE.
7. THE BRIDGE DECK AND APPROACH SLABS SHALL BE SAW-CUT GROOVED ACCORDING TO ITEM 558.02 - LONGITUDINAL SAW-CUT GROOVING OF STRUCTURAL SLAB SURFACES.
8. TOP SURFACES OF THE NEW BRIDGE DECKS AND APPROACH SLABS SHALL BE SEALED ACCORDING TO ITEM 559.1896 18 - PROTECTIVE SEALING OF STRUCTURAL CONCRETE ON NEW BRIDGE DECKS AND BRIDGE DECK OVERLAYS.
9. ALL STRUCTURAL STEEL USED IN THE FABRICATION OF THE PREFABRICATED BOLTED AND GALVANIZED STEEL TRUSS SYSTEM SHALL CONFORM TO ASTM A709 GRADE 50W.
10. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE PROVISIONS OF THE CURRENT SPECIFICATIONS FOR SUPERSTRUCTURE SLABS, WHICH ALLOW THE OPTION OF (3) FORMING SYSTEMS FOR THE UNDERSIDE OF THE SLABS. HOWEVER, ON THIS BRIDGE, ONLY THE FOLLOWING OPTIONS WILL BE PERMITTED: **##########**
11. NO DEVIATIONS FROM THE HAUNCH DETAILS SHOWN ON THESE PLANS MAY BE MADE WITHOUT THE PERMISSION OF THE ENGINEER.

LOAD RATING NOTE:

1. THE BOLTED GALVANIZED STEEL TRUSS SYSTEM MANUFACTURER (CONTRACTOR) SHALL SUBMIT THE REQUIRED LOAD RATING INFORMATION TO THE ENGINEER-IN-CHARGE FOR INSERTION IN THE LOAD RATING TABLES CONTAINED IN THE BRIDGE PLAN - SHEET ##

STORAGE OF MATERIALS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PERMISSION FROM THE OWNER FOR LOCATIONS TO BE USED TO STORE MATERIALS WITHIN THE RIGHT-OF-WAY. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION OF THE PROPERTY OWNERS PRIOR TO UTILIZING ANY AREAS OUTSIDE OF THE RIGHT-OF-WAY TO STORE MATERIALS ON PRIVATE PROPERTY. A COPY OF ANY WRITTEN PERMISSION TO STORE MATERIALS ON PRIVATE PROPERTY, IF OBTAINED, SHALL BE SUBMITTED TO THE ENGINEER.

REINFORCEMENT NOTES:

1. BAR REINFORCEMENT SPACING INDICATED ON THE PLANS ARE MAXIMUM UNLESS OTHERWISE SPECIFIED.
2. COVER FOR BAR REINFORCEMENT ON THESE PLANS SHALL BE 2 INCHES UNLESS OTHERWISE SPECIFIED.
3. BAR REINFORCEMENT INDICATED ON THESE PLANS SHALL BE EPOXY COATED, EXCEPT AS NOTED IN THE APPROACH PAVEMENT DRAWINGS.

UTILITY NOTES:

1. IT IS ASSUMED THAT A PROPOSED 12" GAS MAIN WILL BE INSTALLED AS PART OF THIS PROJECT. PROVISIONS FOR THE CONSTRUCTION SHALL BE INCLUDED AS PART OF THIS PROJECT. CASING, ######, AND PENETRATIONS IN THE ABUTMENTS SHALL BE COORDINATED WITH ORANGE COUNTY AND ROCKLAND COUNTY.

UTILITY QUALITY LEVEL NOTES:

1. FOUR SEPARATE QUALITY LEVELS OF SUBSURFACE UTILITY FACILITY INFORMATION ARE GENERALLY RECOGNIZED AND ARE AS FOLLOWS:

   QUALITY LEVEL A (QLA): QUALITY LEVEL A IS THE HIGHEST DEGREE OF ACCURACY. THE INFORMATION SHOWN ON THE PLANS HAS BEEN OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITY FACILITIES) OF SUBSURFACE UTILITIES, USING (TYPICALLY) MINIMALLY INTRUSIVE EXCAVATION EQUIPMENT TO DETERMINE THEIR PRECISE HORIZONTAL AND VERTICAL POSITIONS, AS WELL AS THEIR OTHER UTILITY FACILITY ATTRIBUTES. (SHOWN AS QLA)

   QUALITY LEVEL B (QLB): QUALITY LEVEL B IS THE SECOND HIGHEST DEGREE OF ACCURACY. THE INFORMATION SHOWN ON THE PLANS HAS BEEN OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS (I.E., UNDERGROUND CAMERAS, RADAR, SONAR, TONE OUTS, ETC.) TO IDENTIFY THE EXISTENCE AND APPROPRIATE HORIZONTAL POSITION OF SUBSURFACE UTILITY FACILITIES. QUALITY LEVEL B DATA ARE REPRODUCIBLE BY SURFACE GEOPHYSICS AT ANY POINT OF THEIR DEPICTION. THE INFORMATION WAS SURVEYED TO APPLICABLE TOLERANCES AND REDUCED ON THE PLANS. NO EXCAVATIONS WERE PERFORMED. (SHOWN AS QLB)

   QUALITY LEVEL C (QLC): QUALITY LEVEL C IS THE THIRD HIGHEST DEGREE OF ACCURACY. THE INFORMATION SHOWN ON THE PLANS HAS BEEN OBTAINED THROUGH SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGEMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION. (SHOWN AS QLC)

   QUALITY LEVEL D (QLD): QUALITY LEVEL D IS THE LOWEST DEGREE OF ACCURACY. THE INFORMATION SHOWN ON THE PLANS WAS DERIVED SOLELY FROM EXISTING NYSDOT AND/OR UTILITY COMPAN RECORDS OR RECOLLECTIONS. (SHOWN AS QLD)

NON-PAVED SURFACE NOTES:

1. THE CONTRACTOR SHALL NOT EXPOSE ANY SUBGRADE THAT CANNOT BE BACKFILLED AND COMPACTED WITH SUBBASE MATERIAL BY THE END OF EACH WORK DAY OR AS APPROVED BY THE ENGINEER.
2. COMPACTED SUBBASE MATERIAL SHALL NOT BE EXPOSED FOR MORE THAN SEVEN CALENDAR DAYS OR AS APPROVED BY THE ENGINEER.

STORM WATER POLLUTION PREVENTION AND TEMPORARY SOIL EROSION AND SEDIMENT CONTROL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF ANY APPLICABLE FEDERAL OR STATE CERTIFICATIONS/PERMITS THAT PERTAIN TO THIS PROJECT.
2. EROSION CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE SWPPP DOCUMENT, NYSDEC REQUIREMENTS, AND DETAILS PROVIDED ON THE PLANS AND AS PER THE MANUFACTURERS REQUIREMENTS.

PREPARED BY:
ON:

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AS BUILT REVISIONS
DESCRIPTION OF WORK:

SIGNATURE _____ DATE _____

DOCUMENT NAME: C-CVER

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ORANGE COUNTY
STATE OF NEW YORK

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CHESTNUT RIDGE OFFICE
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Suite 202
Chestnut Ridge, NY 10977
Phone: 845.352.0411
Fax: 845.352.2611

NOTE: ALL UTILITY LOCATIONS SHOWN ARE QUALITY LEVEL (QLD).

GENERAL NOTES

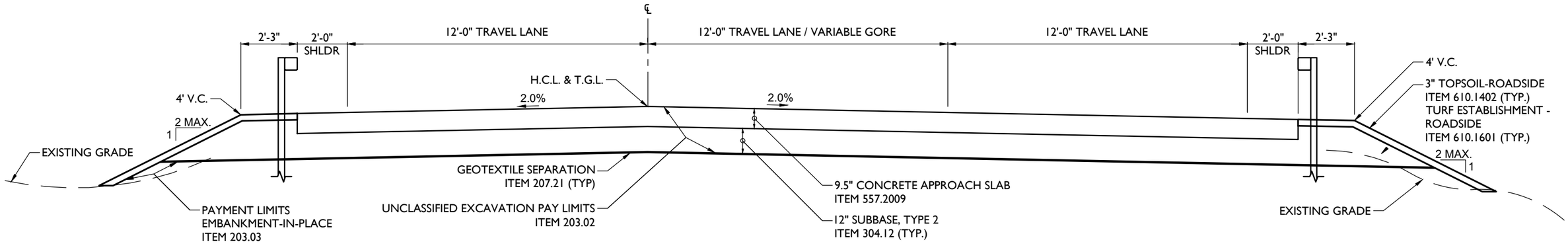
ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

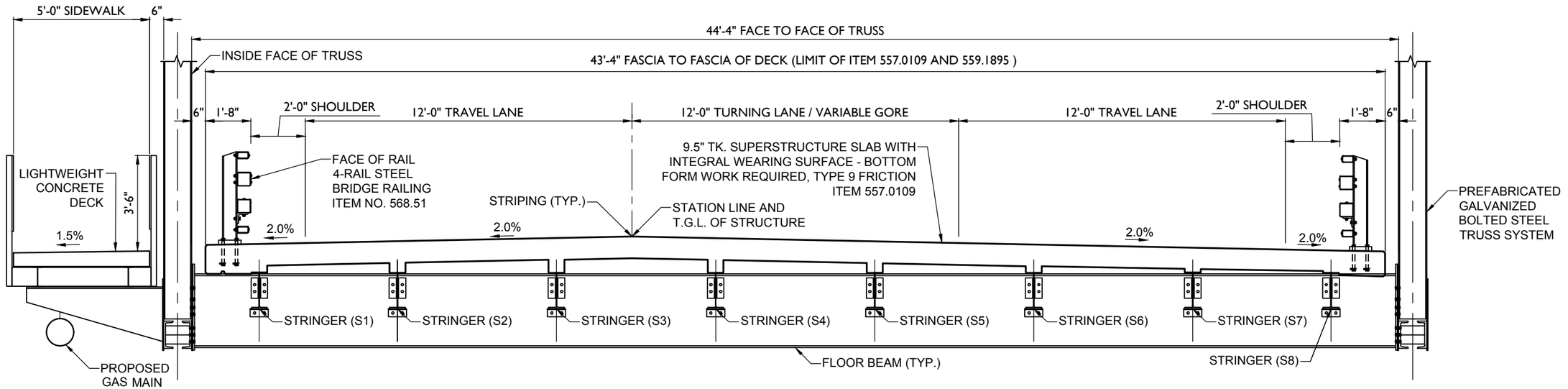
DRAWING No. GN-1
SHEET No. # OF 21

PRINT DATE: 6/28/2016



TYPICAL APPROACH SLAB SECTION

SCALE: 1" = 4'



TYPICAL PROPOSED BRIDGE SECTION

SCALE: 1" = 4'

4 3.2 2.4 1.6 0.8 0 2 4

SCALE : 1" = 4'

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AS BUILT REVISIONS
DESCRIPTION OF WORK:

SIGNATURE DATE

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TYPICAL SECTIONS

ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
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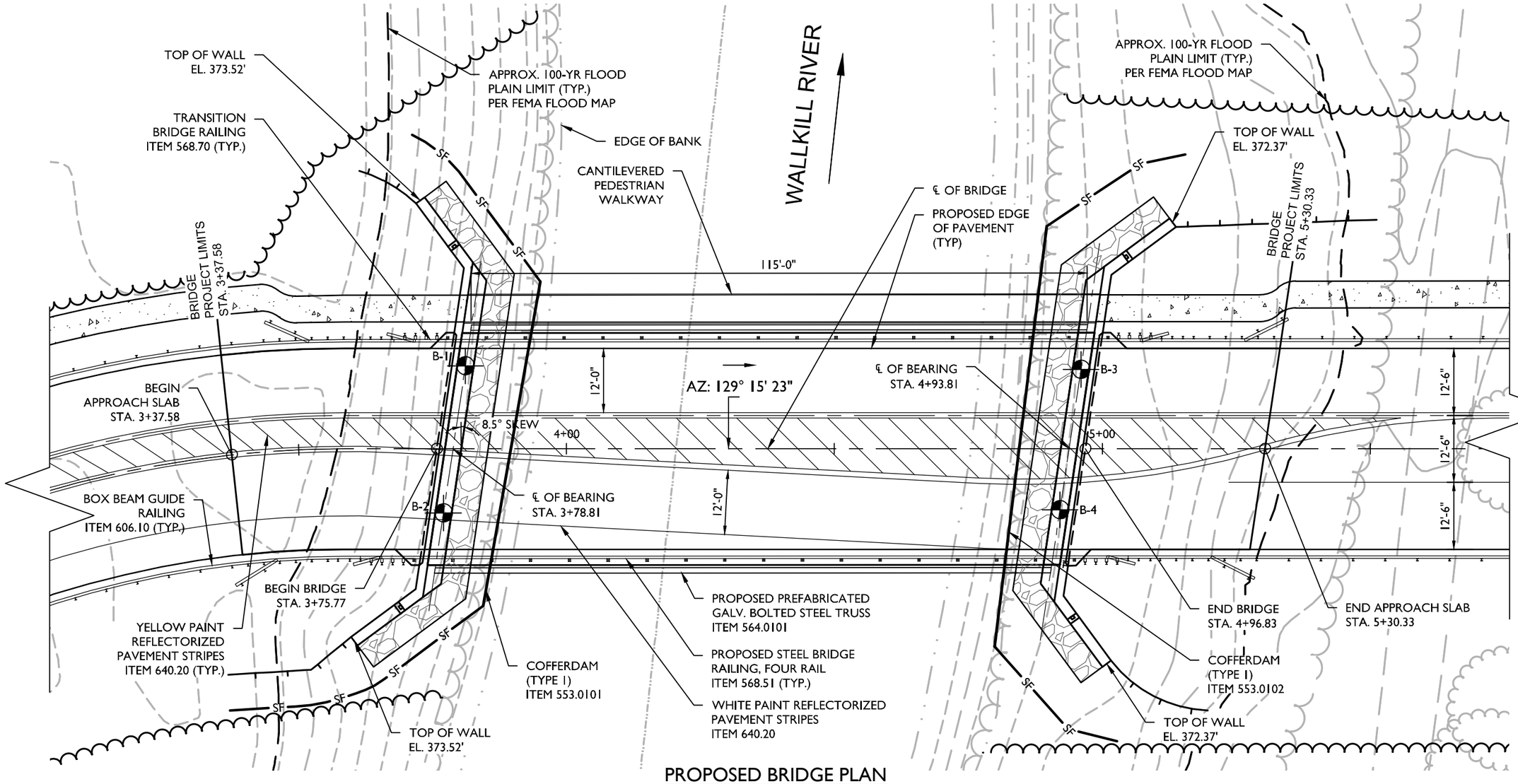
PROJECT NUMBER: 13001659B

DRAWING No. ST-3

SHEET No. 3 OF 21

PRINT DATE: 6/28/2016



PROPOSED BRIDGE PLAN

NOTE

1. BRIDGE ALIGNMENT STA. 3+00 MATCHES WEST VERHAGE ALIGNMENT STA. 22+00
2. BRIDGE ALIGNMENT STA. 5+95.55 MATCHES AMY'S TRUCK DOCK ALIGNMENT STA. 12+50
3. BRIDGE PROJECT LIMITS ARE FROM STA. 3+37.58 TO STA. 5+30.33. ALL ROADWORK OUTSIDE OF BRIDGE LIMITS TO BE DONE BY OTHERS.

20 16 12 8 4 0 10 20

SCALE : 1" = 20'

PREPARED BY:
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AS BUILT REVISIONS
DESCRIPTION OF WORK:

SIGNATURE DATE

DOCUMENT NAME: C-LAYT

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GENERAL BRIDGE PLAN

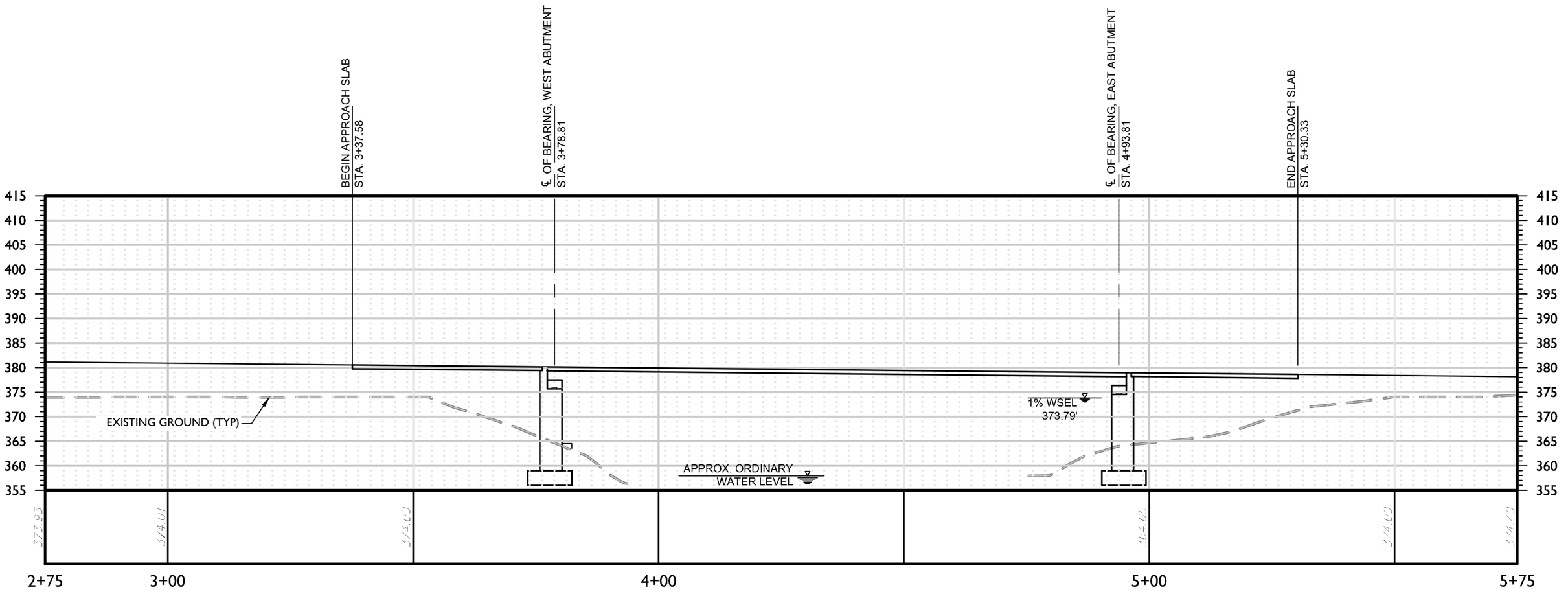
ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

DRAWING No. ST-4
SHEET No. 4 OF 21

PRINT DATE: 6/28/2016



PROFILE OF BRIDGE ALIGNMENT

HORIZONTAL : 1" = 20'

VERTICAL : 1" = 20'

PREPARED BY:

ON:

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BRIDGE PROFILE

ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

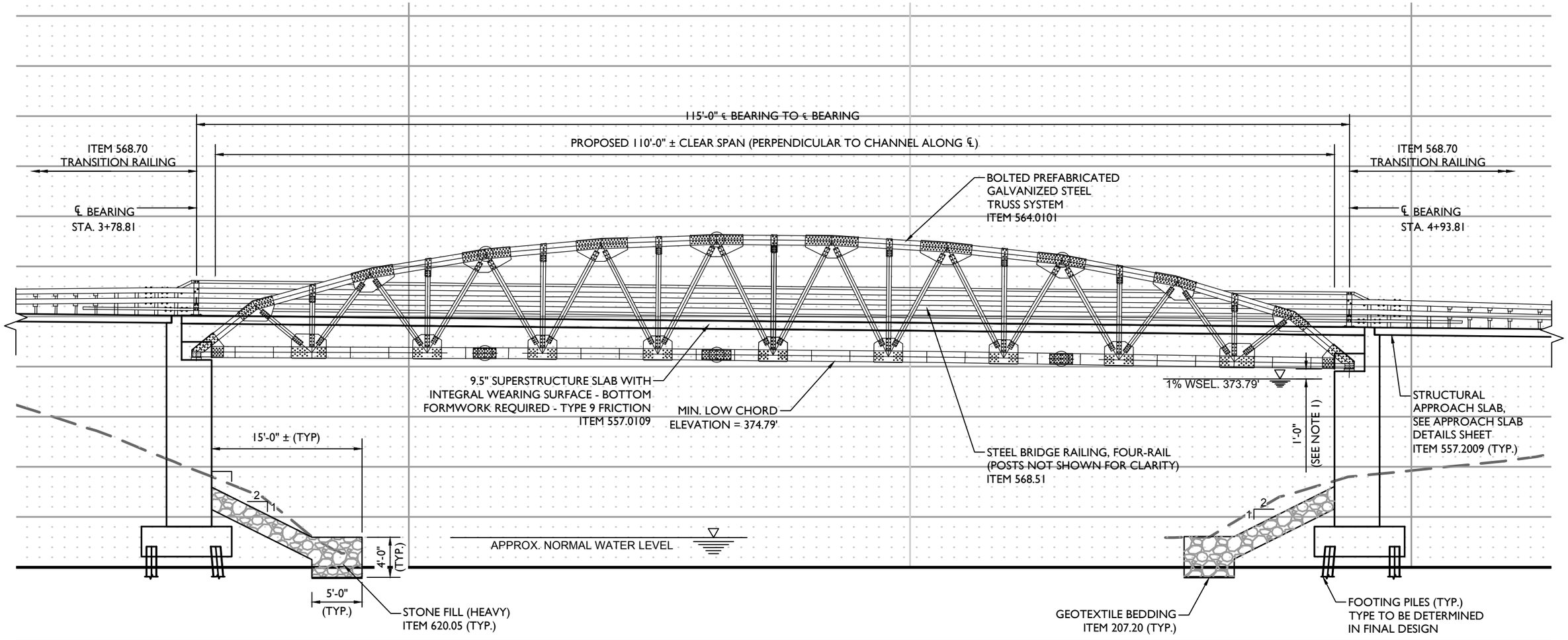
MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

DRAWING No. ST-5

SHEET No. 5 OF 21

PRINT DATE: 6/28/2016



PROPOSED BRIDGE ELEVATION

NOTES:

1. THE PROPOSED FREEBOARD CLEANING = 1.0 FT FOR THE 1% FLOOD EVENT. CRITICAL POINT IS LOCATED AT THE INTERSECTION OF THE EAST ABUTMENT STEM AND THE BOTTOM OF THE TRUSS BOTTOM CHORD.

PREPARED BY:
ON:

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10 8 6 4 2 0 5 10

SCALE : 1" = 10'

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AS BUILT REVISIONS
DESCRIPTION OF WORK:

SIGNATURE DATE

DOCUMENT NAME: C-LAYT

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BRIDGE ELEVATION

ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

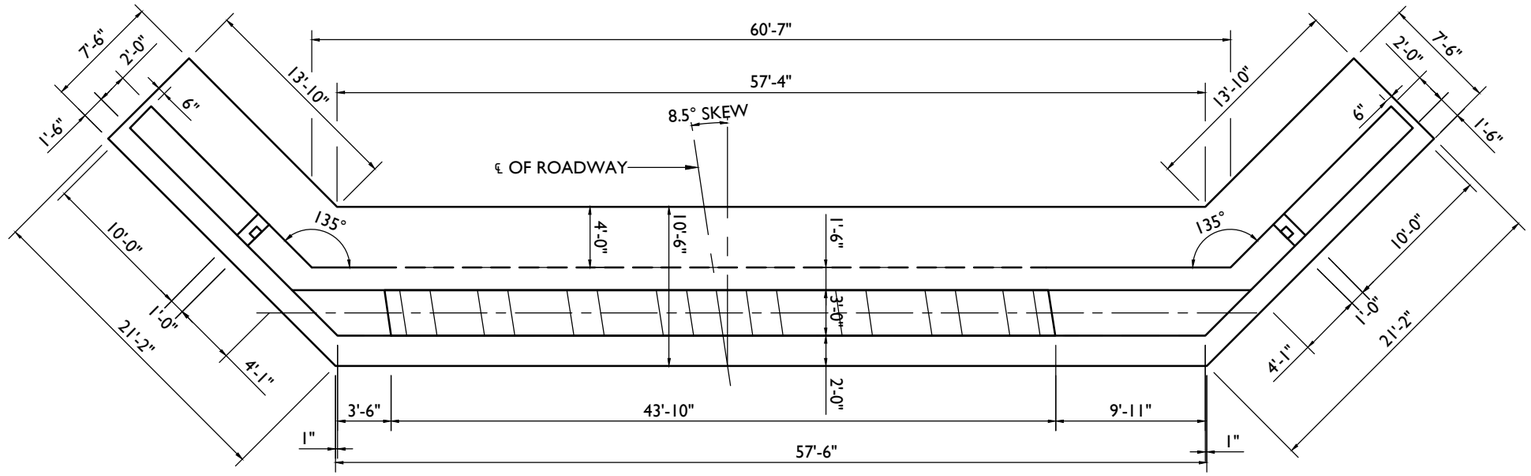
MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

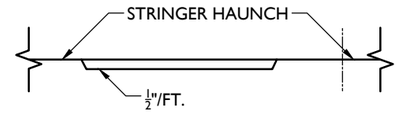
DRAWING No. ST-6

SHEET No. 6 OF 21

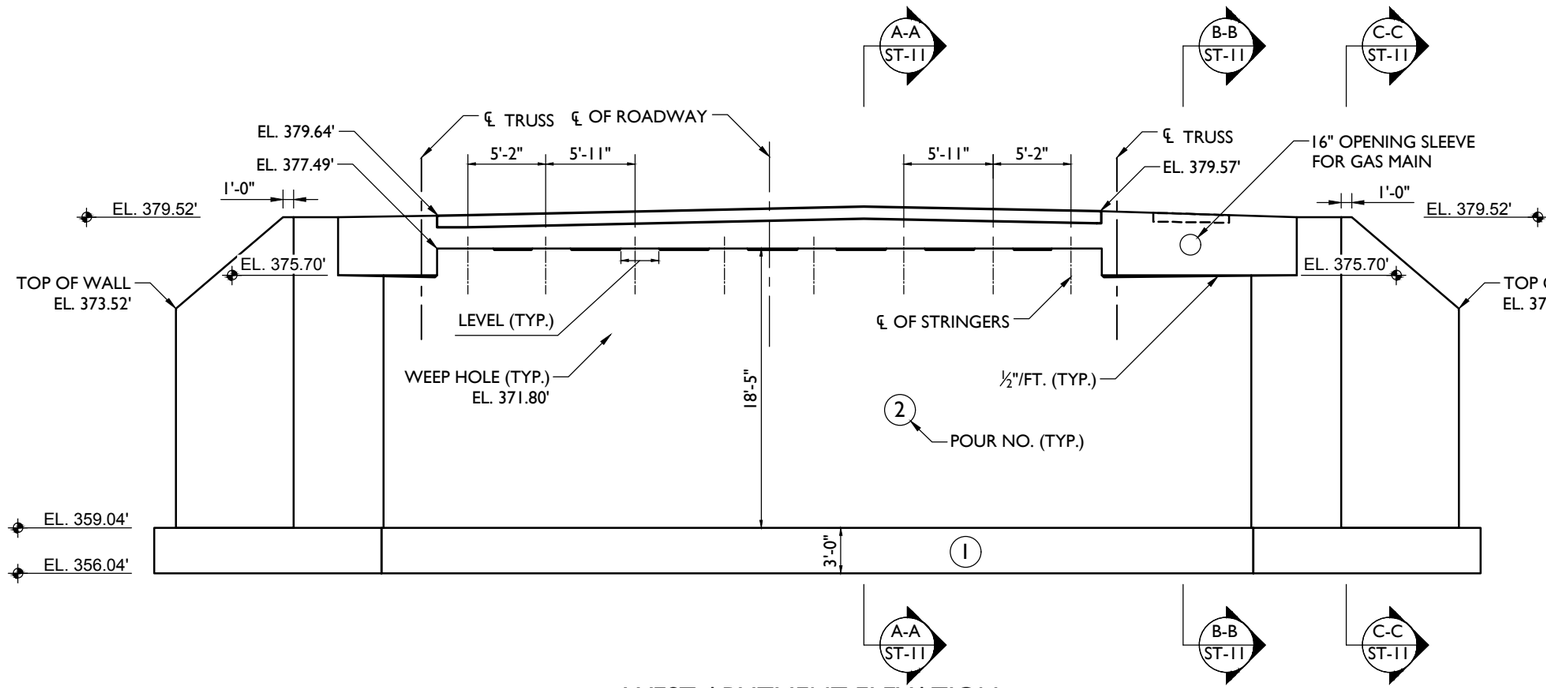
PRINT DATE: 6/28/2016



WEST ABUTMENT PLAN
SCALE: 1" = 10'



DETAIL "A"
SCALE: NTS



WEST ABUTMENT ELEVATION
SCALE: 1" = 10'

NOTE
FOR WEST ABUTMENT FOOTING
1. REINFORCEMENT DETAILS SEE WEST REINFORCEMENT PLAN SHEET
2. FOR ABUTMENT SECTIONS, SEE TYPICAL ABUTMENT REINFORCEMENT SHEET

10 8 6 4 2 0 5 10

SCALE : 1" = 10'

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AS BUILT REVISIONS
DESCRIPTION OF WORK:

SIGNATURE DATE

DOCUMENT NAME: C-BRDG

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STATE OF NEW YORK

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NOTE: ALL UTILITY LOCATIONS SHOWN ARE QUALITY LEVEL (QLD).

WEST ABUTMENT PLAN AND ELEVATION

ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

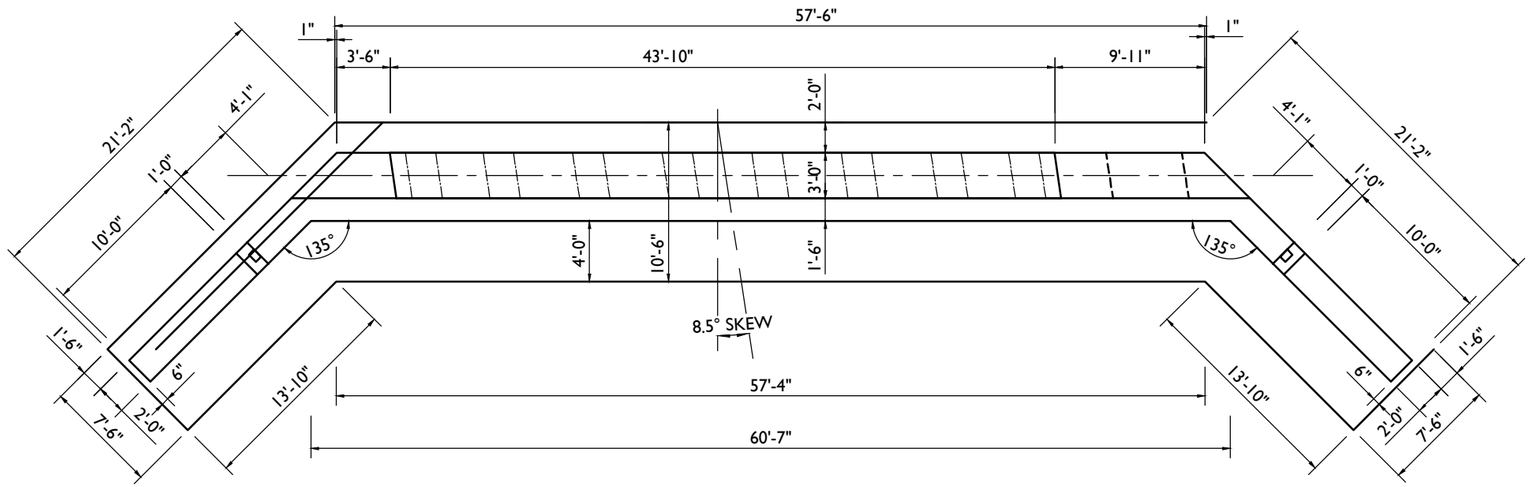
MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

DRAWING No. ST-7

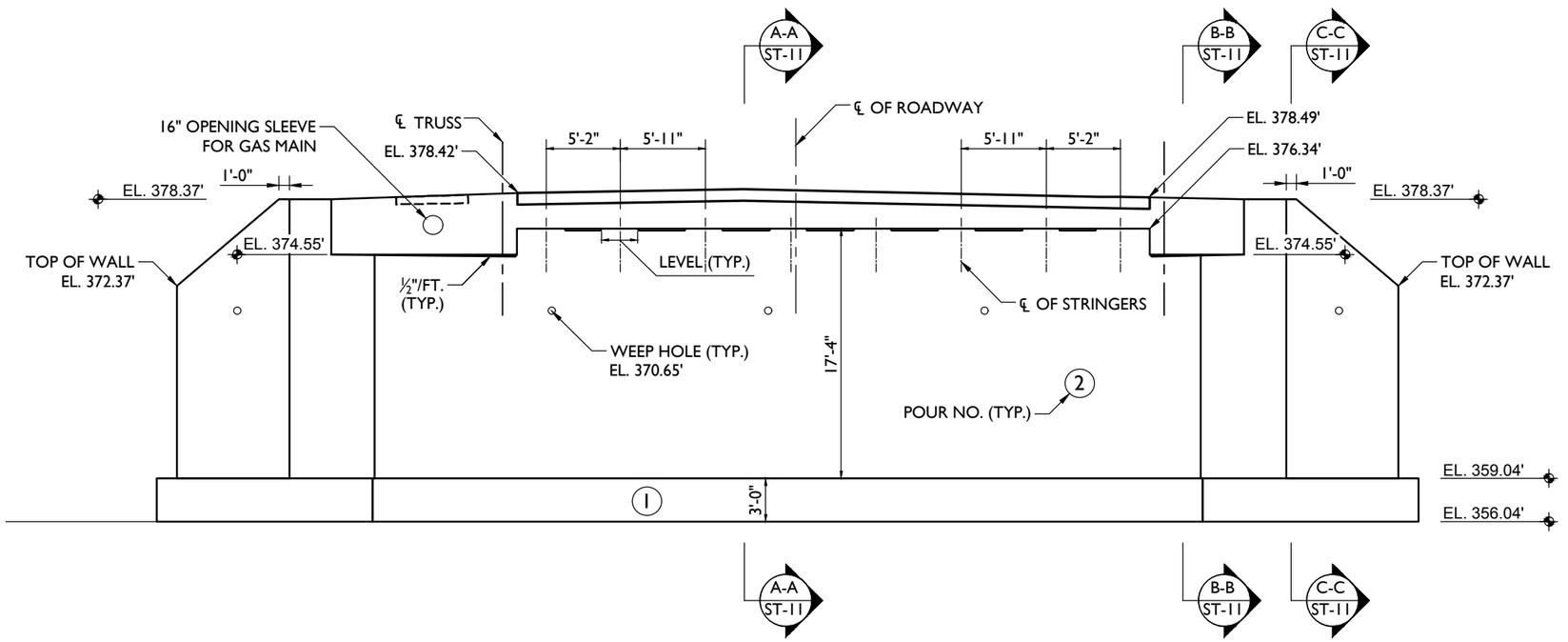
SHEET No. 7 OF 21

PRINT DATE: 6/28/2016



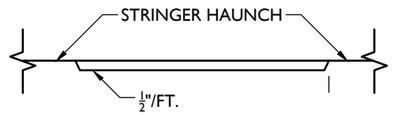
EAST ABUTMENT PLAN

SCALE: 1" = 10'



EAST ABUTMENT ELEVATION

SCALE: 1" = 10'

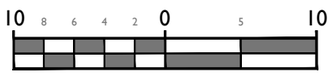


DETAIL "A"

SCALE: NTS

NOTE

1. FOR EAST ABUTMENT FOOTING REINFORCEMENT DETAILS, SEE EAST REINFORCEMENT PLAN SHEET
2. FOR ABUTMENT SECTIONS, SEE TYPICAL ABUTMENT REINFORCEMENT SHEET



SCALE : 1" = 10'

PREPARED BY:
ON:

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SIGNATURE DATE

DOCUMENT NAME: C-BRDG

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EAST ABUTMENT PLAN AND ELEVATION

ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

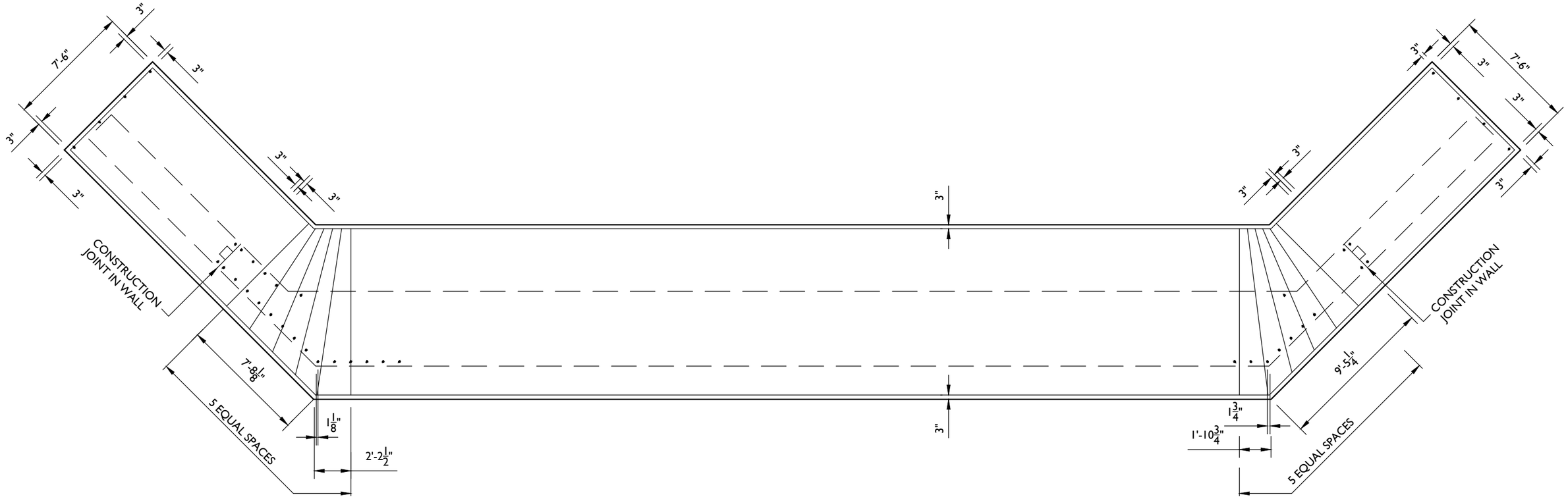
MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

DRAWING No. ST-8

SHEET No. 8 OF 21

PRINT DATE: 6/28/2016



WEST ABUTMENT PLAN

SCALE: 1" = 6'-0"

NOTE

1. STEEL REINFORCEMENT TO BE FINALIZED DURING FINAL DESIGN

PREPARED BY:
ON:

PRELIMINARY

6 4.8 3.6 2.4 1.2 0 3 6

SCALE : 1" = 6'

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AS BUILT REVISIONS
DESCRIPTION OF WORK:

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WEST ABUTMENT
REINFORCEMENT PLAN

ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

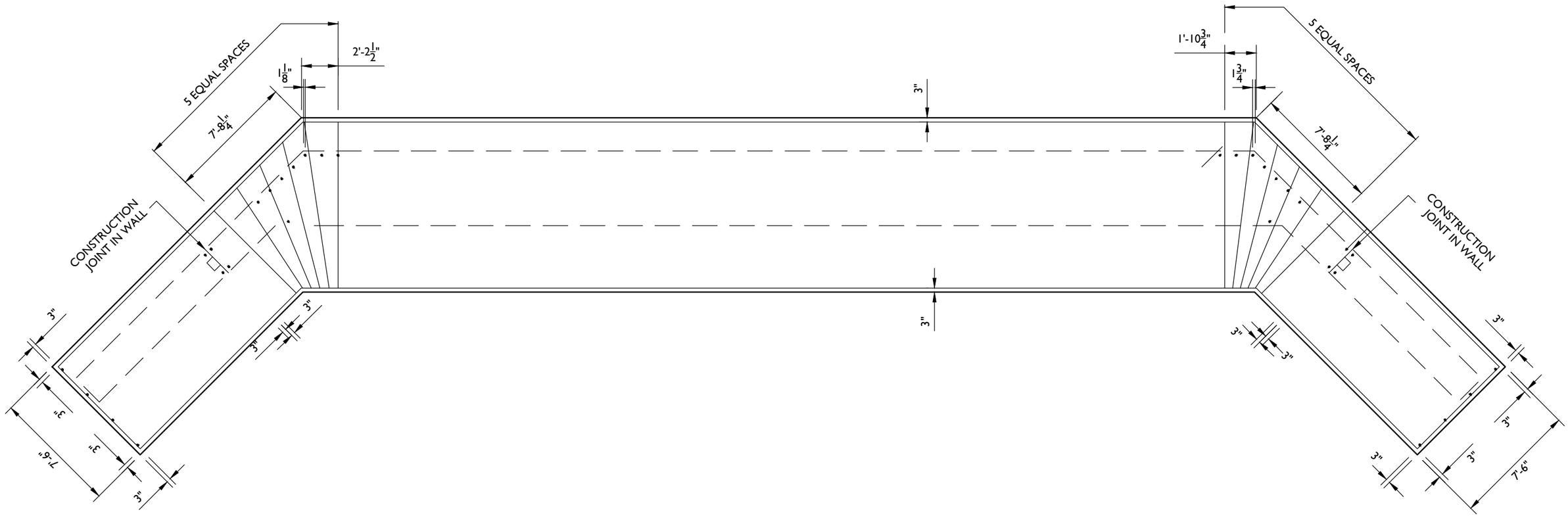
MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

DRAWING No. ST-9

SHEET No. 9 OF 21

PRINT DATE: 6/28/2016



NOTE

1. STEEL REINFORCEMENT TO BE FINALIZED DURING FINAL DESIGN

EAST ABUTMENT PLAN

SCALE: 1" = 6'-0"

6 4.8 3.6 2.4 1.2 0 3 6

SCALE : 1" = 6'

PREPARED BY:
ON:

PRELIMINARY

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AS BUILT REVISIONS
DESCRIPTION OF WORK:

SIGNATURE DATE

DOCUMENT NAME: C-BRDG

AMY'S KITCHEN & SCIENCE OF THE SOUL
BRIDGE DESIGN
TRAINING CENTER LANE AND HARTLEY ROAD
TOWN OF GOSHEN
ORANGE COUNTY
STATE OF NEW YORK

PIN: AW08.03.70P BRIDGE/CULVERT:

CHESTNUT RIDGE OFFICE
777 Chestnut Ridge Road
Suite 202
Chestnut Ridge, NY 10977
Phone: 845.352.0411
Fax: 845.352.2611

NOTE: ALL UTILITY LOCATIONS SHOWN ARE QUALITY LEVEL (QLD).

EAST ABUTMENT
REINFORCEMENT PLAN

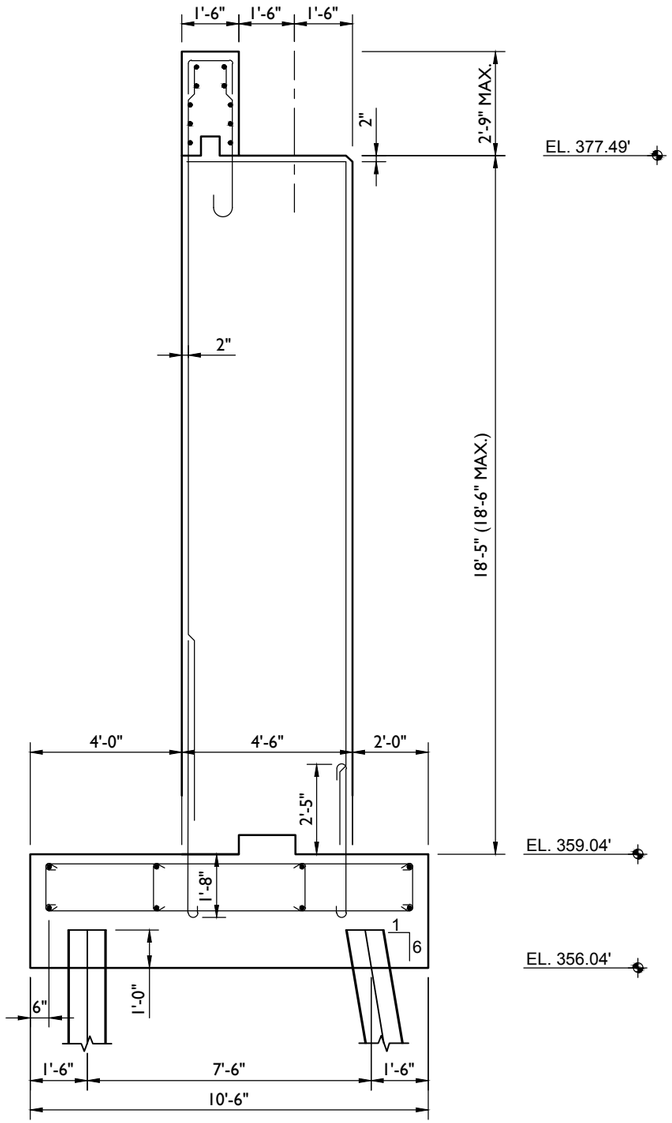
ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

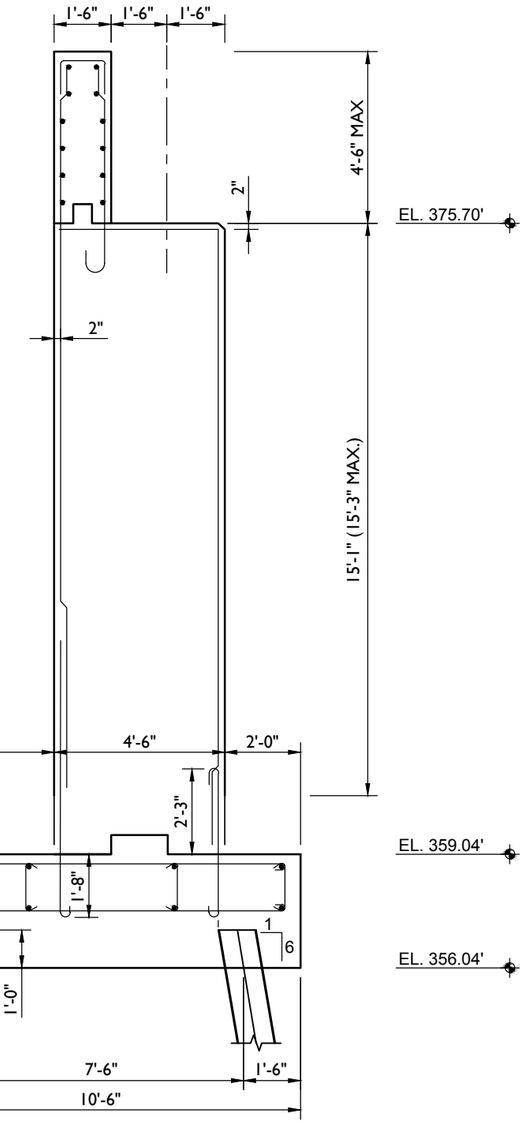
DRAWING No. ST-10
SHEET No. 10 OF 21

PRINT DATE: 6/28/2016



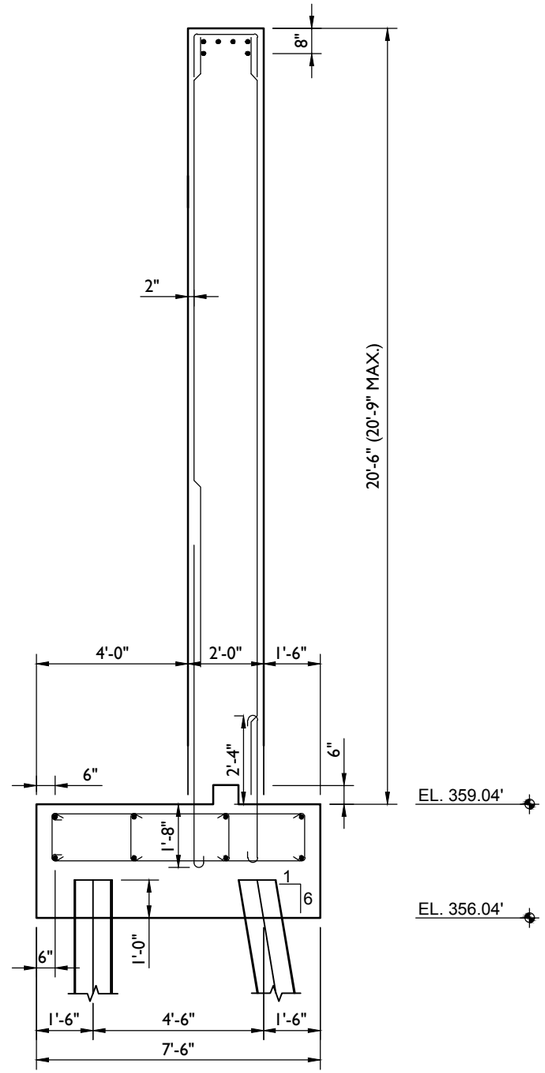
TYPICAL SECTION A-A

SCALE: 1" = 4'-0"



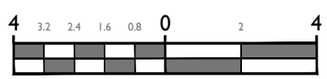
TYPICAL SECTION B-B

SCALE: 1" = 4'-0"



TYPICAL SECTION C-C

SCALE: 1" = 4'-0"



SCALE : 1" = 4'

PREPARED BY:
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WEST ABUTMENT TYPICAL REINFORCEMENT SECTIONS

ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
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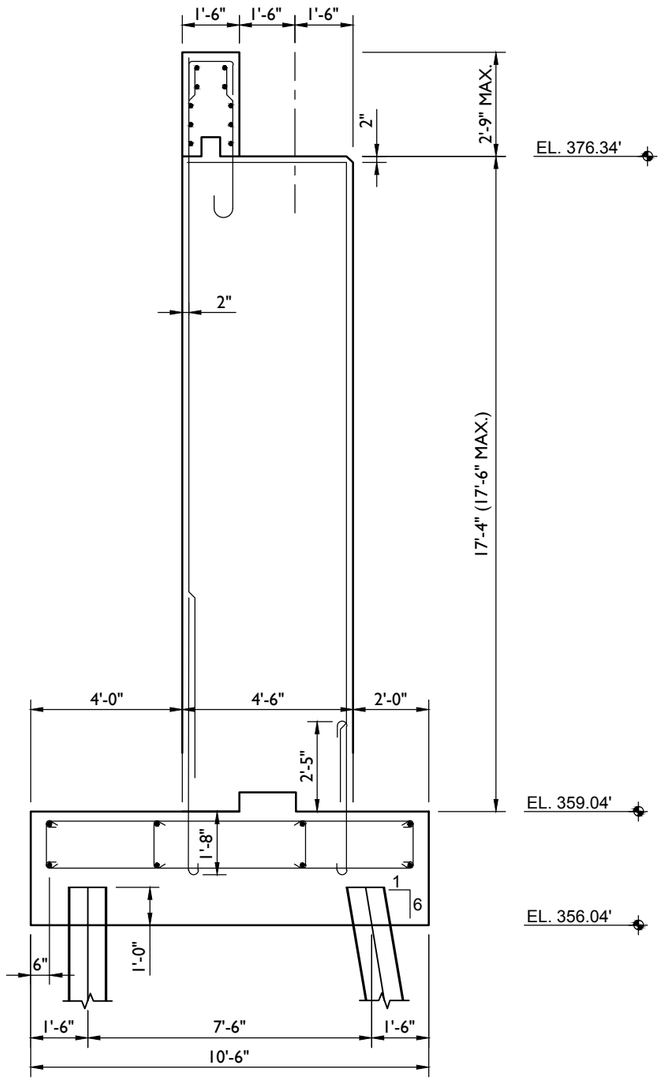
PROJECT NUMBER: 13001659B

DRAWING No. ST-11

SHEET No. 11 OF 21

PRINT DATE: 6/28/2016



TYPICAL SECTION A-A

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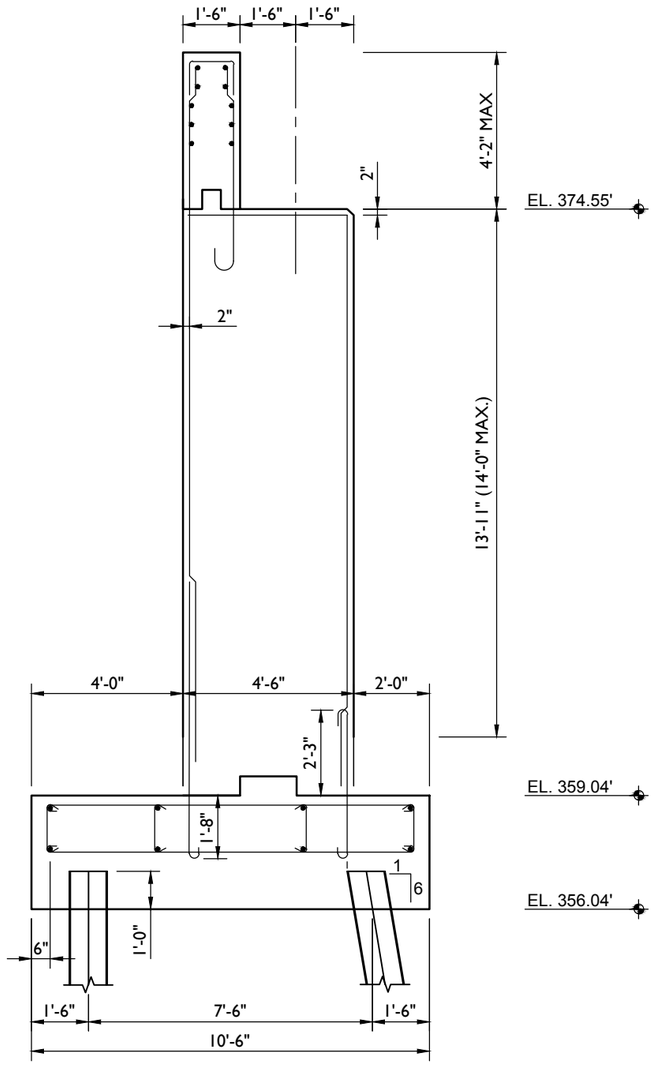
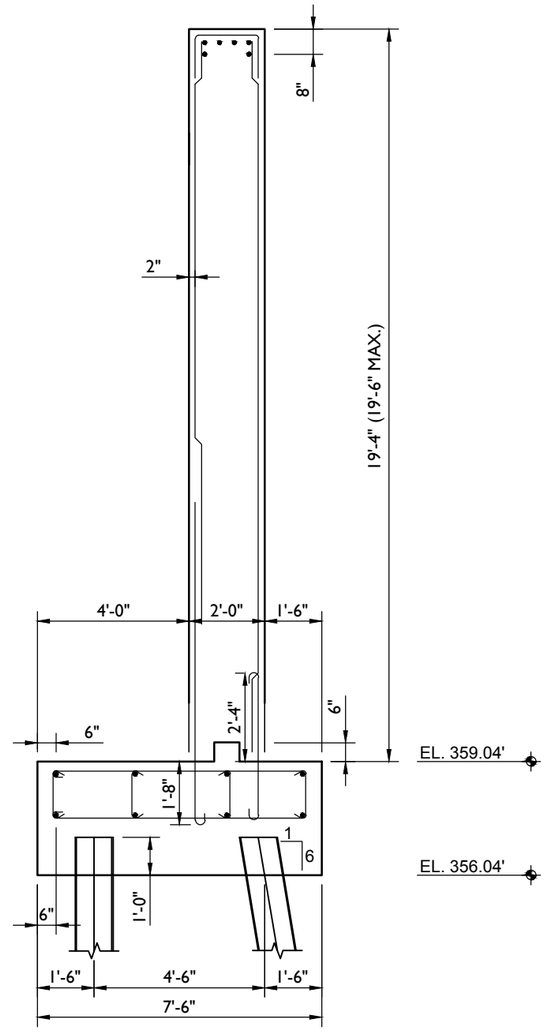


TYPICAL SECTION B-B

SCALE: 1" = 4'-0"



TYPICAL SECTION C-C

SCALE: 1" = 4'-0"

4 3.2 2.4 1.6 0.8 0 2 4

SCALE : 1" = 4'

PREPARED BY:
ON:

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DOCUMENT NAME: C-BRDG

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STATE OF NEW YORK

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NOTE: ALL UTILITY LOCATIONS SHOWN ARE QUALITY LEVEL (QLD).

EAST ABUTMENT TYPICAL REINFORCEMENT SECTIONS

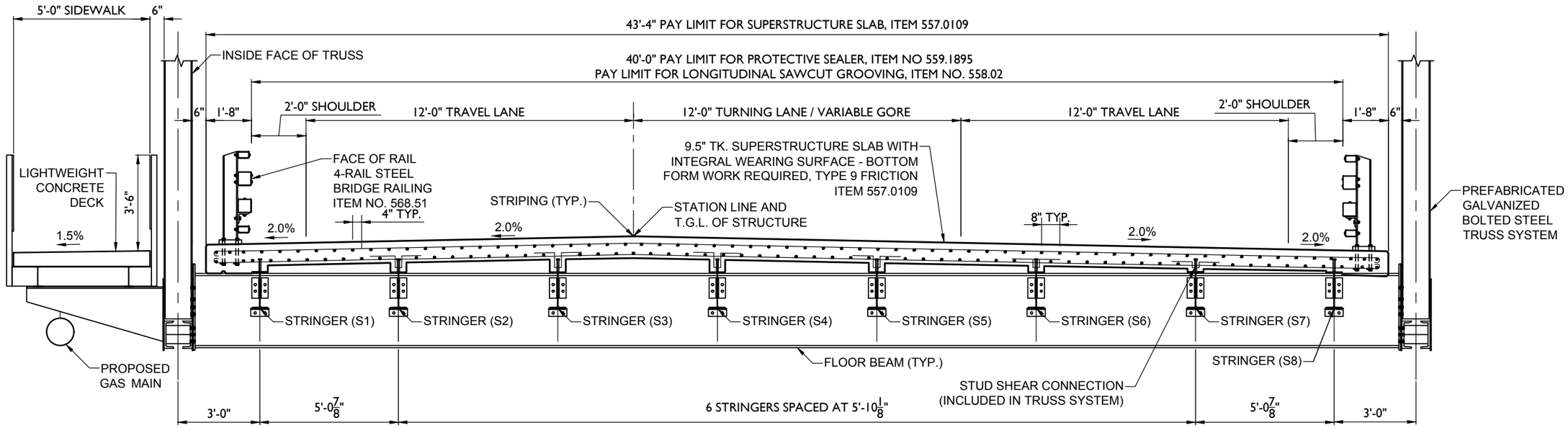
ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

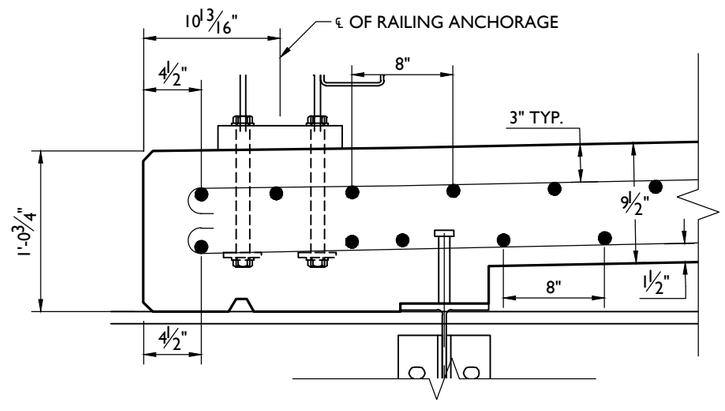
DRAWING No. ST-12
SHEET No. 12 OF 21

PRINT DATE: 6/28/2016



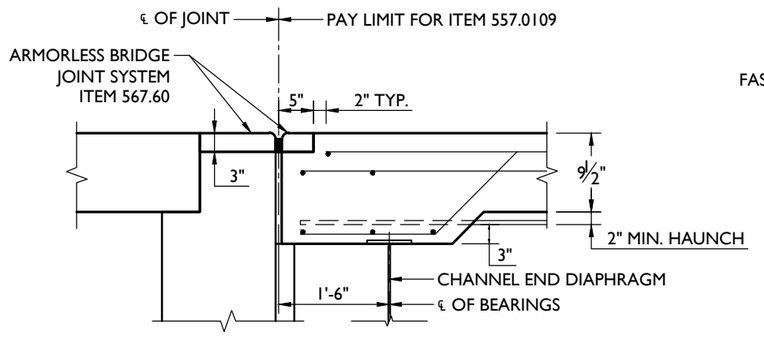
PROPOSED BRIDGE TRANSVERSE SECTION

SCALE: 1" = 4'



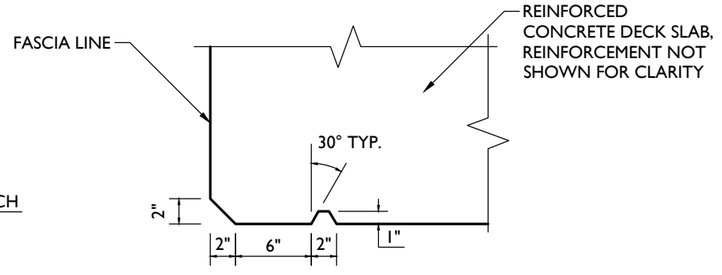
TYPICAL BRIDGE RAILING AND FASCIA REINFORCEMENT DETAIL

SCALE: NTS



END DIAPHRAGM HAUNCH DETAIL

SCALE: NTS



DRIP GROOVE DETAIL

SCALE: NTS

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ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

SUPERSTRUCTURE SLAB TRANSVERSE SECTION AND DETAILS

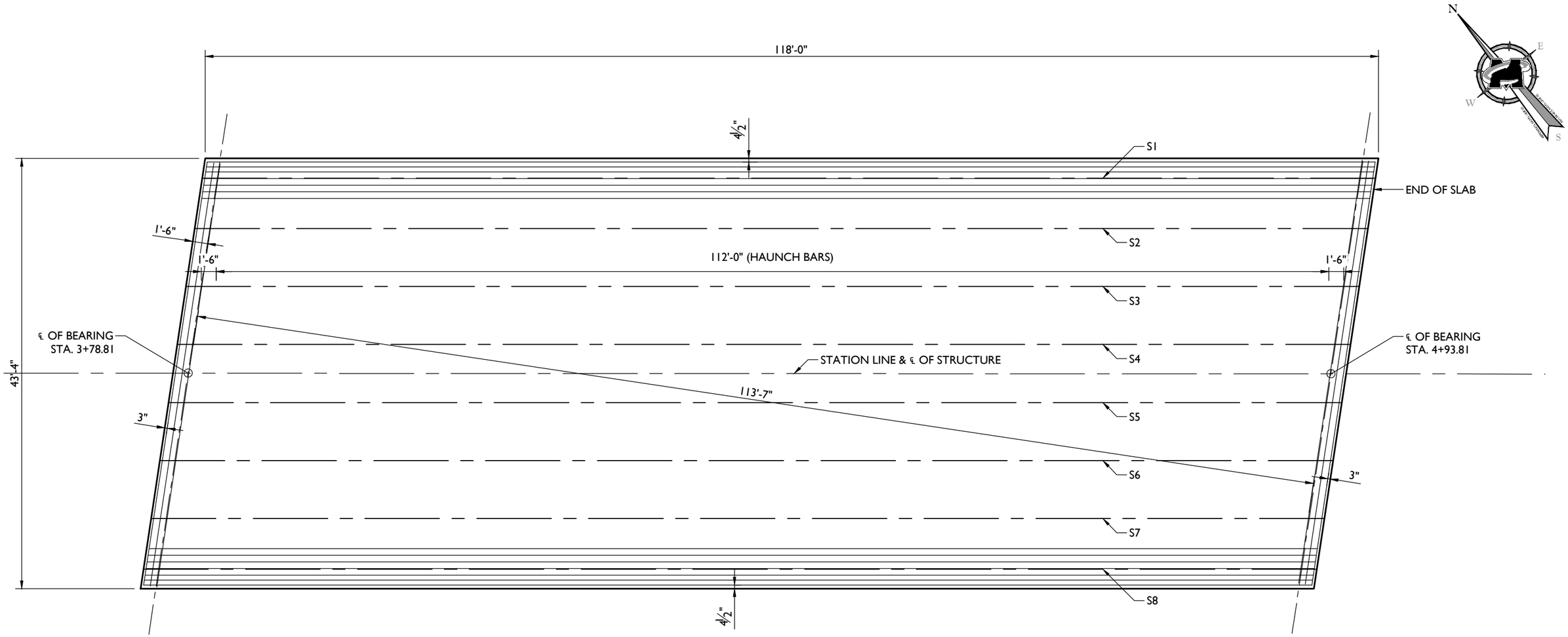
MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

DRAWING No. ST-13

SHEET No. 13 OF 21

PRINT DATE: 6/28/2016



PREPARED BY:
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SUPERSTRUCTURE SLAB TRANSVERSE SECTION AND DETAILS

ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

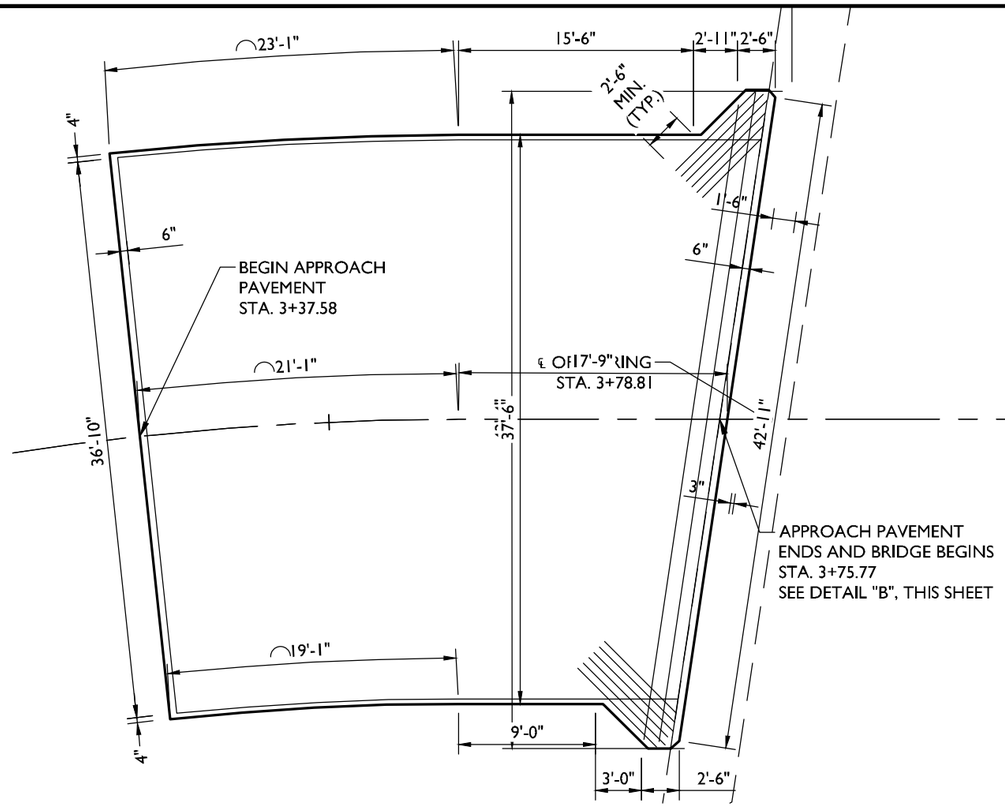
MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

DRAWING No. ST-13

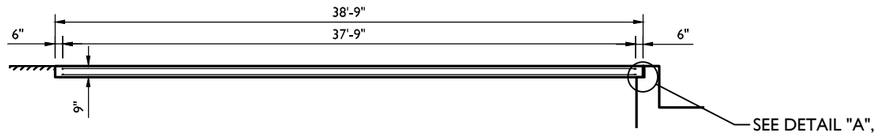
SHEET No. 13 OF 21

PRINT DATE: 6/28/2016



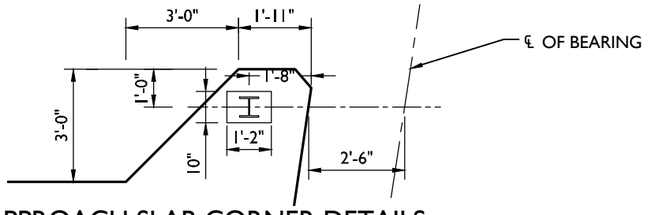
WEST APPROACH SLAB PLAN

SCALE: 1" = 10'-0"



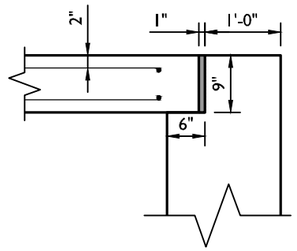
WEST APPROACH SLAB CENTERLINE SECTION

SCALE: 1" = 10'-0"



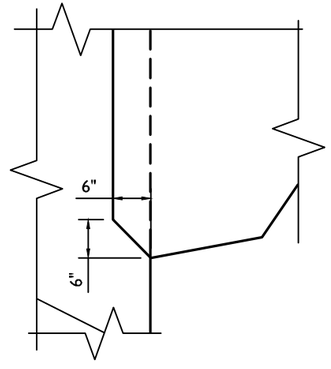
APPROACH SLAB CORNER DETAILS (NW AND SE)

1" = 4'-0"



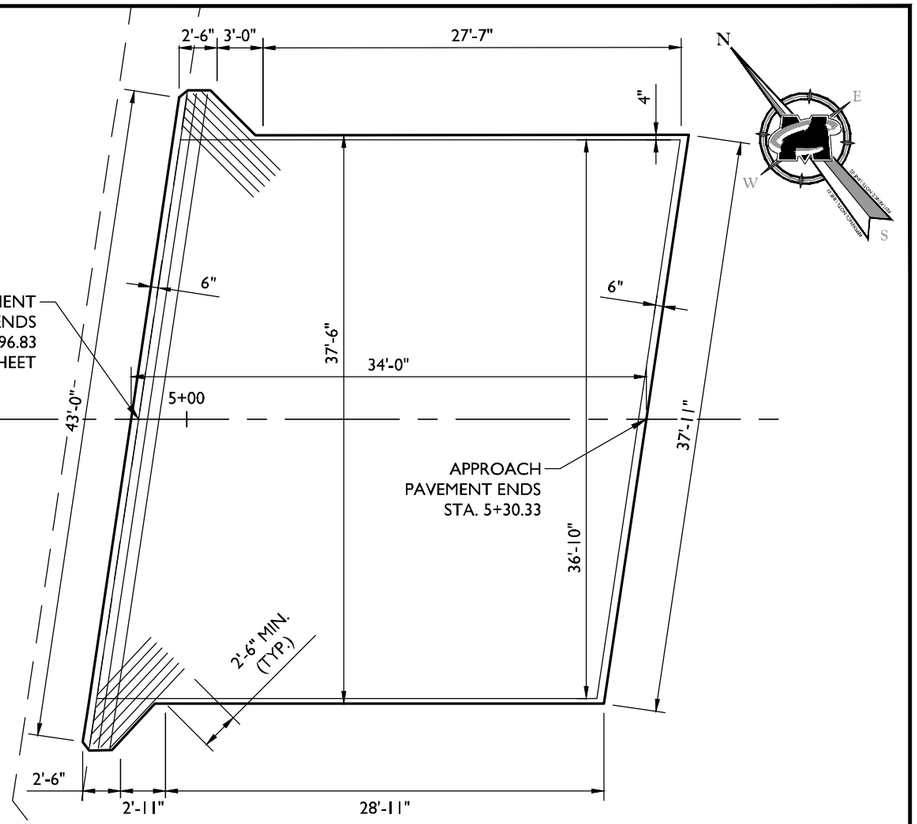
DETAIL "A"

1" = 2'-0"



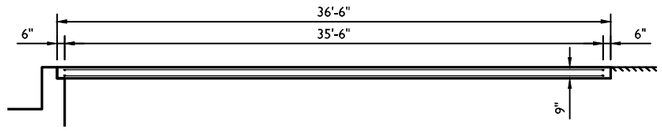
DETAIL "B"

1" = 2'-0"



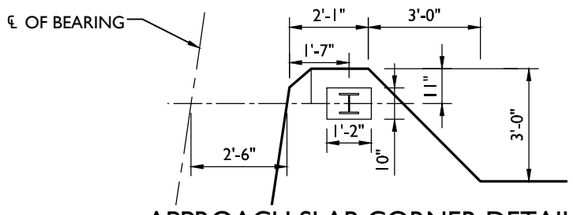
EAST APPROACH SLAB PLAN

SCALE: 1" = 10'-0"



EAST APPROACH SLAB CENTERLINE SECTION

SCALE: 1" = 10'-0"



APPROACH SLAB CORNER DETAILS (NE AND SW)

1" = 4'-0"

PREPARED BY:
ON:

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APPROACH SLAB DETAILS WEST AND EAST

ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

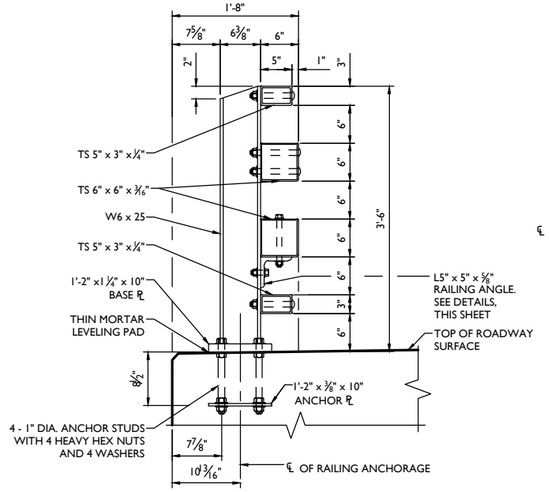
MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

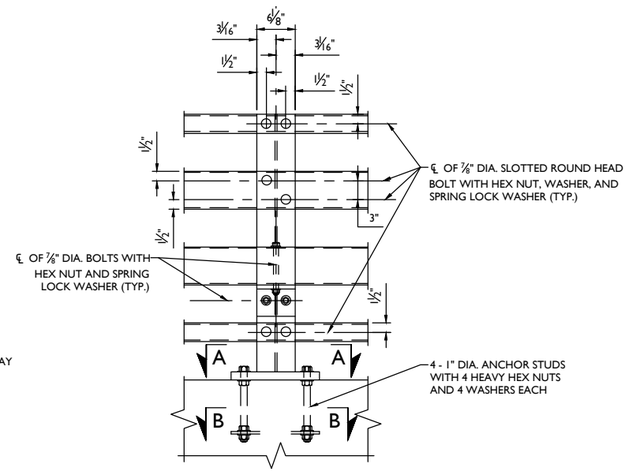
DRAWING No. ST-15

SHEET No. 15 OF 21

PRINT DATE: 6/28/2016

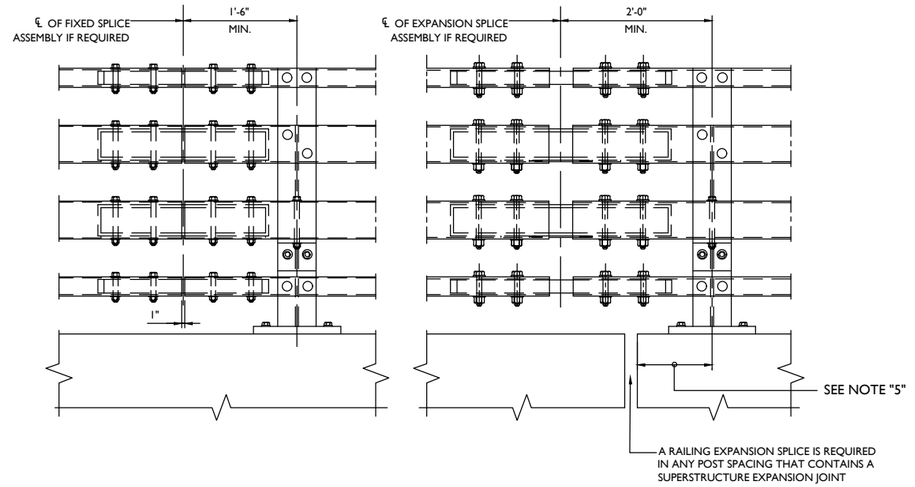


SECTION
SCALE: NTS

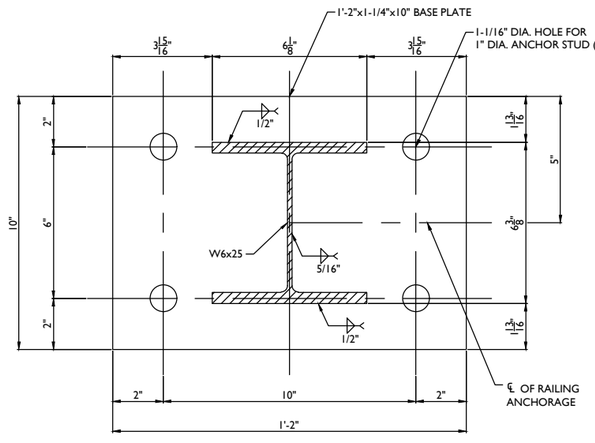


ELEVATION
SCALE: NTS

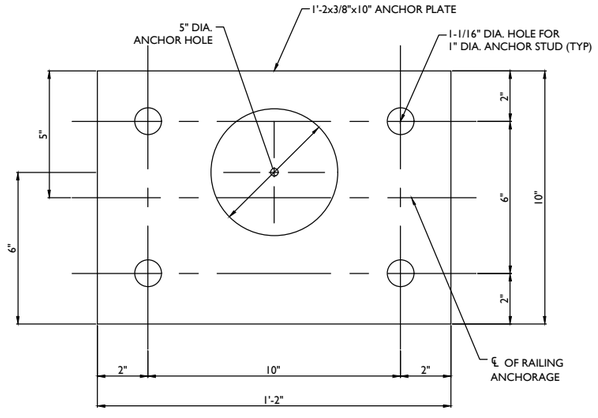
STEEL BRIDGE RAILING (FOUR-RAIL - CURBLESS)
SCALE: NTS



STEEL BRIDGE RAILING SPLICE DETAILS (FOUR-RAIL - CURBLESS)
SCALE: NTS



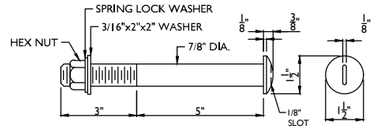
SECTION A-A
SCALE: NTS



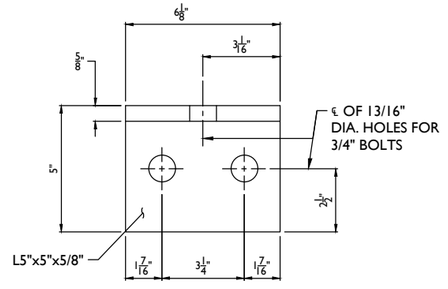
SECTION B-B
SCALE: NTS

NOTES:

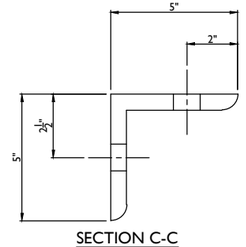
1. ALL RAILING IS TO BE FABRICATED AND ERECTED ACCORDING TO SECTION 568 OF THE STANDARD SPECIFICATIONS
2. PRIOR TO GALVANIZING THE ASSEMBLED POST, GRIND ALL EDGES TO A MINIMUM RADIUS OF 1/16"
3. BOLTS SHALL BE TORQUED SNUG TIGHT (APPROXIMATELY 100 ft-lb).
4. DETAILS SHOWN ON THE DRAWINGS LABELED AS "NOT TO SCALE" ARE INTENTIONALLY DRAWN NOT TO SCALE FOR VISUAL CLARITY. ALL OTHER DETAILS,K FOR WHICH NO SCALE IS SHOWN, ARE DRAWN PROPORTIONAL AND ARE FULLY DIMENSIONED.
5. THE MINIMUM DISTANCE FROM THE POST TO AN EXPANSION JOINT SHALL BE DETERMINED BY THE MINIMUM EDGE DISTANCE OF 5" FROM ANY ANCHOR STUD TO THE END OF THE SLAB, OR TO THE EXPANSION JOINT RECESS POUR, IF ONE WAS USED. ON PRESTRESSED CONCRETE BRIDGES, THE POST SHALL BE LOCATED TO MINIMIZE ANCHOR PLATE/END BLOCK REINFORCEMENT CONFLICTS. POST SPACING SHALL BE ADJUSTED ACCORDINGLY.
6. THE MAXIMUM CENTER TO CENTER SPACING OF RAILING POSTS IS 8'-3". THESE RAILINGS ARE ADEQUATE FOR A TL-4 (PL-2) SERVICE LEVEL.



ROUND HEAD BOLT
SCALE: NTS



PLAN



SECTION C-C

RAILING ANGLE DETAILS
SCALE: NTS

PREPARED BY:
ON:

PRELIMINARY

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AS BUILT REVISIONS
DESCRIPTION OF WORK:

SIGNATURE DATE

DOCUMENT NAME: C-DTLS

AMY'S KITCHEN & SCIENCE OF THE SOUL
BRIDGE DESIGN
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TOWN OF GOSHEN
ORANGE COUNTY
STATE OF NEW YORK

PIN: AW08.03.70P | BRIDGE/CULVERT:

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777 Chestnut Ridge Road
Suite 202
Chestnut Ridge, NY 10977
Phone: 845.352.0411
Fax: 845.352.2611

NOTE: ALL UTILITY LOCATIONS SHOWN ARE QUALITY LEVEL (QLD).

BRIDGE RAILING DETAILS
(SHEET 1 OF 4)

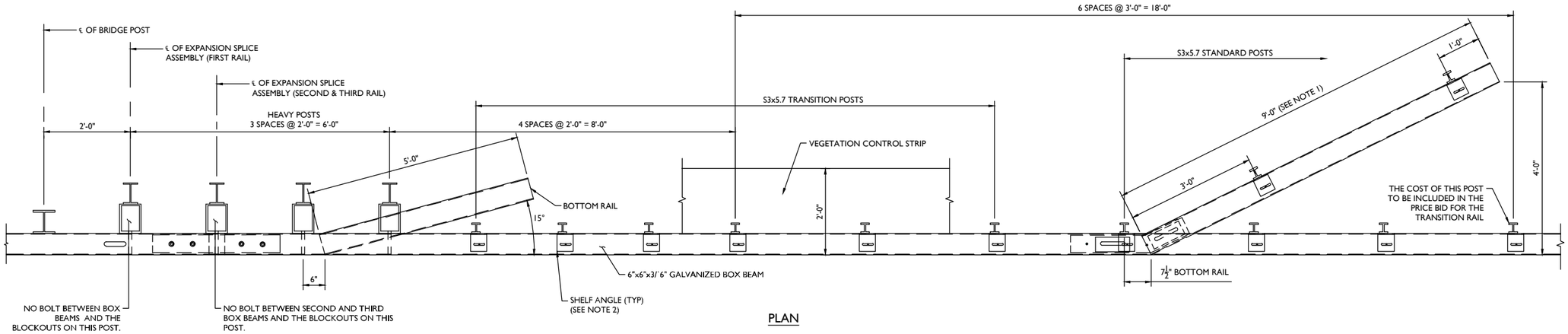
ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

DRAWING No. ST-16
SHEET No. 16 OF 21

PRINT DATE: 6/28/2016



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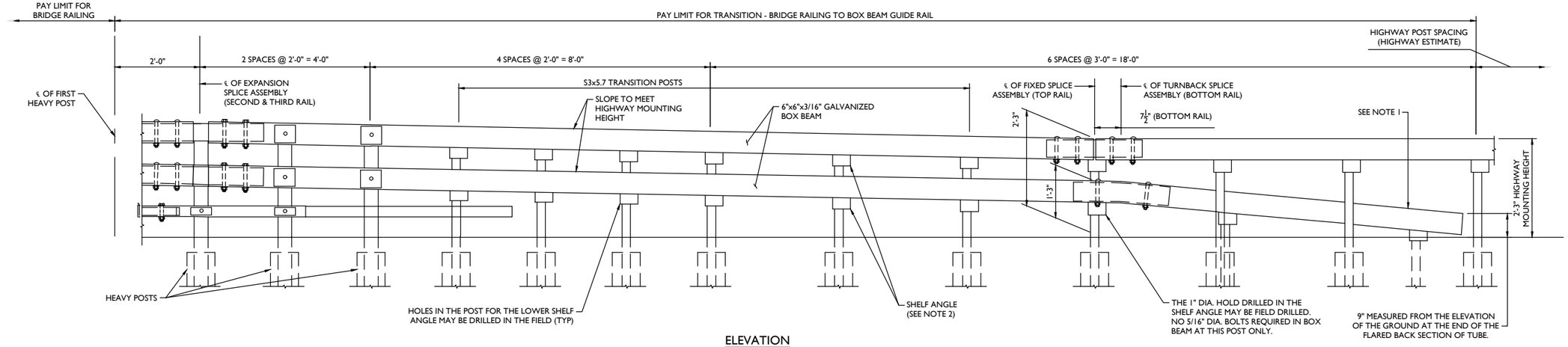
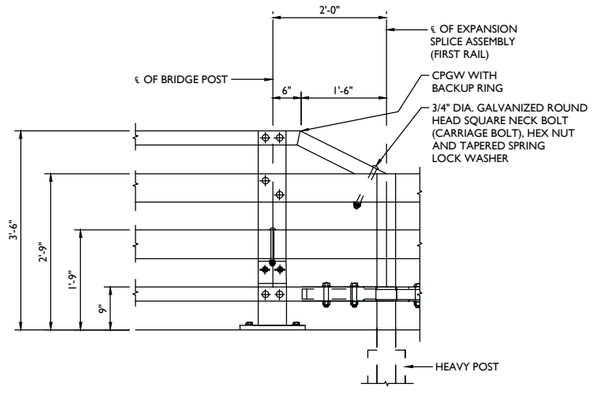
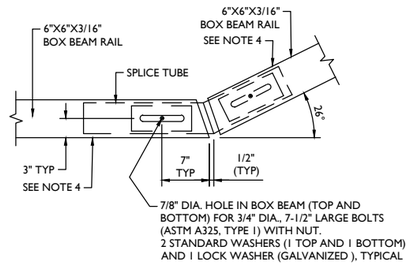


ELEVATION



FOUR-RAIL -CURBLESS ELEVATION
SCALE: NTS



SPLICE DETAIL AT TURN BACK IN LOWER TRANSITION
SCALE: NTS

NOTES:

1. THE COST OF THE POSTS, SPLICE TUBE AND RAIL FOR THE LOWER TUBE FLARE SECTION IS INCLUDED IN THE PRICE BID FOR THE TRANSITION ITEM.
2. SEE TYPICAL RAIL TO POST CONNECTION DETAIL ON CURRENT HIGHWAY STANDARD SHEET TITLED "BOX BEAM GUILDE RAIL".
3. PAVE THE VEGETATION CONTROL STRIP WITH THE SAME MATERIAL AS IN THE PAVED SHOULDER. PAYMENT WILL BE MADE UNDER THE PAVED SHOULDER ITEM.

PREPARED BY:
ON:

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DOCUMENT NAME: C-DTLS

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ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

BRIDGE RAILING DETAILS (SHEET 2 OF 4)

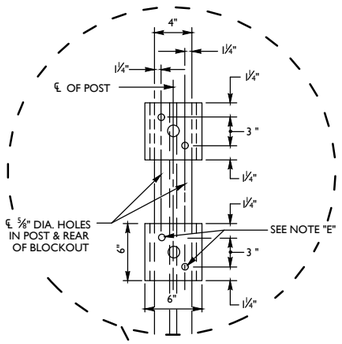
MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

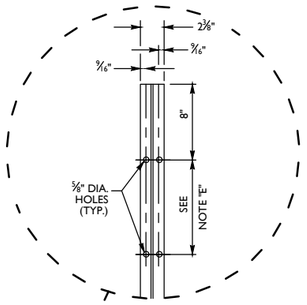
PROJECT NUMBER: 13001659B

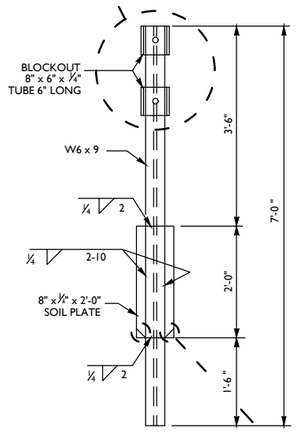
DRAWING No. ST-17

SHEET No. 17 OF 21

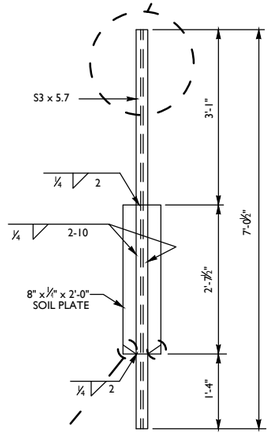
PRINT DATE: 6/28/2016



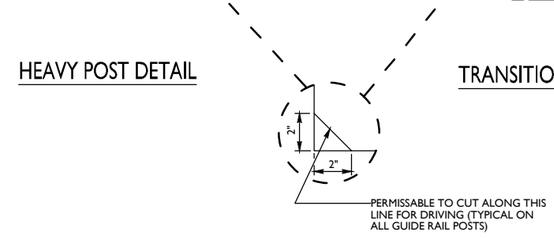


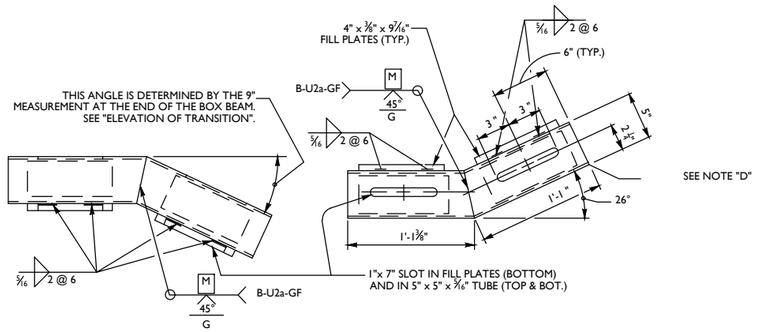


HEAVY POST DETAIL

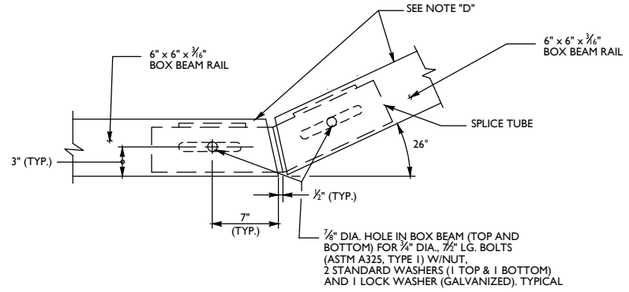


TRANSITION POST DETAIL

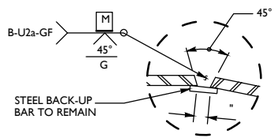




SPLICE TUBE DETAIL FOR TURN BACK



SPLICE DETAIL AT TURN BACK IN LOWER TRANSITION GUIDE RAIL



WELD DETAIL FOR SPLICE TUBE

NOTES:

1. FOR SPECIAL POST DETAIL, SEE BD-RC3E
2. NOTE "D"
   PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES, AND FILL PLATES.
3. NOTE "E"
   HOLES IN THE POST FOR THE LOWER RAIL MAY BE LOCATED AND DRILLED IN THE FIELD. IF SO, THE GALVANIZING SHALL BE REPAIRED IN ACCORDANCE WITH SUBSECTION 719-01.
4. DETAILS ON THE DRAWINGS LABELED AS "NOT TO SCALE" ARE INTENTIONALLY DRAWN NOT TO SCALE FOR VISUAL CLARITY. ALL OTHER DETAILS, FOR WHICH NO SCALE IS SHOWN, ARE DRAWN PROPORTIONAL AND ARE FULLY DIMENSIONED.

PREPARED BY:
ON:

PRELIMINARY

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DESCRIPTION OF WORK:

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BRIDGE RAILING DETAILS
(SHEET 3 OF 4)

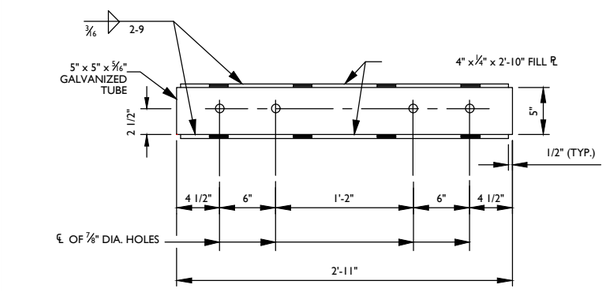
ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

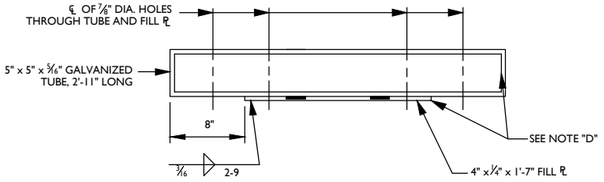
PROJECT NUMBER: 13001659B

DRAWING No. ST-18
SHEET No. 18 OF 21

PRINT DATE: 6/28/2016

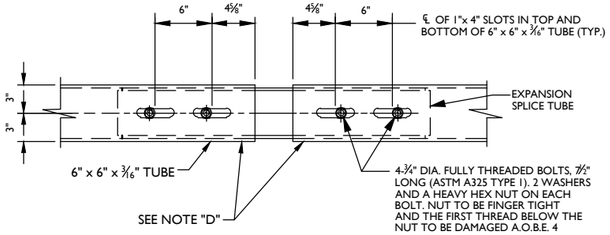


PLAN



ELEVATION

EXPANSION SPLICE TUBE



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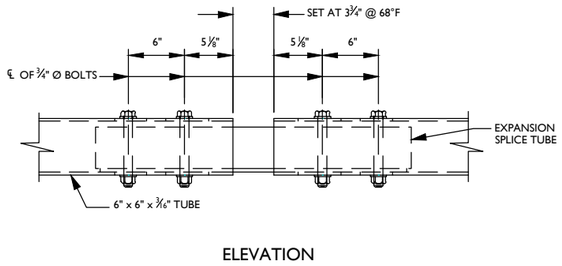
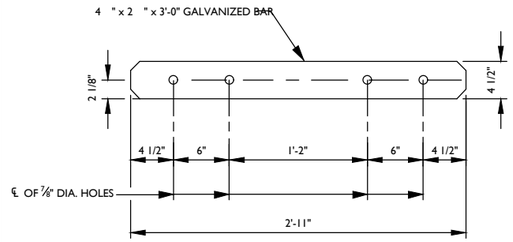


ELEVATION

EXPANSION SPLICE TUBE ASSEMBLY



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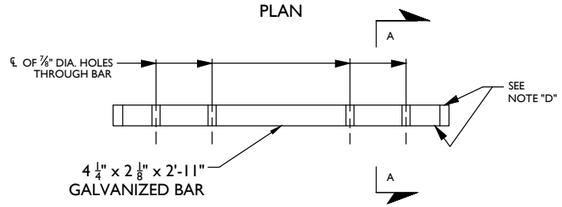
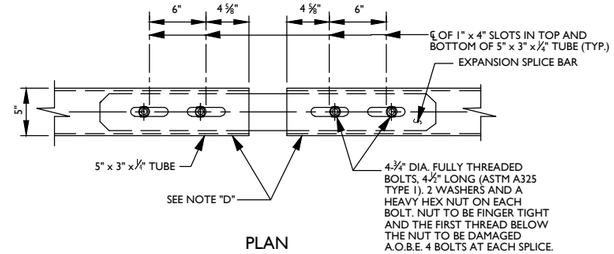


ELEVATION

EXPANSION SPLICE BAR



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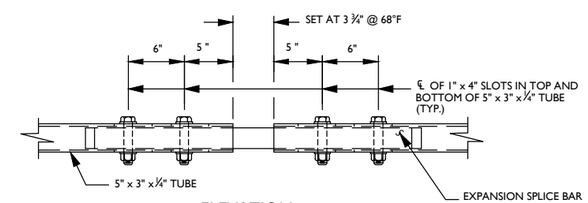

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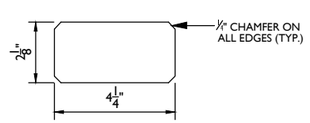
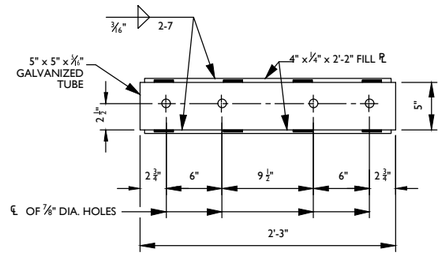


SECTION A-A



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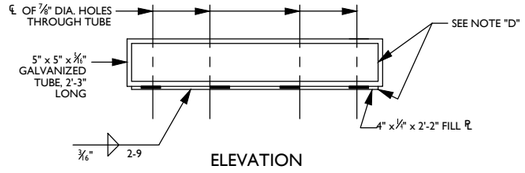
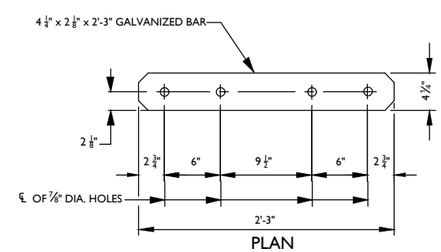


ELEVATION

FIXED SPLICE TUBE



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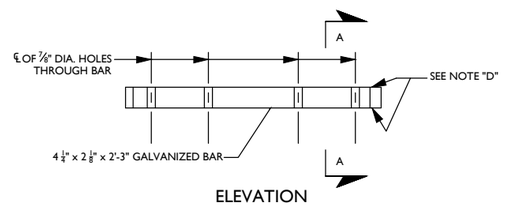

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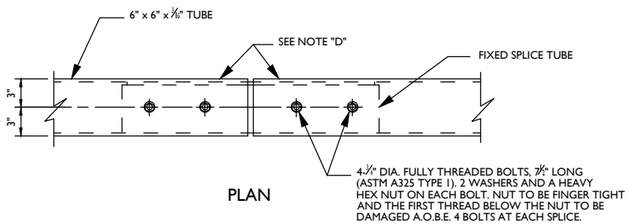
FIXED SPLICE BAR



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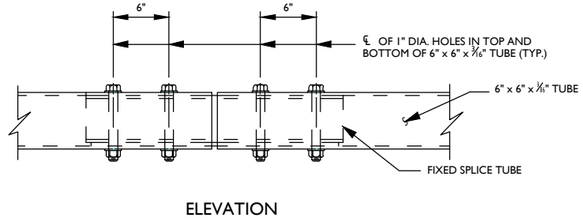
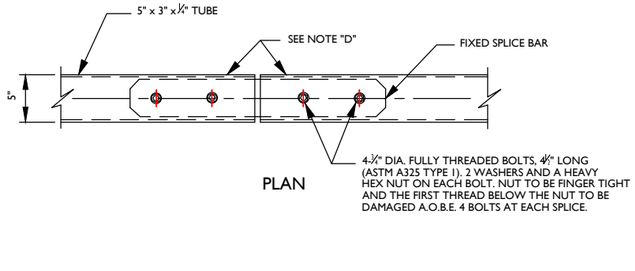


ELEVATION

FIXED SPLICE ASSEMBLY



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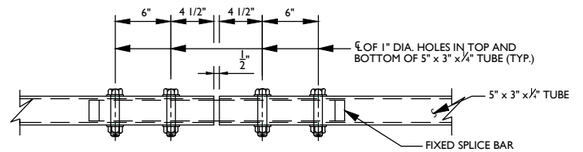

ELEVATION

FIXED SPLICE ASSEMBLY

THE EXPANSION SPLICE ASSEMBLY DETAIL WILL ACCOMMODATE 2" OF EXPANSION OR 4/8" OF CONTRACTION. IF ADDITIONAL MOVEMENT IS ANTICIPATED, THE EXPANSION SPLICE ASSEMBLY (SPLICE TUBE LENGTH, SLOTTED HOLE AND CLEARANCE SETTING) MUST BE REDESIGNED.

NOTES:

1. NOTE "D"
   PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT PERMITTED ON THE ADJOINING SURFACES OF THE BOX BEAM RAILS, SPLICE TUBES, AND FILL PLATES.
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PREPARED BY:
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AMY'S KITCHEN & SCIENCE OF THE SOUL
BRIDGE DESIGN
TRAINING CENTER LANE AND HARTLEY ROAD
TOWN OF GOSHEN
ORANGE COUNTY
STATE OF NEW YORK

PIN: AW08.03.70P | BRIDGE/CULVERT:

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Chestnut Ridge, NY 10977
Phone: 845.352.0411
Fax: 845.352.2611

NOTE: ALL UTILITY LOCATIONS SHOWN ARE QUALITY LEVEL (QLD).

BRIDGE RAILING DETAILS
(SHEET 4 OF 4)

ALL DIMENSIONS IN US SURVEY FEET UNLESS OTHERWISE NOTED

MANAGER:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
NMG	BDR	PAM	NMG

PROJECT NUMBER: 13001659B

DRAWING No. ST-19
SHEET No. 19 OF 21

PRINT DATE: 6/28/2016

Appendix I

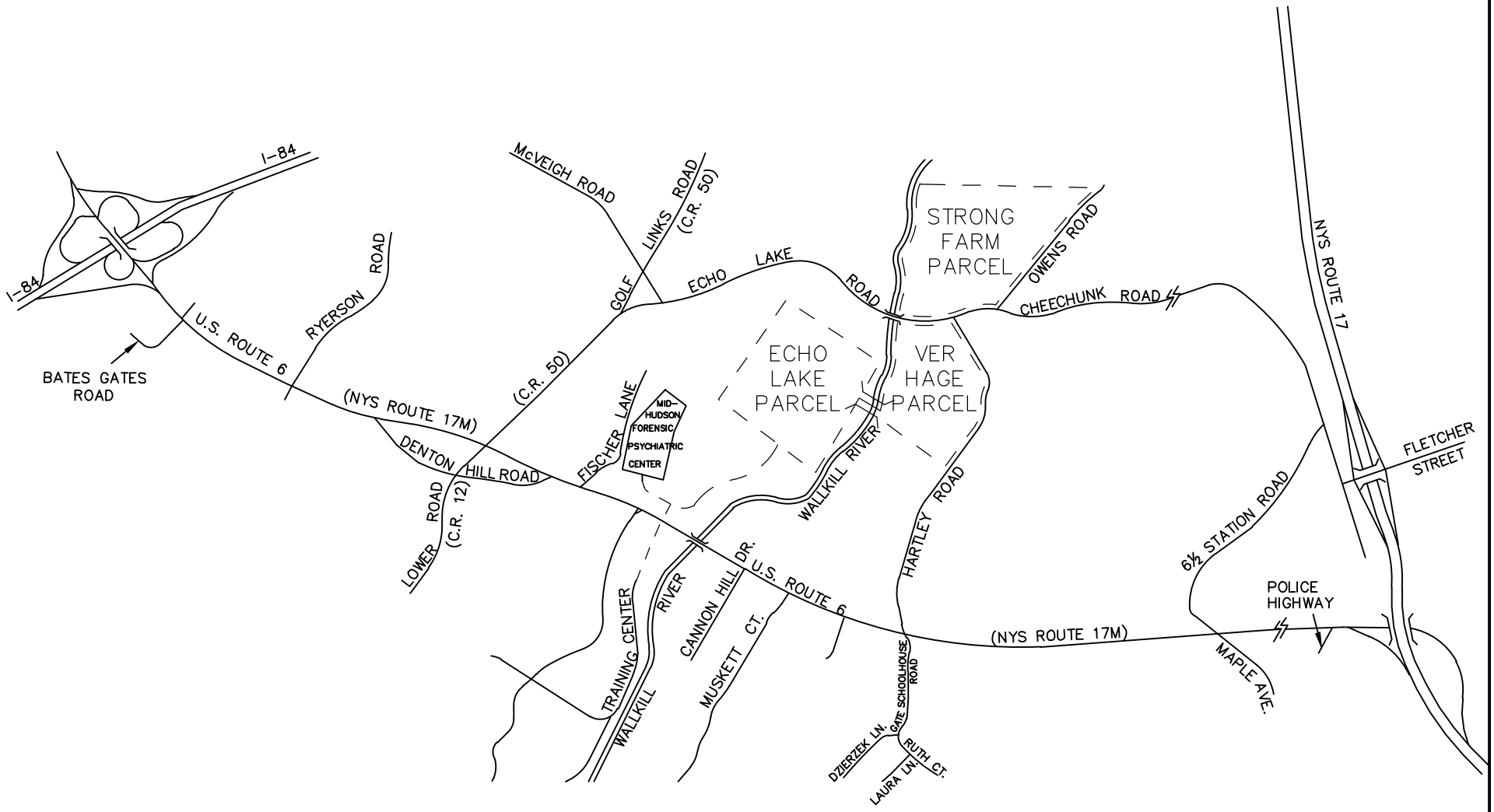
AMY'S KITCHEN/SCIENCE OF THE SOUL

FEIS TRAFFIC VOLUME FIGURES

AMY'S KITCHEN/SCIENCE OF THE SOUL

FEIS TRAFFIC VOLUME FIGURES

2033 FULL BUILD ANALYSIS



NOTE: LINE DIAGRAM NOT TO SCALE

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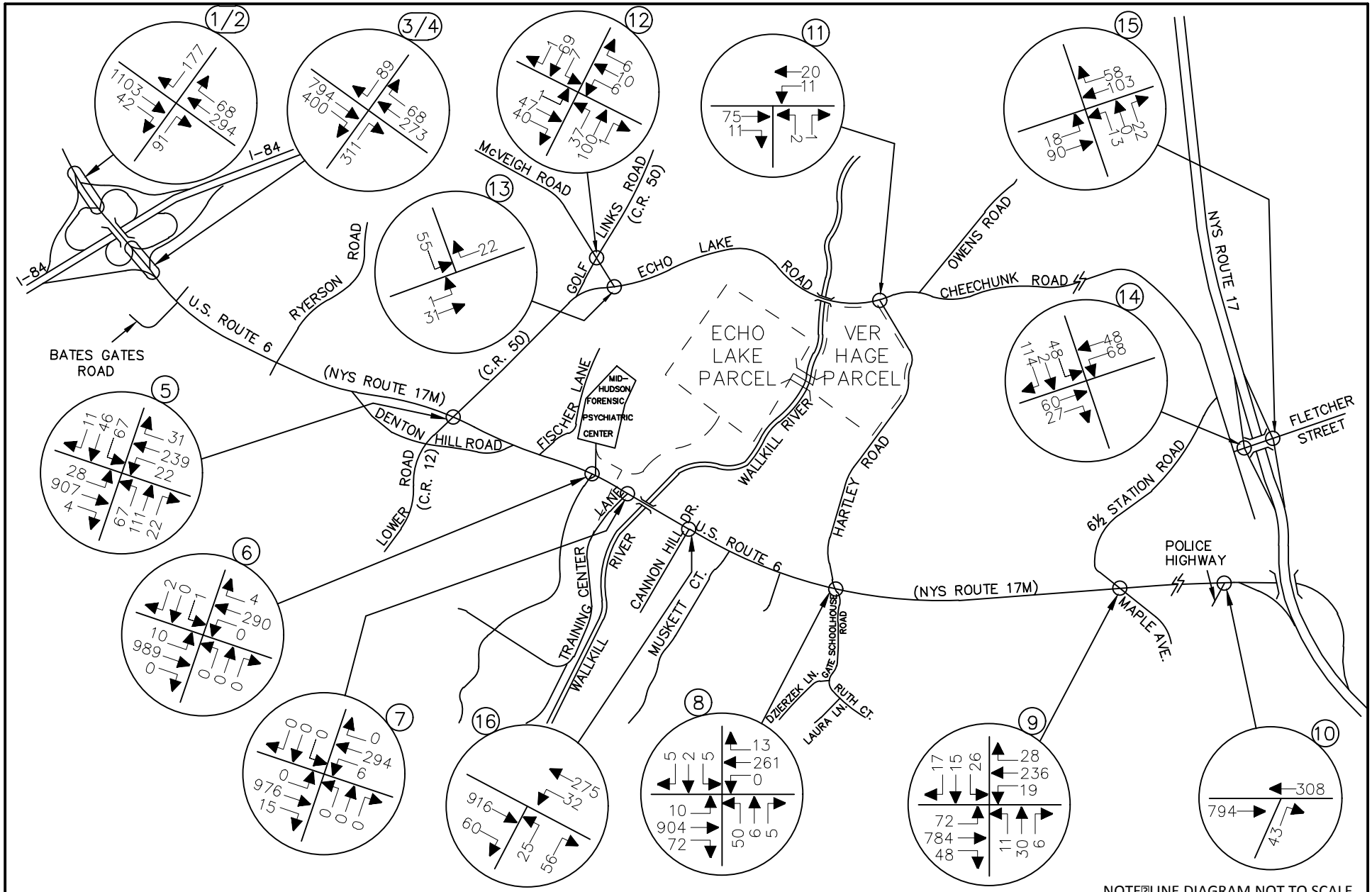
Fax: 914.347.7266
email: solutions @ maserconsulting.com

AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SITE LOCATION MAP

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
1	



NOTE: LINE DIAGRAM NOT TO SCALE

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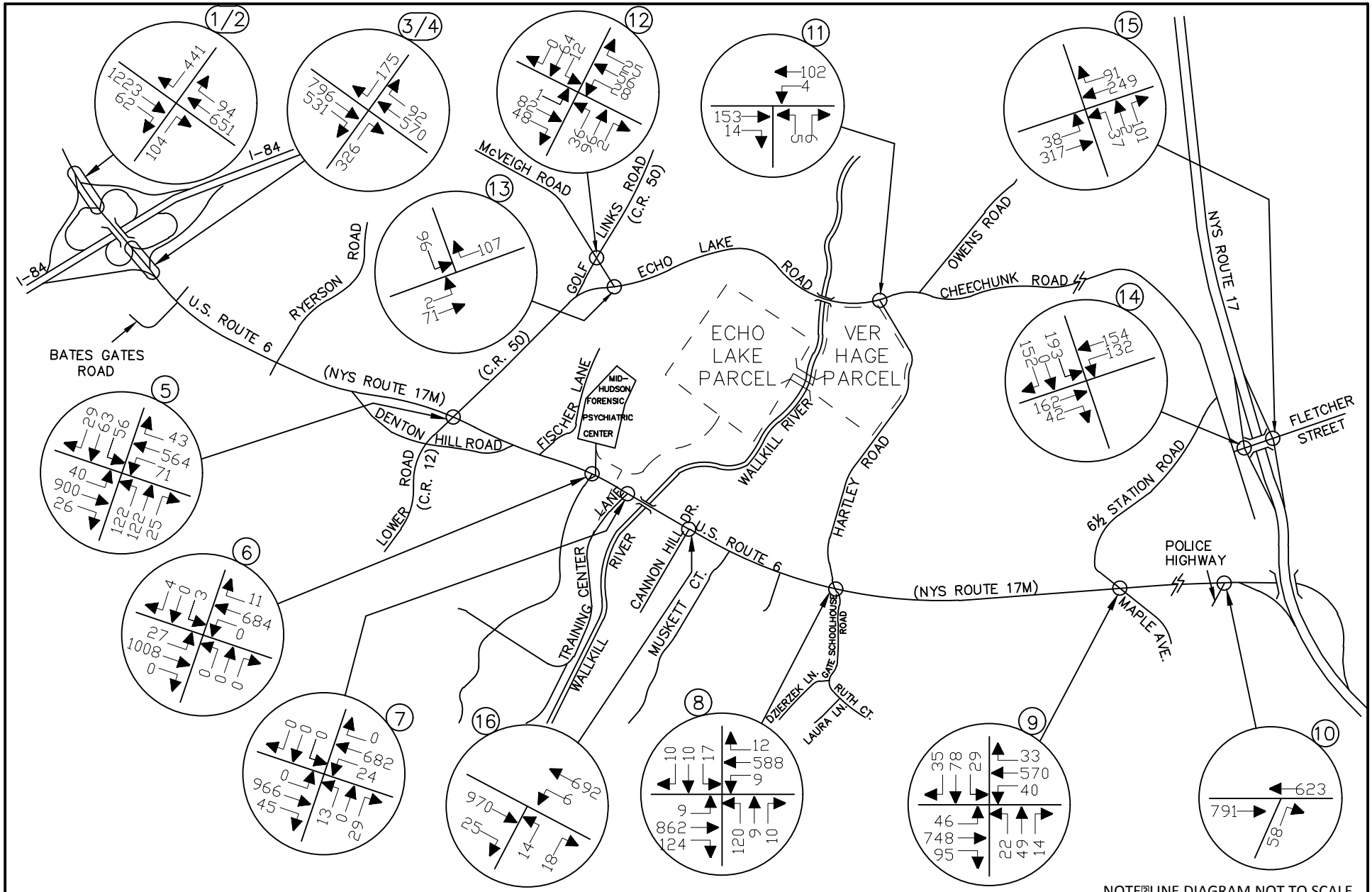
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
2	



NOTE: LINE DIAGRAM NOT TO SCALE

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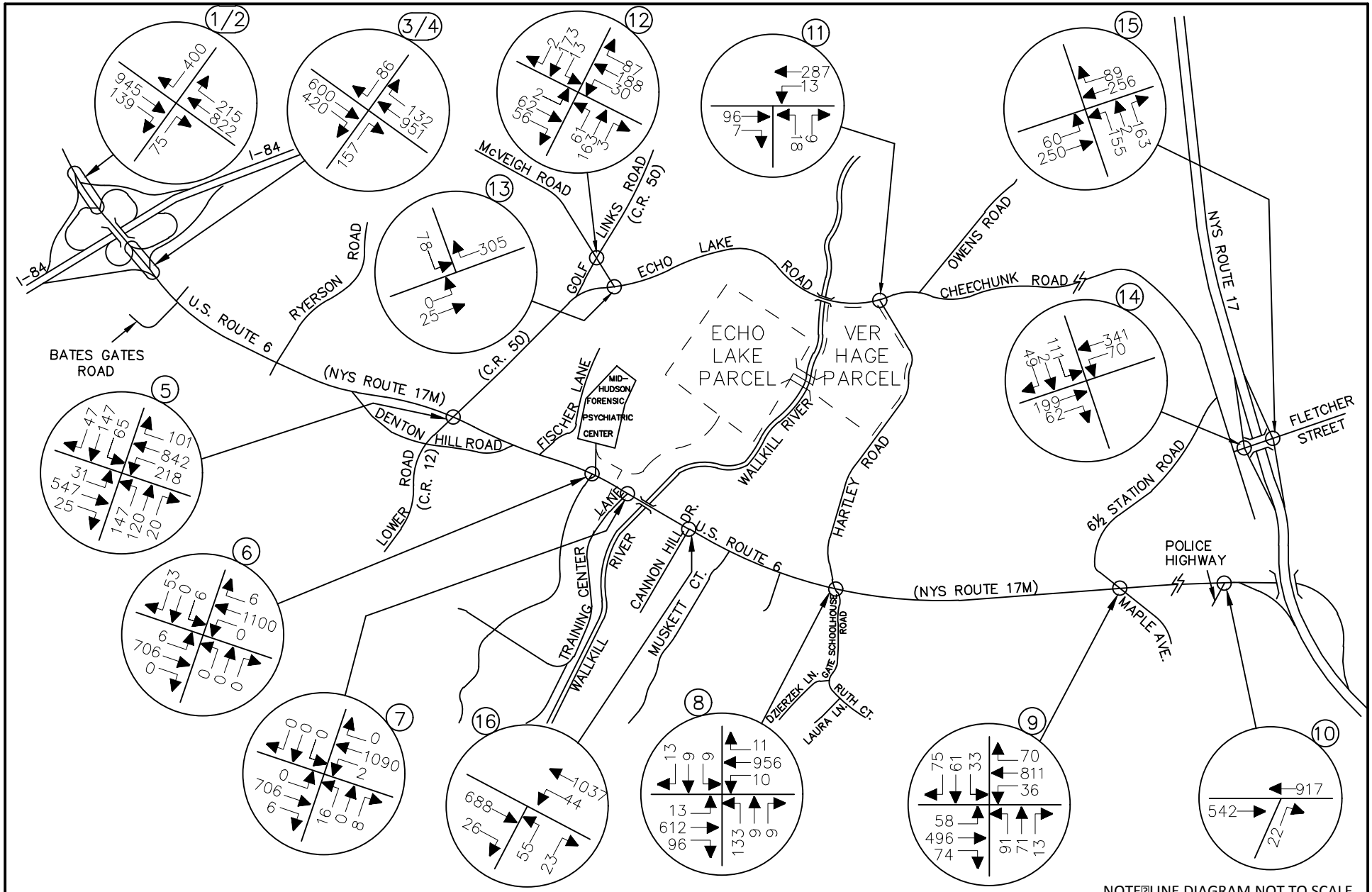
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
3	



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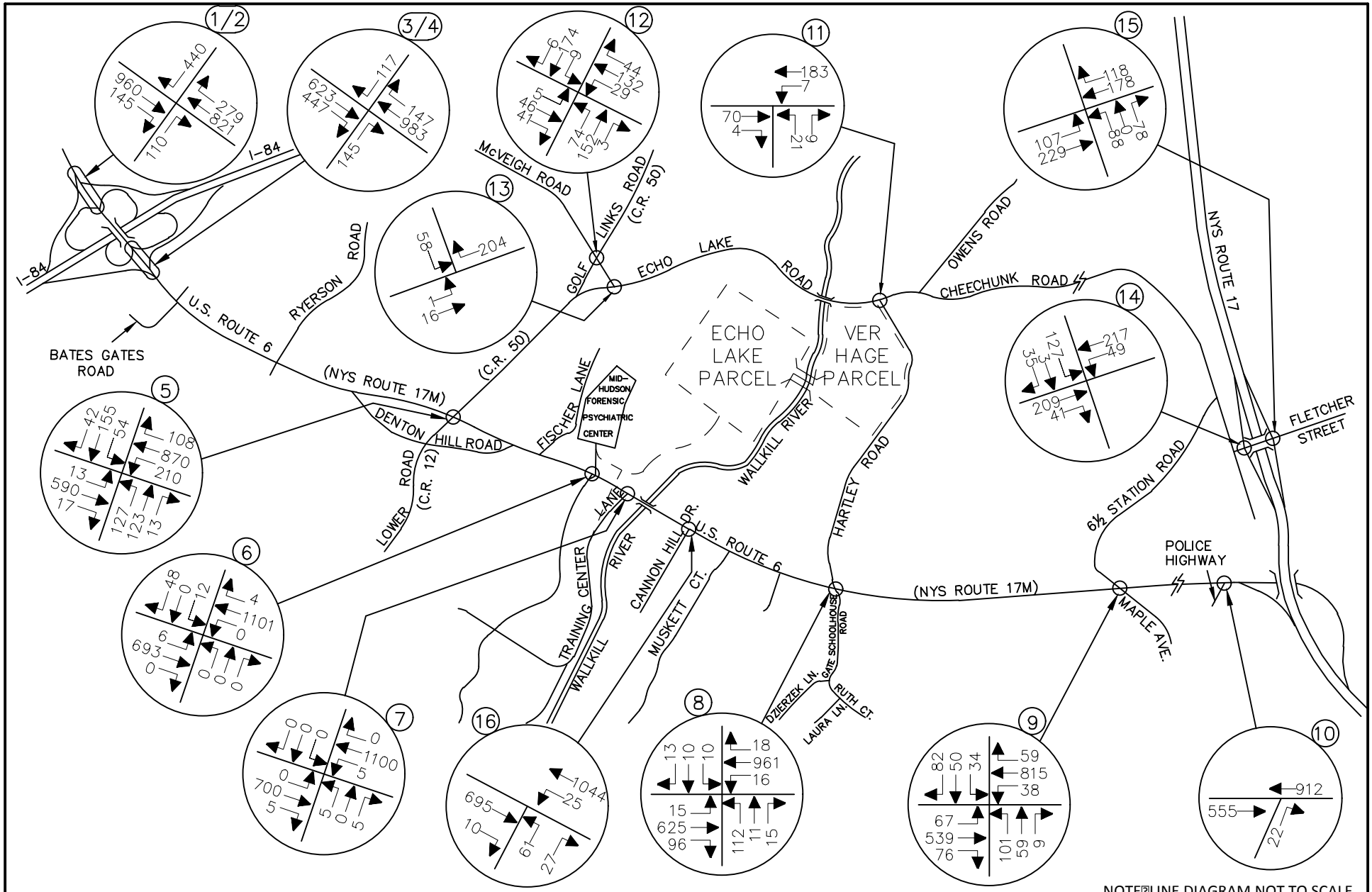
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
4:00 PM - 5:00 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
4	



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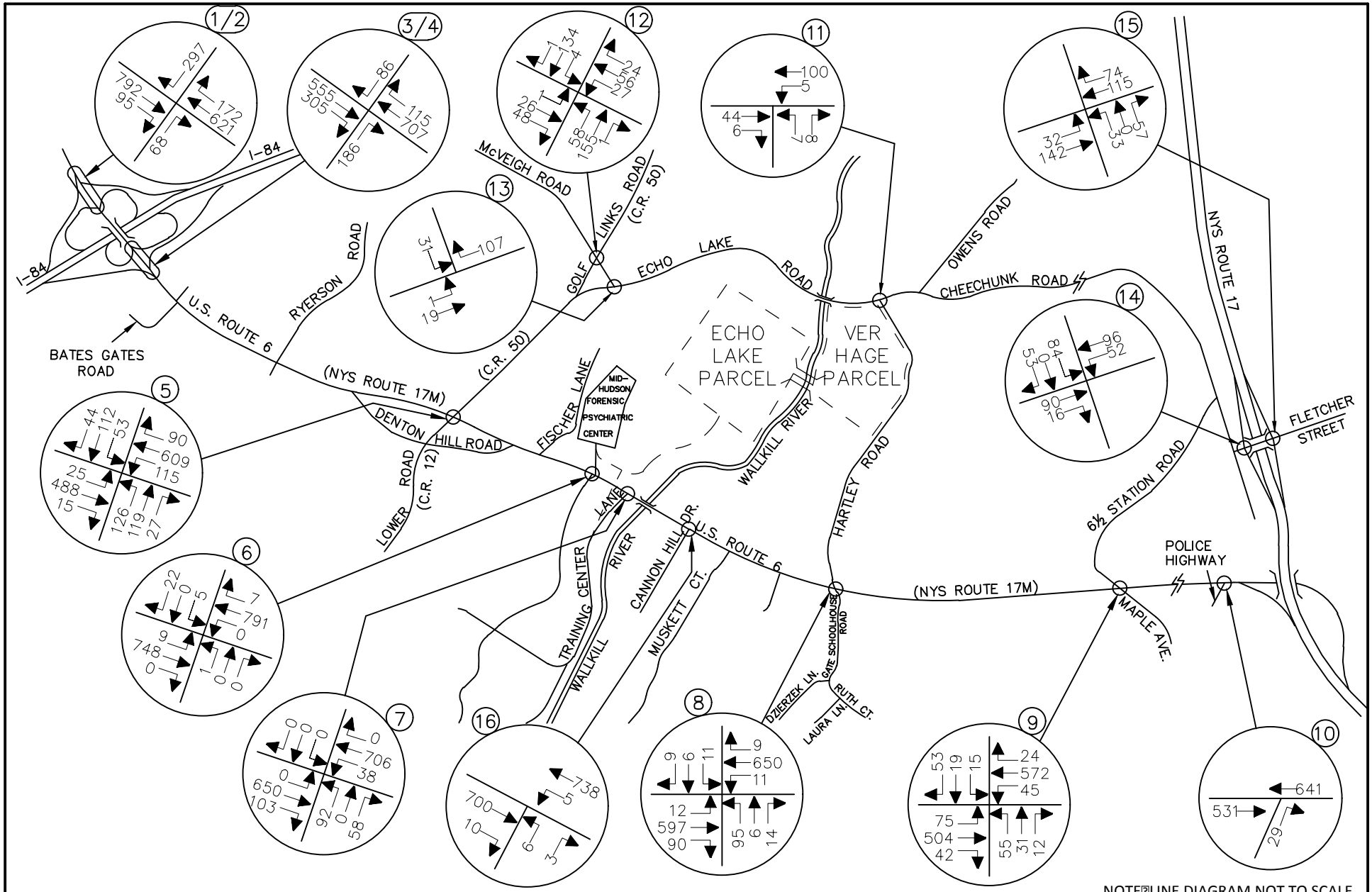
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
5	



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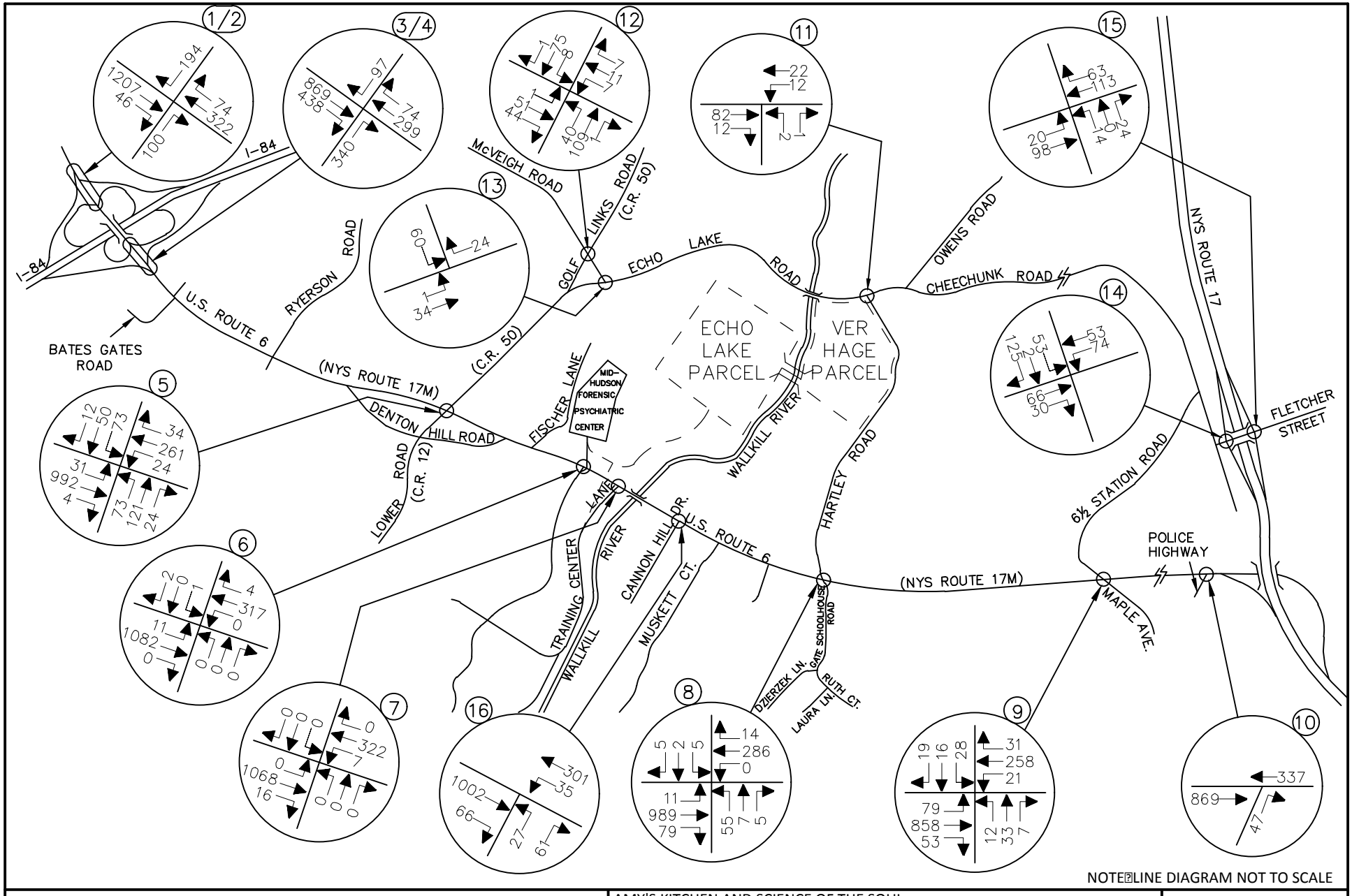
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2015 EXISTING TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
6	



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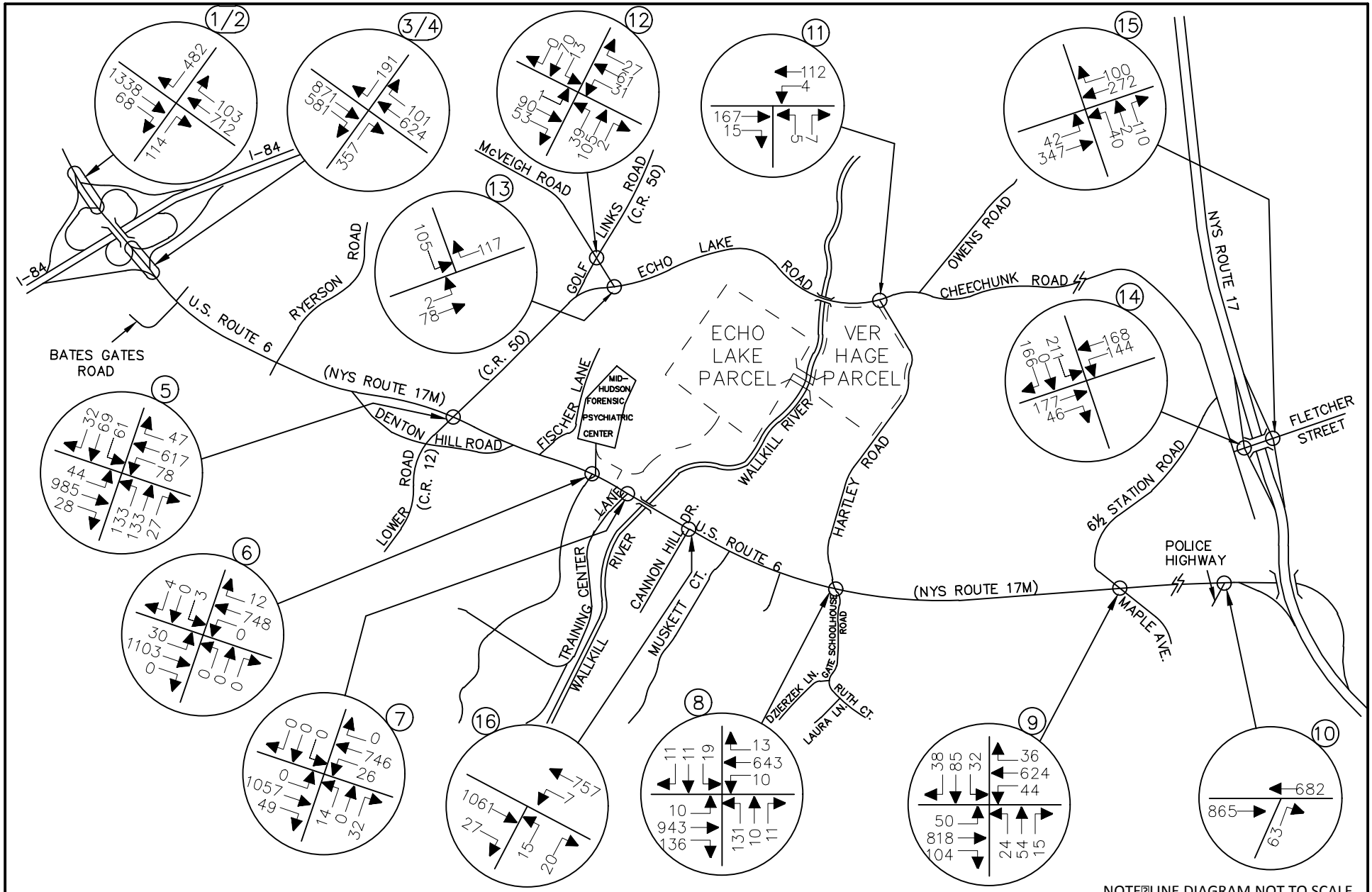
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 PROJECTED TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
7	



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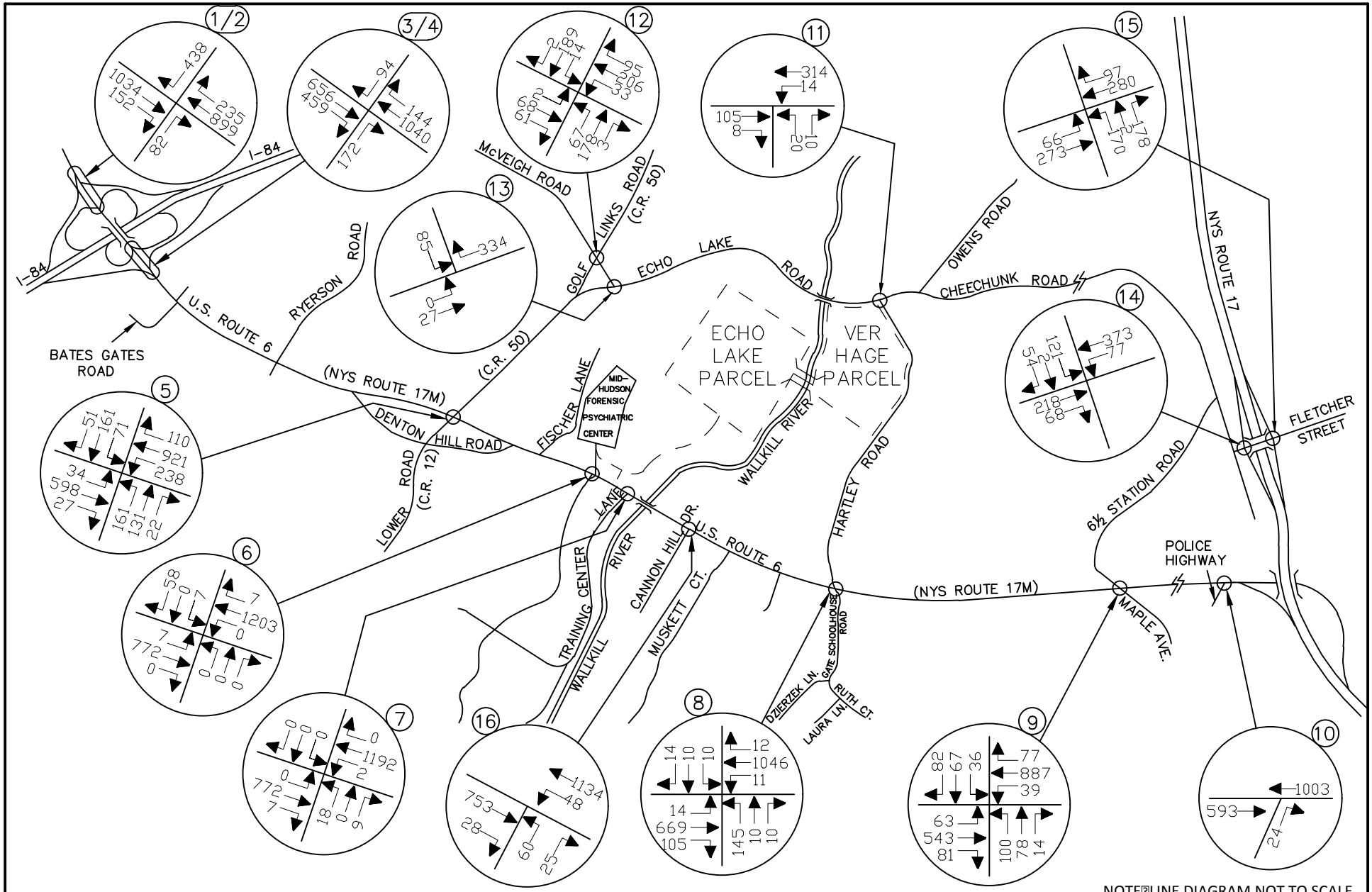
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 PROJECTED TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
8	



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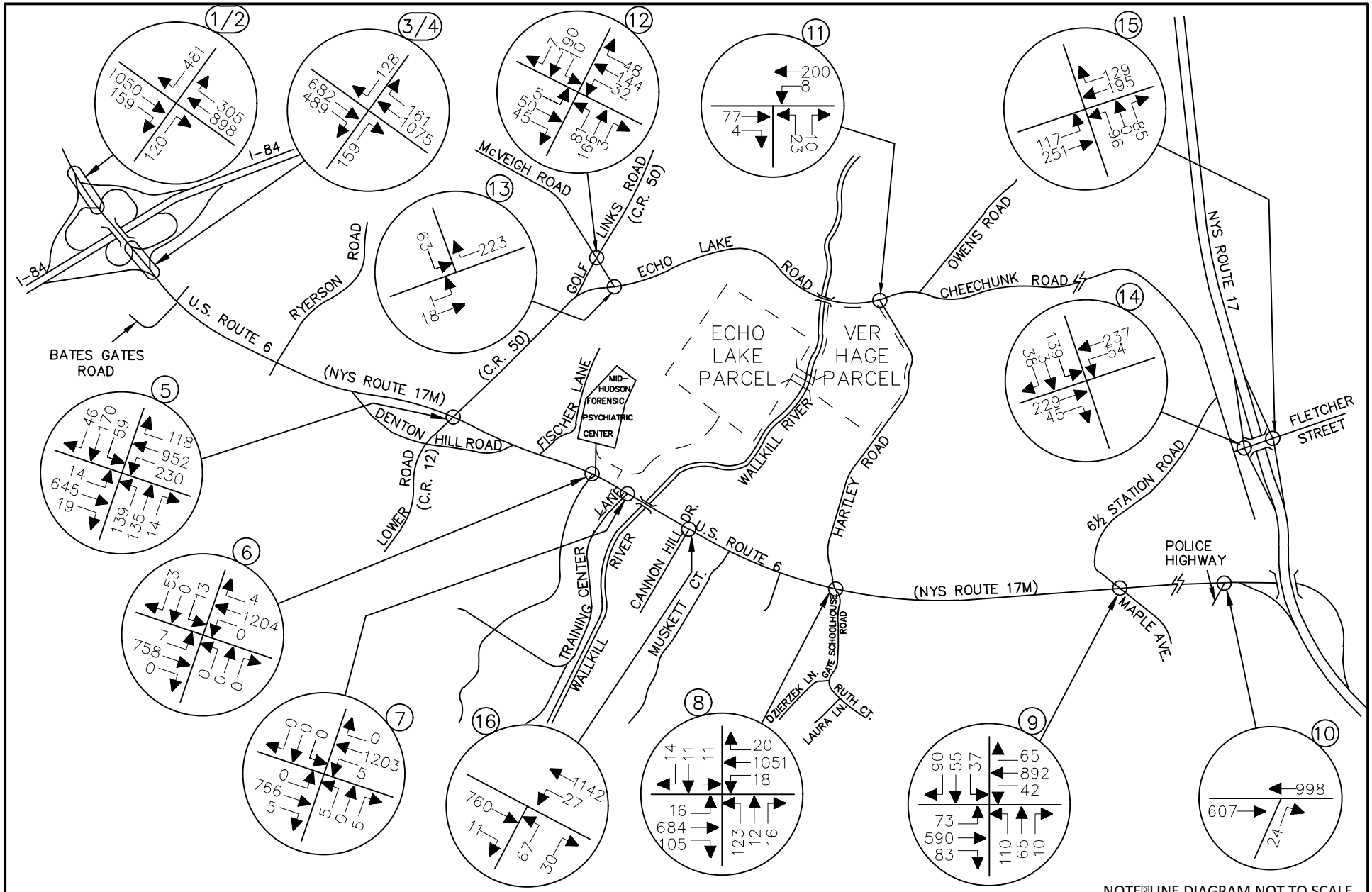
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 PROJECTED TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
4:00 PM - 5:00 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
9	



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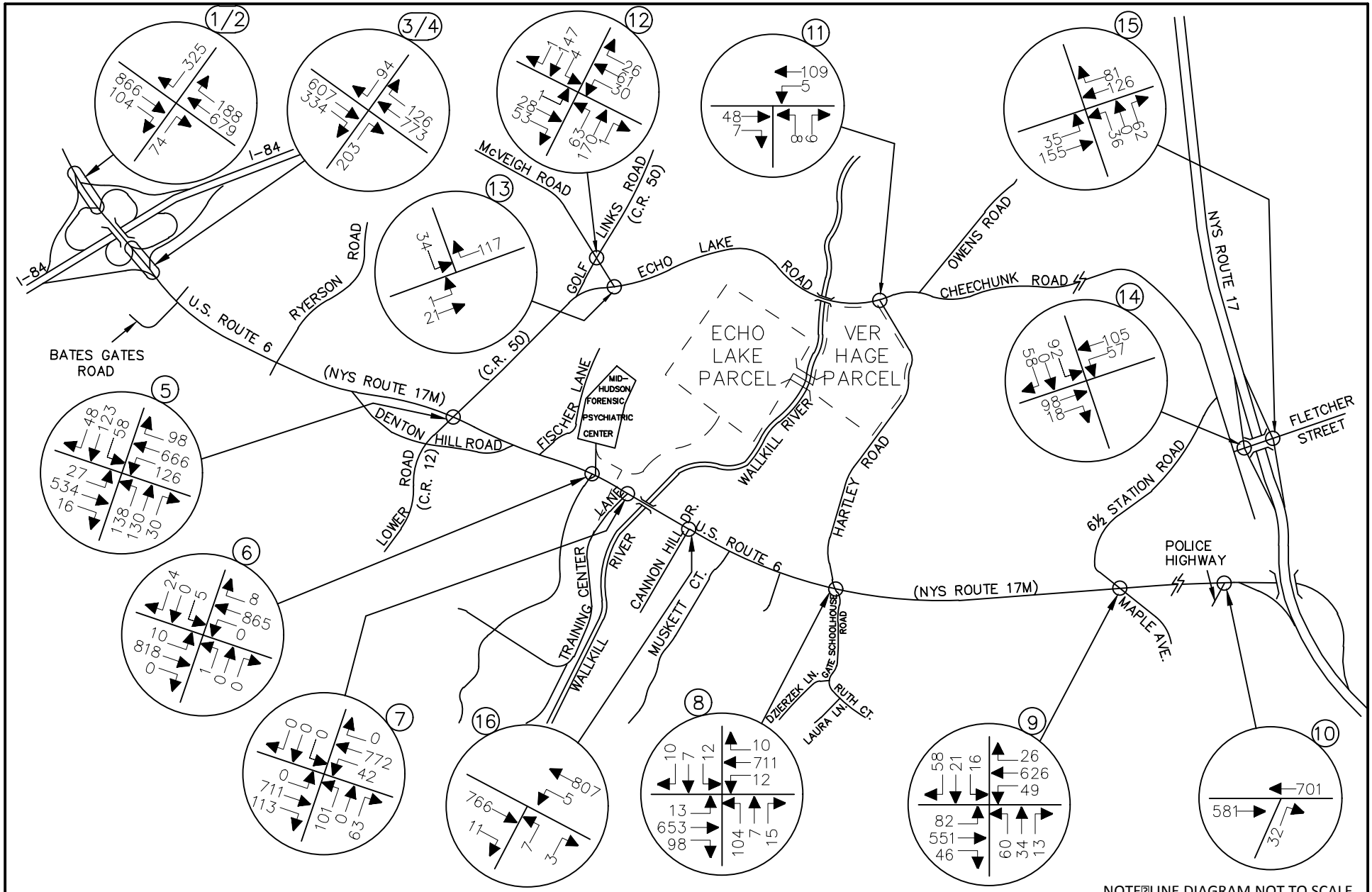
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 PROJECTED TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
10	



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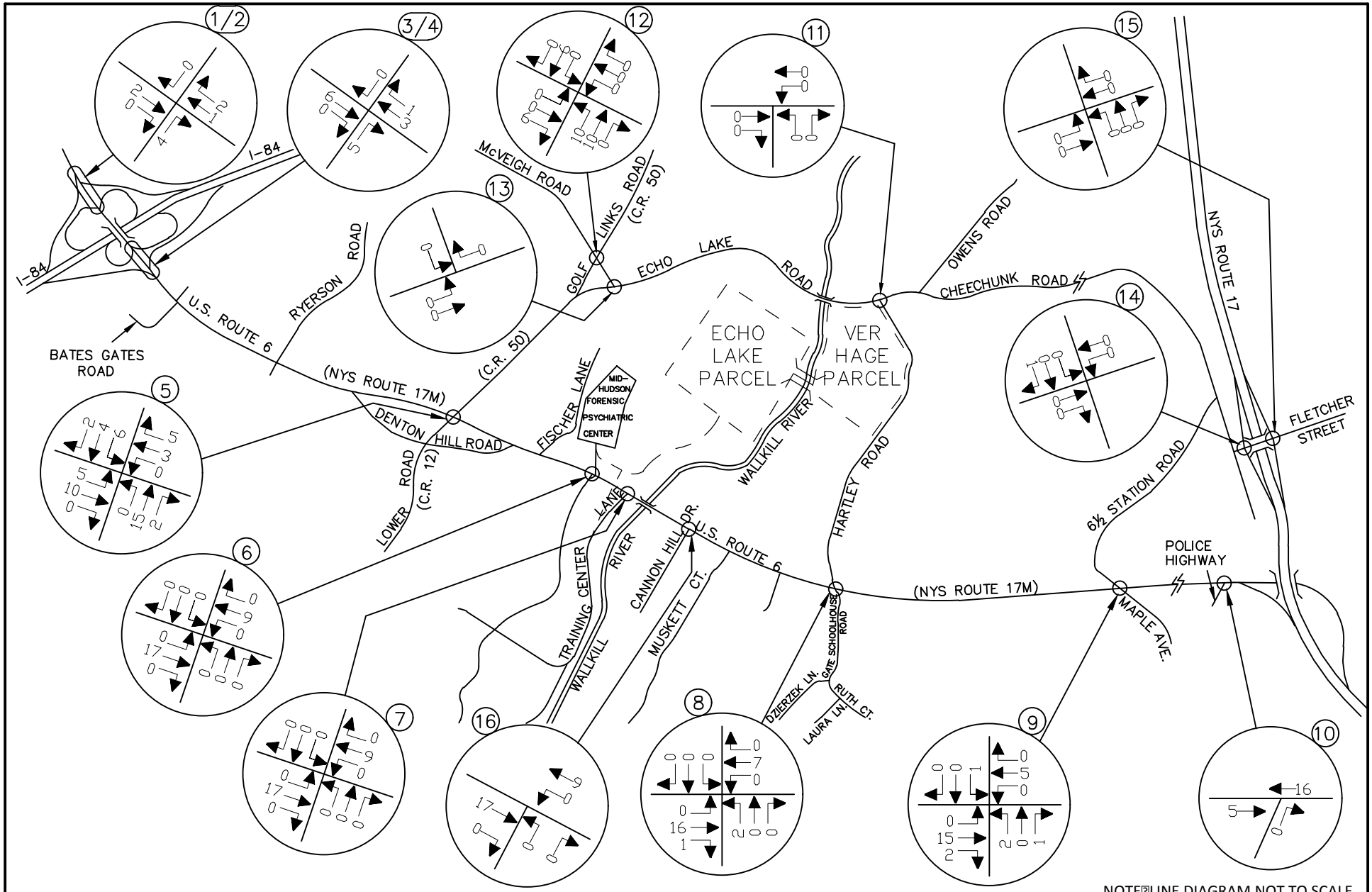
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 PROJECTED TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
11	



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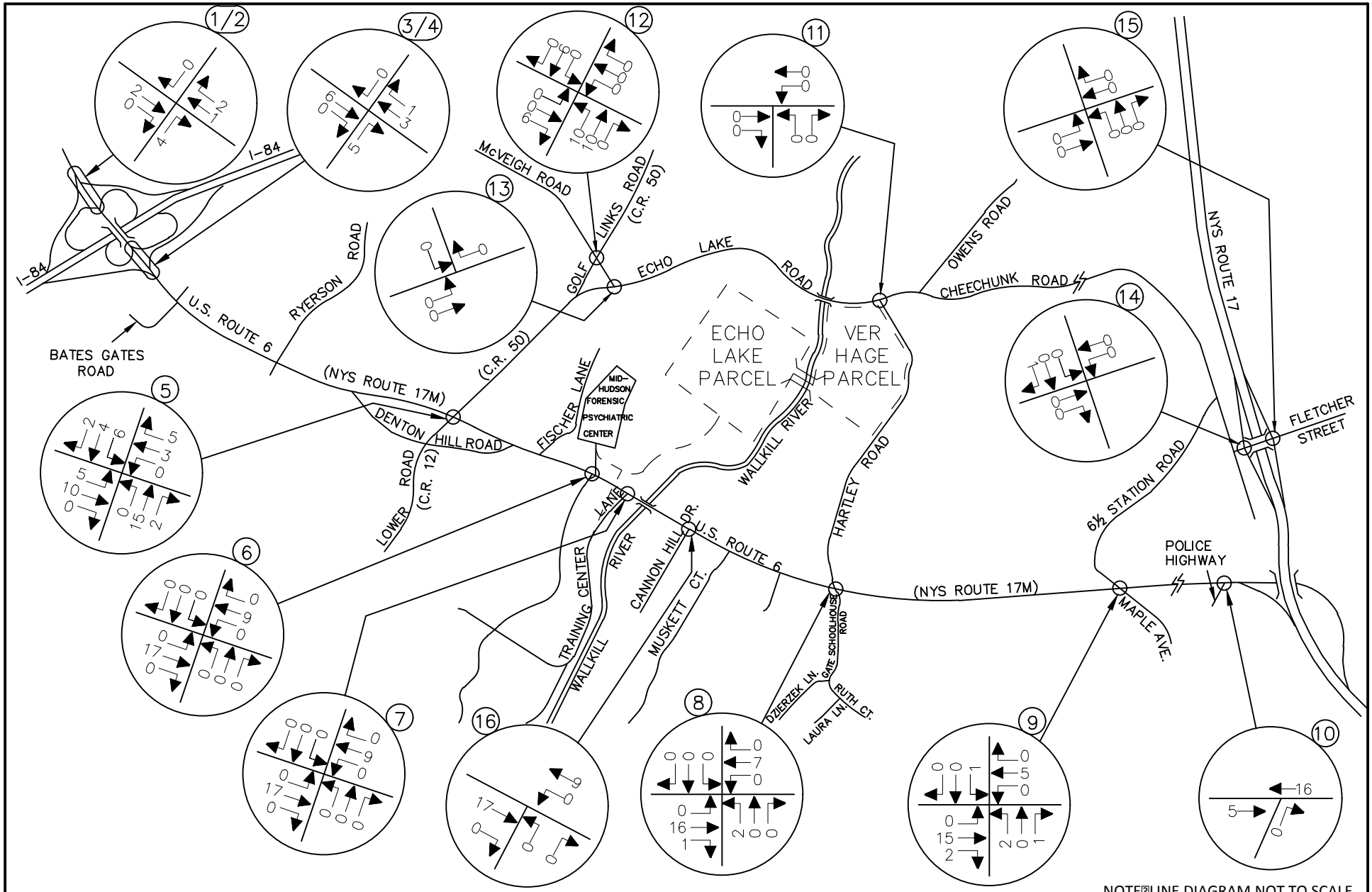
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

OTHER DEVELOPMENT TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
12	



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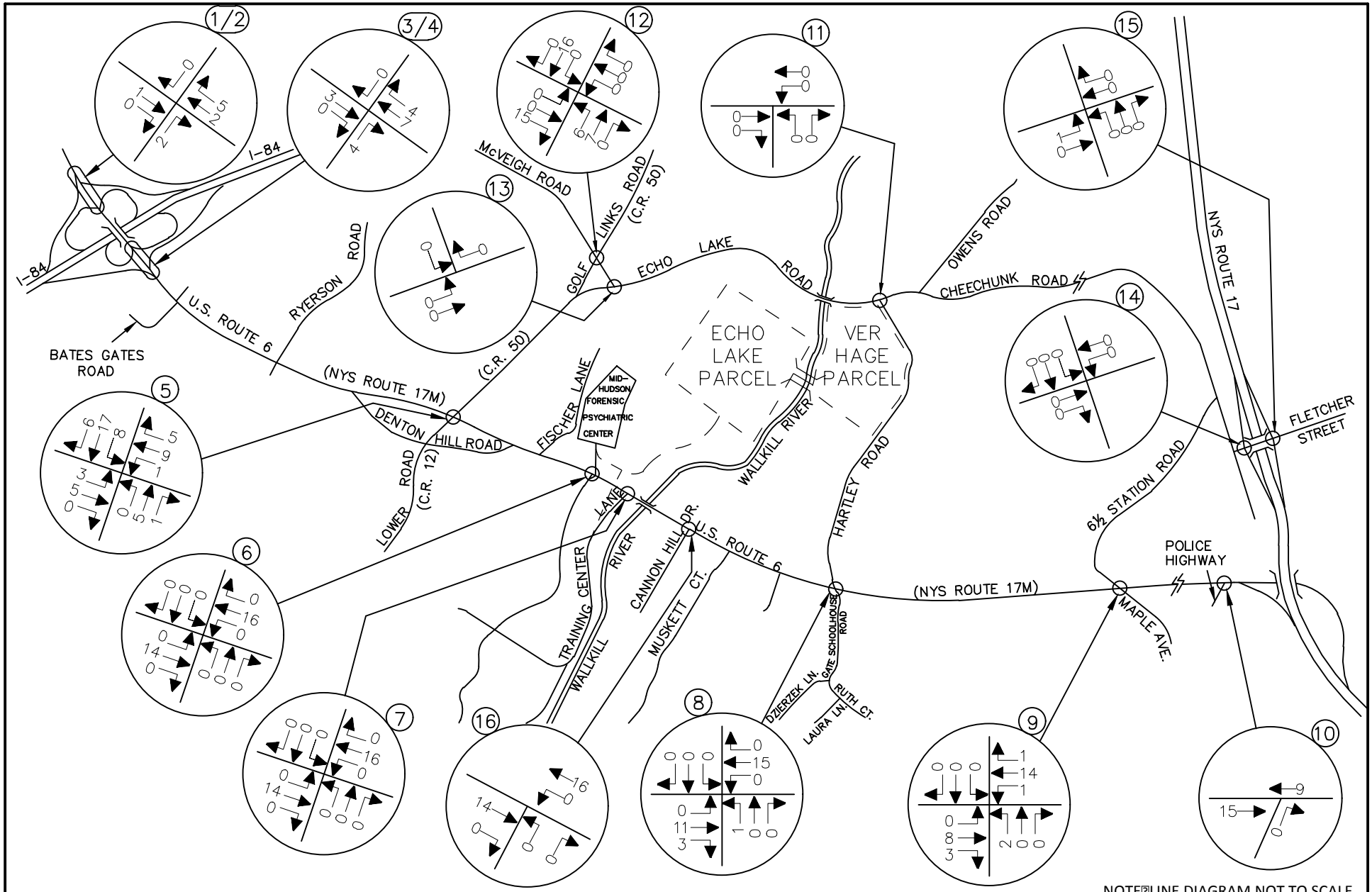
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

OTHER DEVELOPMENT TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
13	



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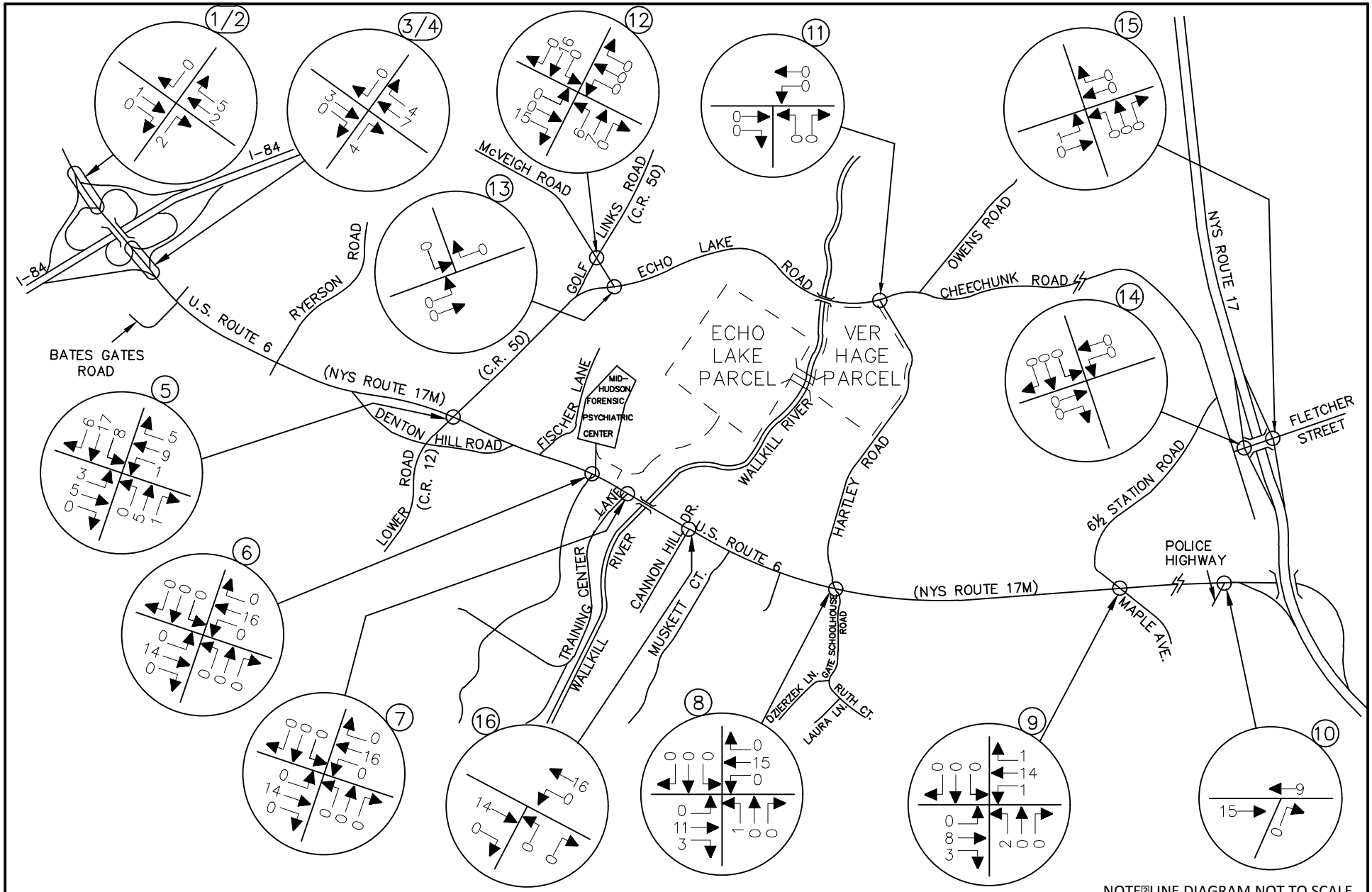
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

OTHER DEVELOPMENT TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
3:00 PM - 4:00 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
14	



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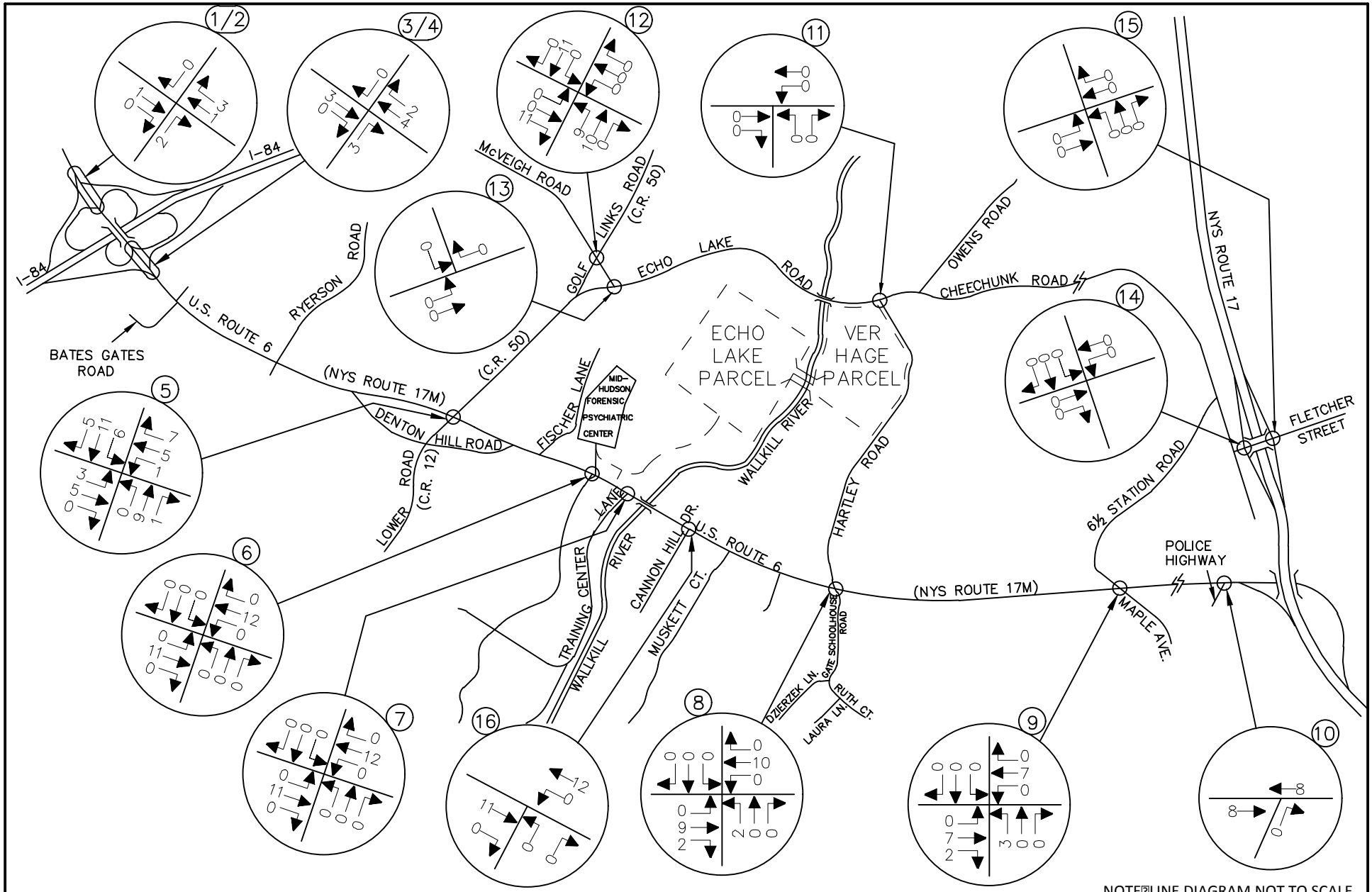
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

OTHER DEVELOPMENT TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
15	



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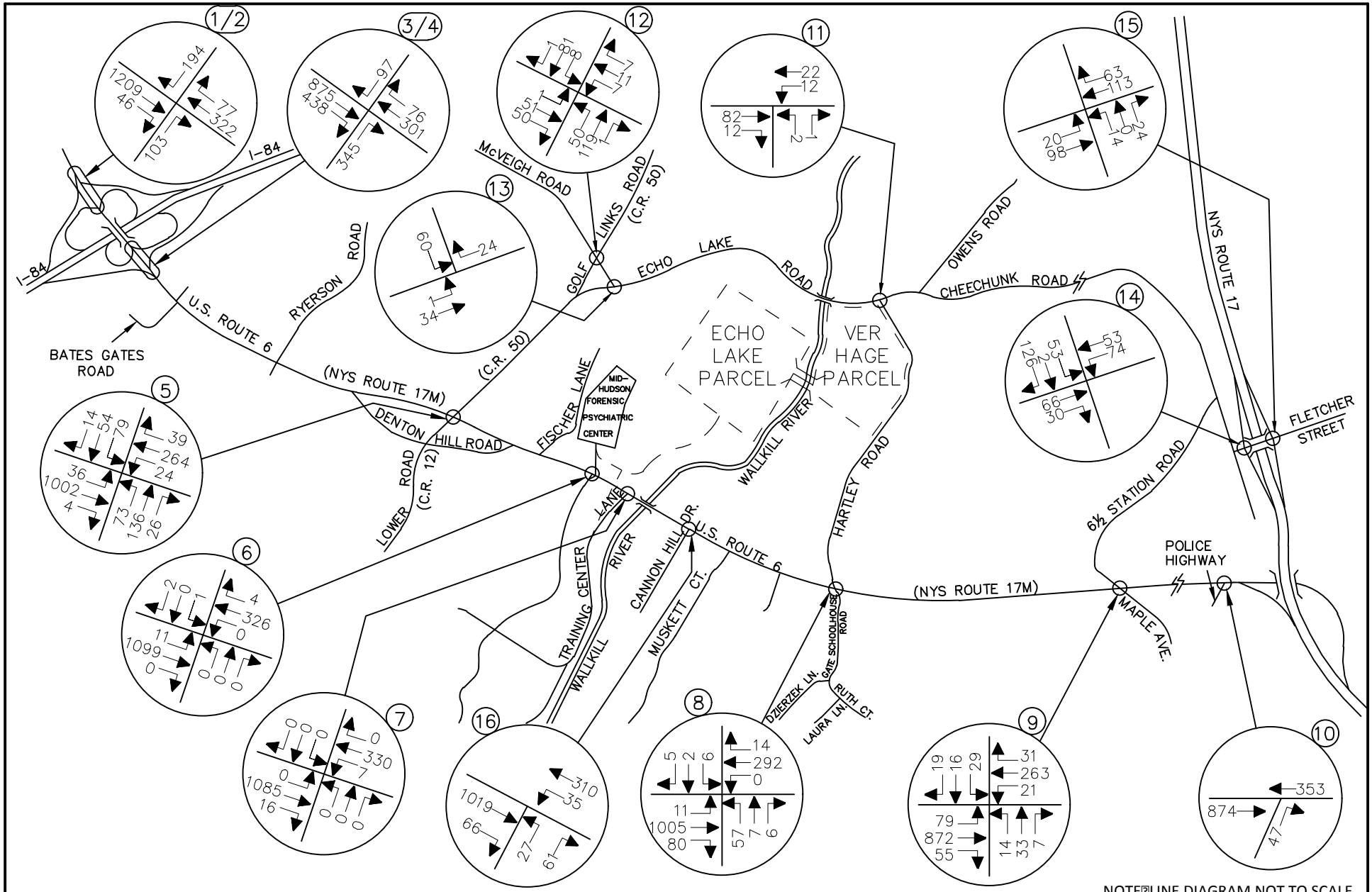
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

OTHER DEVELOPMENT TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
16	



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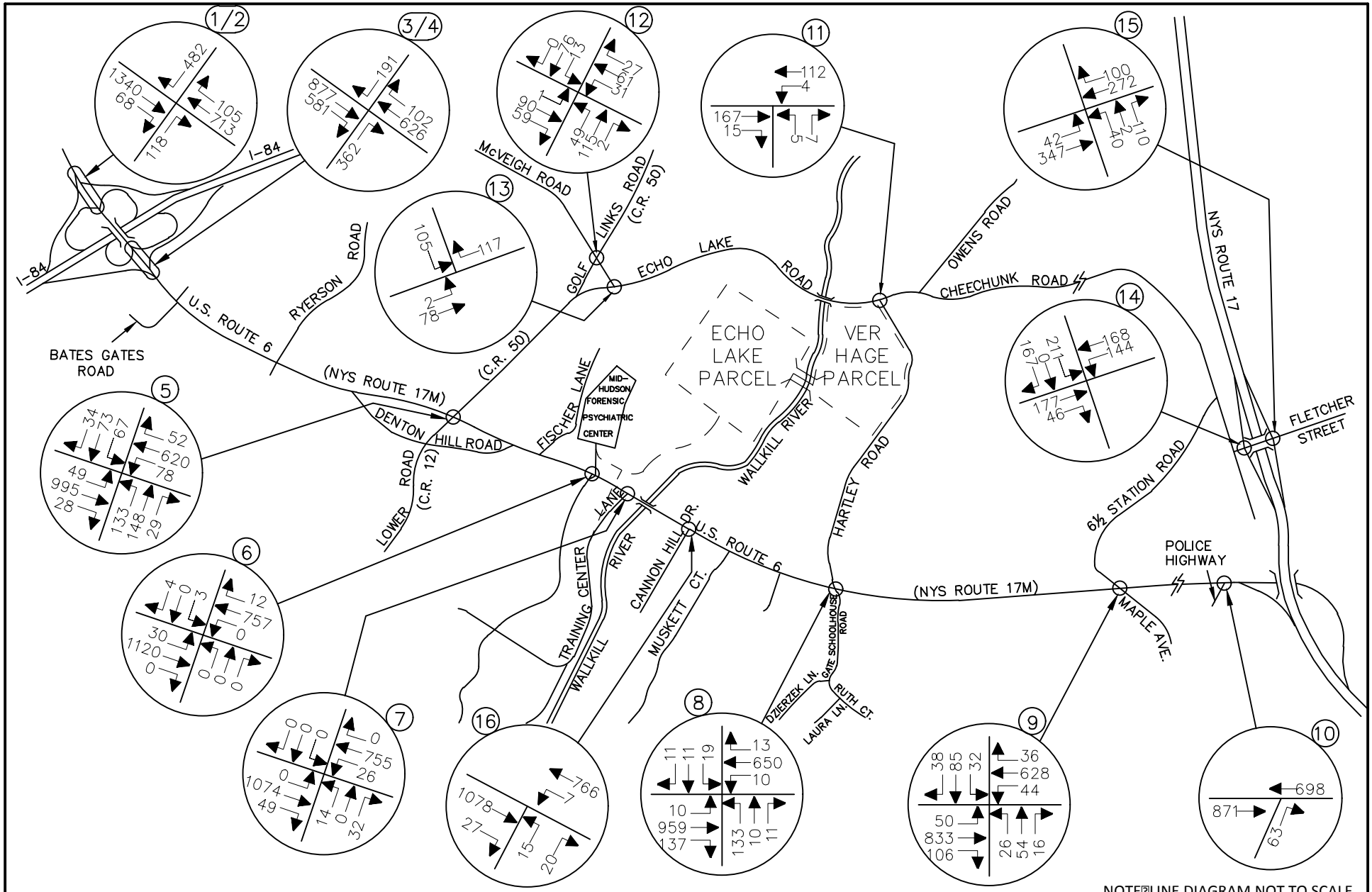
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
17	



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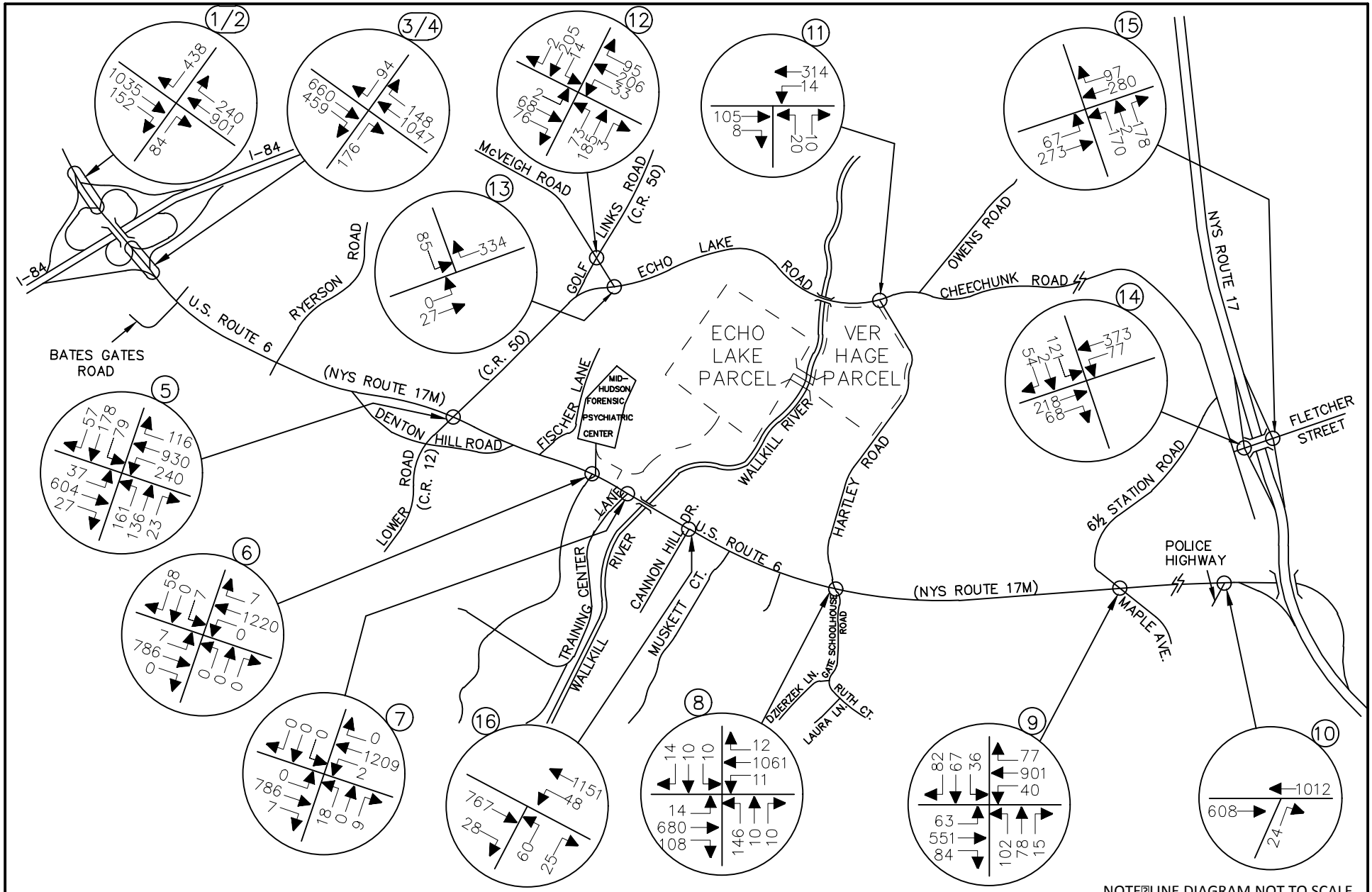
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
18	



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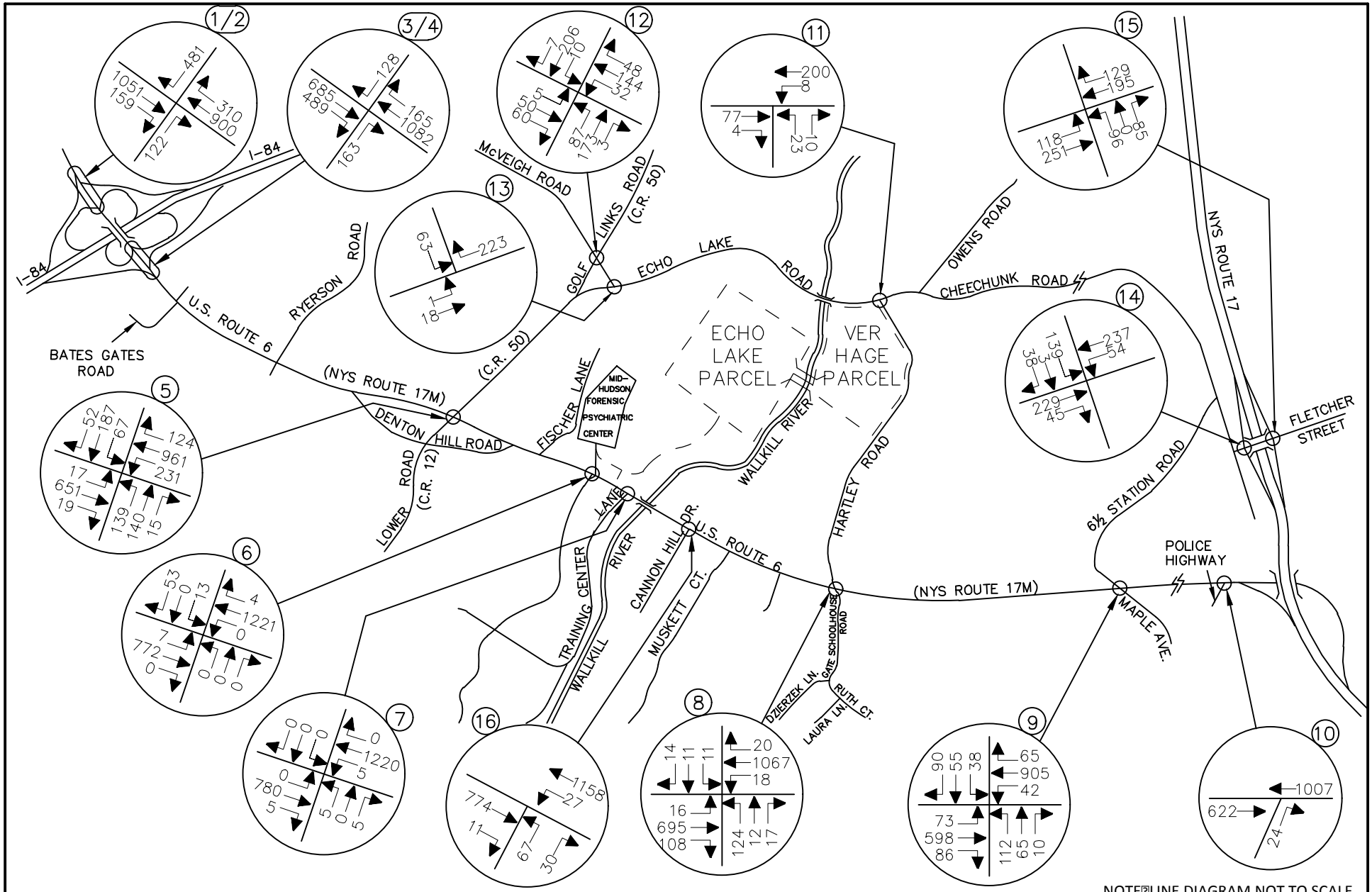
GOSHEN, NEW YORK

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
4:00 PM - 5:00 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
19	



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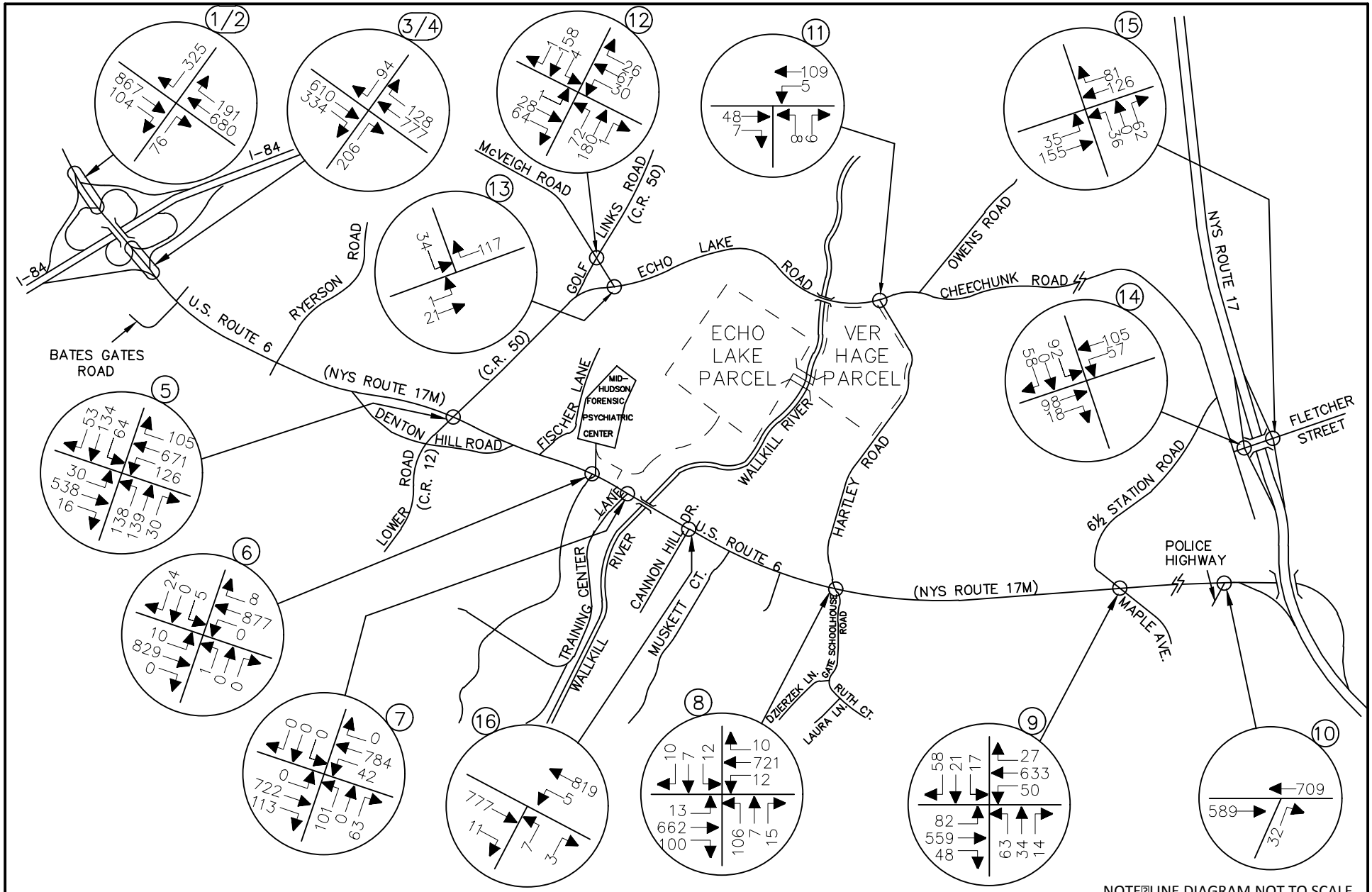
2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
20	



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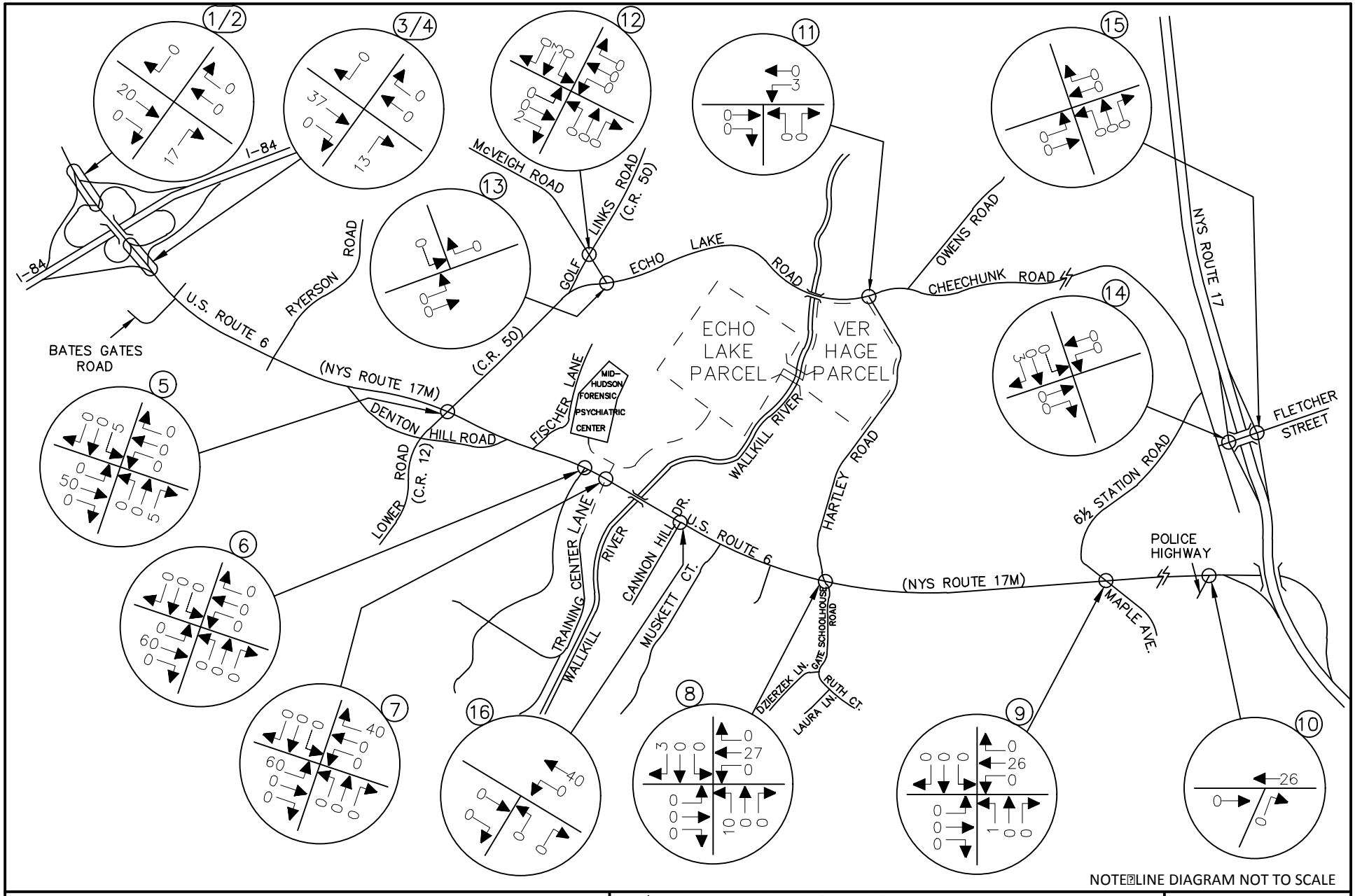
2033 NO-BUILD TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
21	



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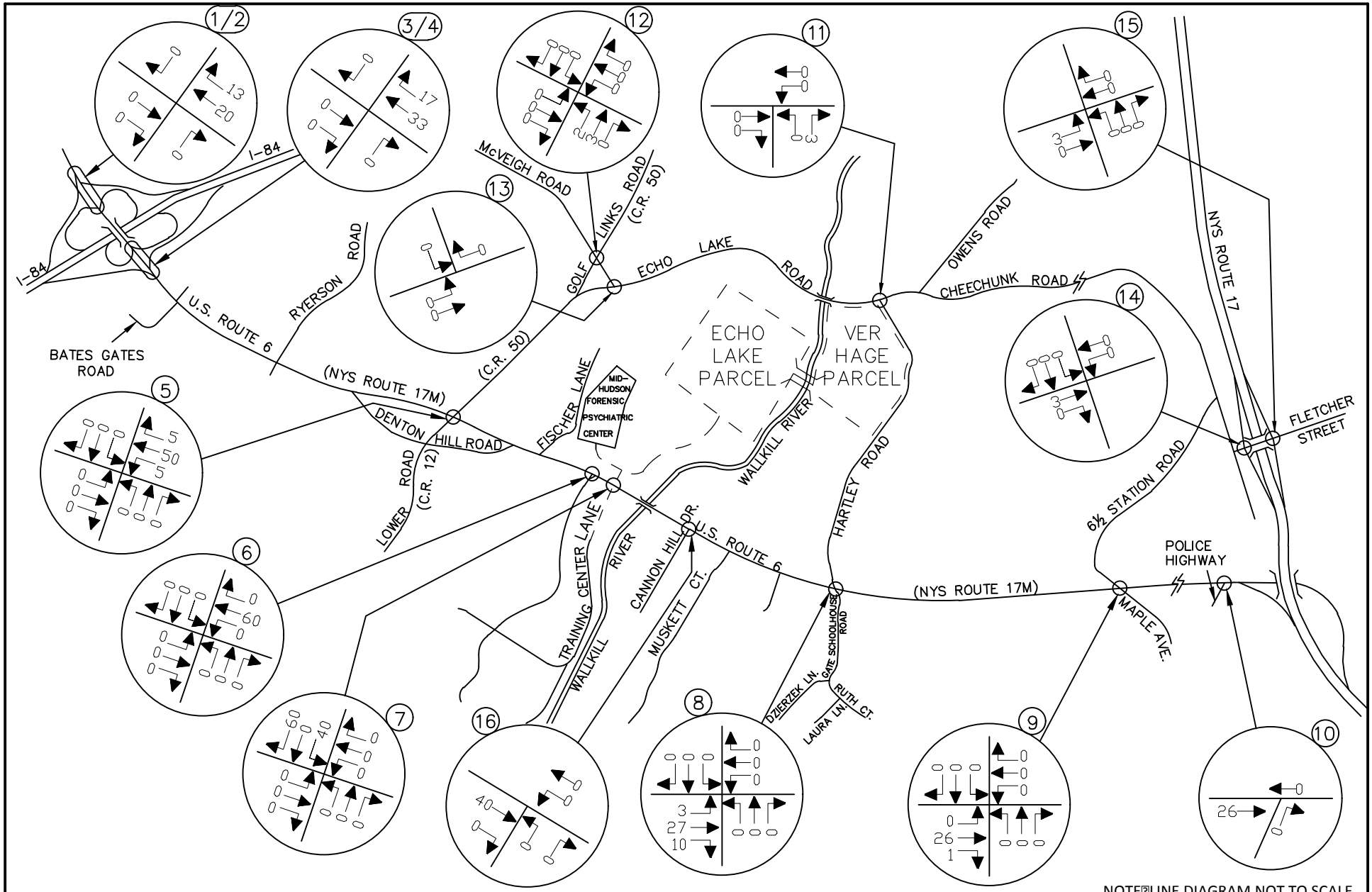
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
ARRIVAL DISTRIBUTION - CARS
ALL VALUES EXPRESSED AS A

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
22	



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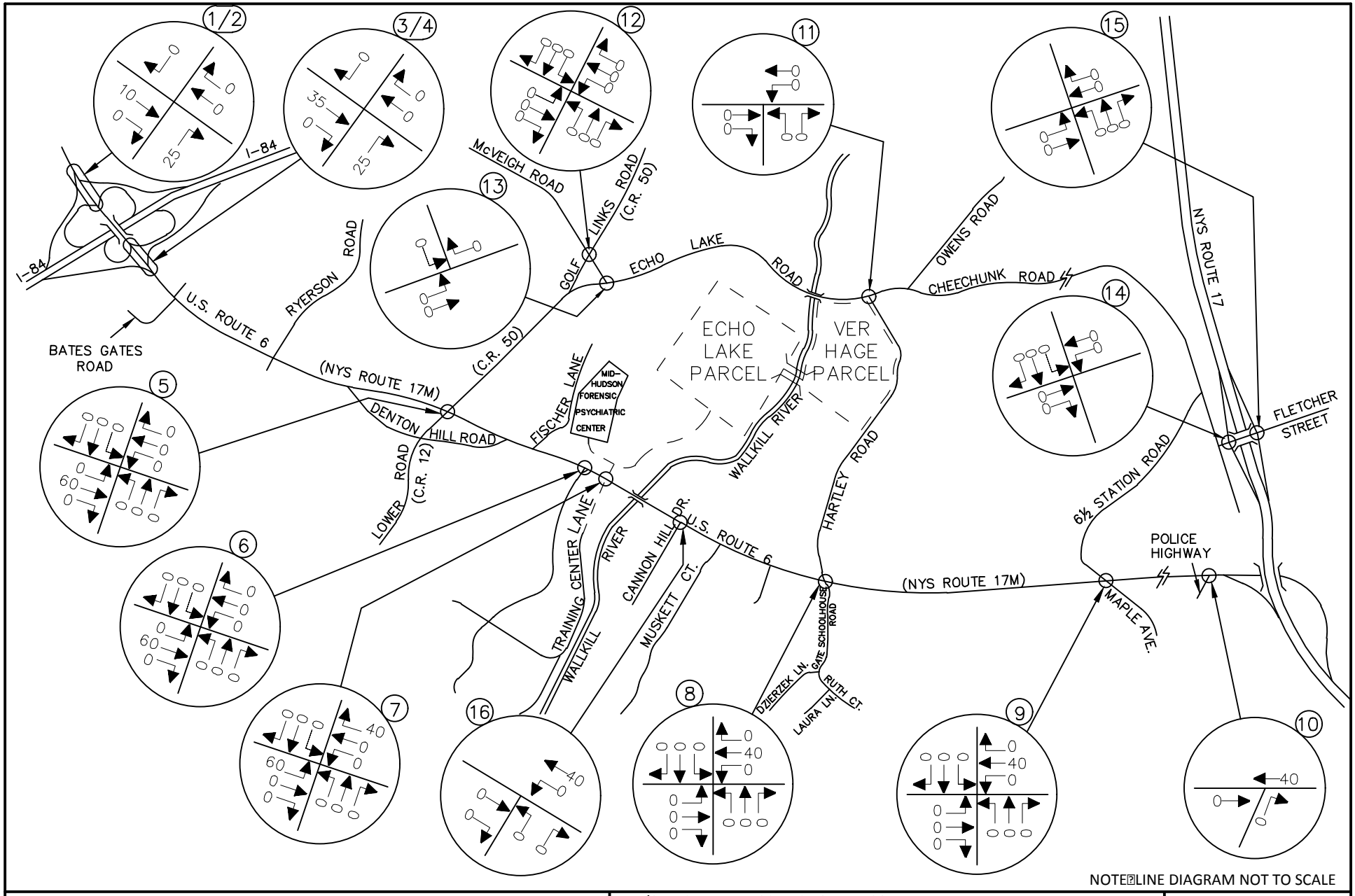
VER HAGE WAREHOUSE USES
DEPARTURE DISTRIBUTION - CARS
ALL VALUES EXPRESSED AS A

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
23	



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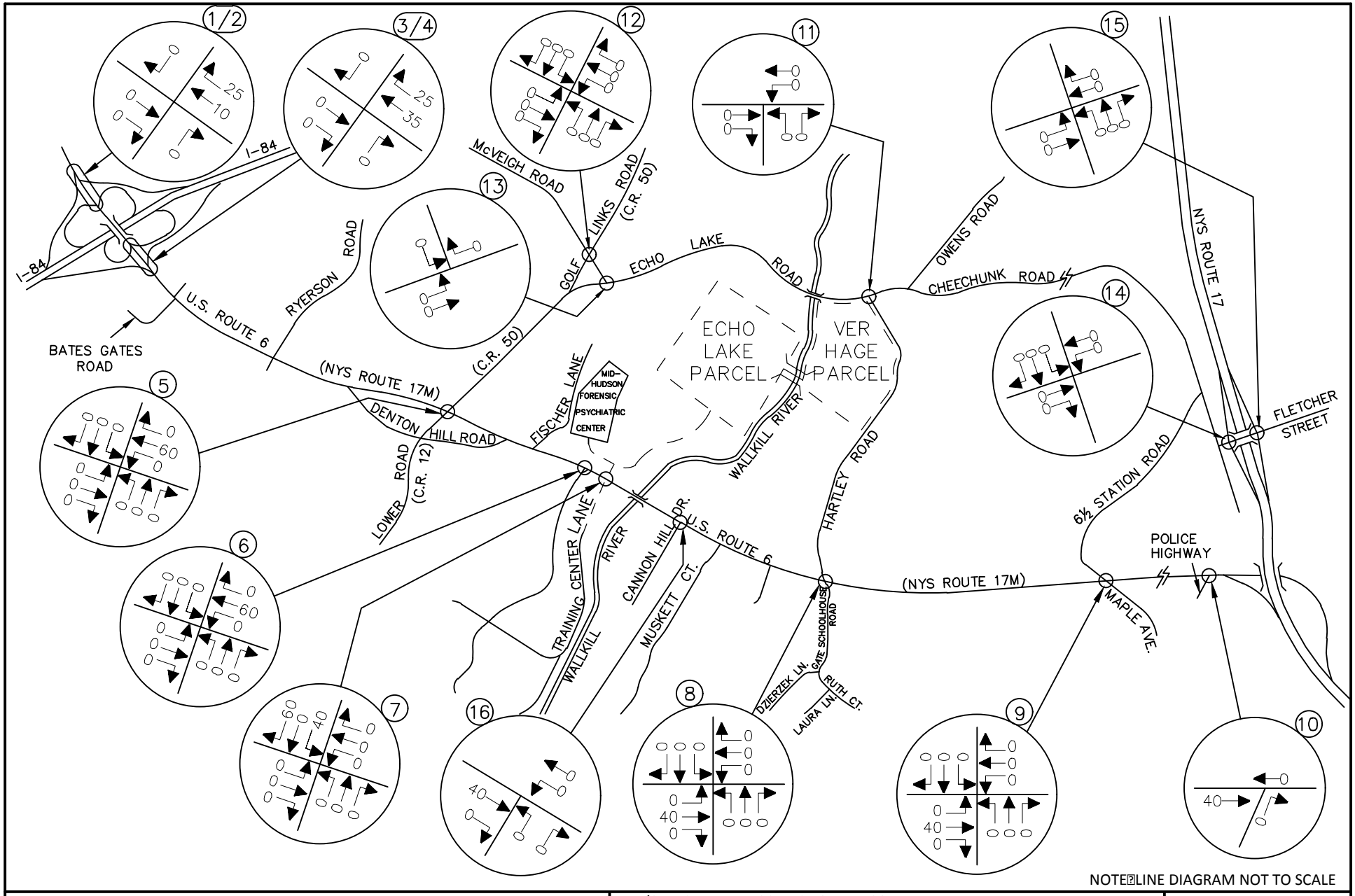
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
ARRIVAL DISTRIBUTION - TRUCKS
ALL VALUES EXPRESSED AS A

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
24	



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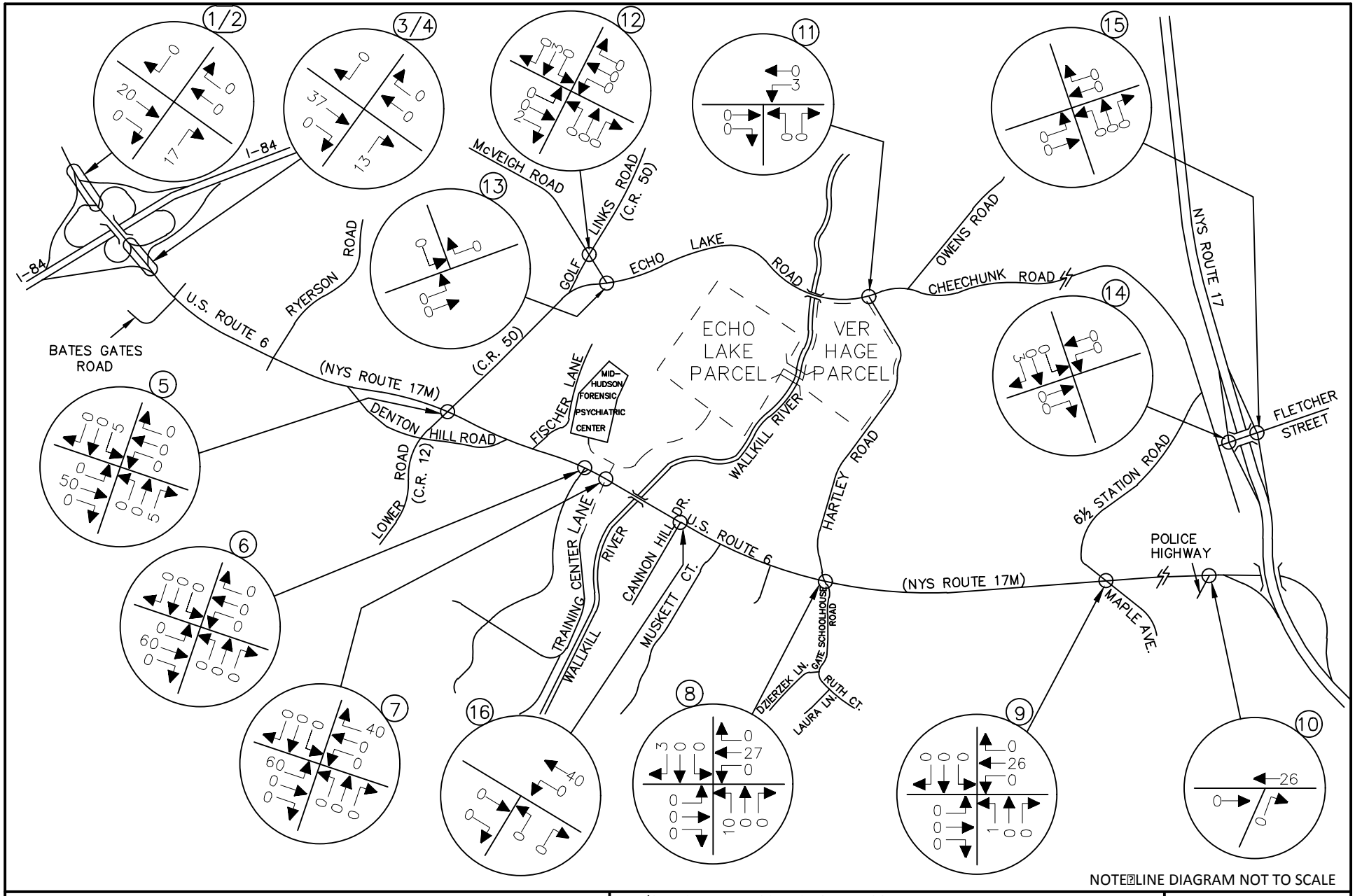
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
DEPARTURE DISTRIBUTION - TRUCKS
ALL VALUES EXPRESSED AS A %

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
25	



NOTE: LINE DIAGRAM NOT TO SCALE

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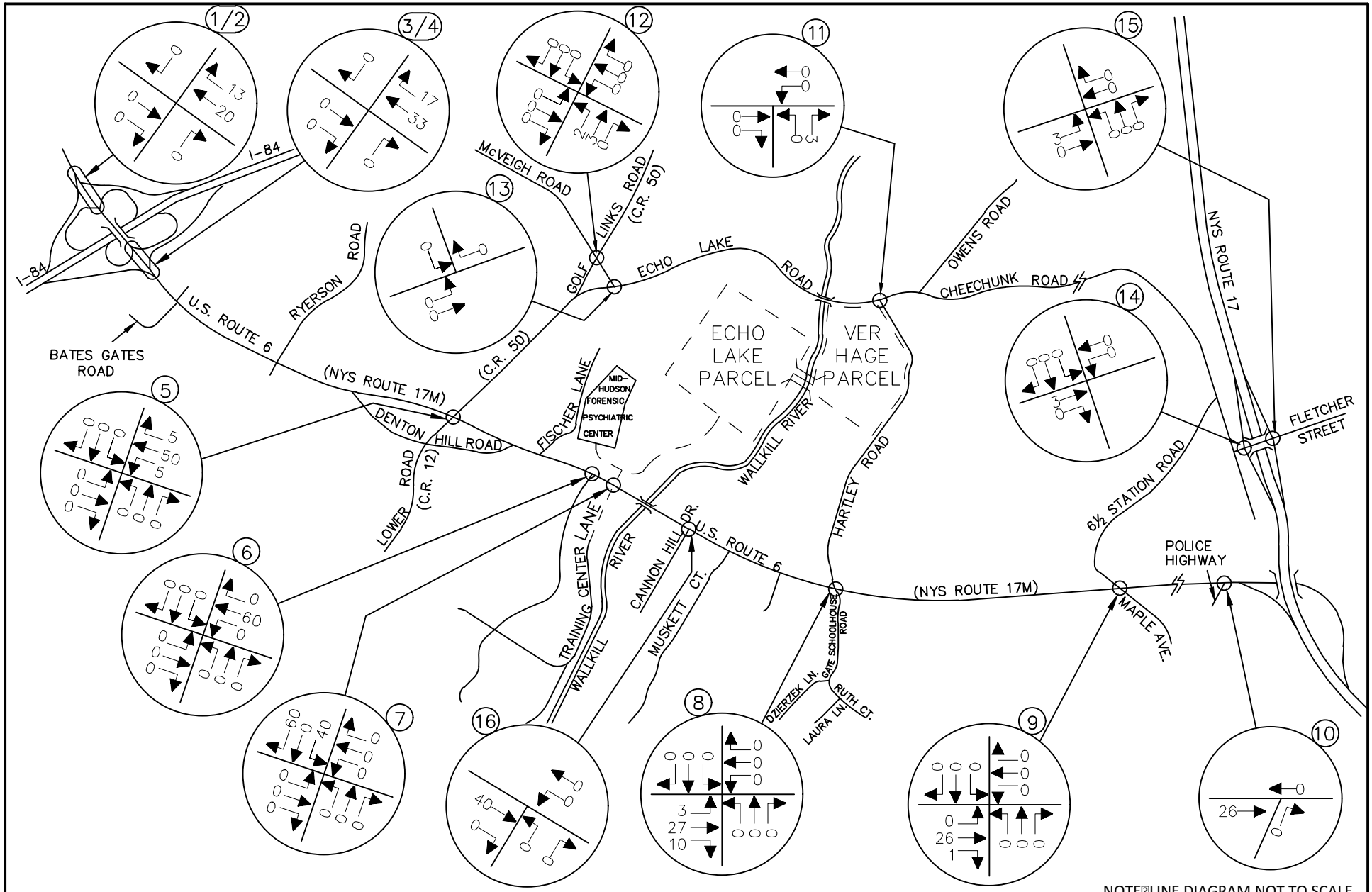
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
ARRIVAL DISTRIBUTION - CARS
ALL VALUES EXPRESSED AS A

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
26	



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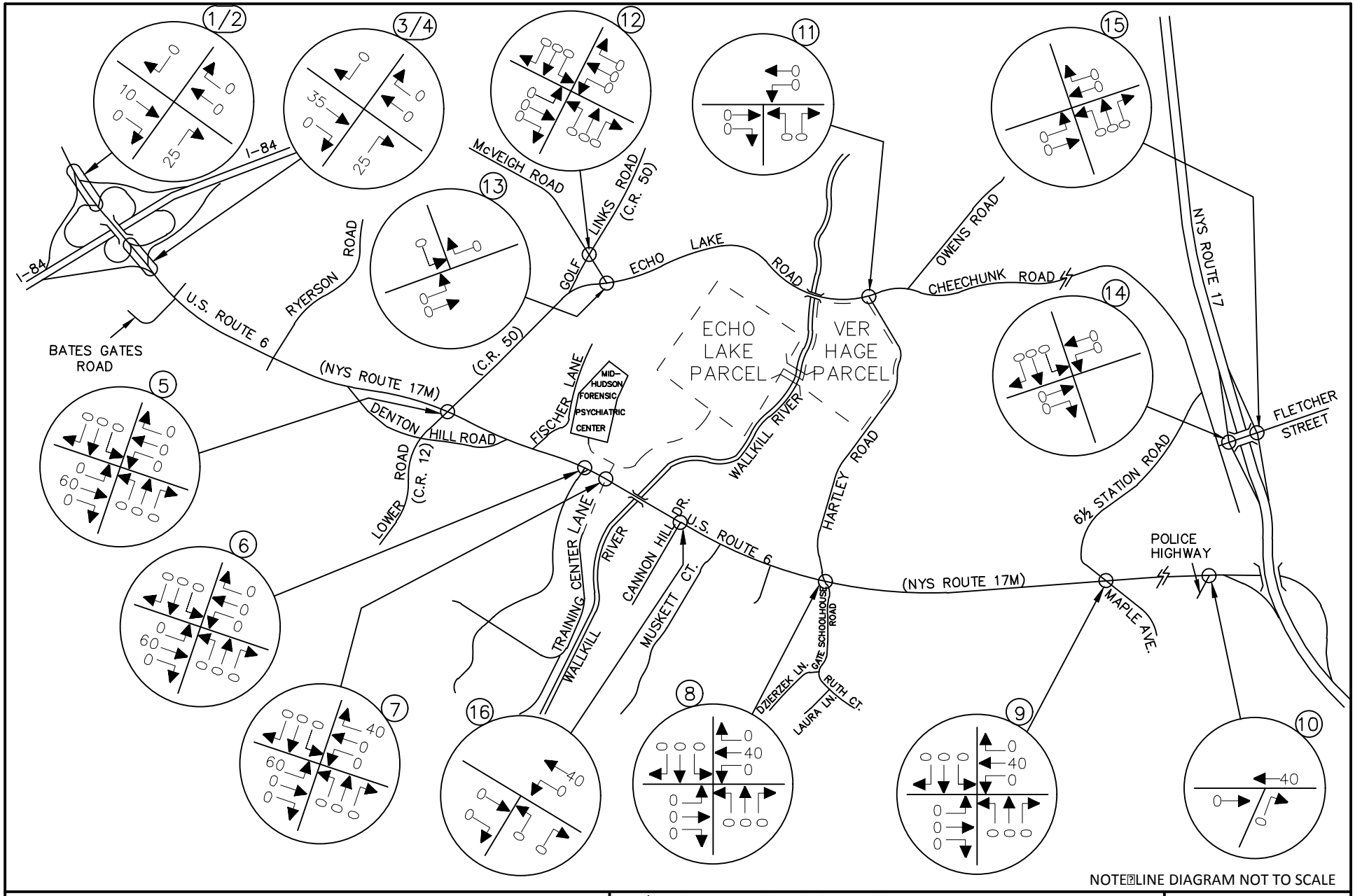
GOSHEN, NEW YORK

AMY'S KITCHEN
DEPARTURE DISTRIBUTION - CARS
ALL VALUES EXPRESSED AS A

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
27	



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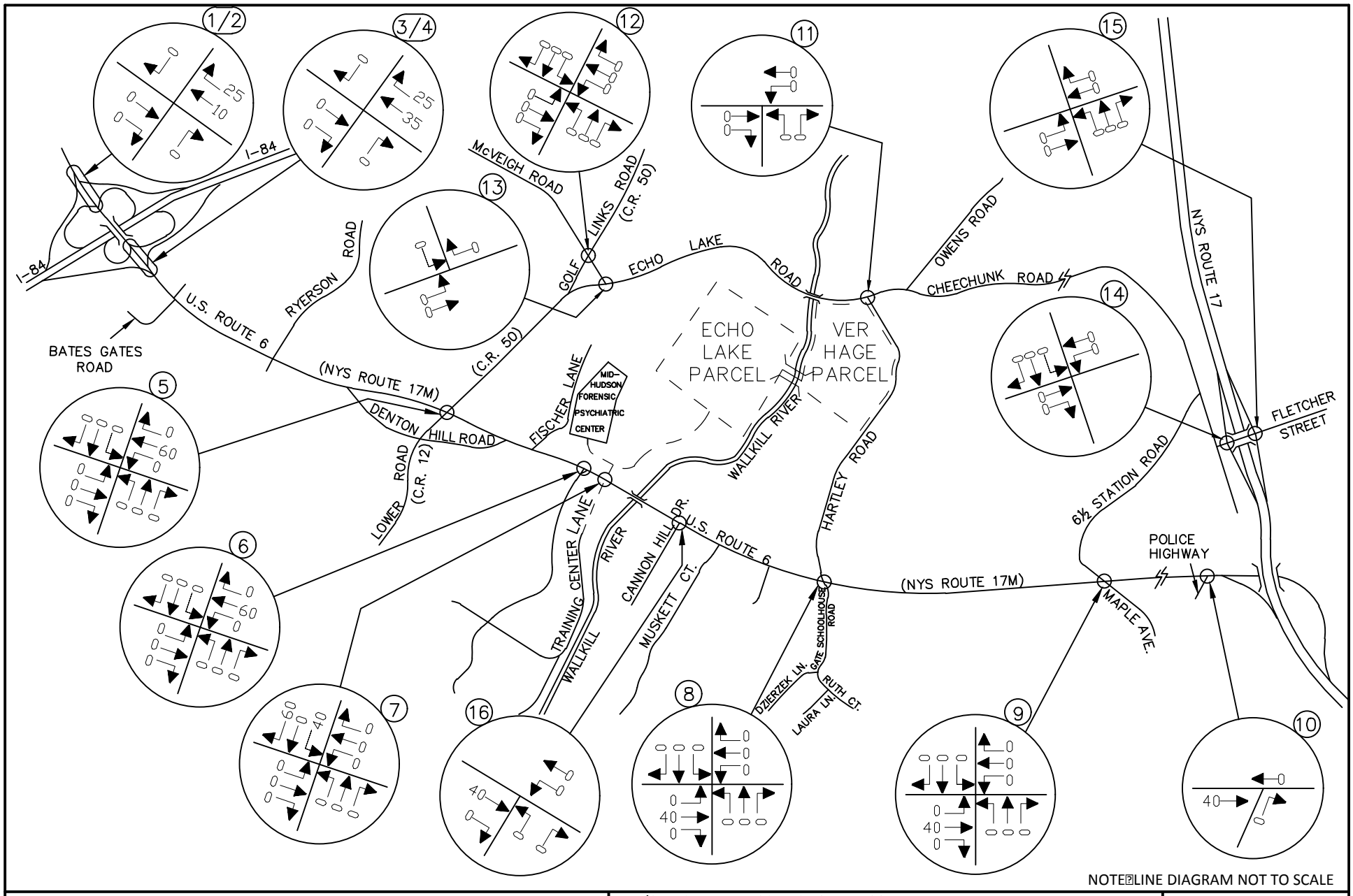
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
ARRIVAL DISTRIBUTION - TRUCKS
ALL VALUES EXPRESSED AS A %

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
28	



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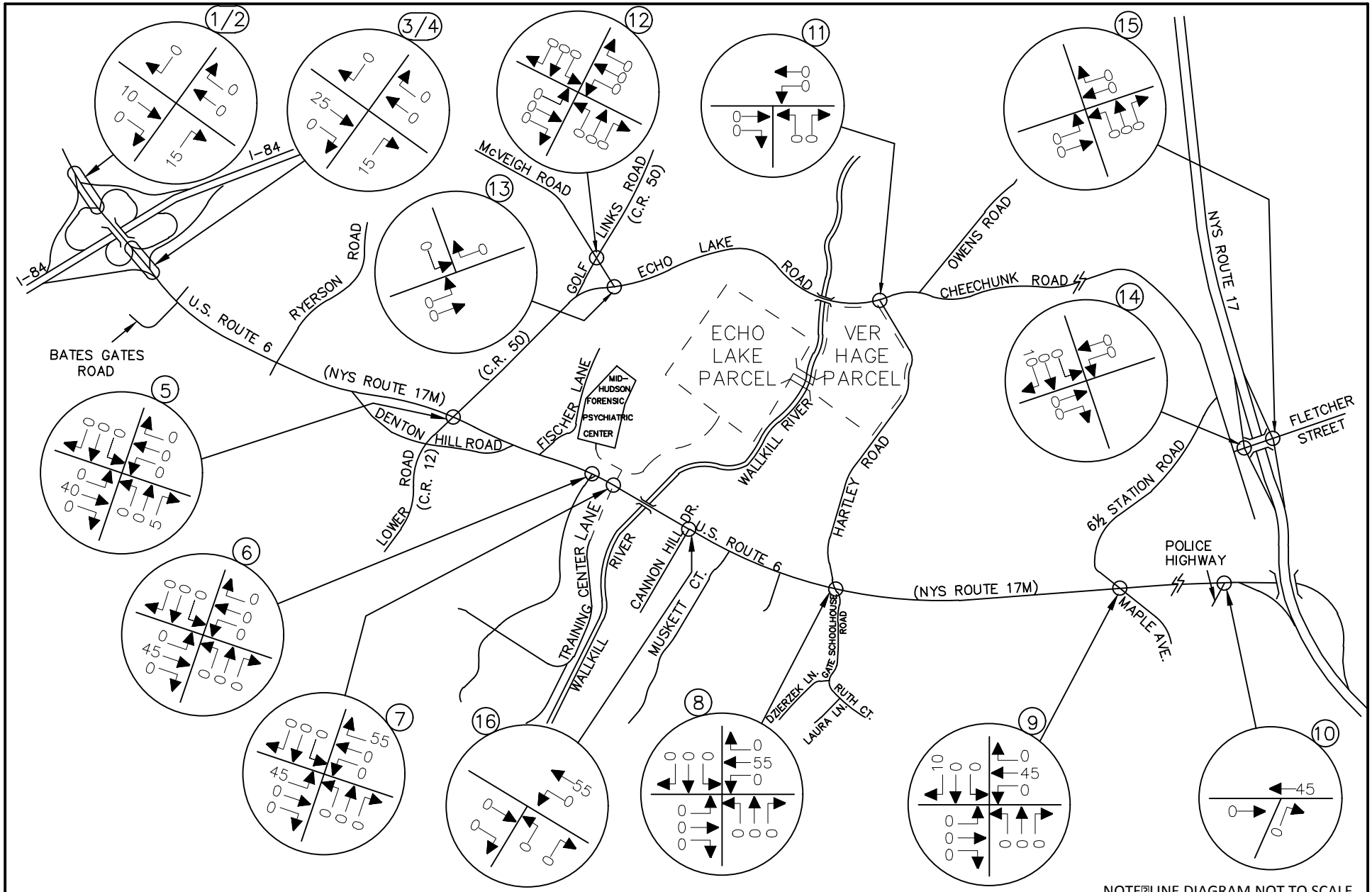
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
DEPARTURE DISTRIBUTION - TRUCKS
ALL VALUES EXPRESSED AS A

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
29	



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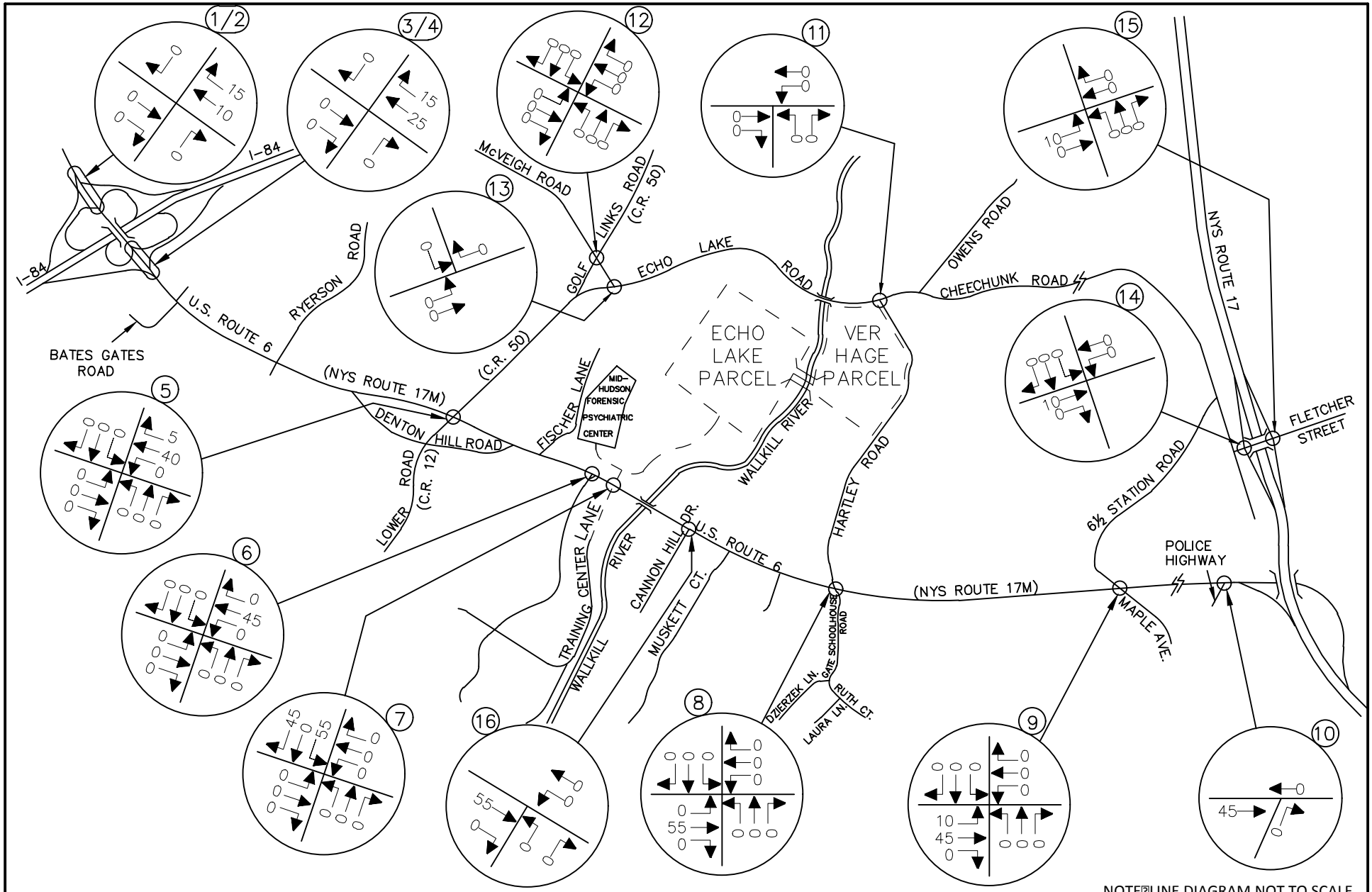
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL TYPICAL CONDITIONS
ARRIVAL DISTRIBUTION
ALL VALUES EXPRESSED AS A

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
30	



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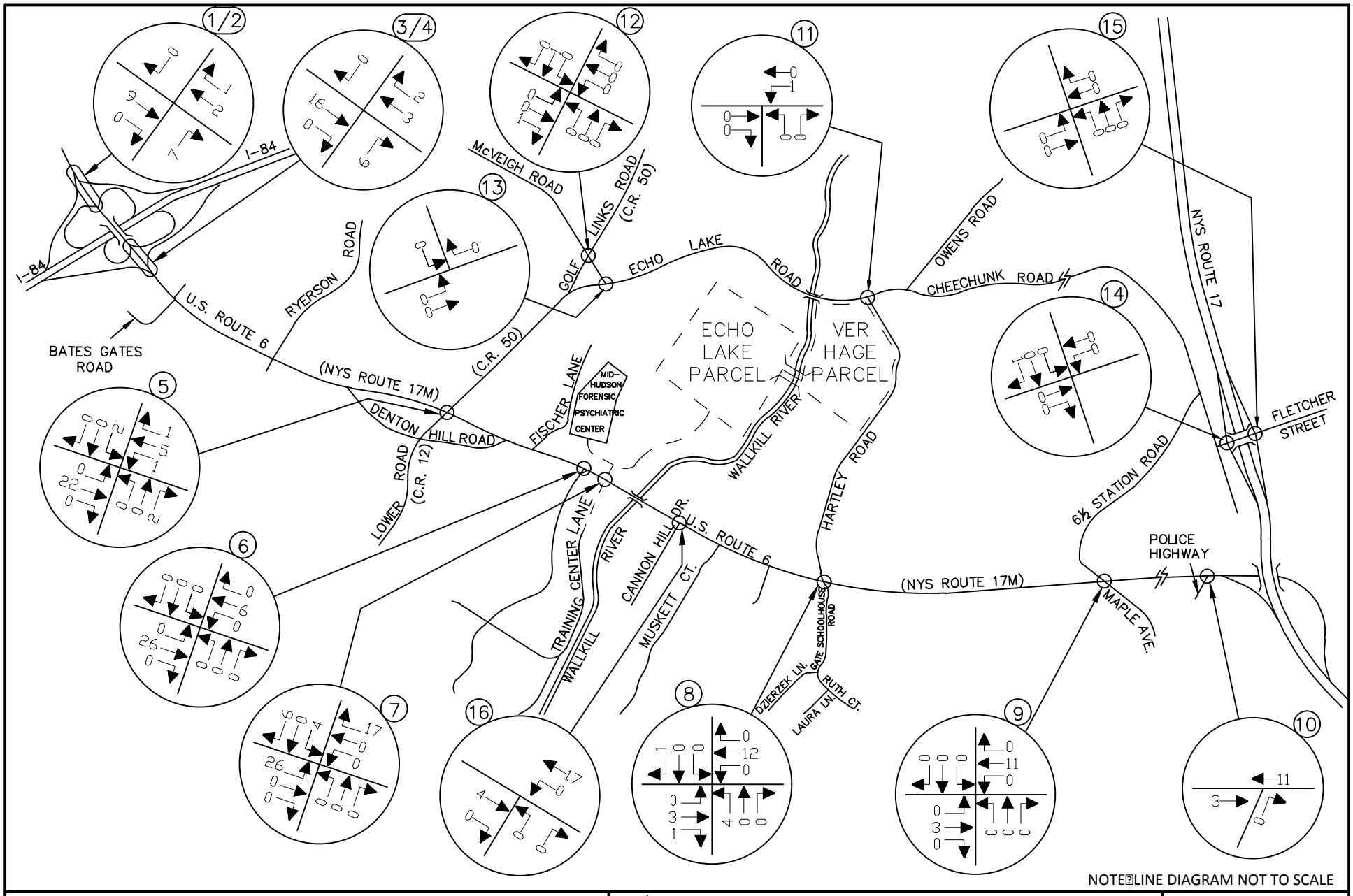
GOSHEN, NEW YORK

SCIENCE OF THE SOUL TYPICAL CONDITIONS
DEPARTURE DISTRIBUTION
ALL VALUES EXPRESSED AS A

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
31	



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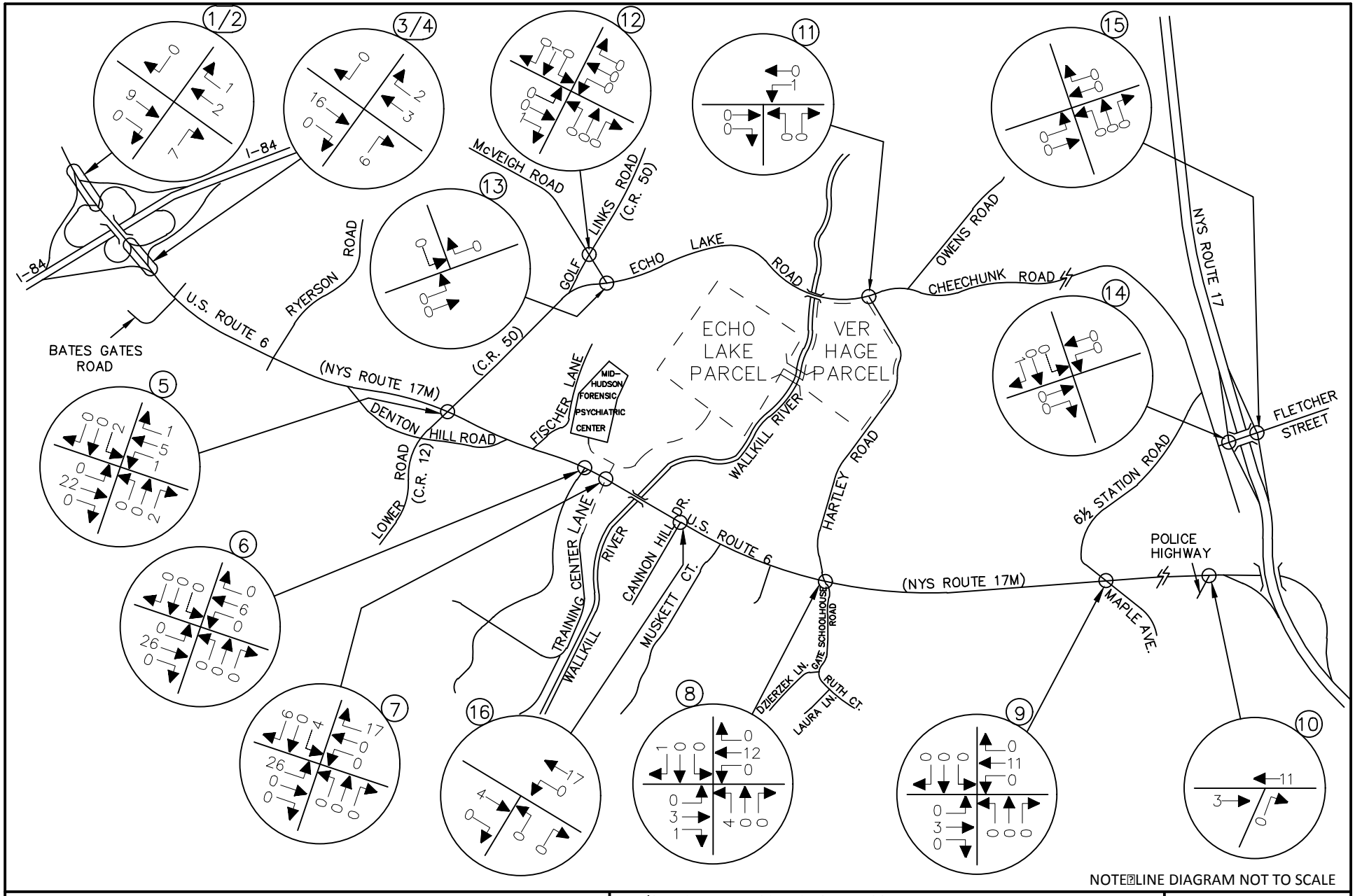
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
32	



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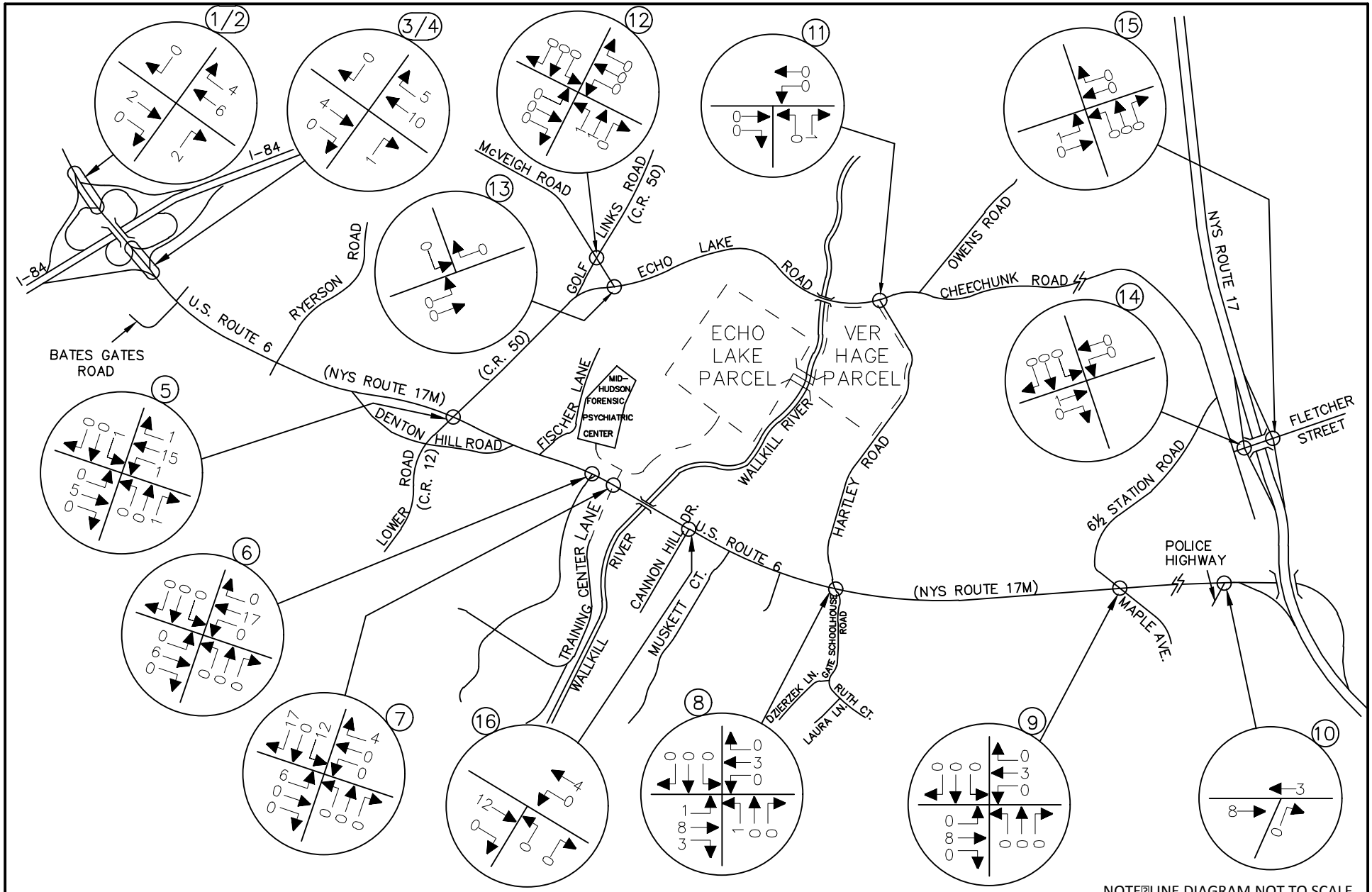
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
33	



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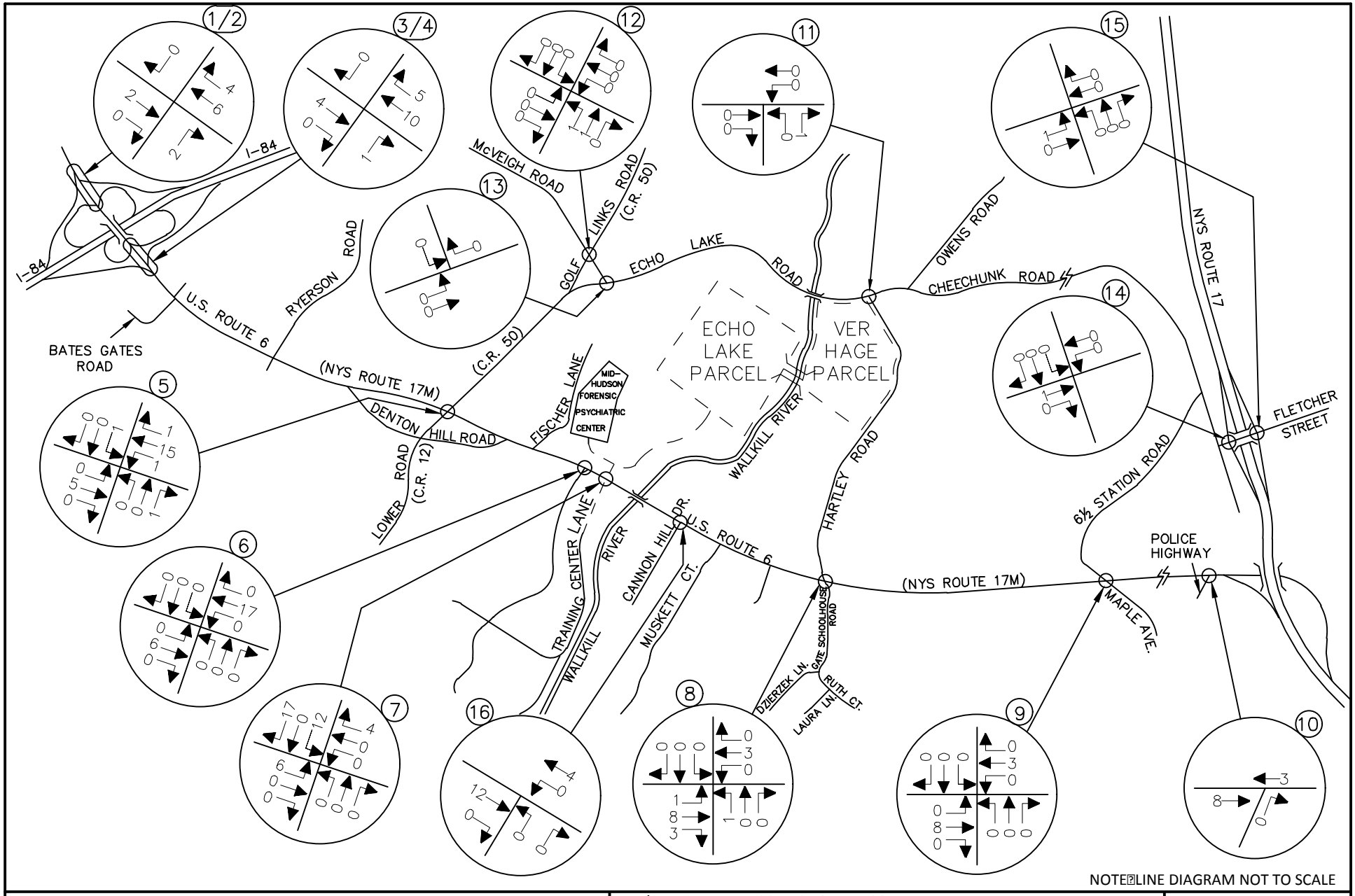
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
3:00 PM - 4:00 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
34	



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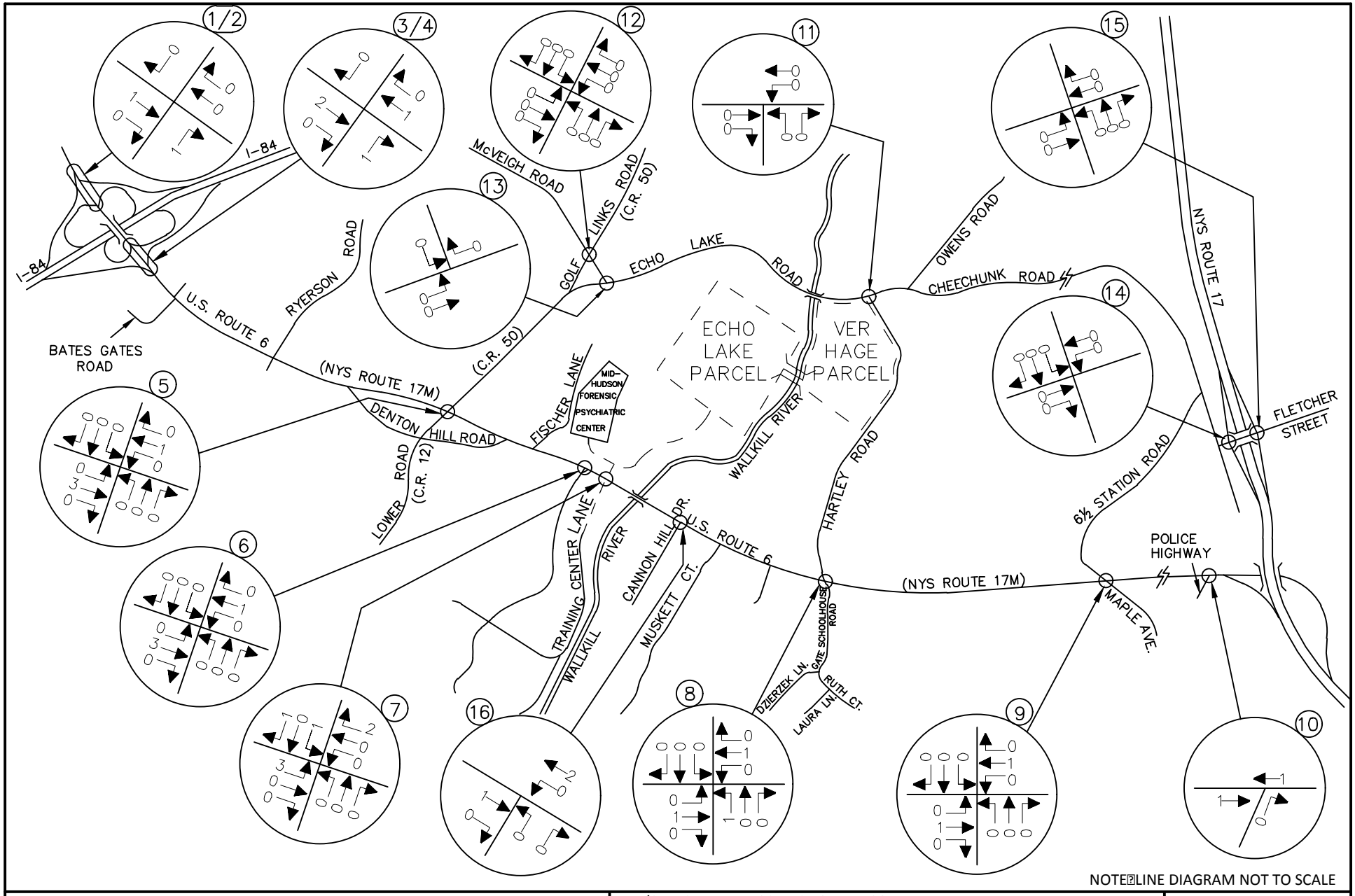
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
35	



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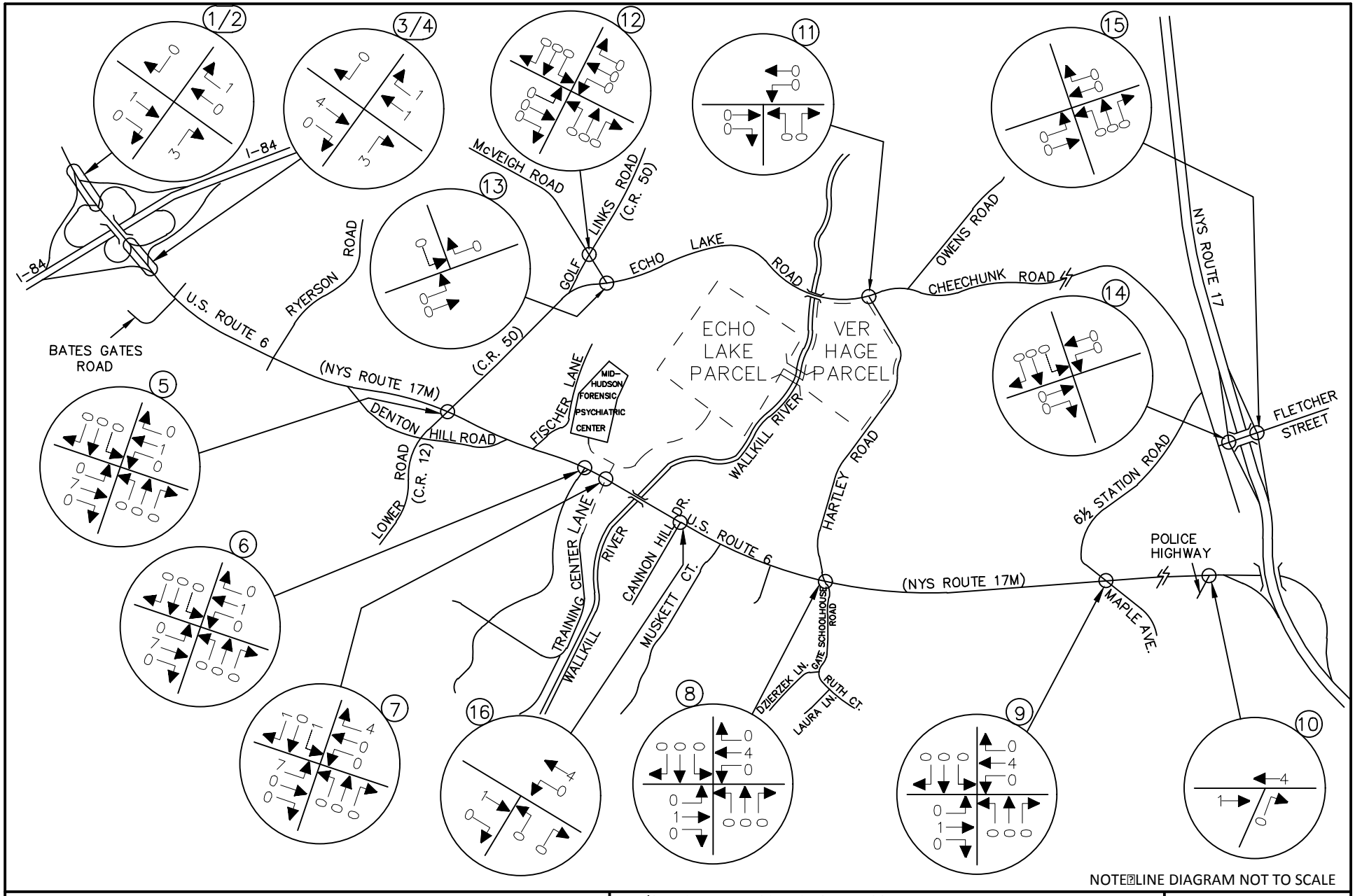
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
36	



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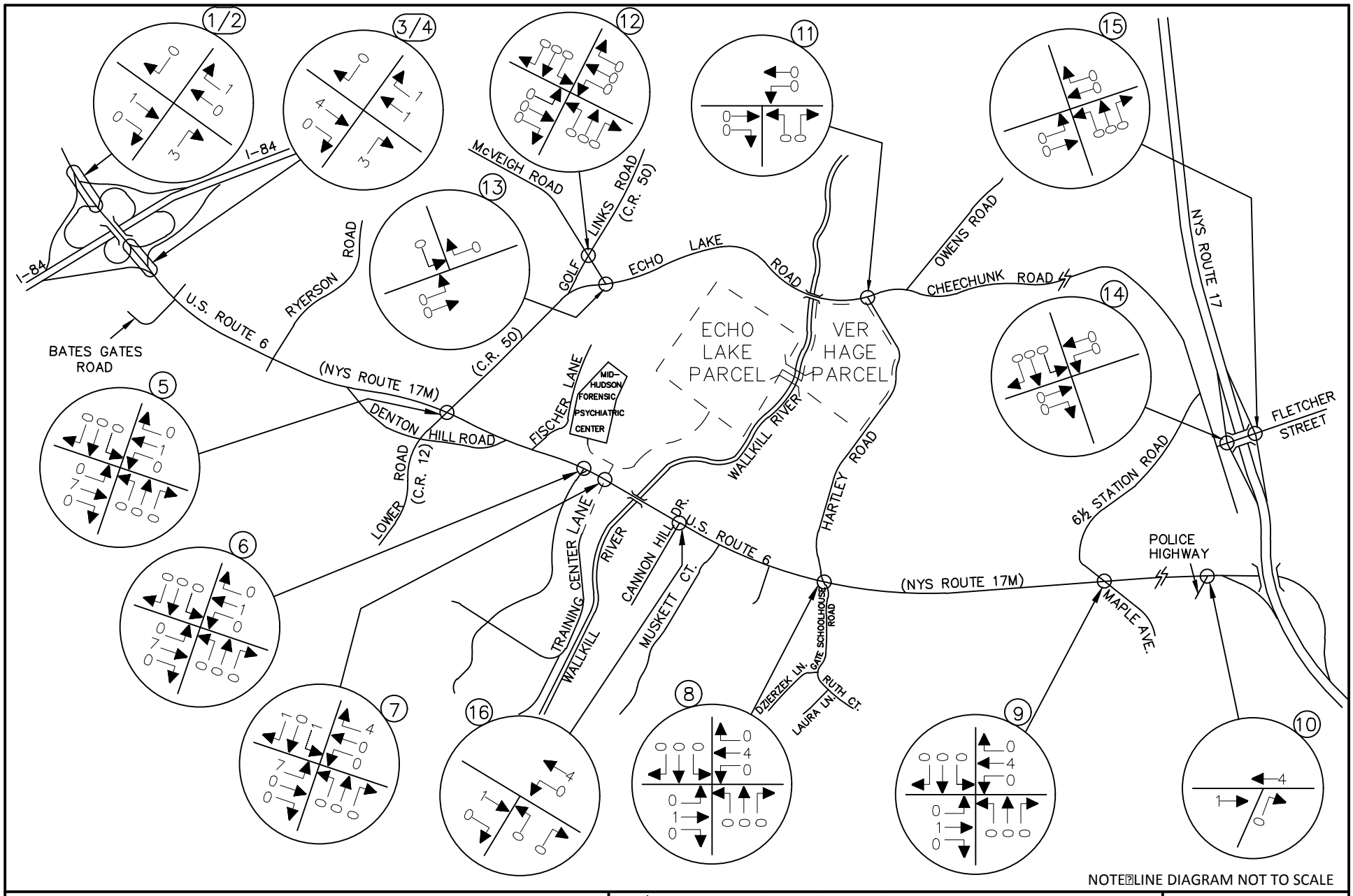
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
37	



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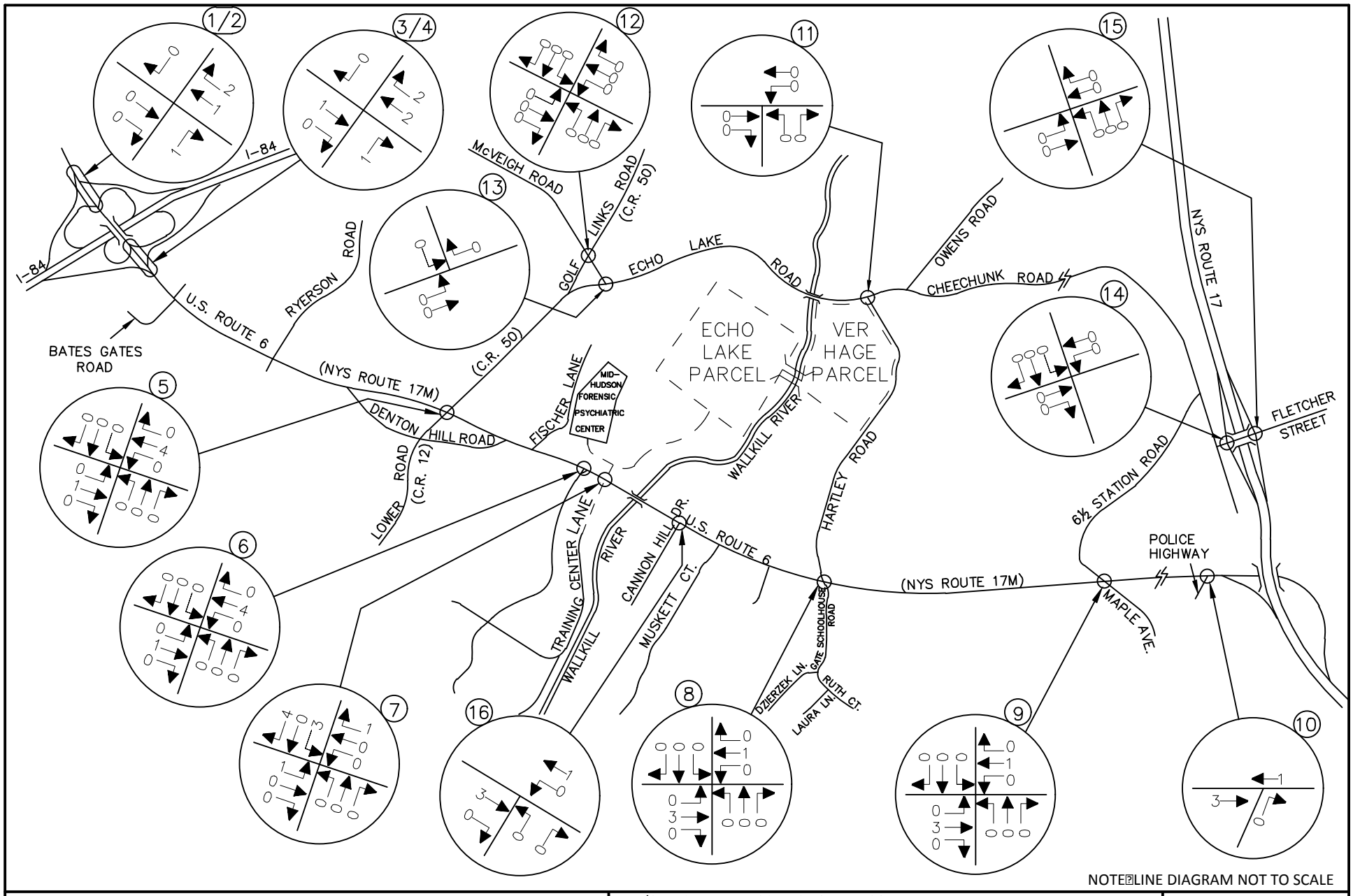
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
38	



NOTE: LINE DIAGRAM NOT TO SCALE

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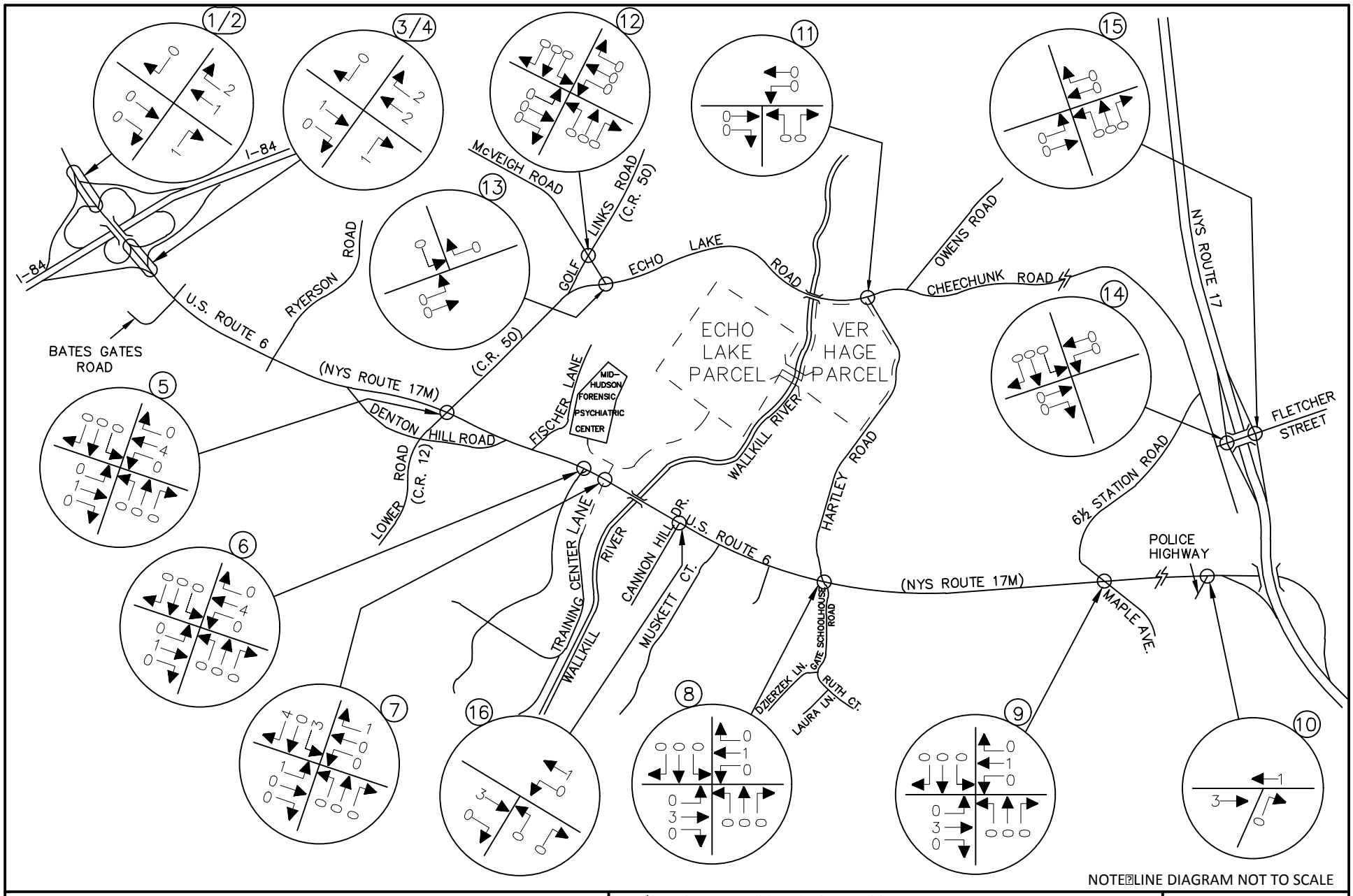
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
PB00 PM - 4:00 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
39	



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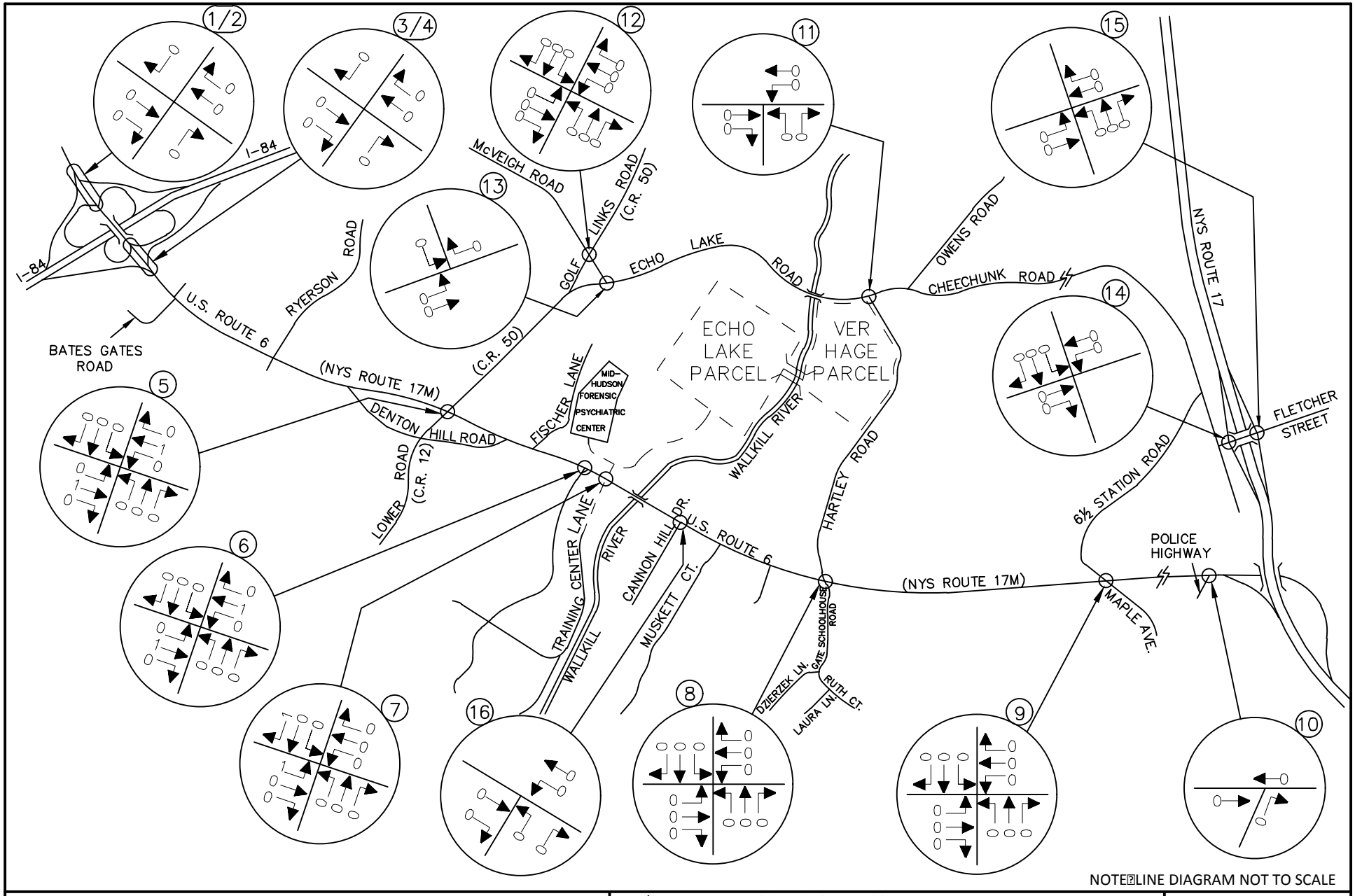
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
40	



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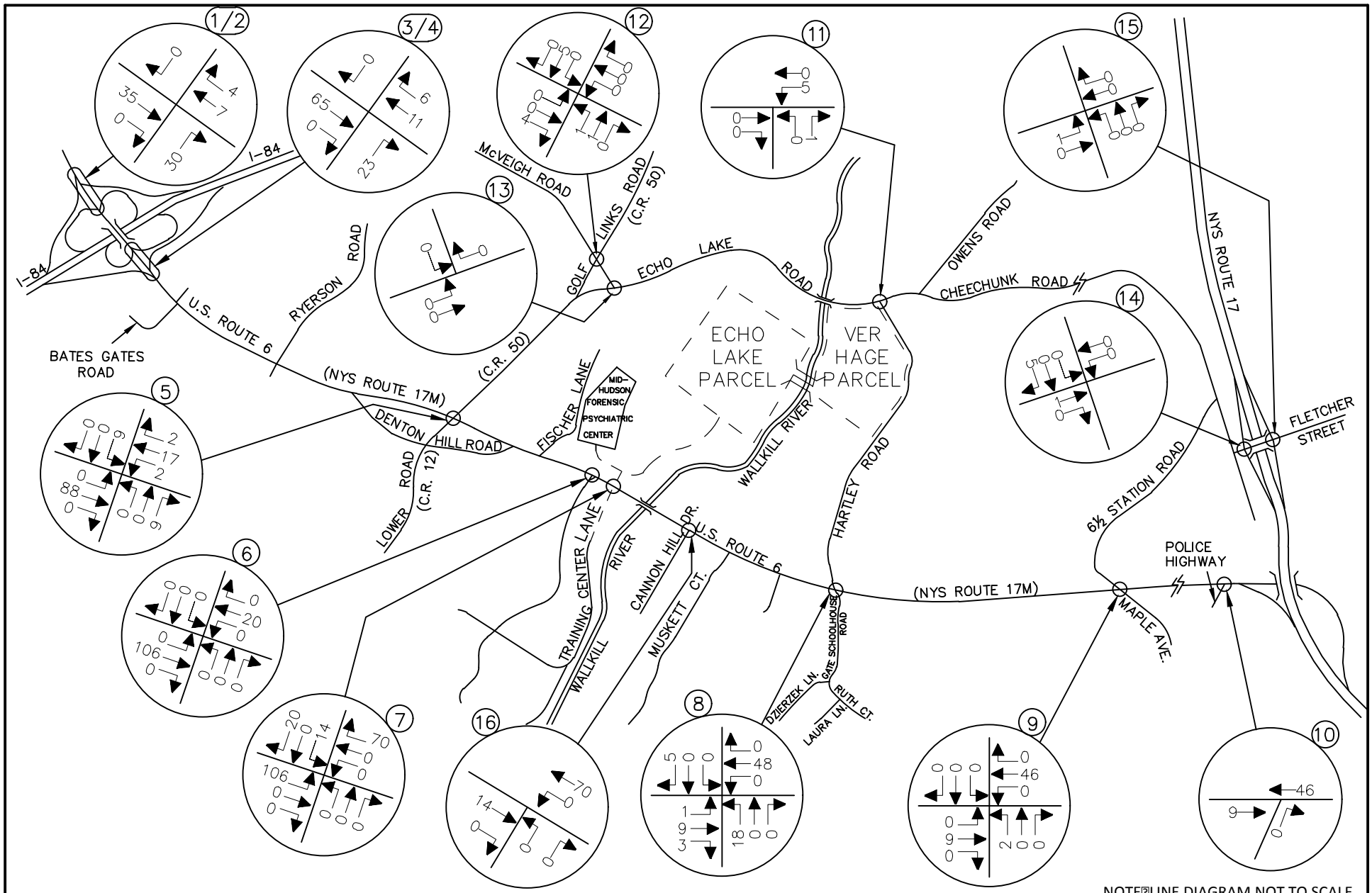
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
41	



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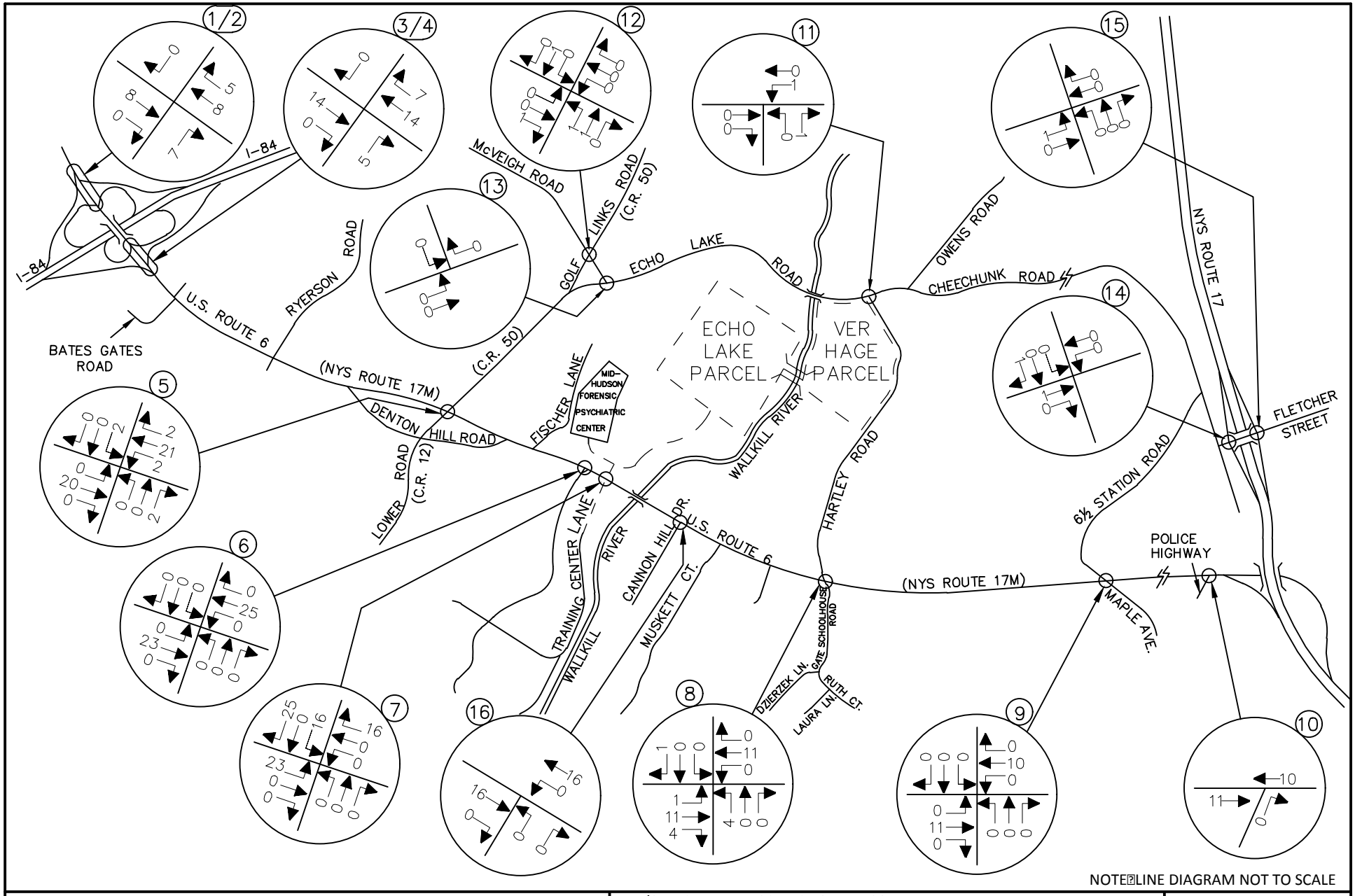
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
42	



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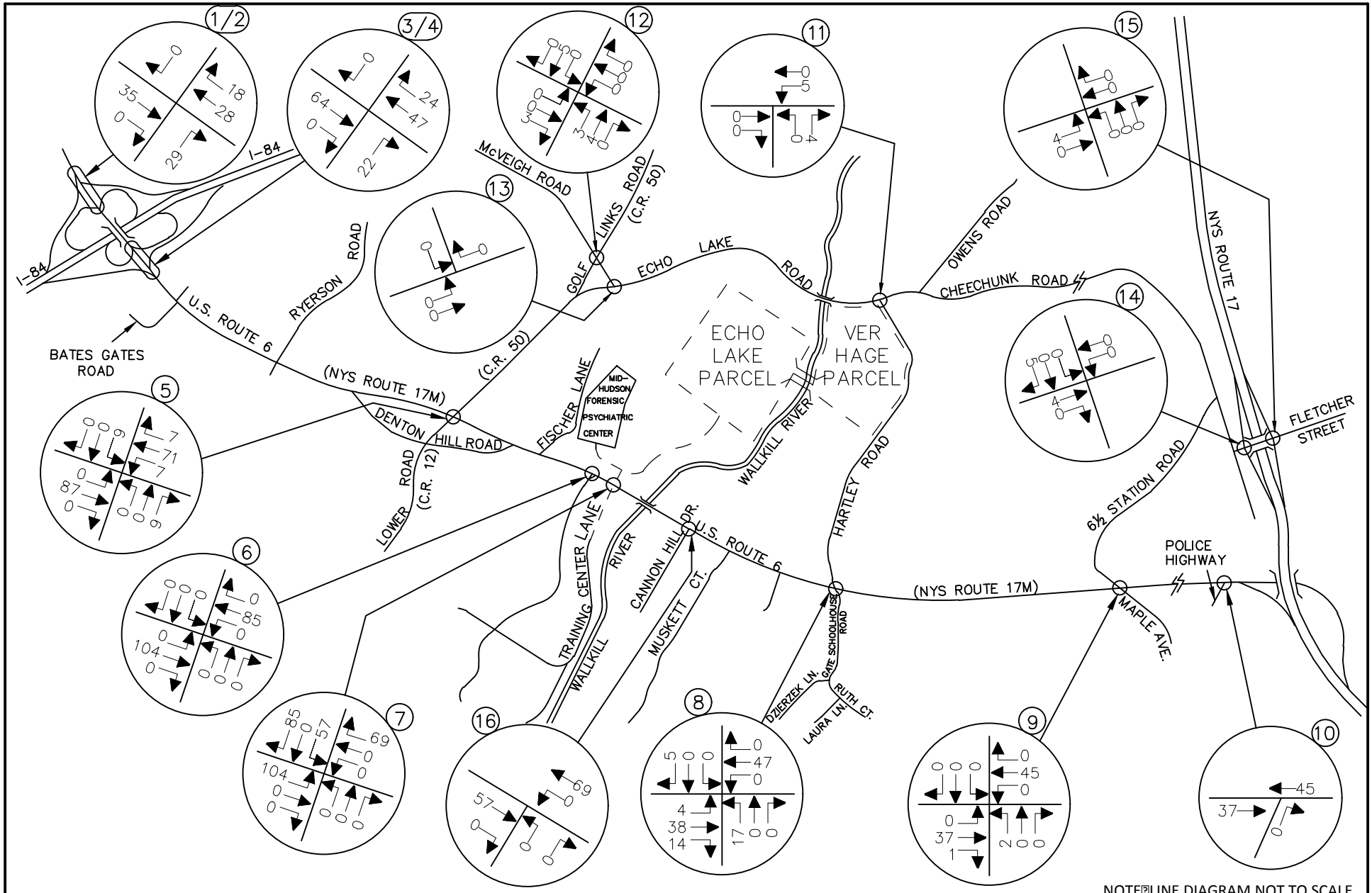
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
43	



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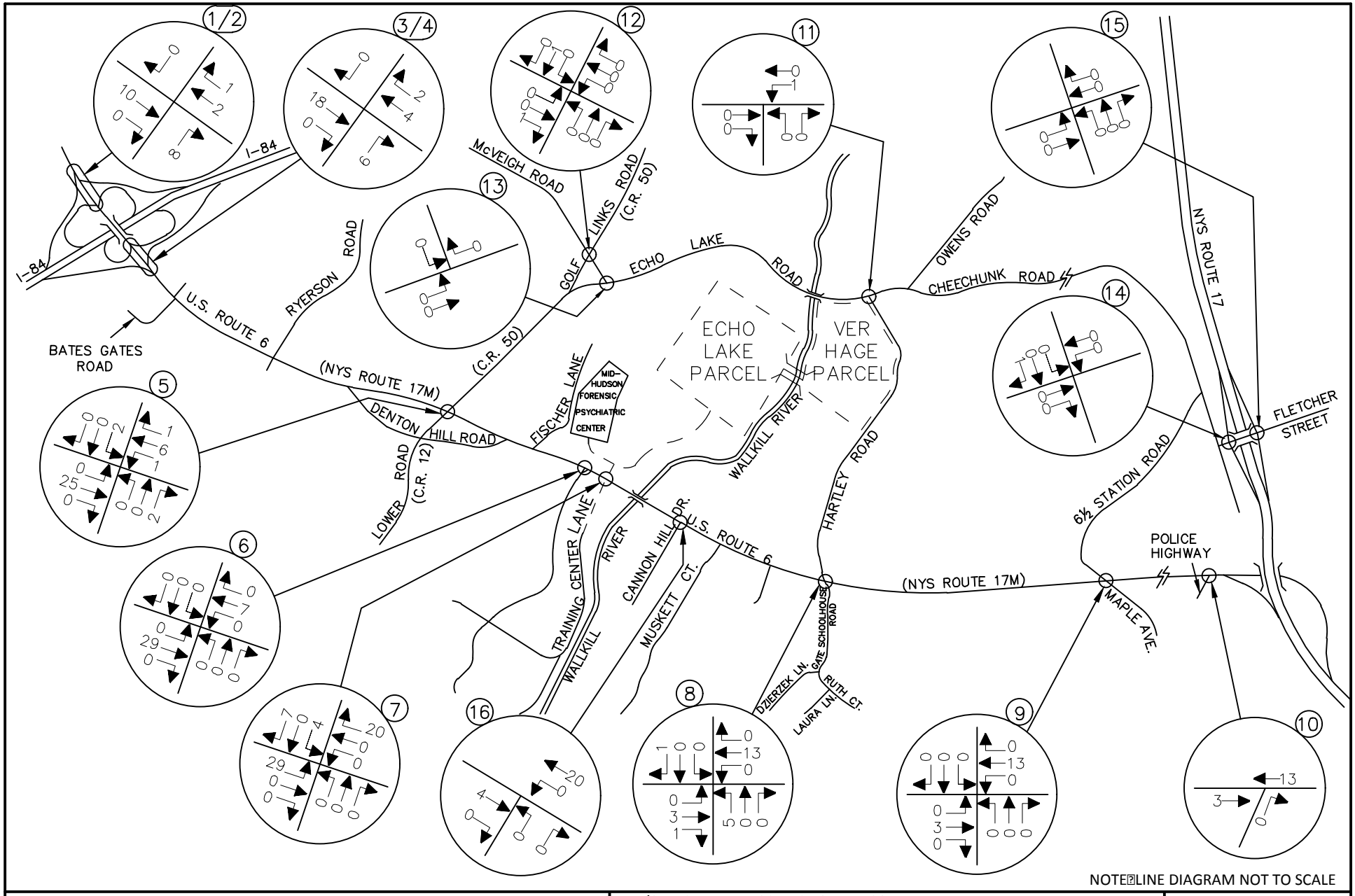
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
3:00 PM - 4:00PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
44	



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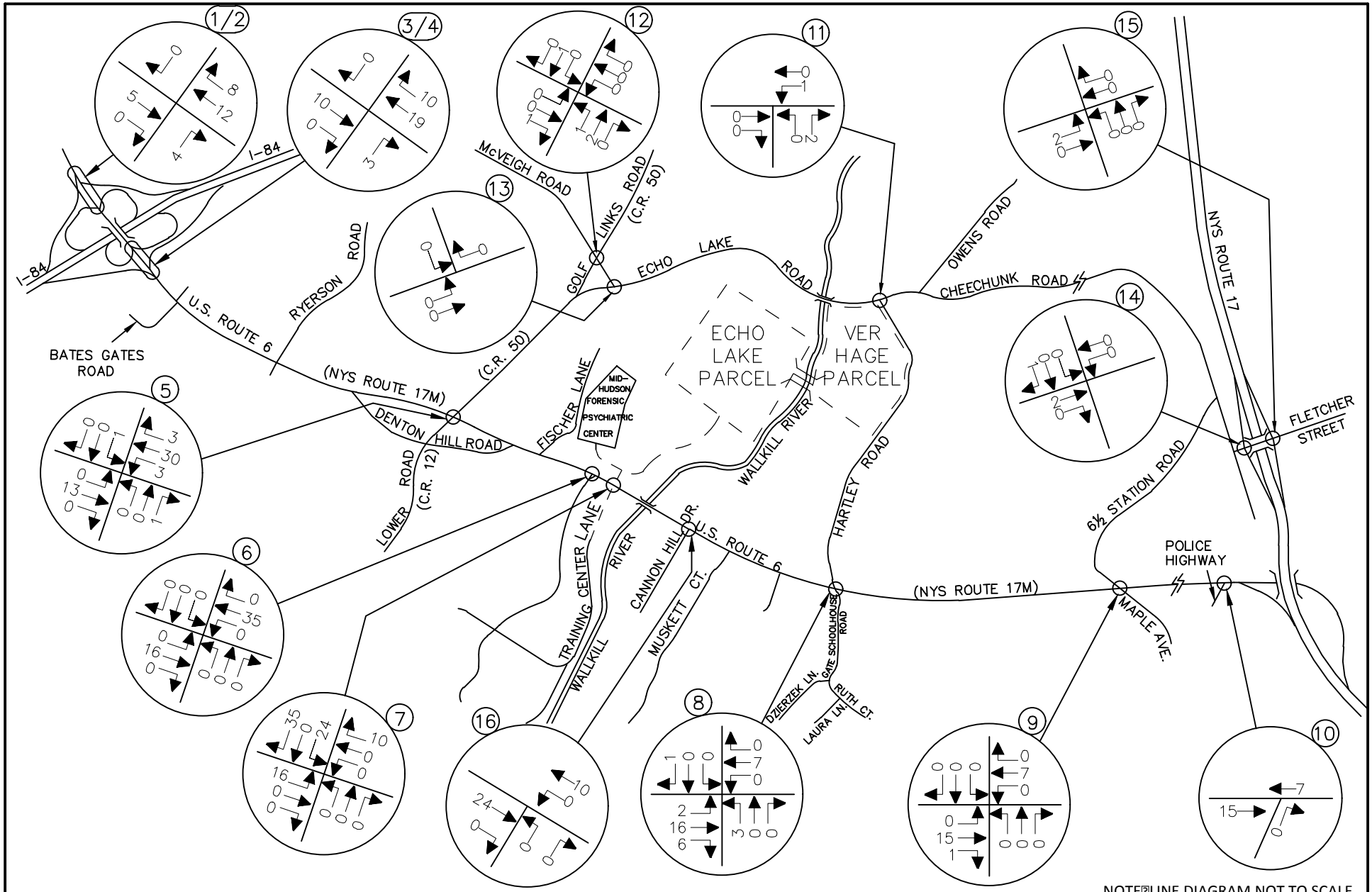
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
45	



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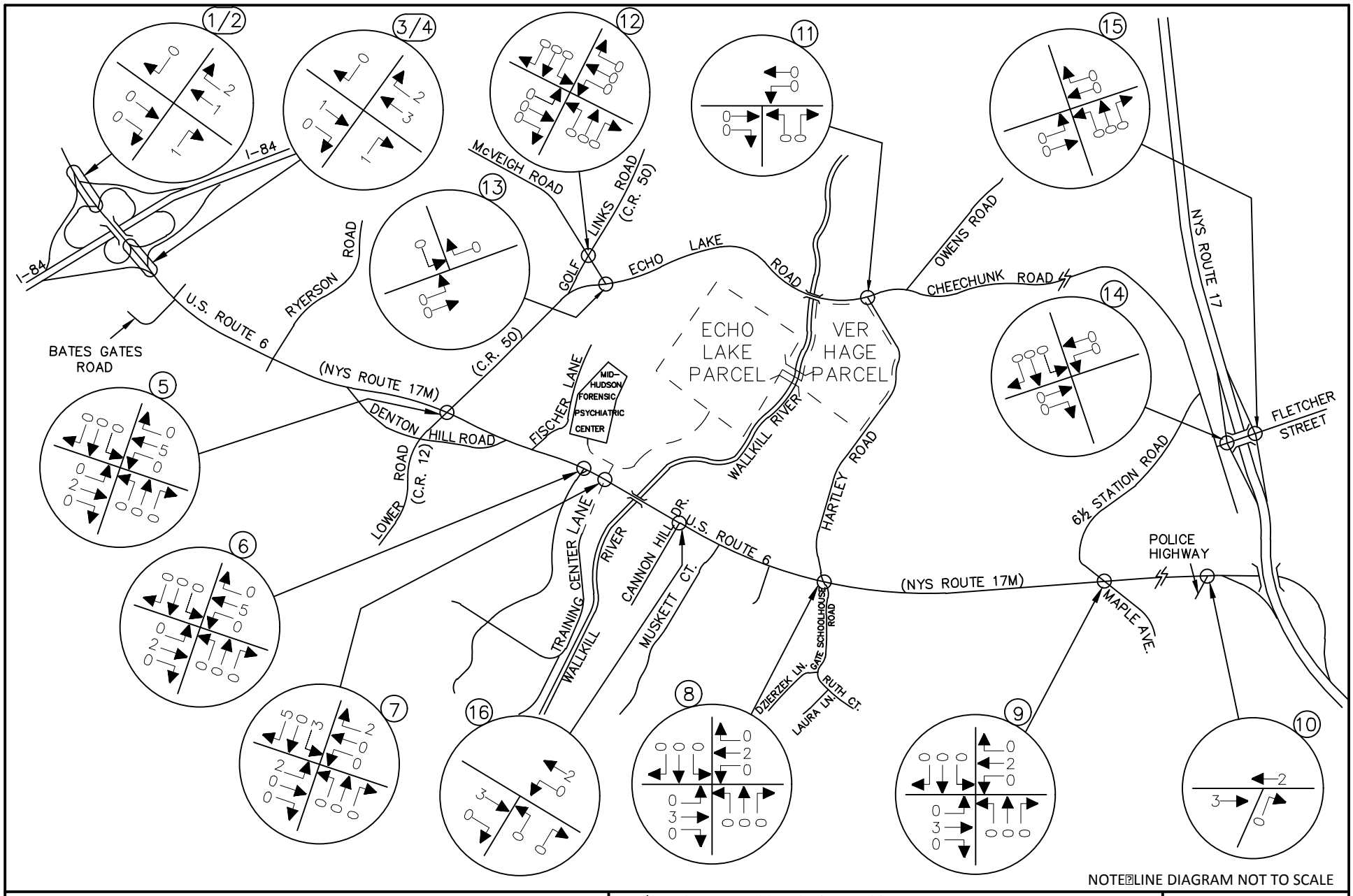
AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - CARS
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
46	



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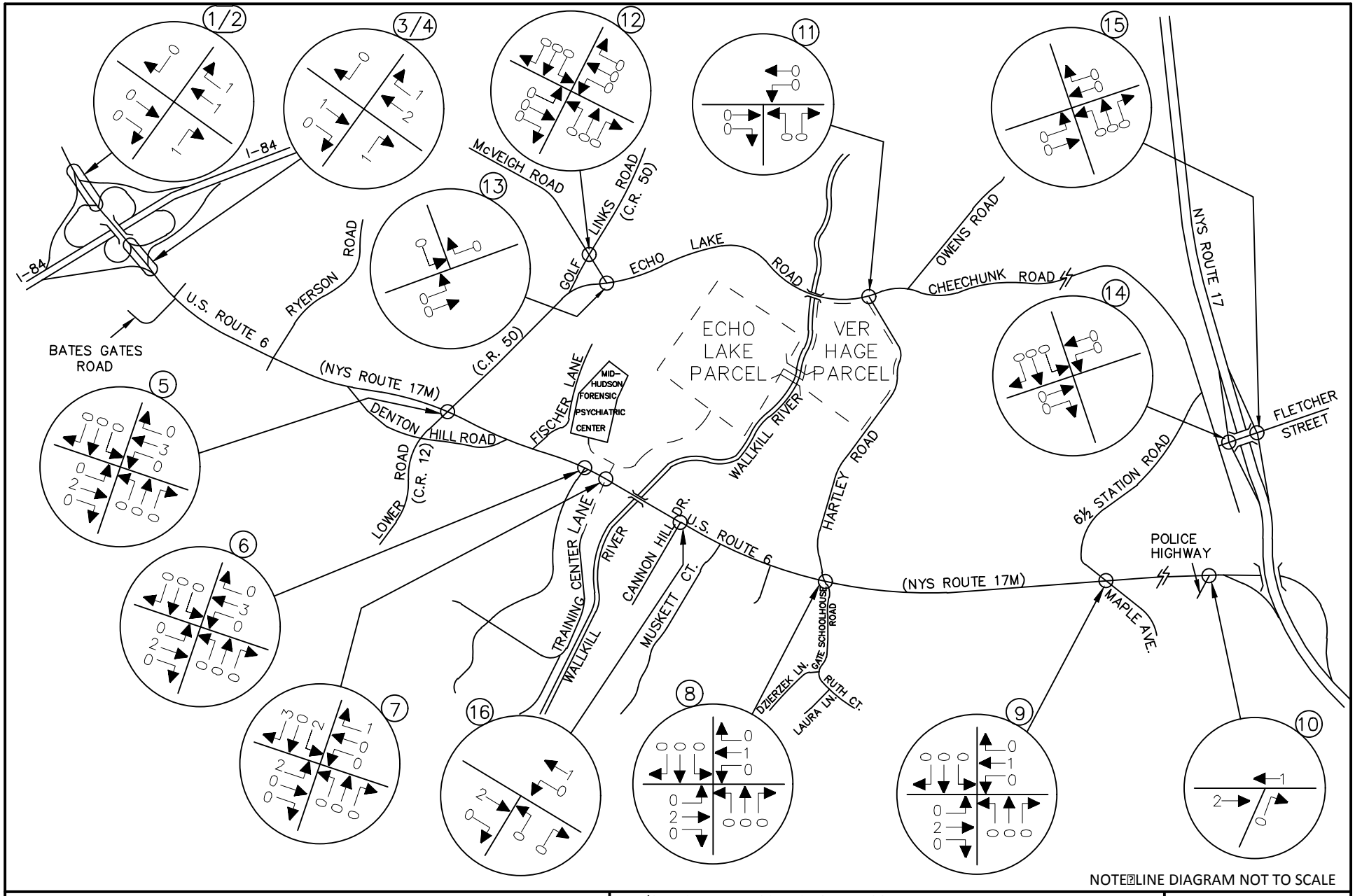
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
47	



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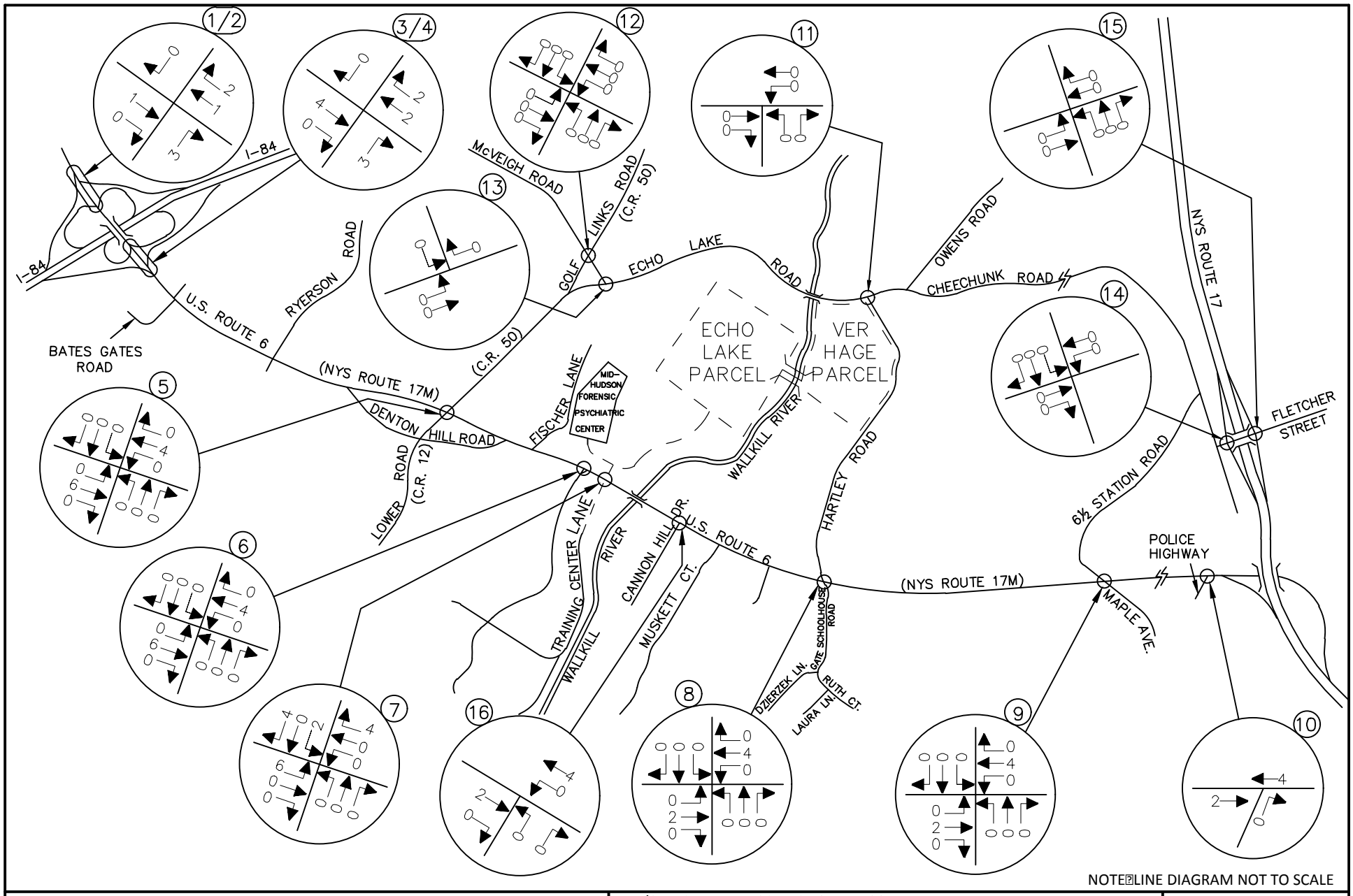
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
48	



NOTE: LINE DIAGRAM NOT TO SCALE

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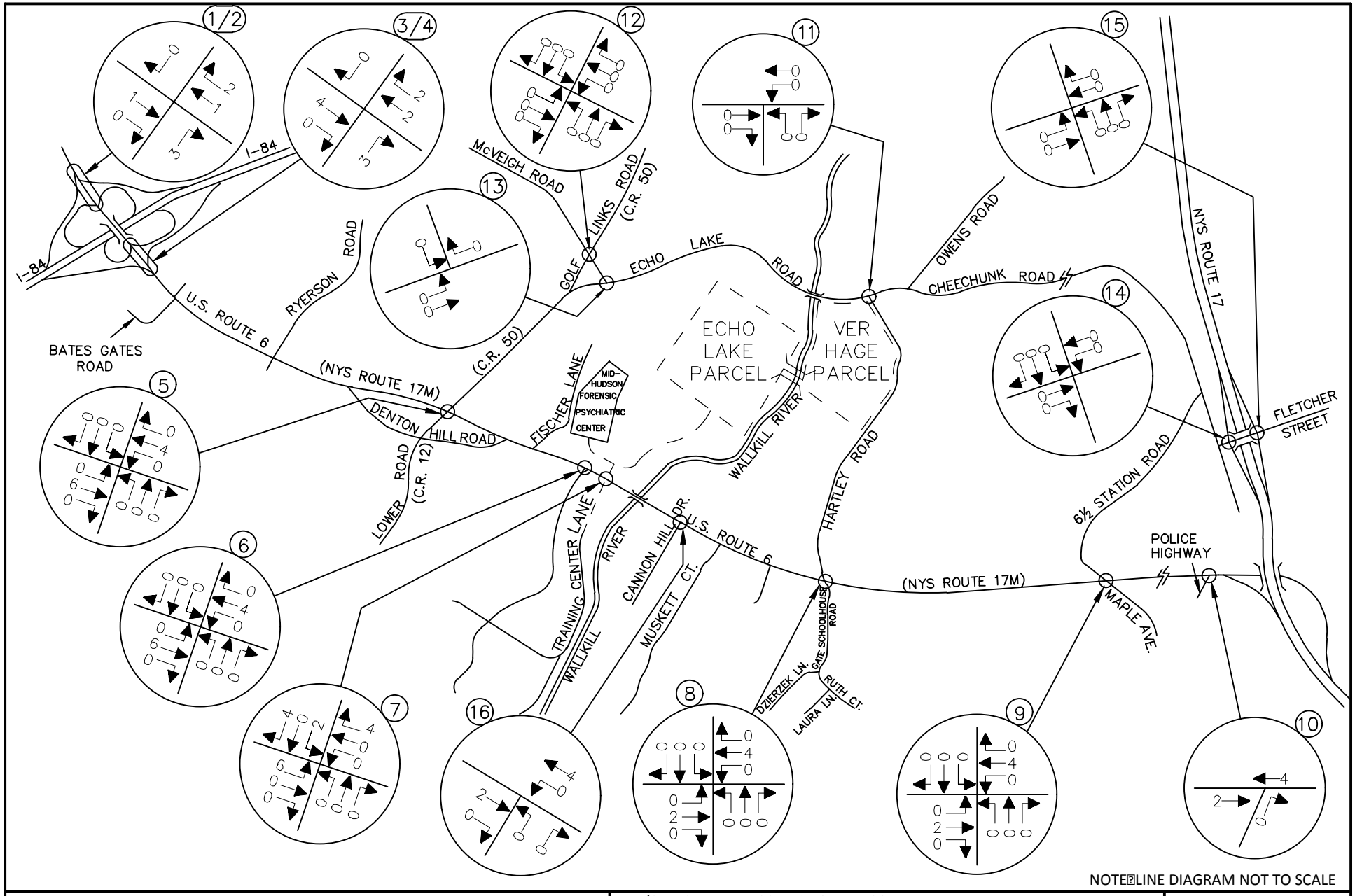
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
4:00 PM - 5:00 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
49	



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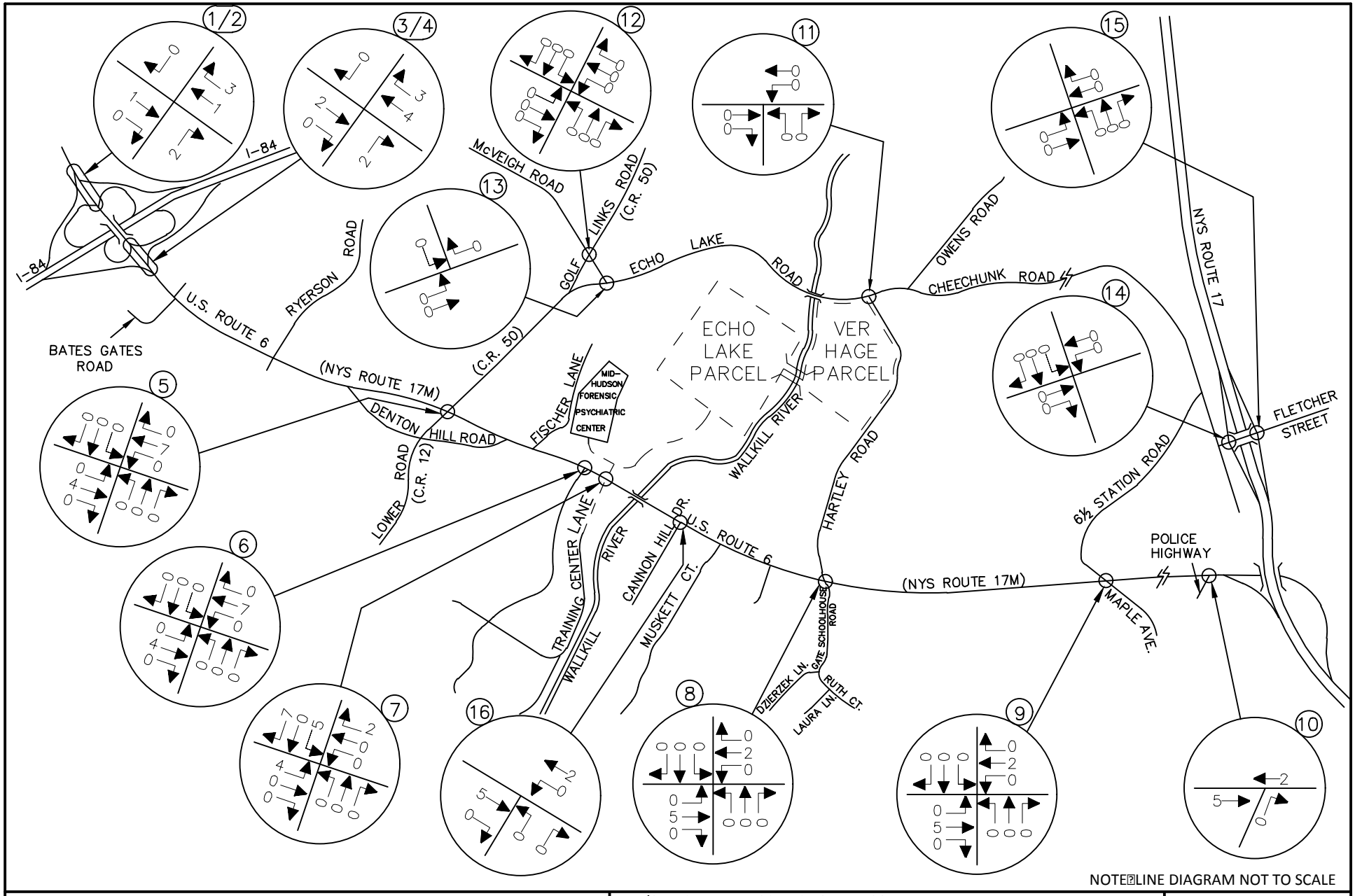
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
50	



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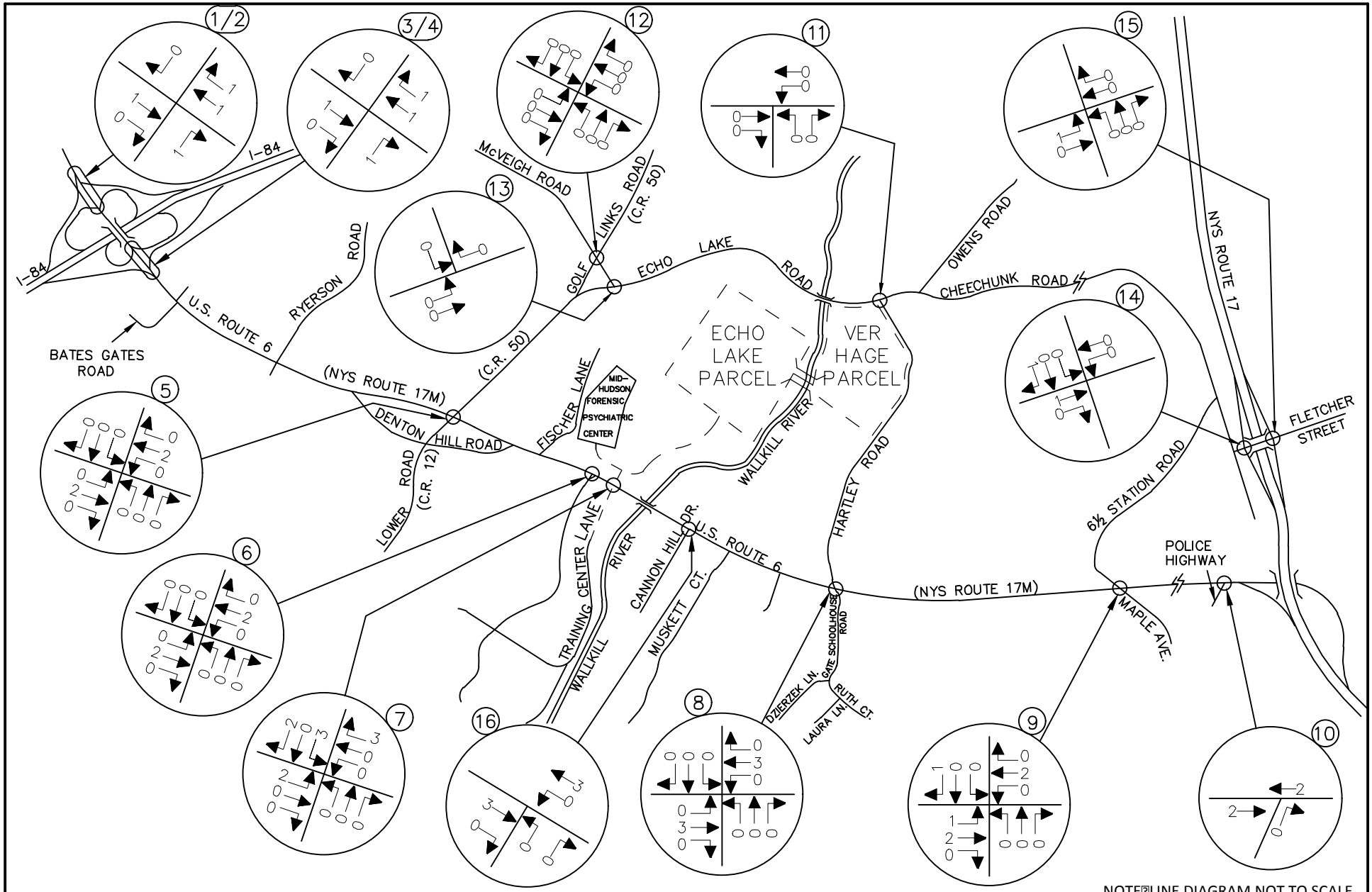
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

AMY'S KITCHEN
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
51	



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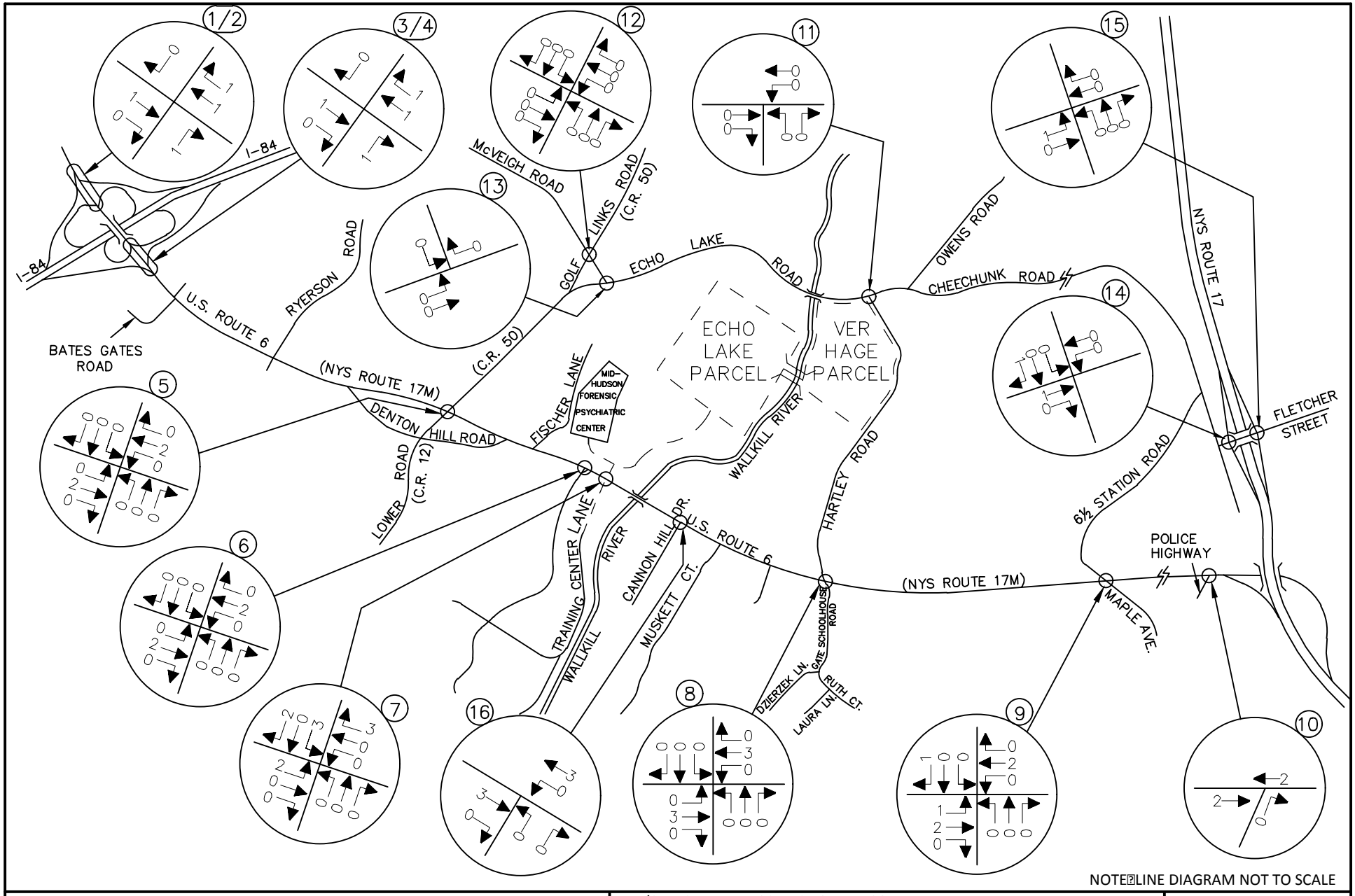
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
(6:00 AM - 7:00 AM)

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
52	



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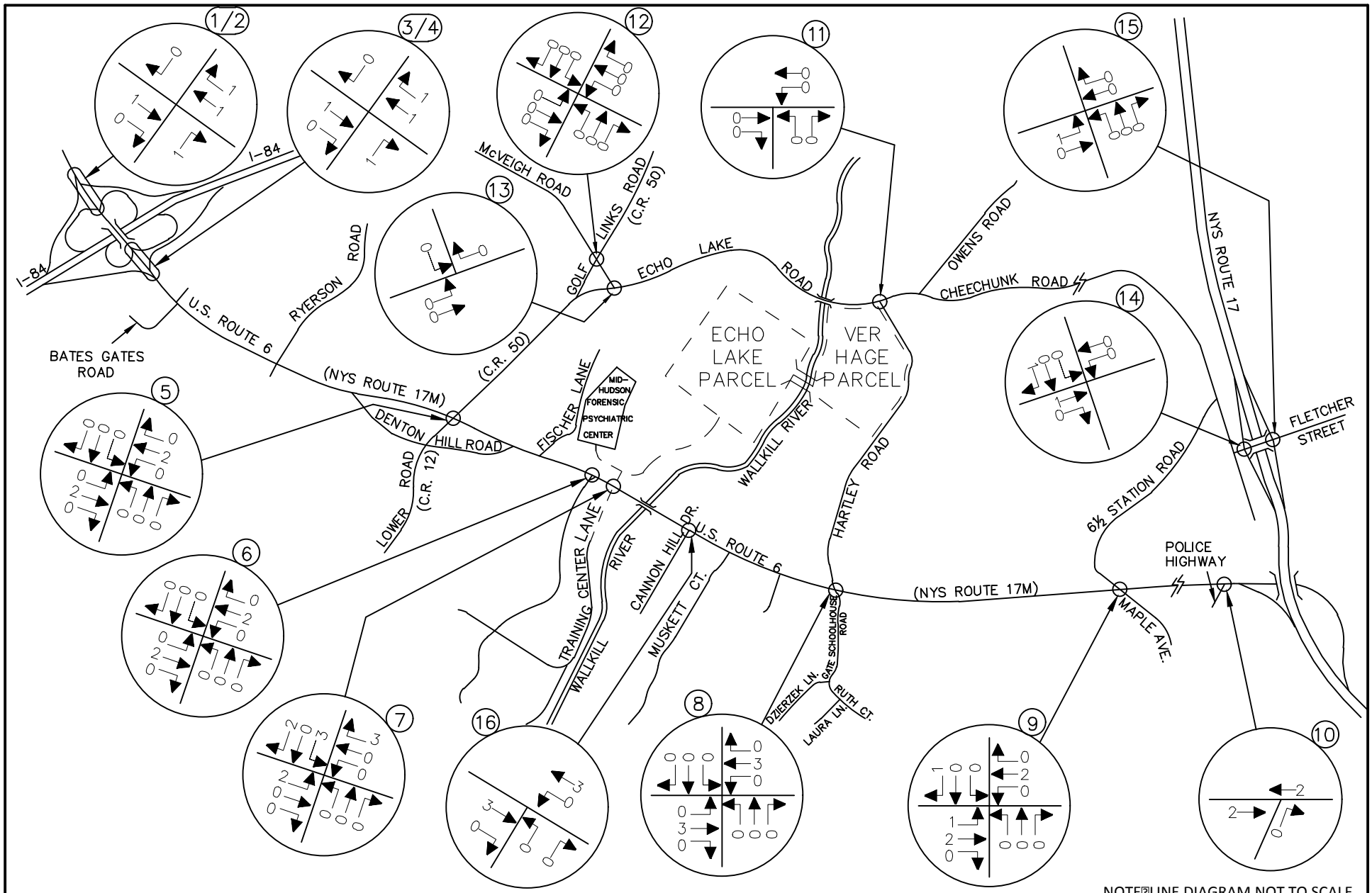
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
53	



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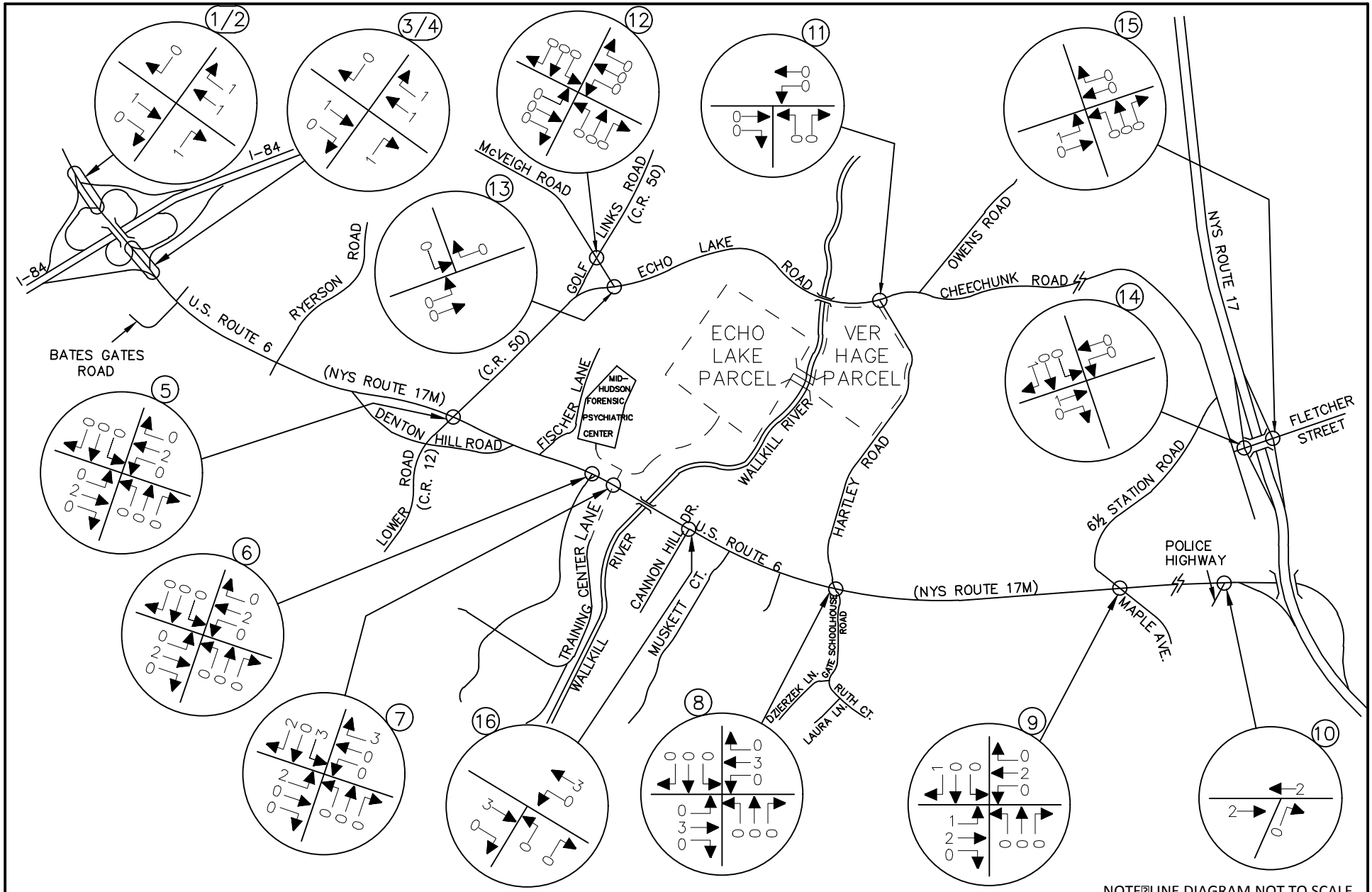
GOSHEN, NEW YORK

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
PM - PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
54	



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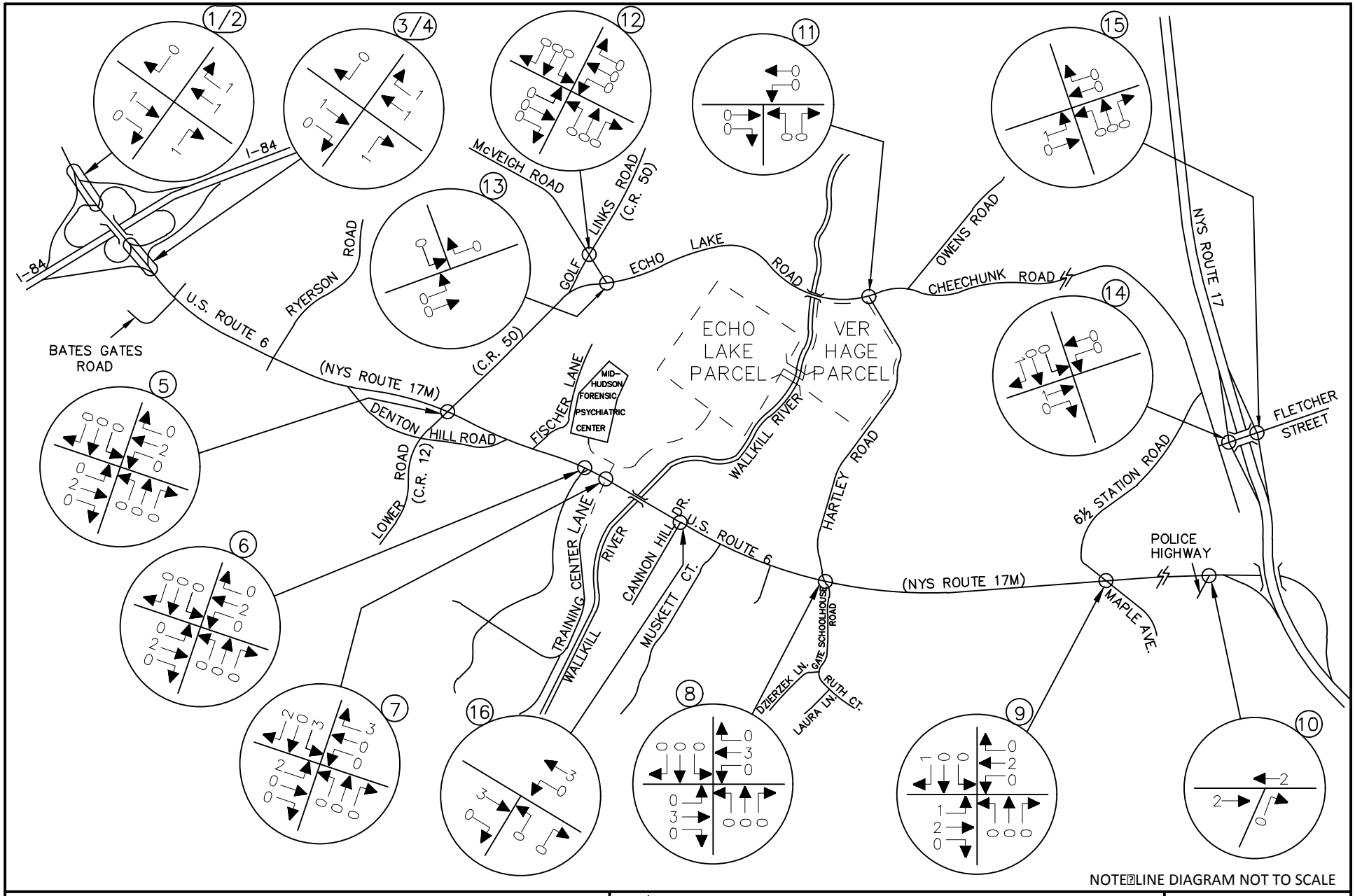
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
55	



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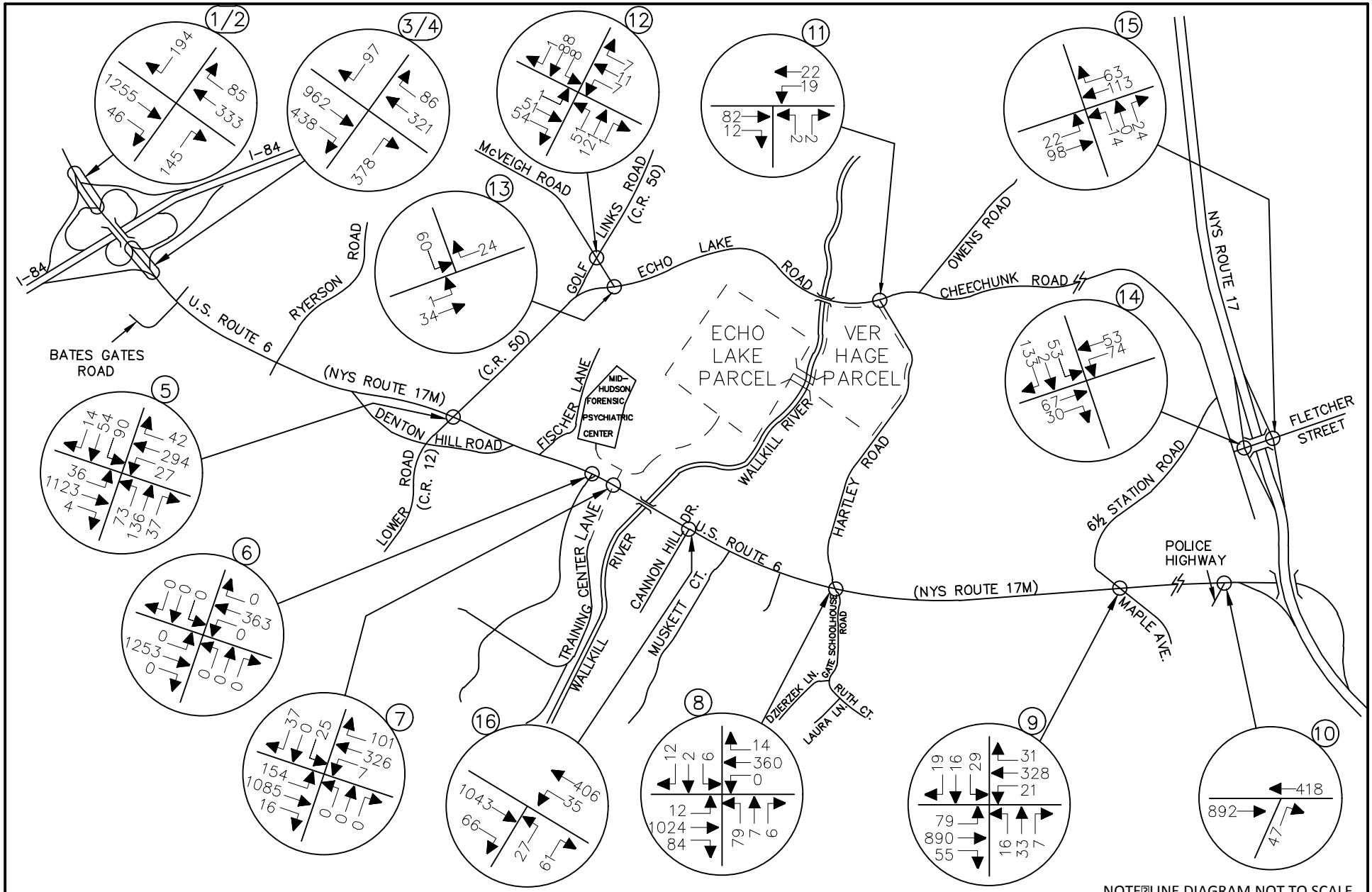
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
56	



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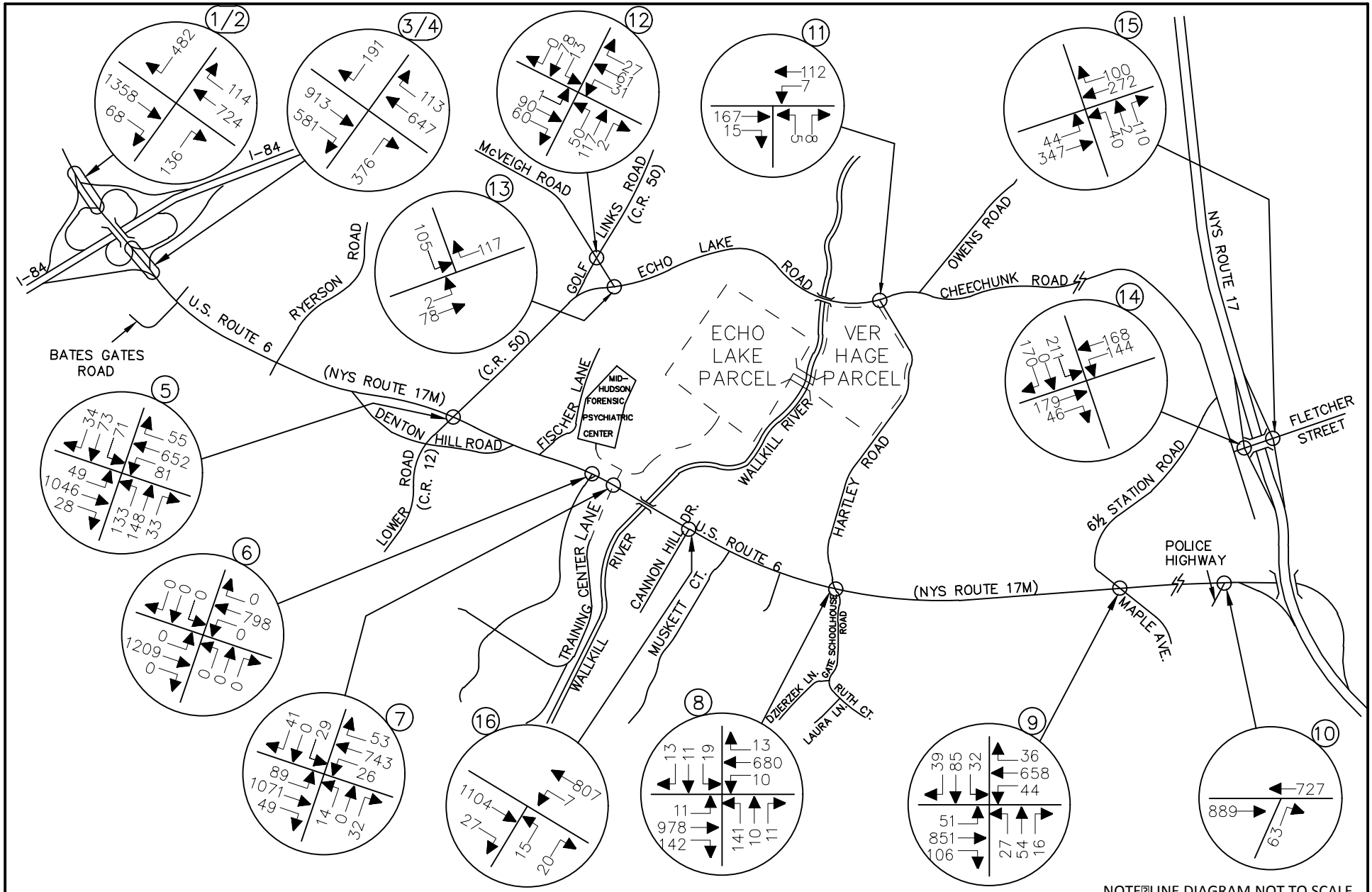
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
57	



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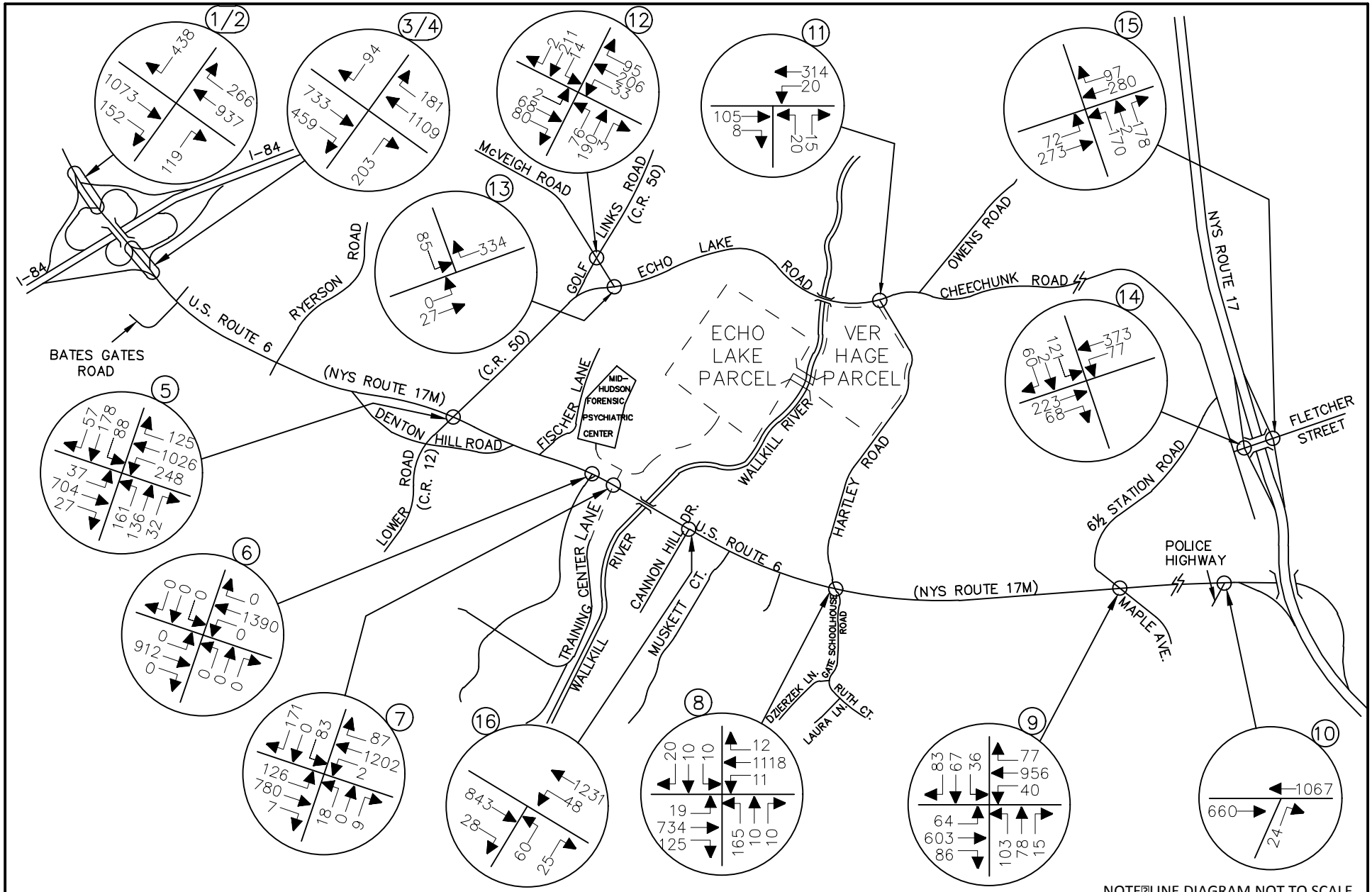
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
58	



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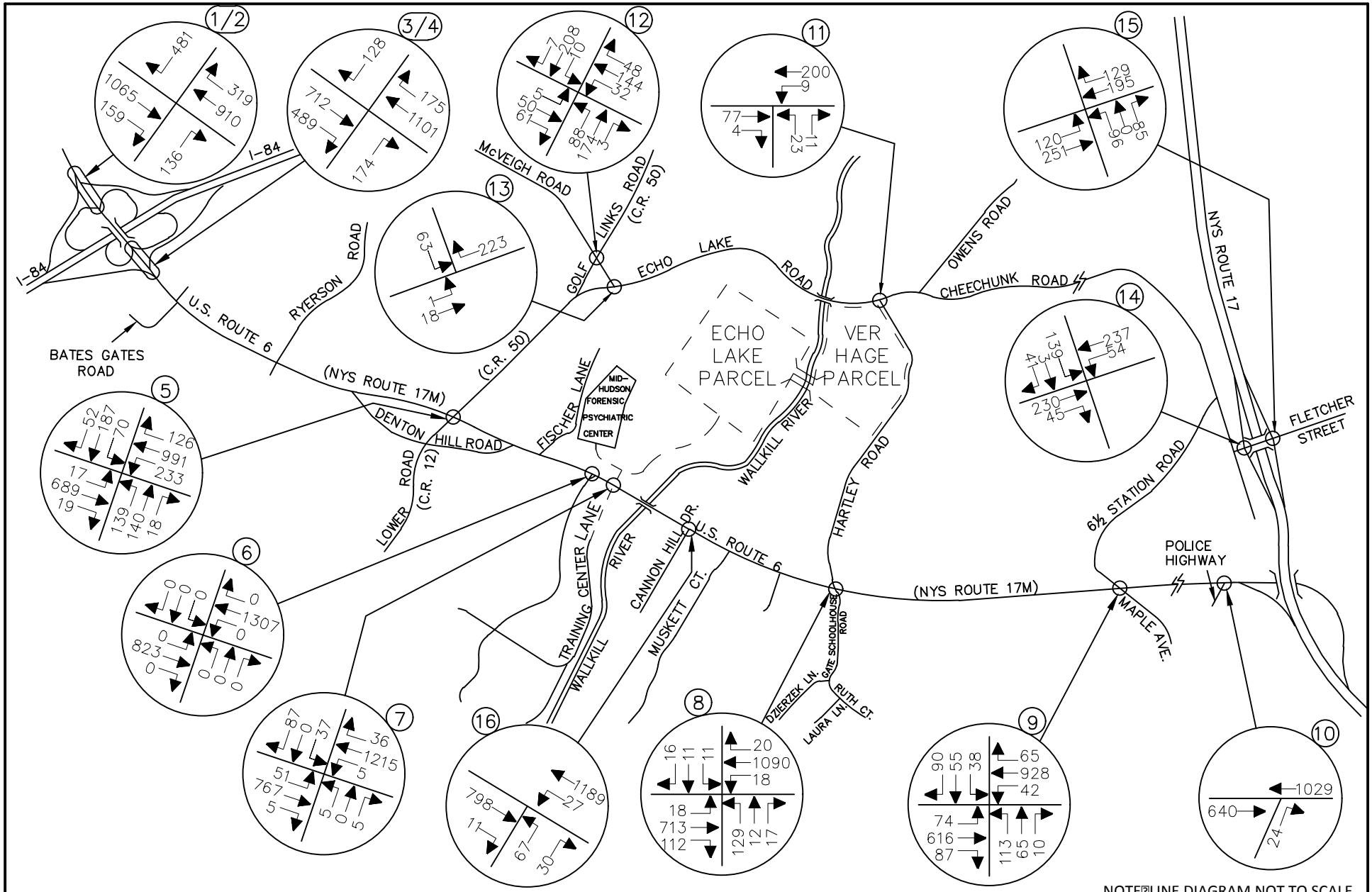
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
4:00 PM - 5:00 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
59	



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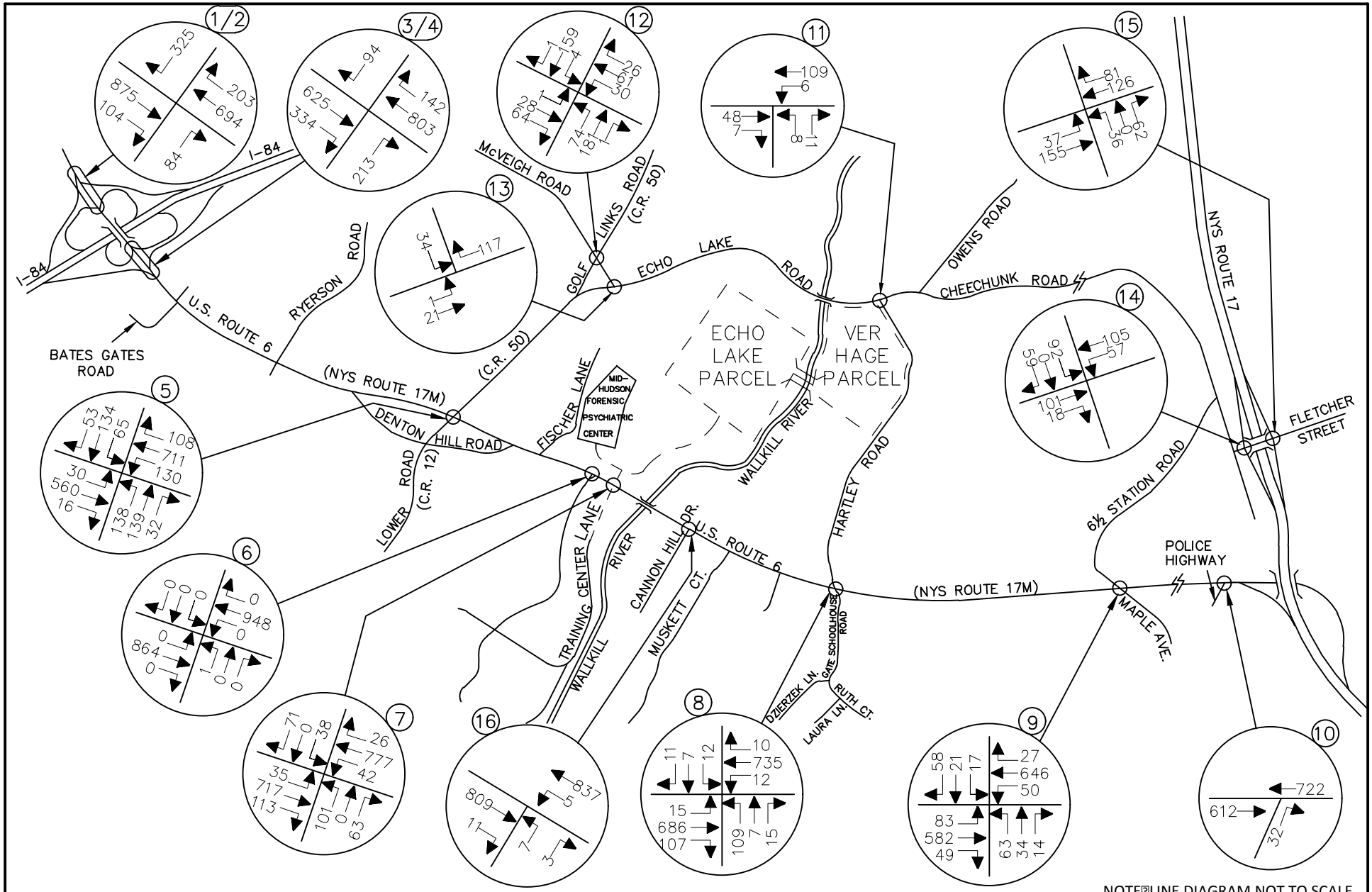
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
60	



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AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

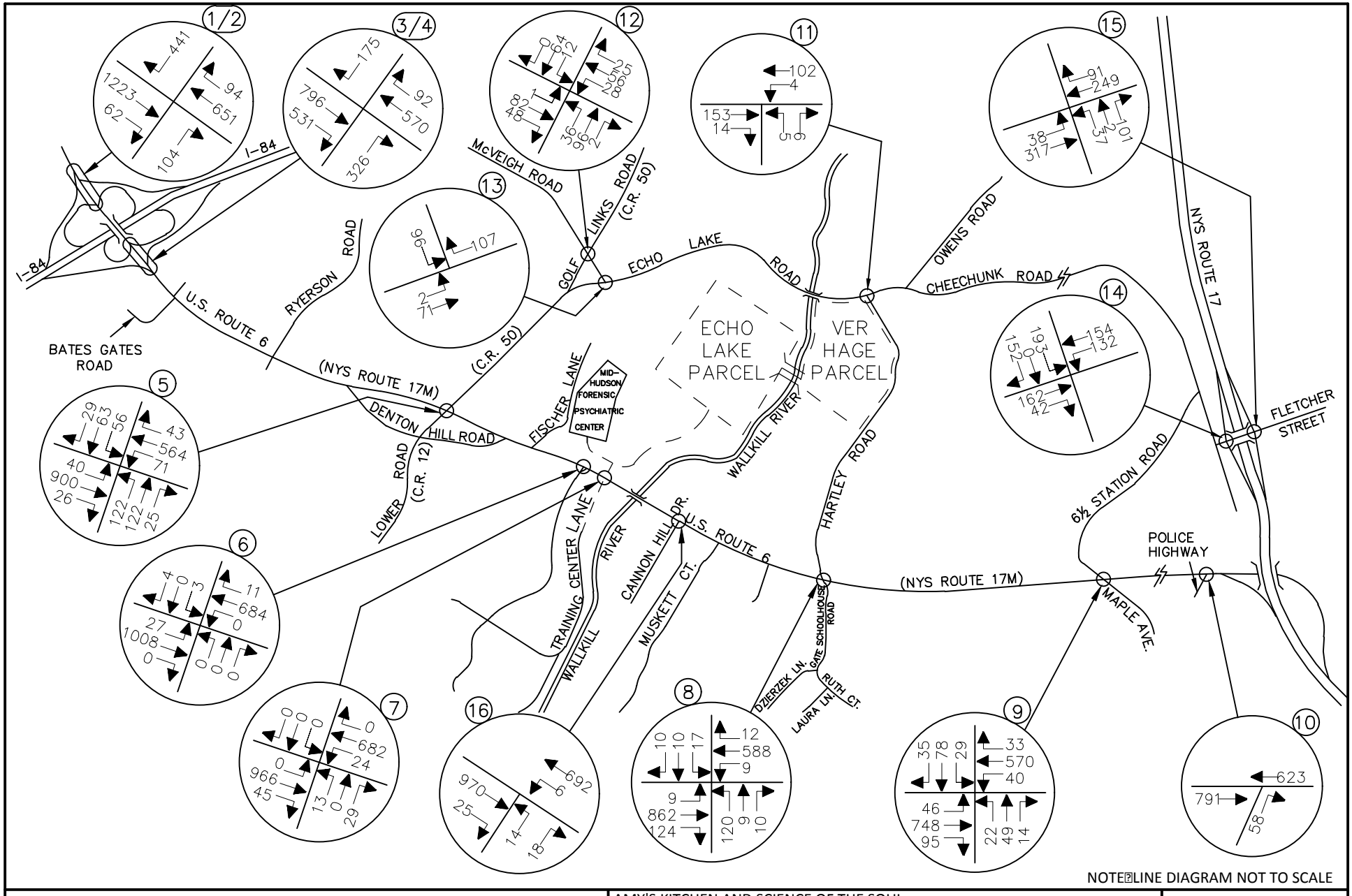
2033 FULL BUILD TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
61	

AMY'S KITCHEN/SCIENCE OF THE SOUL

FEIS TRAFFIC VOLUME FIGURES

SCIENCE OF THE SOUL
EVENT CONDITIONS ANALYSIS



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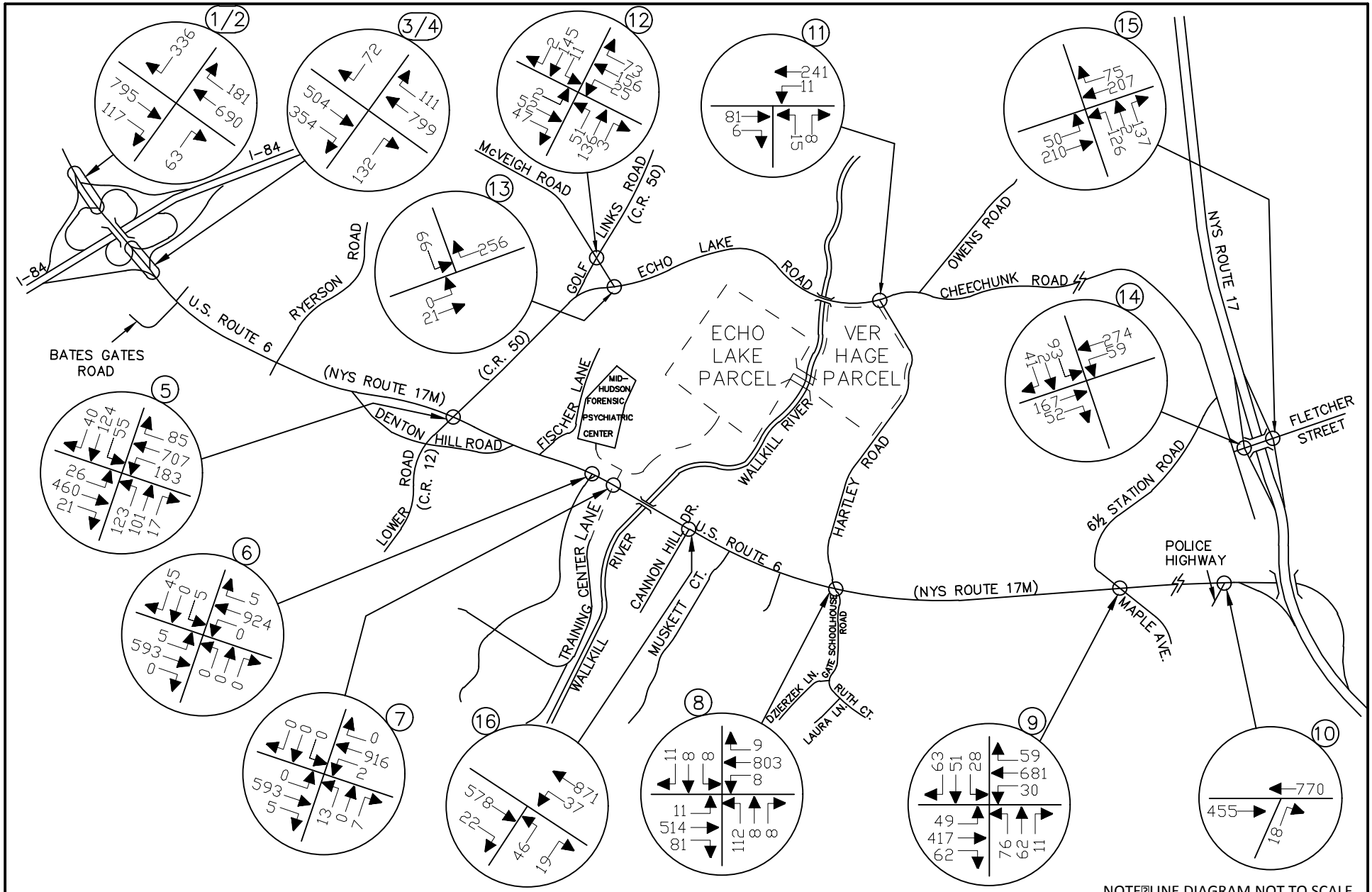
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
8:30 AM - 9:30 AM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
2-E	



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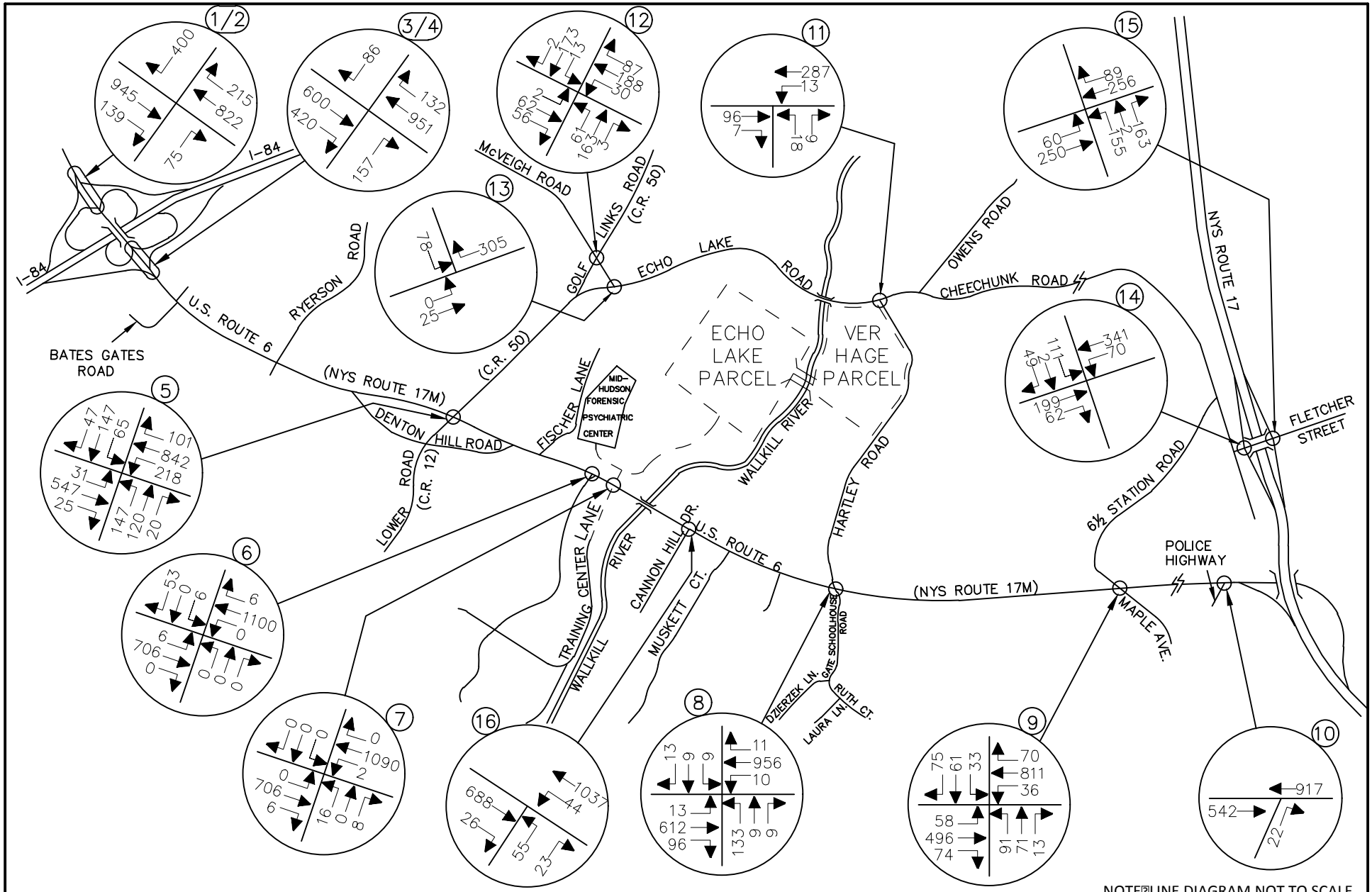
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
3-E	



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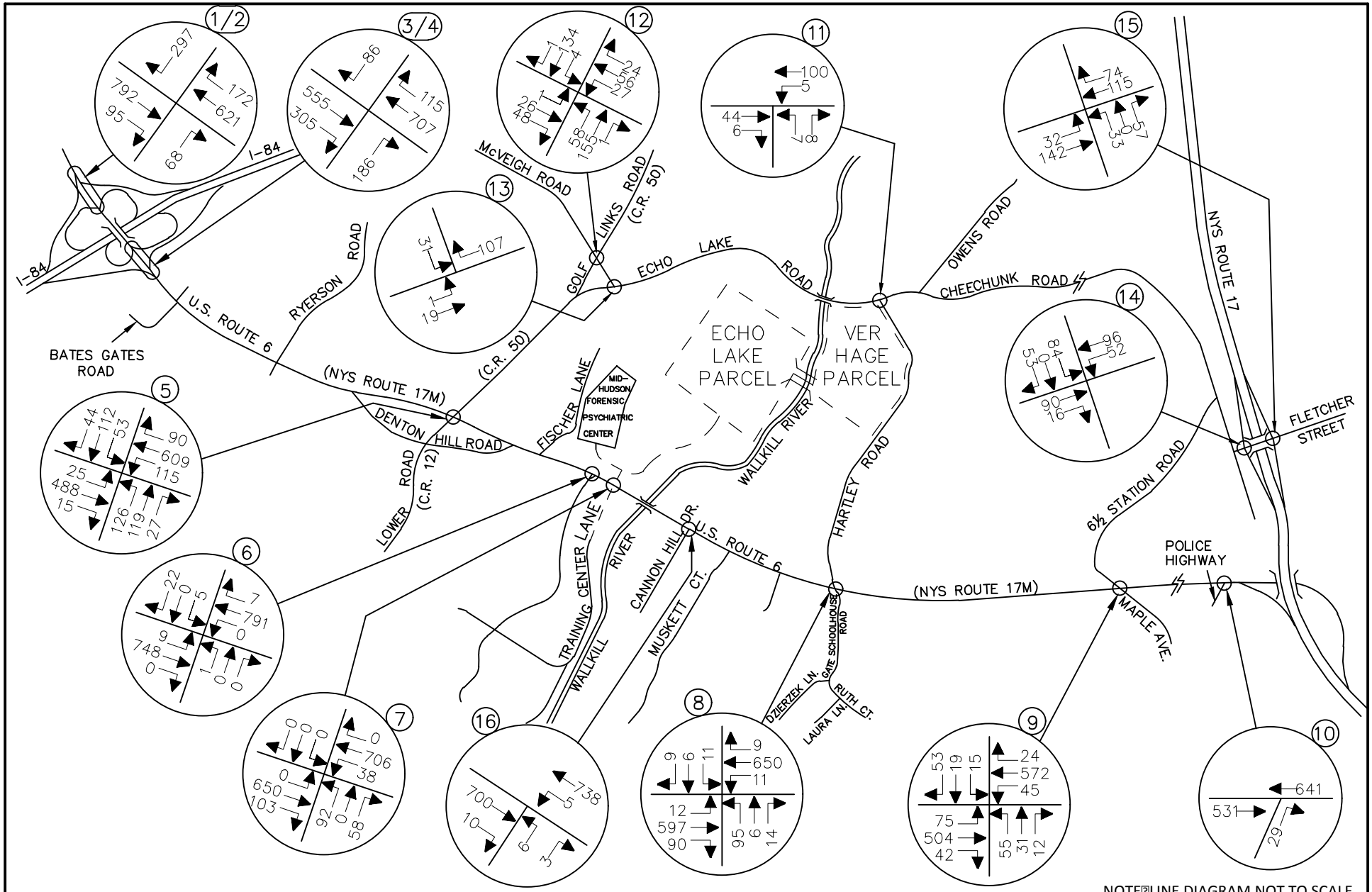
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2015 EXISTING TRAFFIC VOLUMES
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
2:30 PM - 3:30 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
4–E	



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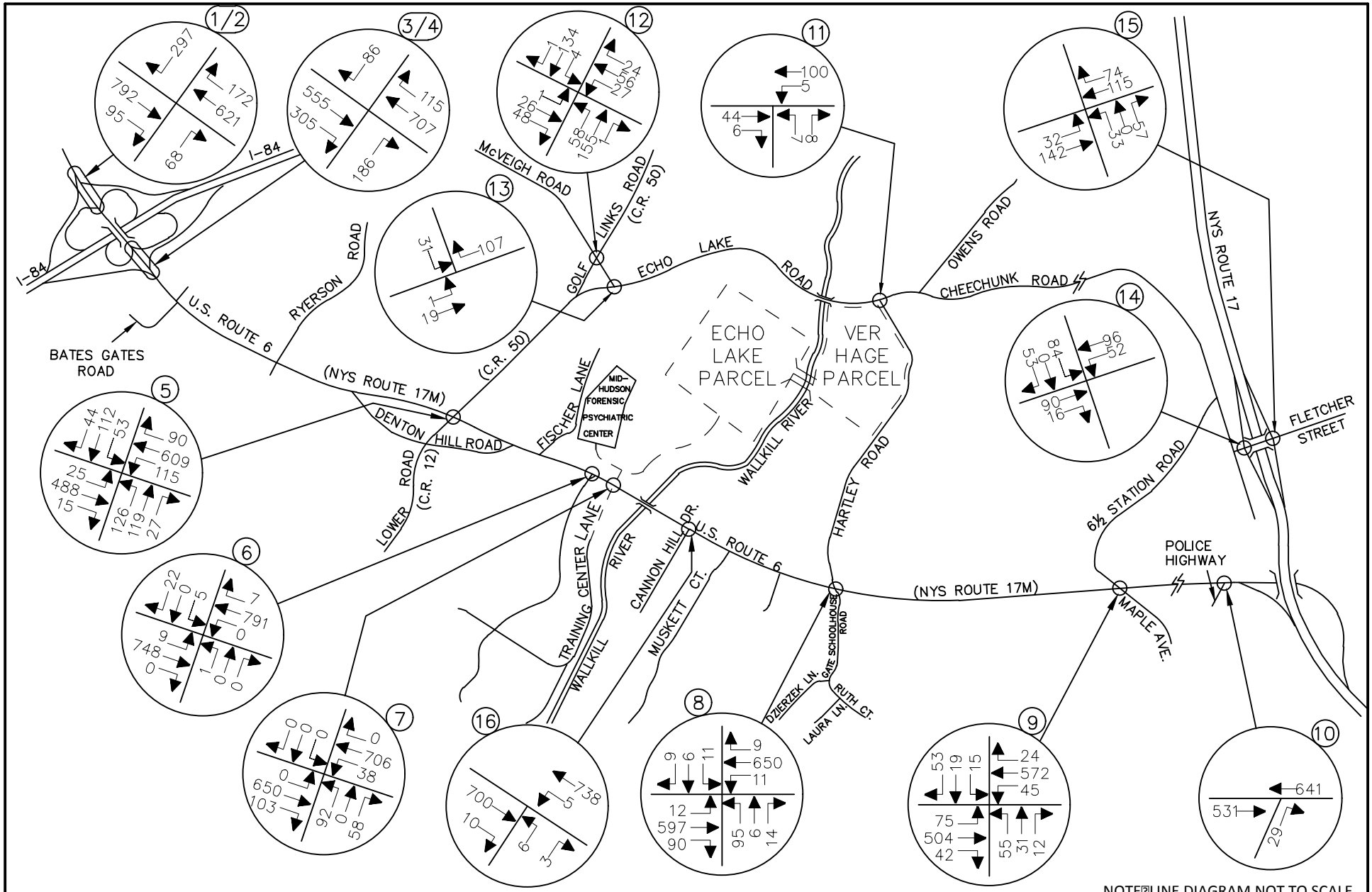
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2015 EXISTING TRAFFIC VOLUMES
WEEKEND MORNING EVENT PEAK HOUR PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
5-E	



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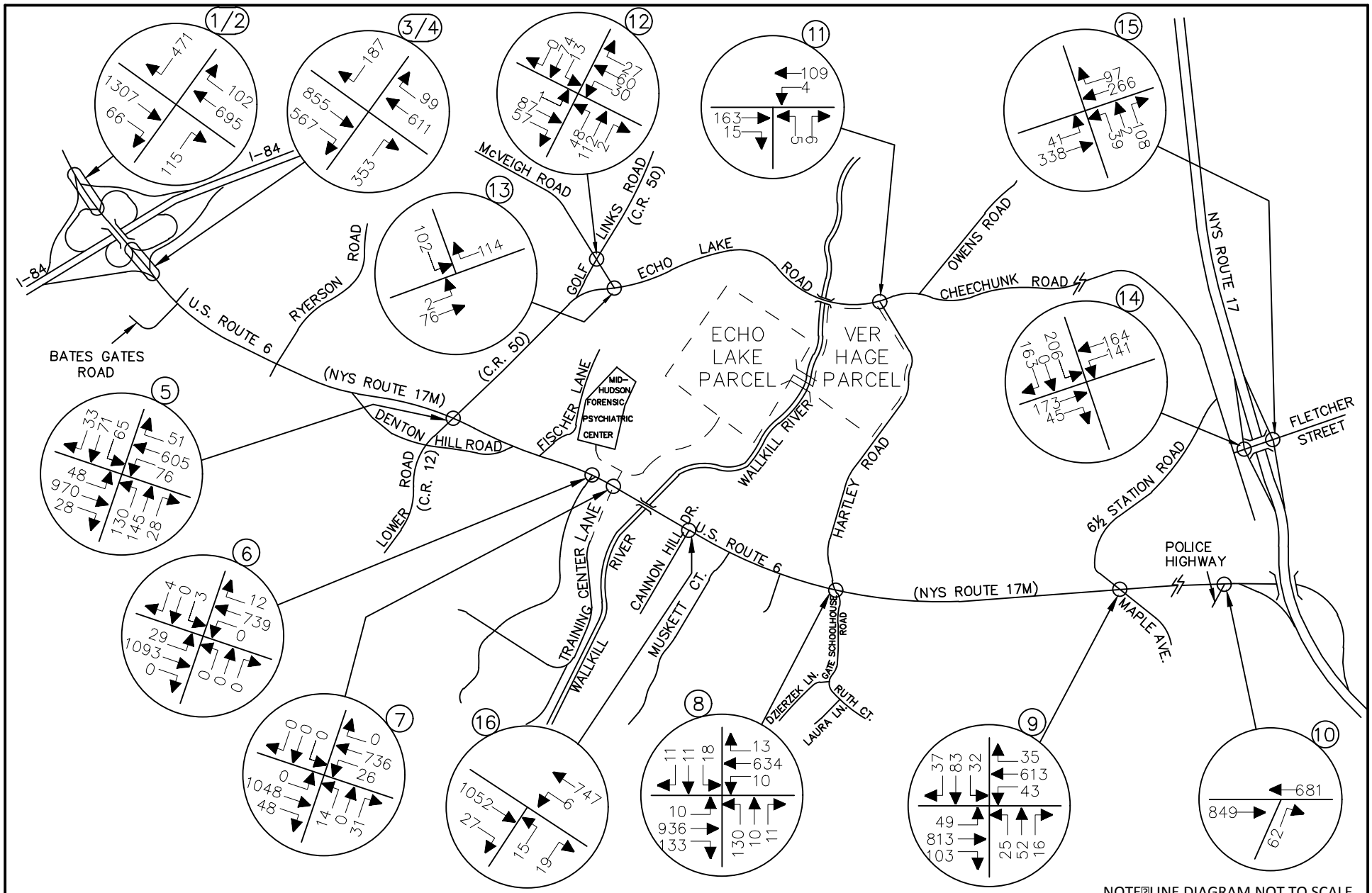
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2015 EXISTING TRAFFIC VOLUMES
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
2:30 PM - 3:30 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
6–E	



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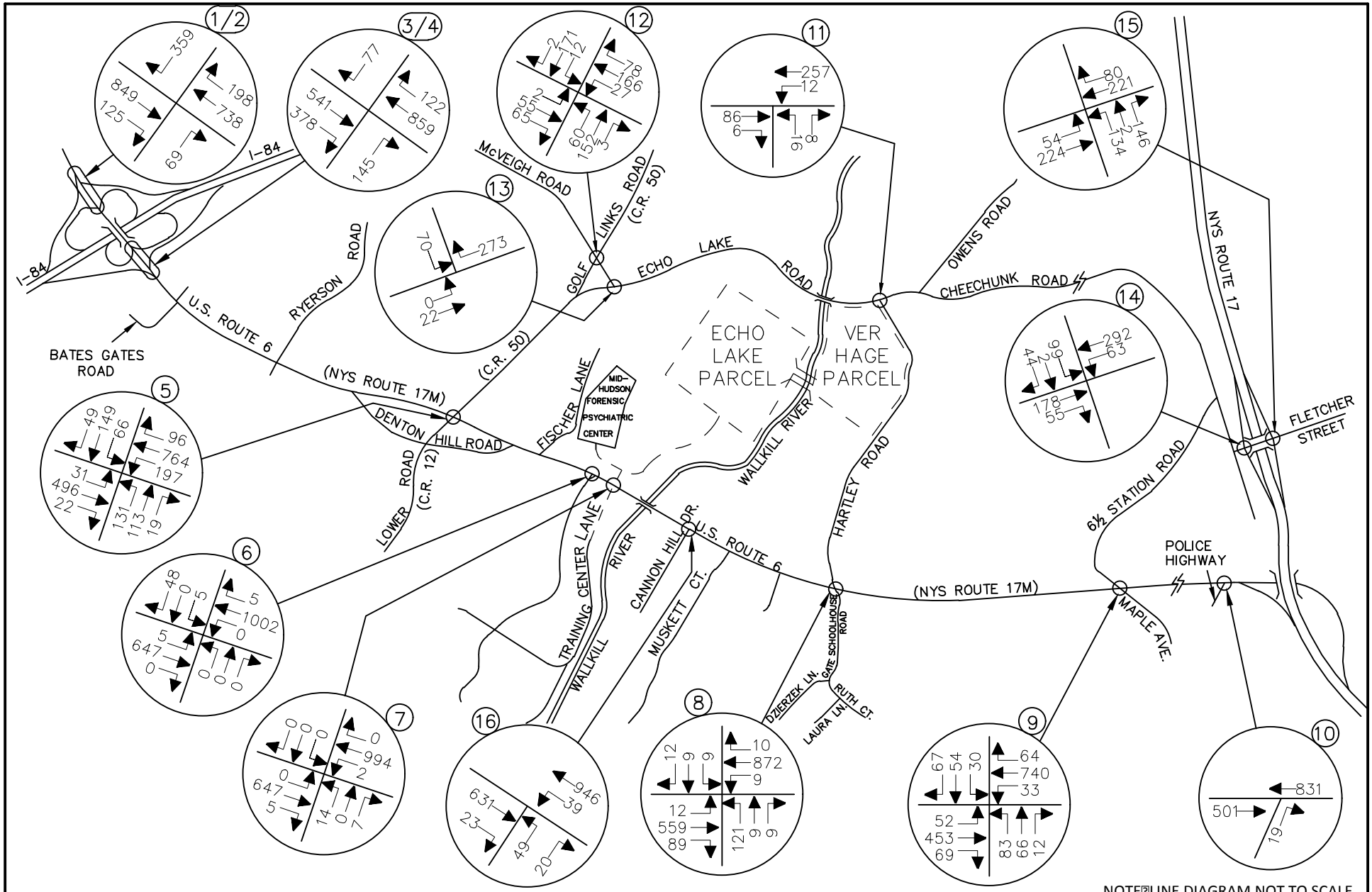
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
8:30 AM - 9:30 AM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
17–E	



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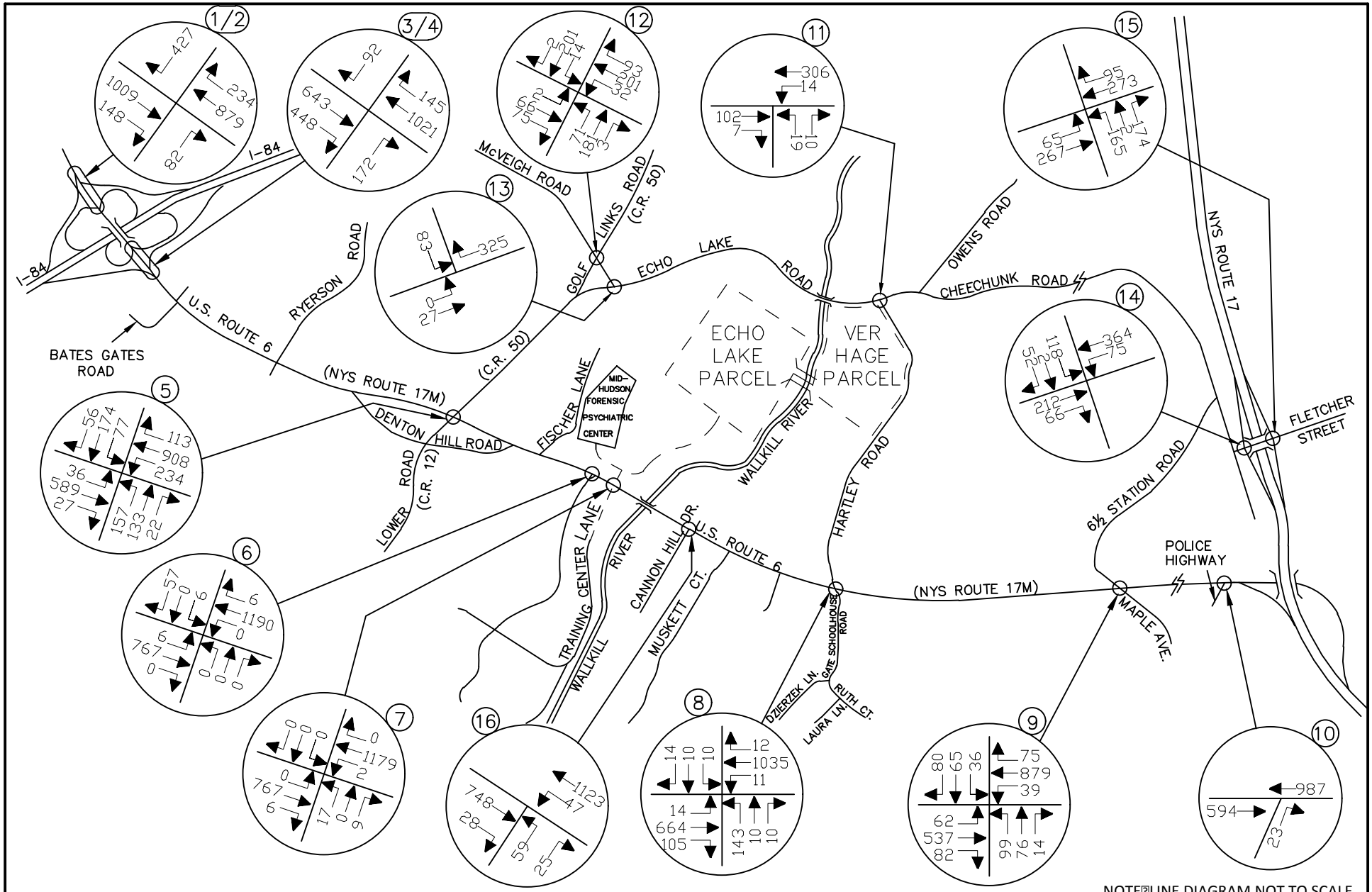
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
12:00 PM - 1:00 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
18–E	



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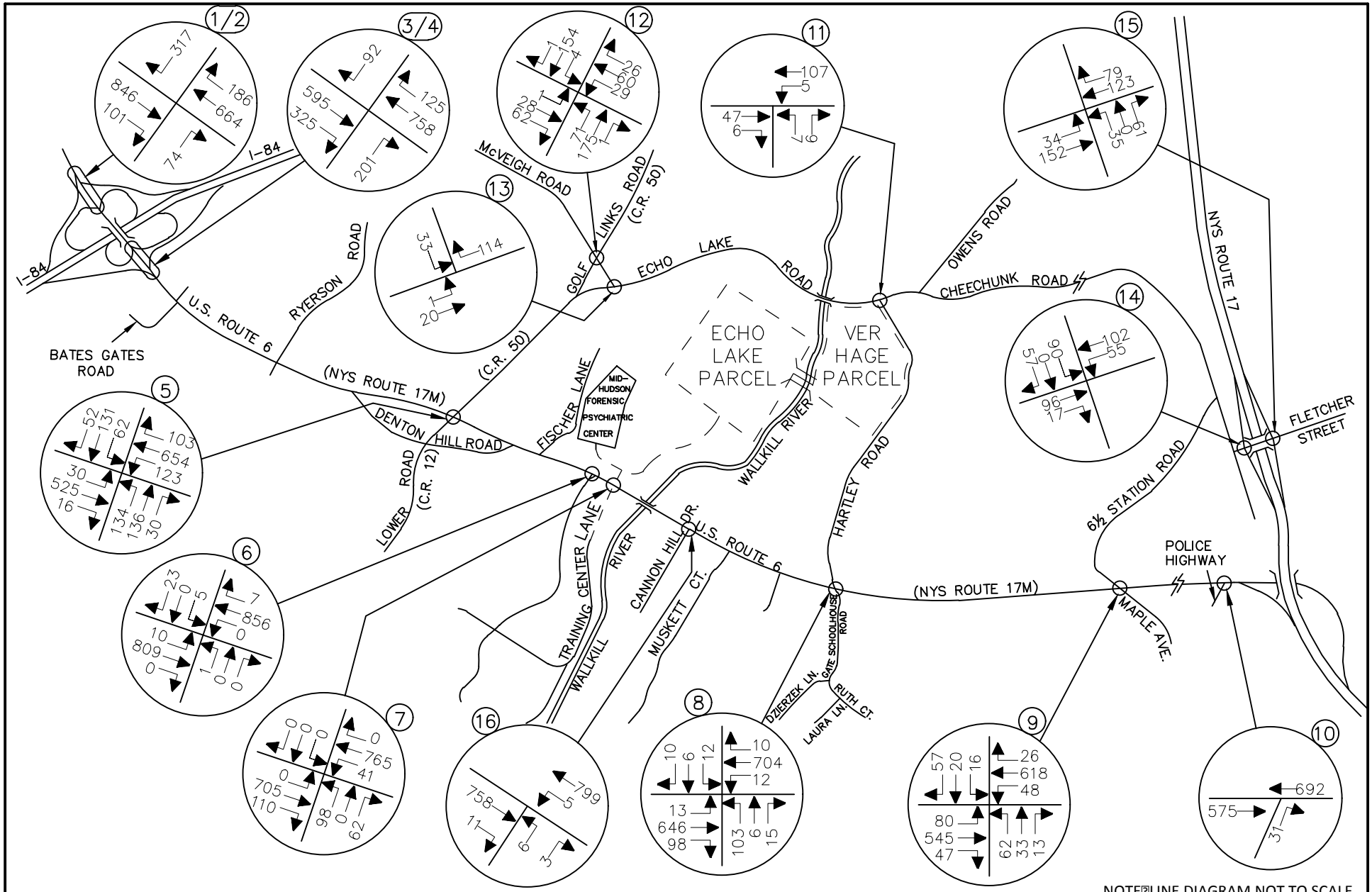
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 NO-BUILD TRAFFIC VOLUMES
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
2:30 PM - 3:30 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
19–E	



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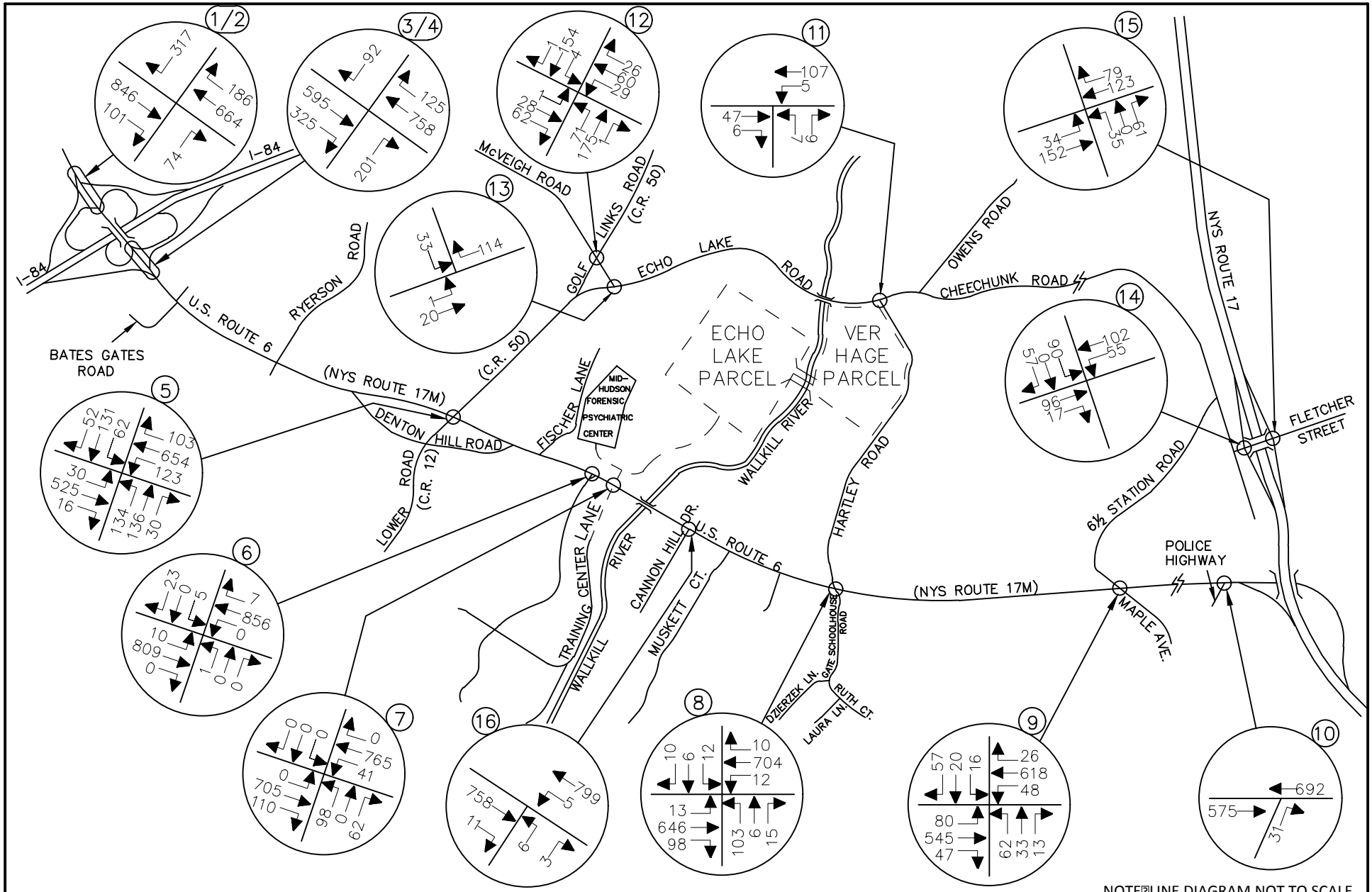
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 NO-BUILD TRAFFIC VOLUMES
WEEKEND MORNING EVENT PEAK HOUR PERIOD
12:00 PM - 1:00 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
20-E	



NOTE: LINE DIAGRAM NOT TO SCALE

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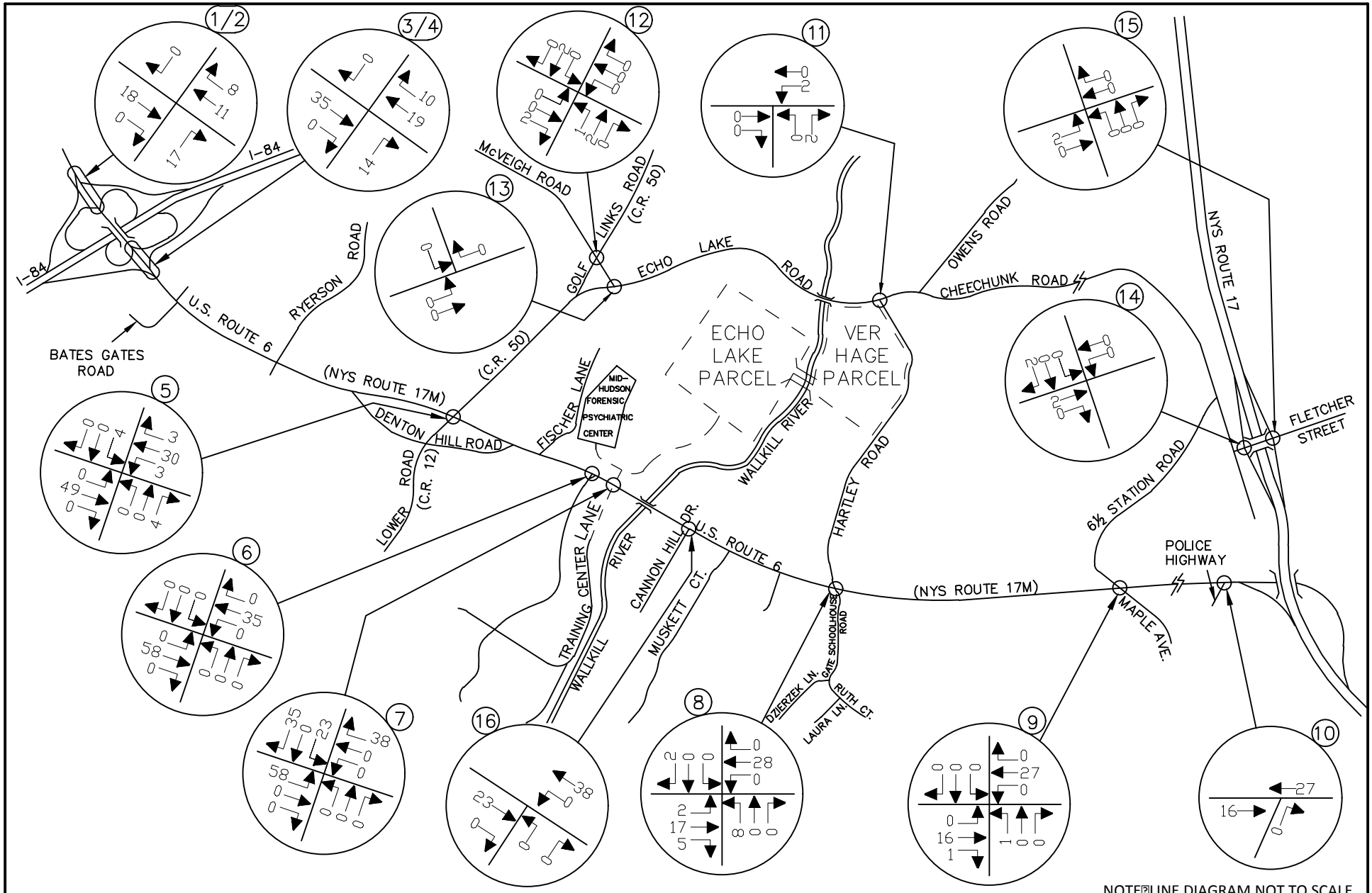
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 NO-BUILD TRAFFIC VOLUMES
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
2:30 PM - 3:30 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
21–E	



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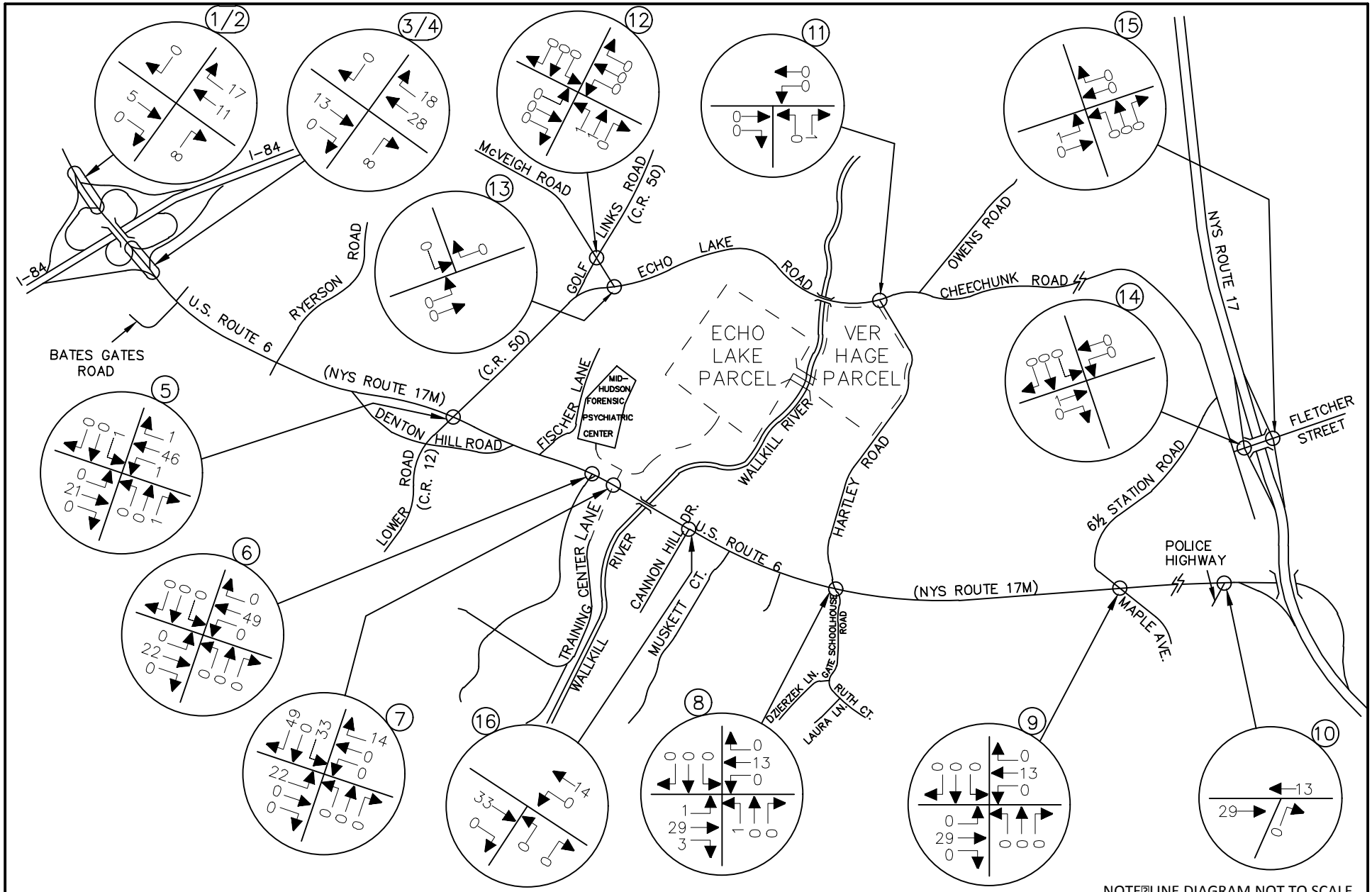
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

AMY'S KITCHEN & VER HAGE WAREHOUSE USES
TOTAL SITE GENERATED TRAFFIC VOLUMES (CARS & TRUCKS)
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
(8:30 AM - 9:30 AM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
22-E	



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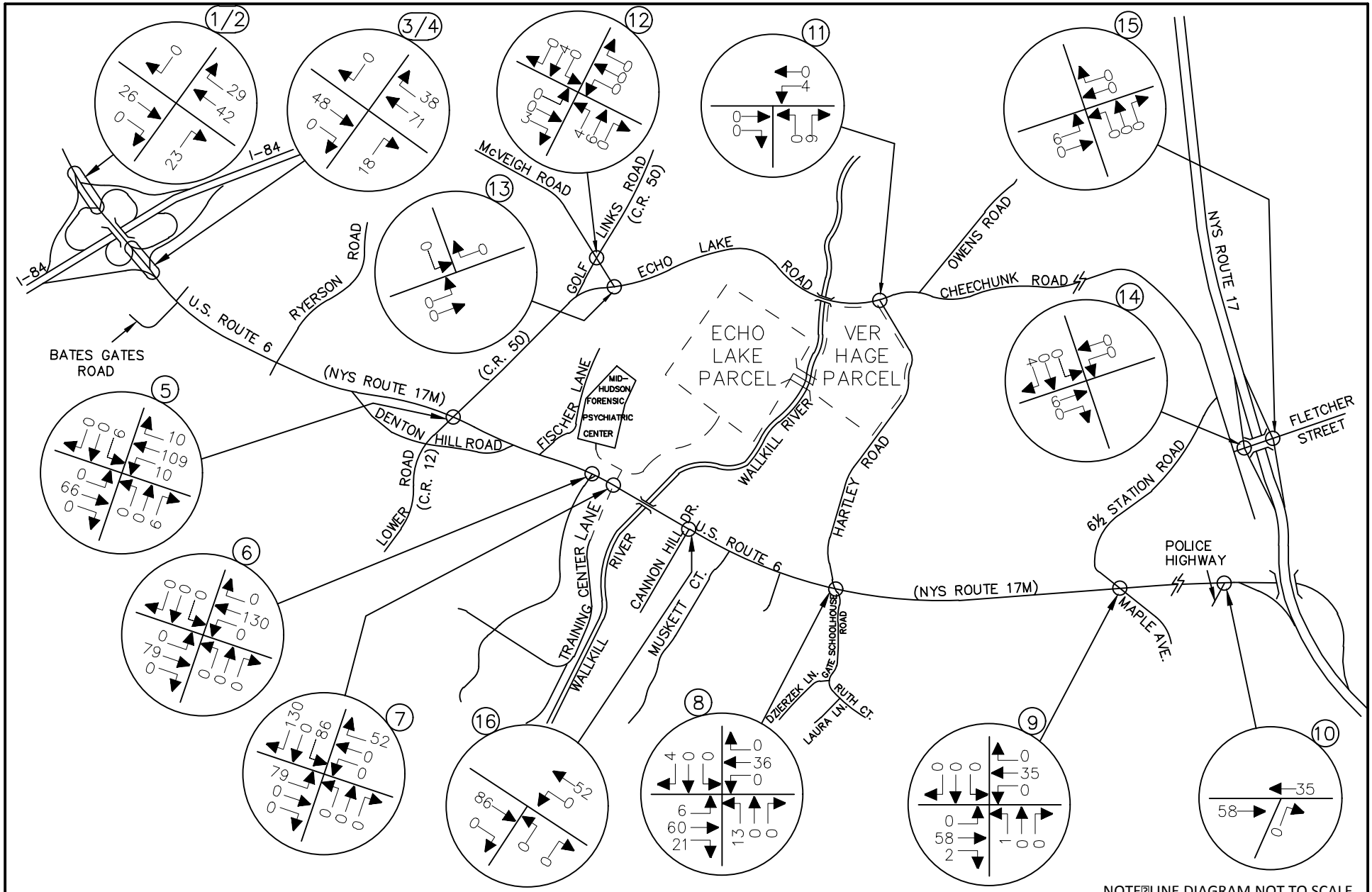
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

AMY'S KITCHEN & VER HAGE WAREHOUSE USES
TOTAL SITE GENERATED TRAFFIC VOLUMES (CARS & TRUCKS)
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
23-E	



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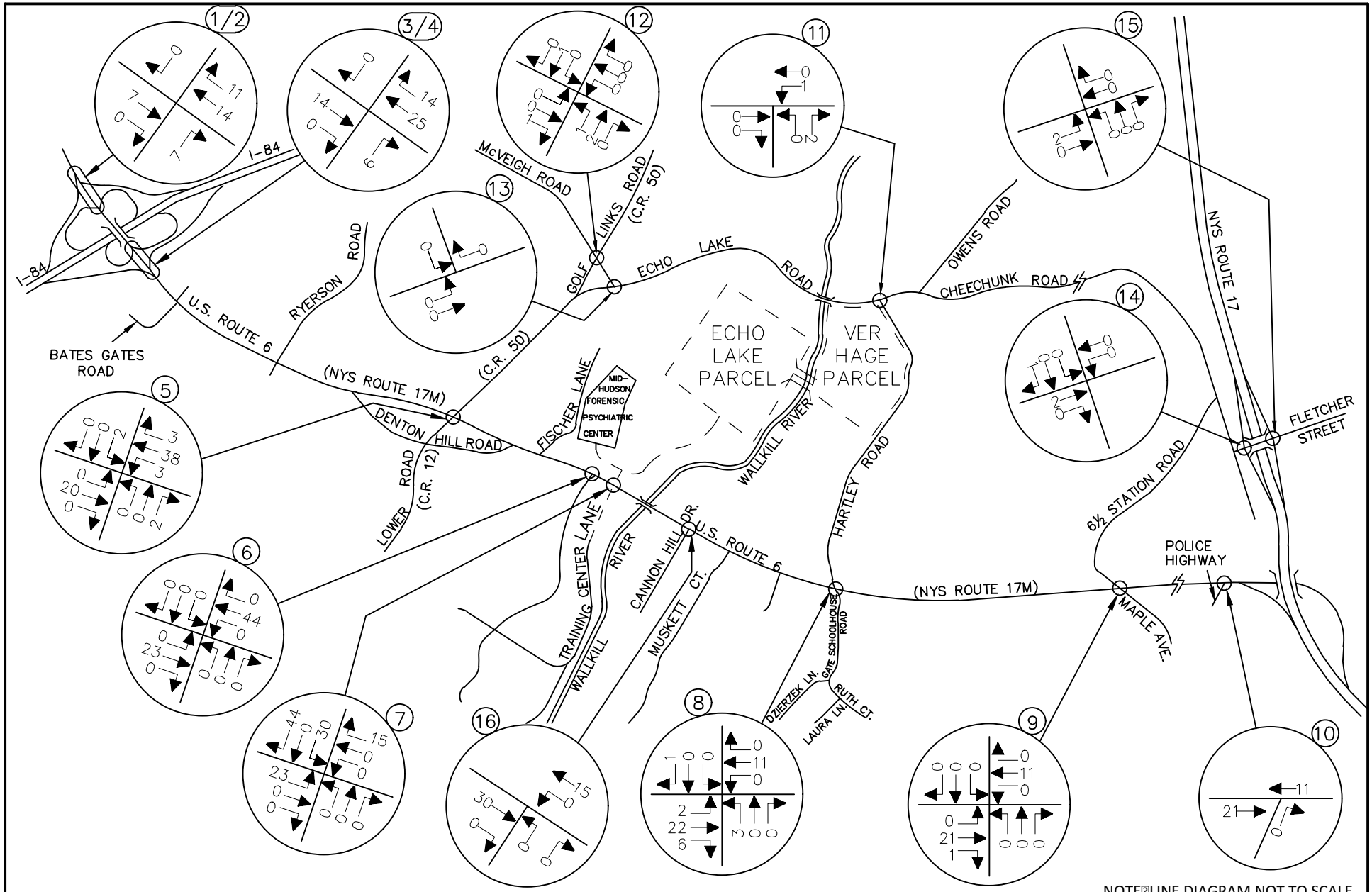
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

AMY'S KITCHEN & VER HAGE WAREHOUSE USES
TOTAL SITE GENERATED TRAFFIC VOLUMES (CARS & TRUCKS)
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
24–E	



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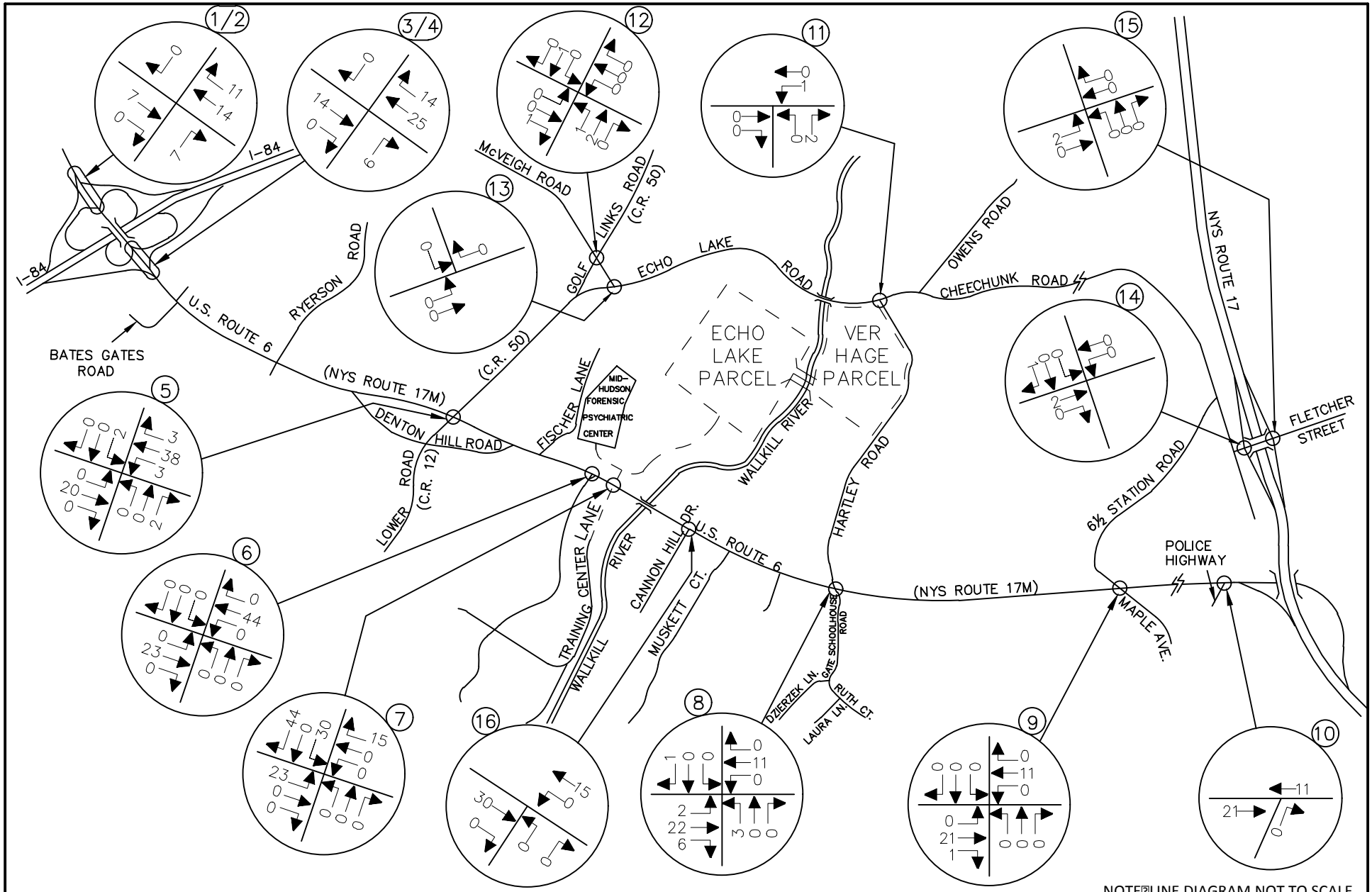
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

AMY'S KITCHEN & VER HAGE WAREHOUSE USES
TOTAL SITE GENERATED TRAFFIC VOLUMES (CARS & TRUCKS)
WEEKEND MORNING EVENT PEAK EXIT PERIOD
(12:00 PM - 1:00 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
25-E	



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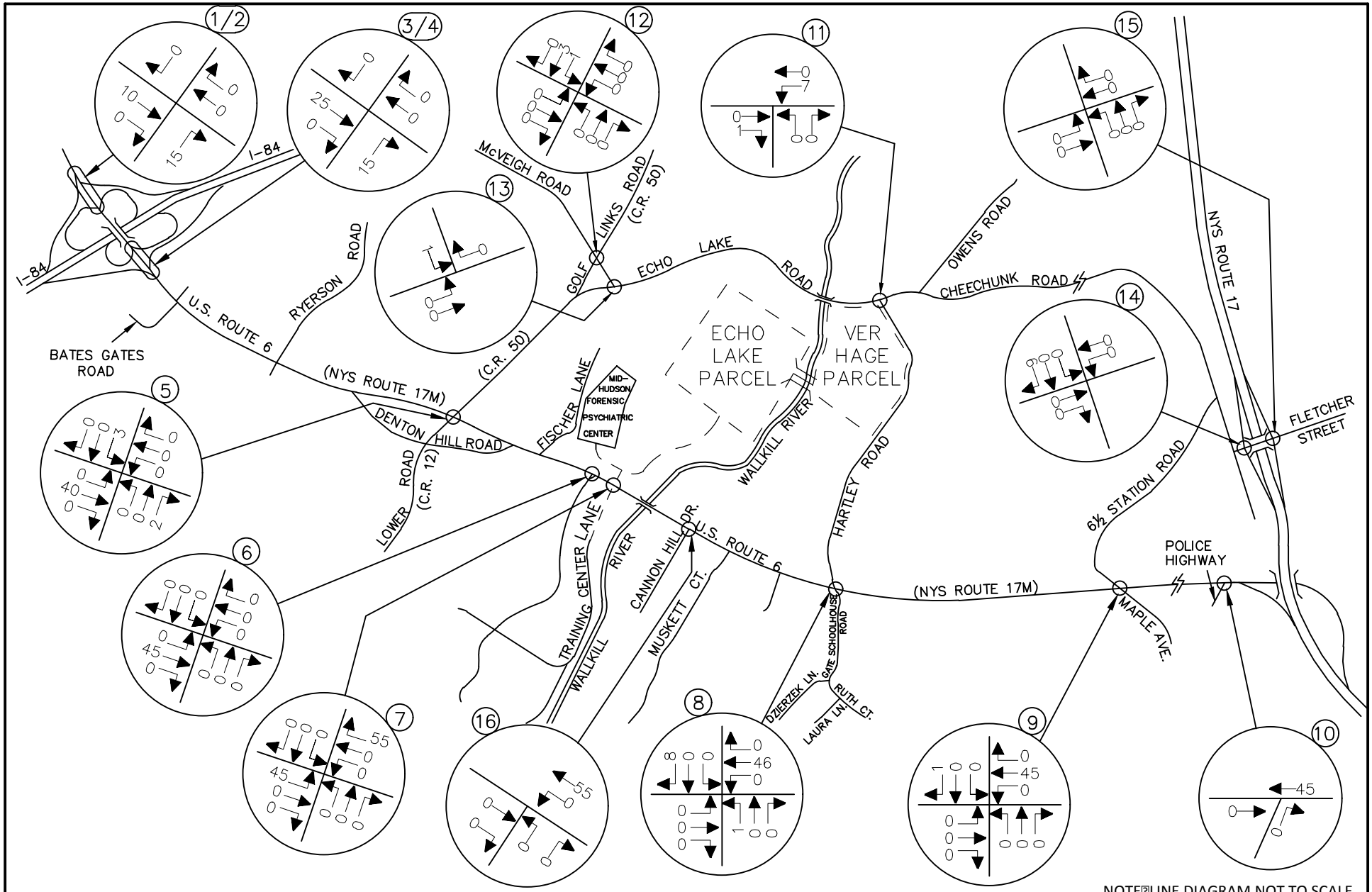
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

AMY'S KITCHEN (PHASE II) & VER HAGE WAREHOUSE USES
TOTAL SITE GENERATED TRAFFIC VOLUMES (CARS & TRUCKS)
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
(2:30 PM - 3:30 PM)

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
26-E	



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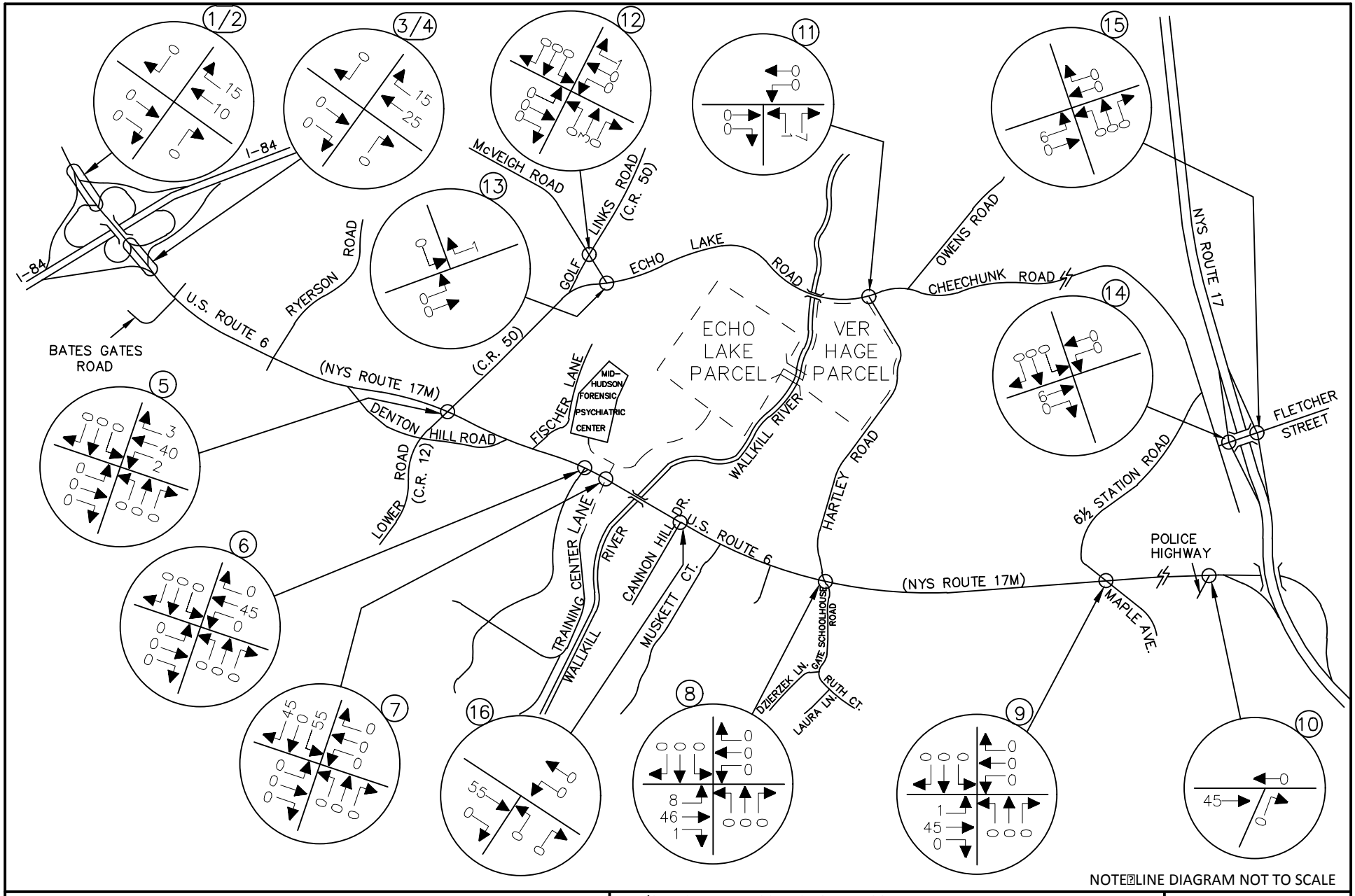
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
ARRIVAL DISTRIBUTION
ALL VALUES EXPRESSED AS A %

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
27-E	



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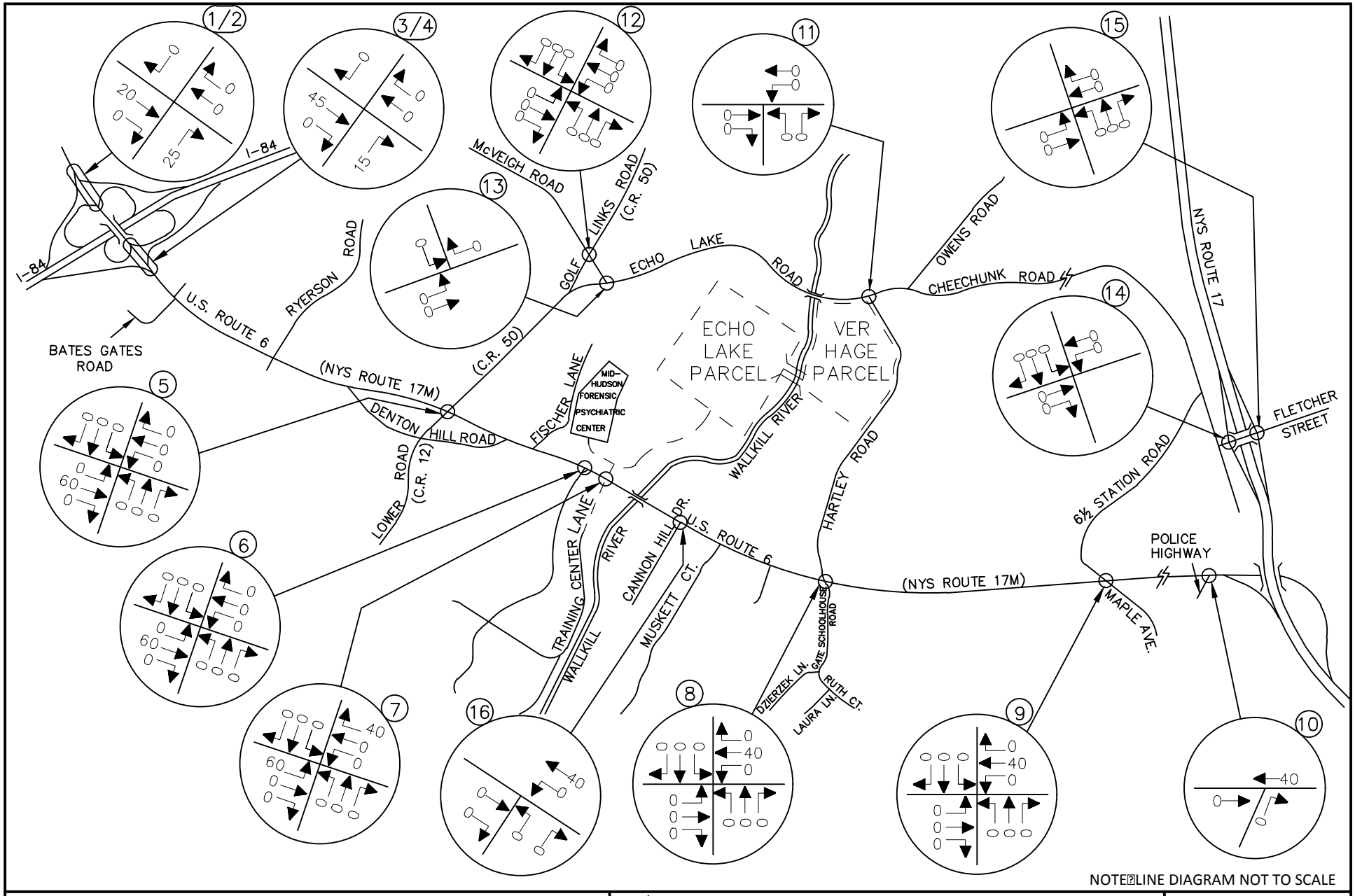
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
DEPARTURE DISTRIBUTION
ALL VALUES EXPRESSED AS A %

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
28-E	



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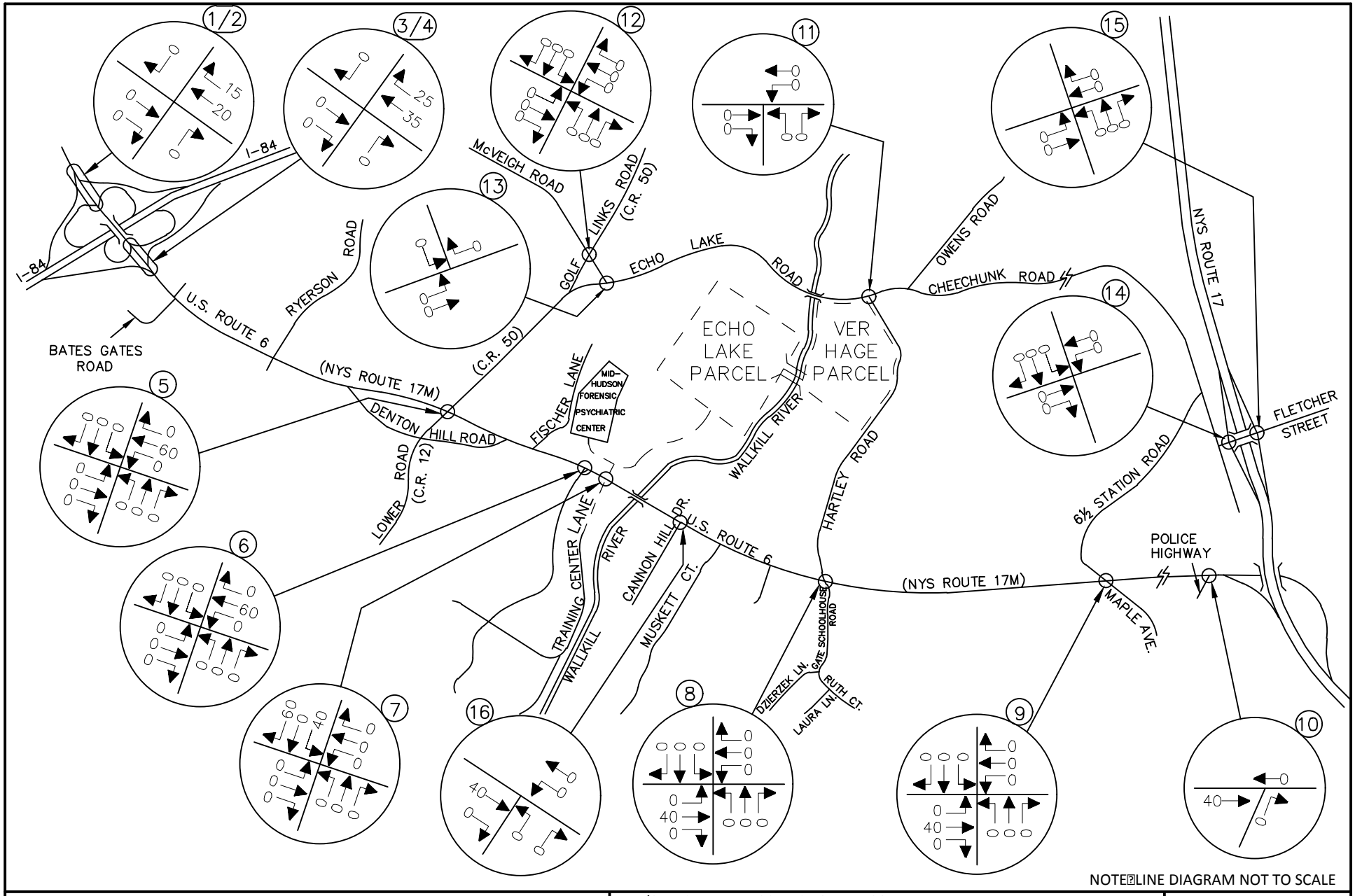
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

LONG DISTANCE/HOTEL SHUTTLE BUSES
ARRIVAL DISTRIBUTION
ALL VALUES EXPRESSED AS A %

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
29-E	



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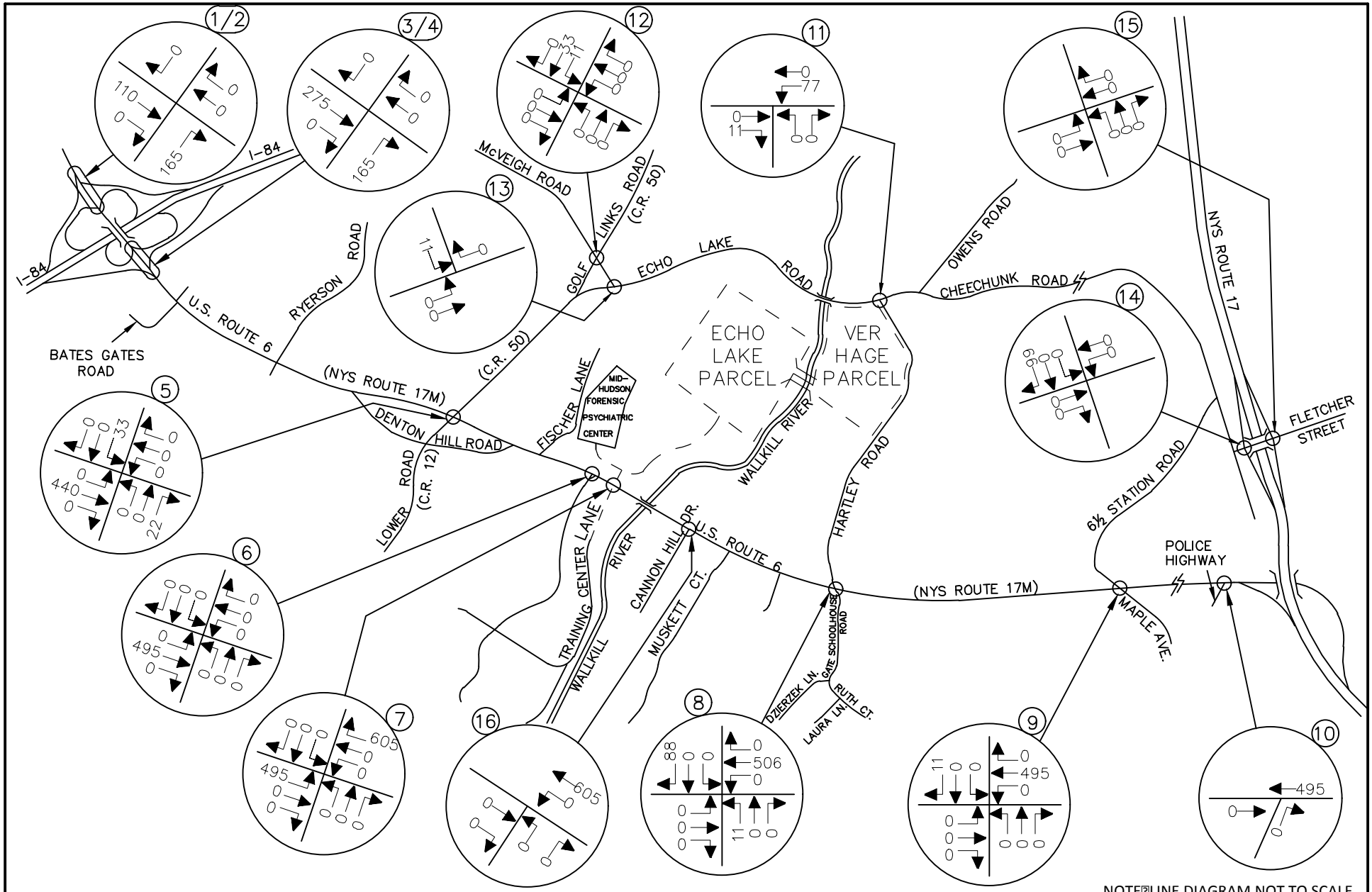
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

LONG DISTANCE/HOTEL SHUTTLE BUSES
DEPARTURE DISTRIBUTION
ALL VALUES EXPRESSED AS A %

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
30-E	



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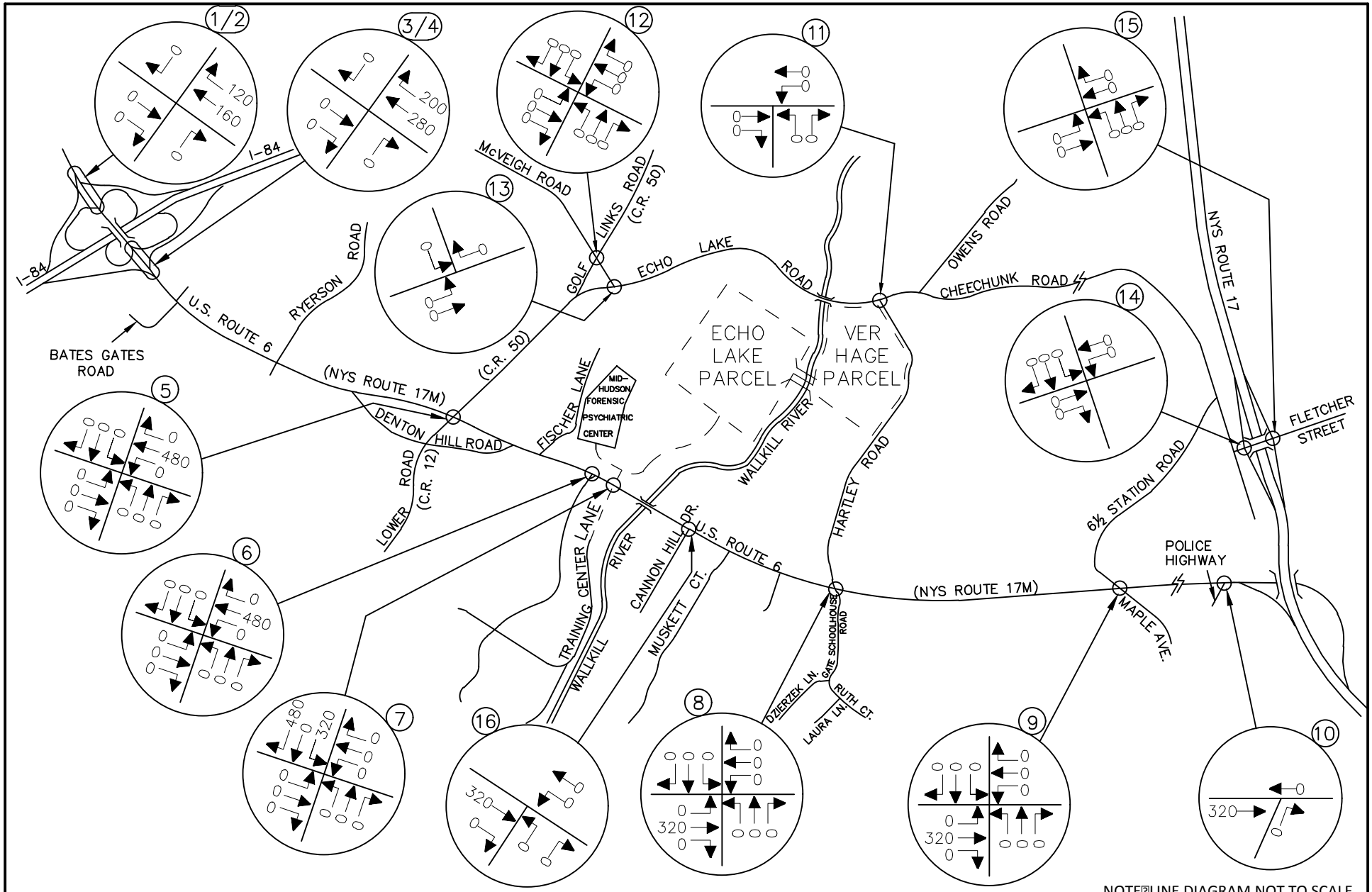
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
8:30 AM - 9:30 AM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
31-E	



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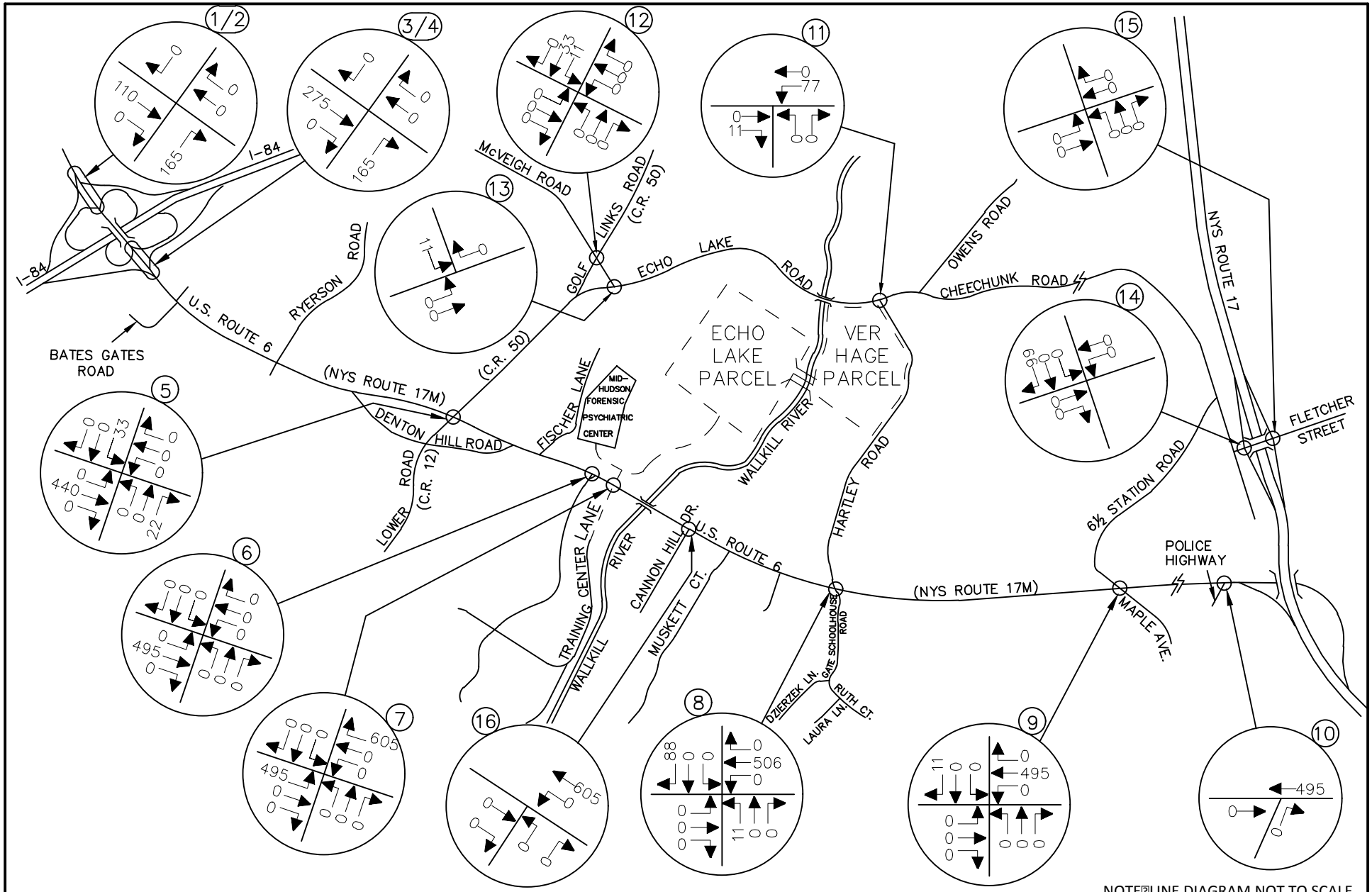
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
12:00 PM - 1:00 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
32-E	



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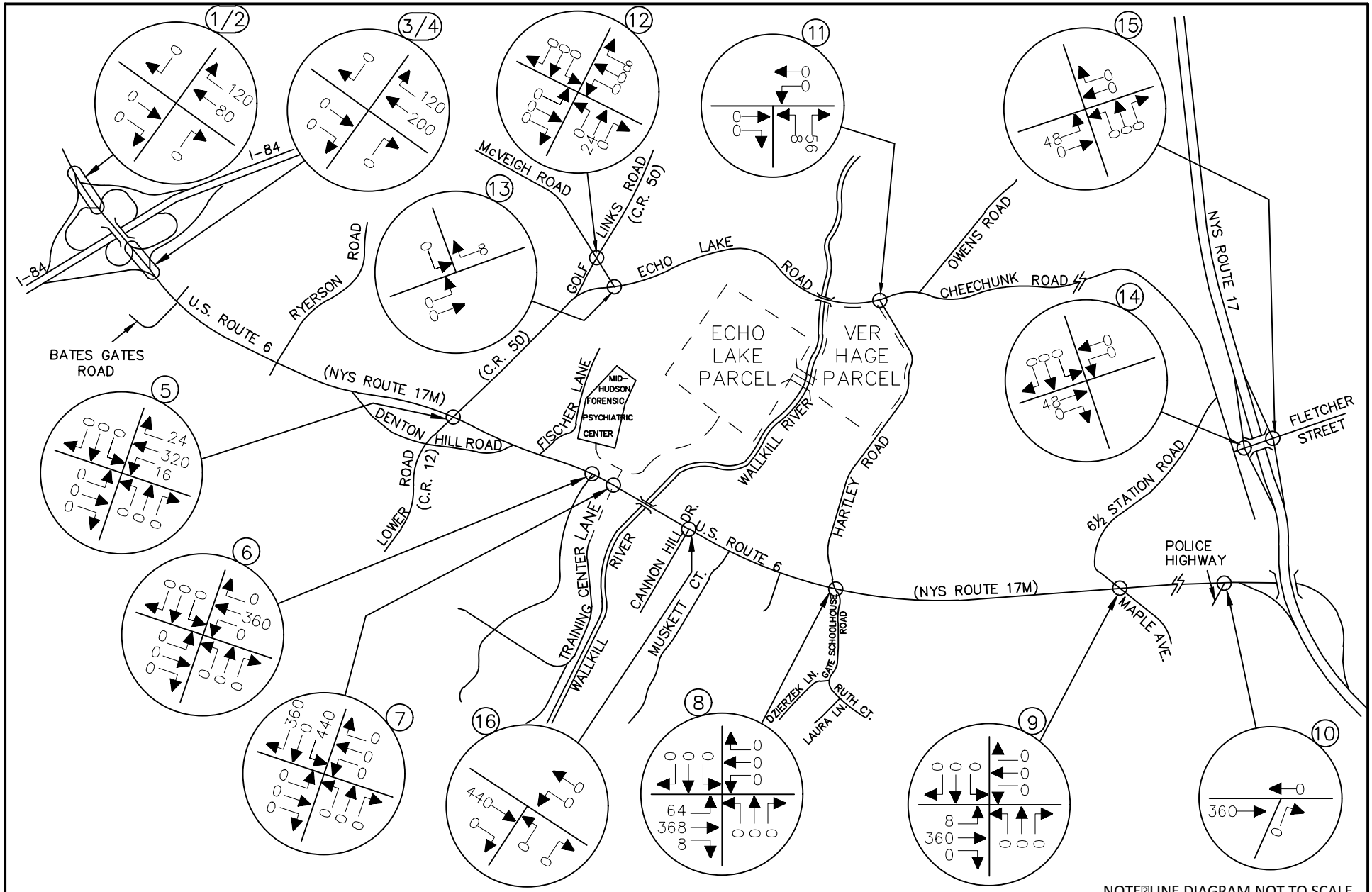
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
2:30 PM - 3:30 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
33-E	



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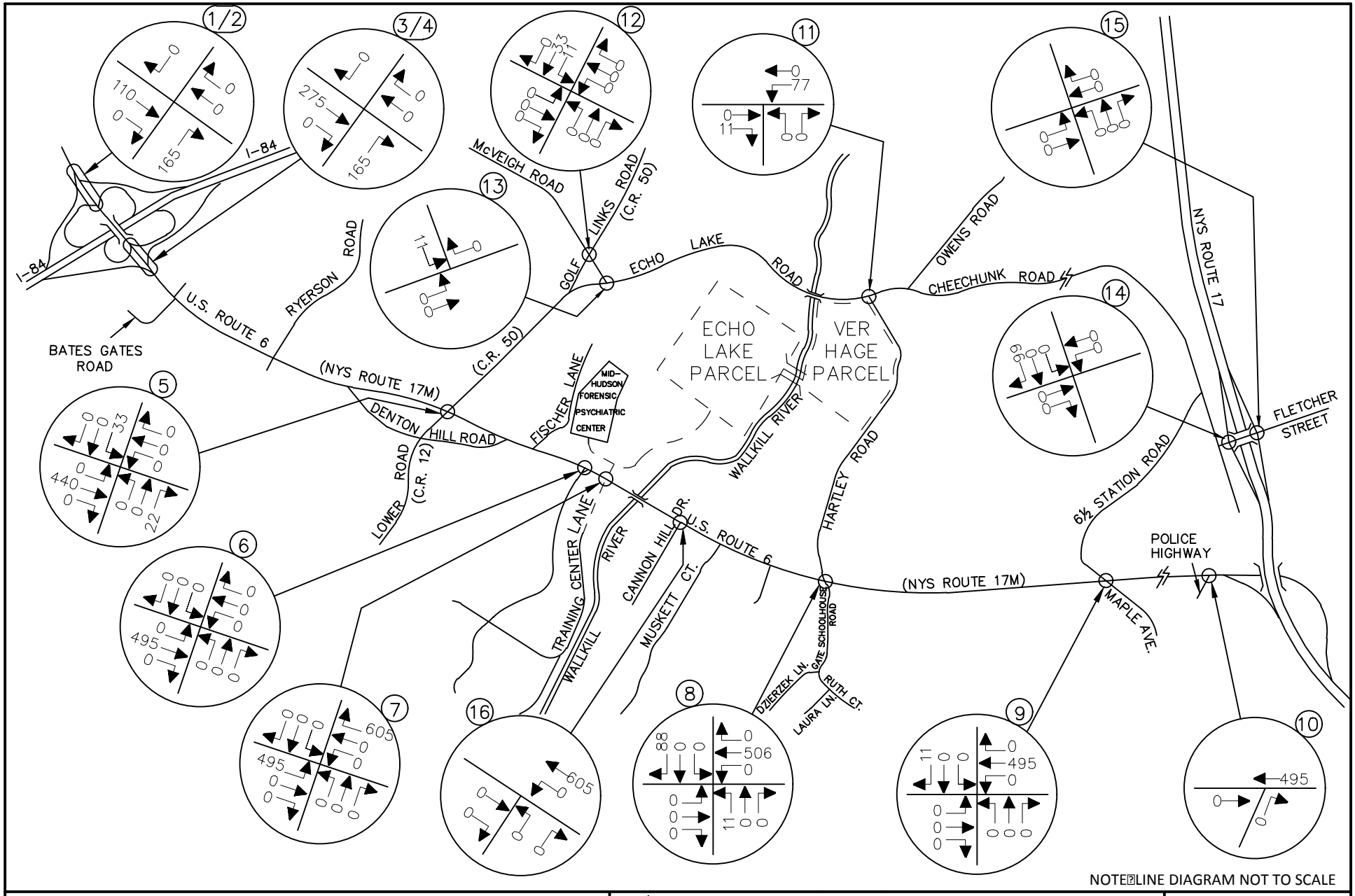
SITE GENERATED TRAFFIC VOLUMES
WEEKEND MORNING EVENT PEAK EXIT PERIOD
12:00 PM - 1:00 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
34-E	



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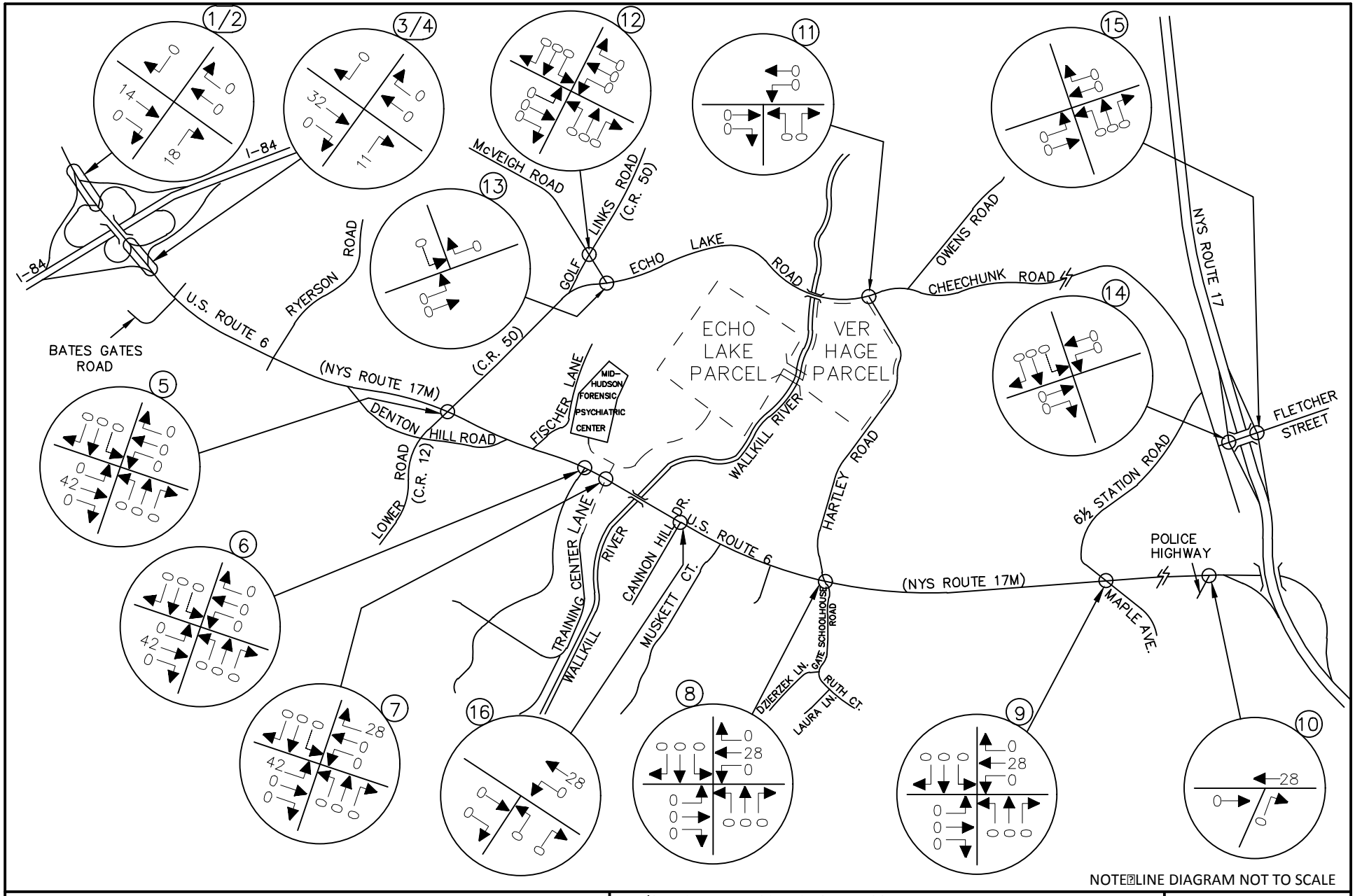
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

ECHO LAKE PASSENGER CAR PARKING
SITE GENERATED TRAFFIC VOLUMES
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
2:30 PM - 3:30 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
35-E	



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AMY'S KITCHEN AND SCIENCE OF THE SOUL
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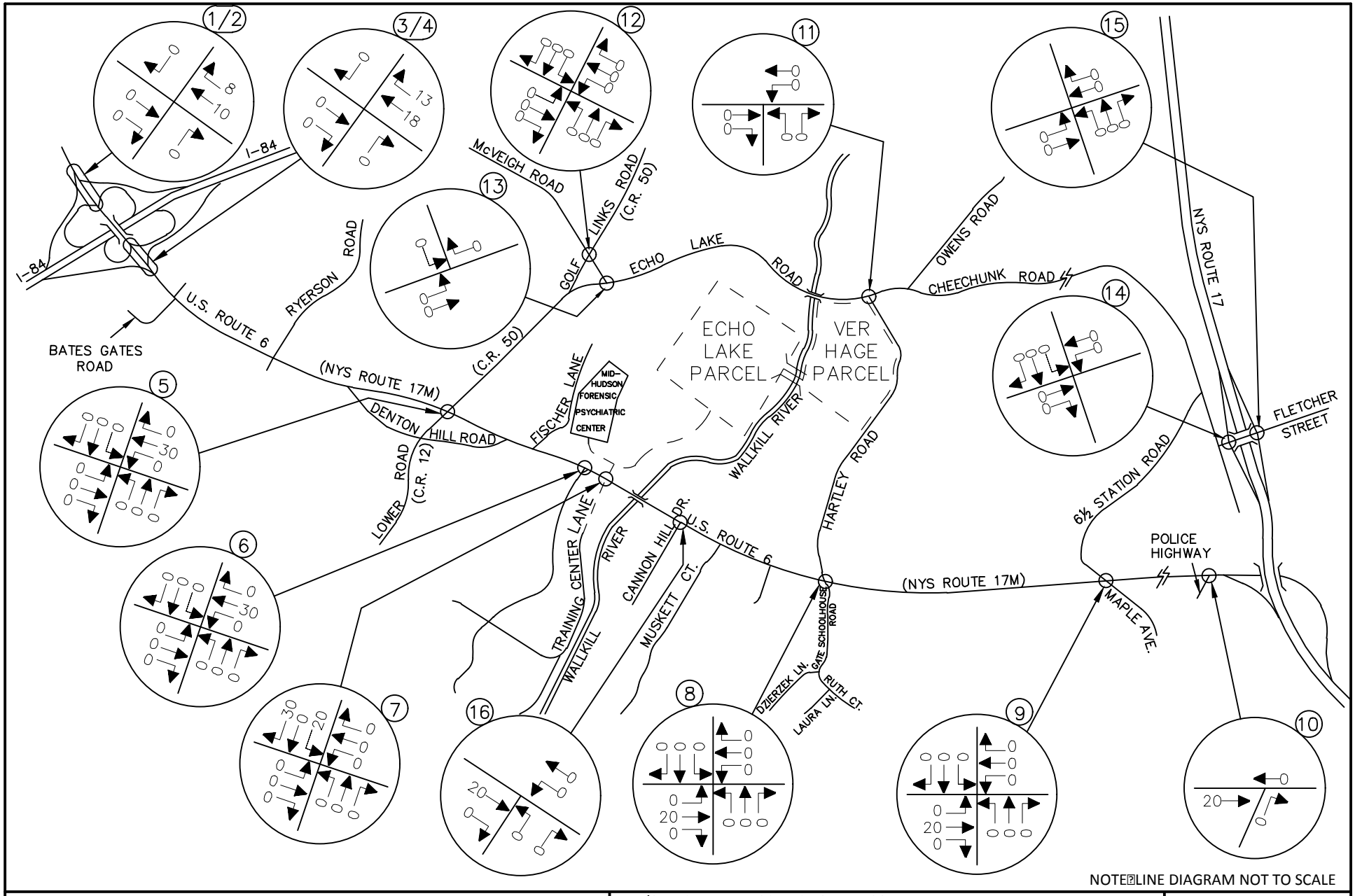
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

LONG DISTANCE/HOTEL SHUTTLE BUSES
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
8:30 AM - 9:30 AM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
36-E	



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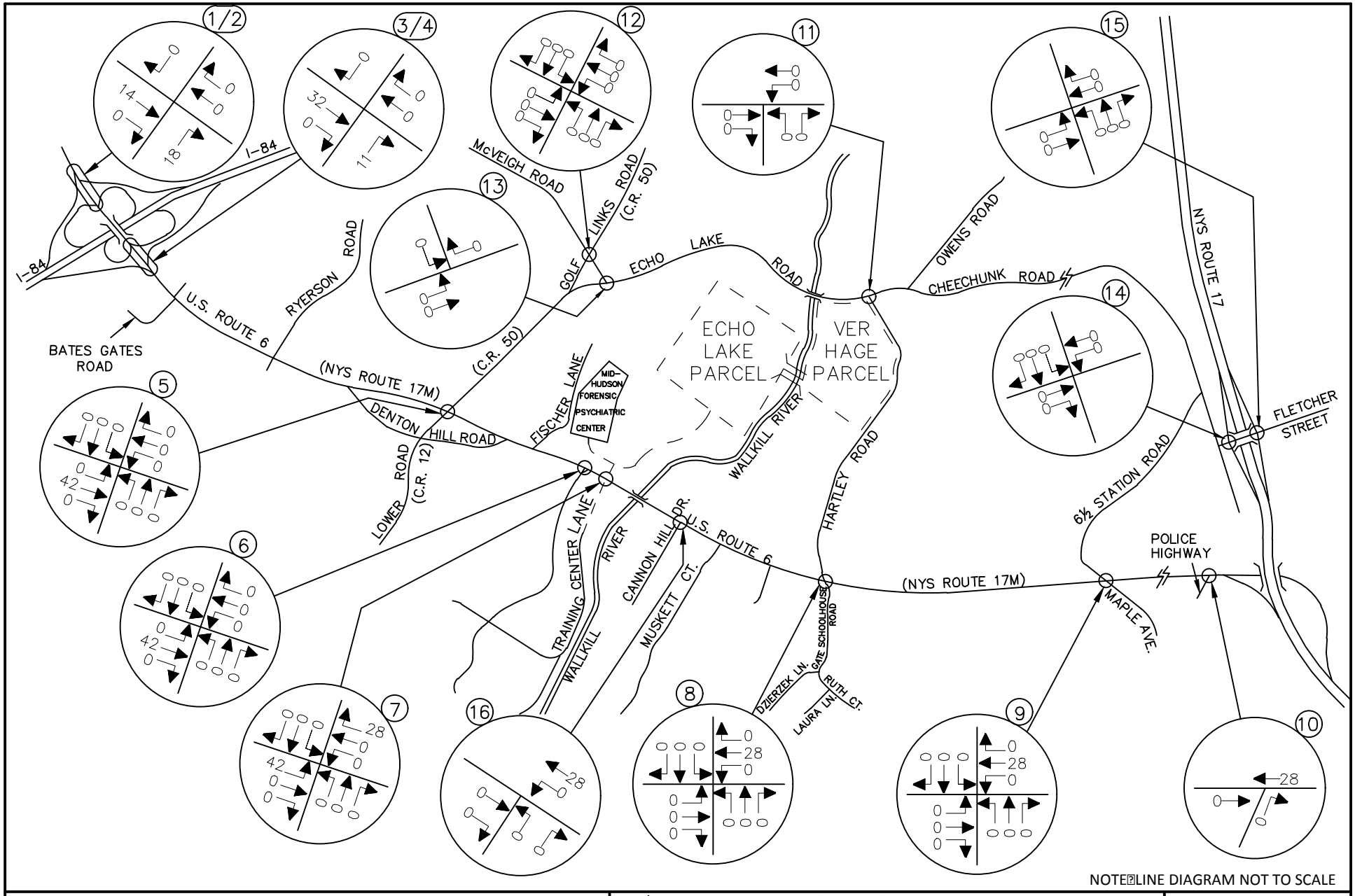
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

LONG DISTANCE HOTEL/SHUTTLE BUSES
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
12:00 PM - 1:00 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
37–E	



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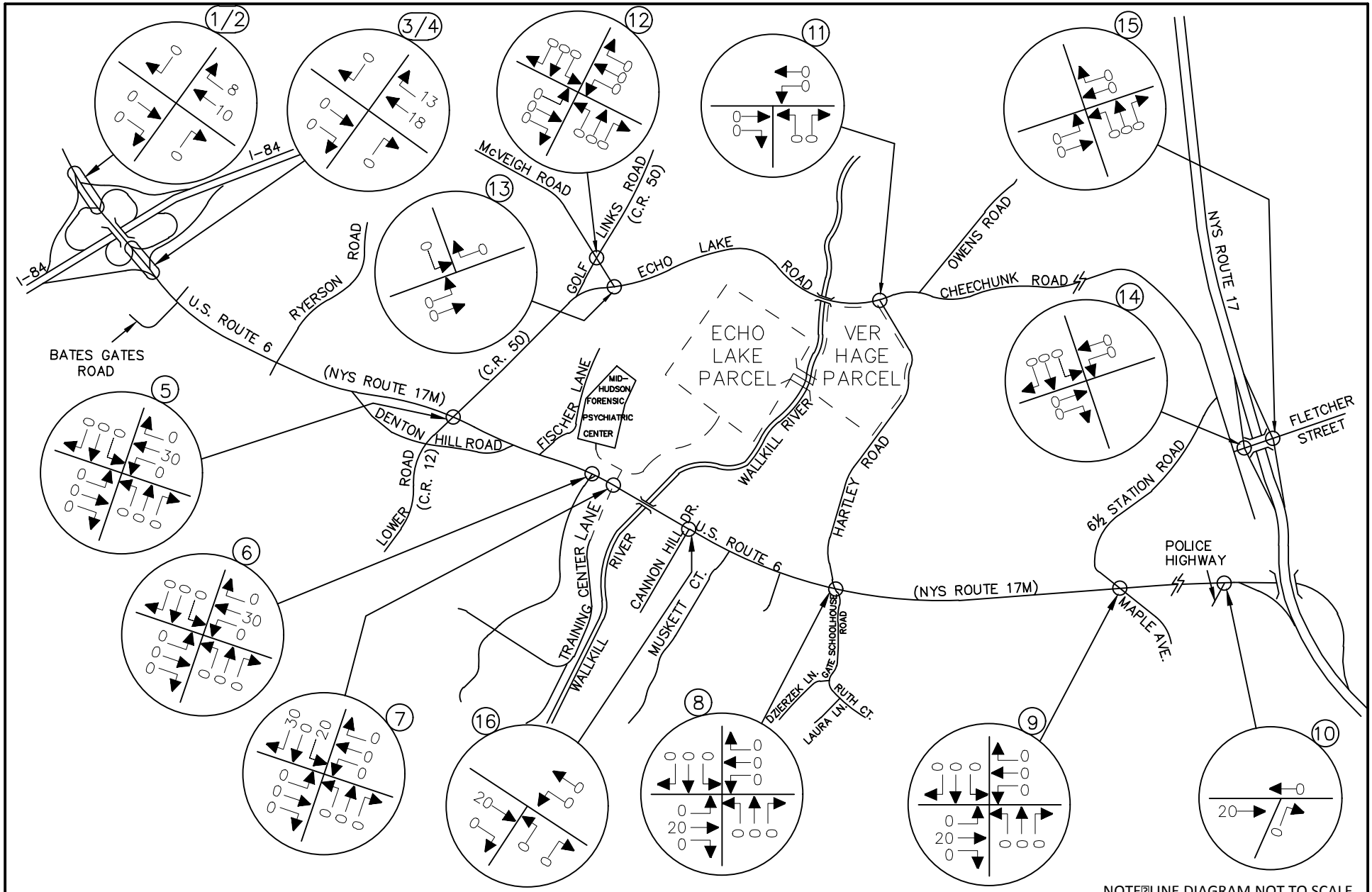
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

LONG DISTANCE HOTEL/SHUTTLE BUSES
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
2:30 PM - 3:30 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
38-E	



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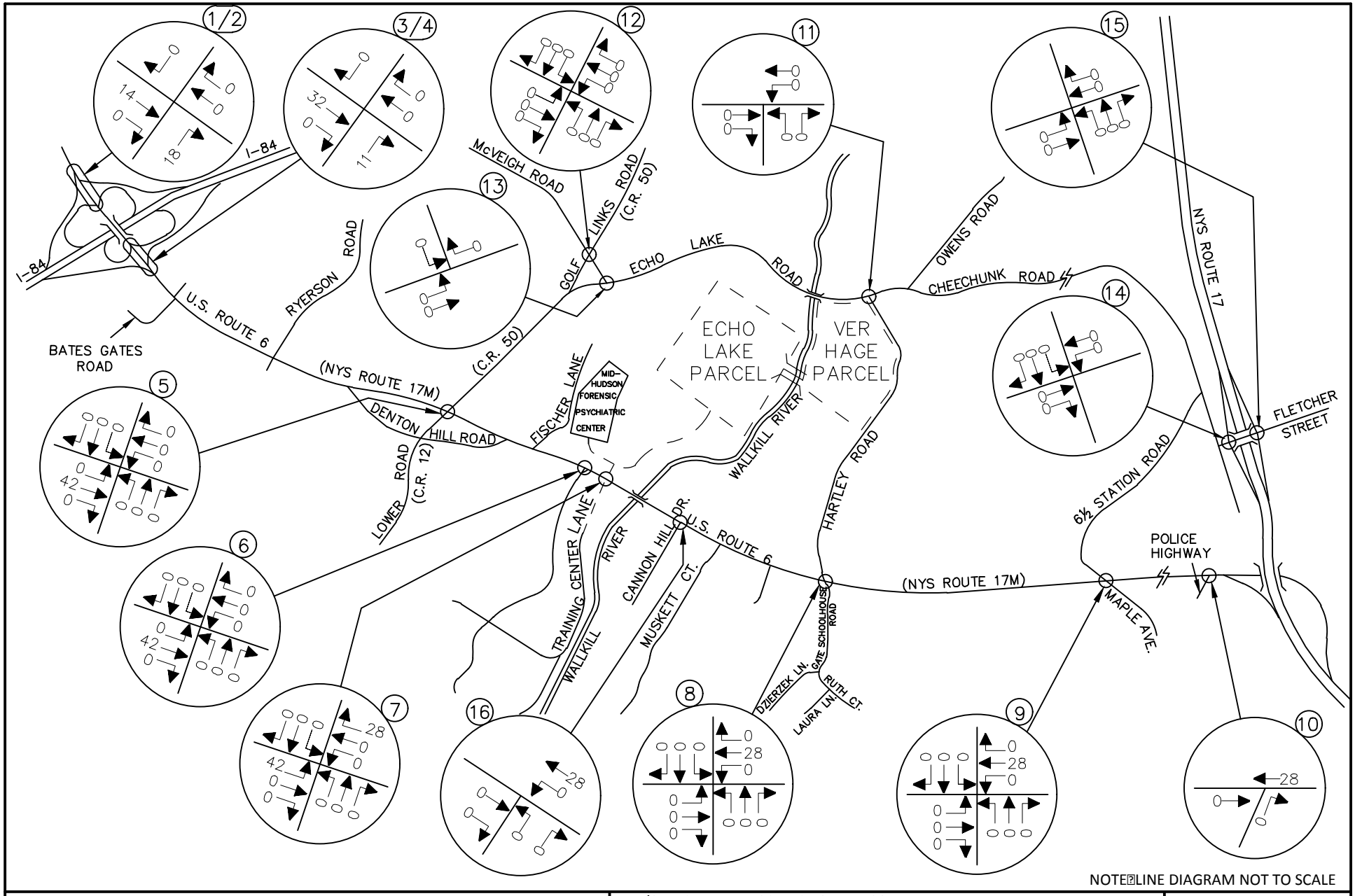
LONG DISTANCE HOTEL/SHUTTLE BUSES
SITE GENERATED TRAFFIC VOLUMES
WEEKEND MORNING EVENT PEAK EXIT PERIOD
12:00 PM - 1:00 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
39-E	



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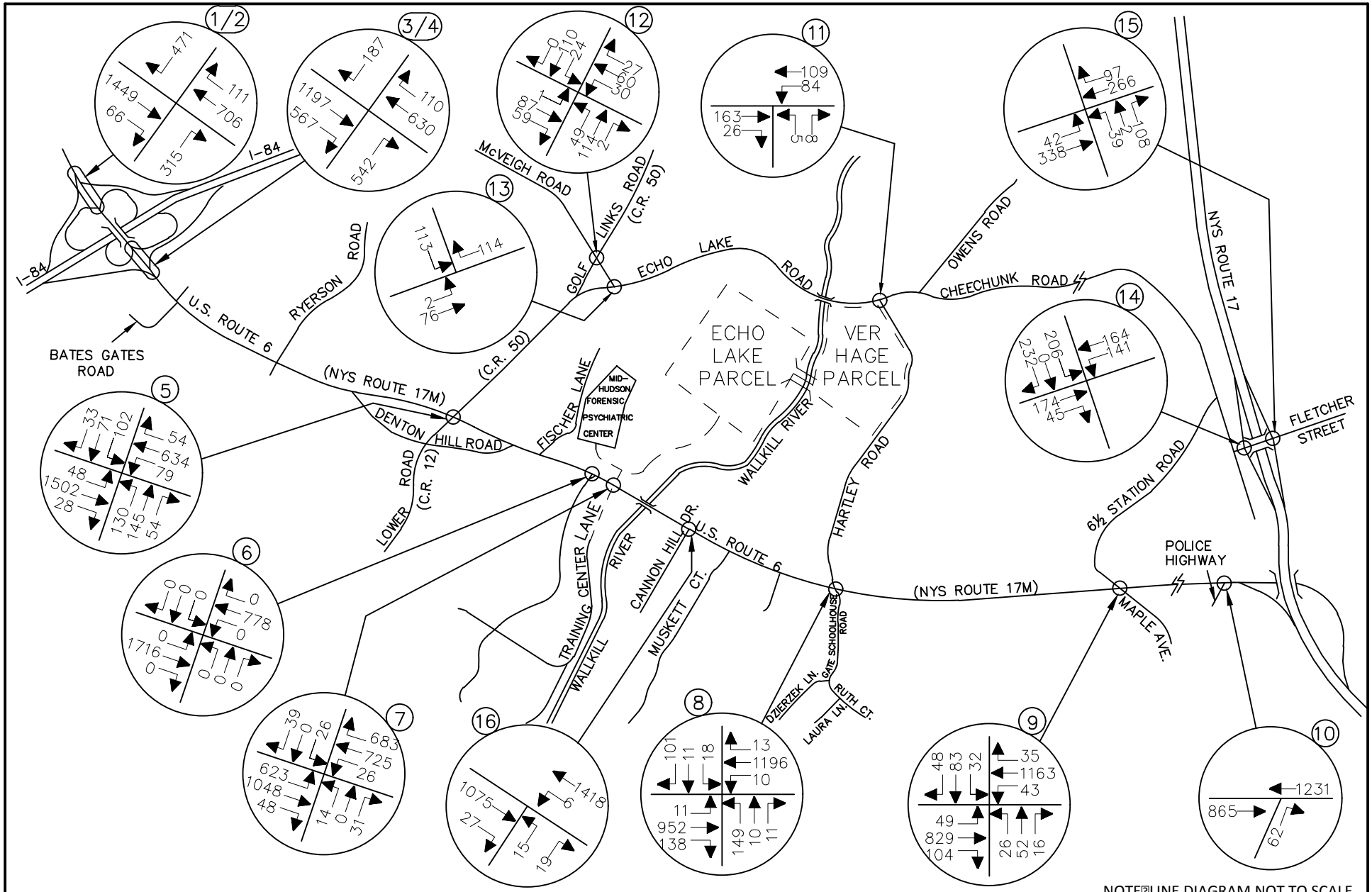
SITE GENERATED TRAFFIC VOLUMES
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
2:30 PM - 3:30 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
40-E	



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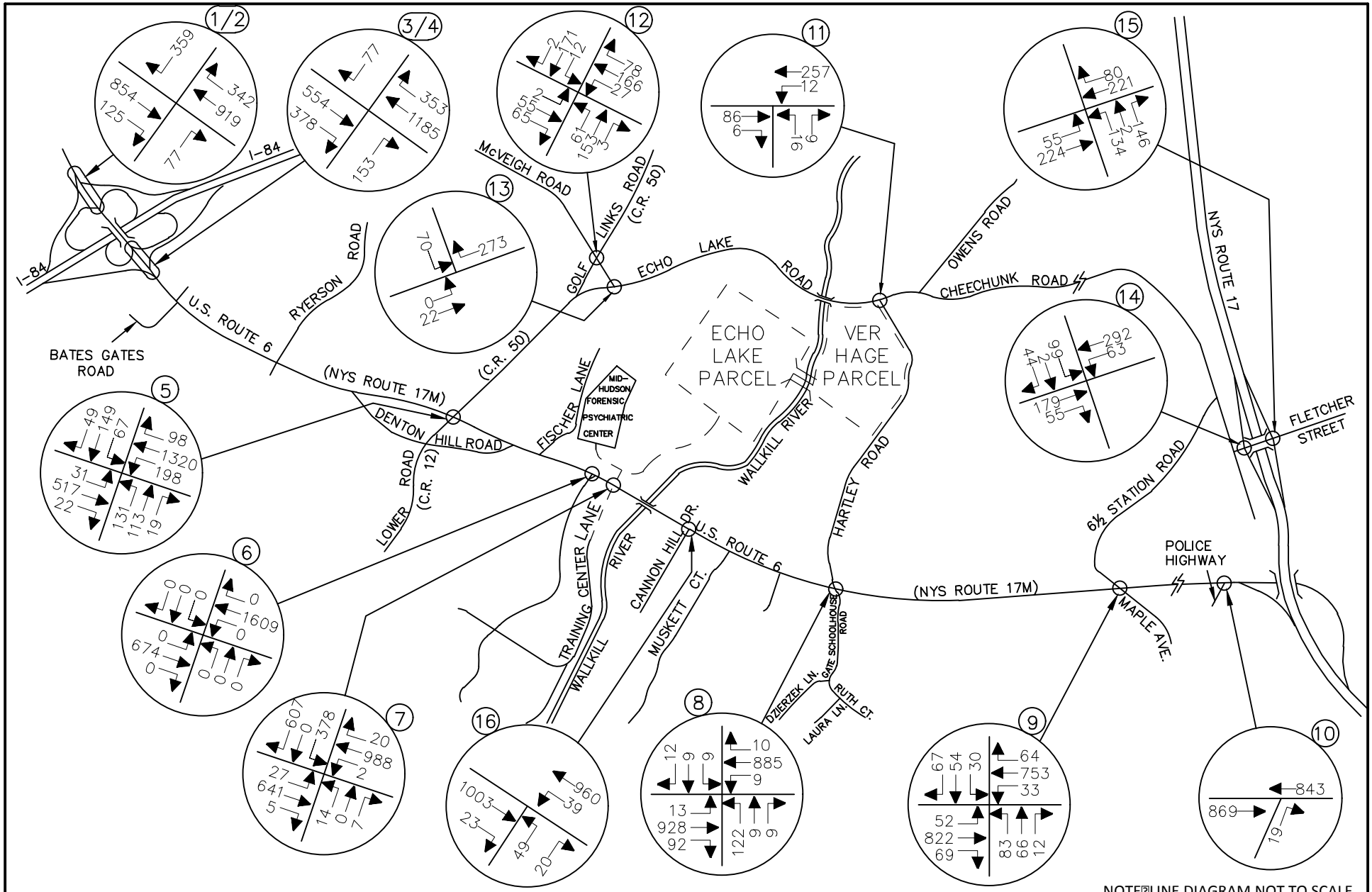
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK ENTRY PERIOD
8:30 AM - 9:30 AM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
41–E	



NOTE: LINE DIAGRAM NOT TO SCALE

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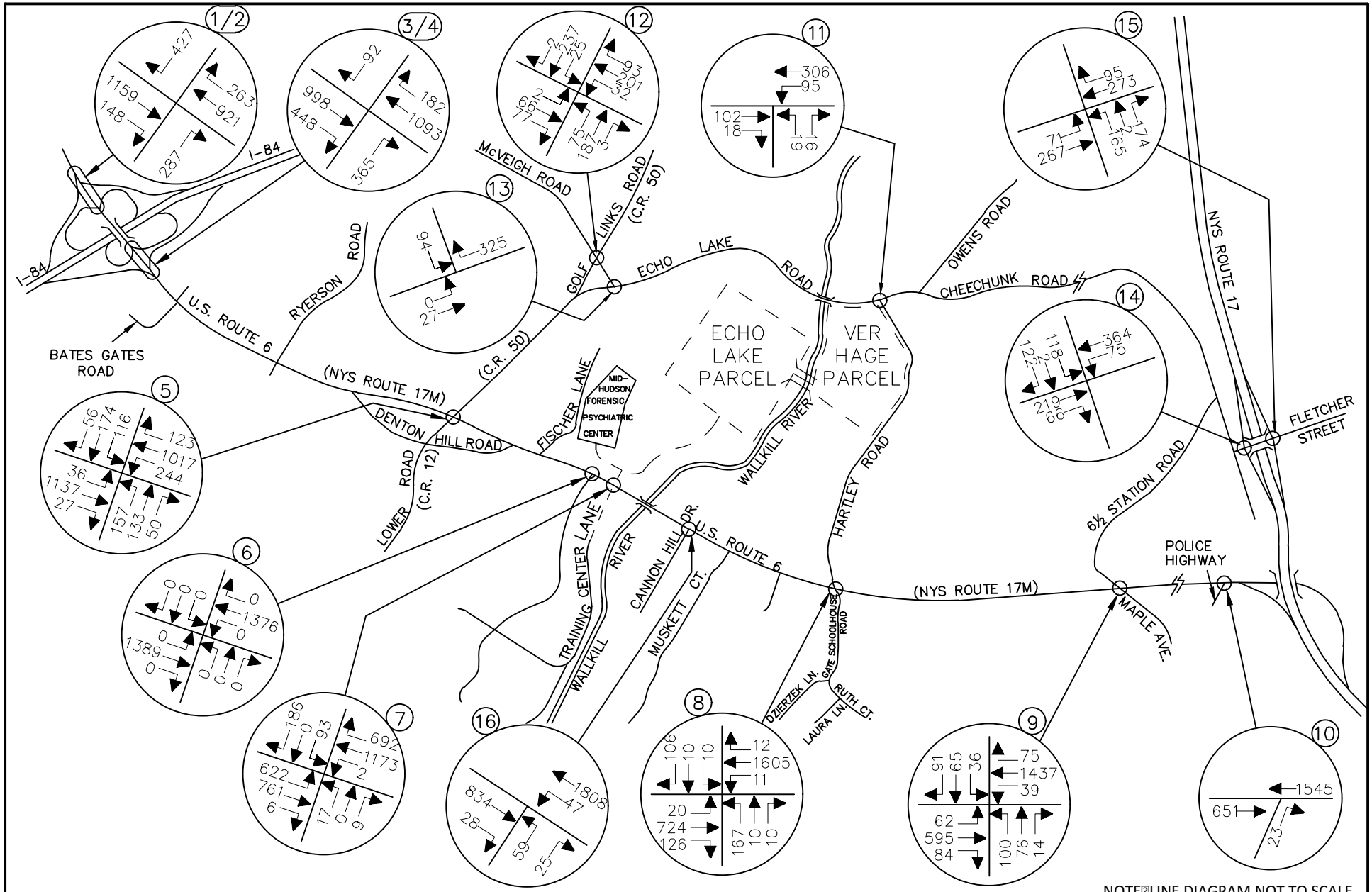
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY MORNING EVENT PEAK EXIT PERIOD
12:00 PM - 1:00 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
42-E	



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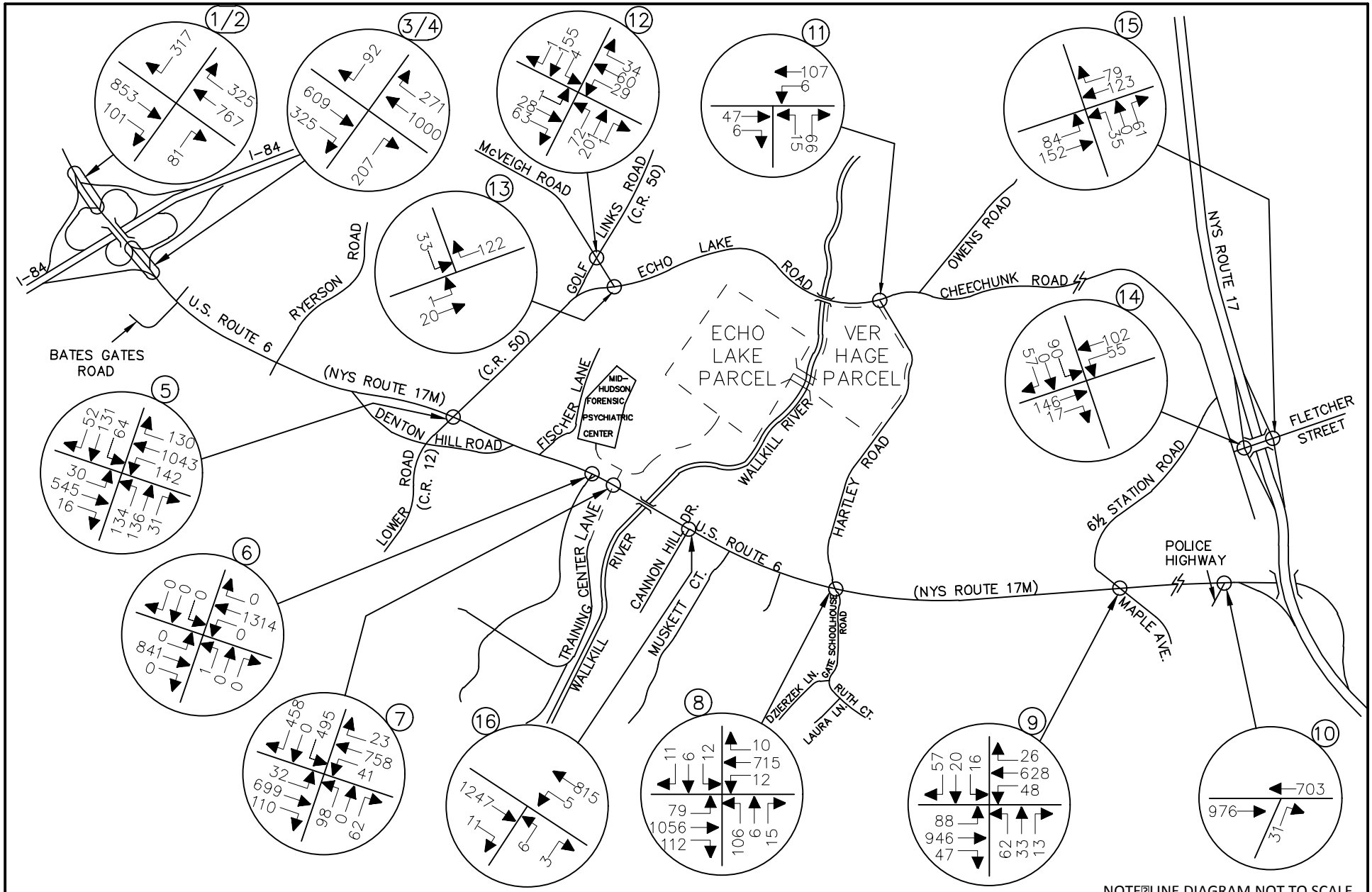
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY AFTERNOON EVENT PEAK ENTRY PERIOD
2:30 PM - 3:30 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
43–E	



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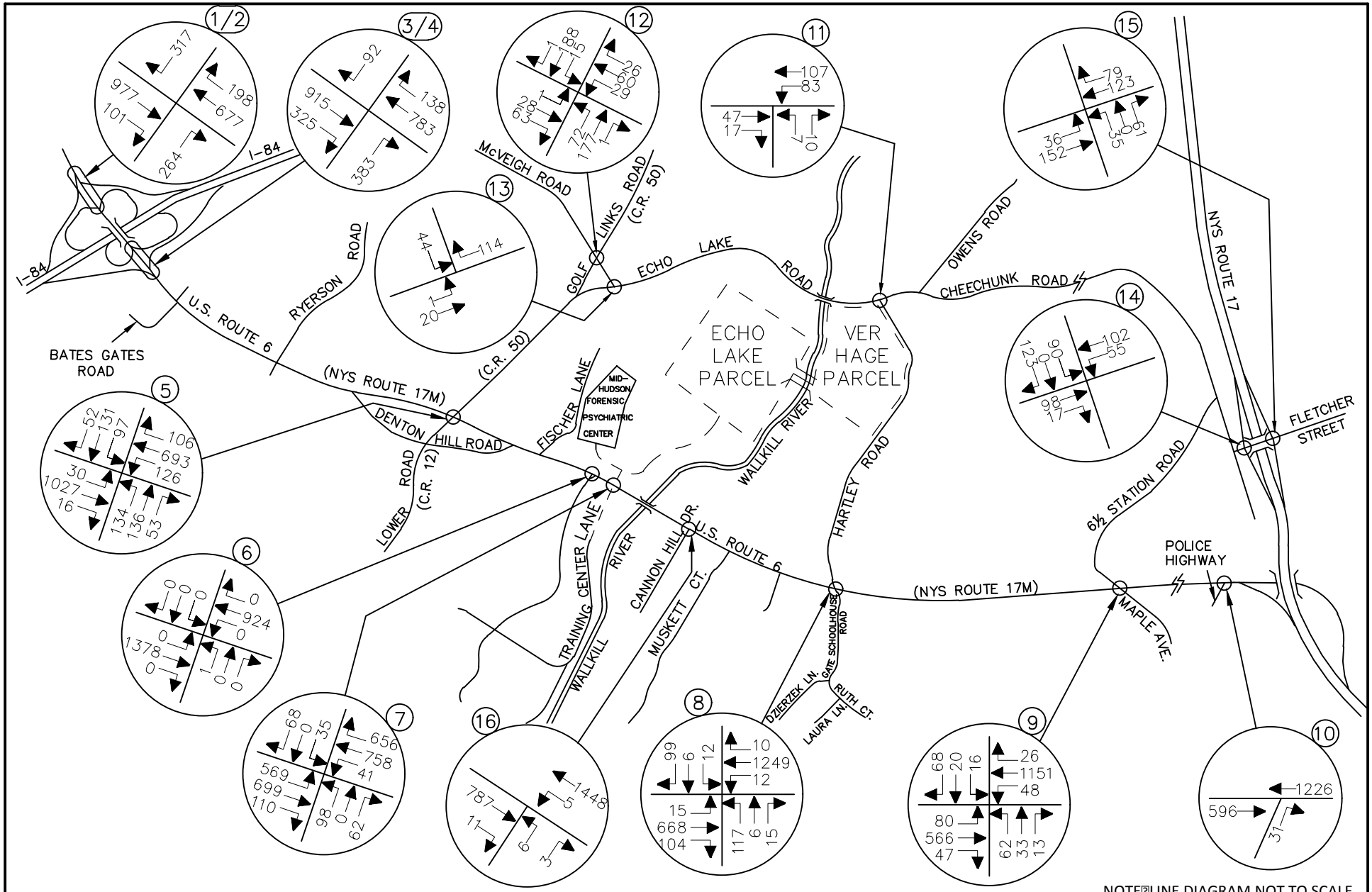
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

2033 FULL BUILD TRAFFIC VOLUMES
WEEKEND MORNING EVENT PEAK HOUR PERIOD
12:00 PM - 1:00 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
44–E	



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AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

SCIENCE OF THE SOUL ANNUAL EVENT CONDITIONS

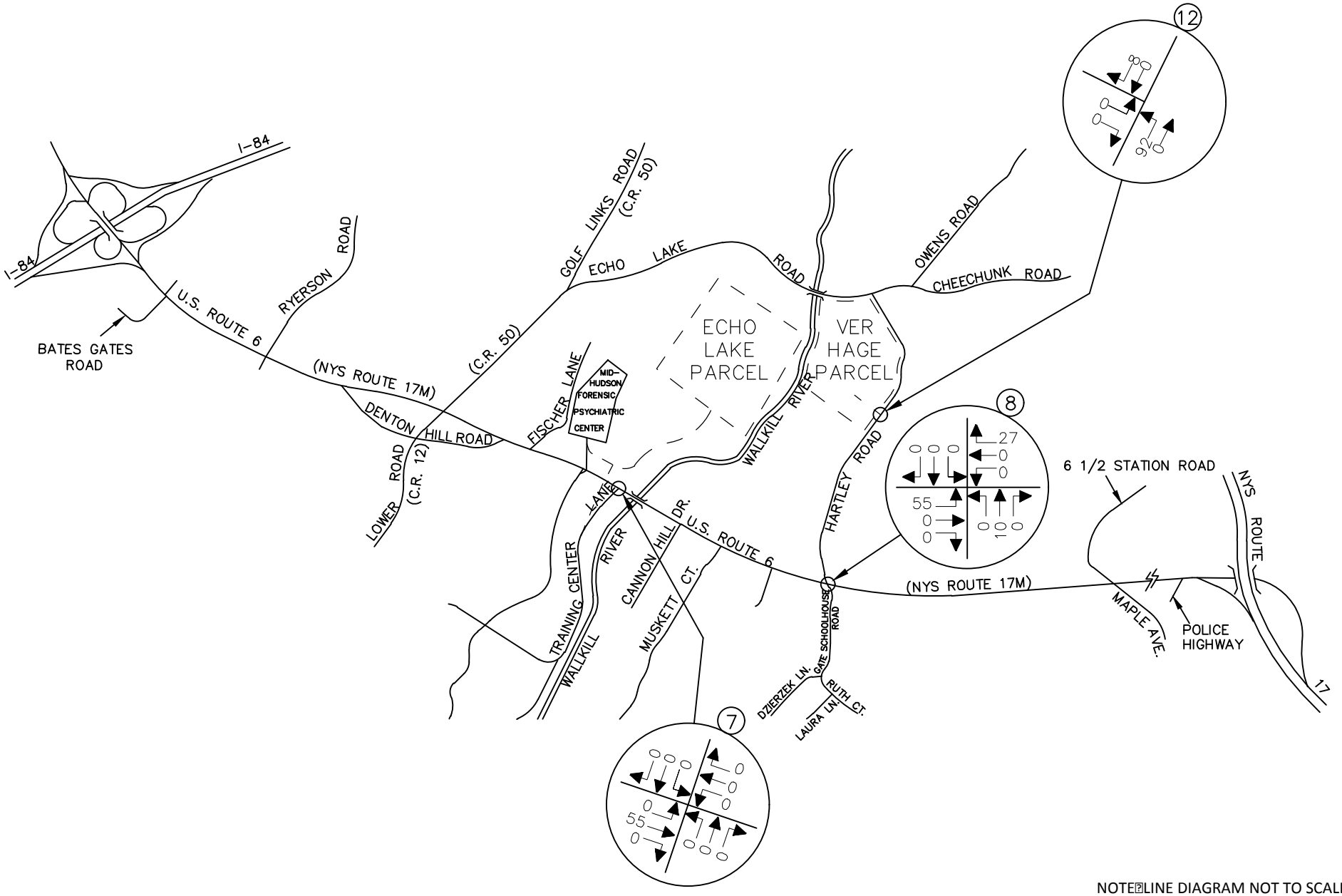
2033 FULL BUILD TRAFFIC VOLUMES
WEEKEND AFTERNOON EVENT PEAK ENTRY PERIOD
2:30 PM - 3:30 PM

JOB NUMBER:	DATE:
13001659B	03/24/16
FIGURE NUMBER:	
45–E	

AMY'S KITCHEN/SCIENCE OF THE SOUL

FEIS TRAFFIC VOLUME FIGURES

2033 FULL BUILD ANALYSIS
WITHOUT WALLKILL RIVER BRIDGE



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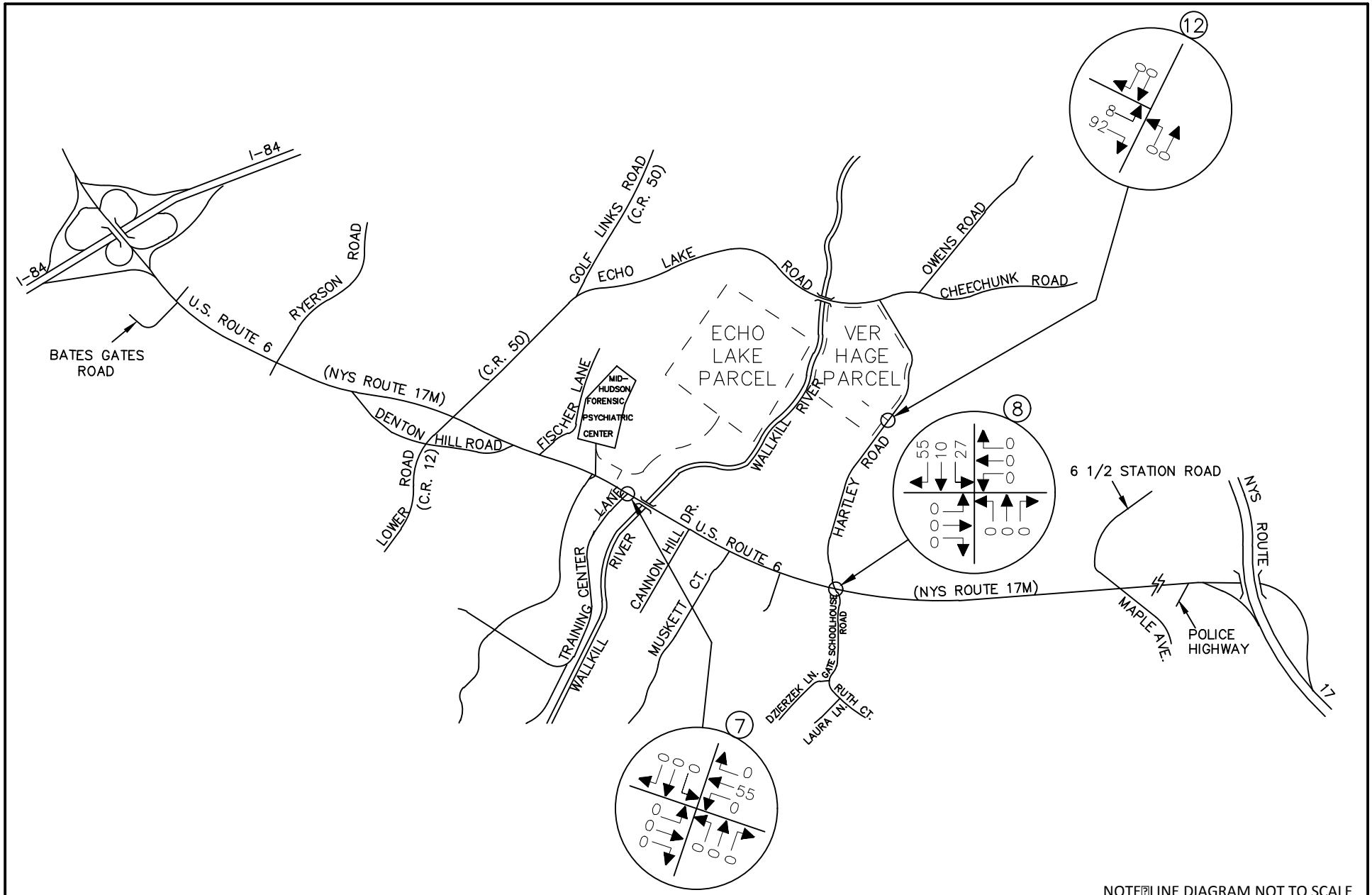
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

VER HAGE WAREHOUSE USES
ARRIVAL DISTRIBUTION - CARS

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
22–NB	



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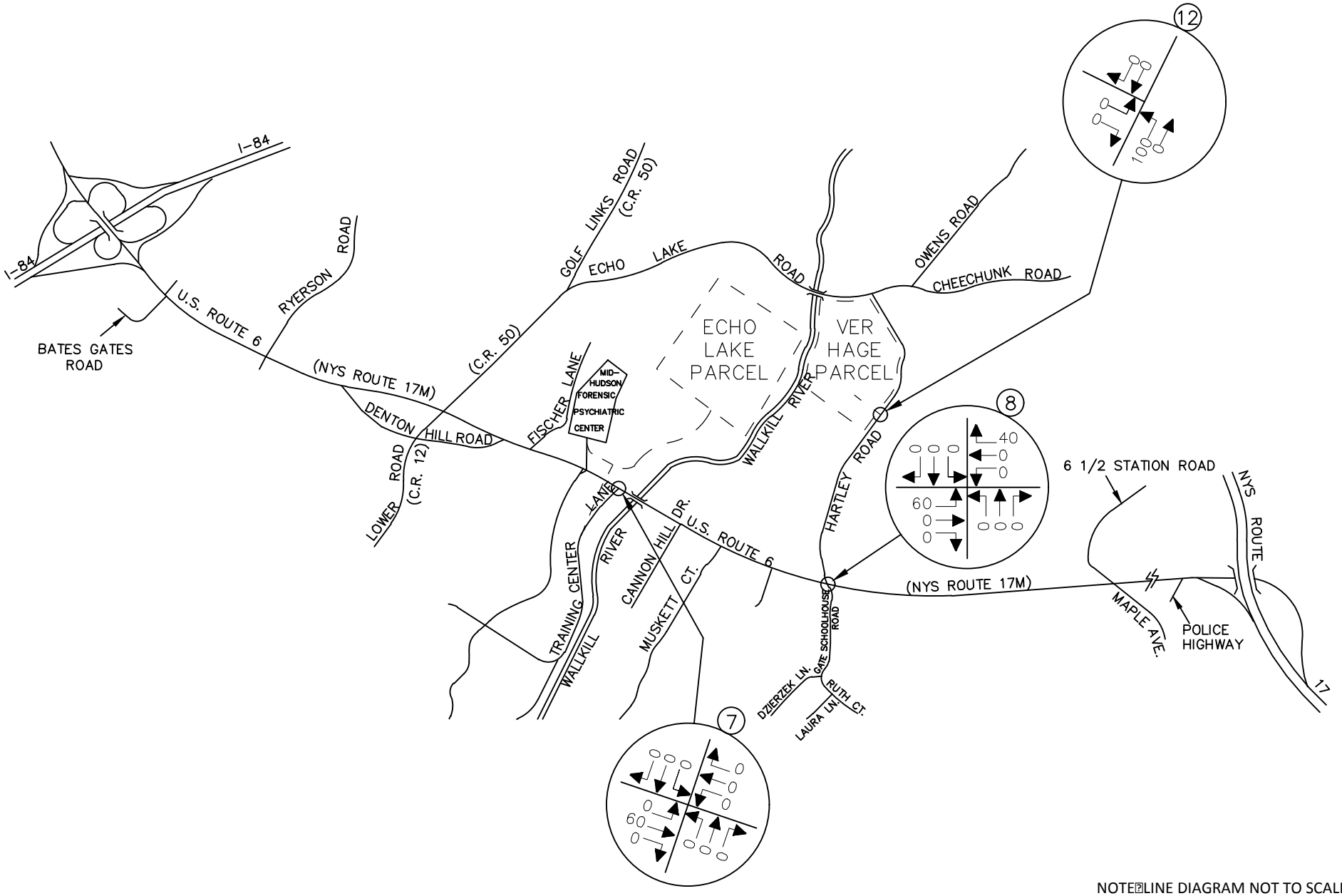
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

VER HAGE WAREHOUSE USES
DEPARTURE DISTRIBUTION - CARS

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
23–NB	



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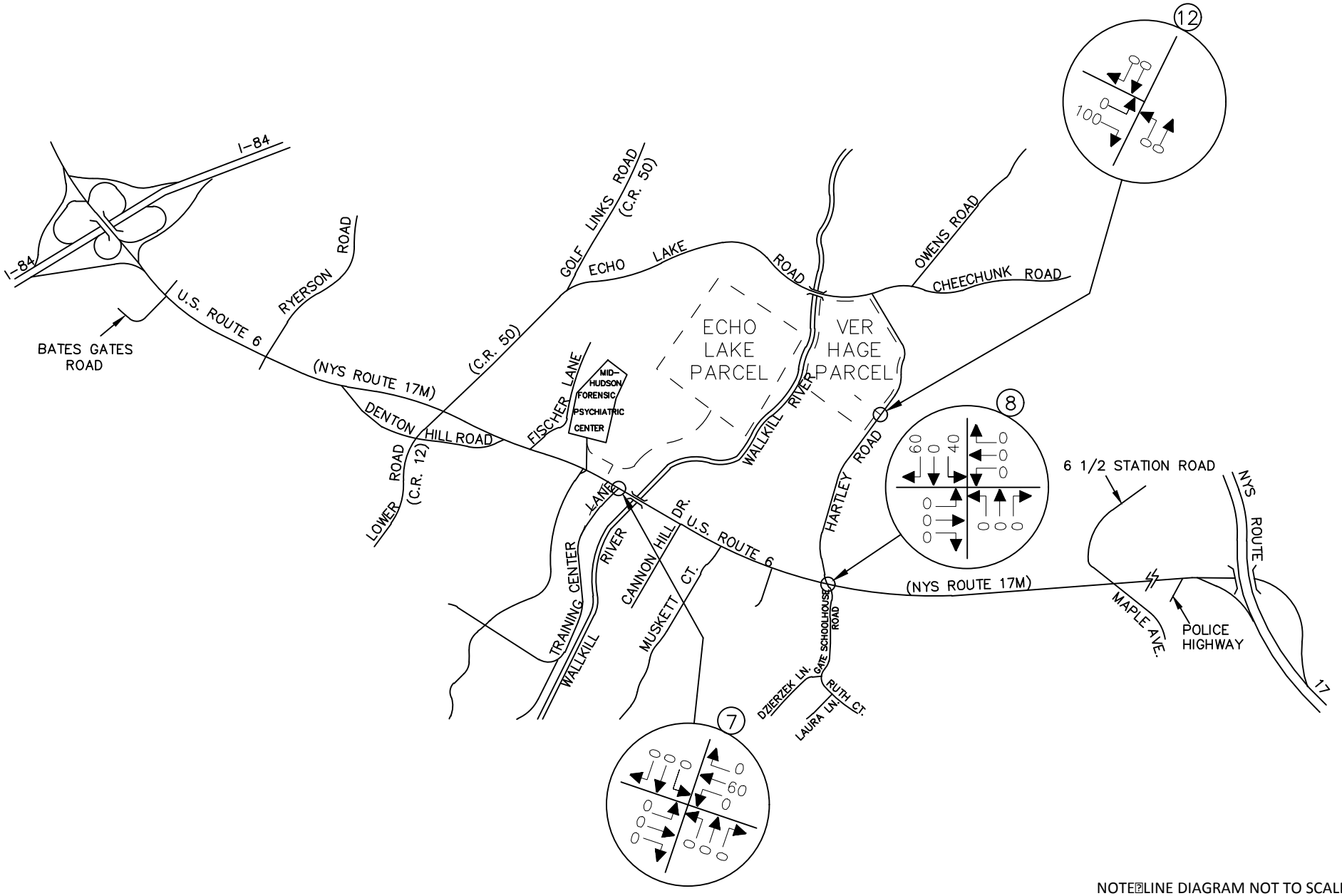
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

VER HAGE WAREHOUSE USES
ARRIVAL DISTRIBUTION - TRUCKS

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
24–NB	



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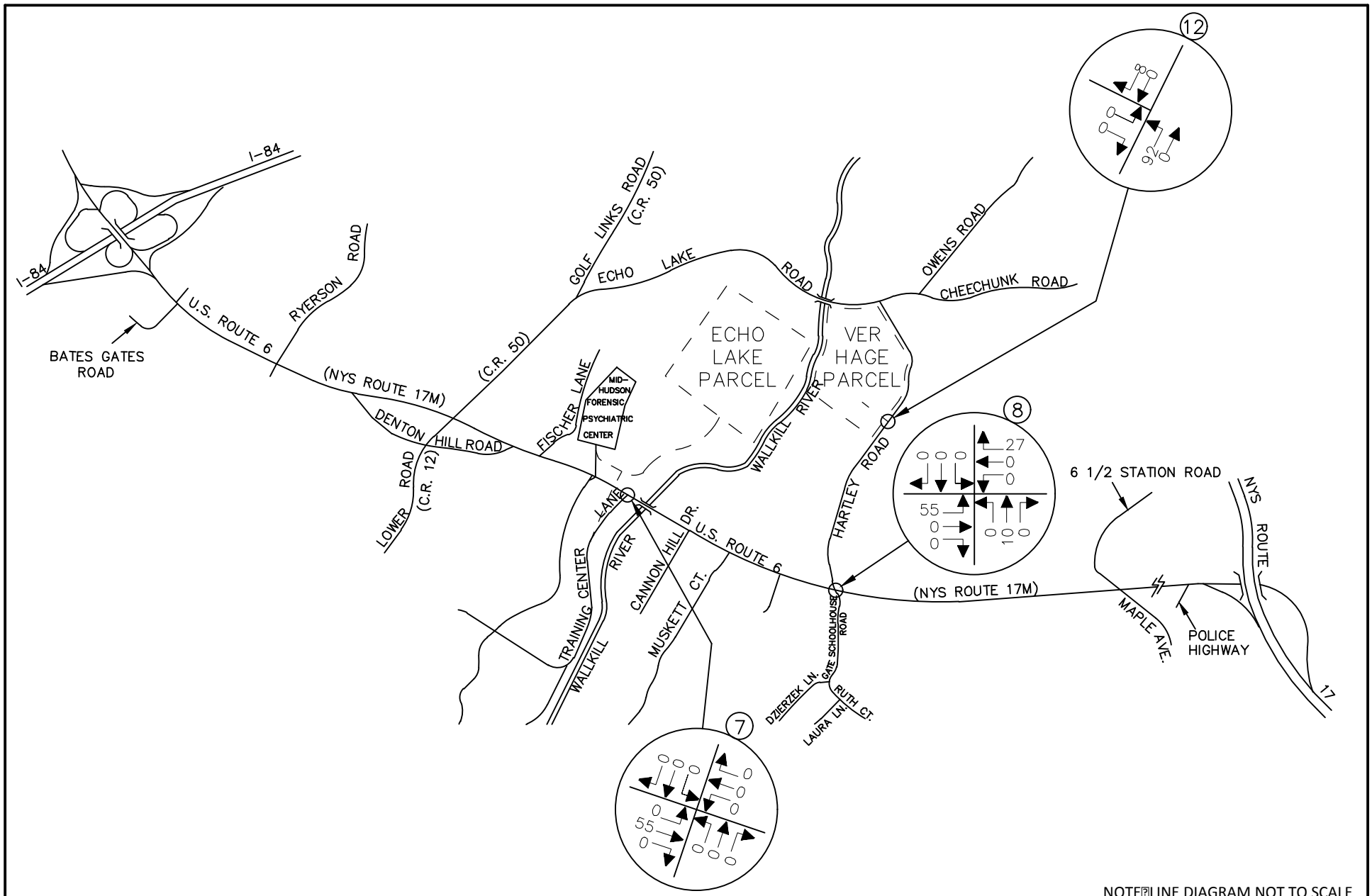
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

VER HAGE WAREHOUSE USES
DEPARTURE DISTRIBUTION - TRUCKS

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
25–NB	



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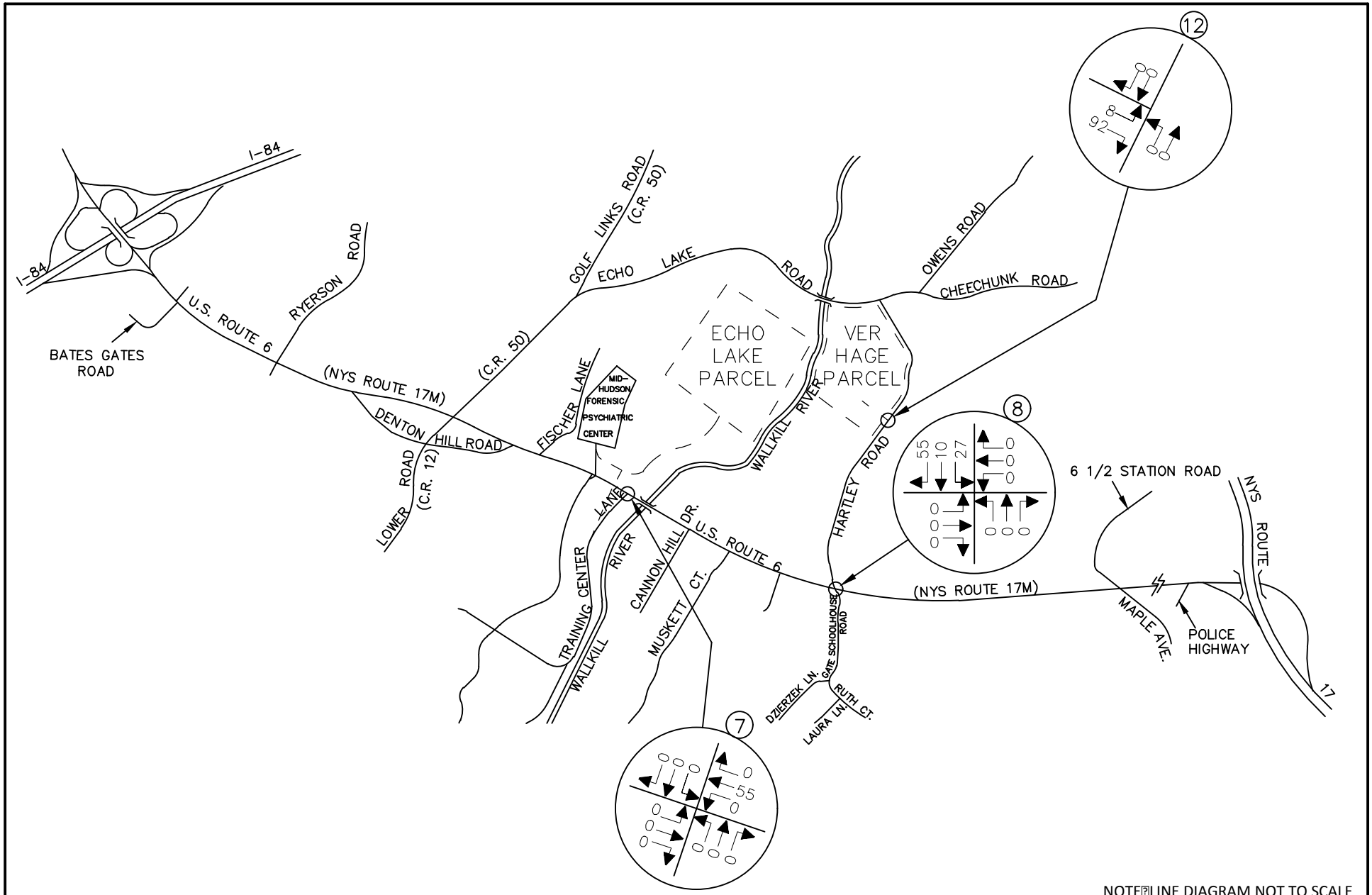
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN
ARRIVAL DISTRIBUTION - CARS

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
26–NB	



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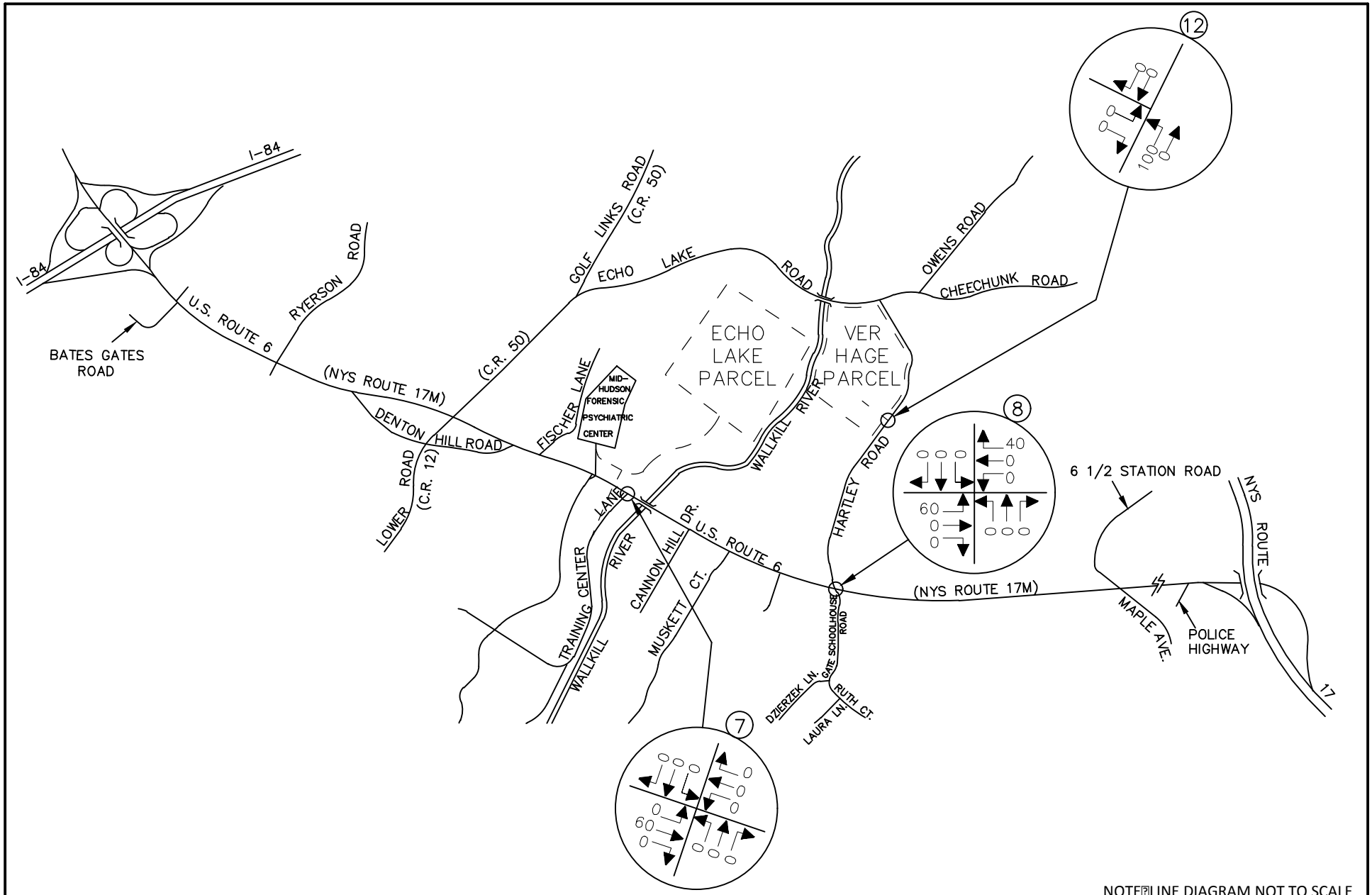
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN
DEPARTURE DISTRIBUTION - CARS

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
27–NB	



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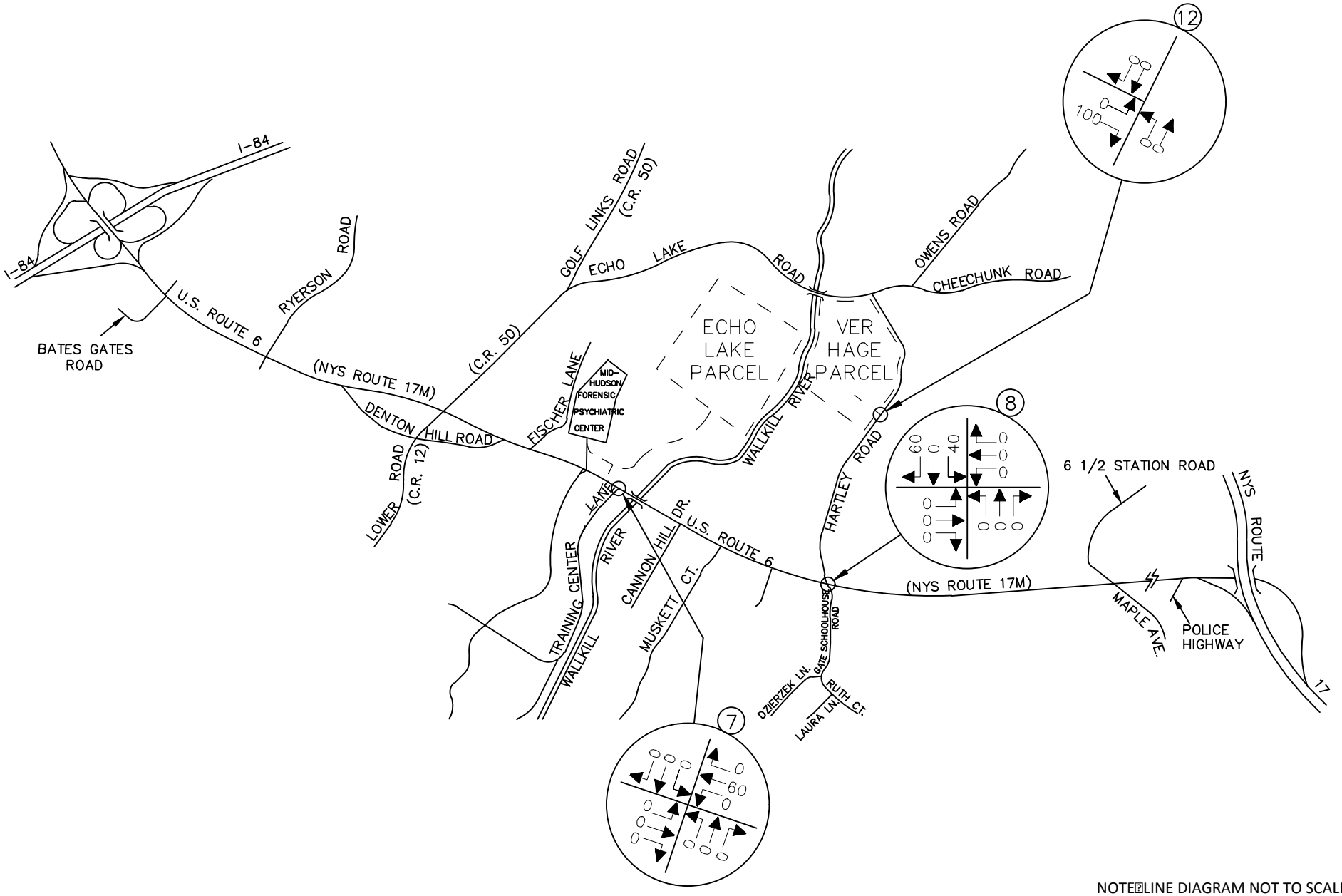
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN
ARRIVAL DISTRIBUTION - TRUCKS

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
48B	



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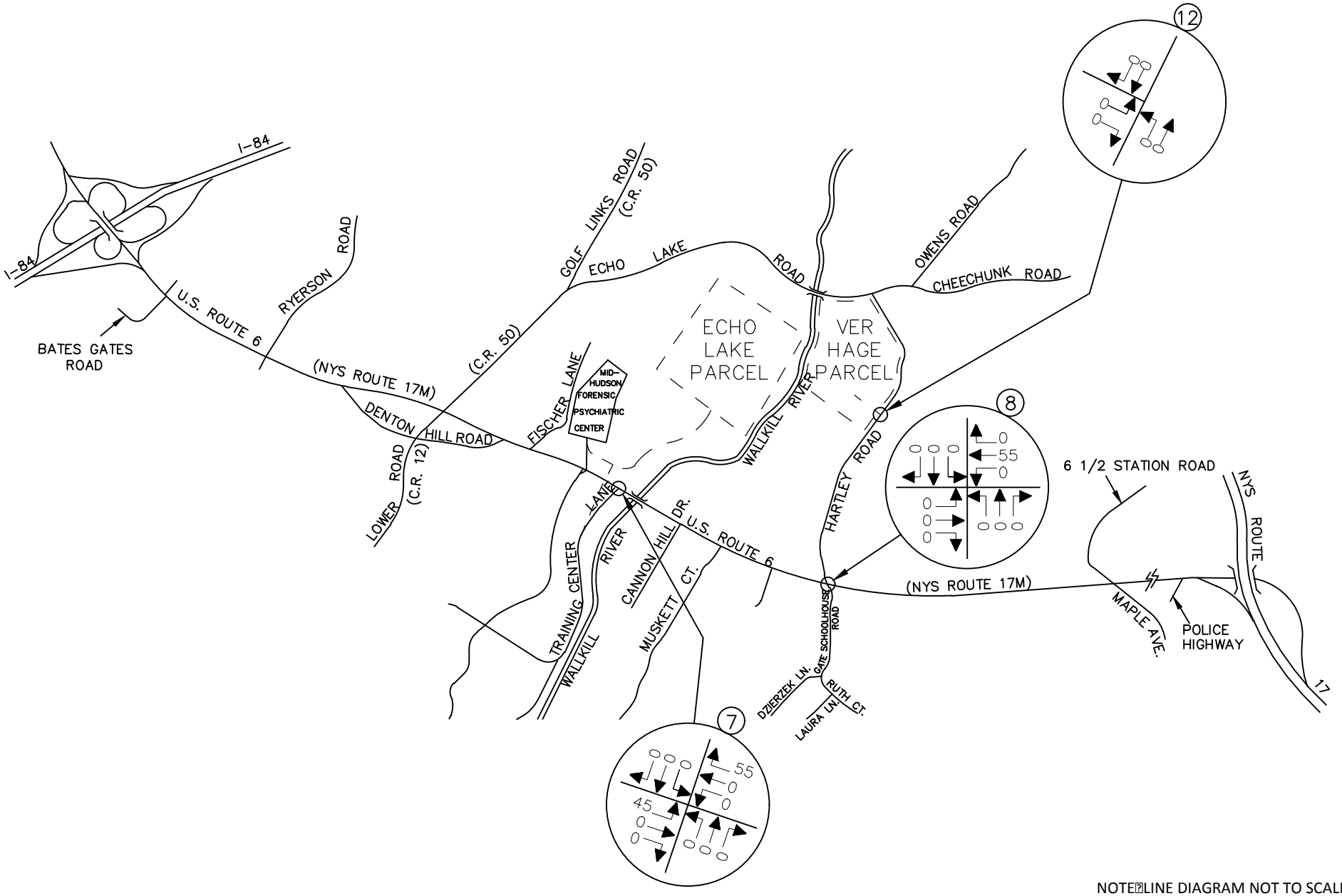
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN
DEPARTURE DISTRIBUTION - TRUCKS

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
29–NB	



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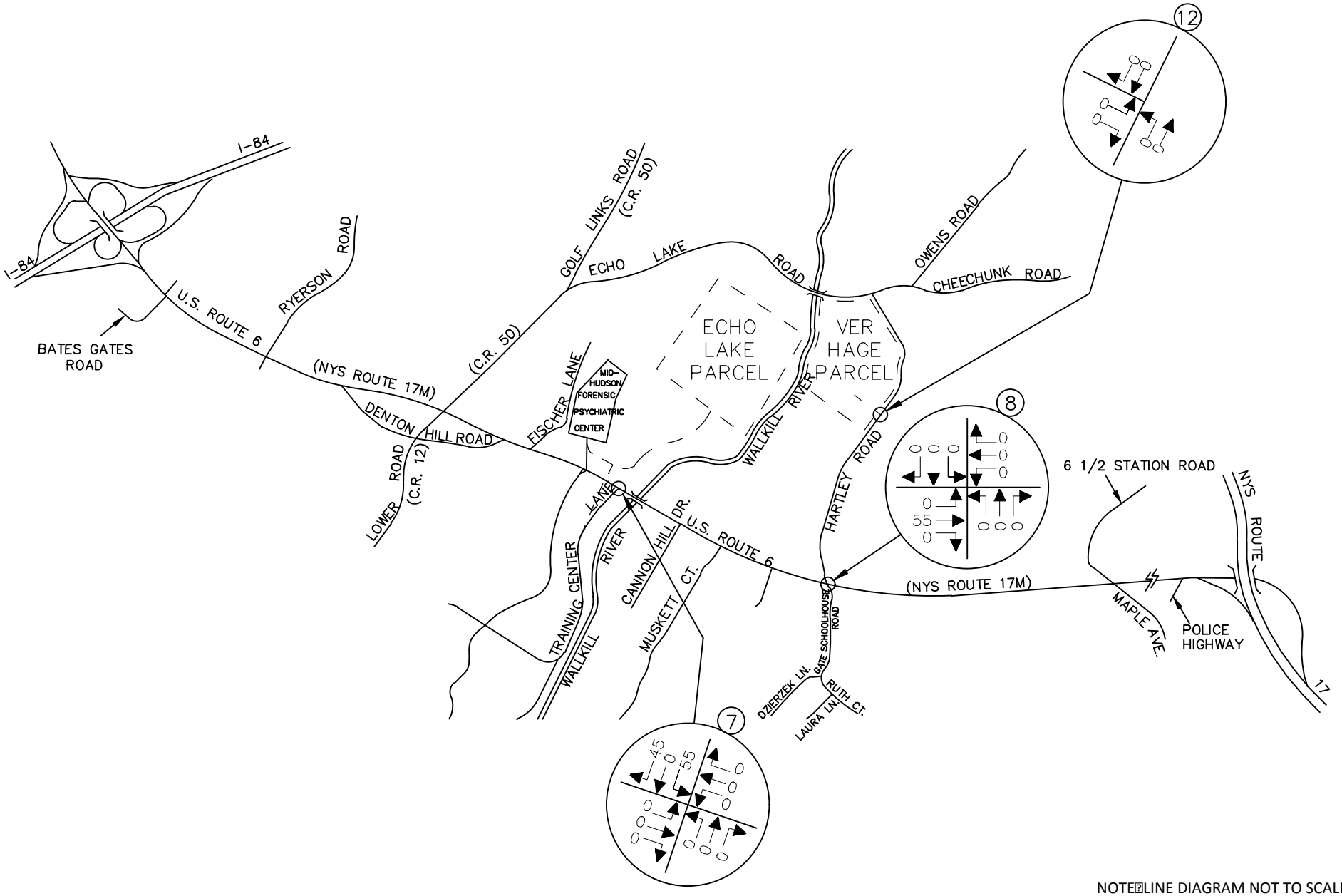
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENCE OF THE SOUL
ARRIVAL DISTRIBUTION
TYPICAL CONDITIONS

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
30–NB	



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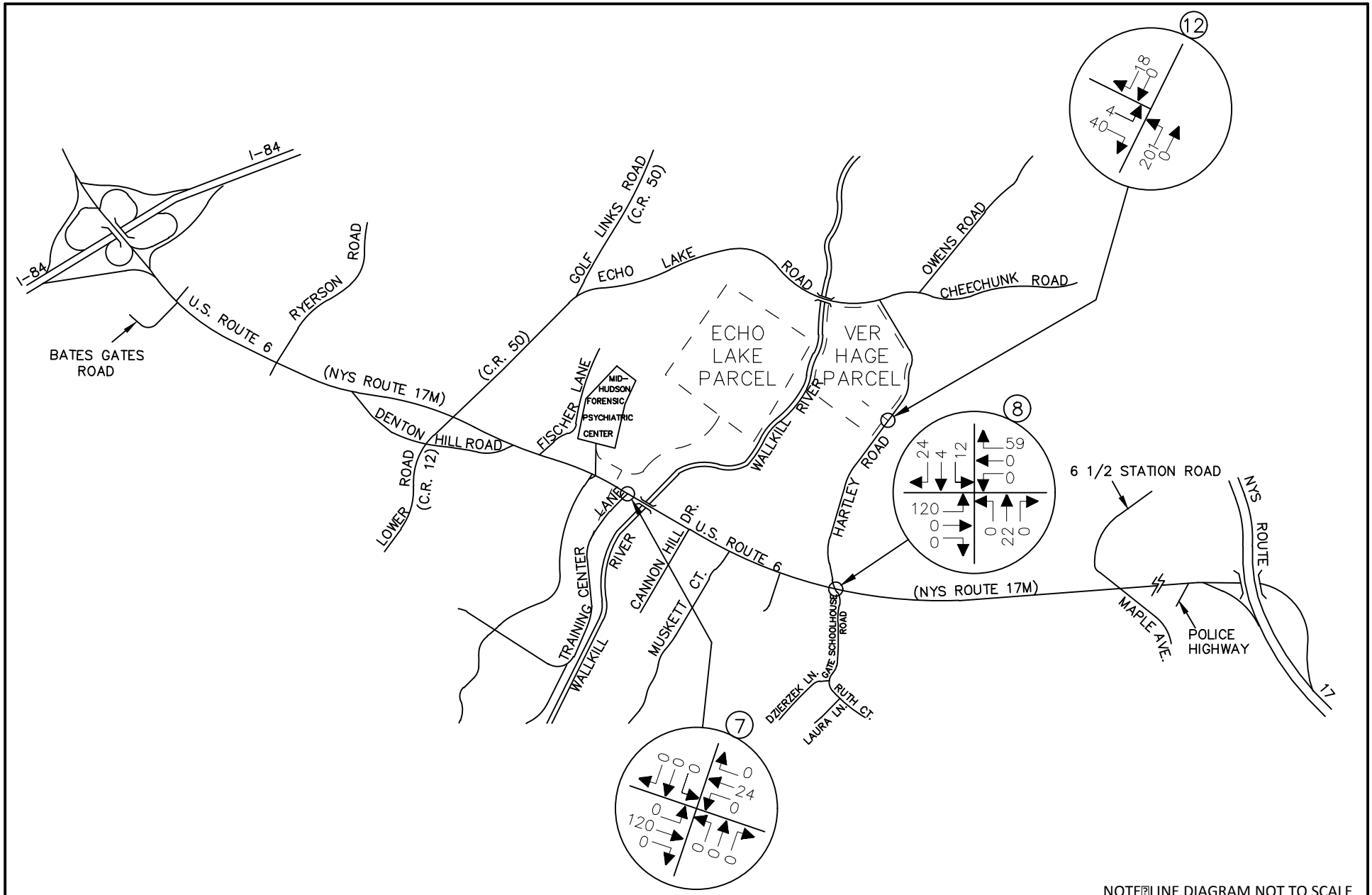
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENCE OF THE SOUL
DEPARTURE DISTRIBUTION
TYPICAL CONDITIONS

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
31–NB	



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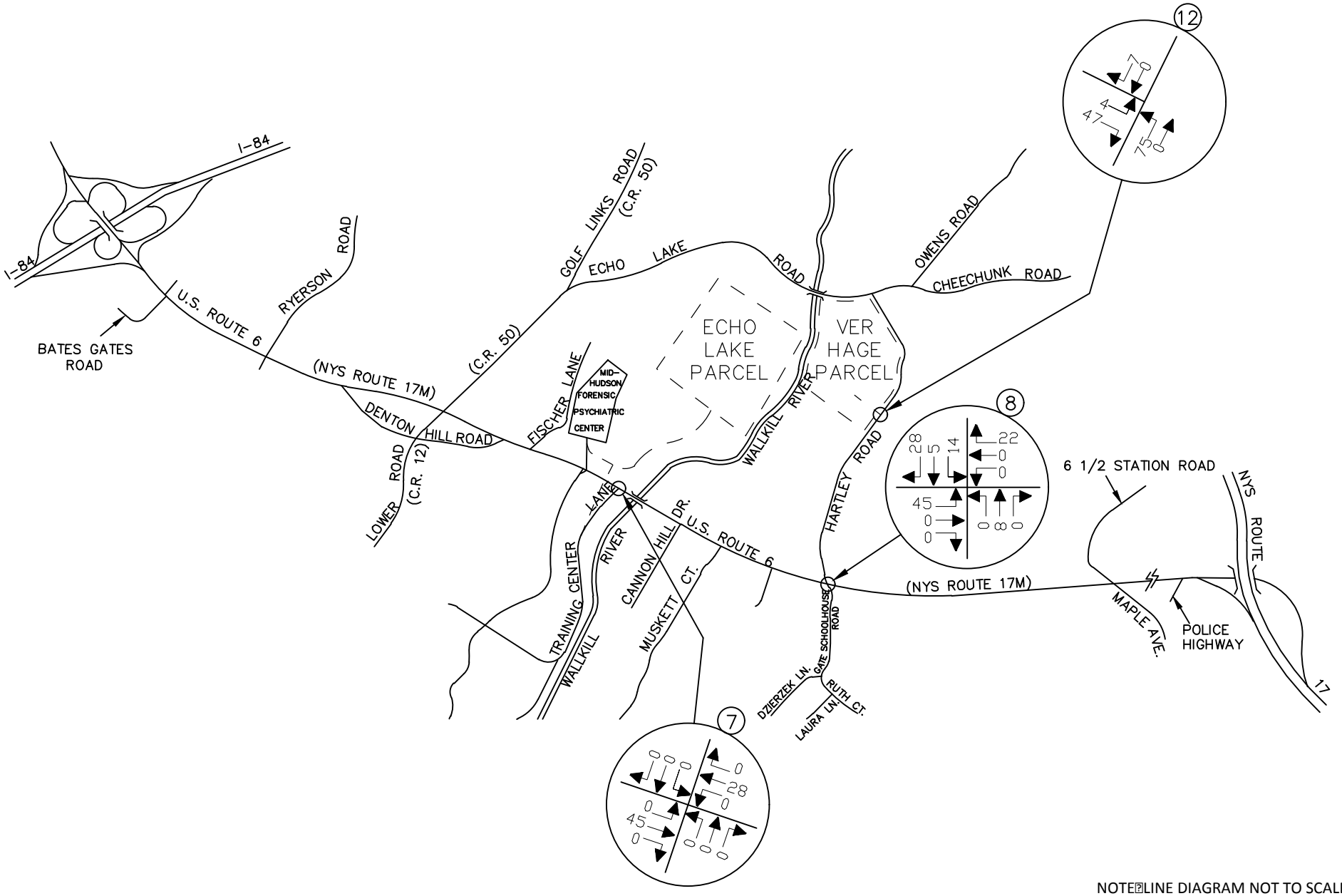
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HIGHWAY HOUR
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
32–NB	



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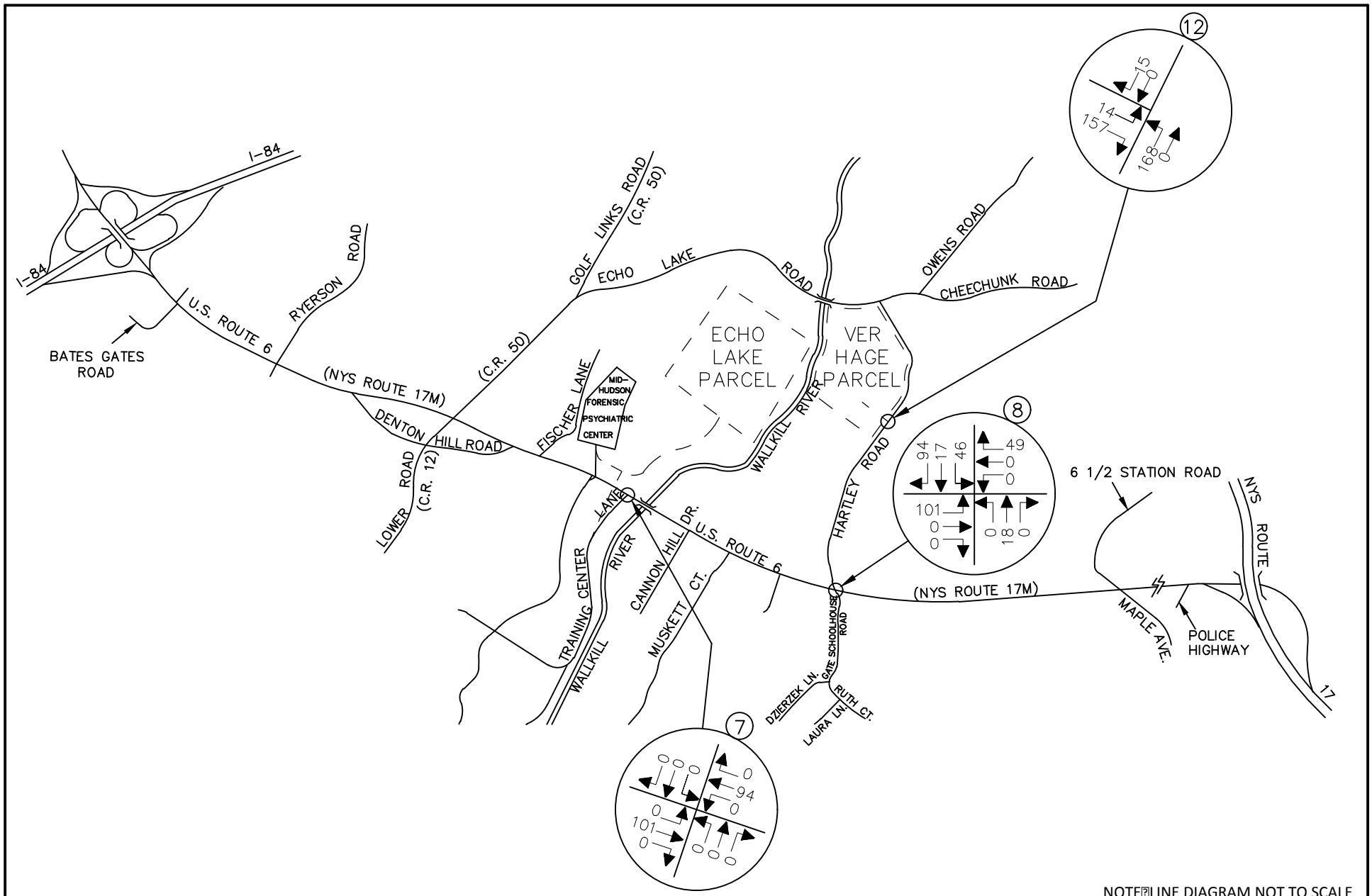
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
33–NB	



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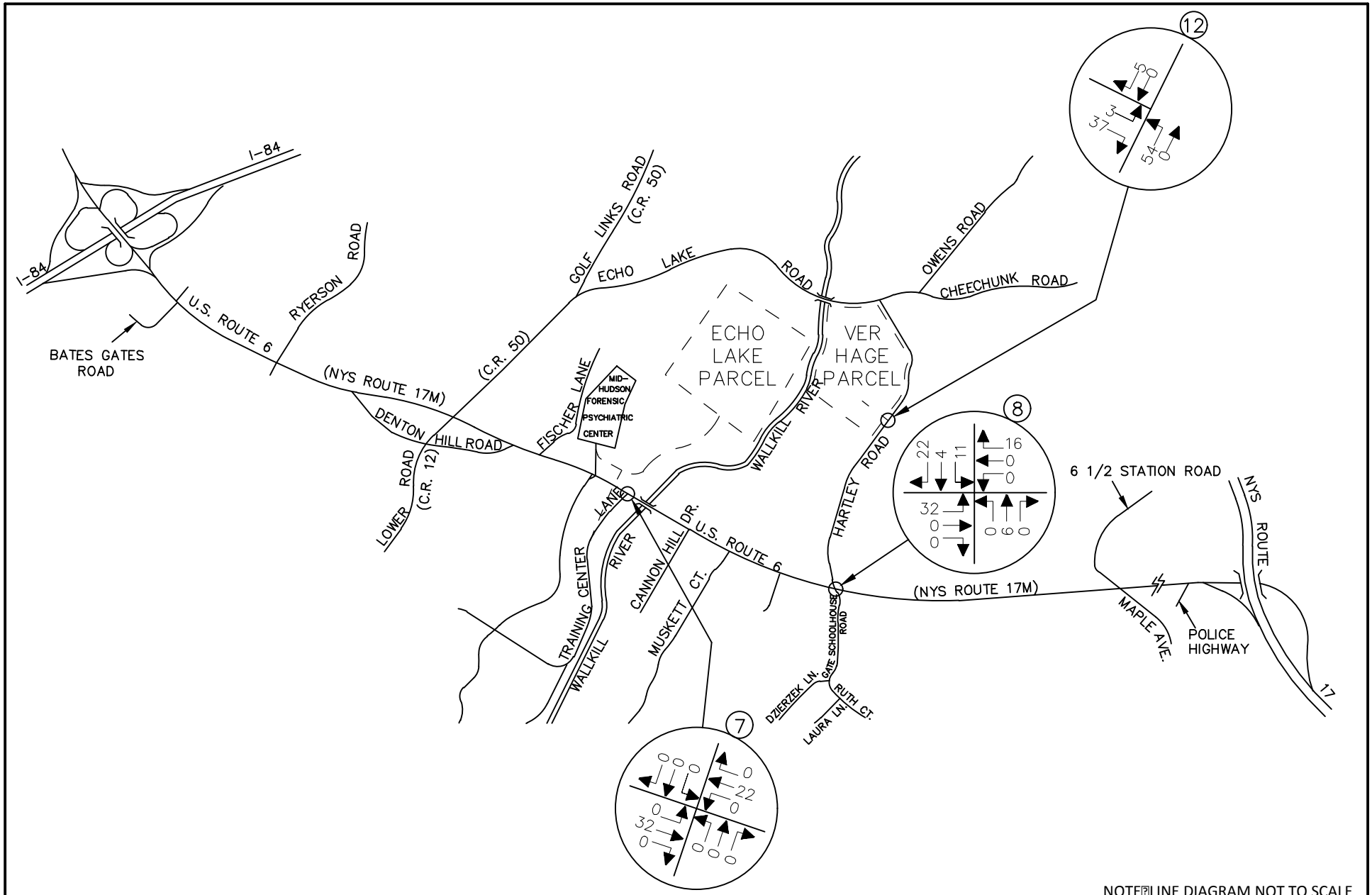
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES -CARS
WEEKDAY PM PEAK OF AMY'S KITCHEN GENERATION
[illegible]00 PM - 4[illegible]00 PM[illegible]

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
34–NB	



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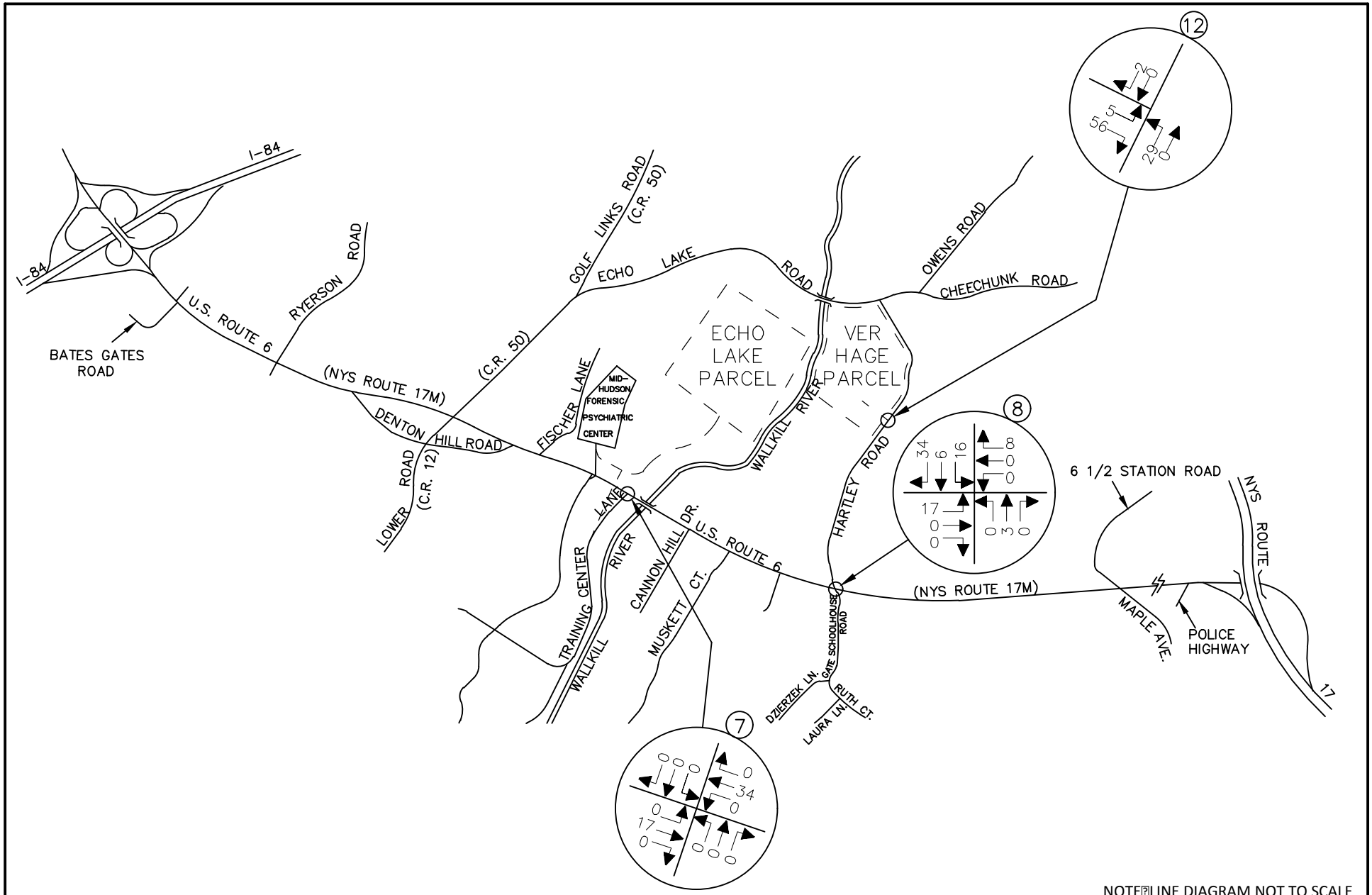
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
35–NB	



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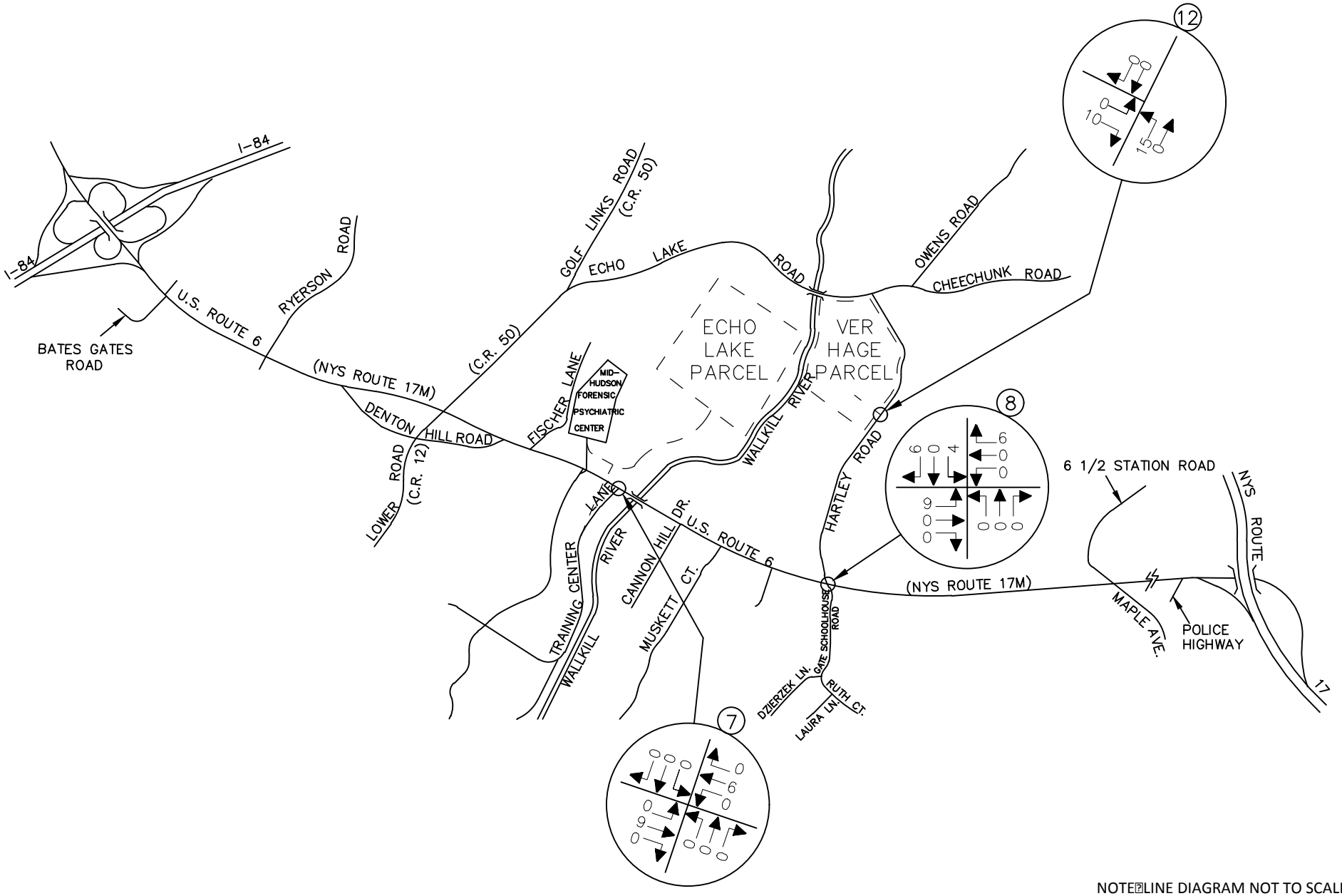
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - CAR
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
36–NB	



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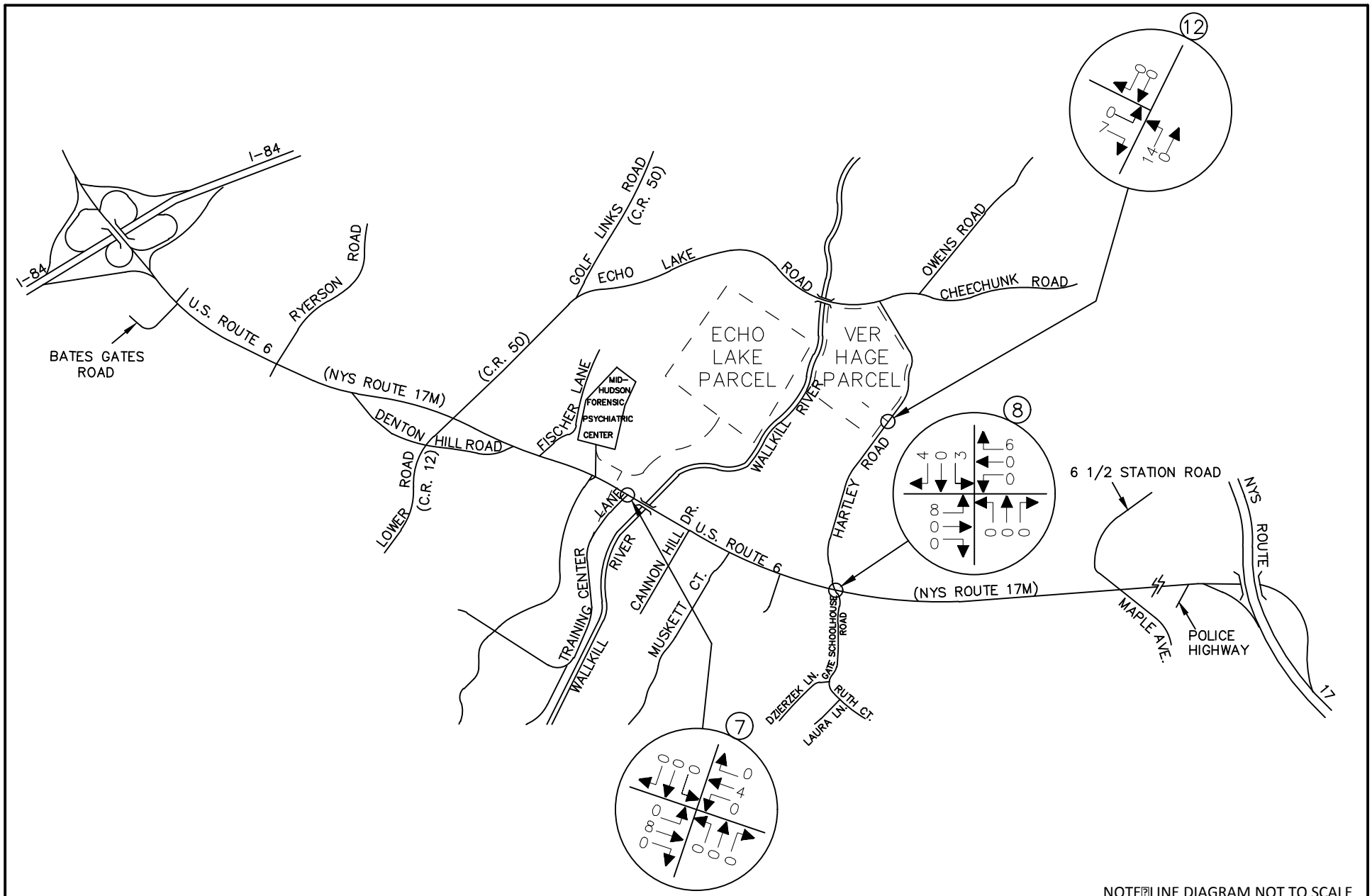
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
37–NB	



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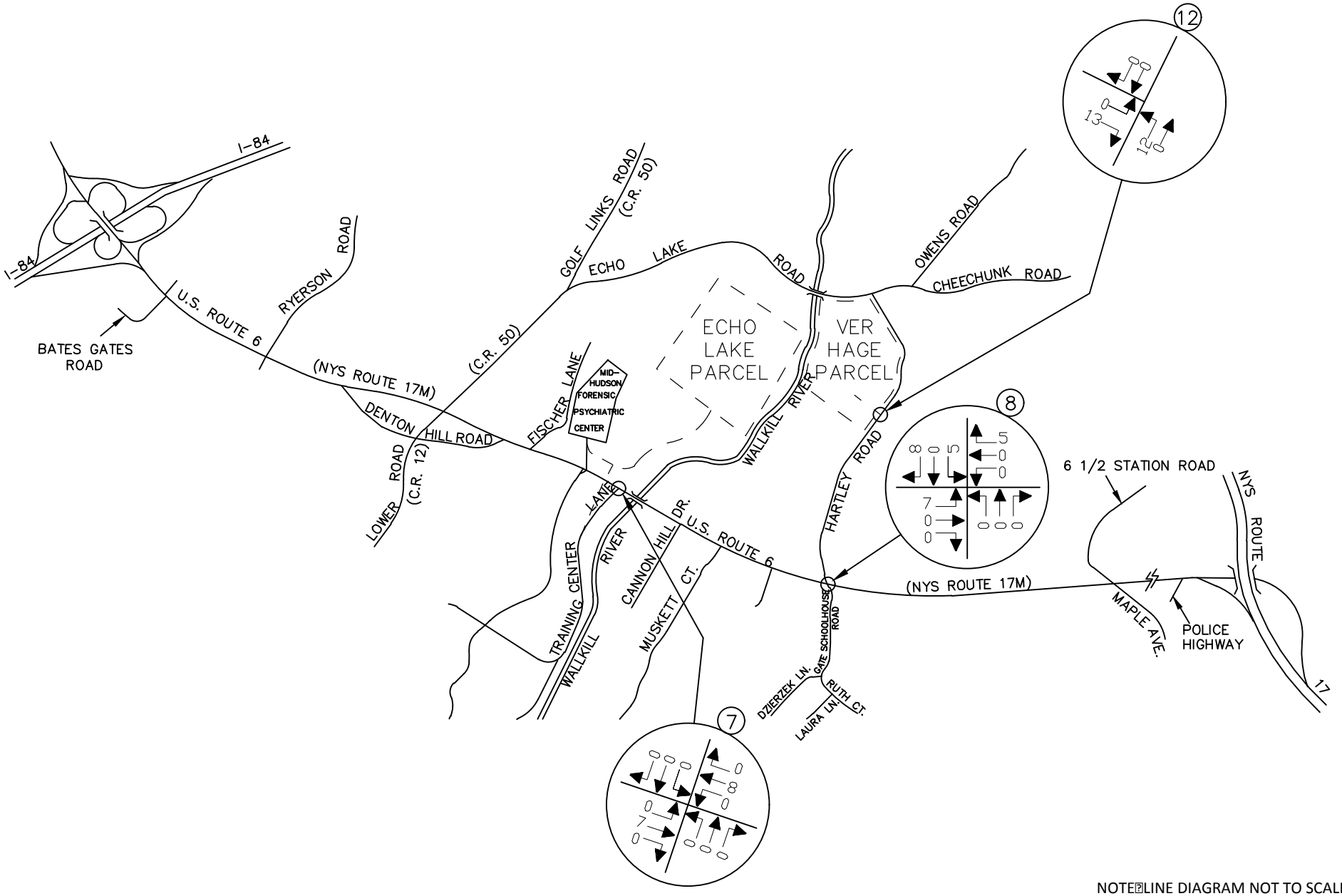
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
38–NB	



NOTE: LINE DIAGRAM NOT TO SCALE

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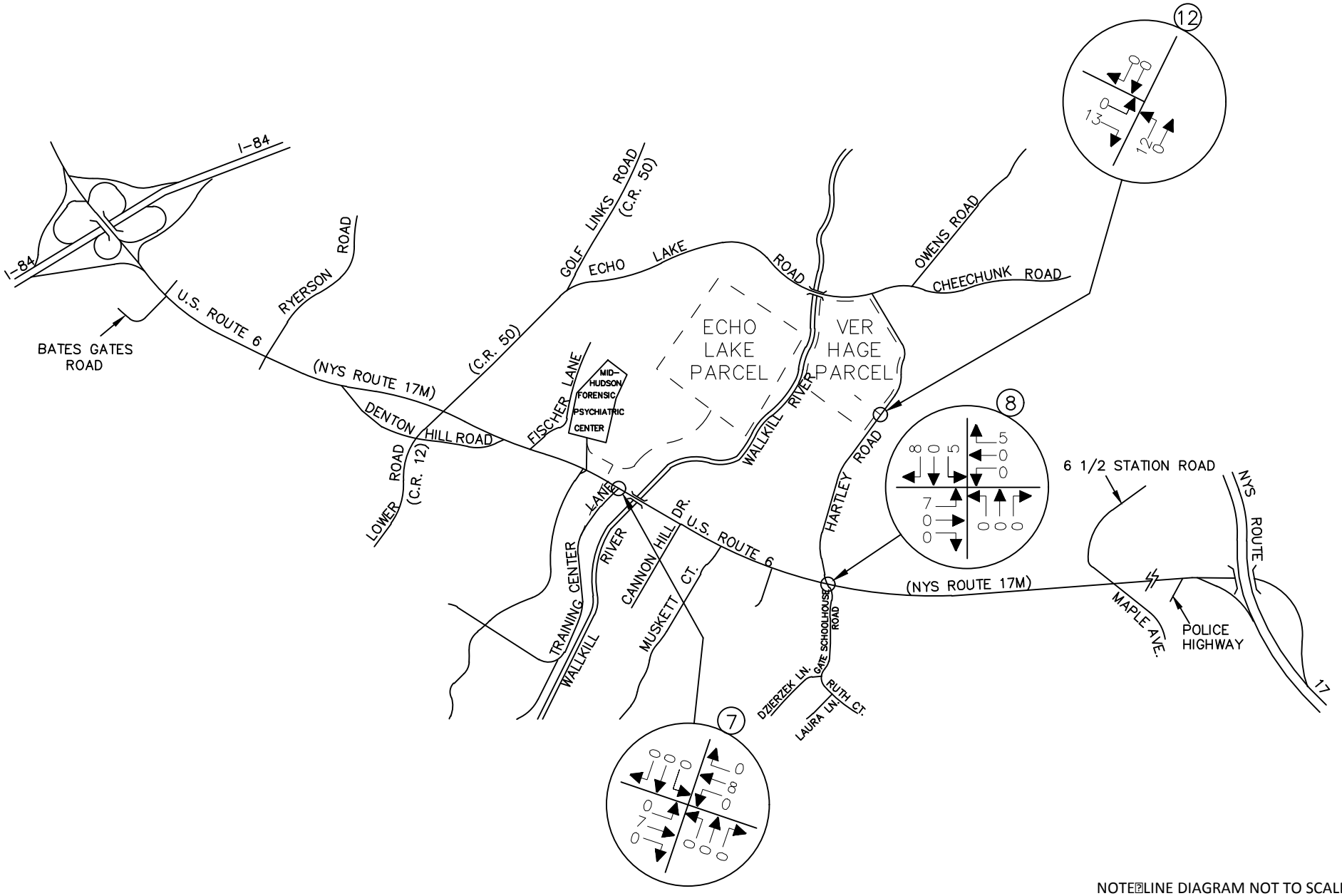
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK OF AMY'S KITCHEN GENERATION
[illegible]

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
39–NB	



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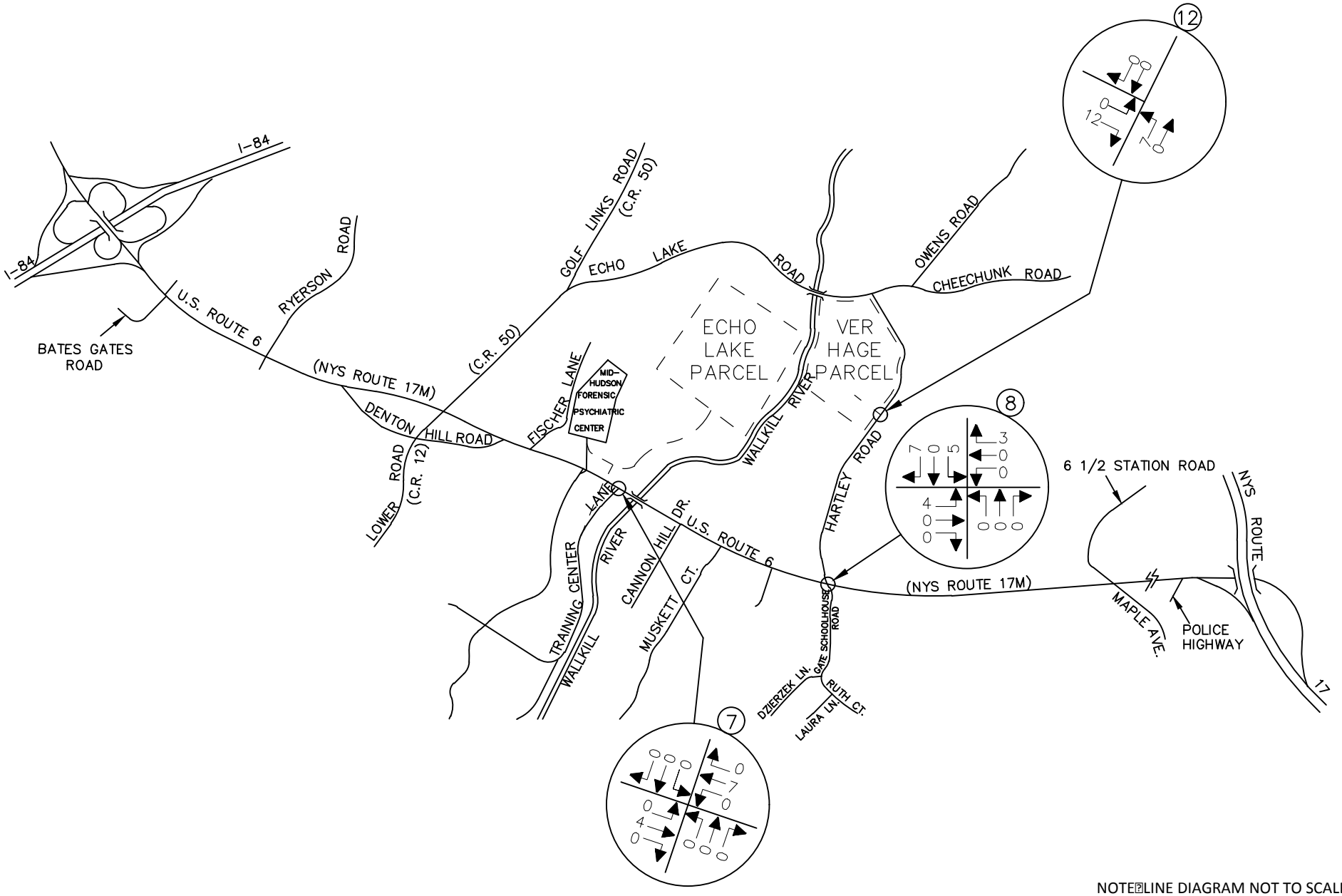
AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
40–NB	



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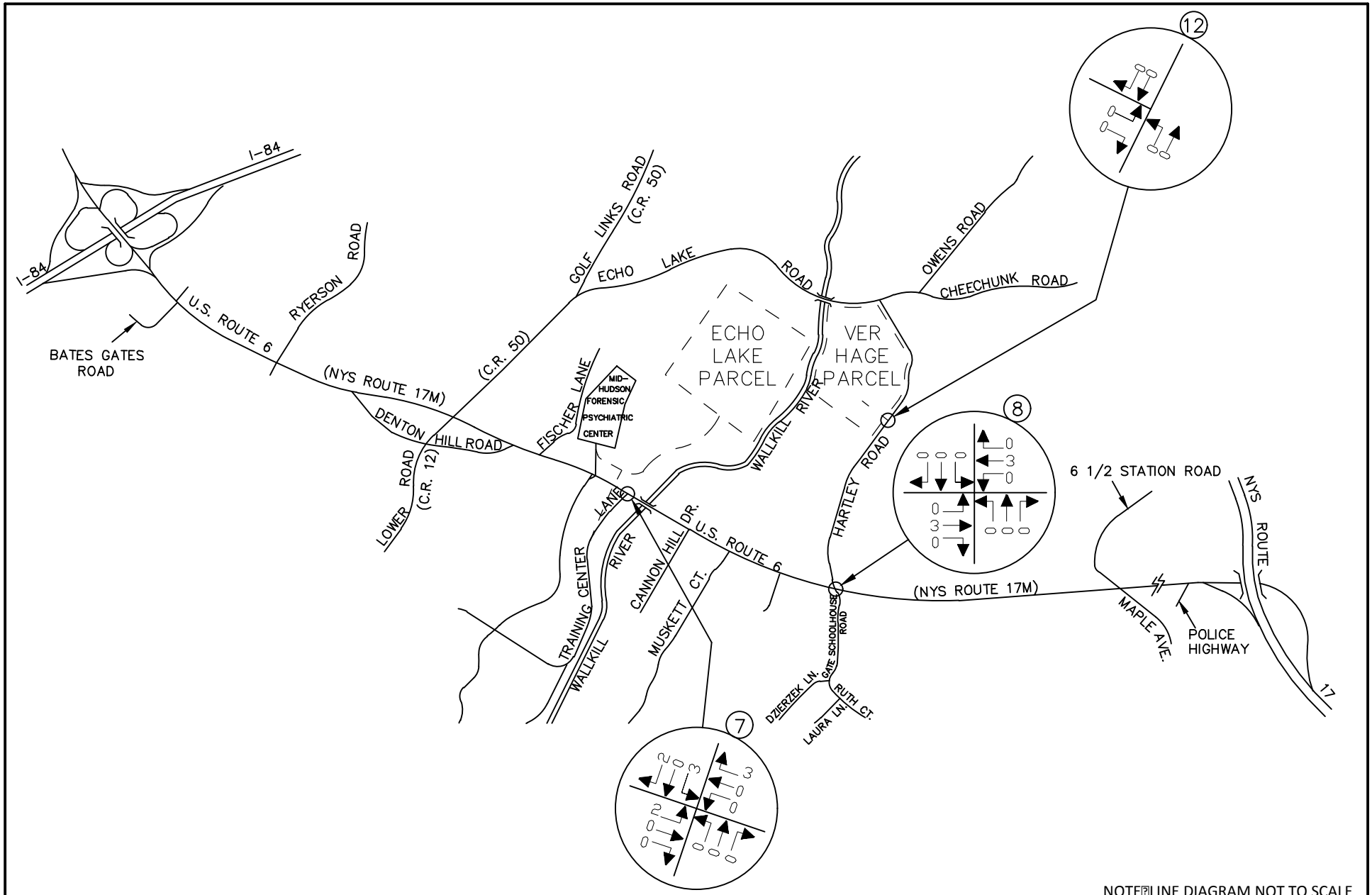
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

AMY'S KITCHEN/VER HAGE WAREHOUSE USES
SITE GENERATED TRAFFIC VOLUMES - TRUCKS
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
41–NB	



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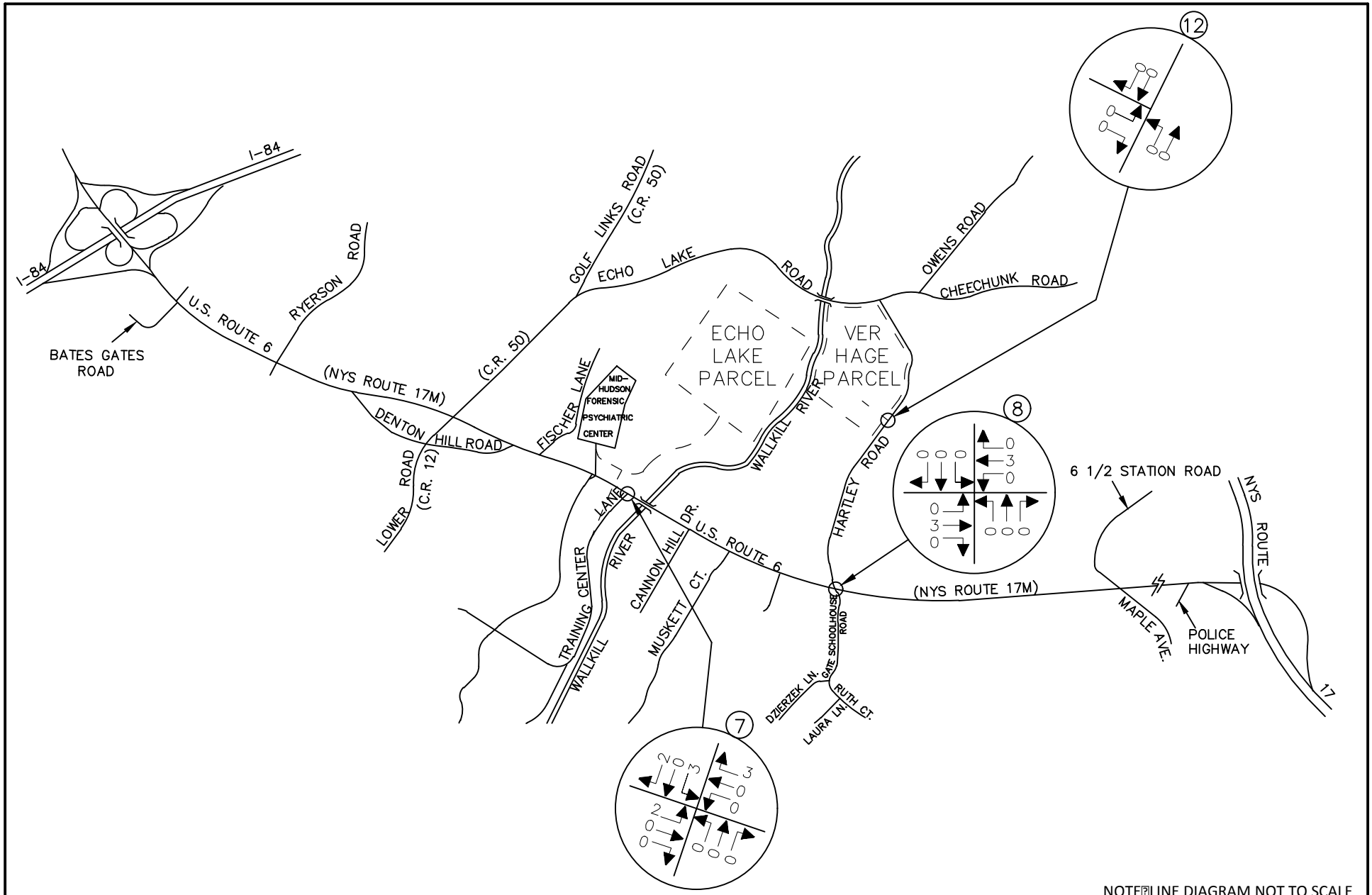
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
42–NB	



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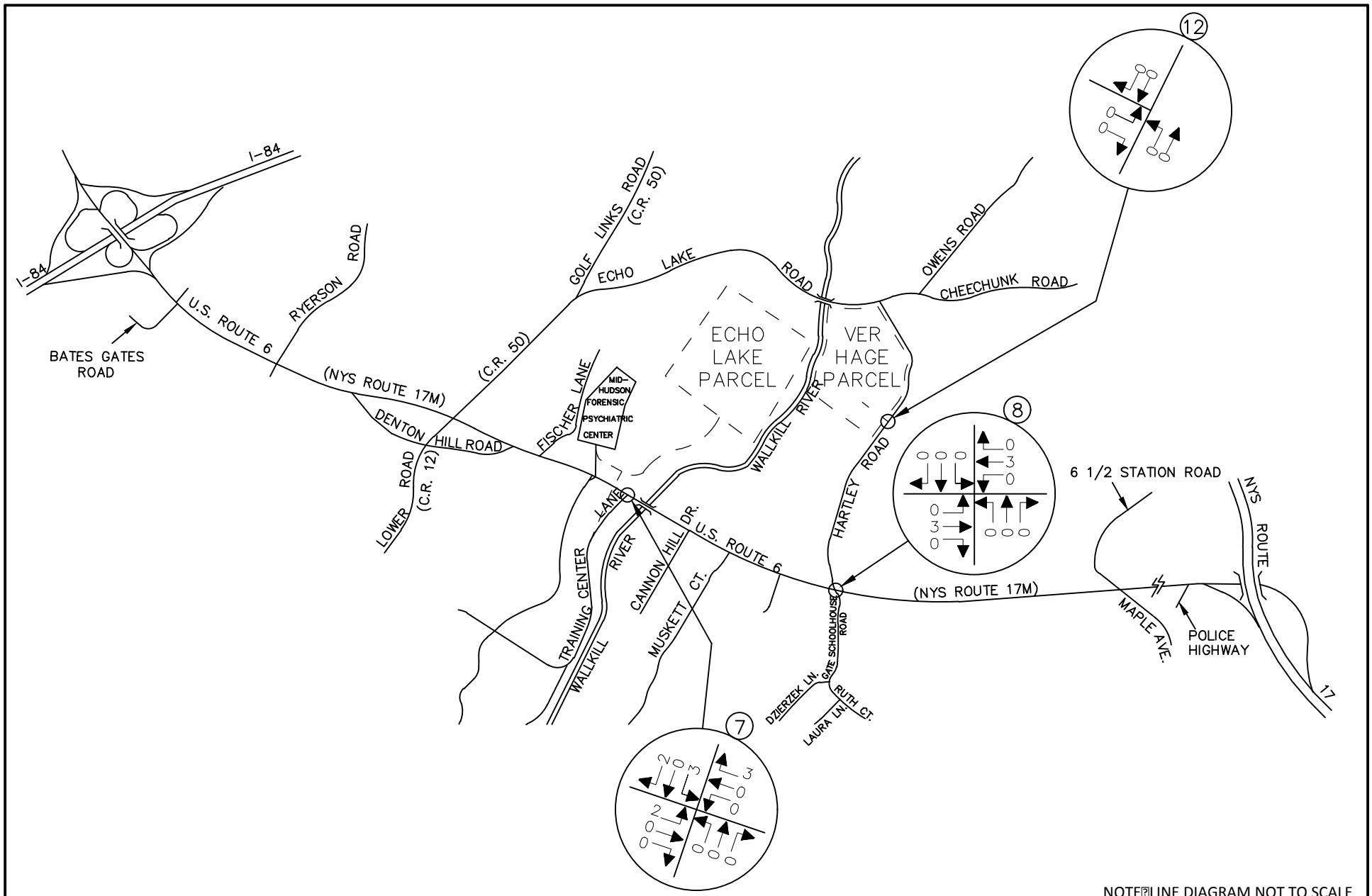
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES - CARS
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
43–NB	



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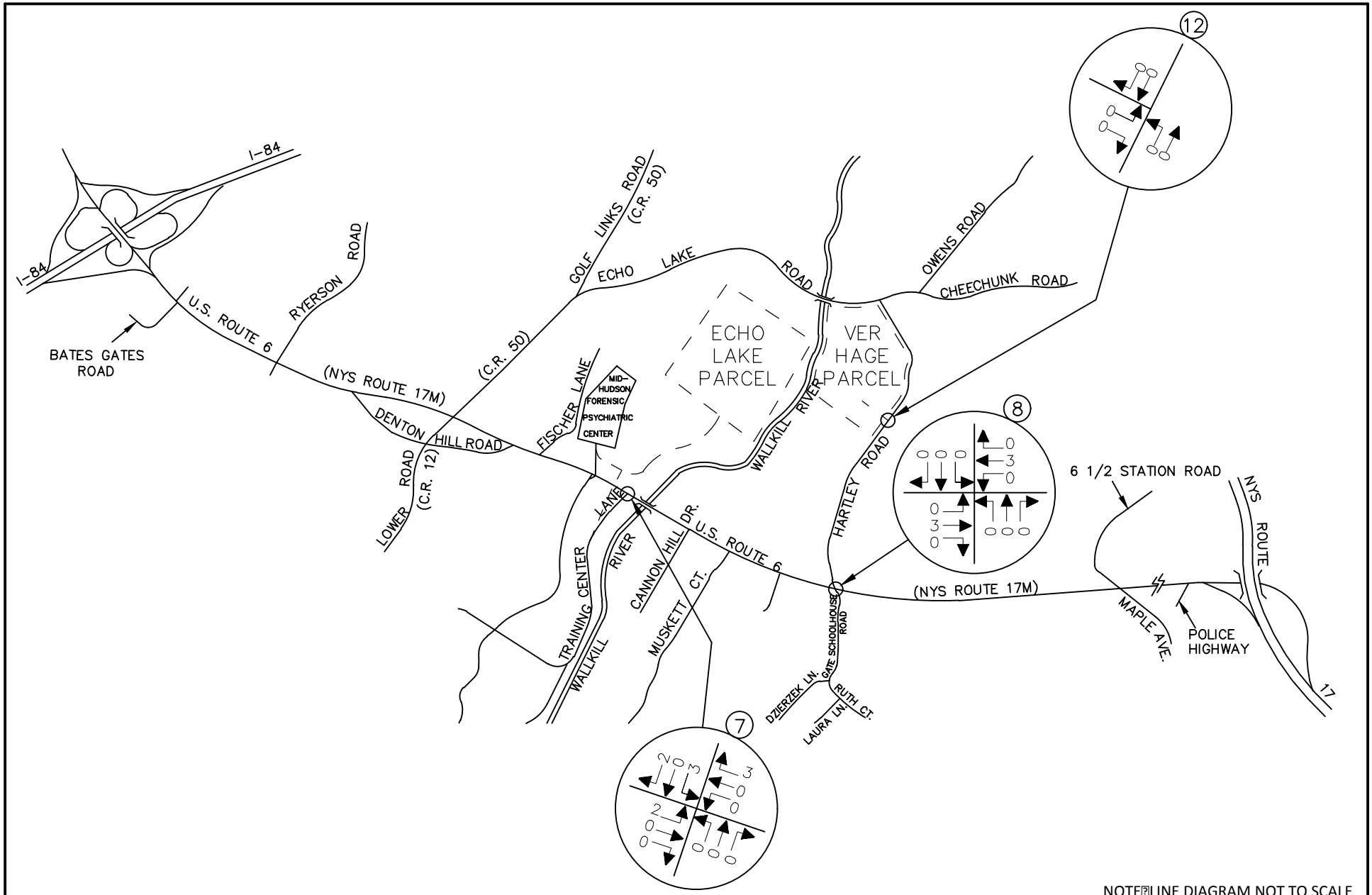
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
3:00 PM - 4:00 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
44–NB	



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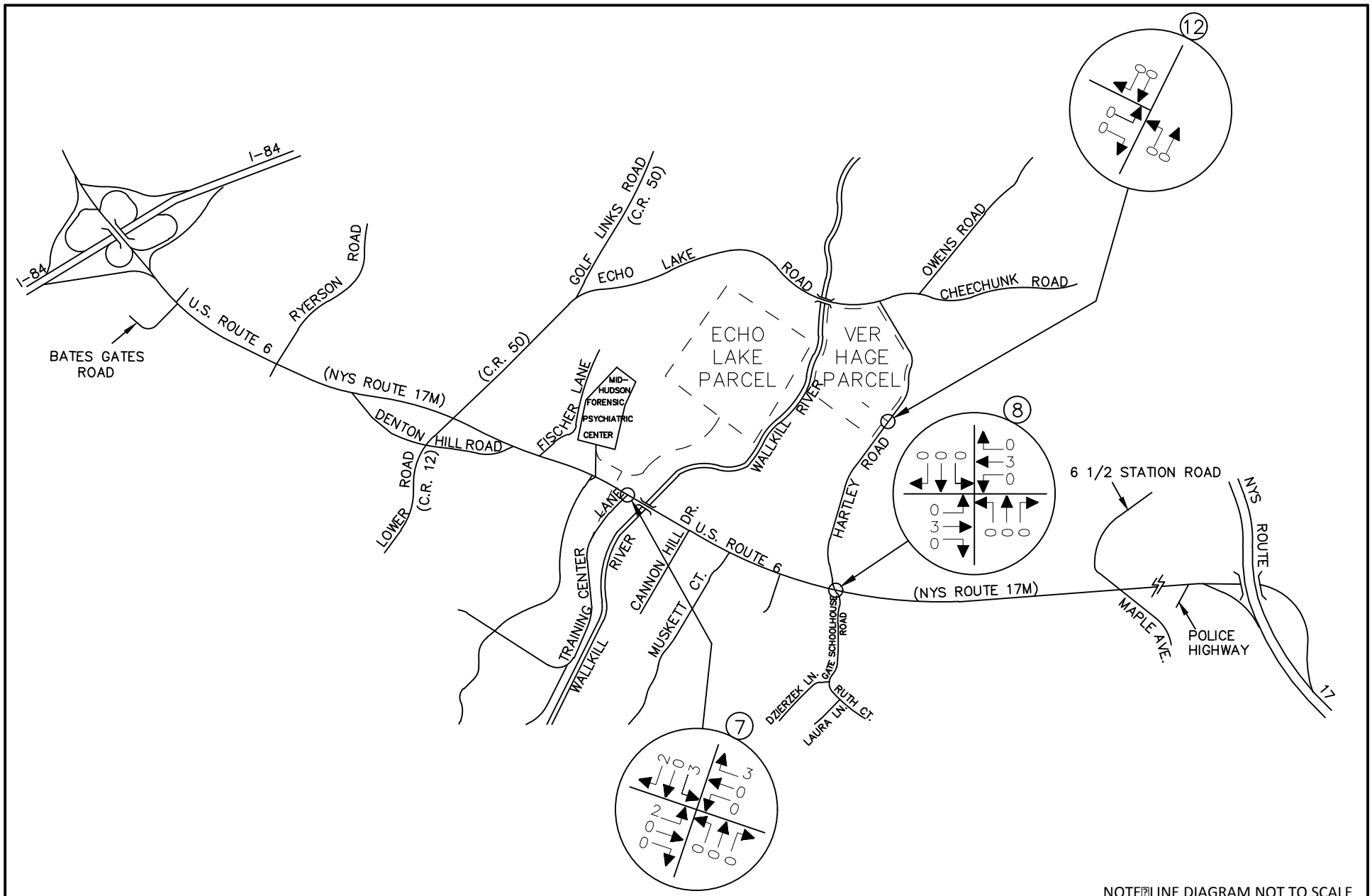
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENC OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
45–NB	



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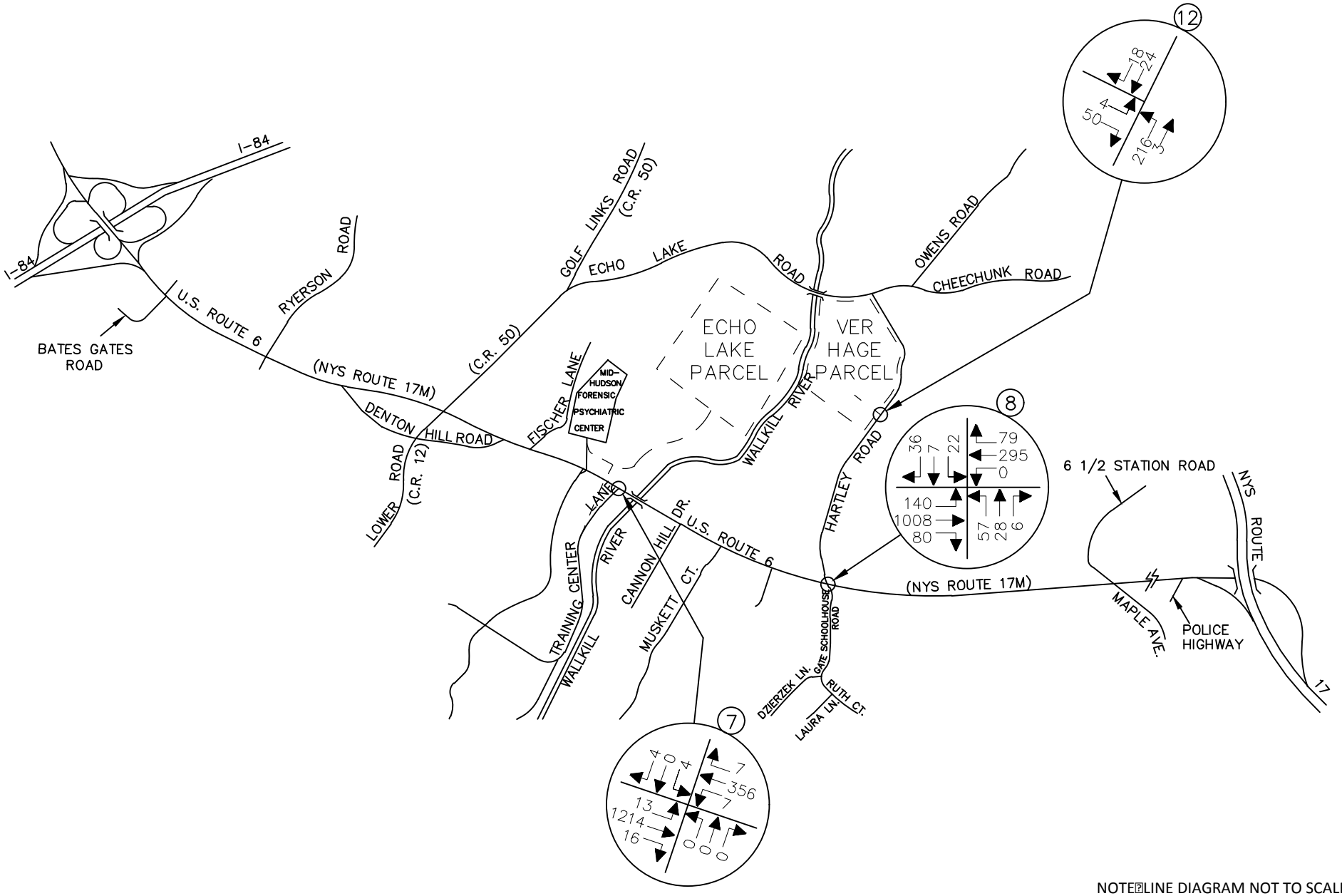
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

SCIENCE OF THE SOUL TYPICAL CONDITIONS
SITE GENERATED TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
46–NB	



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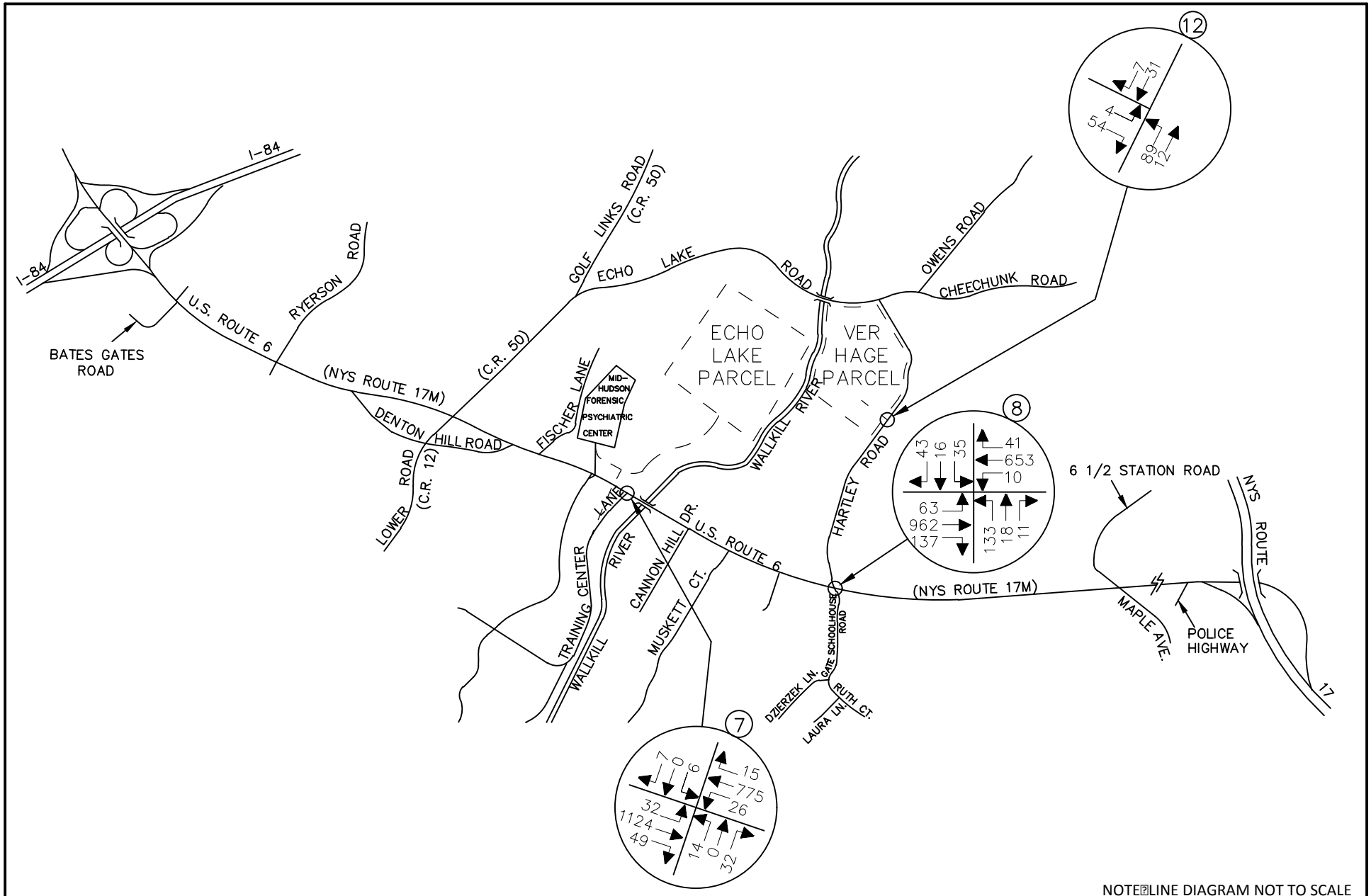
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
47–NB	



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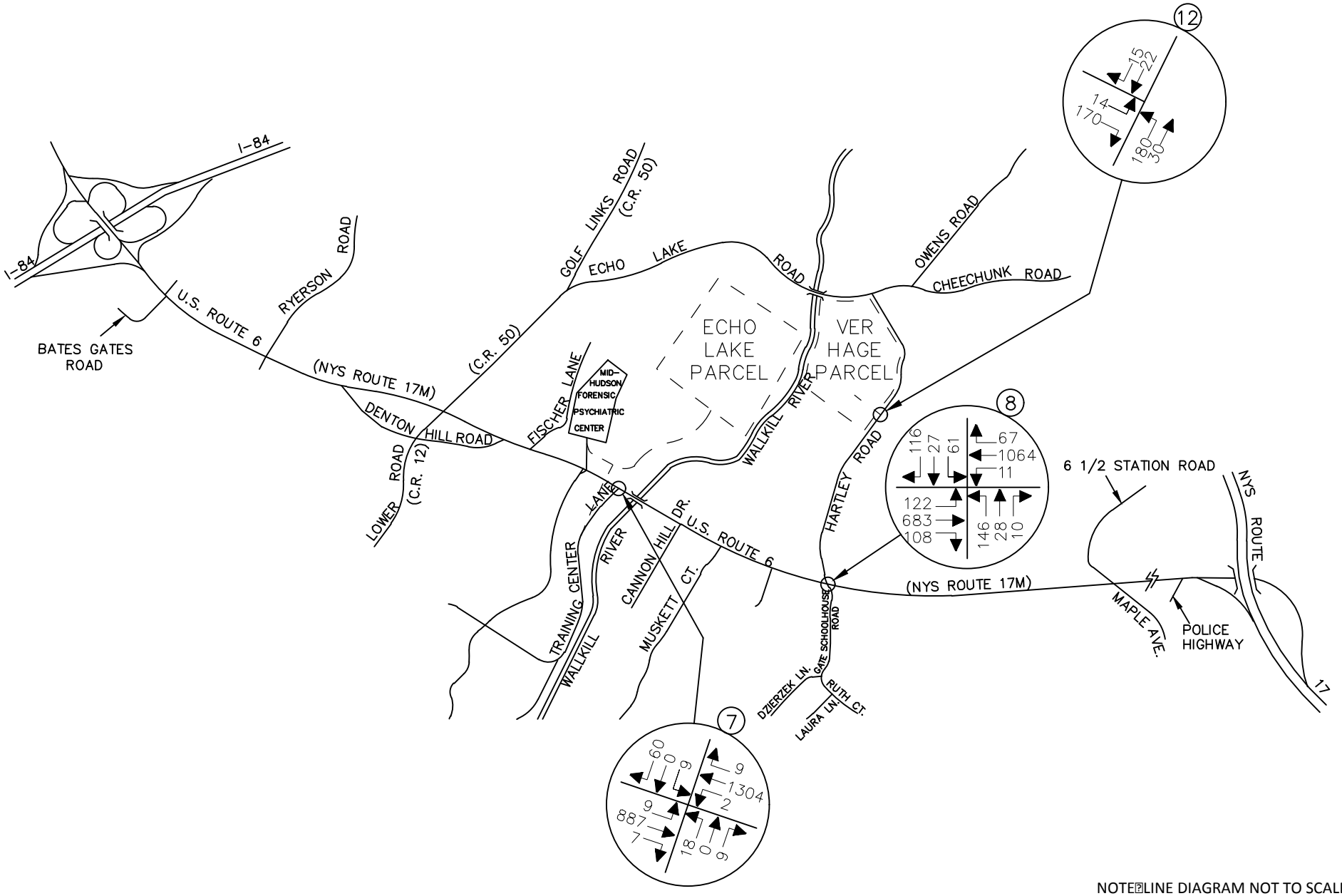
GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
48–NB	



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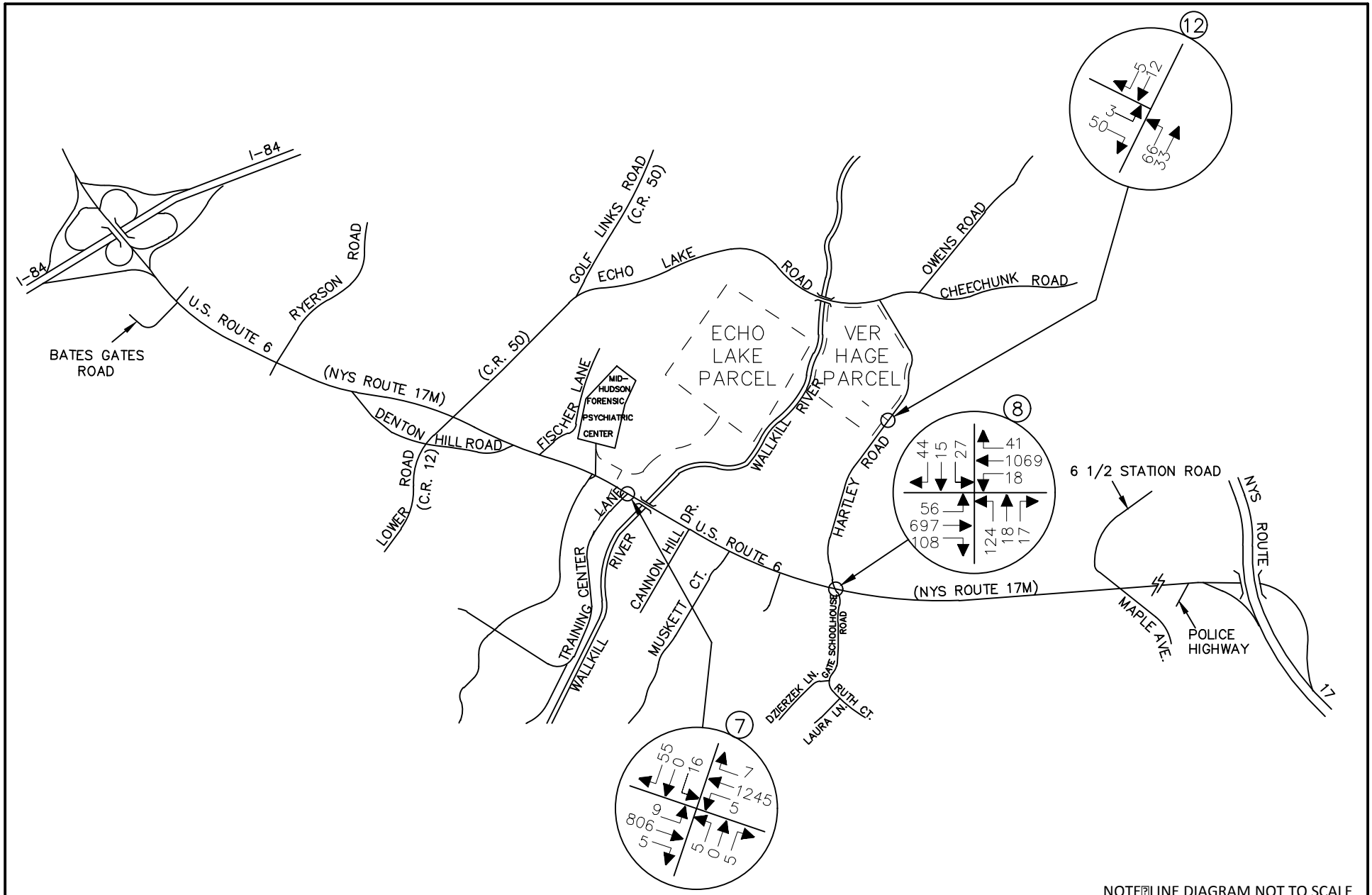
2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
4:00 PM - 5:00 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
49–NB	



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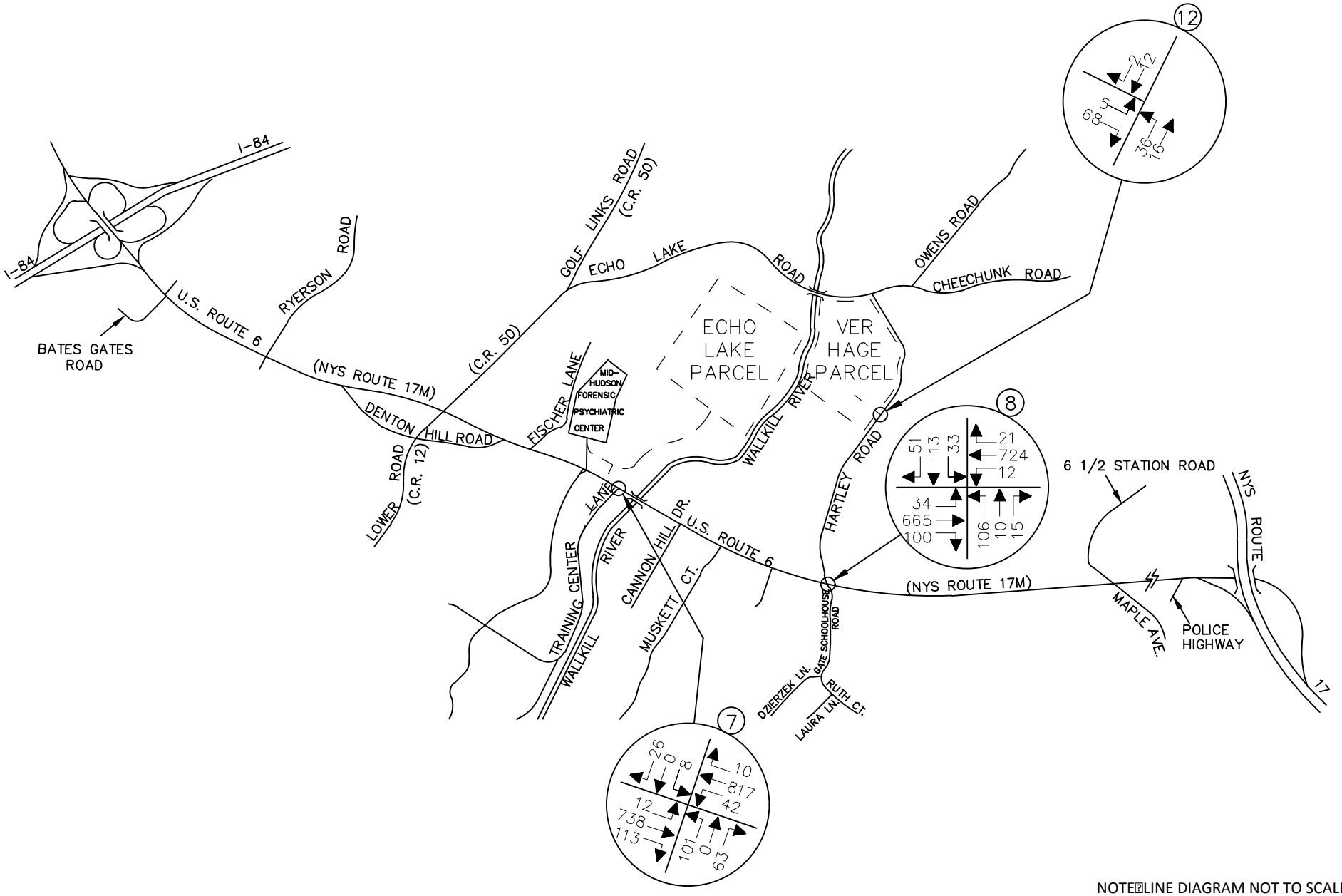
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

2033 FULL BUILD TRAFFIC VOLUMES
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
50–NB	



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GOSHEN, NEW YORK
ALTERNATIVE ANALYSIS WITHOUT WALLKILL RIVER BRIDGE

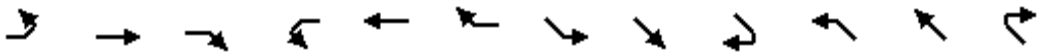
2033 FULL BUILD TRAFFIC VOLUMES
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
51–NB	

AMY'S KITCHEN/SCIENCE OF THE SOUL

RESPONSE TO VHB COMMENT HK-1

REVISED CAPACITY ANALYSIS FOR NYS ROUTE 17M AT MAPLE AVENUE/ 6½ STATION ROAD



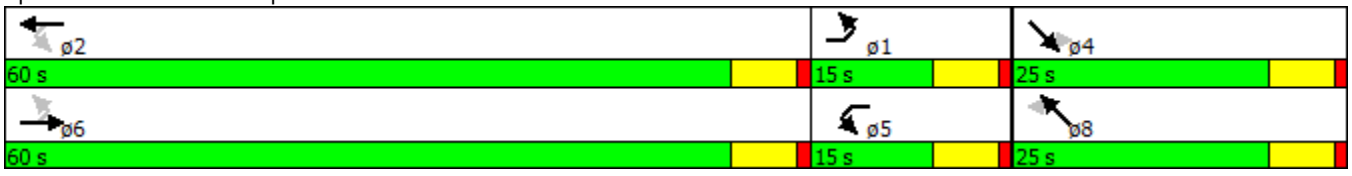
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	67	539	76	38	815	59	34	50	82	101	59	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			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		0.981			0.990			0.934			0.993	
Flt Protected	0.950			0.950				0.990			0.971	
Satd. Flow (prot)	1729	1873	0	1711	1882	0	0	1707	0	0	1799	0
Flt Permitted	0.094			0.253				0.902			0.665	
Satd. Flow (perm)	171	1873	0	456	1882	0	0	1555	0	0	1232	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			6			43			2	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	71	567	80	40	858	62	36	53	86	106	62	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	647	0	40	920	0	0	175	0	0	177	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.34	0.67		0.09	0.90			0.51			0.72	
Control Delay	18.7	21.6		6.6	31.9			32.0			53.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	18.7	21.6		6.6	31.9			32.0			53.4	
Queue Length 50th (ft)	13	329		7	457			70			99	
Queue Length 95th (ft)	27	413		17	#765			142			#208	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	290	1256		485	1261			421			310	
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	0.24	0.52		0.08	0.73			0.42			0.57	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 83.1
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	67	539	76	38	815	59	34	50	82	101	59	9
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1913	1910	1862	1858	1862	1948	1865	1948
Adj Flow Rate, veh/h	71	567	59	40	858	51	36	53	86	106	62	9
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	193	635	66	468	932	55	107	92	126	216	89	12
Arrive On Green	0.05	0.37	0.37	0.19	0.52	0.52	0.18	0.15	0.15	0.18	0.15	0.15
Sat Flow, veh/h	1733	1701	177	1716	1788	106	258	607	835	833	590	76
Grp Volume(v), veh/h	71	0	626	40	0	909	175	0	0	177	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1878	1716	0	1894	1700	0	0	1499	0	0
Q Serve(g_s), s	0.0	0.0	20.0	0.0	0.0	28.2	0.0	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	20.0	0.0	0.0	28.2	5.8	0.0	0.0	6.8	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.06	0.21		0.49	0.60		0.05
Lane Grp Cap(c), veh/h	193	0	701	468	0	988	378	0	0	363	0	0
V/C Ratio(X)	0.37	0.00	0.89	0.09	0.00	0.92	0.46	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	356	0	1586	468	0	1599	609	0	0	572	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.1	0.0	18.8	20.3	0.0	14.1	25.4	0.0	0.0	25.3	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.7	0.0	0.0	3.9	0.3	0.0	0.0	0.4	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	10.6	0.6	0.0	15.7	2.8	0.0	0.0	2.8	0.0	0.0
LnGrp Delay(d),s/veh	29.5	0.0	20.5	20.3	0.0	18.0	25.7	0.0	0.0	25.7	0.0	0.0
LnGrp LOS	C		C	C		B	C			C		
Approach Vol, veh/h		697			949			175			177	
Approach Delay, s/veh		21.4			18.1			25.7			25.7	
Approach LOS		C			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	39.3		15.7	18.4	29.9		15.7
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	30.2		7.8	2.0	22.0		8.8
Green Ext Time (p_c), s	0.1	3.1		0.9	0.1	1.8		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	20.6
HCM 2010 LOS	C

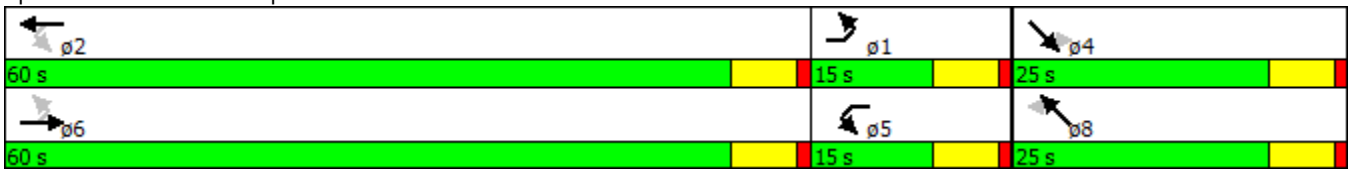
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	73	598	86	42	905	65	38	55	90	112	65	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			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		0.981			0.990			0.934			0.992	
Flt Protected	0.950			0.950				0.990			0.971	
Satd. Flow (prot)	1729	1873	0	1711	1882	0	0	1707	0	0	1798	0
Flt Permitted	0.076			0.223				0.891			0.609	
Satd. Flow (perm)	138	1873	0	402	1882	0	0	1536	0	0	1127	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			6			43			3	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	77	629	91	44	953	68	40	58	95	118	68	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	720	0	44	1021	0	0	193	0	0	197	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.41	0.68		0.11	0.95			0.58			0.88	
Control Delay	25.1	20.7		7.0	38.9			35.1			75.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	25.1	20.7		7.0	38.9			35.1			75.8	
Queue Length 50th (ft)	14	378		8	572			84			118	
Queue Length 95th (ft)	40	464		18	#922			161			#257	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	244	1139		413	1101			349			233	
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	0.32	0.63		0.11	0.93			0.55			0.85	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 93.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	73	598	86	42	905	65	38	55	90	112	65	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1913	1910	1862	1857	1862	1948	1866	1948
Adj Flow Rate, veh/h	77	629	70	44	953	57	40	58	95	118	68	11
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	155	684	76	445	1007	60	98	104	143	203	92	13
Arrive On Green	0.04	0.40	0.40	0.20	0.56	0.56	0.20	0.17	0.17	0.20	0.17	0.17
Sat Flow, veh/h	1733	1688	188	1716	1787	107	253	599	826	757	531	76
Grp Volume(v), veh/h	77	0	699	44	0	1010	193	0	0	197	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1876	1716	0	1894	1678	0	0	1364	0	0
Q Serve(g_s), s	0.0	0.0	28.1	0.0	0.0	39.6	0.0	0.0	0.0	2.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	28.1	0.0	0.0	39.6	8.2	0.0	0.0	11.0	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.06	0.21		0.49	0.60		0.06
Lane Grp Cap(c), veh/h	155	0	760	445	0	1067	387	0	0	343	0	0
V/C Ratio(X)	0.50	0.00	0.92	0.10	0.00	0.95	0.50	0.00	0.00	0.57	0.00	0.00
Avail Cap(c_a), veh/h	287	0	1276	445	0	1288	492	0	0	437	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	36.8	0.0	22.4	25.2	0.0	16.2	30.4	0.0	0.0	31.1	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	4.1	0.0	0.0	12.0	0.4	0.0	0.0	0.6	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	15.2	0.8	0.0	24.0	3.8	0.0	0.0	4.0	0.0	0.0
LnGrp Delay(d),s/veh	37.7	0.0	26.5	25.3	0.0	28.2	30.7	0.0	0.0	31.7	0.0	0.0
LnGrp LOS	D		C	C		C	C			C		
Approach Vol, veh/h		776			1054			193			197	
Approach Delay, s/veh		27.6			28.1			30.7			31.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	50.7		19.7	21.5	38.2		19.7
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	41.6		10.2	2.0	30.1		13.0
Green Ext Time (p_c), s	0.1	3.1		0.9	0.1	2.1		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

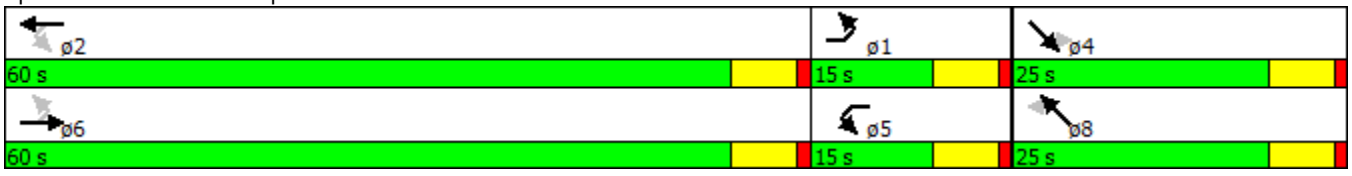
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	74	616	87	42	928	65	38	55	90	113	65	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			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		0.981			0.990			0.934			0.992	
Flt Protected	0.950			0.950				0.990			0.971	
Satd. Flow (prot)	1729	1873	0	1711	1882	0	0	1707	0	0	1798	0
Flt Permitted	0.074			0.214				0.890			0.605	
Satd. Flow (perm)	135	1873	0	386	1882	0	0	1534	0	0	1120	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			5			43			3	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	78	648	92	44	977	68	40	58	95	119	68	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	740	0	44	1045	0	0	193	0	0	198	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.42	0.69		0.12	0.96			0.58			0.90	
Control Delay	25.7	20.6		7.1	41.8			35.4			79.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	25.7	20.6		7.1	41.8			35.4			79.7	
Queue Length 50th (ft)	14	386		8	601			84			118	
Queue Length 95th (ft)	41	479		18	#958			161			#260	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	241	1123		398	1084			344			229	
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	0.32	0.66		0.11	0.96			0.56			0.86	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 94.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	74	616	87	42	928	65	38	55	90	113	65	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1913	1910	1862	1857	1862	1948	1866	1948
Adj Flow Rate, veh/h	78	648	71	44	977	57	40	58	95	119	68	11
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	149	700	77	438	1025	60	97	104	144	201	91	13
Arrive On Green	0.04	0.41	0.41	0.19	0.57	0.57	0.20	0.17	0.17	0.20	0.17	0.17
Sat Flow, veh/h	1733	1691	185	1716	1790	104	253	598	824	751	520	75
Grp Volume(v), veh/h	78	0	719	44	0	1034	193	0	0	198	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1877	1716	0	1895	1674	0	0	1346	0	0
Q Serve(g_s), s	0.0	0.0	30.1	0.0	0.0	42.5	0.0	0.0	0.0	3.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	30.1	0.0	0.0	42.5	8.5	0.0	0.0	11.8	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.06	0.21		0.49	0.60		0.06
Lane Grp Cap(c), veh/h	149	0	777	438	0	1085	385	0	0	337	0	0
V/C Ratio(X)	0.52	0.00	0.93	0.10	0.00	0.95	0.50	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	276	0	1224	438	0	1236	472	0	0	415	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.5	0.0	23.0	26.4	0.0	16.7	31.5	0.0	0.0	32.5	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	5.9	0.0	0.0	14.2	0.4	0.0	0.0	0.6	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	16.8	0.8	0.0	26.1	3.9	0.0	0.0	4.2	0.0	0.0
LnGrp Delay(d),s/veh	39.5	0.0	28.9	26.5	0.0	30.8	31.9	0.0	0.0	33.1	0.0	0.0
LnGrp LOS	D		C	C		C	C			C		
Approach Vol, veh/h		797			1078			193			198	
Approach Delay, s/veh		29.9			30.6			31.9			33.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	53.4		20.4	22.1	40.3		20.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	44.5		10.5	2.0	32.1		13.8
Green Ext Time (p_c), s	0.1	2.9		0.9	0.1	2.2		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	30.7
HCM 2010 LOS	C

AMY'S KITCHEN/SCIENCE OF THE SOUL

RESPONSE TO VHB COMMENT HK-7

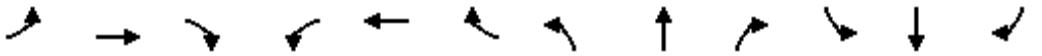
REVISED CAPACITY ANALYSIS WITH ADJUSTED ARRIVAL AND DEPARTURE DISTRIBUTIONS

AMY'S KITCHEN/SCIENCE OF THE SOUL

RESPONSE TO VHB COMMENT HK-7

REVISED CAPACITY ANALYSIS WITH ADJUSTED ARRIVAL AND DEPARTURE DISTRIBUTIONS

2033 FULL BUILD ANALYSIS

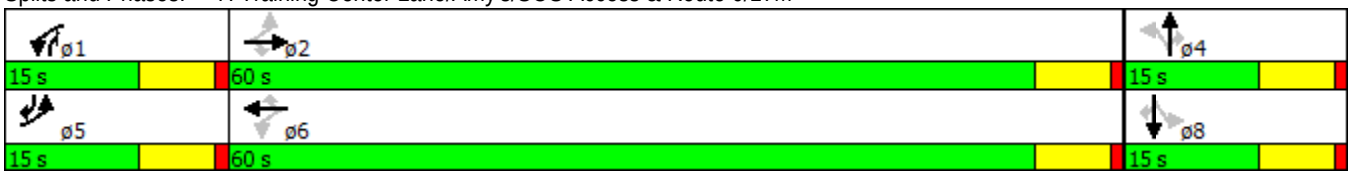


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	1085	16	7	326	101	0	0	0	25	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850						0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1796	1837	1025	1077	1680	1512	0	1863	1188	0	1770	1583
Flt Permitted	0.490			0.123								
Satd. Flow (perm)	926	1837	1025	139	1680	1512	0	1863	1188	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			110						40
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		519			1426			735			542	
Travel Time (s)		7.9			17.7			20.0			12.3	
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	60%	60%	8%	2%	60%	2%	60%	2%	2%	2%
Adj. Flow (vph)	167	1192	18	8	358	110	0	0	0	27	0	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	1192	18	8	358	110	0	0	0	0	27	40
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm			pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4	1		8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	16.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	60.0	60.0	15.0	60.0	60.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	66.7%	66.7%	16.7%	66.7%	66.7%	16.7%	16.7%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	54.0	54.0	9.0	54.0	54.0	9.0	9.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
v/c Ratio	0.19	0.73	0.02	0.05	0.31	0.10					0.18	0.15
Control Delay	2.2	10.7	0.1	3.3	7.0	1.8					39.0	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0					0.0	0.0
Total Delay	2.2	10.7	0.1	3.3	7.0	1.8					39.0	9.8
Queue Length 50th (ft)	0	0	0	0	40	0					12	0
Queue Length 95th (ft)	33	#959	0	4	146	19					40	24
Internal Link Dist (ft)		439			1346			655			462	
Turn Bay Length (ft)	200		100	200		135						
Base Capacity (vph)	892	1625	919	221	1165	1082					215	315
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	0.19	0.73	0.02	0.04	0.31	0.10					0.13	0.13

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 78.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	154	1085	16	7	326	101	0	0	0	25	0	37
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1891	1837	1205	1134	1680	1779	1900	1863	1188	1900	1863	1863
Adj Flow Rate, veh/h	167	1192	18	8	358	110	0	0	0	27	0	40
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	60	60	8	2	2	2	60	2	2	2
Cap, veh/h	733	1324	739	154	1132	1018	0	90	103	158	0	86
Arrive On Green	0.05	0.72	0.72	0.01	0.67	0.67	0.00	0.00	0.00	0.05	0.00	0.05
Sat Flow, veh/h	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Grp Volume(v), veh/h	167	1192	18	8	358	110	0	0	0	27	0	40
Grp Sat Flow(s),veh/h/ln	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Q Serve(g_s), s	2.2	41.4	0.4	0.2	7.1	2.1	0.0	0.0	0.0	1.5	0.0	2.0
Cycle Q Clear(g_c), s	2.2	41.4	0.4	0.2	7.1	2.1	0.0	0.0	0.0	1.5	0.0	2.0
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	733	1324	739	154	1132	1018	0	90	103	158	0	86
V/C Ratio(X)	0.23	0.90	0.02	0.05	0.32	0.11	0.00	0.00	0.00	0.17	0.00	0.46
Avail Cap(c_a), veh/h	839	1324	739	269	1132	1018	0	209	167	248	0	187
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	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.7	8.9	3.2	13.2	5.4	4.6	0.0	0.0	0.0	37.0	0.0	36.8
Incr Delay (d2), s/veh	0.1	10.0	0.1	0.1	0.7	0.2	0.0	0.0	0.0	0.2	0.0	1.4
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	0.0
%ile BackOfQ(50%),veh/ln	1.1	23.9	0.1	0.1	3.5	0.9	0.0	0.0	0.0	0.6	0.0	0.9
LnGrp Delay(d),s/veh	3.7	18.9	3.2	13.2	6.2	4.8	0.0	0.0	0.0	37.2	0.0	38.2
LnGrp LOS	A	B	A	B	A	A				D		D
Approach Vol, veh/h		1377			476			0			67	
Approach Delay, s/veh		16.9			6.0			0.0			37.8	
Approach LOS		B			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	63.8		9.9	10.3	60.0		9.9
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		9.0	9.0	54.0		9.0
Max Q Clear Time (g_c+I1), s	2.2	43.4		0.0	4.2	9.1		4.0
Green Ext Time (p_c), s	0.0	5.2		0.0	0.2	8.4		0.1

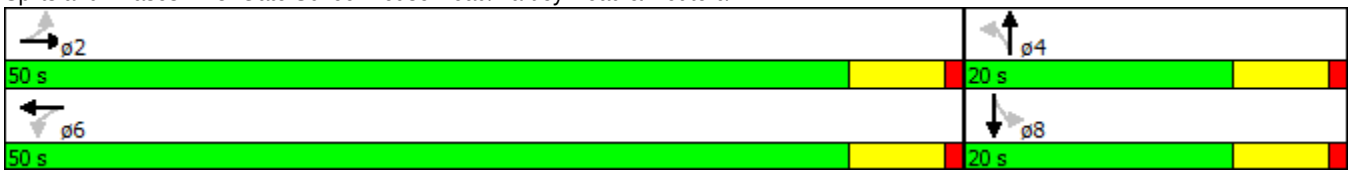
Intersection Summary	
HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	1024	84	0	360	14	79	7	6	6	2	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.990			0.995			0.992			0.916	
Flt Protected		0.999						0.959			0.986	
Satd. Flow (prot)	0	1746	0	0	1770	0	0	1780	0	0	1067	0
Flt Permitted		0.995						0.741			0.900	
Satd. Flow (perm)	0	1739	0	0	1770	0	0	1375	0	0	974	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			5			4			13	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	67%	10%	3%	14%	12%	42%	3%	0%	0%	71%	10%	60%
Adj. Flow (vph)	13	1101	90	0	387	15	85	8	6	6	2	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1204	0	0	402	0	0	99	0	0	21	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.93			0.30			0.53			0.15	
Control Delay		26.5			5.2			36.6			18.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		26.5			5.2			36.6			18.0	
Queue Length 50th (ft)		407			54			38			3	
Queue Length 95th (ft)		#831			116			77			20	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1299			1321			280			206	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.93			0.30			0.35			0.10	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 69.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

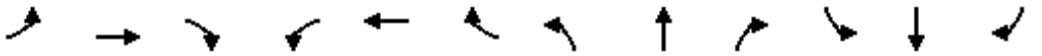
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	1024	84	0	360	14	79	7	6	6	2	12
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1777	1881	1948	1790	1948	1919	1871	1919	1872	1182	1872
Adj Flow Rate, veh/h	13	1101	63	0	387	15	85	8	6	6	2	13
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	72	1146	65	0	1187	46	232	10	8	104	15	54
Arrive On Green	0.73	0.69	0.69	0.00	0.69	0.69	0.12	0.08	0.08	0.12	0.08	0.08
Sat Flow, veh/h	7	1654	94	0	1712	66	1281	121	90	217	181	647
Grp Volume(v), veh/h	1177	0	0	0	0	402	99	0	0	21	0	0
Grp Sat Flow(s),veh/h/ln	1754	0	0	0	0	1779	1492	0	0	1046	0	0
Q Serve(g_s), s	4.9	0.0	0.0	0.0	0.0	4.8	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	30.4	0.0	0.0	0.0	0.0	4.8	3.2	0.0	0.0	1.0	0.0	0.0
Prop In Lane	0.01		0.05	0.00		0.04	0.86		0.06	0.29		0.62
Lane Grp Cap(c), veh/h	1349	0	0	0	0	1233	305	0	0	213	0	0
V/C Ratio(X)	0.87	0.00	0.00	0.00	0.00	0.33	0.32	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	1564	0	0	0	0	1453	558	0	0	385	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	0.0	0.0	0.0	3.3	23.2	0.0	0.0	22.8	0.0	0.0
Incr Delay (d2), s/veh	4.6	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	14.1	0.0	0.0	0.0	0.0	2.4	1.3	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	11.8	0.0	0.0	0.0	0.0	3.3	23.4	0.0	0.0	22.8	0.0	0.0
LnGrp LOS	B					A	C			C		
Approach Vol, veh/h		1177			402			99			21	
Approach Delay, s/veh		11.8			3.3			23.4			22.8	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		43.3		10.5		43.3		10.5
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		32.4		5.2		6.8		3.0
Green Ext Time (p_c), s		5.0		0.2		7.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

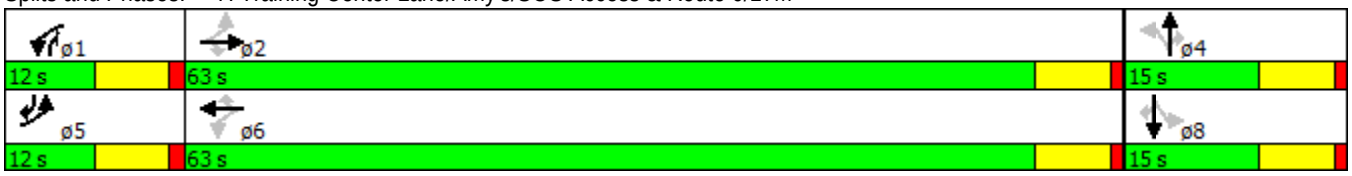


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	1071	49	26	743	53	14	0	32	29	0	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1814	1837	1025	1077	1680	1512	0	1128	1009	0	1597	1392
Flt Permitted	0.257			0.086				0.889			0.889	
Satd. Flow (perm)	491	1837	1025	98	1680	1512	0	1056	1009	0	1495	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109			36			45
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		537			1408			764			522	
Travel Time (s)		8.1			17.5			20.8			11.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	5%	60%	60%	8%	2%	60%	2%	60%	13%	2%	16%
Adj. Flow (vph)	98	1177	54	29	816	58	15	0	35	32	0	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	1177	54	29	816	58	0	15	35	0	32	45
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4	1		8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	16.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	12.0	63.0	63.0	12.0	63.0	63.0	15.0	15.0	12.0	15.0	15.0	12.0
Total Split (%)	13.3%	70.0%	70.0%	13.3%	70.0%	70.0%	16.7%	16.7%	13.3%	16.7%	16.7%	13.3%
Maximum Green (s)	6.0	57.0	57.0	6.0	57.0	57.0	9.0	9.0	6.0	9.0	9.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
v/c Ratio	0.21	0.81	0.07	0.21	0.66	0.05		0.18	0.19		0.27	0.17
Control Delay	3.3	18.5	0.3	6.5	12.4	0.3		42.5	12.0		43.2	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	3.3	18.5	0.3	6.5	12.4	0.3		42.5	12.0		43.2	10.5
Queue Length 50th (ft)	9	542	0	3	269	0		8	0		17	0
Queue Length 95th (ft)	21	#955	2	9	467	3		27	24		45	27
Internal Link Dist (ft)		457			1328			684			442	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	486	1446	830	146	1241	1145		114	197		161	268
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.20	0.81	0.07	0.20	0.66	0.05		0.13	0.18		0.20	0.17

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 83.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	1071	49	26	743	53	14	0	32	29	0	41
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1909	1837	1205	1134	1680	1779	1900	1188	1188	1900	1681	1638
Adj Flow Rate, veh/h	98	1177	54	29	816	58	15	0	35	32	0	45
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	5	60	60	8	2	2	2	60	2	2	16
Cap, veh/h	361	1236	690	126	1098	988	83	0	142	83	0	168
Arrive On Green	0.04	0.67	0.67	0.02	0.65	0.65	0.10	0.00	0.10	0.10	0.00	0.10
Sat Flow, veh/h	1818	1837	1025	1080	1680	1512	0	0	1009	0	0	1392
Grp Volume(v), veh/h	98	1177	54	29	816	58	15	0	35	32	0	45
Grp Sat Flow(s),veh/h/ln	1818	1837	1025	1080	1680	1512	0	0	1009	0	0	1392
Q Serve(g_s), s	1.5	50.9	1.6	0.8	28.6	1.2	0.0	0.0	2.7	0.0	0.0	2.6
Cycle Q Clear(g_c), s	1.5	50.9	1.6	0.8	28.6	1.2	9.0	0.0	2.7	9.0	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	361	1236	690	126	1098	988	83	0	142	83	0	168
V/C Ratio(X)	0.27	0.95	0.08	0.23	0.74	0.06	0.18	0.00	0.25	0.39	0.00	0.27
Avail Cap(c_a), veh/h	419	1236	690	182	1098	988	83	0	142	83	0	168
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	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	1.00
Uniform Delay (d), s/veh	9.9	13.0	4.9	20.3	10.2	5.5	43.6	0.0	33.4	43.6	0.0	34.9
Incr Delay (d2), s/veh	0.1	16.4	0.2	0.3	4.6	0.1	0.4	0.0	0.3	1.1	0.0	0.3
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	30.8	0.5	0.4	14.3	0.5	0.4	0.0	0.8	0.8	0.0	1.0
LnGrp Delay(d),s/veh	10.1	29.4	5.1	20.7	14.8	5.6	44.0	0.0	33.7	44.7	0.0	35.2
LnGrp LOS	B	C	A	C	B	A	D		C	D		D
Approach Vol, veh/h		1329			903			50			77	
Approach Delay, s/veh		27.0			14.4			36.8			39.2	
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	7.5	64.7		15.0	9.2	63.0		15.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	6.0	57.0		9.0	6.0	57.0		9.0
Max Q Clear Time (g_c+I1), s	2.8	52.9		11.0	3.5	30.6		11.0
Green Ext Time (p_c), s	0.0	3.0		0.0	0.0	10.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.7
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	978	142	10	680	13	141	10	11	19	11	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.983			0.997			0.991			0.959	
Flt Protected					0.999			0.958			0.979	
Satd. Flow (prot)	0	1747	0	0	1785	0	0	1776	0	0	1271	0
Flt Permitted		0.992			0.980			0.721			0.850	
Satd. Flow (perm)	0	1733	0	0	1751	0	0	1336	0	0	1104	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			3			5			14	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	12	1052	153	11	731	14	152	11	12	20	12	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1217	0	0	756	0	0	175	0	0	46	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

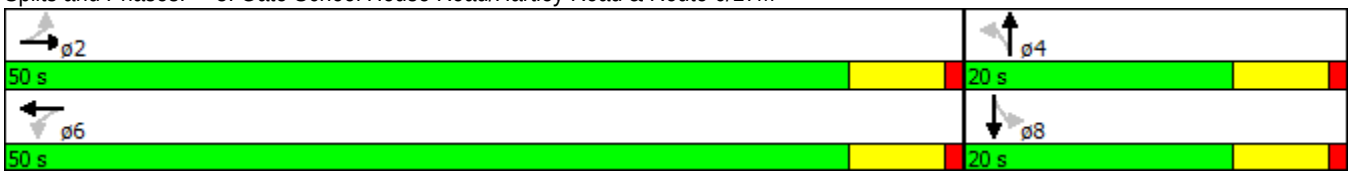
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.06			0.65			0.75			0.23	
Control Delay		59.7			11.2			47.7			21.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		59.7			11.2			47.7			21.2	
Queue Length 50th (ft)		~605			179			68			11	
Queue Length 95th (ft)		#848			303			#148			38	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1150			1156			268			229	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.06			0.65			0.65			0.20	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 71	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

~ 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: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	978	142	10	680	13	141	10	11	19	11	13
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1789	1881	1948	1803	1948	1919	1870	1919	1872	1354	1872
Adj Flow Rate, veh/h	12	1052	126	11	731	14	152	11	12	20	12	14
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	60	1050	125	62	1173	22	285	13	14	137	63	53
Arrive On Green	0.71	0.68	0.68	0.71	0.68	0.68	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	6	1555	185	9	1737	33	1293	94	102	413	449	377
Grp Volume(v), veh/h	1190	0	0	756	0	0	175	0	0	46	0	0
Grp Sat Flow(s),veh/h/ln	1746	0	0	1779	0	0	1489	0	0	1239	0	0
Q Serve(g_s), s	11.5	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	41.1	0.0	0.0	14.8	0.0	0.0	7.0	0.0	0.0	2.0	0.0	0.0
Prop In Lane	0.01		0.11	0.01		0.02	0.87		0.07	0.43		0.30
Lane Grp Cap(c), veh/h	1289	0	0	1312	0	0	358	0	0	291	0	0
V/C Ratio(X)	0.92	0.00	0.00	0.58	0.00	0.00	0.49	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	1294	0	0	1318	0	0	466	0	0	377	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.0	0.0	0.0	5.8	0.0	0.0	26.0	0.0	0.0	24.5	0.0	0.0
Incr Delay (d2), s/veh	10.9	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.1	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	21.2	0.0	0.0	6.5	0.0	0.0	2.9	0.0	0.0	0.7	0.0	0.0
LnGrp Delay(d),s/veh	20.9	0.0	0.0	6.2	0.0	0.0	26.4	0.0	0.0	24.6	0.0	0.0
LnGrp LOS	C			A			C			C		
Approach Vol, veh/h		1190			756			175			46	
Approach Delay, s/veh		20.9			6.2			26.4			24.6	
Approach LOS		C			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		49.8		15.1		49.8		15.1
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		43.1		9.0		16.8		4.0
Green Ext Time (p_c), s		0.7		0.3		9.2		0.4

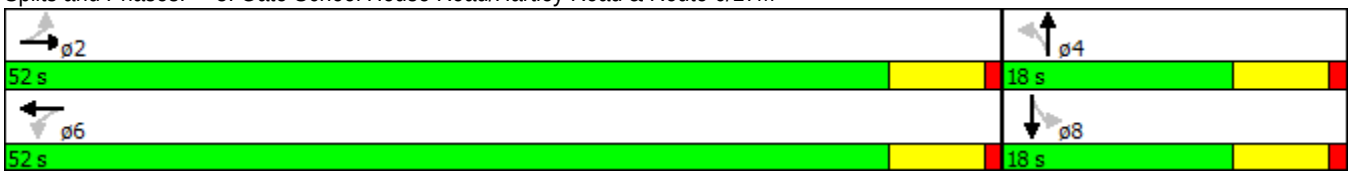
Intersection Summary	
HCM 2010 Ctrl Delay	16.3
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	978	142	10	680	13	141	10	11	19	11	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.983			0.997			0.991			0.959	
Flt Protected					0.999			0.958			0.979	
Satd. Flow (prot)	0	1747	0	0	1785	0	0	1776	0	0	1271	0
Flt Permitted		0.992			0.980			0.721			0.854	
Satd. Flow (perm)	0	1733	0	0	1751	0	0	1336	0	0	1109	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			3			5			14	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	12	1052	153	11	731	14	152	11	12	20	12	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1217	0	0	756	0	0	175	0	0	46	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	52.0	52.0		52.0	52.0		18.0	18.0		18.0	18.0	
Total Split (%)	74.3%	74.3%		74.3%	74.3%		25.7%	25.7%		25.7%	25.7%	
Maximum Green (s)	46.0	46.0		46.0	46.0		12.0	12.0		12.0	12.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.03			0.64			0.82			0.25	
Control Delay		50.2			10.0			58.5			23.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		50.2			10.0			58.5			23.0	
Queue Length 50th (ft)		~589			166			70			12	
Queue Length 95th (ft)		#824			273			#166			39	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1179			1185			227			196	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.03			0.64			0.77			0.23	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 72.2	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ 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.	

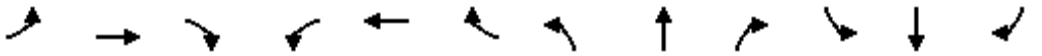
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	978	142	10	680	13	141	10	11	19	11	13
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1789	1881	1948	1803	1948	1919	1870	1919	1872	1354	1872
Adj Flow Rate, veh/h	12	1052	126	11	731	14	152	11	12	20	12	14
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	59	1060	126	61	1184	22	280	13	14	135	62	52
Arrive On Green	0.71	0.68	0.68	0.71	0.68	0.68	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	6	1555	185	9	1738	33	1294	94	102	414	448	377
Grp Volume(v), veh/h	1190	0	0	756	0	0	175	0	0	46	0	0
Grp Sat Flow(s),veh/h/ln	1746	0	0	1779	0	0	1490	0	0	1240	0	0
Q Serve(g_s), s	10.9	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	41.4	0.0	0.0	14.9	0.0	0.0	7.2	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.01		0.11	0.01		0.02	0.87		0.07	0.43		0.30
Lane Grp Cap(c), veh/h	1297	0	0	1321	0	0	352	0	0	286	0	0
V/C Ratio(X)	0.92	0.00	0.00	0.57	0.00	0.00	0.50	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	1316	0	0	1339	0	0	412	0	0	334	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	0.0	0.0	5.7	0.0	0.0	26.8	0.0	0.0	25.2	0.0	0.0
Incr Delay (d2), s/veh	10.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.1	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	21.0	0.0	0.0	6.7	0.0	0.0	3.0	0.0	0.0	0.7	0.0	0.0
LnGrp Delay(d),s/veh	19.9	0.0	0.0	6.1	0.0	0.0	27.2	0.0	0.0	25.3	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		1190			756			175			46	
Approach Delay, s/veh		19.9			6.1			27.2			25.3	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.3		15.2		51.3		15.2
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		46.0		12.0		46.0		12.0
Max Q Clear Time (g_c+I1), s		43.4		9.2		16.9		4.1
Green Ext Time (p_c), s		1.9		0.2		9.4		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B



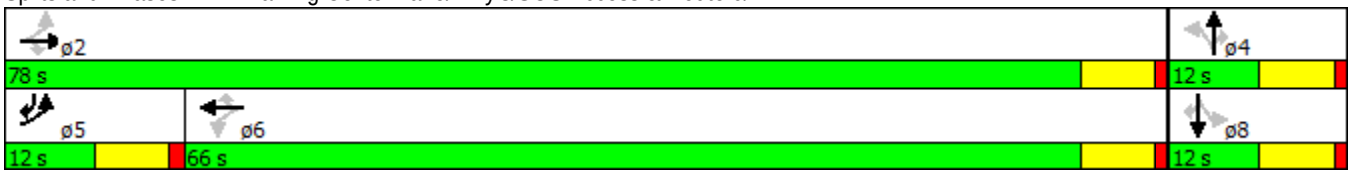
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	780	7	2	1202	87	18	0	9	83	0	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.061			0.353				0.700			0.745	
Satd. Flow (perm)	112	1837	1623	664	1888	1538	0	1317	1599	0	1287	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			109			109			85
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		535			1410			798			469	
Travel Time (s)		8.1			17.5			21.8			10.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	134	830	7	2	1279	93	19	0	10	88	0	182
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	830	7	2	1279	93	0	19	10	0	88	182
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	5
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	12.0	78.0	78.0	66.0	66.0	66.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Split (%)	13.3%	86.7%	86.7%	73.3%	73.3%	73.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%
Maximum Green (s)	6.0	72.0	72.0	60.0	60.0	60.0	6.0	6.0	6.0	6.0	6.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.68	0.57	0.01	0.00	1.01	0.09		0.22	0.05		1.04	0.50
Control Delay	32.3	5.0	0.0	5.0	46.0	1.0		46.1	0.4		152.5	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	32.3	5.0	0.0	5.0	46.0	1.0		46.1	0.4		152.5	22.4
Queue Length 50th (ft)	23	127	0	0	~695	0		10	0		~53	48
Queue Length 95th (ft)	#105	191	0	3	#1024	11		33	0		#148	112
Internal Link Dist (ft)		455			1330			718			389	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	198	1469	1305	443	1261	1063		87	208		85	367
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.68	0.57	0.01	0.00	1.01	0.09		0.22	0.05		1.04	0.50

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ 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: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	126	780	7	2	1202	87	18	0	9	83	0	171
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	134	830	7	2	1279	93	19	0	10	88	0	182
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	175	1469	1298	499	1314	1064	80	0	107	80	0	1134
Arrive On Green	0.04	0.80	0.80	0.69	0.69	0.69	0.07	0.00	0.07	0.07	0.00	0.07
Sat Flow, veh/h	1749	1837	1623	660	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	134	830	7	2	1279	93	19	0	10	88	0	182
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	660	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	1.8	14.8	0.1	0.1	57.2	1.8	0.0	0.0	0.5	0.0	0.0	3.0
Cycle Q Clear(g_c), s	1.8	14.8	0.1	5.2	57.2	1.8	6.0	0.0	0.5	6.0	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	1469	1298	499	1314	1064	80	0	107	80	0	1134
V/C Ratio(X)	0.77	0.56	0.01	0.00	0.97	0.09	0.24	0.00	0.09	1.10	0.00	0.16
Avail Cap(c_a), veh/h	219	1469	1298	499	1314	1064	80	0	107	80	0	1134
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	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	1.00
Uniform Delay (d), s/veh	25.4	3.3	1.8	6.0	13.1	4.6	45.0	0.0	39.4	45.0	0.0	3.0
Incr Delay (d2), s/veh	9.0	1.6	0.0	0.0	19.2	0.2	0.6	0.0	0.1	130.4	0.0	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	0.3	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	8.0	0.0	0.0	36.1	0.8	0.5	0.0	0.2	4.9	0.0	4.5
LnGrp Delay(d),s/veh	34.4	4.9	1.8	6.0	32.3	4.7	45.6	0.0	39.6	175.7	0.0	3.0
LnGrp LOS	C	A	A	A	C	A	D		D	F		A
Approach Vol, veh/h		971			1374			29			270	
Approach Delay, s/veh		8.9			30.4			43.5			59.3	
Approach LOS		A			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		78.0		12.0	9.8	68.2		12.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		72.0		6.0	6.0	60.0		6.0
Max Q Clear Time (g_c+I1), s		16.8		8.0	3.8	59.2		8.0
Green Ext Time (p_c), s		13.2		0.0	0.1	0.7		0.0

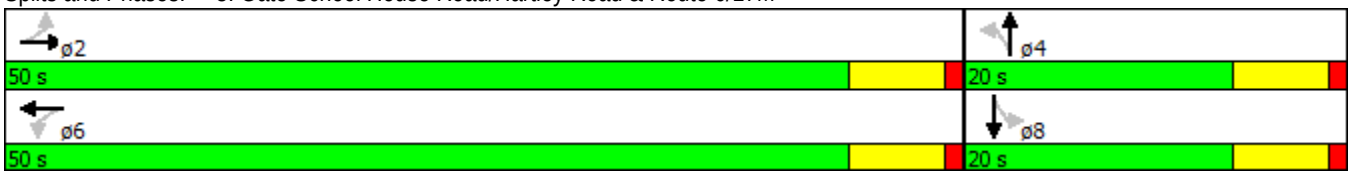
Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	734	125	11	1118	12	165	10	10	10	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.981			0.999			0.993			0.932	
Flt Protected		0.999						0.957			0.988	
Satd. Flow (prot)	0	1804	0	0	1879	0	0	1768	0	0	1482	0
Flt Permitted		0.963			0.990			0.718			0.913	
Satd. Flow (perm)	0	1739	0	0	1860	0	0	1326	0	0	1370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			1			4			22	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	20	789	134	12	1202	13	177	11	11	11	11	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	943	0	0	1227	0	0	199	0	0	44	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.83			1.01			0.83			0.17	
Control Delay		18.1			44.6			55.5			16.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		18.1			44.6			55.5			16.4	
Queue Length 50th (ft)		278			~591			80			8	
Queue Length 95th (ft)		#570			#826			#179			33	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1143			1214			262			285	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.83			1.01			0.76			0.15	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 71.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ 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.	

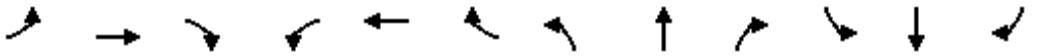
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	734	125	11	1118	12	165	10	10	10	10	20
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1853	1881	1948	1893	1948	1919	1860	1919	1872	1610	1872
Adj Flow Rate, veh/h	20	789	107	12	1202	13	177	11	11	11	11	22
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	67	1024	137	60	1218	13	309	13	13	103	82	117
Arrive On Green	0.69	0.66	0.66	0.69	0.66	0.66	0.19	0.16	0.16	0.19	0.16	0.16
Sat Flow, veh/h	17	1556	208	6	1850	20	1290	80	80	220	517	736
Grp Volume(v), veh/h	916	0	0	1227	0	0	199	0	0	44	0	0
Grp Sat Flow(s),veh/h/ln	1780	0	0	1876	0	0	1451	0	0	1473	0	0
Q Serve(g_s), s	0.0	0.0	0.0	9.8	0.0	0.0	6.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.9	0.0	0.0	38.9	0.0	0.0	8.3	0.0	0.0	1.7	0.0	0.0
Prop In Lane	0.02		0.12	0.01		0.01	0.89		0.06	0.25		0.50
Lane Grp Cap(c), veh/h	1282	0	0	1348	0	0	378	0	0	347	0	0
V/C Ratio(X)	0.71	0.00	0.00	0.91	0.00	0.00	0.53	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	1301	0	0	1368	0	0	454	0	0	421	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.5	0.0	0.0	10.4	0.0	0.0	25.7	0.0	0.0	23.7	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	9.0	0.0	0.0	0.4	0.0	0.0	0.1	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	10.3	0.0	0.0	21.3	0.0	0.0	3.3	0.0	0.0	0.7	0.0	0.0
LnGrp Delay(d),s/veh	9.1	0.0	0.0	19.4	0.0	0.0	26.2	0.0	0.0	23.8	0.0	0.0
LnGrp LOS	A			B			C			C		
Approach Vol, veh/h		916			1227			199			44	
Approach Delay, s/veh		9.1			19.4			26.2			23.8	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		49.3		16.4		49.3		16.4
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		23.9		10.3		40.9		3.7
Green Ext Time (p_c), s		9.6		0.3		2.4		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B



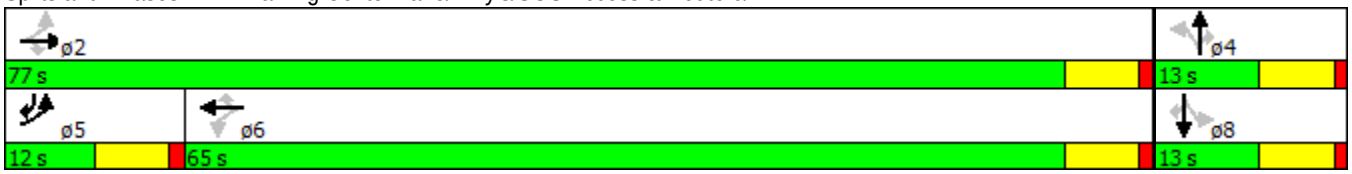
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	767	5	5	1215	36	5	0	5	37	0	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.056			0.358				0.976			0.976	
Satd. Flow (perm)	103	1837	1623	673	1888	1538	0	1836	1599	0	1686	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			109			109			79
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		507			1447			776			433	
Travel Time (s)		7.7			17.9			21.2			9.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	54	816	5	5	1293	38	5	0	5	39	0	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	816	5	5	1293	38	0	5	5	0	39	93
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	5
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	12.0	77.0	77.0	65.0	65.0	65.0	13.0	13.0	13.0	13.0	13.0	12.0
Total Split (%)	13.3%	85.6%	85.6%	72.2%	72.2%	72.2%	14.4%	14.4%	14.4%	14.4%	14.4%	13.3%
Maximum Green (s)	6.0	71.0	71.0	59.0	59.0	59.0	7.0	7.0	7.0	7.0	7.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.30	0.51	0.00	0.01	0.91	0.03		0.04	0.02		0.33	0.33
Control Delay	7.5	4.0	0.0	5.4	24.9	0.1		39.2	0.2		46.5	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	7.5	4.0	0.0	5.4	24.9	0.1		39.2	0.2		46.5	12.8
Queue Length 50th (ft)	5	133	0	1	~796	0		3	0		21	7
Queue Length 95th (ft)	18	200	0	5	#1052	0		14	0		53	46
Internal Link Dist (ft)		427			1367			696			353	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	199	1604	1421	507	1422	1185		146	228		135	298
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.27	0.51	0.00	0.01	0.91	0.03		0.03	0.02		0.29	0.31

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 87.8
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ 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.

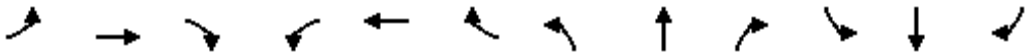
Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	51	767	5	5	1215	36	5	0	5	37	0	87
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	54	816	5	5	1293	38	5	0	5	39	0	93
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	145	1449	1280	496	1325	1073	80	0	124	80	0	1159
Arrive On Green	0.02	0.79	0.79	0.70	0.70	0.70	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1749	1837	1623	670	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	54	816	5	5	1293	38	5	0	5	39	0	93
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	670	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	0.7	15.2	0.1	0.3	58.0	0.7	0.0	0.0	0.3	0.0	0.0	1.3
Cycle Q Clear(g_c), s	0.7	15.2	0.1	7.2	58.0	0.7	7.0	0.0	0.3	7.0	0.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	1449	1280	496	1325	1073	80	0	124	80	0	1159
V/C Ratio(X)	0.37	0.56	0.00	0.01	0.98	0.04	0.06	0.00	0.04	0.49	0.00	0.08
Avail Cap(c_a), veh/h	218	1449	1280	496	1325	1073	80	0	124	80	0	1159
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	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	1.00
Uniform Delay (d), s/veh	25.4	3.6	2.0	6.5	12.9	4.2	45.0	0.0	38.4	45.0	0.0	2.4
Incr Delay (d2), s/veh	0.6	1.6	0.0	0.0	19.5	0.1	0.1	0.0	0.0	1.7	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	1.0	8.1	0.0	0.1	37.0	0.3	0.1	0.0	0.1	1.0	0.0	2.3
LnGrp Delay(d),s/veh	26.0	5.2	2.0	6.6	32.4	4.3	45.1	0.0	38.4	46.7	0.0	2.4
LnGrp LOS	C	A	A	A	C	A	D		D	D		A
Approach Vol, veh/h		875			1336			10			132	
Approach Delay, s/veh		6.5			31.5			41.8			15.5	
Approach LOS		A			C			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		77.0		13.0	8.2	68.8		13.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		71.0		7.0	6.0	59.0		7.0
Max Q Clear Time (g_c+I1), s		17.2		9.0	2.7	60.0		9.0
Green Ext Time (p_c), s		12.9		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.4
HCM 2010 LOS	C

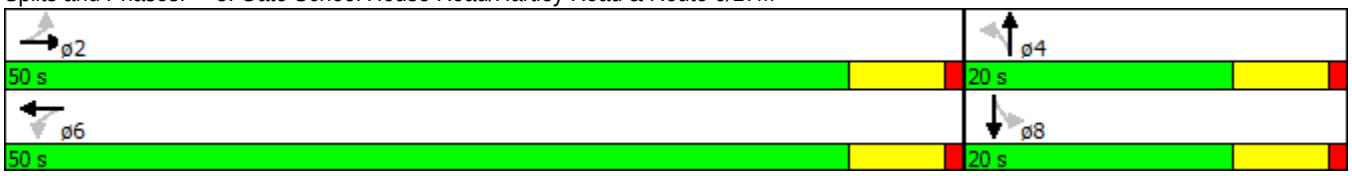


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	713	112	18	1090	20	129	12	17	11	11	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.982			0.998			0.986			0.944	
Flt Protected		0.999			0.999			0.961			0.986	
Satd. Flow (prot)	0	1805	0	0	1875	0	0	1763	0	0	1494	0
Flt Permitted		0.965			0.982			0.737			0.899	
Satd. Flow (perm)	0	1744	0	0	1843	0	0	1352	0	0	1362	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			3			8			17	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	19	767	120	19	1172	22	139	13	18	12	12	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	906	0	0	1213	0	0	170	0	0	41	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.78			0.99			0.74			0.17	
Control Delay		15.2			39.2			45.4			18.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.2			39.2			45.4			18.0	
Queue Length 50th (ft)		239			~510			64			9	
Queue Length 95th (ft)		#485			#817			#138			33	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1164			1224			274			284	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.78			0.99			0.62			0.14	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ 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: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	713	112	18	1090	20	129	12	17	11	11	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1852	1881	1948	1893	1948	1919	1861	1919	1872	1605	1872
Adj Flow Rate, veh/h	19	767	93	19	1172	22	139	13	18	12	12	17
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	70	1060	127	67	1216	23	272	16	22	111	83	84
Arrive On Green	0.70	0.67	0.67	0.70	0.67	0.67	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	16	1584	189	12	1818	34	1204	113	156	262	596	608
Grp Volume(v), veh/h	879	0	0	1213	0	0	170	0	0	41	0	0
Grp Sat Flow(s),veh/h/ln	1790	0	0	1864	0	0	1473	0	0	1465	0	0
Q Serve(g_s), s	0.0	0.0	0.0	9.9	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	18.5	0.0	0.0	35.1	0.0	0.0	6.6	0.0	0.0	1.5	0.0	0.0
Prop In Lane	0.02		0.11	0.02		0.02	0.82		0.11	0.29		0.41
Lane Grp Cap(c), veh/h	1313	0	0	1365	0	0	357	0	0	325	0	0
V/C Ratio(X)	0.67	0.00	0.00	0.89	0.00	0.00	0.48	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	1375	0	0	1432	0	0	478	0	0	442	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	0.0	9.1	0.0	0.0	25.1	0.0	0.0	23.5	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	6.7	0.0	0.0	0.4	0.0	0.0	0.1	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.0	18.3	0.0	0.0	2.7	0.0	0.0	0.6	0.0	0.0
LnGrp Delay(d),s/veh	7.4	0.0	0.0	15.8	0.0	0.0	25.4	0.0	0.0	23.6	0.0	0.0
LnGrp LOS	A			B			C			C		
Approach Vol, veh/h		879			1213			170			41	
Approach Delay, s/veh		7.4			15.8			25.4			23.6	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		47.7		14.7		47.7		14.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		20.5		8.6		37.1		3.5
Green Ext Time (p_c), s		9.9		0.3		4.6		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

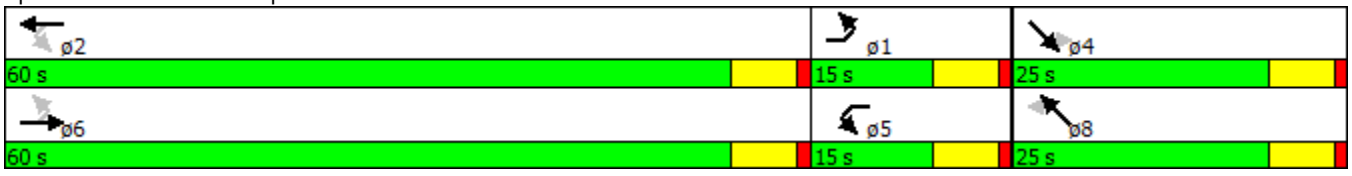
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	74	616	87	42	928	65	38	55	90	113	65	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	13	12	12	12	12
Grade (%)		-5%			-1%			4%			-5%	
Storage Length (ft)	200		0	200		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	86			86			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		0.981			0.990			0.934			0.992	
Flt Protected	0.950			0.950				0.990			0.971	
Satd. Flow (prot)	1729	1873	0	1711	1882	0	0	1707	0	0	1798	0
Flt Permitted	0.074			0.214				0.890			0.605	
Satd. Flow (perm)	135	1873	0	386	1882	0	0	1534	0	0	1120	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			5			43			3	
Link Speed (mph)		55			55			30			35	
Link Distance (ft)		687			4159			556			794	
Travel Time (s)		8.5			51.6			12.6			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	2%	2%	6%	4%	1%	1%	2%	7%	2%	9%	1%
Adj. Flow (vph)	78	648	92	44	977	68	40	58	95	119	68	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	740	0	44	1045	0	0	193	0	0	198	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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (ft)	83	83		83	83		50	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		0	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6			2			4			8		
Detector Phase	1	6		5	2		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	60.0		15.0	60.0		25.0	25.0		25.0	25.0	
Total Split (%)	15.0%	60.0%		15.0%	60.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	9.0	54.0		9.0	54.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.42	0.69		0.12	0.96			0.58			0.90	
Control Delay	25.7	20.6		7.1	41.8			35.4			79.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	25.7	20.6		7.1	41.8			35.4			79.7	
Queue Length 50th (ft)	14	386		8	601			84			118	
Queue Length 95th (ft)	41	479		18	#958			161			#260	
Internal Link Dist (ft)		607			4079			476			714	
Turn Bay Length (ft)	200			200								
Base Capacity (vph)	241	1123		398	1084			344			229	
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	0.32	0.66		0.11	0.96			0.56			0.86	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 94.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Maple Ave/6 1/2 Station Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	74	616	87	42	928	65	38	55	90	113	65	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1820	1909	1948	1801	1913	1910	1862	1857	1862	1948	1866	1948
Adj Flow Rate, veh/h	78	648	71	44	977	57	40	58	95	119	68	11
Adj No. of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	2	2	6	4	4	2	2	2	9	9	9
Cap, veh/h	149	700	77	438	1025	60	97	104	144	201	91	13
Arrive On Green	0.04	0.41	0.41	0.19	0.57	0.57	0.20	0.17	0.17	0.20	0.17	0.17
Sat Flow, veh/h	1733	1691	185	1716	1790	104	253	598	824	751	520	75
Grp Volume(v), veh/h	78	0	719	44	0	1034	193	0	0	198	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	1877	1716	0	1895	1674	0	0	1346	0	0
Q Serve(g_s), s	0.0	0.0	30.1	0.0	0.0	42.5	0.0	0.0	0.0	3.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	30.1	0.0	0.0	42.5	8.5	0.0	0.0	11.8	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.06	0.21		0.49	0.60		0.06
Lane Grp Cap(c), veh/h	149	0	777	438	0	1085	385	0	0	337	0	0
V/C Ratio(X)	0.52	0.00	0.93	0.10	0.00	0.95	0.50	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	276	0	1224	438	0	1236	472	0	0	415	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	38.5	0.0	23.0	26.4	0.0	16.7	31.5	0.0	0.0	32.5	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	5.9	0.0	0.0	14.2	0.4	0.0	0.0	0.6	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	16.8	0.8	0.0	26.1	3.9	0.0	0.0	4.2	0.0	0.0
LnGrp Delay(d),s/veh	39.5	0.0	28.9	26.5	0.0	30.8	31.9	0.0	0.0	33.1	0.0	0.0
LnGrp LOS	D		C	C		C	C			C		
Approach Vol, veh/h		797			1078			193			198	
Approach Delay, s/veh		29.9			30.6			31.9			33.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.0	53.4		20.4	22.1	40.3		20.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		19.0	9.0	54.0		19.0
Max Q Clear Time (g_c+I1), s	2.0	44.5		10.5	2.0	32.1		13.8
Green Ext Time (p_c), s	0.1	2.9		0.9	0.1	2.2		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	30.7
HCM 2010 LOS	C

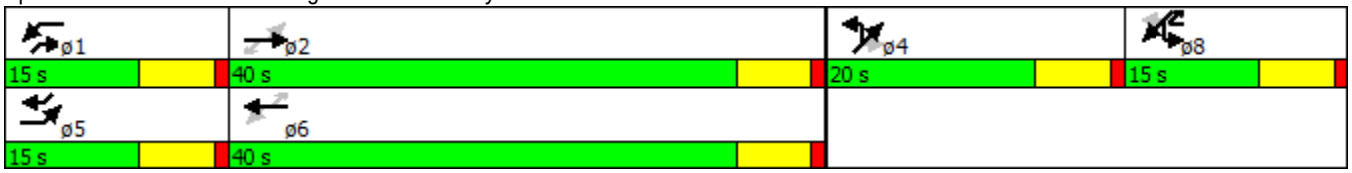
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	35	717	113	42	777	26	101	0	63	38	0	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1666	1891	1591	1671	1925	1495	0	1752	1509	0	1492	1346
Flt Permitted	0.102			0.149				0.950			0.950	
Satd. Flow (perm)	179	1891	1591	262	1925	1495	0	1752	1509	0	1492	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182			109			109			109
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		521			1429			802			646	
Travel Time (s)		7.9			17.7			21.9			14.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	10%	2%	3%	8%	2%	8%	3%	2%	7%	21%	2%	20%
Adj. Flow (vph)	37	763	120	45	827	28	107	0	67	40	0	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	763	120	45	827	28	0	107	67	0	40	76
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	Split	NA	pm+ov	Split	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	5	2		1	6	8	4	4	1	8	8	5
Permitted Phases	2		2	6		6			4			8
Detector Phase	5	2	2	1	6	8	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	11.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	40.0	40.0	15.0	40.0	15.0	20.0	20.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	44.4%	44.4%	16.7%	44.4%	16.7%	22.2%	22.2%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	34.0	34.0	9.0	34.0	9.0	14.0	14.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min	None	None	None	None	None	None	None
v/c Ratio	0.17	0.73	0.13	0.17	0.78	0.03		0.50	0.17		0.30	0.23
Control Delay	10.7	26.7	1.1	10.3	28.5	0.0		41.2	2.1		41.2	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	10.7	26.7	1.1	10.3	28.5	0.0		41.2	2.1		41.2	4.3
Queue Length 50th (ft)	7	351	0	9	395	0		51	0		19	0
Queue Length 95th (ft)	23	#681	10	27	#749	0		103	8		52	18
Internal Link Dist (ft)		441			1349			722			566	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	298	1042	958	340	1064	1004		342	456		187	387
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.12	0.73	0.13	0.13	0.78	0.03		0.31	0.15		0.21	0.20

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 73.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

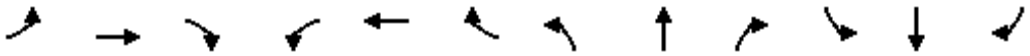
Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	35	717	113	42	777	26	101	0	63	38	0	71
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1753	1891	1872	1759	1937	1759	1900	1845	1776	1900	1570	1583
Adj Flow Rate, veh/h	37	763	120	45	827	28	107	0	67	40	0	76
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	2	3	8	2	8	2	2	7	2	2	20
Cap, veh/h	182	874	736	205	901	830	157	0	168	112	0	135
Arrive On Green	0.02	0.46	0.46	0.03	0.47	0.47	0.09	0.00	0.09	0.08	0.00	0.08
Sat Flow, veh/h	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Grp Volume(v), veh/h	37	763	120	45	827	28	107	0	67	40	0	76
Grp Sat Flow(s),veh/h/ln	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Q Serve(g_s), s	0.8	25.1	3.0	1.0	27.5	0.6	4.1	0.0	2.8	1.8	0.0	3.7
Cycle Q Clear(g_c), s	0.8	25.1	3.0	1.0	27.5	0.6	4.1	0.0	2.8	1.8	0.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	874	736	205	901	830	157	0	168	112	0	135
V/C Ratio(X)	0.20	0.87	0.16	0.22	0.92	0.03	0.68	0.00	0.40	0.36	0.00	0.56
Avail Cap(c_a), veh/h	363	932	785	381	955	871	357	0	340	195	0	209
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	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	1.00
Uniform Delay (d), s/veh	15.1	16.7	10.8	14.2	17.2	7.0	30.4	0.0	28.5	30.3	0.0	29.6
Incr Delay (d2), s/veh	0.2	8.2	0.0	0.2	12.5	0.0	1.9	0.0	0.6	0.7	0.0	1.4
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	0.0
%ile BackOfQ(50%),veh/ln	0.4	14.9	1.3	0.5	17.6	0.3	2.0	0.0	1.2	0.7	0.0	1.4
LnGrp Delay(d),s/veh	15.3	25.0	10.8	14.4	29.7	7.0	32.4	0.0	29.0	31.0	0.0	31.0
LnGrp LOS	B	C	B	B	C	A	C		C	C		C
Approach Vol, veh/h		920			900			174			116	
Approach Delay, s/veh		22.7			28.2			31.1			31.0	
Approach LOS		C			C			C			C	

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	37.9		12.2	7.5	38.1		11.2
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	34.0		14.0	9.0	34.0		9.0
Max Q Clear Time (g_c+I1), s	3.0	27.1		6.1	2.8	29.5		5.7
Green Ext Time (p_c), s	0.0	3.6		0.3	0.0	2.6		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

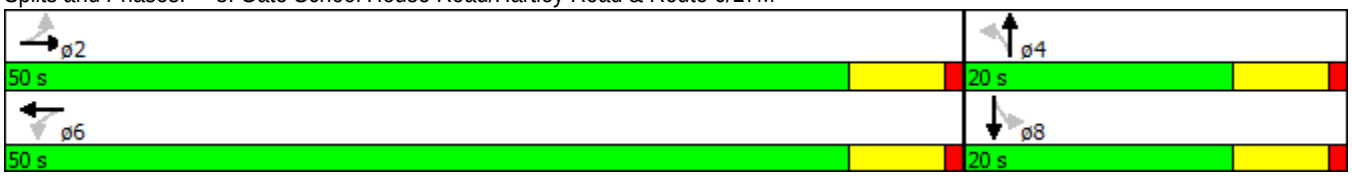


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	686	107	12	735	10	109	7	15	12	7	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.982			0.998			0.984			0.949	
Flt Protected		0.999			0.999			0.960			0.980	
Satd. Flow (prot)	0	1851	0	0	1941	0	0	1798	0	0	1414	0
Flt Permitted		0.982			0.984			0.739			0.850	
Satd. Flow (perm)	0	1820	0	0	1912	0	0	1384	0	0	1227	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			2			8			12	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	42%
Adj. Flow (vph)	16	730	114	13	782	11	116	7	16	13	7	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	860	0	0	806	0	0	139	0	0	32	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.70			0.63			0.53			0.14	
Control Delay		11.8			10.2			28.9			17.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		11.8			10.2			28.9			17.6	
Queue Length 50th (ft)		168			148			34			5	
Queue Length 95th (ft)		364			308			102			29	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1540			1615			414			370	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.56			0.50			0.34			0.09	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 51.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	686	107	12	735	10	109	7	15	12	7	11
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1899	1881	1948	1960	1948	1919	1903	1919	1872	1521	1872
Adj Flow Rate, veh/h	16	730	87	13	782	11	116	7	16	13	7	12
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	0	0	0	0	0	0
Cap, veh/h	107	911	107	105	1056	15	327	9	21	186	51	61
Arrive On Green	0.61	0.56	0.56	0.61	0.56	0.56	0.17	0.12	0.12	0.17	0.12	0.12
Sat Flow, veh/h	14	1635	192	11	1897	26	1251	75	173	418	429	508
Grp Volume(v), veh/h	833	0	0	806	0	0	139	0	0	32	0	0
Grp Sat Flow(s),veh/h/ln	1842	0	0	1934	0	0	1499	0	0	1354	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.4	0.0	0.0	10.8	0.0	0.0	3.0	0.0	0.0	0.7	0.0	0.0
Prop In Lane	0.02		0.10	0.02		0.01	0.83		0.12	0.41		0.37
Lane Grp Cap(c), veh/h	1224	0	0	1280	0	0	438	0	0	371	0	0
V/C Ratio(X)	0.68	0.00	0.00	0.63	0.00	0.00	0.32	0.00	0.00	0.09	0.00	0.00
Avail Cap(c_a), veh/h	2361	0	0	2477	0	0	814	0	0	697	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.4	0.0	0.0	6.0	0.0	0.0	14.9	0.0	0.0	14.3	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	0.0	5.0	0.0	0.0	1.2	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	6.6	0.0	0.0	6.2	0.0	0.0	15.0	0.0	0.0	14.4	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		833			806			139			32	
Approach Delay, s/veh		6.6			6.2			15.0			14.4	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.7		10.4		26.7		10.4
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		14.4		5.0		12.8		2.7
Green Ext Time (p_c), s		6.3		0.3		6.3		0.3

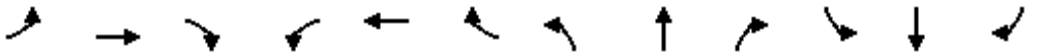
Intersection Summary	
HCM 2010 Ctrl Delay	7.2
HCM 2010 LOS	A

AMY'S KITCHEN/SCIENCE OF THE SOUL

RESPONSE TO VHB COMMENT HK-7

REVISED CAPACITY ANALYSIS WITH ADJUSTED ARRIVAL AND DEPARTURE DISTRIBUTIONS

2033 SOS EVENT CONDITIONS ANALYSIS

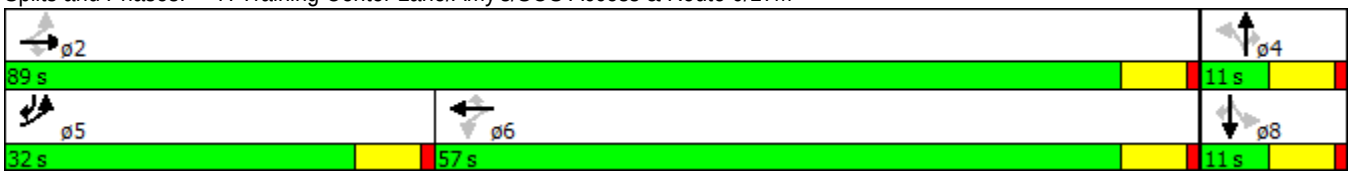


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	623	1048	48	26	725	683	14	0	31	26	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1814	1837	1025	1077	1680	1512	0	1128	1009	0	1597	1392
Flt Permitted	0.126			0.261								
Satd. Flow (perm)	241	1837	1025	296	1680	1512	0	1188	1009	0	1681	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			49			236			98			43
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		537			1414			764			522	
Travel Time (s)		8.1			17.5			20.8			11.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	5%	60%	60%	8%	2%	60%	2%	60%	13%	2%	16%
Adj. Flow (vph)	685	1152	53	29	797	751	15	0	34	29	0	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	685	1152	53	29	797	751	0	15	34	0	29	43
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6			4			8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	32.0	89.0	89.0	57.0	57.0	57.0	11.0	11.0	11.0	11.0	11.0	32.0
Total Split (%)	32.0%	89.0%	89.0%	57.0%	57.0%	57.0%	11.0%	11.0%	11.0%	11.0%	11.0%	32.0%
Maximum Green (s)	26.0	83.0	83.0	51.0	51.0	51.0	5.0	5.0	5.0	5.0	5.0	26.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	1.07	0.70	0.06	0.18	0.89	0.82		0.25	0.24		0.34	0.09
Control Delay	81.4	5.8	0.6	16.9	34.8	22.1		55.9	3.8		56.3	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	81.4	5.8	0.6	16.9	34.8	22.1		55.9	3.8		56.3	6.9
Queue Length 50th (ft)	~414	236	0	10	453	287		9	0		18	0
Queue Length 95th (ft)	#638	378	5	30	#720	#555		31	0		48	22
Internal Link Dist (ft)		457			1334			684			442	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	639	1649	925	158	898	918		62	145		88	500
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	1.07	0.70	0.06	0.18	0.89	0.82		0.24	0.23		0.33	0.09

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 95.6	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ 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: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	623	1048	48	26	725	683	14	0	31	26	0	39
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1909	1837	1205	1134	1680	1779	1900	1188	1188	1900	1681	1638
Adj Flow Rate, veh/h	685	1152	53	29	797	751	15	0	34	29	0	43
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	5	60	60	8	2	2	2	60	2	2	16
Cap, veh/h	568	1524	850	215	857	771	72	0	50	72	0	780
Arrive On Green	0.26	0.83	0.83	0.51	0.51	0.51	0.05	0.00	0.05	0.05	0.00	0.05
Sat Flow, veh/h	1818	1837	1025	281	1680	1512	0	0	1009	0	0	1392
Grp Volume(v), veh/h	685	1152	53	29	797	751	15	0	34	29	0	43
Grp Sat Flow(s),veh/h/ln	1818	1837	1025	281	1680	1512	0	0	1009	0	0	1392
Q Serve(g_s), s	26.0	28.6	0.9	5.6	44.2	48.4	0.0	0.0	3.3	0.0	0.0	1.4
Cycle Q Clear(g_c), s	26.0	28.6	0.9	5.6	44.2	48.4	5.0	0.0	3.3	5.0	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	568	1524	850	215	857	771	72	0	50	72	0	780
V/C Ratio(X)	1.21	0.76	0.06	0.13	0.93	0.97	0.21	0.00	0.67	0.40	0.00	0.06
Avail Cap(c_a), veh/h	568	1524	850	215	857	771	72	0	50	72	0	780
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	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	1.00
Uniform Delay (d), s/veh	31.2	3.9	1.5	13.4	22.8	23.9	50.0	0.0	46.7	50.0	0.0	10.0
Incr Delay (d2), s/veh	108.6	3.5	0.1	1.3	17.8	26.6	0.5	0.0	25.1	1.3	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	32.8	15.3	0.3	0.5	24.6	25.7	0.4	0.0	1.3	0.8	0.0	1.2
LnGrp Delay(d),s/veh	139.8	7.4	1.7	14.7	40.7	50.5	50.5	0.0	71.8	51.3	0.0	10.0
LnGrp LOS	F	A	A	B	D	D	D		E	D		A
Approach Vol, veh/h		1890			1577			49			72	
Approach Delay, s/veh		55.2			44.9			65.3			26.7	
Approach LOS		E			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		89.0		11.0	32.0	57.0		11.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		83.0		5.0	26.0	51.0		5.0
Max Q Clear Time (g_c+I1), s		30.6		7.0	28.0	50.4		7.0
Green Ext Time (p_c), s		19.6		0.0	0.0	0.6		0.0

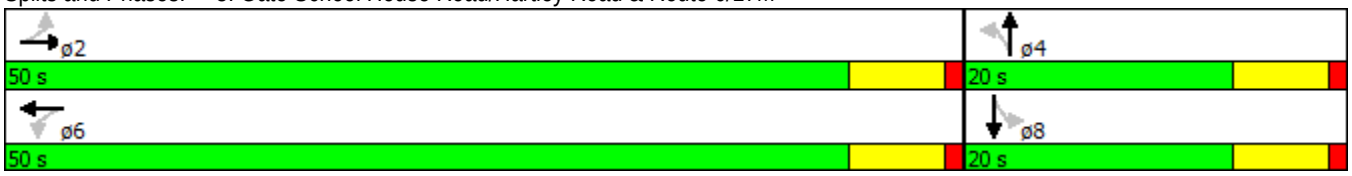
Intersection Summary	
HCM 2010 Ctrl Delay	50.2
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	952	138	10	1196	13	149	10	11	18	11	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.983			0.999			0.991			0.895	
Flt Protected		0.999						0.958			0.993	
Satd. Flow (prot)	0	1745	0	0	1792	0	0	1775	0	0	1212	0
Flt Permitted		0.983			0.988			0.687			0.945	
Satd. Flow (perm)	0	1717	0	0	1771	0	0	1273	0	0	1153	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			1			5			71	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	12	1024	148	11	1286	14	160	11	12	19	12	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1184	0	0	1311	0	0	183	0	0	140	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.05			1.13			0.80			0.53	
Control Delay		57.4			88.7			53.0			21.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		57.4			88.7			53.0			21.6	
Queue Length 50th (ft)		~587			~697			72			26	
Queue Length 95th (ft)		#820			#936			#164			77	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1127			1156			257			286	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.05			1.13			0.71			0.49	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70.4	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
~ 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.	

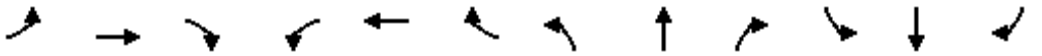
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	952	138	10	1196	13	149	10	11	18	11	101
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1789	1881	1948	1806	1948	1919	1870	1919	1872	1363	1872
Adj Flow Rate, veh/h	12	1024	121	11	1286	14	160	11	12	19	12	109
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	58	1004	118	57	1139	12	286	16	14	78	31	171
Arrive On Green	0.67	0.65	0.65	0.67	0.65	0.65	0.21	0.18	0.18	0.21	0.18	0.18
Sat Flow, veh/h	6	1556	183	5	1764	19	1045	92	80	101	171	958
Grp Volume(v), veh/h	1157	0	0	1311	0	0	183	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1745	0	0	1789	0	0	1217	0	0	1231	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.3	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	43.7	0.0	0.0	46.0	0.0	0.0	10.0	0.0	0.0	7.1	0.0	0.0
Prop In Lane	0.01		0.10	0.01		0.01	0.87		0.07	0.14		0.78
Lane Grp Cap(c), veh/h	1231	0	0	1260	0	0	352	0	0	316	0	0
V/C Ratio(X)	0.94	0.00	0.00	1.04	0.00	0.00	0.52	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	1231	0	0	1260	0	0	387	0	0	347	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.0	0.0	0.0	13.3	0.0	0.0	26.4	0.0	0.0	25.8	0.0	0.0
Incr Delay (d2), s/veh	13.6	0.0	0.0	36.5	0.0	0.0	0.4	0.0	0.0	0.4	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	23.4	0.0	0.0	35.5	0.0	0.0	3.2	0.0	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	25.5	0.0	0.0	49.8	0.0	0.0	26.8	0.0	0.0	26.2	0.0	0.0
LnGrp LOS	C			F			C			C		
Approach Vol, veh/h		1157			1311			183			140	
Approach Delay, s/veh		25.5			49.8			26.8			26.2	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		18.2		50.0		18.2
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		45.7		12.0		48.0		9.1
Green Ext Time (p_c), s		0.0		0.2		0.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	37.0
HCM 2010 LOS	D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	623	1048	48	26	725	683	14	0	31	26	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1814	1837	1025	1077	1680	1512	0	1128	1009	0	1597	1392
Flt Permitted	0.126			0.261								
Satd. Flow (perm)	241	1837	1025	296	1680	1512	0	1188	1009	0	1681	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			49			236			98			43
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		537			1414			764			522	
Travel Time (s)		8.1			17.5			20.8			11.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	5%	60%	60%	8%	2%	60%	2%	60%	13%	2%	16%
Adj. Flow (vph)	685	1152	53	29	797	751	15	0	34	29	0	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	685	1152	53	29	797	751	0	15	34	0	29	43
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2			6			4			8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	952	138	10	1196	13	149	10	11	18	11	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.983			0.999			0.991			0.895	
Flt Protected		0.999						0.958			0.993	
Satd. Flow (prot)	0	1745	0	0	1792	0	0	1775	0	0	1212	0
Flt Permitted		0.984			0.989			0.664			0.952	
Satd. Flow (perm)	0	1719	0	0	1772	0	0	1230	0	0	1162	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			2			4			90	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	12	1024	148	11	1286	14	160	11	12	19	12	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1184	0	0	1311	0	0	183	0	0	140	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

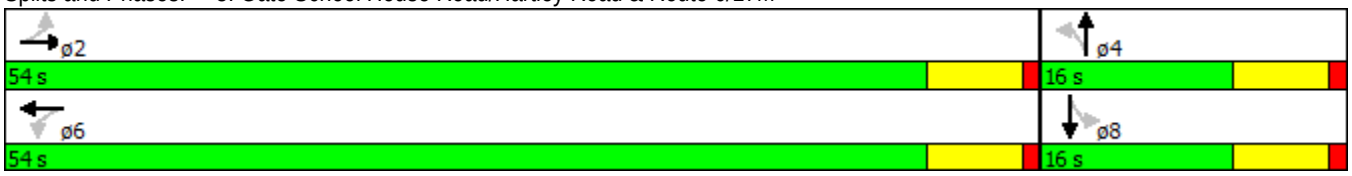
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	54.0	54.0		54.0	54.0		16.0	16.0		16.0	16.0	
Total Split (%)	77.1%	77.1%		77.1%	77.1%		22.9%	22.9%		22.9%	22.9%	
Maximum Green (s)	48.0	48.0		48.0	48.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.99			1.07			1.05			0.59	
Control Delay		36.6			60.4			115.1			22.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		36.6			60.4			115.1			22.9	
Queue Length 50th (ft)		413			~647			~81			20	
Queue Length 95th (ft)		#772			#886			#203			#82	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1198			1229			175			239	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.99			1.07			1.05			0.59	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 72	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	

~ 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.

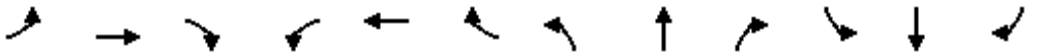
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	952	138	10	1196	13	149	10	11	18	11	101
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1789	1881	1948	1806	1948	1919	1870	1919	1872	1363	1872
Adj Flow Rate, veh/h	12	1024	121	11	1286	14	160	11	12	19	12	109
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	56	1066	125	55	1212	13	240	10	11	75	24	142
Arrive On Green	0.71	0.69	0.69	0.71	0.69	0.69	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	6	1554	182	5	1768	19	1006	69	75	115	168	994
Grp Volume(v), veh/h	1157	0	0	1311	0	0	183	0	0	140	0	0
Grp Sat Flow(s),veh/h/ln	1743	0	0	1792	0	0	1150	0	0	1276	0	0
Q Serve(g_s), s	0.0	0.0	0.0	10.1	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	39.9	0.0	0.0	50.0	0.0	0.0	11.1	0.0	0.0	7.3	0.0	0.0
Prop In Lane	0.01		0.10	0.01		0.01	0.87		0.07	0.14		0.78
Lane Grp Cap(c), veh/h	1297	0	0	1332	0	0	294	0	0	277	0	0
V/C Ratio(X)	0.89	0.00	0.00	0.98	0.00	0.00	0.62	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	1297	0	0	1332	0	0	294	0	0	277	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	0.0	11.8	0.0	0.0	29.9	0.0	0.0	28.8	0.0	0.0
Incr Delay (d2), s/veh	7.9	0.0	0.0	20.8	0.0	0.0	3.1	0.0	0.0	0.6	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	19.8	0.0	0.0	31.1	0.0	0.0	3.6	0.0	0.0	2.5	0.0	0.0
LnGrp Delay(d),s/veh	17.6	0.0	0.0	32.6	0.0	0.0	32.9	0.0	0.0	29.4	0.0	0.0
LnGrp LOS	B			C			C			C		
Approach Vol, veh/h		1157			1311			183			140	
Approach Delay, s/veh		17.6			32.6			32.9			29.4	
Approach LOS		B			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		54.0		16.0		54.0		16.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		48.0		10.0		48.0		10.0
Max Q Clear Time (g_c+I1), s		41.9		13.1		52.0		9.3
Green Ext Time (p_c), s		4.9		0.0		0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C



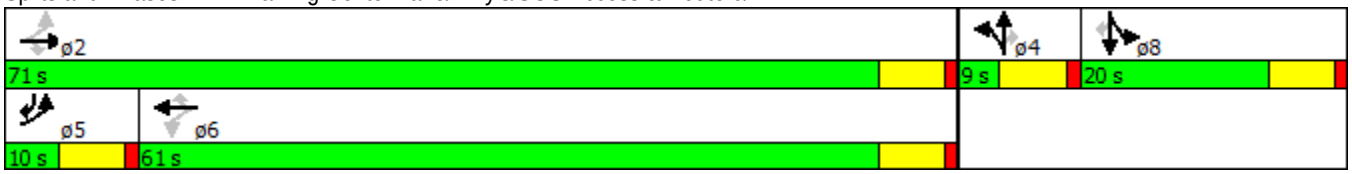
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	641	5	2	988	20	14	0	7	378	0	607
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.065			0.375				0.950			0.950	
Satd. Flow (perm)	119	1837	1623	705	1888	1538	0	1787	1599	0	1641	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			164			164			111
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		535			1410			798			469	
Travel Time (s)		8.1			17.5			21.8			10.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	29	682	5	2	1051	21	15	0	7	402	0	646
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	682	5	2	1051	21	0	15	7	0	402	646
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Split	NA	Perm	Split	NA	pm+ov

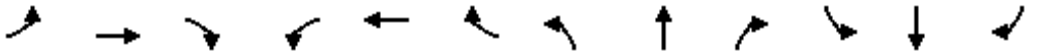
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		4	4		8	8	5
Permitted Phases	2		2	6		6			4			8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	10.0	71.0	71.0	61.0	61.0	61.0	9.0	9.0	9.0	20.0	20.0	10.0
Total Split (%)	10.0%	71.0%	71.0%	61.0%	61.0%	61.0%	9.0%	9.0%	9.0%	20.0%	20.0%	10.0%
Maximum Green (s)	4.0	65.0	65.0	55.0	55.0	55.0	3.0	3.0	3.0	14.0	14.0	4.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.19	0.54	0.00	0.00	0.96	0.02		0.27	0.03		1.65	1.40
Control Delay	8.5	9.9	0.0	10.0	39.2	0.1		58.4	0.3		341.7	216.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	8.5	9.9	0.0	10.0	39.2	0.1		58.4	0.3		341.7	216.9
Queue Length 50th (ft)	4	151	0	0	495	0		9	0		~333	~446
Queue Length 95th (ft)	16	316	0	4	#954	0		31	0		#567	#732
Internal Link Dist (ft)		455			1330			718			389	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	150	1265	1148	410	1100	964		56	209		243	463
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.19	0.54	0.00	0.00	0.96	0.02		0.27	0.03		1.65	1.40

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 94.6
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ 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: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	27	641	5	2	988	20	14	0	7	378	0	607
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	29	682	5	2	1051	21	15	0	7	402	0	646
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	137	1214	1073	423	1108	897	25	0	22	234	0	1085
Arrive On Green	0.02	0.66	0.66	0.58	0.58	0.58	0.01	0.00	0.01	0.14	0.00	0.14
Sat Flow, veh/h	1749	1837	1623	760	1900	1538	1792	0	1599	1645	0	1495
Grp Volume(v), veh/h	29	682	5	2	1051	21	15	0	7	402	0	646
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	760	1900	1538	1792	0	1599	1645	0	1495
Q Serve(g_s), s	0.6	19.7	0.1	0.1	50.8	0.6	0.8	0.0	0.4	14.0	0.0	14.0
Cycle Q Clear(g_c), s	0.6	19.7	0.1	12.2	50.8	0.6	0.8	0.0	0.4	14.0	0.0	14.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	137	1214	1073	423	1108	897	25	0	22	234	0	1085
V/C Ratio(X)	0.21	0.56	0.00	0.00	0.95	0.02	0.61	0.00	0.32	1.72	0.00	0.60
Avail Cap(c_a), veh/h	179	1214	1073	423	1108	897	55	0	49	234	0	1085
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	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	1.00
Uniform Delay (d), s/veh	22.2	9.0	5.7	14.3	19.1	8.7	48.2	0.0	48.0	42.2	0.0	5.6
Incr Delay (d2), s/veh	0.3	1.9	0.0	0.0	17.2	0.0	8.6	0.0	3.0	340.0	0.0	0.6
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	10.5	0.0	0.0	31.6	0.3	0.5	0.0	0.2	28.4	0.0	17.6
LnGrp Delay(d),s/veh	22.5	10.9	5.7	14.4	36.3	8.7	56.9	0.0	51.1	382.2	0.0	6.2
LnGrp LOS	C	B	A	B	D	A	E		D	F		A
Approach Vol, veh/h		716			1074			22			1048	
Approach Delay, s/veh		11.3			35.7			55.0			150.5	
Approach LOS		B			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		71.0		7.4	7.6	63.4		20.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		65.0		3.0	4.0	55.0		14.0
Max Q Clear Time (g_c+I1), s		21.7		2.8	2.6	52.8		16.0
Green Ext Time (p_c), s		7.7		0.0	0.0	1.5		0.0

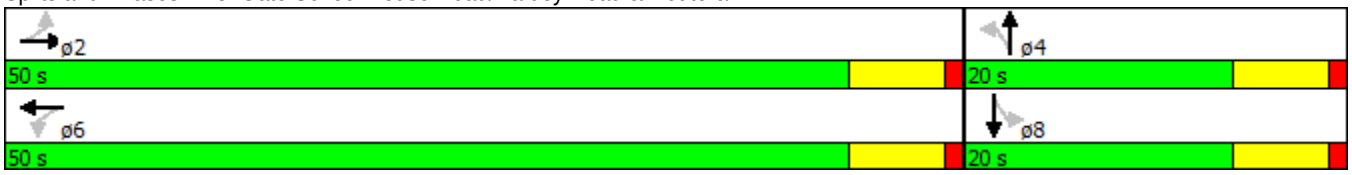
Intersection Summary	
HCM 2010 Ctrl Delay	71.8
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	928	92	9	885	10	122	9	9	9	9	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.988			0.998			0.991			0.947	
Flt Protected		0.999			0.999			0.958			0.985	
Satd. Flow (prot)	0	1814	0	0	1875	0	0	1765	0	0	1496	0
Flt Permitted		0.986			0.988			0.731			0.895	
Satd. Flow (perm)	0	1791	0	0	1855	0	0	1347	0	0	1359	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			2			5			13	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	14	998	99	10	952	11	131	10	10	10	10	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1111	0	0	973	0	0	151	0	0	33	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.86			0.73			0.66			0.14	
Control Delay		20.7			13.3			40.1			18.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.7			13.3			40.1			18.4	
Queue Length 50th (ft)		355			251			57			7	
Queue Length 95th (ft)		#727			#573			113			29	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1291			1334			295			304	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.86			0.73			0.51			0.11	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 65.6	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

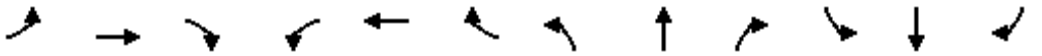
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	928	92	9	885	10	122	9	9	9	9	12
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1850	1881	1948	1893	1948	1919	1860	1919	1872	1603	1872
Adj Flow Rate, veh/h	14	998	72	10	952	11	131	10	10	10	10	13
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	73	1096	78	71	1204	14	285	12	12	121	78	73
Arrive On Green	0.69	0.65	0.65	0.69	0.65	0.65	0.16	0.13	0.13	0.16	0.13	0.13
Sat Flow, veh/h	8	1682	120	6	1847	21	1266	97	97	272	612	575
Grp Volume(v), veh/h	1084	0	0	973	0	0	151	0	0	33	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	0	1874	0	0	1459	0	0	1458	0	0
Q Serve(g_s), s	2.1	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	25.7	0.0	0.0	19.0	0.0	0.0	5.1	0.0	0.0	1.1	0.0	0.0
Prop In Lane	0.01		0.07	0.01		0.01	0.87		0.07	0.30		0.39
Lane Grp Cap(c), veh/h	1313	0	0	1357	0	0	364	0	0	326	0	0
V/C Ratio(X)	0.83	0.00	0.00	0.72	0.00	0.00	0.42	0.00	0.00	0.10	0.00	0.00
Avail Cap(c_a), veh/h	1592	0	0	1645	0	0	547	0	0	503	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.7	0.0	0.0	6.6	0.0	0.0	22.0	0.0	0.0	20.9	0.0	0.0
Incr Delay (d2), s/veh	2.6	0.0	0.0	0.8	0.0	0.0	0.3	0.0	0.0	0.0	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	12.0	0.0	0.0	9.0	0.0	0.0	2.1	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	10.3	0.0	0.0	7.4	0.0	0.0	22.3	0.0	0.0	20.9	0.0	0.0
LnGrp LOS	B			A			C			C		
Approach Vol, veh/h		1084			973			151			33	
Approach Delay, s/veh		10.3			7.4			22.3			20.9	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		41.5		13.0		41.5		13.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		27.7		7.1		21.0		3.1
Green Ext Time (p_c), s		7.8		0.3		9.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.0
HCM 2010 LOS	B



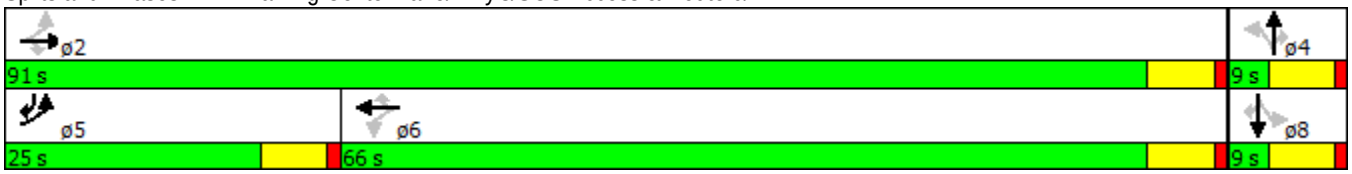
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	622	761	6	2	1173	692	17	0	9	93	0	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.061			0.360								
Satd. Flow (perm)	112	1837	1623	677	1888	1538	0	1881	1599	0	1727	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33			168			98			68
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		535			1419			798			469	
Travel Time (s)		8.1			17.6			21.8			10.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	662	810	6	2	1248	736	18	0	10	99	0	198
Shared Lane Traffic (%)												
Lane Group Flow (vph)	662	810	6	2	1248	736	0	18	10	0	99	198
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov

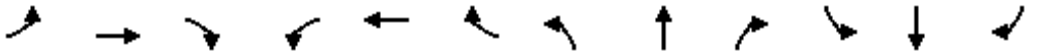
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	5
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	25.0	91.0	91.0	66.0	66.0	66.0	9.0	9.0	9.0	9.0	9.0	25.0
Total Split (%)	25.0%	91.0%	91.0%	66.0%	66.0%	66.0%	9.0%	9.0%	9.0%	9.0%	9.0%	25.0%
Maximum Green (s)	19.0	85.0	85.0	60.0	60.0	60.0	3.0	3.0	3.0	3.0	3.0	19.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	1.63	0.52	0.00	0.00	1.10	0.74		0.32	0.07		1.94	0.42
Control Delay	322.0	3.3	0.0	8.0	81.3	16.4		62.5	0.9		515.0	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	322.0	3.3	0.0	8.0	81.3	16.4		62.5	0.9		515.0	22.2
Queue Length 50th (ft)	~568	91	0	0	~909	244		12	0		~98	66
Queue Length 95th (ft)	#789	132	0	3	#1161	406		35	0		#202	132
Internal Link Dist (ft)		455			1339			718			389	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	405	1561	1384	406	1132	990		56	143		51	467
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	1.63	0.52	0.00	0.00	1.10	0.74		0.32	0.07		1.94	0.42

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ 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: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	622	761	6	2	1173	692	17	0	9	93	0	186
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	662	810	6	2	1248	736	18	0	10	99	0	198
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	404	1561	1380	476	1140	923	72	0	48	72	0	942
Arrive On Green	0.19	0.85	0.85	0.60	0.60	0.60	0.03	0.00	0.03	0.03	0.00	0.03
Sat Flow, veh/h	1749	1837	1623	673	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	662	810	6	2	1248	736	18	0	10	99	0	198
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	673	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	19.0	11.8	0.1	0.1	60.0	36.7	0.0	0.0	0.6	0.0	0.0	3.0
Cycle Q Clear(g_c), s	19.0	11.8	0.1	0.1	60.0	36.7	3.0	0.0	0.6	3.0	0.0	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	404	1561	1380	476	1140	923	72	0	48	72	0	942
V/C Ratio(X)	1.64	0.52	0.00	0.00	1.09	0.80	0.25	0.00	0.21	1.37	0.00	0.21
Avail Cap(c_a), veh/h	404	1561	1380	476	1140	923	72	0	48	72	0	942
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	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	1.00
Uniform Delay (d), s/veh	35.4	2.0	1.1	8.0	20.0	15.3	50.0	0.0	47.3	50.0	0.0	7.4
Incr Delay (d2), s/veh	297.8	1.2	0.0	0.0	56.4	7.1	0.7	0.0	0.8	234.7	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	44.6	6.4	0.0	0.0	48.9	17.2	0.5	0.0	0.3	6.7	0.0	5.5
LnGrp Delay(d),s/veh	333.2	3.2	1.1	8.0	76.4	22.5	50.7	0.0	48.1	284.7	0.0	7.4
LnGrp LOS	F	A	A	A	F	C	D		D	F		A
Approach Vol, veh/h		1478			1986			28			297	
Approach Delay, s/veh		151.0			56.4			49.8			99.8	
Approach LOS		F			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		91.0		9.0	25.0	66.0		9.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		85.0		3.0	19.0	60.0		3.0
Max Q Clear Time (g_c+I1), s		13.8		5.0	21.0	62.0		5.0
Green Ext Time (p_c), s		20.3		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	96.6
HCM 2010 LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	724	126	11	1605	12	167	10	10	10	10	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.981			0.999			0.993			0.887	
Flt Protected		0.999						0.957			0.996	
Satd. Flow (prot)	0	1804	0	0	1879	0	0	1768	0	0	1441	0
Flt Permitted		0.929			0.993			0.693			0.968	
Satd. Flow (perm)	0	1678	0	0	1866	0	0	1280	0	0	1401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			1			4			26	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	22	778	135	12	1726	13	180	11	11	11	11	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	935	0	0	1751	0	0	202	0	0	136	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

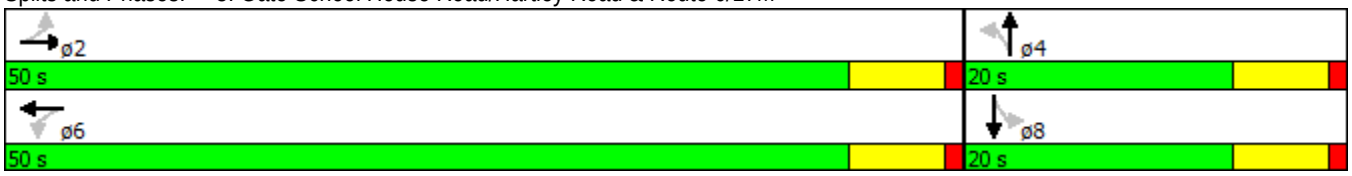
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.86			1.45			0.85			0.49	
Control Delay		20.7			227.9			58.3			26.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.7			227.9			58.3			26.5	
Queue Length 50th (ft)		285			~1084			81			41	
Queue Length 95th (ft)		#581			#1339			#187			92	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1090			1204			258			299	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.86			1.45			0.78			0.45	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70.4	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	

~ 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: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	724	126	11	1605	12	167	10	10	10	10	106
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1853	1881	1948	1893	1948	1919	1860	1919	1872	1631	1872
Adj Flow Rate, veh/h	22	778	108	12	1726	13	180	11	11	11	11	114
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	66	974	133	56	1196	9	306	13	13	68	32	224
Arrive On Green	0.67	0.64	0.64	0.67	0.64	0.64	0.21	0.18	0.18	0.21	0.18	0.18
Sat Flow, veh/h	19	1517	207	5	1863	14	1130	69	69	62	174	1221
Grp Volume(v), veh/h	908	0	0	1751	0	0	202	0	0	136	0	0
Grp Sat Flow(s),veh/h/ln	1743	0	0	1881	0	0	1269	0	0	1457	0	0
Q Serve(g_s), s	0.0	0.0	0.0	16.7	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	23.5	0.0	0.0	46.0	0.0	0.0	10.3	0.0	0.0	5.8	0.0	0.0
Prop In Lane	0.02		0.12	0.01		0.01	0.89		0.05	0.08		0.84
Lane Grp Cap(c), veh/h	1223	0	0	1315	0	0	369	0	0	366	0	0
V/C Ratio(X)	0.74	0.00	0.00	1.33	0.00	0.00	0.55	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	1223	0	0	1315	0	0	396	0	0	395	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	0.0	0.0	13.5	0.0	0.0	26.3	0.0	0.0	25.2	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	0.0	154.3	0.0	0.0	0.6	0.0	0.0	0.2	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	11.4	0.0	0.0	80.2	0.0	0.0	3.5	0.0	0.0	2.2	0.0	0.0
LnGrp Delay(d),s/veh	10.8	0.0	0.0	167.8	0.0	0.0	26.9	0.0	0.0	25.4	0.0	0.0
LnGrp LOS	B			F			C			C		
Approach Vol, veh/h		908			1751			202			136	
Approach Delay, s/veh		10.8			167.8			26.9			25.4	
Approach LOS		B			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		18.5		50.0		18.5
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		25.5		12.3		48.0		7.8
Green Ext Time (p_c), s		15.2		0.2		0.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	104.3
HCM 2010 LOS	F

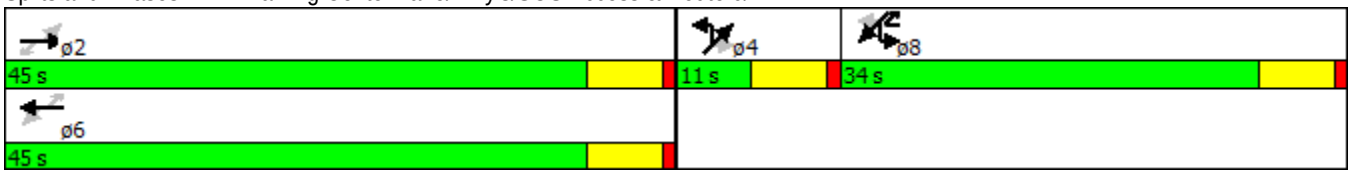
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	32	699	110	41	758	23	98	0	62	495	0	458
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1666	1891	1591	1671	1925	1495	0	1752	1509	0	1492	1346
Flt Permitted	0.104			0.104				0.950			0.950	
Satd. Flow (perm)	182	1891	1591	183	1925	1495	0	1752	1509	0	1492	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			36			109			109
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		521			1428			802			646	
Travel Time (s)		7.9			17.7			21.9			14.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	10%	2%	3%	8%	2%	8%	3%	2%	7%	21%	2%	20%
Adj. Flow (vph)	34	744	117	44	806	24	104	0	66	527	0	487
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	744	117	44	806	24	0	104	66	0	527	487
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA	pm+ov	Split	NA	Perm	Split	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases		2			6	8	4	4		8	8	
Permitted Phases	2		2	6		6			4			8
Detector Phase	2	2	2	6	6	8	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	34.0	11.0	11.0	11.0	34.0	34.0	34.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	37.8%	12.2%	12.2%	12.2%	37.8%	37.8%	37.8%
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0	28.0	5.0	5.0	5.0	28.0	28.0	28.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Min	Min	Min	Min	Min	None	None	None	None	None	None	None
v/c Ratio	0.44	0.92	0.16	0.56	0.98	0.02		1.06	0.35		1.13	0.98
Control Delay	39.4	42.5	4.3	51.7	52.9	0.4		153.3	8.0		112.2	62.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	39.4	42.5	4.3	51.7	52.9	0.4		153.3	8.0		112.2	62.0
Queue Length 50th (ft)	13	383	3	18	434	0		~66	0		~353	223
Queue Length 95th (ft)	#56	#616	33	#75	#686	3		#168	15		#546	#433
Internal Link Dist (ft)		441			1348			722			566	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	79	826	756	80	841	1217		98	187		468	496
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.43	0.90	0.15	0.55	0.96	0.02		1.06	0.35		1.13	0.98

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 89.3
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
~ 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: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	32	699	110	41	758	23	98	0	62	495	0	458
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1753	1891	1872	1759	1937	1759	1900	1845	1776	1900	1570	1583
Adj Flow Rate, veh/h	34	744	117	44	806	24	104	0	66	527	0	487
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	2	3	8	2	8	2	2	7	2	2	20
Cap, veh/h	98	819	690	120	839	731	98	0	84	465	0	419
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.06	0.00	0.06	0.31	0.00	0.31
Sat Flow, veh/h	619	1891	1591	604	1937	1495	1757	0	1509	1495	0	1346
Grp Volume(v), veh/h	34	744	117	44	806	24	104	0	66	527	0	487
Grp Sat Flow(s),veh/h/ln	619	1891	1591	604	1937	1495	1757	0	1509	1495	0	1346
Q Serve(g_s), s	2.7	33.1	4.0	5.9	36.3	0.8	5.0	0.0	3.9	28.0	0.0	28.0
Cycle Q Clear(g_c), s	39.0	33.1	4.0	39.0	36.3	0.8	5.0	0.0	3.9	28.0	0.0	28.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	98	819	690	120	839	731	98	0	84	465	0	419
V/C Ratio(X)	0.35	0.91	0.17	0.37	0.96	0.03	1.07	0.00	0.79	1.13	0.00	1.16
Avail Cap(c_a), veh/h	98	819	690	120	839	731	98	0	84	465	0	419
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	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	1.00
Uniform Delay (d), s/veh	44.3	23.8	15.6	42.3	24.7	11.9	42.5	0.0	42.0	31.0	0.0	31.0
Incr Delay (d2), s/veh	0.8	13.6	0.0	0.7	21.7	0.0	109.9	0.0	35.3	83.4	0.0	96.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	20.2	1.8	1.1	24.3	0.3	5.4	0.0	2.4	22.3	0.0	21.6
LnGrp Delay(d),s/veh	45.1	37.4	15.6	43.0	46.4	12.0	153.0	0.0	77.3	114.4	0.0	127.7
LnGrp LOS	D	D	B	D	D	B	F		E	F		F
Approach Vol, veh/h		895			874			170			1014	
Approach Delay, s/veh		34.9			45.3			123.6			120.8	
Approach LOS		C			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		45.0		11.0		45.0		34.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		39.0		5.0		39.0		28.0
Max Q Clear Time (g_c+I1), s		41.0		7.0		41.0		30.0
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	72.6
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	79	1056	112	12	715	10	106	6	15	12	6	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.988			0.998			0.984			0.948	
Flt Protected		0.997			0.999			0.960			0.979	
Satd. Flow (prot)	0	1846	0	0	1941	0	0	1798	0	0	1403	0
Flt Permitted		0.907			0.973			0.739			0.856	
Satd. Flow (perm)	0	1680	0	0	1890	0	0	1384	0	0	1227	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			2			9			12	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	42%
Adj. Flow (vph)	84	1123	119	13	761	11	113	6	16	13	6	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1326	0	0	785	0	0	135	0	0	31	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

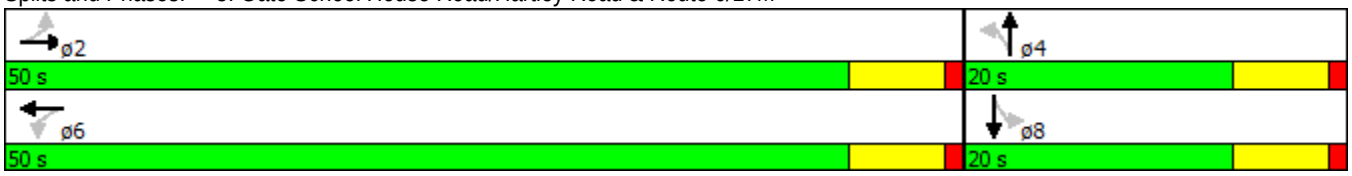
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.08			0.57			0.63			0.16	
Control Delay		67.7			8.6			38.2			19.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		67.7			8.6			38.2			19.3	
Queue Length 50th (ft)		~671			154			48			7	
Queue Length 95th (ft)		#974			297			99			28	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1227			1376			290			261	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.08			0.57			0.47			0.12	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 68.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

~ 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: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	79	1056	112	12	715	10	106	6	15	12	6	11
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1886	1881	1948	1959	1948	1919	1903	1919	1872	1512	1872
Adj Flow Rate, veh/h	84	1123	92	13	761	11	113	6	16	13	6	12
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	0	0	0	0	0	0
Cap, veh/h	116	1069	86	66	1315	19	245	7	20	126	48	59
Arrive On Green	0.73	0.70	0.70	0.73	0.70	0.70	0.14	0.11	0.11	0.14	0.11	0.11
Sat Flow, veh/h	79	1531	123	11	1883	27	1262	67	179	405	430	527
Grp Volume(v), veh/h	1299	0	0	785	0	0	135	0	0	31	0	0
Grp Sat Flow(s),veh/h/ln	1732	0	0	1922	0	0	1507	0	0	1362	0	0
Q Serve(g_s), s	33.3	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	46.0	0.0	0.0	12.4	0.0	0.0	5.2	0.0	0.0	1.2	0.0	0.0
Prop In Lane	0.06		0.07	0.02		0.01	0.84		0.12	0.42		0.39
Lane Grp Cap(c), veh/h	1325	0	0	1461	0	0	321	0	0	276	0	0
V/C Ratio(X)	0.98	0.00	0.00	0.54	0.00	0.00	0.42	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	1325	0	0	1461	0	0	482	0	0	414	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	0.0	0.0	4.7	0.0	0.0	26.3	0.0	0.0	25.0	0.0	0.0
Incr Delay (d2), s/veh	20.0	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.1	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	28.0	0.0	0.0	5.9	0.0	0.0	2.1	0.0	0.0	0.5	0.0	0.0
LnGrp Delay(d),s/veh	29.8	0.0	0.0	4.9	0.0	0.0	26.6	0.0	0.0	25.1	0.0	0.0
LnGrp LOS	C			A			C			C		
Approach Vol, veh/h		1299			785			135			31	
Approach Delay, s/veh		29.8			4.9			26.6			25.1	
Approach LOS		C			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		13.0		50.0		13.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		48.0		7.2		14.4		3.2
Green Ext Time (p_c), s		0.0		0.2		11.7		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

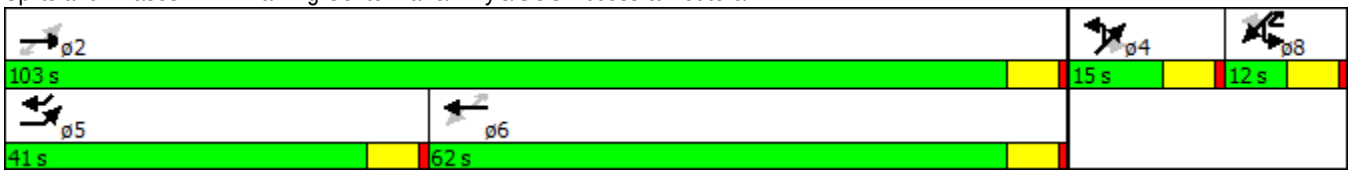
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	569	699	110	41	758	656	98	0	62	35	0	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1666	1891	1591	1671	1925	1495	0	1752	1509	0	1492	1346
Flt Permitted	0.066			0.383				0.950			0.950	
Satd. Flow (perm)	116	1891	1591	674	1925	1495	0	1752	1509	0	1492	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			86			283			126			76
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		521			1424			802			646	
Travel Time (s)		7.9			17.7			21.9			14.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	10%	2%	3%	8%	2%	8%	3%	2%	7%	21%	2%	20%
Adj. Flow (vph)	605	744	117	44	806	698	104	0	66	37	0	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	605	744	117	44	806	698	0	104	66	0	37	72
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+ov	Split	NA	Perm	Split	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	5	2			6	8	4	4		8	8	5
Permitted Phases	2		2	6		6			4			8
Detector Phase	5	2	2	6	6	8	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	11.0	11.0	11.0	11.0	11.0	11.0	9.0
Total Split (s)	41.0	103.0	103.0	62.0	62.0	12.0	15.0	15.0	15.0	12.0	12.0	41.0
Total Split (%)	31.5%	79.2%	79.2%	47.7%	47.7%	9.2%	11.5%	11.5%	11.5%	9.2%	9.2%	31.5%
Maximum Green (s)	35.0	97.0	97.0	56.0	56.0	6.0	9.0	9.0	9.0	6.0	6.0	35.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag							Lead
Lead-Lag Optimize?	Yes			Yes	Yes							Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	Min	Min	None	None	None	None	None	None	None
v/c Ratio	1.19	0.53	0.10	0.15	0.98	0.82		0.86	0.30		0.54	0.13
Control Delay	140.2	8.6	1.7	24.5	64.6	22.0		109.9	3.4		88.1	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	140.2	8.6	1.7	24.5	64.6	22.0		109.9	3.4		88.1	6.0
Queue Length 50th (ft)	~571	230	6	22	655	251		88	0		31	0
Queue Length 95th (ft)	#804	310	21	50	#932	448		#197	0		#82	31
Internal Link Dist (ft)		441			1344			722			566	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	507	1424	1219	293	837	855		122	222		69	539
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	1.19	0.52	0.10	0.15	0.96	0.82		0.85	0.30		0.54	0.13

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 128.8
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
~ 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: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	569	699	110	41	758	656	98	0	62	35	0	68
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1753	1891	1872	1759	1937	1759	1900	1845	1776	1900	1570	1583
Adj Flow Rate, veh/h	605	744	117	44	806	698	104	0	66	37	0	72
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	2	3	8	2	8	2	2	7	2	2	20
Cap, veh/h	515	1414	1190	316	836	749	122	0	105	66	0	640
Arrive On Green	0.27	0.75	0.75	0.43	0.43	0.43	0.07	0.00	0.07	0.04	0.00	0.04
Sat Flow, veh/h	1670	1891	1591	604	1937	1495	1757	0	1509	1495	0	1346
Grp Volume(v), veh/h	605	744	117	44	806	698	104	0	66	37	0	72
Grp Sat Flow(s),veh/h/ln	1670	1891	1591	604	1937	1495	1757	0	1509	1495	0	1346
Q Serve(g_s), s	35.0	21.2	2.6	5.8	52.5	56.0	7.6	0.0	5.5	3.1	0.0	3.8
Cycle Q Clear(g_c), s	35.0	21.2	2.6	5.8	52.5	56.0	7.6	0.0	5.5	3.1	0.0	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	515	1414	1190	316	836	749	122	0	105	66	0	640
V/C Ratio(X)	1.18	0.53	0.10	0.14	0.96	0.93	0.85	0.00	0.63	0.56	0.00	0.11
Avail Cap(c_a), veh/h	515	1414	1190	316	836	749	122	0	105	69	0	643
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	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	1.00
Uniform Delay (d), s/veh	40.6	6.8	4.5	22.6	35.9	30.1	59.7	0.0	58.7	60.8	0.0	18.8
Incr Delay (d2), s/veh	97.9	0.2	0.0	0.1	22.5	18.0	39.3	0.0	8.9	4.9	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	32.3	11.0	1.1	1.0	33.2	28.6	5.0	0.0	2.6	1.4	0.0	2.6
LnGrp Delay(d),s/veh	138.4	7.0	4.5	22.7	58.4	48.2	99.0	0.0	67.6	65.7	0.0	18.9
LnGrp LOS	F	A	A	C	E	D	F		E	E		B
Approach Vol, veh/h		1466			1548			170			109	
Approach Delay, s/veh		61.0			52.8			86.8			34.7	
Approach LOS		E			D			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		103.0		15.0	41.0	62.0		11.7
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		97.0		9.0	35.0	56.0		6.0
Max Q Clear Time (g_c+I1), s		23.2		9.6	37.0	58.0		5.8
Green Ext Time (p_c), s		12.9		0.0	0.0	0.0		0.0

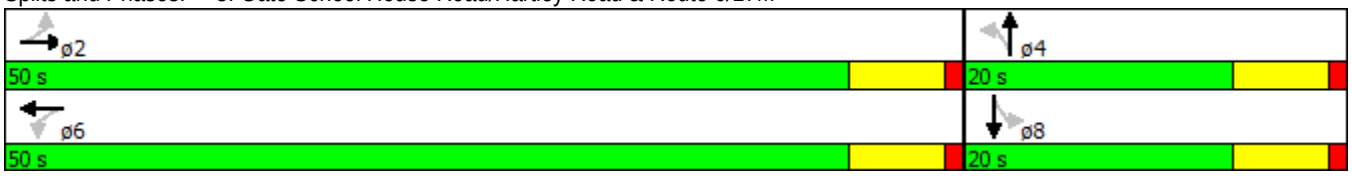
Intersection Summary	
HCM 2010 Ctrl Delay	57.6
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	668	104	12	1249	10	117	6	15	12	6	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.982			0.999			0.985			0.886	
Flt Protected		0.999						0.959			0.995	
Satd. Flow (prot)	0	1851	0	0	1948	0	0	1797	0	0	1200	0
Flt Permitted		0.966			0.991			0.736			0.958	
Satd. Flow (perm)	0	1790	0	0	1930	0	0	1379	0	0	1156	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			1			8			65	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	42%
Adj. Flow (vph)	16	711	111	13	1329	11	124	6	16	13	6	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	838	0	0	1353	0	0	146	0	0	124	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.65			0.97			0.65			0.53	
Control Delay		10.3			34.8			39.1			22.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		10.3			34.8			39.1			22.3	
Queue Length 50th (ft)		181			~634			53			22	
Queue Length 95th (ft)		353			#929			107			68	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1293			1388			293			292	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.65			0.97			0.50			0.42	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 67.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
~ 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: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	668	104	12	1249	10	117	6	15	12	6	99
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1899	1881	1948	1962	1948	1919	1903	1919	1872	1362	1872
Adj Flow Rate, veh/h	16	711	84	13	1329	11	124	6	16	13	6	105
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	0	0	0	0	0	0
Cap, veh/h	66	1097	128	60	1299	11	256	12	20	72	15	145
Arrive On Green	0.71	0.67	0.67	0.71	0.67	0.67	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	14	1626	189	7	1925	16	1087	83	144	76	108	1022
Grp Volume(v), veh/h	811	0	0	1353	0	0	146	0	0	124	0	0
Grp Sat Flow(s),veh/h/ln	1829	0	0	1948	0	0	1315	0	0	1206	0	0
Q Serve(g_s), s	0.0	0.0	0.0	14.8	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.8	0.0	0.0	43.9	0.0	0.0	6.9	0.0	0.0	6.1	0.0	0.0
Prop In Lane	0.02		0.10	0.01		0.01	0.85		0.11	0.10		0.85
Lane Grp Cap(c), veh/h	1346	0	0	1429	0	0	328	0	0	269	0	0
V/C Ratio(X)	0.60	0.00	0.00	0.95	0.00	0.00	0.44	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	1346	0	0	1429	0	0	427	0	0	353	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.0	0.0	0.0	10.5	0.0	0.0	26.2	0.0	0.0	26.7	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	13.1	0.0	0.0	0.4	0.0	0.0	0.5	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	0.0	26.0	0.0	0.0	2.4	0.0	0.0	2.0	0.0	0.0
LnGrp Delay(d),s/veh	6.6	0.0	0.0	23.6	0.0	0.0	26.5	0.0	0.0	27.1	0.0	0.0
LnGrp LOS	A			C			C			C		
Approach Vol, veh/h		811			1353			146			124	
Approach Delay, s/veh		6.6			23.6			26.5			27.1	
Approach LOS		A			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		15.2		50.0		15.2
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		17.8		8.9		45.9		8.1
Green Ext Time (p_c), s		11.5		0.4		0.0		0.4

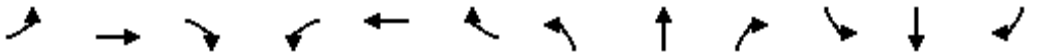
Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

AMY'S KITCHEN/SCIENCE OF THE SOUL

RESPONSE TO VHB COMMENT HK-7

REVISED CAPACITY ANALYSIS WITH ADJUSTED ARRIVAL AND DEPARTURE DISTRIBUTIONS

2033 FULL BUILD ANALYSIS WITHOUT WALLKILL RIVER BRIDGE



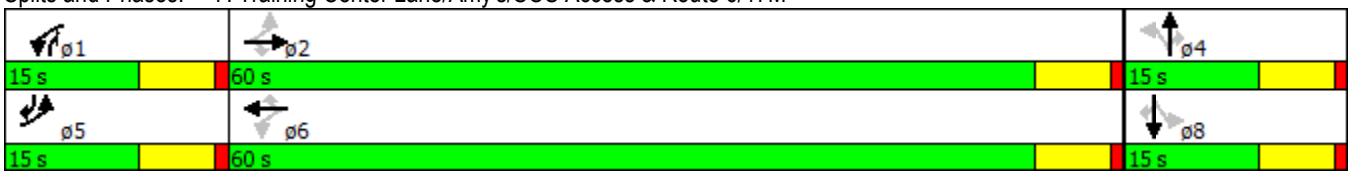
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1214	16	7	356	7	0	0	0	4	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	86			86			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			0.850						0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1796	1837	1025	1077	1680	1512	0	1863	1188	0	1770	1583
Flt Permitted	0.523			0.062								
Satd. Flow (perm)	989	1837	1025	70	1680	1512	0	1863	1188	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109						36
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		484			1461			782			458	
Travel Time (s)		7.3			18.1			21.3			10.4	
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	60%	60%	8%	2%	60%	2%	60%	2%	2%	2%
Adj. Flow (vph)	14	1334	18	8	391	8	0	0	0	4	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	1334	18	8	391	8	0	0	0	0	4	4
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm			pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4	1		8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	16.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	60.0	60.0	15.0	60.0	60.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	66.7%	66.7%	16.7%	66.7%	66.7%	16.7%	16.7%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	54.0	54.0	9.0	54.0	54.0	9.0	9.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
v/c Ratio	0.02	0.78	0.02	0.07	0.26	0.01					0.03	0.02
Control Delay	1.3	10.2	0.1	2.6	3.2	0.0					34.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0					0.0	0.0
Total Delay	1.3	10.2	0.1	2.6	3.2	0.0					34.8	0.2
Queue Length 50th (ft)	1	0	0	0	0	0					2	0
Queue Length 95th (ft)	4	#1049	0	3	127	0					12	0
Internal Link Dist (ft)		404			1381			702			378	
Turn Bay Length (ft)	200		100	200		135						
Base Capacity (vph)	973	1709	961	181	1484	1348					221	263
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	0.01	0.78	0.02	0.04	0.26	0.01					0.02	0.02

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 75.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	1214	16	7	356	7	0	0	0	4	0	4
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1891	1837	1205	1134	1680	1779	1900	1863	1188	1900	1863	1863
Adj Flow Rate, veh/h	14	1334	18	8	391	8	0	0	0	4	0	4
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	60	60	8	2	2	2	60	2	2	2
Cap, veh/h	768	1357	757	116	1234	1111	0	19	21	112	0	26
Arrive On Green	0.01	0.74	0.74	0.01	0.73	0.73	0.00	0.00	0.00	0.01	0.00	0.01
Sat Flow, veh/h	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Grp Volume(v), veh/h	14	1334	18	8	391	8	0	0	0	4	0	4
Grp Sat Flow(s),veh/h/ln	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Q Serve(g_s), s	0.1	51.0	0.3	0.1	5.9	0.1	0.0	0.0	0.0	0.2	0.0	0.2
Cycle Q Clear(g_c), s	0.1	51.0	0.3	0.1	5.9	0.1	0.0	0.0	0.0	0.2	0.0	0.2
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	768	1357	757	116	1234	1111	0	19	21	112	0	26
V/C Ratio(X)	0.02	0.98	0.02	0.07	0.32	0.01	0.00	0.00	0.00	0.04	0.00	0.15
Avail Cap(c_a), veh/h	970	1357	757	241	1234	1111	0	228	134	271	0	204
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	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	2.7	9.2	2.6	20.5	3.4	2.6	0.0	0.0	0.0	36.1	0.0	35.6
Incr Delay (d2), s/veh	0.0	20.7	0.1	0.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
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	0.0
%ile BackOfQ(50%),veh/ln	0.1	32.6	0.1	0.1	2.9	0.0	0.0	0.0	0.0	0.1	0.0	0.1
LnGrp Delay(d),s/veh	2.7	29.9	2.6	20.6	4.0	2.6	0.0	0.0	0.0	36.1	0.0	36.7
LnGrp LOS	A	C	A	C	A	A				D		D
Approach Vol, veh/h		1366			407			0			8	
Approach Delay, s/veh		29.3			4.3			0.0			36.4	
Approach LOS		C			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	60.3		6.8	6.7	60.0		6.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		9.0	9.0	54.0		9.0
Max Q Clear Time (g_c+I1), s	2.1	53.0		0.0	2.1	7.9		2.2
Green Ext Time (p_c), s	0.0	0.8		0.0	0.0	10.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.6
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1008	80	0	295	79	57	28	6	22	7	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.991			0.971			0.992			0.926	
Flt Protected		0.994						0.970			0.983	
Satd. Flow (prot)	0	1650	0	0	1651	0	0	1812	0	0	1078	0
Flt Permitted		0.897						0.767			0.887	
Satd. Flow (perm)	0	1489	0	0	1651	0	0	1433	0	0	972	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			37			4			39	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	67%	10%	3%	14%	12%	42%	3%	0%	0%	71%	10%	60%
Adj. Flow (vph)	151	1084	86	0	317	85	61	30	6	24	8	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1321	0	0	402	0	0	97	0	0	71	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

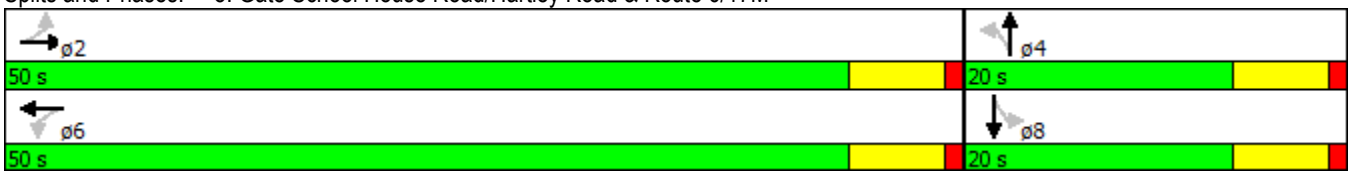
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.19			0.33			0.51			0.44	
Control Delay		113.9			5.0			34.6			23.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		113.9			5.0			34.6			23.0	
Queue Length 50th (ft)		~691			48			35			12	
Queue Length 95th (ft)		#1014			108			76			46	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1106			1234			302			233	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.19			0.33			0.32			0.30	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 67.2	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	

~ 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.

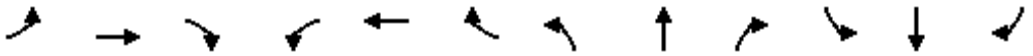
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	1008	80	0	295	79	57	28	6	22	7	36
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1686	1881	1948	1711	1948	1919	1883	1919	1872	1184	1872
Adj Flow Rate, veh/h	151	1084	59	0	317	85	61	30	6	24	8	39
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	171	940	50	0	927	249	187	53	10	104	17	53
Arrive On Green	0.75	0.71	0.71	0.00	0.71	0.71	0.13	0.09	0.09	0.13	0.09	0.09
Sat Flow, veh/h	149	1319	70	0	1301	349	992	571	103	277	187	566
Grp Volume(v), veh/h	1294	0	0	0	0	402	97	0	0	71	0	0
Grp Sat Flow(s),veh/h/ln	1539	0	0	0	0	1650	1667	0	0	1030	0	0
Q Serve(g_s), s	38.8	0.0	0.0	0.0	0.0	5.7	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	46.0	0.0	0.0	0.0	0.0	5.7	3.0	0.0	0.0	3.8	0.0	0.0
Prop In Lane	0.12		0.05	0.00		0.21	0.63		0.06	0.34		0.55
Lane Grp Cap(c), veh/h	1211	0	0	0	0	1176	304	0	0	207	0	0
V/C Ratio(X)	1.07	0.00	0.00	0.00	0.00	0.34	0.32	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	1211	0	0	0	0	1176	506	0	0	337	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.0	0.0	0.0	0.0	0.0	3.4	26.2	0.0	0.0	26.8	0.0	0.0
Incr Delay (d2), s/veh	46.1	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.4	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	35.1	0.0	0.0	0.0	0.0	2.6	1.5	0.0	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	56.1	0.0	0.0	0.0	0.0	3.4	26.4	0.0	0.0	27.1	0.0	0.0
LnGrp LOS	F					A	C			C		
Approach Vol, veh/h		1294			402			97			71	
Approach Delay, s/veh		56.1			3.4			26.4			27.1	
Approach LOS		E			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		11.7		50.0		11.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		48.0		5.0		7.7		5.8
Green Ext Time (p_c), s		0.0		0.3		9.5		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	42.1
HCM 2010 LOS	D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	1008	80	0	295	79	57	28	6	22	7	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Storage Length (ft)	150		0	100		0	90		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	86			86			86			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		0.989			0.968			0.975			0.926	
Flt Protected	0.950						0.950				0.983	
Satd. Flow (prot)	1070	1699	0	1708	1593	0	1652	1746	0	0	1078	0
Flt Permitted	0.526						0.711				0.873	
Satd. Flow (perm)	592	1699	0	1708	1593	0	1236	1746	0	0	957	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			46			6			39	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	67%	10%	3%	14%	12%	42%	3%	0%	0%	71%	10%	60%
Adj. Flow (vph)	151	1084	86	0	317	85	61	30	6	24	8	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	1170	0	0	402	0	61	36	0	0	71	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)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.97	0.97	0.97	1.08	1.08	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		1	2		2	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru			Thru	
Leading Detector (ft)	83	83		50	83		83	83		50	83	
Trailing Detector (ft)	-5	-5		0	-5		-5	-5		0	-5	
Detector 1 Position(ft)	-5	-5		0	-5		-5	-5		0	-5	
Detector 1 Size(ft)	40	40		50	40		40	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	55.0	55.0		55.0	55.0		15.0	15.0		15.0	15.0	
Total Split (%)	78.6%	78.6%		78.6%	78.6%		21.4%	21.4%		21.4%	21.4%	
Maximum Green (s)	49.0	49.0		49.0	49.0		9.0	9.0		9.0	9.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-2.0	0.0		-2.0	0.0		-2.0	0.0			0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
v/c Ratio	0.32	0.89			0.33		0.37	0.19			0.52	
Control Delay	5.4	20.9			4.0		33.2	26.5			30.0	
Queue Delay	0.0	0.0			0.0		0.0	0.0			0.0	
Total Delay	5.4	20.9			4.0		33.2	26.5			30.0	
Queue Length 50th (ft)	17	354			44		24	12			13	
Queue Length 95th (ft)	44	#757			83		57	36			50	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)	150						90					
Base Capacity (vph)	468	1308			1234		196	232			158	
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	0.32	0.89			0.33		0.31	0.16			0.45	

Intersection Summary

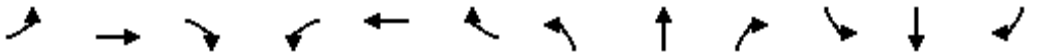
Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 69.2
Natural Cycle: 70
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	1008	80	0	295	79	57	28	6	22	7	36
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1126	1718	1881	1708	1646	1948	1863	1919	1919	1872	1184	1872
Adj Flow Rate, veh/h	151	1084	59	0	317	85	61	30	6	24	8	39
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	67	10	10	14	12	12	3	0	0	10	10	10
Cap, veh/h	501	1175	64	107	911	244	288	146	29	96	18	51
Arrive On Green	0.76	0.73	0.73	0.00	0.73	0.73	0.12	0.09	0.09	0.12	0.09	0.09
Sat Flow, veh/h	592	1615	88	449	1251	335	1353	1553	311	259	189	546
Grp Volume(v), veh/h	151	0	1143	0	0	402	61	0	36	71	0	0
Grp Sat Flow(s),veh/h/ln	592	0	1703	449	0	1586	1353	0	1864	994	0	0
Q Serve(g_s), s	7.7	0.0	37.4	0.0	0.0	6.2	0.0	0.0	1.2	2.7	0.0	0.0
Cycle Q Clear(g_c), s	13.9	0.0	37.4	0.0	0.0	6.2	2.4	0.0	1.2	4.5	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.21	1.00		0.17	0.34		0.55
Lane Grp Cap(c), veh/h	501	0	1239	107	0	1155	288	0	175	194	0	0
V/C Ratio(X)	0.30	0.00	0.92	0.00	0.00	0.35	0.21	0.00	0.21	0.37	0.00	0.00
Avail Cap(c_a), veh/h	501	0	1239	107	0	1155	342	0	249	233	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.1	0.0	7.6	0.0	0.0	3.3	26.9	0.0	28.2	29.3	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	12.7	0.0	0.0	0.8	0.1	0.0	0.2	0.4	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	21.2	0.0	0.0	2.9	1.0	0.0	0.6	1.2	0.0	0.0
LnGrp Delay(d),s/veh	6.6	0.0	20.2	0.0	0.0	4.2	27.0	0.0	28.4	29.7	0.0	0.0
LnGrp LOS	A		C			A	C		C	C		
Approach Vol, veh/h		1294			402			97			71	
Approach Delay, s/veh		18.6			4.2			27.5			29.7	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		55.0		12.3		55.0		12.3
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		49.0		9.0		49.0		9.0
Max Q Clear Time (g_c+I1), s		39.4		4.4		8.2		6.5
Green Ext Time (p_c), s		5.1		0.2		9.2		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B

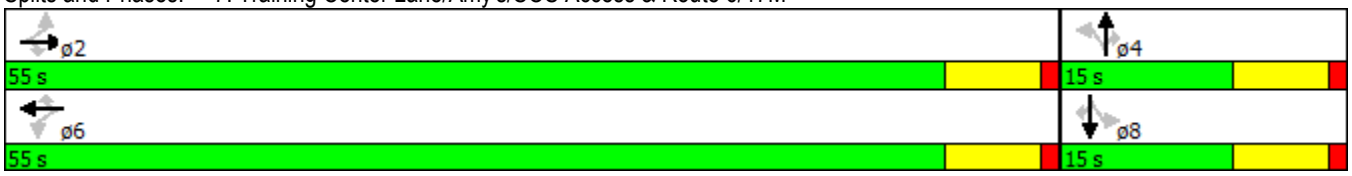


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	1124	49	26	775	15	14	0	32	6	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	86			86			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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1814	1837	1025	1077	1680	1512	0	1128	1009	0	1597	1392
Flt Permitted	0.292			0.112				0.952			0.952	
Satd. Flow (perm)	558	1837	1025	127	1680	1512	0	1130	1009	0	1601	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47			47			47			47
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		521			1424			760			456	
Travel Time (s)		7.9			17.7			20.7			10.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	5%	60%	60%	8%	2%	60%	2%	60%	13%	2%	16%
Adj. Flow (vph)	35	1235	54	29	852	16	15	0	35	7	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	1235	54	29	852	16	0	15	35	0	7	8
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		2			6			4			8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	78.6%	78.6%	78.6%	78.6%	78.6%	78.6%	21.4%	21.4%	21.4%	21.4%	21.4%	21.4%
Maximum Green (s)	49.0	49.0	49.0	49.0	49.0	49.0	9.0	9.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Max	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.08	0.81	0.06	0.28	0.61	0.01		0.15	0.26		0.05	0.05
Control Delay	3.2	13.2	1.4	11.9	6.7	0.2		31.2	12.5		28.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	3.2	13.2	1.4	11.9	6.7	0.2		31.2	12.5		28.2	0.6
Queue Length 50th (ft)	3	305	1	3	140	0		6	0		3	0
Queue Length 95th (ft)	12	#761	9	25	302	1		22	19		13	0
Internal Link Dist (ft)		441			1344			680			376	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	464	1530	861	105	1399	1267		148	172		209	222
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.08	0.81	0.06	0.28	0.61	0.01		0.10	0.20		0.03	0.04

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 68.8	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

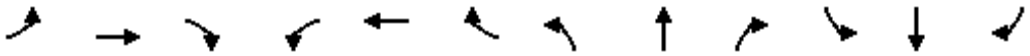
Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	1124	49	26	775	15	14	0	32	6	0	7
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1909	1837	1205	1134	1680	1779	1900	1188	1188	1900	1681	1638
Adj Flow Rate, veh/h	35	1235	54	29	852	16	15	0	35	7	0	8
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	5	60	60	8	2	2	2	60	2	2	16
Cap, veh/h	427	1373	766	169	1256	1130	110	0	70	110	0	97
Arrive On Green	0.75	0.75	0.75	0.75	0.75	0.75	0.07	0.00	0.07	0.07	0.00	0.07
Sat Flow, veh/h	651	1837	1025	260	1680	1512	1	0	1009	2	0	1392
Grp Volume(v), veh/h	35	1235	54	29	852	16	15	0	35	7	0	8
Grp Sat Flow(s),veh/h/ln	651	1837	1025	260	1680	1512	1	0	1009	2	0	1392
Q Serve(g_s), s	1.9	34.0	0.9	6.4	17.0	0.2	0.0	0.0	2.2	0.0	0.0	0.4
Cycle Q Clear(g_c), s	18.9	34.0	0.9	40.3	17.0	0.2	4.6	0.0	2.2	4.6	0.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	427	1373	766	169	1256	1130	110	0	70	110	0	97
V/C Ratio(X)	0.08	0.90	0.07	0.17	0.68	0.01	0.14	0.00	0.50	0.06	0.00	0.08
Avail Cap(c_a), veh/h	427	1373	766	169	1256	1130	170	0	139	193	0	191
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	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	1.00
Uniform Delay (d), s/veh	9.1	6.4	2.2	21.9	4.2	2.1	32.8	0.0	29.4	32.8	0.0	28.5
Incr Delay (d2), s/veh	0.4	9.7	0.2	2.2	3.0	0.0	0.2	0.0	2.0	0.1	0.0	0.1
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	0.0
%ile BackOfQ(50%),veh/ln	0.4	20.2	0.3	0.6	8.6	0.1	0.3	0.0	0.7	0.1	0.0	0.1
LnGrp Delay(d),s/veh	9.5	16.1	2.4	24.1	7.2	2.1	33.0	0.0	31.4	32.9	0.0	28.7
LnGrp LOS	A	B	A	C	A	A	C		C	C		C
Approach Vol, veh/h		1324			897			50			15	
Approach Delay, s/veh		15.3			7.7			31.9			30.6	
Approach LOS		B			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		55.0		10.6		55.0		10.6
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		49.0		9.0		49.0		9.0
Max Q Clear Time (g_c+I1), s		36.0		6.6		42.3		6.6
Green Ext Time (p_c), s		8.1		0.0		4.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.8
HCM 2010 LOS	B



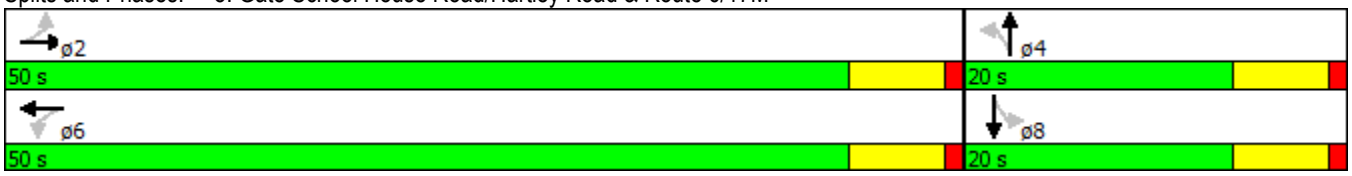
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	962	137	10	653	41	133	18	11	35	16	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.984			0.992			0.991			0.939	
Flt Protected		0.997			0.999			0.961			0.982	
Satd. Flow (prot)	0	1727	0	0	1766	0	0	1784	0	0	1236	0
Flt Permitted		0.926			0.979			0.772			0.852	
Satd. Flow (perm)	0	1604	0	0	1731	0	0	1433	0	0	1072	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			9			5			46	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	68	1034	147	11	702	44	143	19	12	38	17	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1249	0	0	757	0	0	174	0	0	101	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.17			0.66			0.72			0.47	
Control Delay		103.1			11.1			43.5			22.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		103.1			11.1			43.5			22.5	
Queue Length 50th (ft)		~661			172			67			20	
Queue Length 95th (ft)		#920			307			#132			63	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1069			1151			289			250	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.17			0.66			0.60			0.40	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70.6
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
~ 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.

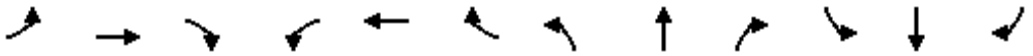
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	962	137	10	653	41	133	18	11	35	16	43
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1772	1881	1948	1794	1948	1919	1873	1919	1872	1341	1872
Adj Flow Rate, veh/h	68	1034	120	11	702	44	143	19	12	38	17	46
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	10	10	10	12	12	12	0	0	0	10	10	10
Cap, veh/h	99	960	109	62	1108	69	273	23	15	125	45	79
Arrive On Green	0.70	0.67	0.67	0.70	0.67	0.67	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	61	1425	162	9	1646	102	1211	161	102	345	317	553
Grp Volume(v), veh/h	1222	0	0	757	0	0	174	0	0	101	0	0
Grp Sat Flow(s),veh/h/ln	1647	0	0	1756	0	0	1474	0	0	1215	0	0
Q Serve(g_s), s	30.7	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	46.0	0.0	0.0	15.3	0.0	0.0	7.0	0.0	0.0	4.7	0.0	0.0
Prop In Lane	0.06		0.10	0.01		0.06	0.82		0.07	0.38		0.46
Lane Grp Cap(c), veh/h	1218	0	0	1293	0	0	356	0	0	286	0	0
V/C Ratio(X)	1.00	0.00	0.00	0.59	0.00	0.00	0.49	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	1218	0	0	1293	0	0	456	0	0	365	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	0.0	0.0	6.0	0.0	0.0	26.1	0.0	0.0	25.7	0.0	0.0
Incr Delay (d2), s/veh	26.5	0.0	0.0	0.5	0.0	0.0	0.4	0.0	0.0	0.3	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	30.0	0.0	0.0	6.8	0.0	0.0	2.9	0.0	0.0	1.6	0.0	0.0
LnGrp Delay(d),s/veh	38.1	0.0	0.0	6.4	0.0	0.0	26.5	0.0	0.0	26.0	0.0	0.0
LnGrp LOS	F			A			C			C		
Approach Vol, veh/h		1222			757			174			101	
Approach Delay, s/veh		38.1			6.4			26.5			26.0	
Approach LOS		D			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		15.3		50.0		15.3
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		48.0		9.0		17.3		6.7
Green Ext Time (p_c), s		0.0		0.4		10.1		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C



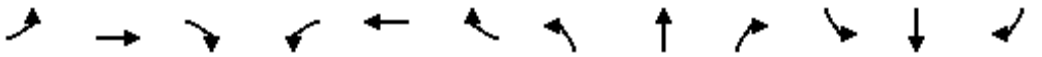
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	63	962	137	10	653	41	133	18	11	35	16	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Storage Length (ft)	150		0	100		0	90		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	86			86			86			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		0.981			0.991			0.942			0.939	
Flt Protected	0.950			0.950			0.950				0.982	
Satd. Flow (prot)	1344	1691	0	1623	1710	0	1652	1687	0	0	1236	0
Flt Permitted	0.327			0.113			0.745				0.863	
Satd. Flow (perm)	462	1691	0	193	1710	0	1295	1687	0	0	1086	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			11			12			42	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	33%	10%	3%	14%	12%	27%	3%	0%	0%	56%	10%	37%
Adj. Flow (vph)	68	1034	147	11	702	44	143	19	12	38	17	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	1181	0	11	746	0	143	31	0	0	101	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)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.97	0.97	0.97	1.08	1.08	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		2	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	83	83		83	83		83	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		40	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	65.0	65.0		65.0	65.0		15.0	15.0		15.0	15.0	
Total Split (%)	81.3%	81.3%		81.3%	81.3%		18.8%	18.8%		18.8%	18.8%	
Maximum Green (s)	59.0	59.0		59.0	59.0		9.0	9.0		9.0	9.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-2.0	0.0		-2.0	0.0		-2.0	0.0			0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
v/c Ratio	0.19	0.94		0.07	0.59		0.81	0.16			0.64	
Control Delay	4.1	25.7		3.7	7.1		68.1	25.3			41.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	4.1	25.7		3.7	7.1		68.1	25.3			41.7	
Queue Length 50th (ft)	7	398		1	135		70	9			28	
Queue Length 95th (ft)	19	#822		5	216		#168	33			#98	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)	150			100			90					
Base Capacity (vph)	352	1255		147	1265		178	200			159	
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	0.19	0.94		0.07	0.59		0.80	0.15			0.64	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 79.9
Natural Cycle: 80
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

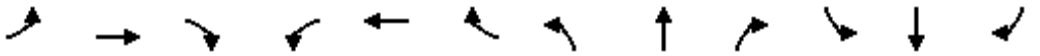
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	962	137	10	653	41	133	18	11	35	16	43
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1414	1724	1881	1708	1725	1948	1863	1919	1919	1872	1341	1872
Adj Flow Rate, veh/h	68	1034	120	11	702	44	143	19	12	38	17	46
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	33	10	10	14	12	12	3	0	0	10	10	10
Cap, veh/h	392	1118	130	179	1185	74	262	124	78	99	32	58
Arrive On Green	0.76	0.74	0.74	0.76	0.74	0.74	0.14	0.11	0.11	0.14	0.11	0.11
Sat Flow, veh/h	541	1517	176	445	1607	101	1334	1101	695	334	282	515
Grp Volume(v), veh/h	68	0	1154	11	0	746	143	0	31	101	0	0
Grp Sat Flow(s),veh/h/ln	541	0	1693	445	0	1707	1334	0	1796	1131	0	0
Q Serve(g_s), s	5.1	0.0	45.0	1.6	0.0	16.3	2.3	0.0	1.2	4.6	0.0	0.0
Cycle Q Clear(g_c), s	21.4	0.0	45.0	46.6	0.0	16.3	9.0	0.0	1.2	6.7	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.06	1.00		0.39	0.38		0.46
Lane Grp Cap(c), veh/h	392	0	1248	179	0	1259	262	0	202	217	0	0
V/C Ratio(X)	0.17	0.00	0.92	0.06	0.00	0.59	0.55	0.00	0.15	0.46	0.00	0.00
Avail Cap(c_a), veh/h	392	0	1248	179	0	1259	262	0	202	217	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.9	0.0	8.7	26.2	0.0	4.9	33.8	0.0	32.1	34.0	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	12.8	0.7	0.0	2.1	1.3	0.0	0.1	0.6	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	24.6	0.2	0.0	8.2	3.2	0.0	0.6	2.1	0.0	0.0
LnGrp Delay(d),s/veh	9.9	0.0	21.5	26.9	0.0	6.9	35.1	0.0	32.2	34.6	0.0	0.0
LnGrp LOS	A		C	C		A	D		C	C		
Approach Vol, veh/h		1222			757			174			101	
Approach Delay, s/veh		20.8			7.2			34.6			34.6	
Approach LOS		C			A			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		65.0		15.0		65.0		15.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		59.0		9.0		59.0		9.0
Max Q Clear Time (g_c+I1), s		47.0		11.0		48.6		8.7
Green Ext Time (p_c), s		6.6		0.0		6.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B



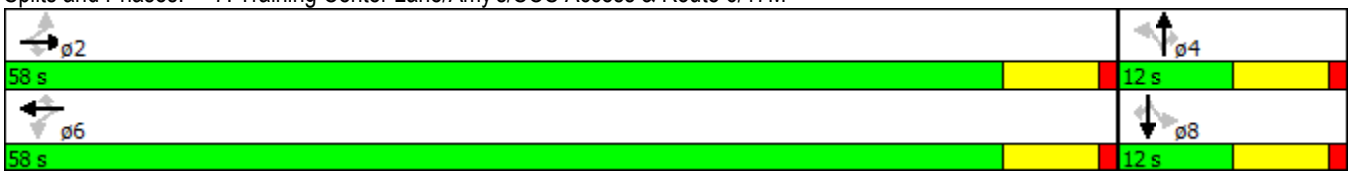
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	887	7	2	1304	9	18	0	9	9	0	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	86			86			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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.070			0.256								
Satd. Flow (perm)	129	1837	1623	482	1888	1538	0	1881	1599	0	1727	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47			47			47			64
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		507			1438			741			445	
Travel Time (s)		7.7			17.8			20.2			10.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	10	944	7	2	1387	10	19	0	10	10	0	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	944	7	2	1387	10	0	19	10	0	10	64
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm

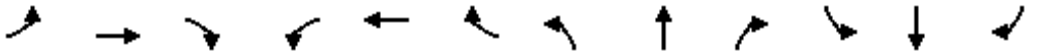
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	58.0	58.0	58.0	58.0	58.0	58.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Split (%)	82.9%	82.9%	82.9%	82.9%	82.9%	82.9%	17.1%	17.1%	17.1%	17.1%	17.1%	17.1%
Maximum Green (s)	52.0	52.0	52.0	52.0	52.0	52.0	6.0	6.0	6.0	6.0	6.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Max	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.09	0.61	0.01	0.00	0.87	0.01		0.13	0.06		0.08	0.37
Control Delay	4.7	5.7	0.0	2.5	15.8	0.0		31.9	0.7		30.9	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	4.7	5.7	0.0	2.5	15.8	0.0		31.9	0.7		30.9	15.7
Queue Length 50th (ft)	1	156	0	0	420	0		8	0		4	0
Queue Length 95th (ft)	5	272	0	2	#864	0		26	0		17	33
Internal Link Dist (ft)		427			1358			661			365	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	109	1555	1381	408	1598	1309		159	178		146	185
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.09	0.61	0.01	0.00	0.87	0.01		0.12	0.06		0.07	0.35

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70.7
Natural Cycle: 75
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M

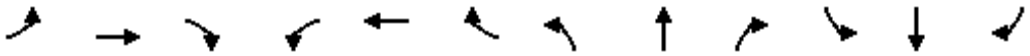




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	887	7	2	1304	9	18	0	9	9	0	60
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	10	944	7	2	1387	10	19	0	10	10	0	64
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	121	1364	1206	382	1411	1143	103	0	137	103	0	128
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.09	0.00	0.09	0.09	0.00	0.09
Sat Flow, veh/h	379	1837	1623	593	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	10	944	7	2	1387	10	19	0	10	10	0	64
Grp Sat Flow(s),veh/h/ln	379	1837	1623	593	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	1.8	19.0	0.1	0.1	48.7	0.1	0.0	0.0	0.4	0.0	0.0	2.9
Cycle Q Clear(g_c), s	50.5	19.0	0.1	19.2	48.7	0.1	6.0	0.0	0.4	6.0	0.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	121	1364	1206	382	1411	1143	103	0	137	103	0	128
V/C Ratio(X)	0.08	0.69	0.01	0.01	0.98	0.01	0.18	0.00	0.07	0.10	0.00	0.50
Avail Cap(c_a), veh/h	121	1364	1206	382	1411	1143	103	0	137	103	0	128
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	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	1.00
Uniform Delay (d), s/veh	32.6	4.8	2.3	9.8	8.6	2.3	35.0	0.0	29.4	35.0	0.0	30.6
Incr Delay (d2), s/veh	1.3	2.9	0.0	0.0	20.2	0.0	0.3	0.0	0.1	0.2	0.0	1.1
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	0.0
%ile BackOfQ(50%),veh/ln	0.2	10.3	0.0	0.0	32.2	0.1	0.4	0.0	0.2	0.2	0.0	1.2
LnGrp Delay(d),s/veh	33.9	7.7	2.3	9.9	28.7	2.3	35.3	0.0	29.5	35.2	0.0	31.7
LnGrp LOS	C	A	A	A	C	A	D		C	D		C
Approach Vol, veh/h		961			1399			29			74	
Approach Delay, s/veh		7.9			28.5			33.3			32.2	
Approach LOS		A			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		58.0		12.0		58.0		12.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		52.0		6.0		52.0		6.0
Max Q Clear Time (g_c+I1), s		52.5		8.0		50.7		8.0
Green Ext Time (p_c), s		0.0		0.0		1.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.6
HCM 2010 LOS	C



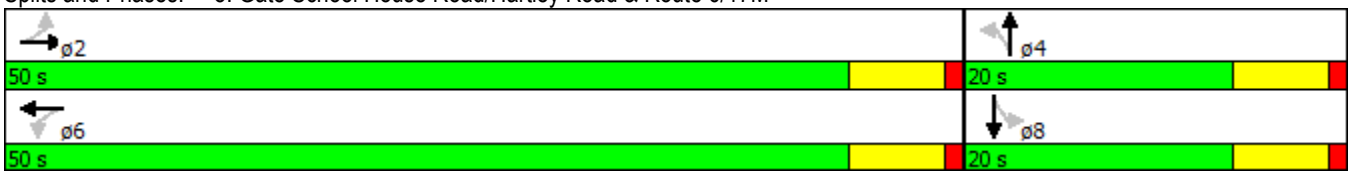
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	683	108	11	1064	67	146	28	10	61	27	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.984			0.992			0.992			0.923	
Flt Protected		0.993						0.962			0.985	
Satd. Flow (prot)	0	1784	0	0	1868	0	0	1765	0	0	1471	0
Flt Permitted		0.696			0.989			0.586			0.866	
Satd. Flow (perm)	0	1250	0	0	1848	0	0	1075	0	0	1293	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			9			4			85	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	131	734	116	12	1144	72	157	30	11	66	29	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	981	0	0	1228	0	0	198	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)		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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		1.23			1.05			0.93			0.68	
Control Delay		134.0			56.9			75.6			28.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		134.0			56.9			75.6			28.4	
Queue Length 50th (ft)		~538			~592			82			52	
Queue Length 95th (ft)		#759			#828			#202			#145	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		795			1169			219			327	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		1.23			1.05			0.90			0.67	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 69.7
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
~ 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.

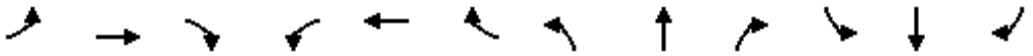
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	122	683	108	11	1064	67	146	28	10	61	27	116
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1838	1881	1948	1895	1948	1919	1850	1919	1872	1618	1872
Adj Flow Rate, veh/h	131	734	89	12	1144	72	157	30	11	66	29	125
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	119	502	58	56	1106	69	267	42	13	136	54	162
Arrive On Green	0.66	0.63	0.63	0.66	0.63	0.63	0.22	0.20	0.20	0.22	0.20	0.20
Sat Flow, veh/h	95	794	91	7	1750	109	890	216	65	353	277	829
Grp Volume(v), veh/h	954	0	0	1228	0	0	198	0	0	220	0	0
Grp Sat Flow(s),veh/h/ln	981	0	0	1866	0	0	1172	0	0	1458	0	0
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	46.0	0.0	0.0	45.5	0.0	0.0	11.6	0.0	0.0	9.4	0.0	0.0
Prop In Lane	0.14		0.09	0.01		0.06	0.79		0.06	0.30		0.57
Lane Grp Cap(c), veh/h	707	0	0	1285	0	0	356	0	0	395	0	0
V/C Ratio(X)	1.35	0.00	0.00	0.96	0.00	0.00	0.56	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	707	0	0	1285	0	0	363	0	0	402	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.2	0.0	0.0	13.0	0.0	0.0	26.5	0.0	0.0	26.0	0.0	0.0
Incr Delay (d2), s/veh	166.8	0.0	0.0	15.6	0.0	0.0	1.0	0.0	0.0	1.0	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	45.7	0.0	0.0	26.5	0.0	0.0	3.6	0.0	0.0	3.9	0.0	0.0
LnGrp Delay(d),s/veh	179.0	0.0	0.0	28.6	0.0	0.0	27.5	0.0	0.0	27.0	0.0	0.0
LnGrp LOS	F			C			C			C		
Approach Vol, veh/h		954			1228			198			220	
Approach Delay, s/veh		179.0			28.6			27.5			27.0	
Approach LOS		F			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.0		19.6		50.0		19.6
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		48.0		13.6		47.5		11.4
Green Ext Time (p_c), s		0.0		0.1		0.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	83.6
HCM 2010 LOS	F



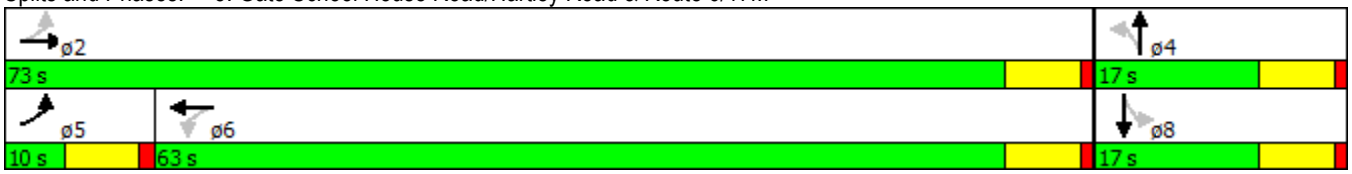
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	683	108	11	1064	67	146	28	10	61	27	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Storage Length (ft)	150		0	100		0	90		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	86			86			86			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		0.980			0.991			0.960			0.923	
Flt Protected	0.950			0.950			0.950				0.985	
Satd. Flow (prot)	1581	1748	0	1682	1807	0	1652	1613	0	0	1471	0
Flt Permitted	0.063			0.319			0.392				0.884	
Satd. Flow (perm)	105	1748	0	565	1807	0	682	1613	0	0	1320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			7			11			60	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	131	734	116	12	1144	72	157	30	11	66	29	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	131	850	0	12	1216	0	157	41	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)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.97	0.97	0.97	1.08	1.08	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		2	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	83	83		83	83		83	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		40	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		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	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	10.0	73.0		63.0	63.0		17.0	17.0		17.0	17.0	
Total Split (%)	11.1%	81.1%		70.0%	70.0%		18.9%	18.9%		18.9%	18.9%	
Maximum Green (s)	4.0	67.0		57.0	57.0		11.0	11.0		11.0	11.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
v/c Ratio	0.92	0.65		0.03	1.06		1.89	0.20			1.03	
Control Delay	74.3	8.4		6.5	62.9		469.2	30.8			100.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	74.3	8.4		6.5	62.9		469.2	30.8			100.1	
Queue Length 50th (ft)	29	188		2	~768		~138	16			~102	
Queue Length 95th (ft)	#95	293		9	#1019		#259	46			#245	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)	150			100			90					
Base Capacity (vph)	143	1307		357	1147		83	206			214	
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	0.92	0.65		0.03	1.06		1.89	0.20			1.03	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 140
Control Type: Semi Act-Uncoord
~ 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.

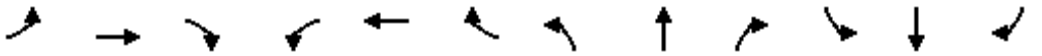
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	122	683	108	11	1064	67	146	28	10	61	27	116
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1665	1784	1881	1770	1823	1948	1863	1800	1919	1872	1618	1872
Adj Flow Rate, veh/h	131	734	89	12	1144	24	157	30	11	66	29	125
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	13	6	6	10	7	7	3	9	9	20	20	20
Cap, veh/h	150	1162	141	406	1127	24	183	154	56	94	27	90
Arrive On Green	0.04	0.74	0.74	0.63	0.63	0.63	0.12	0.12	0.12	0.14	0.12	0.12
Sat Flow, veh/h	1585	1561	189	630	1779	37	1228	1258	461	341	218	735
Grp Volume(v), veh/h	131	0	823	12	0	1168	157	0	41	220	0	0
Grp Sat Flow(s),veh/h/ln	1585	0	1750	630	0	1817	1228	0	1719	1294	0	0
Q Serve(g_s), s	2.8	0.0	20.4	0.8	0.0	57.0	0.0	0.0	1.9	11.1	0.0	0.0
Cycle Q Clear(g_c), s	2.8	0.0	20.4	11.3	0.0	57.0	11.0	0.0	1.9	13.0	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.02	1.00		0.27	0.30		0.57
Lane Grp Cap(c), veh/h	150	0	1303	406	0	1150	183	0	210	239	0	0
V/C Ratio(X)	0.87	0.00	0.63	0.03	0.00	1.02	0.86	0.00	0.20	0.92	0.00	0.00
Avail Cap(c_a), veh/h	150	0	1303	406	0	1150	183	0	210	239	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.1	0.0	5.5	10.7	0.0	16.5	41.4	0.0	35.5	41.2	0.0	0.0
Incr Delay (d2), s/veh	38.6	0.0	0.8	0.0	0.0	30.4	30.0	0.0	0.2	36.8	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	9.9	0.1	0.0	37.8	5.4	0.0	0.9	7.8	0.0	0.0
LnGrp Delay(d),s/veh	63.7	0.0	6.3	10.7	0.0	46.9	71.4	0.0	35.7	78.0	0.0	0.0
LnGrp LOS	E		A	B		F	E		D	E		
Approach Vol, veh/h		954			1180			198			220	
Approach Delay, s/veh		14.2			46.5			64.0			78.0	
Approach LOS		B			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		73.0		17.0	10.0	63.0		17.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		67.0		11.0	4.0	57.0		11.0
Max Q Clear Time (g_c+I1), s		22.4		13.0	4.8	59.0		15.0
Green Ext Time (p_c), s		10.1		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.5
HCM 2010 LOS	D



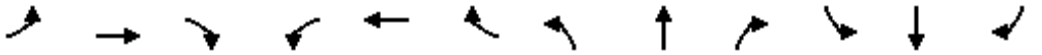
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	9	806	5	5	1245	7	5	0	5	16	0	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	86			86			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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.073			0.291								
Satd. Flow (perm)	134	1837	1623	547	1888	1538	0	1881	1599	0	1727	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47			47			47			59
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		507			1428			741			445	
Travel Time (s)		7.7			17.7			20.2			10.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	10	857	5	5	1324	7	5	0	5	17	0	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	857	5	5	1324	7	0	5	5	0	17	59
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	2	2	2	6	6	6	4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	16.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	55.0	55.0	55.0	55.0	55.0	55.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	78.6%	78.6%	78.6%	78.6%	78.6%	78.6%	21.4%	21.4%	21.4%	21.4%	21.4%	21.4%
Maximum Green (s)	49.0	49.0	49.0	49.0	49.0	49.0	9.0	9.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Max	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.09	0.56	0.00	0.01	0.84	0.01		0.03	0.03		0.12	0.33
Control Delay	5.1	5.5	0.0	2.8	14.6	0.0		28.0	0.2		29.8	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	5.1	5.5	0.0	2.8	14.6	0.0		28.0	0.2		29.8	14.2
Queue Length 50th (ft)	1	128	0	0	352	0		2	0		7	0
Queue Length 95th (ft)	6	257	0	3	#821	0		11	0		23	31
Internal Link Dist (ft)		427			1348			661			365	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	112	1535	1364	457	1577	1293		246	250		227	247
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.09	0.56	0.00	0.01	0.84	0.01		0.02	0.02		0.07	0.24

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 68.5
Natural Cycle: 65
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

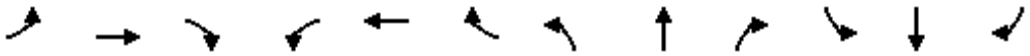
Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	806	5	5	1245	7	5	0	5	16	0	55
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	10	857	5	5	1324	7	5	0	5	17	0	59
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	132	1313	1161	407	1359	1100	107	0	176	107	0	164
Arrive On Green	0.72	0.72	0.72	0.72	0.72	0.72	0.11	0.00	0.11	0.11	0.00	0.11
Sat Flow, veh/h	404	1837	1623	645	1900	1538	16	0	1599	15	0	1495
Grp Volume(v), veh/h	10	857	5	5	1324	7	5	0	5	17	0	59
Grp Sat Flow(s),veh/h/ln	404	1837	1623	645	1900	1538	16	0	1599	15	0	1495
Q Serve(g_s), s	1.6	17.1	0.1	0.3	44.9	0.1	0.1	0.0	0.2	0.1	0.0	2.5
Cycle Q Clear(g_c), s	46.1	17.1	0.1	17.2	44.9	0.1	7.5	0.0	0.2	7.5	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	132	1313	1161	407	1359	1100	107	0	176	107	0	164
V/C Ratio(X)	0.08	0.65	0.00	0.01	0.97	0.01	0.05	0.00	0.03	0.16	0.00	0.36
Avail Cap(c_a), veh/h	132	1313	1161	407	1359	1100	136	0	210	135	0	196
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	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	1.00
Uniform Delay (d), s/veh	30.7	5.2	2.8	9.8	9.2	2.8	34.2	0.0	27.2	34.3	0.0	28.3
Incr Delay (d2), s/veh	1.1	2.5	0.0	0.1	19.0	0.0	0.1	0.0	0.0	0.3	0.0	0.5
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	9.3	0.0	0.1	30.0	0.0	0.1	0.0	0.1	0.3	0.0	1.1
LnGrp Delay(d),s/veh	31.8	7.7	2.8	9.8	28.2	2.8	34.3	0.0	27.3	34.5	0.0	28.8
LnGrp LOS	C	A	A	A	C	A	C		C	C		C
Approach Vol, veh/h		872			1336			10			76	
Approach Delay, s/veh		8.0			28.0			30.8			30.0	
Approach LOS		A			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		55.0		13.6		55.0		13.6
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		49.0		9.0		49.0		9.0
Max Q Clear Time (g_c+I1), s		48.1		9.5		46.9		9.5
Green Ext Time (p_c), s		0.8		0.0		1.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	697	108	18	1069	41	124	18	17	27	15	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.983			0.995			0.986			0.931	
Flt Protected		0.997			0.999			0.962			0.984	
Satd. Flow (prot)	0	1798	0	0	1871	0	0	1761	0	0	1478	0
Flt Permitted		0.861			0.981			0.772			0.872	
Satd. Flow (perm)	0	1553	0	0	1837	0	0	1413	0	0	1310	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			5			8			47	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	60	749	116	19	1149	44	133	19	18	29	16	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	925	0	0	1212	0	0	170	0	0	92	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

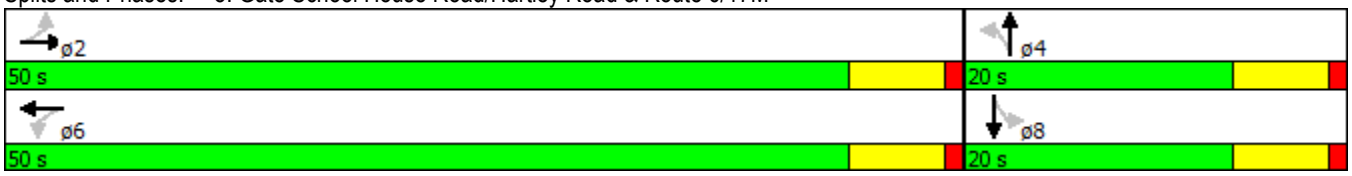
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.89			0.99			0.70			0.36	
Control Delay		24.7			40.0			41.6			17.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		24.7			40.0			41.6			17.9	
Queue Length 50th (ft)		292			~564			64			16	
Queue Length 95th (ft)		#610			#817			#126			54	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1036			1219			287			298	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.89			0.99			0.59			0.31	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	

~ 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.

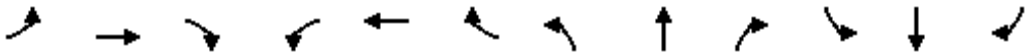
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	56	697	108	18	1069	41	124	18	17	27	15	44
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1846	1881	1948	1894	1948	1919	1857	1919	1872	1614	1872
Adj Flow Rate, veh/h	60	749	89	19	1149	44	133	19	18	29	16	47
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	6	6	6	7	7	7	9	9	9	20	20	20
Cap, veh/h	104	917	106	67	1195	45	265	23	22	121	51	101
Arrive On Green	0.70	0.67	0.67	0.70	0.67	0.67	0.17	0.14	0.14	0.17	0.14	0.14
Sat Flow, veh/h	64	1366	157	12	1780	68	1194	171	162	332	380	744
Grp Volume(v), veh/h	898	0	0	1212	0	0	170	0	0	92	0	0
Grp Sat Flow(s),veh/h/ln	1587	0	0	1860	0	0	1526	0	0	1456	0	0
Q Serve(g_s), s	0.0	0.0	0.0	9.6	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	21.5	0.0	0.0	34.8	0.0	0.0	6.1	0.0	0.0	3.4	0.0	0.0
Prop In Lane	0.07		0.10	0.02		0.04	0.78		0.11	0.32		0.51
Lane Grp Cap(c), veh/h	1178	0	0	1367	0	0	359	0	0	320	0	0
V/C Ratio(X)	0.76	0.00	0.00	0.89	0.00	0.00	0.47	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	1232	0	0	1433	0	0	484	0	0	440	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	0.0	9.0	0.0	0.0	25.0	0.0	0.0	24.5	0.0	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	6.5	0.0	0.0	0.4	0.0	0.0	0.2	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	9.3	0.0	0.0	18.2	0.0	0.0	2.6	0.0	0.0	1.4	0.0	0.0
LnGrp Delay(d),s/veh	8.9	0.0	0.0	15.5	0.0	0.0	25.3	0.0	0.0	24.6	0.0	0.0
LnGrp LOS	A			B			C			C		
Approach Vol, veh/h		898			1212			170			92	
Approach Delay, s/veh		8.9			15.5			25.3			24.6	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		47.8		14.4		47.8		14.4
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		23.5		8.1		36.8		5.4
Green Ext Time (p_c), s		10.0		0.4		5.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B



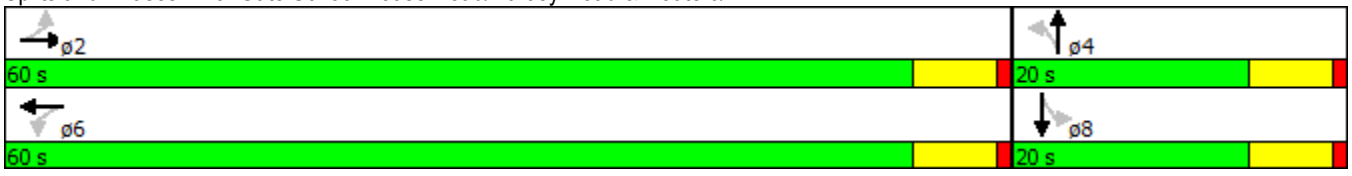
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	697	108	18	1069	41	124	18	17	27	15	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Storage Length (ft)	150		0	100		0	90		0	0		0
Storage Lanes	1		0	1		0	1		0	0		0
Taper Length (ft)	86			86			86			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		0.980			0.994			0.927			0.931	
Flt Protected	0.950			0.950			0.950				0.984	
Satd. Flow (prot)	1581	1748	0	1682	1811	0	1652	1587	0	0	1478	0
Flt Permitted	0.082			0.254			0.820				0.880	
Satd. Flow (perm)	136	1748	0	450	1811	0	1426	1587	0	0	1322	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			5			18			47	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	2%	10%	7%	4%	3%	9%	0%	17%	20%	14%
Adj. Flow (vph)	60	749	116	19	1149	44	133	19	18	29	16	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	865	0	19	1193	0	133	37	0	0	92	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)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.97	0.97	0.97	1.08	1.08	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2		2	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru			Thru	
Leading Detector (ft)	83	83		83	83		83	83		50	83	
Trailing Detector (ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Position(ft)	-5	-5		-5	-5		-5	-5		0	-5	
Detector 1 Size(ft)	40	40		40	40		40	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		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	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Total Split (%)	75.0%	75.0%		75.0%	75.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	54.0	54.0		54.0	54.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio	0.59	0.66		0.06	0.88		0.62	0.15			0.40	
Control Delay	38.5	10.0		4.8	20.7		44.2	19.7			22.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	38.5	10.0		4.8	20.7		44.2	19.7			22.2	
Queue Length 50th (ft)	14	208		3	435		61	8			19	
Queue Length 95th (ft)	#90	375		10	#855		117	33			61	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)	150			100			90					
Base Capacity (vph)	102	1318		338	1362		282	328			299	
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	0.59	0.66		0.06	0.88		0.47	0.11			0.31	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 72.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	56	697	108	18	1069	41	124	18	17	27	15	44
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1665	1784	1881	1770	1822	1948	1863	1834	1919	1872	1614	1872
Adj Flow Rate, veh/h	60	749	89	19	1149	44	133	19	18	29	16	47
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	13	6	6	10	7	7	3	9	9	20	20	20
Cap, veh/h	173	1128	134	385	1257	48	268	102	97	101	42	83
Arrive On Green	0.72	0.72	0.72	0.72	0.72	0.72	0.12	0.12	0.12	0.14	0.12	0.12
Sat Flow, veh/h	418	1565	186	621	1743	67	1334	867	822	316	356	702
Grp Volume(v), veh/h	60	0	838	19	0	1193	133	0	37	92	0	0
Grp Sat Flow(s),veh/h/ln	418	0	1751	621	0	1810	1334	0	1689	1374	0	0
Q Serve(g_s), s	10.2	0.0	19.1	1.3	0.0	40.1	1.9	0.0	1.5	1.8	0.0	0.0
Cycle Q Clear(g_c), s	50.3	0.0	19.1	20.3	0.0	40.1	6.4	0.0	1.5	4.5	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.04	1.00		0.49	0.32		0.51
Lane Grp Cap(c), veh/h	173	0	1262	385	0	1305	268	0	199	262	0	0
V/C Ratio(X)	0.35	0.00	0.66	0.05	0.00	0.91	0.50	0.00	0.19	0.35	0.00	0.00
Avail Cap(c_a), veh/h	175	0	1270	388	0	1313	362	0	318	357	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.1	0.0	5.6	11.0	0.0	8.5	31.7	0.0	29.6	30.6	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	1.0	0.0	0.0	9.7	0.5	0.0	0.2	0.3	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	9.2	0.2	0.0	23.1	2.7	0.0	0.7	1.7	0.0	0.0
LnGrp Delay(d),s/veh	29.5	0.0	6.6	11.0	0.0	18.2	32.2	0.0	29.8	30.9	0.0	0.0
LnGrp LOS	C		A	B		B	C		C	C		
Approach Vol, veh/h		898			1212			170			92	
Approach Delay, s/veh		8.1			18.1			31.7			30.9	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		59.7		14.8		59.7		14.8
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		54.0		14.0		54.0		14.0
Max Q Clear Time (g_c+I1), s		52.3		8.4		42.1		6.5
Green Ext Time (p_c), s		1.3		0.4		7.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

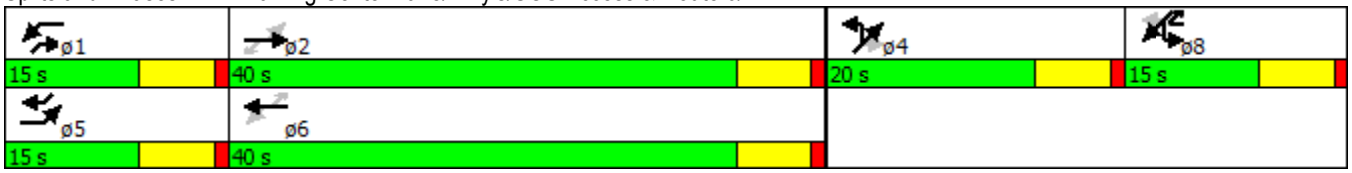
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	12	738	113	42	817	10	101	0	63	8	0	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1666	1891	1591	1671	1925	1495	0	1752	1509	0	1492	1346
Flt Permitted	0.117			0.148				0.950			0.950	
Satd. Flow (perm)	205	1891	1591	260	1925	1495	0	1752	1509	0	1492	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182			109			109			109
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		545			1400			738			450	
Travel Time (s)		8.3			17.4			20.1			10.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	10%	2%	3%	8%	2%	8%	3%	2%	7%	21%	2%	20%
Adj. Flow (vph)	13	785	120	45	869	11	107	0	67	9	0	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	785	120	45	869	11	0	107	67	0	9	28
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	Split	NA	pm+ov	Split	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	5	2		1	6	8	4	4	1	8	8	5
Permitted Phases	2		2	6		6			4			8
Detector Phase	5	2	2	1	6	8	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	11.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	40.0	40.0	15.0	40.0	15.0	20.0	20.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	44.4%	44.4%	16.7%	44.4%	16.7%	22.2%	22.2%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	34.0	34.0	9.0	34.0	9.0	14.0	14.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min	None	None	None	None	None	None	None
v/c Ratio	0.06	0.72	0.12	0.16	0.73	0.01		0.49	0.16		0.08	0.10
Control Delay	8.3	24.0	1.0	8.5	23.0	0.0		38.4	2.0		36.6	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	8.3	24.0	1.0	8.5	23.0	0.0		38.4	2.0		36.6	0.8
Queue Length 50th (ft)	1	240	0	5	277	0		41	0		3	0
Queue Length 95th (ft)	11	#674	10	25	#749	0		100	9		19	0
Internal Link Dist (ft)		465			1320			658			370	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	326	1086	991	358	1184	1060		359	495		196	343
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.04	0.72	0.12	0.13	0.73	0.01		0.30	0.14		0.05	0.08

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 70
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

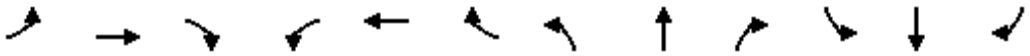
Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	12	738	113	42	817	10	101	0	63	8	0	26
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1753	1891	1872	1759	1937	1759	1900	1845	1776	1900	1570	1583
Adj Flow Rate, veh/h	13	785	120	45	869	11	107	0	67	9	0	28
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	2	3	8	2	8	2	2	7	2	2	20
Cap, veh/h	173	898	756	214	952	870	160	0	152	56	0	85
Arrive On Green	0.01	0.48	0.48	0.03	0.49	0.49	0.09	0.00	0.09	0.04	0.00	0.04
Sat Flow, veh/h	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Grp Volume(v), veh/h	13	785	120	45	869	11	107	0	67	9	0	28
Grp Sat Flow(s),veh/h/ln	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Q Serve(g_s), s	0.3	24.1	2.8	0.9	26.8	0.2	3.8	0.0	2.7	0.4	0.0	1.3
Cycle Q Clear(g_c), s	0.3	24.1	2.8	0.9	26.8	0.2	3.8	0.0	2.7	0.4	0.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	173	898	756	214	952	870	160	0	152	56	0	85
V/C Ratio(X)	0.08	0.87	0.16	0.21	0.91	0.01	0.67	0.00	0.44	0.16	0.00	0.33
Avail Cap(c_a), veh/h	389	993	836	404	1017	921	380	0	341	208	0	222
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	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	1.00
Uniform Delay (d), s/veh	13.9	15.2	9.6	13.2	15.2	5.7	28.5	0.0	27.4	30.2	0.0	29.0
Incr Delay (d2), s/veh	0.1	7.5	0.0	0.2	11.3	0.0	1.8	0.0	0.8	0.5	0.0	0.8
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	14.3	1.2	0.4	17.2	0.1	1.9	0.0	1.2	0.2	0.0	0.5
LnGrp Delay(d),s/veh	14.0	22.8	9.7	13.3	26.5	5.7	30.3	0.0	28.2	30.7	0.0	29.8
LnGrp LOS	B	C	A	B	C	A	C		C	C		C
Approach Vol, veh/h		918			925			174			37	
Approach Delay, s/veh		20.9			25.6			29.5			30.0	
Approach LOS		C			C			C			C	

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	36.8		11.9	6.6	37.8		8.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	34.0		14.0	9.0	34.0		9.0
Max Q Clear Time (g_c+I1), s	2.9	26.1		5.8	2.3	28.8		3.3
Green Ext Time (p_c), s	0.0	4.0		0.3	0.0	3.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

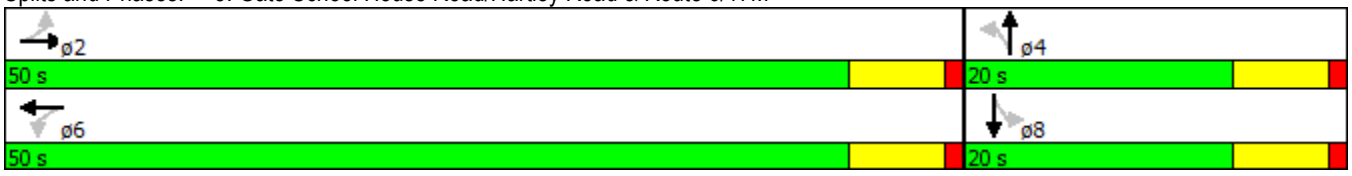


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	665	100	12	724	21	106	10	15	33	13	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
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		0.983			0.996			0.985			0.929	
Flt Protected		0.998			0.999			0.961			0.983	
Satd. Flow (prot)	0	1845	0	0	1930	0	0	1802	0	0	1334	0
Flt Permitted		0.949			0.984			0.699			0.869	
Satd. Flow (perm)	0	1755	0	0	1901	0	0	1311	0	0	1179	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			4			8			54	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	42%
Adj. Flow (vph)	36	707	106	13	770	22	113	11	16	35	14	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	849	0	0	805	0	0	140	0	0	103	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	1.01	0.97	1.01	0.97	0.93	0.97	0.99	0.99	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	2	2		6	6		4	4		8	8	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	16.0	16.0		16.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	50.0	50.0		50.0	50.0		20.0	20.0		20.0	20.0	
Total Split (%)	71.4%	71.4%		71.4%	71.4%		28.6%	28.6%		28.6%	28.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		14.0	14.0		14.0	14.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
v/c Ratio		0.72			0.63			0.56			0.39	
Control Delay		12.7			10.3			30.7			17.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		12.7			10.3			30.7			17.5	
Queue Length 50th (ft)		169			147			35			12	
Queue Length 95th (ft)		376			309			105			59	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)												
Base Capacity (vph)		1524			1648			400			393	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.56			0.49			0.35			0.26	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 50.7	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

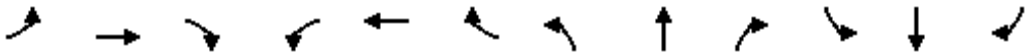
Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	665	100	12	724	21	106	10	15	33	13	51
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1881	1893	1881	1948	1952	1948	1919	1904	1919	1872	1461	1872
Adj Flow Rate, veh/h	36	707	79	13	770	22	113	11	16	35	14	54
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	0	0	0	0	0	0
Cap, veh/h	122	879	96	104	1032	29	332	15	22	175	30	84
Arrive On Green	0.61	0.56	0.56	0.61	0.56	0.56	0.18	0.13	0.13	0.18	0.13	0.13
Sat Flow, veh/h	39	1584	173	11	1859	53	1268	123	180	369	240	671
Grp Volume(v), veh/h	822	0	0	805	0	0	140	0	0	103	0	0
Grp Sat Flow(s),veh/h/ln	1795	0	0	1923	0	0	1571	0	0	1280	0	0
Q Serve(g_s), s	1.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.5	0.0	0.0	11.1	0.0	0.0	2.6	0.0	0.0	2.5	0.0	0.0
Prop In Lane	0.04		0.10	0.02		0.03	0.81		0.11	0.34		0.52
Lane Grp Cap(c), veh/h	1192	0	0	1268	0	0	454	0	0	357	0	0
V/C Ratio(X)	0.69	0.00	0.00	0.64	0.00	0.00	0.31	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	2261	0	0	2434	0	0	804	0	0	656	0	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	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.4	0.0	0.0	6.2	0.0	0.0	14.7	0.0	0.0	15.2	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.2	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	0.0	5.0	0.0	0.0	1.2	0.0	0.0	0.9	0.0	0.0
LnGrp Delay(d),s/veh	6.7	0.0	0.0	6.4	0.0	0.0	14.9	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	A			A			B			B		
Approach Vol, veh/h		822			805			140			103	
Approach Delay, s/veh		6.7			6.4			14.9			15.3	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		26.8		10.7		26.8		10.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		44.0		14.0		44.0		14.0
Max Q Clear Time (g_c+I1), s		14.5		4.6		13.1		4.5
Green Ext Time (p_c), s		6.4		0.5		6.4		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	7.6
HCM 2010 LOS	A



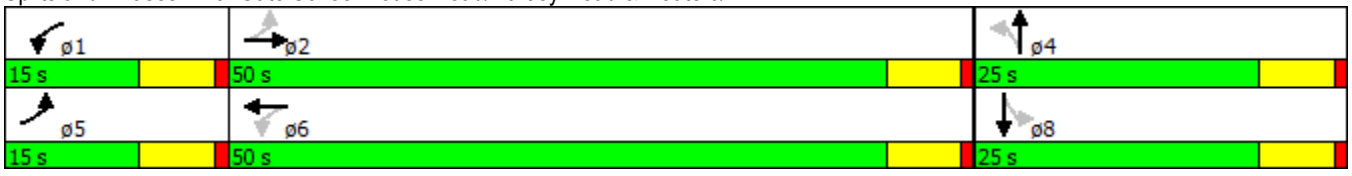
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	665	100	12	724	21	106	10	15	33	13	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	12	12	12	12
Grade (%)		2%			-5%			-2%			3%	
Storage Length (ft)	150		0	100		0	90		0	0		0
Storage Lanes	1		0	1		0	1		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		0.980			0.996			0.911			0.929	
Flt Protected	0.950			0.950			0.950				0.983	
Satd. Flow (prot)	1527	1794	0	1850	1868	0	1685	1632	0	0	1334	0
Flt Permitted	0.200			0.230			0.785				0.876	
Satd. Flow (perm)	322	1794	0	448	1868	0	1392	1632	0	0	1189	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			2			16			54	
Link Speed (mph)		55			55			35			35	
Link Distance (ft)		1742			1632			549			649	
Travel Time (s)		21.6			20.2			10.7			12.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	3%	1%	0%	3%	33%	1%	0%	0%	18%	0%	42%
Adj. Flow (vph)	36	707	106	13	770	22	113	11	16	35	14	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	813	0	13	792	0	113	27	0	0	103	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)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.97	0.97	0.97	1.08	1.08	0.99	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (ft)	50	83		50	83		50	83		50	83	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	50	40		50	40		50	40		50	40	
Detector 1 Type	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	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		43			43			43			43	
Detector 2 Size(ft)		40			40			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	

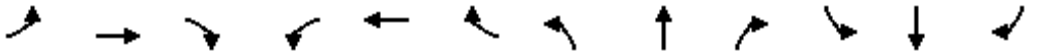
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	3.0	10.0		3.0	10.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	16.0		9.0	16.0		11.0	11.0		11.0	11.0	
Total Split (s)	15.0	50.0		15.0	50.0		25.0	25.0		25.0	25.0	
Total Split (%)	16.7%	55.6%		16.7%	55.6%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	9.0	44.0		9.0	44.0		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-2.0	0.0		-2.0	0.0		-2.0	0.0			0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	6.0			6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
v/c Ratio	0.09	0.66		0.03	0.68		0.39	0.09			0.41	
Control Delay	4.6	13.7		4.2	17.7		30.7	18.6			21.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	4.6	13.7		4.2	17.7		30.7	18.6			21.4	
Queue Length 50th (ft)	4	173		1	273		43	4			18	
Queue Length 95th (ft)	14	#601		7	#573		99	26			67	
Internal Link Dist (ft)		1662			1552			469			569	
Turn Bay Length (ft)	150			100			90					
Base Capacity (vph)	466	1380		591	1366		521	564			438	
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	0.08	0.59		0.02	0.58		0.22	0.05			0.24	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 63.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Gate School House Road/Hartley Road & Route 6/17M





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	665	100	12	724	21	106	10	15	33	13	51
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1608	1831	1881	1948	1876	1948	1900	1919	1919	1872	1461	1872
Adj Flow Rate, veh/h	36	707	79	13	770	22	113	11	16	35	14	54
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	17	3	3	0	3	3	1	0	0	0	0	0
Cap, veh/h	342	843	94	364	921	26	387	86	125	133	31	78
Arrive On Green	0.06	0.52	0.52	0.05	0.51	0.51	0.16	0.12	0.12	0.16	0.12	0.12
Sat Flow, veh/h	1531	1618	181	1855	1815	52	1354	708	1030	331	254	645
Grp Volume(v), veh/h	36	0	786	13	0	792	113	0	27	103	0	0
Grp Sat Flow(s),veh/h/ln	1531	0	1799	1855	0	1866	1354	0	1737	1230	0	0
Q Serve(g_s), s	0.5	0.0	19.2	0.1	0.0	18.8	0.0	0.0	0.7	2.4	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	19.2	0.1	0.0	18.8	3.0	0.0	0.7	3.9	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.03	1.00		0.59	0.34		0.52
Lane Grp Cap(c), veh/h	342	0	937	364	0	947	387	0	210	290	0	0
V/C Ratio(X)	0.11	0.00	0.84	0.04	0.00	0.84	0.29	0.00	0.13	0.36	0.00	0.00
Avail Cap(c_a), veh/h	573	0	1531	669	0	1589	721	0	639	587	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.7	0.0	10.5	7.7	0.0	10.9	19.5	0.0	20.3	21.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.0	0.0	0.0	0.8	0.2	0.0	0.1	0.3	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	9.7	0.1	0.0	9.7	1.5	0.0	0.4	1.3	0.0	0.0
LnGrp Delay(d),s/veh	7.7	0.0	11.6	7.7	0.0	11.7	19.7	0.0	20.4	21.6	0.0	0.0
LnGrp LOS	A		B	A		B	B		C	C		
Approach Vol, veh/h		822			805			140			103	
Approach Delay, s/veh		11.4			11.6			19.8			21.6	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	32.9		12.3	7.2	32.2		12.3
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	44.0		19.0	9.0	44.0		19.0
Max Q Clear Time (g_c+I1), s	2.1	21.2		5.0	2.5	20.8		5.9
Green Ext Time (p_c), s	0.0	5.4		0.5	0.0	5.5		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

AMY'S KITCHEN/SCIENCE OF THE SOUL

RESPONSE TO COMMENT FROM OFFICE OF MENTAL HEALTH

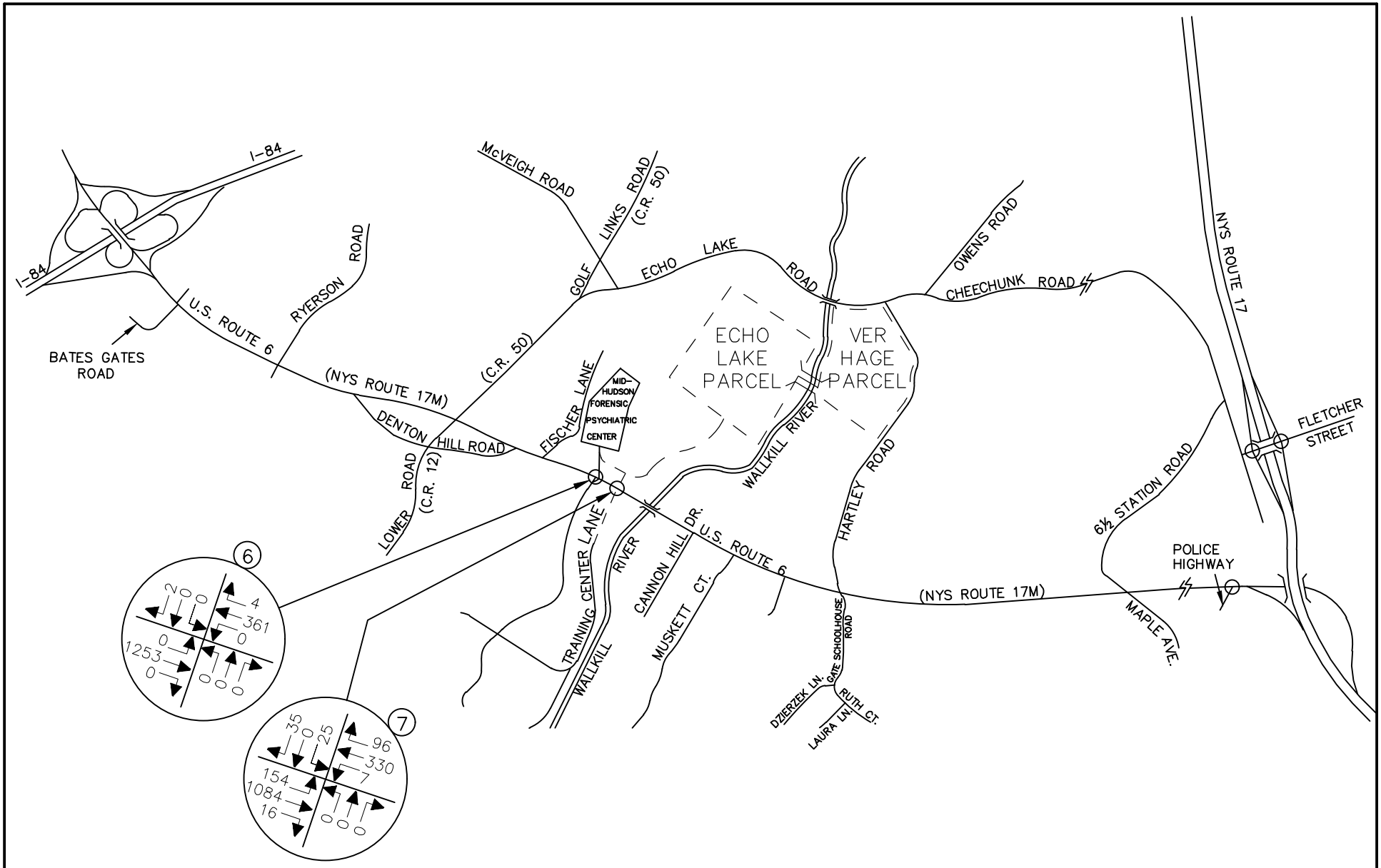
AMY'S KITCHEN/SCIENCE OF THE SOUL

RESPONSE TO COMMENT FROM OFFICE OF MENTAL HEALTH

2033 FULL BUILD CONDITIONS MAINTAINING A RIGHT TURN ENTRY/ RIGHT TURN EXIT ONLY DRIVEWAY AT EXISTING PSYCHIATRIC CENTER ACCESS LOCATION

AMY'S KITCHEN/SCIENCE OF THE SOUL

FIGURES



NOTE: LINE DIAGRAM NOT TO SCALE

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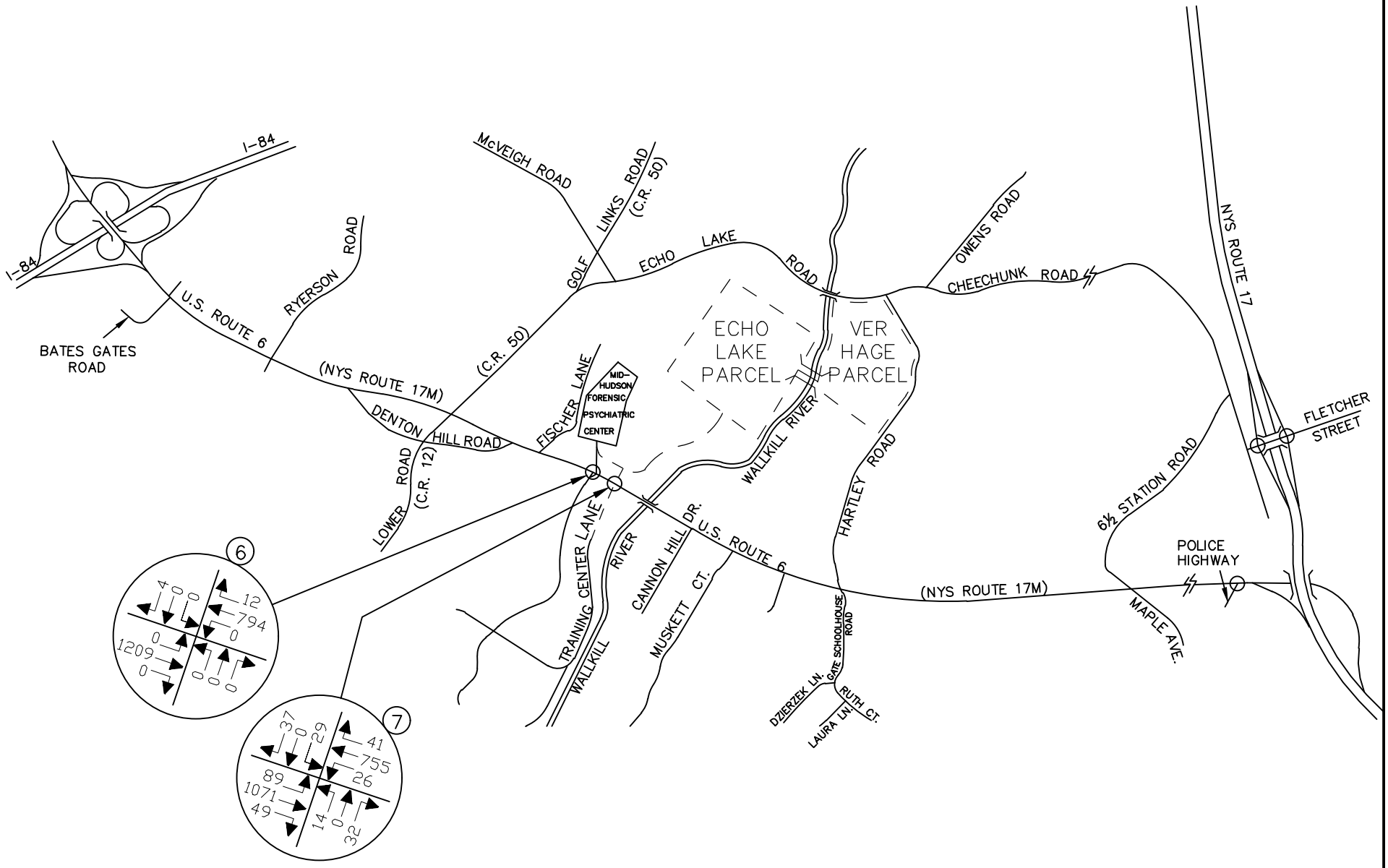
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WITH RIGHT TURN IN/RIGHT TURN OUT AT
MID-HUDSON PSYCHIATRIC CENTER DRIVEWAY
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
57–RI/RO	



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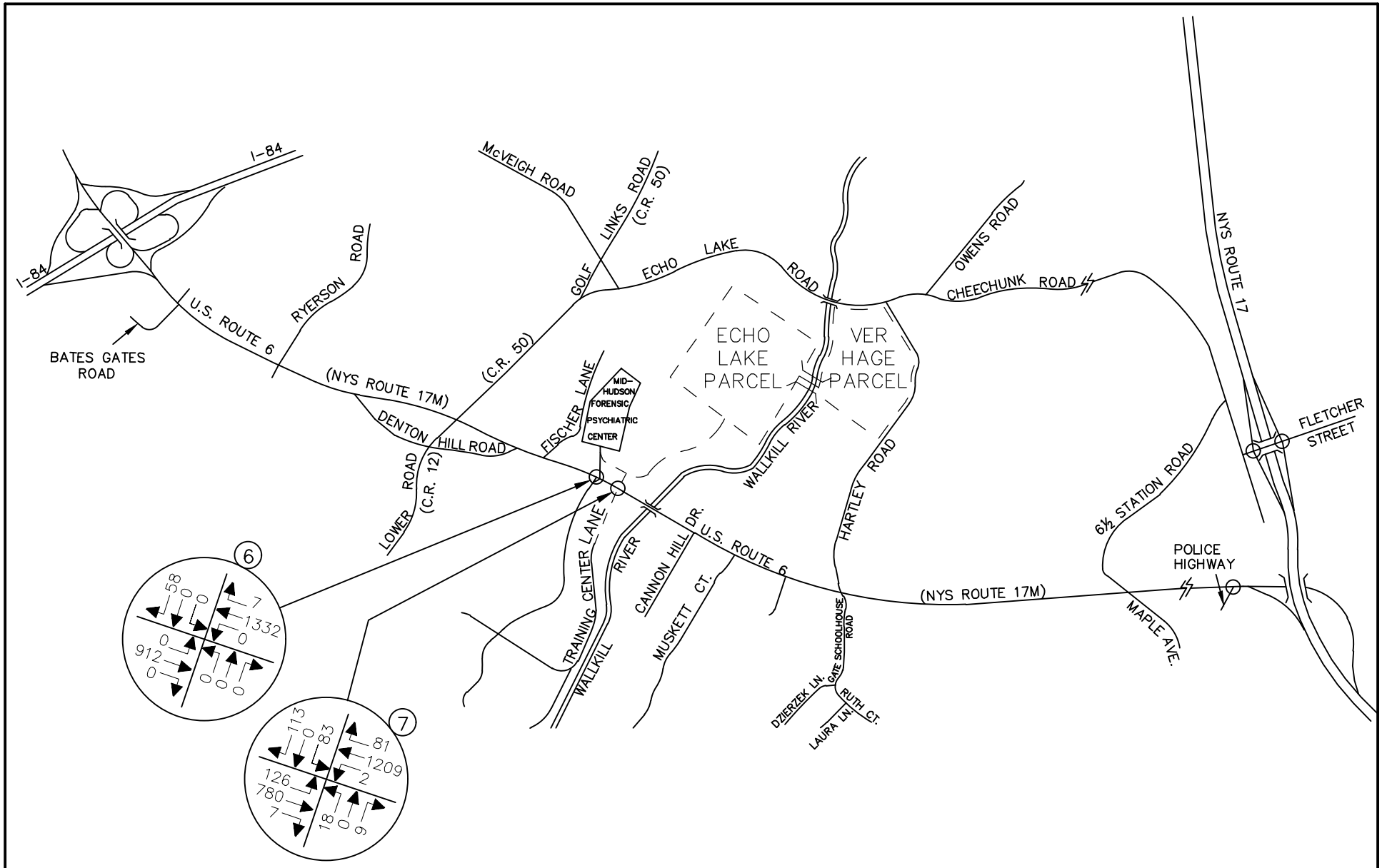
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WITH RIGHT TURN IN/RIGHT TURN OUT AT
MID-HUDSON PSYCHIATRIC CENTER DRIVEWAY
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
58–RI/RO	



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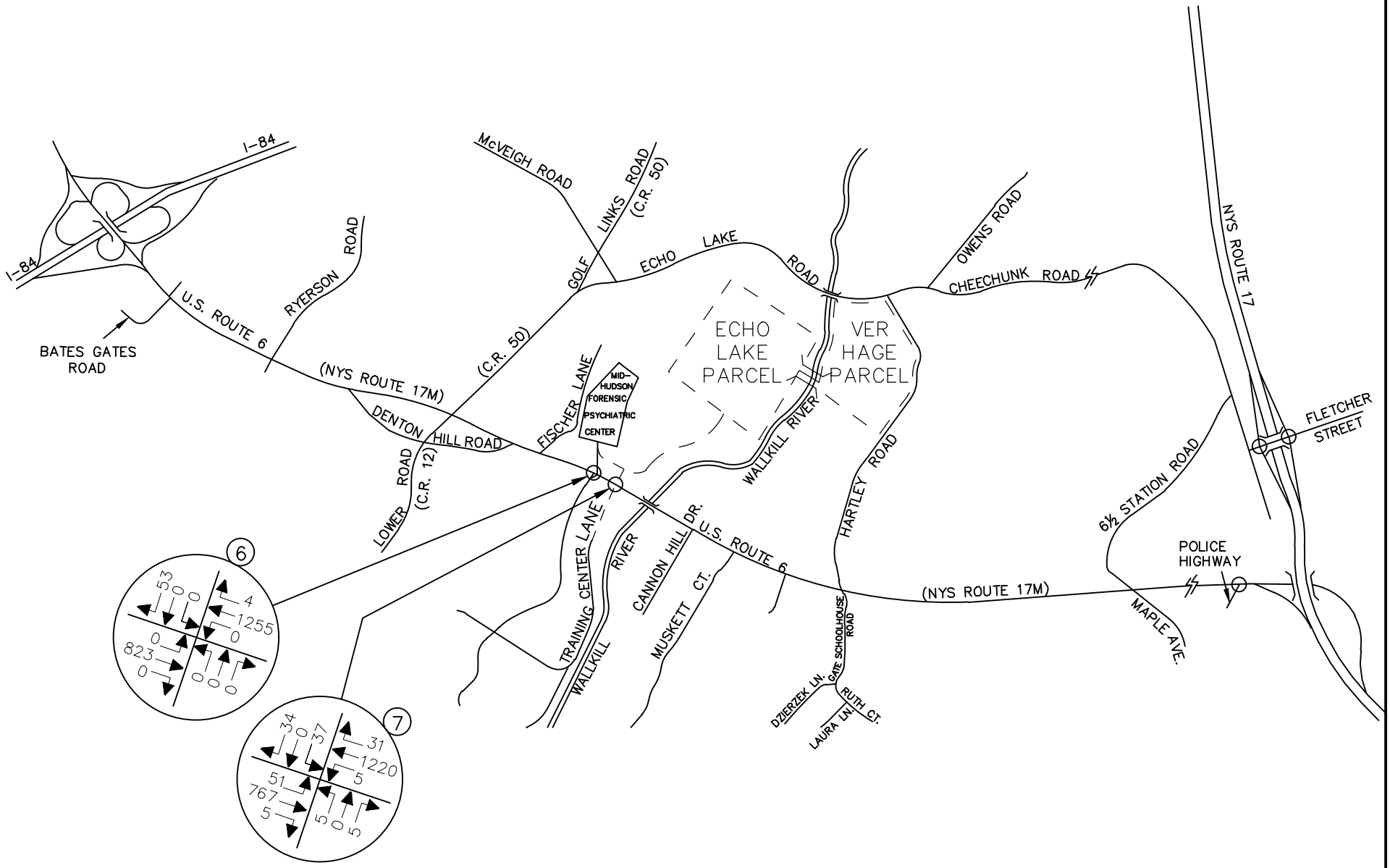
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WITH RIGHT TURN IN/RIGHT TURN OUT AT
MID-HUDSON PSYCHIATRIC CENTER DRIVEWAY
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
4:00 PM - 5:00 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
59–RI/RO	



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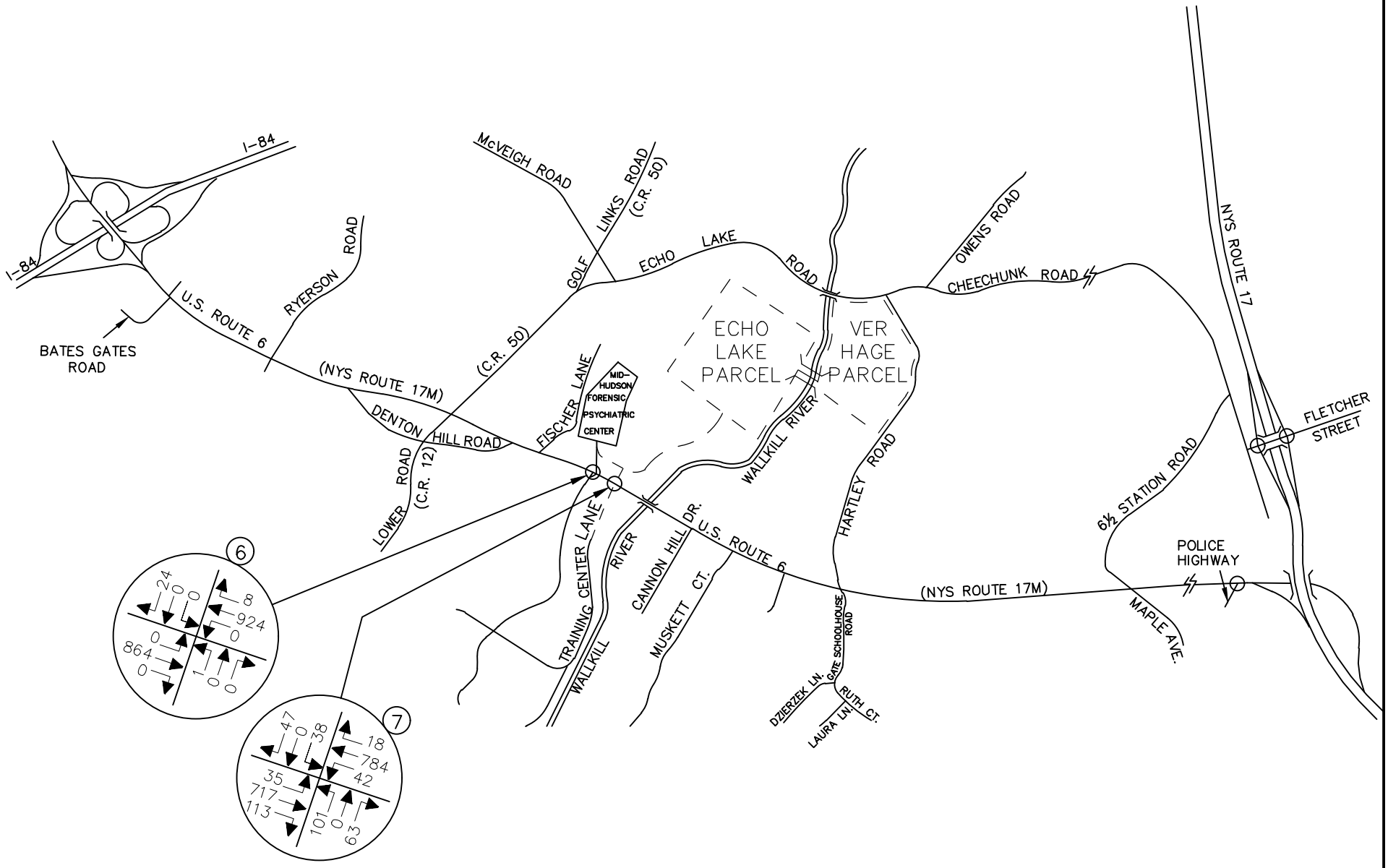
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WITH RIGHT TURN IN/RIGHT TURN OUT AT
MID-HUDSON PSYCHIATRIC CENTER DRIVEWAY
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
60–RI/RO	



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AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WITH RIGHT TURN IN/RIGHT TURN OUT AT
MID-HUDSON PSYCHIATRIC CENTER DRIVEWAY
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
61–RI/RO	

AMY'S KITCHEN/SCIENCE OF THE SOUL

CAPACITY ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	1253	0	0	361	4	0	0	0	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			0%	
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					0.999							0.865
Flt Protected												
Satd. Flow (prot)	0	1879	0	0	1781	0	1928	0	0	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	1879	0	0	1781	0	1928	0	0	0	0	1611
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2765			519			353			438	
Travel Time (s)		41.9			7.9			8.0			10.0	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	1%	8%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	0	1319	0	0	380	4	0	0	0	0	0	2
Shared Lane Traffic (%)							0%					
Lane Group Flow (vph)	0	1319	0	0	384	0	0	0	0	0	0	2
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)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

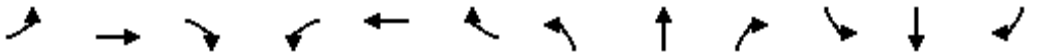
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	1253	0	0	361	4	0	0	0	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	1	1	8	2	1	2	1	2	2	2
Mvmt Flow	0	1319	0	0	380	4	0	0	0	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	380	0	0	1319	0	0	1699	1699	1319	1699	1699	380
Stage 1	-	-	-	-	-	-	1319	1319	-	380	380	-
Stage 2	-	-	-	-	-	-	380	380	-	1319	1319	-
Critical Hdwy	4.12	-	-	4.11	-	-	6.11	5.52	5.71	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	1178	-	-	527	-	0	117	148	232	73	92	667
Stage 1	-	-	-	-	-	0	280	327	-	642	614	-
Stage 2	-	-	-	-	-	0	716	682	-	193	227	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	1178	-	-	527	-	-	117	148	232	73	92	667
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	148	-	73	92	-
Stage 1	-	-	-	-	-	-	280	327	-	642	614	-
Stage 2	-	-	-	-	-	-	714	682	-	193	227	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0	0	0	10.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	SWLn1
Capacity (veh/h)	-	1178	-	-	527	-	667
HCM Lane V/C Ratio	-	-	-	-	-	-	0.003
HCM Control Delay (s)	0	0	-	-	0	-	10.4
HCM Lane LOS	A	A	-	-	A	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	0

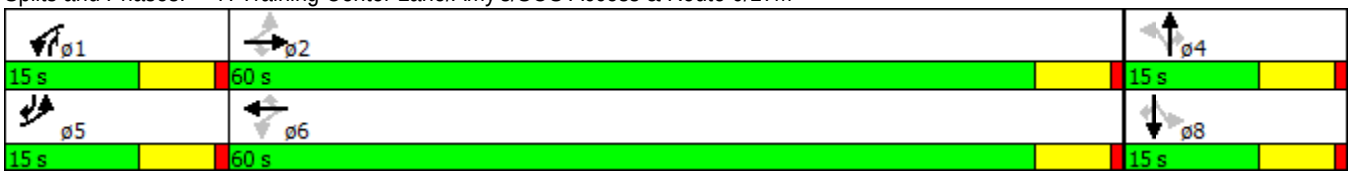


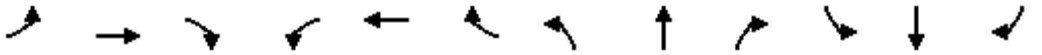
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	1084	16	7	330	96	0	0	0	25	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850						0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1796	1837	1025	1077	1680	1512	0	1863	1188	0	1770	1583
Flt Permitted	0.486			0.123								
Satd. Flow (perm)	919	1837	1025	139	1680	1512	0	1863	1188	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109						38
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		519			712			735			542	
Travel Time (s)		7.9			8.8			20.0			12.3	
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	60%	60%	8%	2%	60%	2%	60%	2%	2%	2%
Adj. Flow (vph)	167	1191	18	8	363	104	0	0	0	27	0	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	1191	18	8	363	104	0	0	0	0	27	38
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm			pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4	1		8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	16.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	60.0	60.0	15.0	60.0	60.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	66.7%	66.7%	16.7%	66.7%	66.7%	16.7%	16.7%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	54.0	54.0	9.0	54.0	54.0	9.0	9.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
v/c Ratio	0.19	0.73	0.02	0.05	0.31	0.10					0.18	0.14
Control Delay	2.2	10.7	0.1	3.3	7.1	1.7					39.0	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0					0.0	0.0
Total Delay	2.2	10.7	0.1	3.3	7.1	1.7					39.0	10.0
Queue Length 50th (ft)	0	0	0	0	40	0					12	0
Queue Length 95th (ft)	33	#958	0	4	149	17					40	23
Internal Link Dist (ft)		439			632			655			462	
Turn Bay Length (ft)	200		100	200		135						
Base Capacity (vph)	887	1625	919	221	1165	1082					215	314
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	0.19	0.73	0.02	0.04	0.31	0.10					0.13	0.12

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 78.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	154	1084	16	7	330	96	0	0	0	25	0	35
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1891	1837	1205	1134	1680	1779	1900	1863	1188	1900	1863	1863
Adj Flow Rate, veh/h	167	1191	18	8	363	104	0	0	0	27	0	38
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	60	60	8	2	2	2	60	2	2	2
Cap, veh/h	733	1325	739	155	1132	1019	0	89	102	157	0	85
Arrive On Green	0.05	0.72	0.72	0.01	0.67	0.67	0.00	0.00	0.00	0.05	0.00	0.05
Sat Flow, veh/h	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Grp Volume(v), veh/h	167	1191	18	8	363	104	0	0	0	27	0	38
Grp Sat Flow(s),veh/h/ln	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Q Serve(g_s), s	2.2	41.2	0.4	0.2	7.2	1.9	0.0	0.0	0.0	1.5	0.0	1.9
Cycle Q Clear(g_c), s	2.2	41.2	0.4	0.2	7.2	1.9	0.0	0.0	0.0	1.5	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	733	1325	739	155	1132	1019	0	89	102	157	0	85
V/C Ratio(X)	0.23	0.90	0.02	0.05	0.32	0.10	0.00	0.00	0.00	0.17	0.00	0.45
Avail Cap(c_a), veh/h	839	1325	739	269	1132	1019	0	209	167	248	0	188
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	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.7	8.8	3.2	13.1	5.4	4.6	0.0	0.0	0.0	37.0	0.0	36.7
Incr Delay (d2), s/veh	0.1	9.9	0.1	0.1	0.7	0.2	0.0	0.0	0.0	0.2	0.0	1.4
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	0.0
%ile BackOfQ(50%),veh/ln	1.1	23.8	0.1	0.1	3.6	0.9	0.0	0.0	0.0	0.6	0.0	0.8
LnGrp Delay(d),s/veh	3.7	18.7	3.2	13.1	6.2	4.8	0.0	0.0	0.0	37.2	0.0	38.1
LnGrp LOS	A	B	A	B	A	A				D		D
Approach Vol, veh/h		1376			475			0			65	
Approach Delay, s/veh		16.7			6.0			0.0			37.7	
Approach LOS		B			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	63.8		9.8	10.3	60.0		9.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		9.0	9.0	54.0		9.0
Max Q Clear Time (g_c+I1), s	2.2	43.2		0.0	4.2	9.2		3.9
Green Ext Time (p_c), s	0.0	5.3		0.0	0.2	8.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	1209	0	0	794	12	0	0	0	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			0%	
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					0.998							0.865
Flt Protected												
Satd. Flow (prot)	0	1879	0	0	1779	0	1928	0	0	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	1879	0	0	1779	0	1928	0	0	0	0	1611
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2765			537			353			390	
Travel Time (s)		41.9			8.1			8.0			8.9	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	1%	8%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	0	1273	0	0	836	13	0	0	0	0	0	4
Shared Lane Traffic (%)							0%					
Lane Group Flow (vph)	0	1273	0	0	849	0	0	0	0	0	0	4
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)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

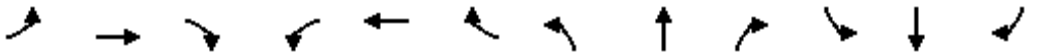
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	1209	0	0	794	12	0	0	0	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	1	1	8	2	1	2	1	2	2	2
Mvmt Flow	0	1273	0	0	836	13	0	0	0	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	836	0	0	1273	0	0	2109	2109	1273	2109	2109	836
Stage 1	-	-	-	-	-	-	1273	1273	-	836	836	-
Stage 2	-	-	-	-	-	-	836	836	-	1273	1273	-
Critical Hdwy	4.12	-	-	4.11	-	-	6.11	5.52	5.71	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	798	-	-	549	-	0	67	92	245	37	51	367
Stage 1	-	-	-	-	-	0	294	339	-	362	382	-
Stage 2	-	-	-	-	-	0	458	482	-	205	238	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	798	-	-	549	-	-	66	92	245	37	51	367
Mov Cap-2 Maneuver	-	-	-	-	-	-	66	92	-	37	51	-
Stage 1	-	-	-	-	-	-	294	339	-	362	382	-
Stage 2	-	-	-	-	-	-	453	482	-	205	238	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0	0	0	14.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	SWLn1
Capacity (veh/h)	-	798	-	-	549	-	367
HCM Lane V/C Ratio	-	-	-	-	-	-	0.012
HCM Control Delay (s)	0	0	-	-	0	-	14.9
HCM Lane LOS	A	A	-	-	A	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	0

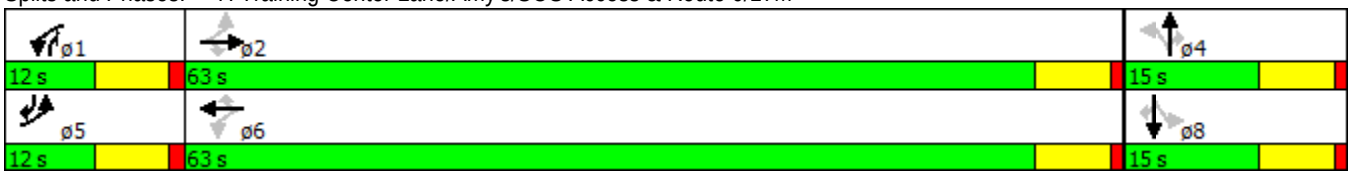


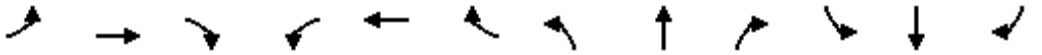
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	1071	49	26	755	41	14	0	32	29	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1814	1837	1025	1077	1680	1512	0	1128	1009	0	1597	1392
Flt Permitted	0.250			0.086				0.889			0.889	
Satd. Flow (perm)	477	1837	1025	98	1680	1512	0	1056	1009	0	1495	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109			36			41
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		537			1207			764			522	
Travel Time (s)		8.1			15.0			20.8			11.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	5%	60%	60%	8%	2%	60%	2%	60%	13%	2%	16%
Adj. Flow (vph)	98	1177	54	29	830	45	15	0	35	32	0	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	1177	54	29	830	45	0	15	35	0	32	41
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4	1		8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	16.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	12.0	63.0	63.0	12.0	63.0	63.0	15.0	15.0	12.0	15.0	15.0	12.0
Total Split (%)	13.3%	70.0%	70.0%	13.3%	70.0%	70.0%	16.7%	16.7%	13.3%	16.7%	16.7%	13.3%
Maximum Green (s)	6.0	57.0	57.0	6.0	57.0	57.0	9.0	9.0	6.0	9.0	9.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
v/c Ratio	0.21	0.81	0.07	0.21	0.67	0.04		0.18	0.19		0.27	0.16
Control Delay	3.4	18.5	0.3	6.5	12.7	0.1		42.5	12.0		43.2	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	3.4	18.5	0.3	6.5	12.7	0.1		42.5	12.0		43.2	10.6
Queue Length 50th (ft)	9	542	0	3	278	0		8	0		17	0
Queue Length 95th (ft)	21	#955	2	9	483	0		27	24		45	26
Internal Link Dist (ft)		457			1127			684			442	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	476	1446	830	146	1241	1145		114	197		161	265
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.21	0.81	0.07	0.20	0.67	0.04		0.13	0.18		0.20	0.15

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 83.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	1071	49	26	755	41	14	0	32	29	0	37
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1909	1837	1205	1134	1680	1779	1900	1188	1188	1900	1681	1638
Adj Flow Rate, veh/h	98	1177	54	29	830	45	15	0	35	32	0	41
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	5	60	60	8	2	2	2	60	2	2	16
Cap, veh/h	354	1236	690	126	1098	988	83	0	142	83	0	168
Arrive On Green	0.04	0.67	0.67	0.02	0.65	0.65	0.10	0.00	0.10	0.10	0.00	0.10
Sat Flow, veh/h	1818	1837	1025	1080	1680	1512	0	0	1009	0	0	1392
Grp Volume(v), veh/h	98	1177	54	29	830	45	15	0	35	32	0	41
Grp Sat Flow(s),veh/h/ln	1818	1837	1025	1080	1680	1512	0	0	1009	0	0	1392
Q Serve(g_s), s	1.5	50.9	1.6	0.8	29.5	0.9	0.0	0.0	2.7	0.0	0.0	2.3
Cycle Q Clear(g_c), s	1.5	50.9	1.6	0.8	29.5	0.9	9.0	0.0	2.7	9.0	0.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	354	1236	690	126	1098	988	83	0	142	83	0	168
V/C Ratio(X)	0.28	0.95	0.08	0.23	0.76	0.05	0.18	0.00	0.25	0.39	0.00	0.24
Avail Cap(c_a), veh/h	411	1236	690	182	1098	988	83	0	142	83	0	168
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	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	1.00
Uniform Delay (d), s/veh	10.3	13.0	4.9	20.3	10.4	5.4	43.6	0.0	33.4	43.6	0.0	34.8
Incr Delay (d2), s/veh	0.2	16.4	0.2	0.3	4.9	0.1	0.4	0.0	0.3	1.1	0.0	0.3
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	30.8	0.5	0.4	14.9	0.4	0.4	0.0	0.8	0.8	0.0	0.9
LnGrp Delay(d),s/veh	10.5	29.4	5.1	20.7	15.2	5.5	44.0	0.0	33.7	44.7	0.0	35.0
LnGrp LOS	B	C	A	C	B	A	D		C	D		D
Approach Vol, veh/h		1329			904			50			73	
Approach Delay, s/veh		27.0			14.9			36.8			39.3	
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	7.5	64.7		15.0	9.2	63.0		15.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	6.0	57.0		9.0	6.0	57.0		9.0
Max Q Clear Time (g_c+I1), s	2.8	52.9		11.0	3.5	31.5		11.0
Green Ext Time (p_c), s	0.0	3.0		0.0	0.0	10.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.0
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	912	0	0	1332	7	0	0	0	0	0	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			0%	
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					0.999							0.865
Flt Protected												
Satd. Flow (prot)	0	1879	0	0	1780	0	1928	0	0	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	1879	0	0	1780	0	1928	0	0	0	0	1611
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		552			535			353			372	
Travel Time (s)		8.4			8.1			8.0			8.5	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	1%	8%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	0	960	0	0	1402	8	0	0	0	0	0	63
Shared Lane Traffic (%)							0%					
Lane Group Flow (vph)	0	960	0	0	1410	0	0	0	0	0	0	63
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)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

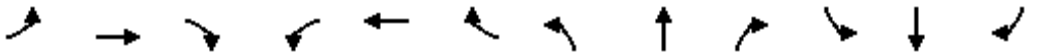
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	912	0	0	1332	7	0	0	0	0	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	1	1	8	2	1	2	1	2	2	2
Mvmt Flow	0	960	0	0	1402	8	0	0	0	0	0	63

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1402	0	0	960	0	0	2362	2362	960	2362	2362	1402
Stage 1	-	-	-	-	-	-	960	960	-	1402	1402	-
Stage 2	-	-	-	-	-	-	1402	1402	-	960	960	-
Critical Hdwy	4.12	-	-	4.11	-	-	6.11	5.52	5.71	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	487	-	-	721	-	0	48	68	357	25	35	171
Stage 1	-	-	-	-	-	0	404	437	-	173	207	-
Stage 2	-	-	-	-	-	0	257	305	-	308	335	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	487	-	-	721	-	-	30	68	357	25	35	171
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	68	-	25	35	-
Stage 1	-	-	-	-	-	-	404	437	-	173	207	-
Stage 2	-	-	-	-	-	-	162	305	-	308	335	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0	0	0	37.9
HCM LOS			A	E

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	SWLn1
Capacity (veh/h)	-	487	-	-	721	-	171
HCM Lane V/C Ratio	-	-	-	-	-	-	0.369
HCM Control Delay (s)	0	0	-	-	0	-	37.9
HCM Lane LOS	A	A	-	-	A	-	E
HCM 95th %tile Q(veh)	-	0	-	-	0	-	1.6



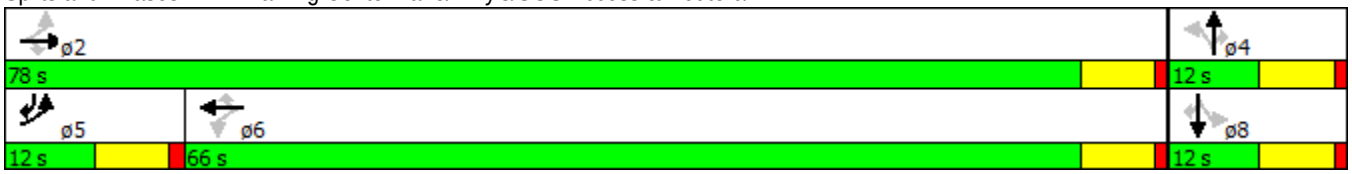
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	780	7	2	1209	81	18	0	9	83	0	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.061			0.353				0.700			0.745	
Satd. Flow (perm)	112	1837	1623	664	1888	1538	0	1317	1599	0	1287	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			109			109			84
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		535			705			798			469	
Travel Time (s)		8.1			8.7			21.8			10.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	134	830	7	2	1286	86	19	0	10	88	0	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	830	7	2	1286	86	0	19	10	0	88	120
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	5
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	12.0	78.0	78.0	66.0	66.0	66.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Split (%)	13.3%	86.7%	86.7%	73.3%	73.3%	73.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%
Maximum Green (s)	6.0	72.0	72.0	60.0	60.0	60.0	6.0	6.0	6.0	6.0	6.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.68	0.57	0.01	0.00	1.02	0.08		0.22	0.05		1.04	0.33
Control Delay	32.3	5.0	0.0	5.0	47.5	0.9		46.1	0.4		152.5	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	32.3	5.0	0.0	5.0	47.5	0.9		46.1	0.4		152.5	14.4
Queue Length 50th (ft)	23	127	0	0	~722	0		10	0		~53	17
Queue Length 95th (ft)	#105	191	0	3	#1032	10		33	0		#148	64
Internal Link Dist (ft)		455			625			718			389	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	198	1469	1305	443	1261	1063		87	208		85	366
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.68	0.57	0.01	0.00	1.02	0.08		0.22	0.05		1.04	0.33

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ 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: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	126	780	7	2	1209	81	18	0	9	83	0	113
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	134	830	7	2	1286	86	19	0	10	88	0	120
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	171	1469	1298	499	1314	1064	80	0	107	80	0	1134
Arrive On Green	0.04	0.80	0.80	0.69	0.69	0.69	0.07	0.00	0.07	0.07	0.00	0.07
Sat Flow, veh/h	1749	1837	1623	660	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	134	830	7	2	1286	86	19	0	10	88	0	120
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	660	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	1.8	14.8	0.1	0.1	58.1	1.6	0.0	0.0	0.5	0.0	0.0	1.9
Cycle Q Clear(g_c), s	1.8	14.8	0.1	5.2	58.1	1.6	6.0	0.0	0.5	6.0	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	1469	1298	499	1314	1064	80	0	107	80	0	1134
V/C Ratio(X)	0.78	0.56	0.01	0.00	0.98	0.08	0.24	0.00	0.09	1.10	0.00	0.11
Avail Cap(c_a), veh/h	214	1469	1298	499	1314	1064	80	0	107	80	0	1134
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	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	1.00
Uniform Delay (d), s/veh	25.6	3.3	1.8	6.0	13.2	4.5	45.0	0.0	39.4	45.0	0.0	2.9
Incr Delay (d2), s/veh	10.7	1.6	0.0	0.0	20.2	0.1	0.6	0.0	0.1	130.4	0.0	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	0.3	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	8.0	0.0	0.0	37.0	0.7	0.5	0.0	0.2	4.9	0.0	3.0
LnGrp Delay(d),s/veh	36.3	4.9	1.8	6.0	33.4	4.7	45.6	0.0	39.6	175.7	0.0	2.9
LnGrp LOS	D	A	A	A	C	A	D		D	F		A
Approach Vol, veh/h		971			1374			29			208	
Approach Delay, s/veh		9.2			31.6			43.5			76.0	
Approach LOS		A			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		78.0		12.0	9.8	68.2		12.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		72.0		6.0	6.0	60.0		6.0
Max Q Clear Time (g_c+I1), s		16.8		8.0	3.8	60.1		8.0
Green Ext Time (p_c), s		13.3		0.0	0.1	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	823	0	0	1255	4	0	0	0	0	0	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			0%	
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												0.865
Flt Protected												
Satd. Flow (prot)	0	1879	0	0	1782	0	1928	0	0	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	1879	0	0	1782	0	1928	0	0	0	0	1611
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2765			507			353			575	
Travel Time (s)		41.9			7.7			8.0			13.1	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	1%	8%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	0	866	0	0	1321	4	0	0	0	0	0	58
Shared Lane Traffic (%)							0%					
Lane Group Flow (vph)	0	866	0	0	1325	0	0	0	0	0	0	58
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)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

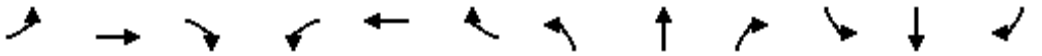
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	823	0	0	1255	4	0	0	0	0	0	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	1	1	8	2	1	2	1	2	2	2
Mvmt Flow	0	866	0	0	1321	4	0	0	0	0	0	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1321	0	0	866	0	0	2187	2187	866	2187	2187	1321
Stage 1	-	-	-	-	-	-	866	866	-	1321	1321	-
Stage 2	-	-	-	-	-	-	1321	1321	-	866	866	-
Critical Hdwy	4.12	-	-	4.11	-	-	6.11	5.52	5.71	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	523	-	-	782	-	0	61	84	399	33	46	191
Stage 1	-	-	-	-	-	0	444	471	-	193	226	-
Stage 2	-	-	-	-	-	0	280	326	-	348	370	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	523	-	-	782	-	-	43	84	399	33	46	191
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	84	-	33	46	-
Stage 1	-	-	-	-	-	-	444	471	-	193	226	-
Stage 2	-	-	-	-	-	-	196	326	-	348	370	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0	0	0	31.8
HCM LOS			A	D

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	SWLn1
Capacity (veh/h)	-	523	-	-	782	-	191
HCM Lane V/C Ratio	-	-	-	-	-	-	0.302
HCM Control Delay (s)	0	0	-	-	0	-	31.8
HCM Lane LOS	A	A	-	-	A	-	D
HCM 95th %tile Q(veh)	-	0	-	-	0	-	1.2



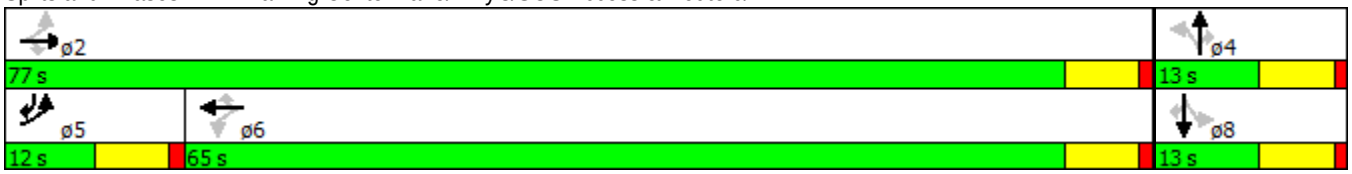
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	767	5	5	1220	31	5	0	5	37	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.056			0.358				0.976			0.976	
Satd. Flow (perm)	103	1837	1623	673	1888	1538	0	1836	1599	0	1686	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			109			109			36
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		507			1222			776			433	
Travel Time (s)		7.7			15.1			21.2			9.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	54	816	5	5	1298	33	5	0	5	39	0	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	816	5	5	1298	33	0	5	5	0	39	36
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	5
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	12.0	77.0	77.0	65.0	65.0	65.0	13.0	13.0	13.0	13.0	13.0	12.0
Total Split (%)	13.3%	85.6%	85.6%	72.2%	72.2%	72.2%	14.4%	14.4%	14.4%	14.4%	14.4%	13.3%
Maximum Green (s)	6.0	71.0	71.0	59.0	59.0	59.0	7.0	7.0	7.0	7.0	7.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.30	0.51	0.00	0.01	0.91	0.03		0.04	0.02		0.33	0.15
Control Delay	7.5	4.0	0.0	5.4	25.3	0.0		39.2	0.2		46.5	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	7.5	4.0	0.0	5.4	25.3	0.0		39.2	0.2		46.5	11.7
Queue Length 50th (ft)	5	133	0	1	~802	0		3	0		21	0
Queue Length 95th (ft)	18	200	0	5	#1059	0		14	0		53	24
Internal Link Dist (ft)		427			1142			696			353	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	199	1604	1421	507	1422	1185		146	228		135	262
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.27	0.51	0.00	0.01	0.91	0.03		0.03	0.02		0.29	0.14

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 87.8
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ 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: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	51	767	5	5	1220	31	5	0	5	37	0	34
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	54	816	5	5	1298	33	5	0	5	39	0	36
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	142	1449	1280	496	1325	1073	80	0	124	80	0	1159
Arrive On Green	0.02	0.79	0.79	0.70	0.70	0.70	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1749	1837	1623	670	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	54	816	5	5	1298	33	5	0	5	39	0	36
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	670	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	0.7	15.2	0.1	0.3	58.7	0.6	0.0	0.0	0.3	0.0	0.0	0.5
Cycle Q Clear(g_c), s	0.7	15.2	0.1	7.2	58.7	0.6	7.0	0.0	0.3	7.0	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	142	1449	1280	496	1325	1073	80	0	124	80	0	1159
V/C Ratio(X)	0.38	0.56	0.00	0.01	0.98	0.03	0.06	0.00	0.04	0.49	0.00	0.03
Avail Cap(c_a), veh/h	215	1449	1280	496	1325	1073	80	0	124	80	0	1159
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	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	1.00
Uniform Delay (d), s/veh	25.7	3.6	2.0	6.5	13.0	4.2	45.0	0.0	38.4	45.0	0.0	2.3
Incr Delay (d2), s/veh	0.6	1.6	0.0	0.0	20.3	0.1	0.1	0.0	0.0	1.7	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	1.0	8.1	0.0	0.1	37.7	0.3	0.1	0.0	0.1	1.0	0.0	0.9
LnGrp Delay(d),s/veh	26.3	5.2	2.0	6.6	33.3	4.3	45.1	0.0	38.4	46.7	0.0	2.3
LnGrp LOS	C	A	A	A	C	A	D		D	D		A
Approach Vol, veh/h		875			1336			10			75	
Approach Delay, s/veh		6.5			32.4			41.8			25.4	
Approach LOS		A			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		77.0		13.0	8.2	68.8		13.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		71.0		7.0	6.0	59.0		7.0
Max Q Clear Time (g_c+I1), s		17.2		9.0	2.7	60.7		9.0
Green Ext Time (p_c), s		13.0		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	864	0	0	924	8	1	0	0	0	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			0%	
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					0.999							0.865
Flt Protected							0.950					
Satd. Flow (prot)	0	1879	0	0	1781	0	1832	0	0	0	0	1611
Flt Permitted							0.950					
Satd. Flow (perm)	0	1879	0	0	1781	0	1832	0	0	0	0	1611
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2765			521			353			672	
Travel Time (s)		41.9			7.9			8.0			15.3	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	1%	8%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	0	909	0	0	973	9	1	0	0	0	0	26
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	0	909	0	0	982	0	1	0	0	0	0	26
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)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	864	0	0	924	8	1	0	0	0	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	1	1	8	2	1	2	1	2	2	2
Mvmt Flow	0	909	0	0	973	9	1	0	0	0	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	973	0	0	909	0	0	1882	1882	909	1882	1882	973
Stage 1	-	-	-	-	-	-	909	909	-	973	973	-
Stage 2	-	-	-	-	-	-	973	973	-	909	909	-
Critical Hdwy	4.12	-	-	4.11	-	-	6.11	5.52	5.71	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	709	-	-	753	-	0	92	120	380	54	71	306
Stage 1	-	-	-	-	-	0	426	455	-	303	330	-
Stage 2	-	-	-	-	-	0	399	433	-	329	354	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	709	-	-	753	-	-	84	120	380	54	71	306
Mov Cap-2 Maneuver	-	-	-	-	-	-	84	120	-	54	71	-
Stage 1	-	-	-	-	-	-	426	455	-	303	330	-
Stage 2	-	-	-	-	-	-	365	433	-	329	354	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0	0	48.4	17.9
HCM LOS			E	C

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	SWLn1
Capacity (veh/h)	84	709	-	-	753	-	306
HCM Lane V/C Ratio	0.013	-	-	-	-	-	0.085
HCM Control Delay (s)	48.4	0	-	-	0	-	17.9
HCM Lane LOS	E	A	-	-	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	0.3

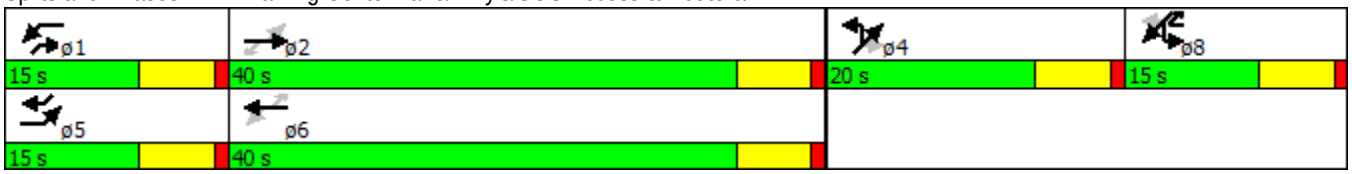
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	35	717	113	42	784	18	101	0	63	38	0	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1666	1891	1591	1671	1925	1495	0	1752	1509	0	1492	1346
Flt Permitted	0.102			0.149				0.950			0.950	
Satd. Flow (perm)	179	1891	1591	262	1925	1495	0	1752	1509	0	1492	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182			109			109			109
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		521			1215			802			646	
Travel Time (s)		7.9			15.1			21.9			14.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	10%	2%	3%	8%	2%	8%	3%	2%	7%	21%	2%	20%
Adj. Flow (vph)	37	763	120	45	834	19	107	0	67	40	0	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	763	120	45	834	19	0	107	67	0	40	50
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	Split	NA	pm+ov	Split	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	5	2		1	6	8	4	4	1	8	8	5
Permitted Phases	2		2	6		6			4			8
Detector Phase	5	2	2	1	6	8	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	11.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	40.0	40.0	15.0	40.0	15.0	20.0	20.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	44.4%	44.4%	16.7%	44.4%	16.7%	22.2%	22.2%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	34.0	34.0	9.0	34.0	9.0	14.0	14.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min	None	None	None	None	None	None	None
v/c Ratio	0.17	0.73	0.13	0.17	0.78	0.02		0.50	0.17		0.30	0.15
Control Delay	10.7	26.7	1.1	10.3	28.8	0.1		41.2	2.1		41.2	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	10.7	26.7	1.1	10.3	28.8	0.1		41.2	2.1		41.2	1.0
Queue Length 50th (ft)	7	351	0	9	~405	0		51	0		19	0
Queue Length 95th (ft)	23	#681	10	27	#757	0		103	8		52	1
Internal Link Dist (ft)		441			1135			722			566	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	298	1042	958	340	1064	1004		342	456		187	387
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.12	0.73	0.13	0.13	0.78	0.02		0.31	0.15		0.21	0.13

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 73.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
~ 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: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	35	717	113	42	784	18	101	0	63	38	0	47
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1753	1891	1872	1759	1937	1759	1900	1845	1776	1900	1570	1583
Adj Flow Rate, veh/h	37	763	120	45	834	19	107	0	67	40	0	50
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	2	3	8	2	8	2	2	7	2	2	20
Cap, veh/h	188	886	745	214	913	840	158	0	169	90	0	115
Arrive On Green	0.02	0.47	0.47	0.03	0.47	0.47	0.09	0.00	0.09	0.06	0.00	0.06
Sat Flow, veh/h	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Grp Volume(v), veh/h	37	763	120	45	834	19	107	0	67	40	0	50
Grp Sat Flow(s),veh/h/ln	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Q Serve(g_s), s	0.8	24.3	2.9	0.9	26.9	0.4	4.0	0.0	2.8	1.7	0.0	2.4
Cycle Q Clear(g_c), s	0.8	24.3	2.9	0.9	26.9	0.4	4.0	0.0	2.8	1.7	0.0	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	886	745	214	913	840	158	0	169	90	0	115
V/C Ratio(X)	0.20	0.86	0.16	0.21	0.91	0.02	0.68	0.00	0.40	0.44	0.00	0.43
Avail Cap(c_a), veh/h	373	953	802	395	977	888	365	0	347	200	0	214
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	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	1.00
Uniform Delay (d), s/veh	14.6	16.0	10.3	13.6	16.5	6.6	29.7	0.0	27.8	30.6	0.0	29.3
Incr Delay (d2), s/veh	0.2	7.2	0.0	0.2	11.7	0.0	1.9	0.0	0.6	1.3	0.0	1.0
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	0.0
%ile BackOfQ(50%),veh/ln	0.4	14.3	1.3	0.4	17.1	0.2	2.0	0.0	1.2	0.8	0.0	0.9
LnGrp Delay(d),s/veh	14.8	23.2	10.3	13.8	28.2	6.6	31.6	0.0	28.4	31.9	0.0	30.2
LnGrp LOS	B	C	B	B	C	A	C		C	C		C
Approach Vol, veh/h		920			898			174			90	
Approach Delay, s/veh		21.1			27.0			30.4			30.9	
Approach LOS		C			C			C			C	

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	37.6		12.1	7.5	37.8		10.1
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	34.0		14.0	9.0	34.0		9.0
Max Q Clear Time (g_c+I1), s	2.9	26.3		6.0	2.8	28.9		4.4
Green Ext Time (p_c), s	0.0	3.9		0.3	0.0	2.9		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	24.9
HCM 2010 LOS	C

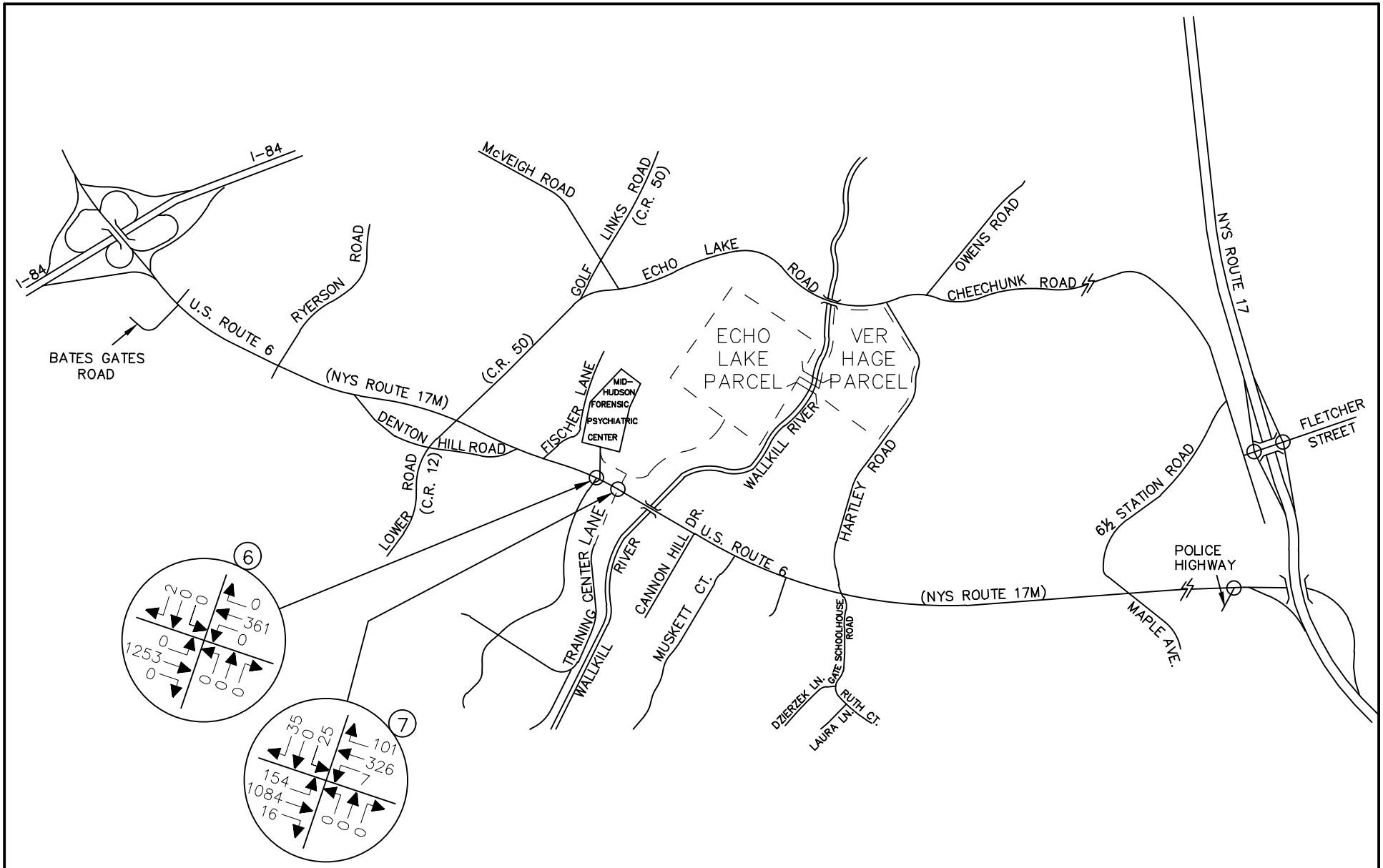
AMY'S KITCHEN/SCIENCE OF THE SOUL

RESPONSE TO COMMENT FROM OFFICE OF MENTAL HEALTH

2033 FULL BUILD CONDITIONS MAINTAINING A RIGHT TURN EXIT ONLY DRIVEWAY AT EXISTING PSYCHIATRIC CENTER ACCESS LOCATION

AMY'S KITCHEN/SCIENCE OF THE SOUL

FIGURES



NOTE: LINE DIAGRAM NOT TO SCALE

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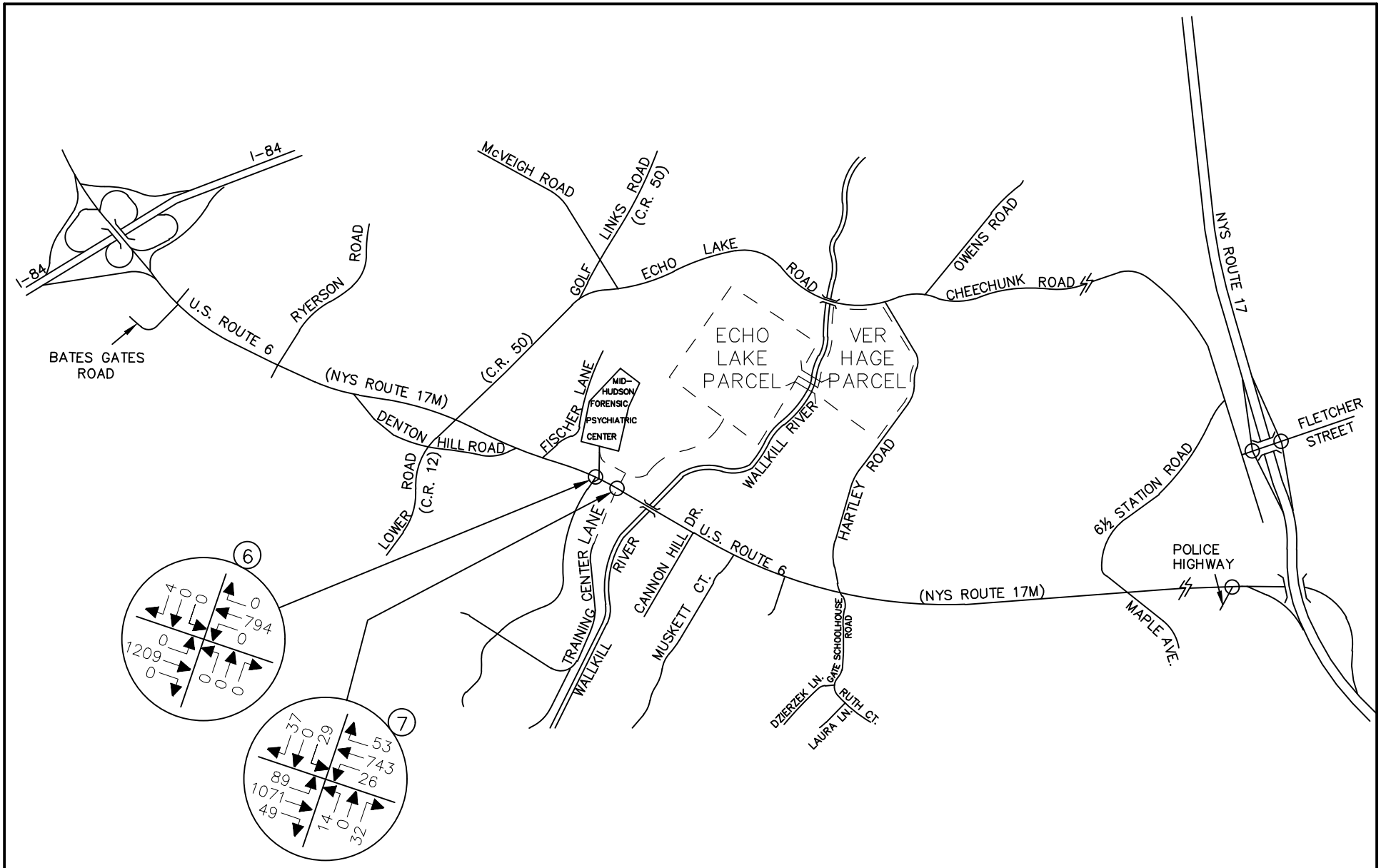
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WITH RIGHT TURN OUT ONLY AT
MID-HUDSON PSYCHIATRIC CENTER DRIVEWAY
WEEKDAY AM PEAK HOUR OF AMY'S KITCHEN GENERATION
6:00 AM - 7:00 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
57–RO	



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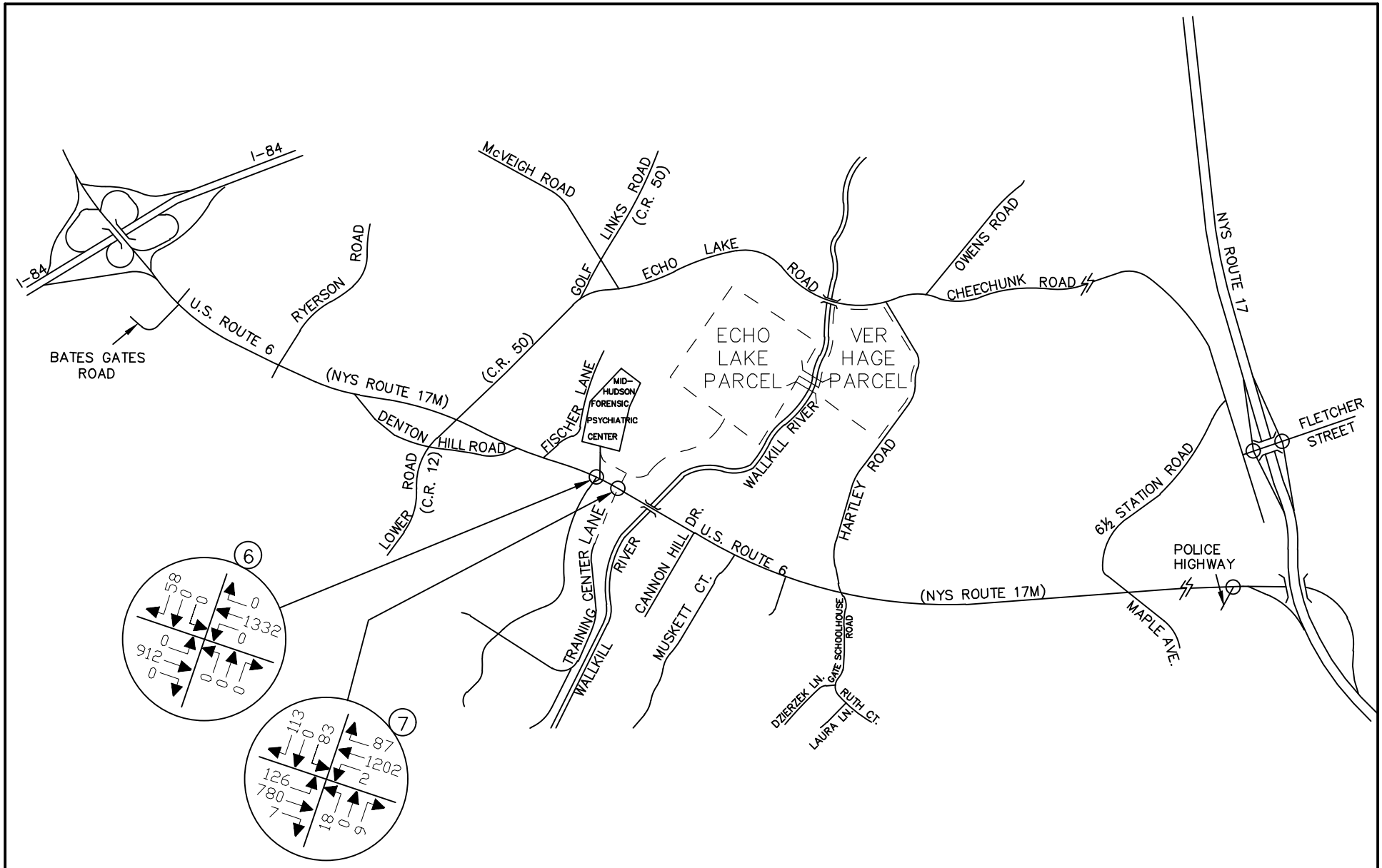
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WITH RIGHT TURN OUT ONLY AT
MID-HUDSON PSYCHIATRIC CENTER DRIVEWAY
WEEKDAY AM PEAK HIGHWAY HOUR
7:30 AM - 8:30 AM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
58–RO	



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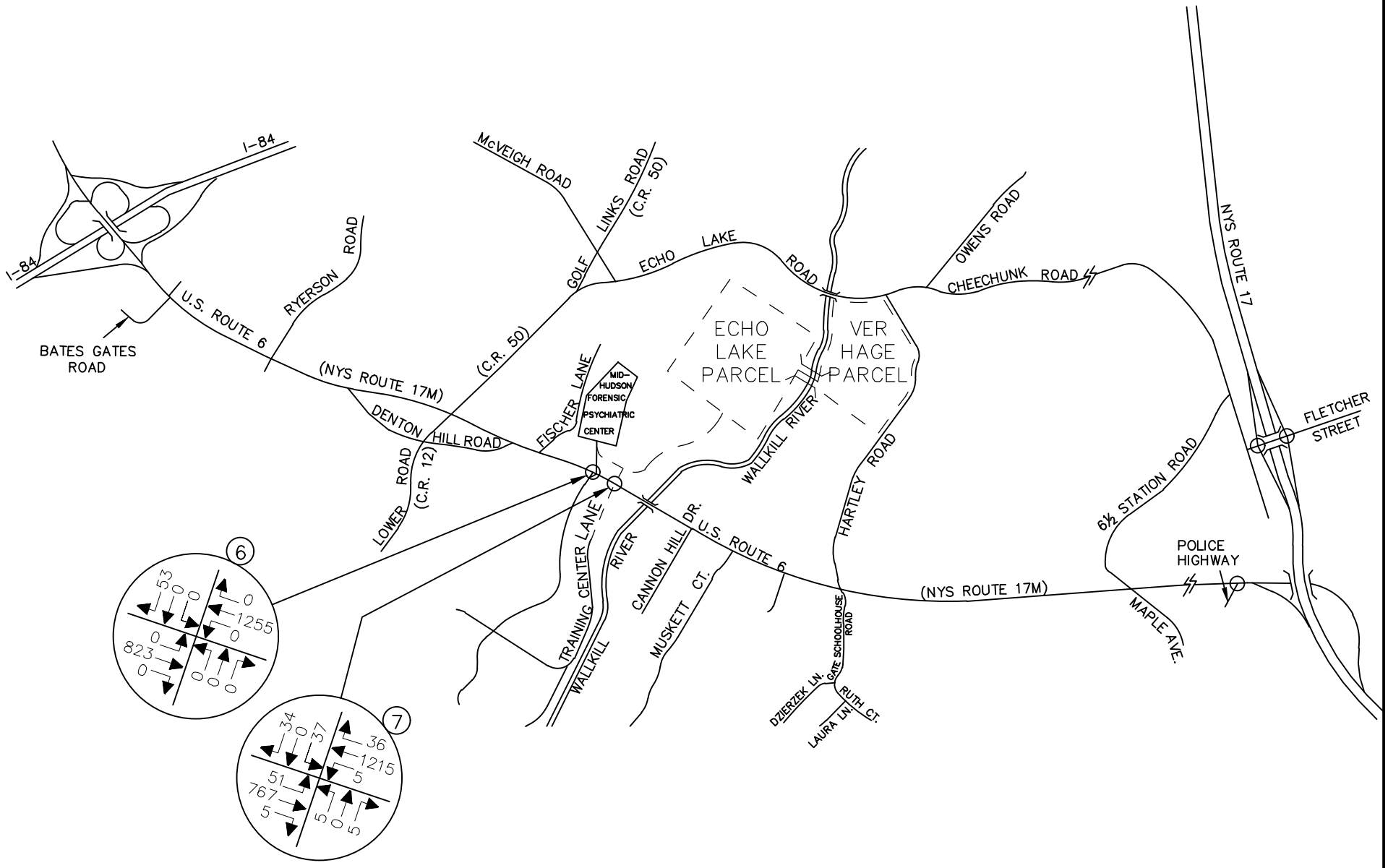
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WITH RIGHT TURN OUT ONLY AT
MID-HUDSON PSYCHIATRIC CENTER DRIVEWAY
WEEKDAY PM PEAK HOUR OF AMY'S KITCHEN GENERATION
[illegible]

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
59–RO	



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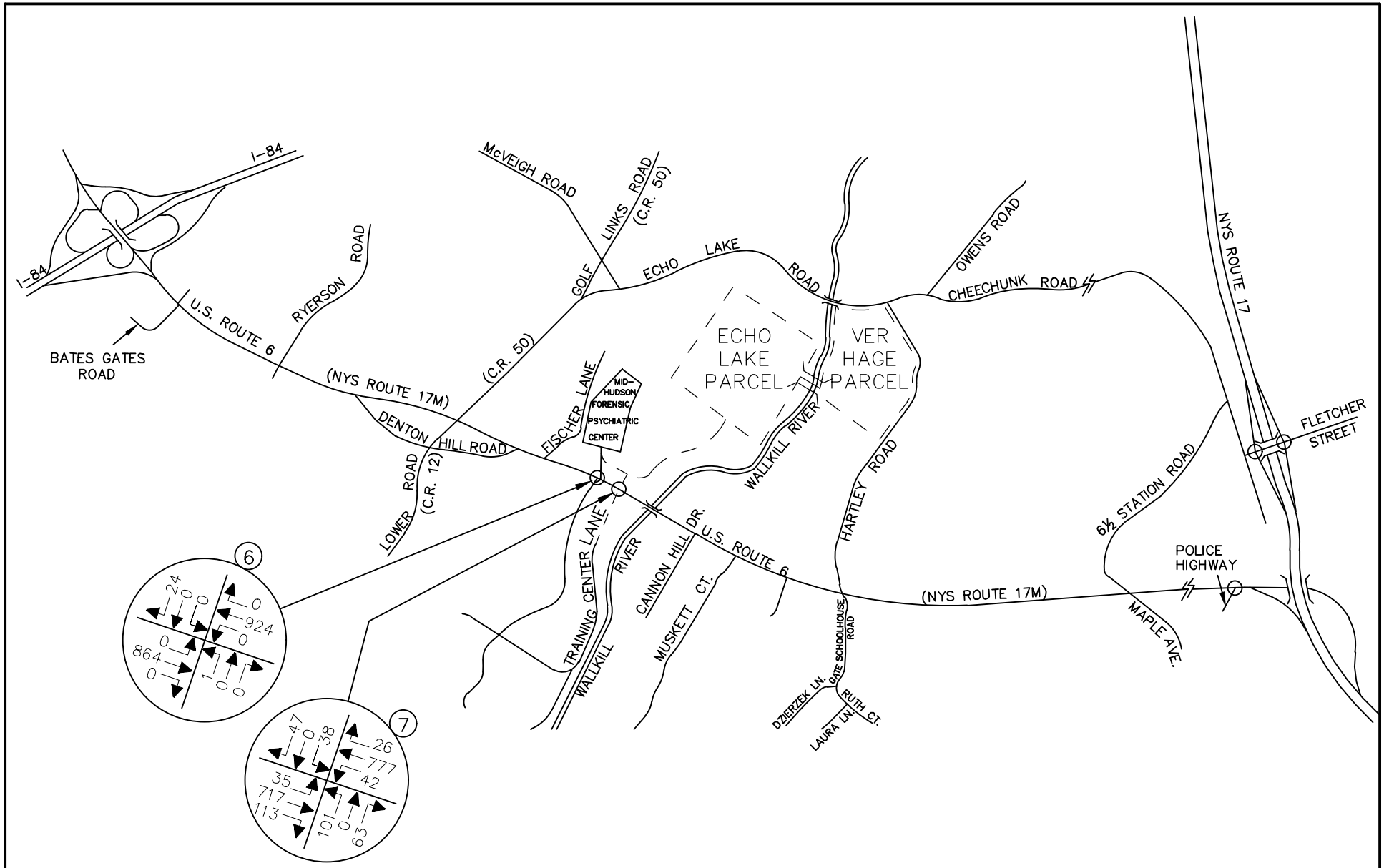
AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WITH RIGHT TURN OUT ONLY AT
MID-HUDSON PSYCHIATRIC CENTER DRIVEWAY
WEEKDAY PM PEAK HIGHWAY HOUR
4:30 PM - 5:30 PM

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
60–RO	



NOTE: LINE DIAGRAM NOT TO SCALE

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AMY'S KITCHEN AND SCIENCE OF THE SOUL
GOSHEN, NEW YORK

2033 FULL BUILD TRAFFIC VOLUMES
WITH RIGHT TURN OUT ONLY AT
MID-HUDSON PSYCHIATRIC CENTER DRIVEWAY
SATURDAY PEAK HOUR

JOB NUMBER:	DATE:
13001659B	06/09/16
FIGURE NUMBER:	
61–RO	

AMY'S KITCHEN/SCIENCE OF THE SOUL

CAPACITY ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	1253	0	0	361	0	0	0	0	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			0%	
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												0.865
Flt Protected												
Satd. Flow (prot)	0	1879	0	0	1782	0	1928	0	0	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	1879	0	0	1782	0	1928	0	0	0	0	1611
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2765			519			353			438	
Travel Time (s)		41.9			7.9			8.0			10.0	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	1%	8%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	0	1319	0	0	380	0	0	0	0	0	0	2
Shared Lane Traffic (%)							0%					
Lane Group Flow (vph)	0	1319	0	0	380	0	0	0	0	0	0	2
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)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

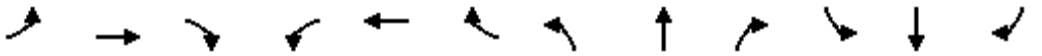
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	1253	0	0	361	0	0	0	0	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	1	1	8	2	1	2	1	2	2	2
Mvmt Flow	0	1319	0	0	380	0	0	0	0	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	380	0	0	1319	0	0	1699	1699	1319	1699	1699	380
Stage 1	-	-	-	-	-	-	1319	1319	-	380	380	-
Stage 2	-	-	-	-	-	-	380	380	-	1319	1319	-
Critical Hdwy	4.12	-	-	4.11	-	-	6.11	5.52	5.71	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	1178	-	-	527	-	-	117	148	232	73	92	667
Stage 1	-	-	-	-	-	-	280	327	-	642	614	-
Stage 2	-	-	-	-	-	-	716	682	-	193	227	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1178	-	-	527	-	-	117	148	232	73	92	667
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	148	-	73	92	-
Stage 1	-	-	-	-	-	-	280	327	-	642	614	-
Stage 2	-	-	-	-	-	-	714	682	-	193	227	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0	0	0	10.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	1178	-	-	527	-	-	667
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.003
HCM Control Delay (s)	0	0	-	-	0	-	-	10.4
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

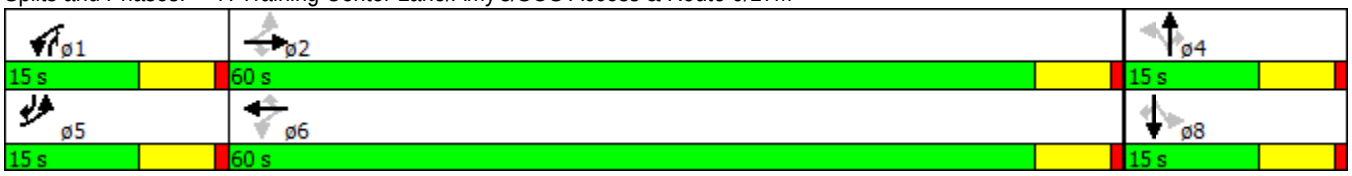


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	1084	16	7	326	101	0	0	0	25	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850						0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1796	1837	1025	1077	1680	1512	0	1863	1188	0	1770	1583
Flt Permitted	0.490			0.123								
Satd. Flow (perm)	926	1837	1025	139	1680	1512	0	1863	1188	0	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			110						40
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		519			1216			735			542	
Travel Time (s)		7.9			15.1			20.0			12.3	
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	60%	60%	8%	2%	60%	2%	60%	2%	2%	2%
Adj. Flow (vph)	167	1191	18	8	358	110	0	0	0	27	0	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	1191	18	8	358	110	0	0	0	0	27	40
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm			pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4	1		8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	16.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	60.0	60.0	15.0	60.0	60.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	66.7%	66.7%	16.7%	66.7%	66.7%	16.7%	16.7%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	54.0	54.0	9.0	54.0	54.0	9.0	9.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
v/c Ratio	0.19	0.73	0.02	0.05	0.31	0.10					0.18	0.15
Control Delay	2.2	10.7	0.1	3.3	7.0	1.8					39.0	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0					0.0	0.0
Total Delay	2.2	10.7	0.1	3.3	7.0	1.8					39.0	9.8
Queue Length 50th (ft)	0	0	0	0	40	0					12	0
Queue Length 95th (ft)	33	#958	0	4	146	19					40	24
Internal Link Dist (ft)		439			1136			655			462	
Turn Bay Length (ft)	200		100	200		135						
Base Capacity (vph)	892	1625	919	221	1165	1082					215	315
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	0.19	0.73	0.02	0.04	0.31	0.10					0.13	0.13

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 78.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	154	1084	16	7	326	101	0	0	0	25	0	37
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1891	1837	1205	1134	1680	1779	1900	1863	1188	1900	1863	1863
Adj Flow Rate, veh/h	167	1191	18	8	358	110	0	0	0	27	0	40
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	2	5	60	60	8	2	2	2	60	2	2	2
Cap, veh/h	733	1324	739	154	1132	1018	0	90	103	158	0	86
Arrive On Green	0.05	0.72	0.72	0.01	0.67	0.67	0.00	0.00	0.00	0.05	0.00	0.05
Sat Flow, veh/h	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Grp Volume(v), veh/h	167	1191	18	8	358	110	0	0	0	27	0	40
Grp Sat Flow(s),veh/h/ln	1801	1837	1025	1080	1680	1512	0	1863	1009	1412	0	1583
Q Serve(g_s), s	2.2	41.3	0.4	0.2	7.1	2.1	0.0	0.0	0.0	1.5	0.0	2.0
Cycle Q Clear(g_c), s	2.2	41.3	0.4	0.2	7.1	2.1	0.0	0.0	0.0	1.5	0.0	2.0
Prop In Lane	1.00		1.00	1.00		1.00	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	733	1324	739	154	1132	1018	0	90	103	158	0	86
V/C Ratio(X)	0.23	0.90	0.02	0.05	0.32	0.11	0.00	0.00	0.00	0.17	0.00	0.46
Avail Cap(c_a), veh/h	839	1324	739	269	1132	1018	0	209	167	248	0	187
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	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.7	8.9	3.2	13.1	5.4	4.6	0.0	0.0	0.0	37.0	0.0	36.8
Incr Delay (d2), s/veh	0.1	10.0	0.1	0.1	0.7	0.2	0.0	0.0	0.0	0.2	0.0	1.4
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	0.0
%ile BackOfQ(50%),veh/ln	1.1	23.8	0.1	0.1	3.5	0.9	0.0	0.0	0.0	0.6	0.0	0.9
LnGrp Delay(d),s/veh	3.7	18.8	3.2	13.2	6.2	4.8	0.0	0.0	0.0	37.2	0.0	38.2
LnGrp LOS	A	B	A	B	A	A				D		D
Approach Vol, veh/h		1376			476			0			67	
Approach Delay, s/veh		16.8			6.0			0.0			37.8	
Approach LOS		B			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	63.8		9.9	10.3	60.0		9.9
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	54.0		9.0	9.0	54.0		9.0
Max Q Clear Time (g_c+I1), s	2.2	43.3		0.0	4.2	9.1		4.0
Green Ext Time (p_c), s	0.0	5.2		0.0	0.2	8.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	1209	0	0	794	0	0	0	0	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			0%	
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												0.865
Flt Protected												
Satd. Flow (prot)	0	1879	0	0	1782	0	1928	0	0	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	1879	0	0	1782	0	1928	0	0	0	0	1611
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2765			537			353			390	
Travel Time (s)		41.9			8.1			8.0			8.9	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	1%	8%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	0	1273	0	0	836	0	0	0	0	0	0	4
Shared Lane Traffic (%)							0%					
Lane Group Flow (vph)	0	1273	0	0	836	0	0	0	0	0	0	4
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)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

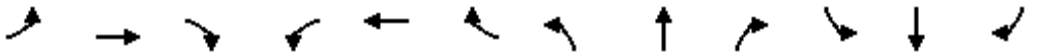
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	1209	0	0	794	0	0	0	0	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	1	1	8	2	1	2	1	2	2	2
Mvmt Flow	0	1273	0	0	836	0	0	0	0	0	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	836	0	0	1273	0	0	2109	2109	1273	2109	2109	836
Stage 1	-	-	-	-	-	-	1273	1273	-	836	836	-
Stage 2	-	-	-	-	-	-	836	836	-	1273	1273	-
Critical Hdwy	4.12	-	-	4.11	-	-	6.11	5.52	5.71	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	798	-	-	549	-	-	67	92	245	37	51	367
Stage 1	-	-	-	-	-	-	294	339	-	362	382	-
Stage 2	-	-	-	-	-	-	458	482	-	205	238	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	798	-	-	549	-	-	66	92	245	37	51	367
Mov Cap-2 Maneuver	-	-	-	-	-	-	66	92	-	37	51	-
Stage 1	-	-	-	-	-	-	294	339	-	362	382	-
Stage 2	-	-	-	-	-	-	453	482	-	205	238	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0	0	0	14.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	798	-	-	549	-	-	367
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.012
HCM Control Delay (s)	0	0	-	-	0	-	-	14.9
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

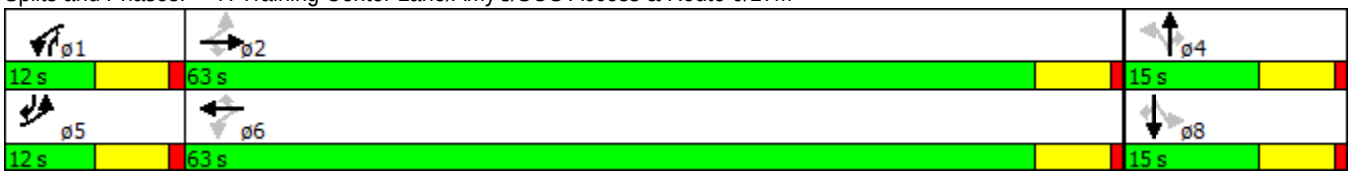


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	1071	49	26	743	53	14	0	32	29	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			9%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1814	1837	1025	1077	1680	1512	0	1128	1009	0	1597	1392
Flt Permitted	0.257			0.086				0.889			0.889	
Satd. Flow (perm)	491	1837	1025	98	1680	1512	0	1056	1009	0	1495	1392
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109			36			41
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		537			1207			764			522	
Travel Time (s)		8.1			15.0			20.8			11.9	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	5%	60%	60%	8%	2%	60%	2%	60%	13%	2%	16%
Adj. Flow (vph)	98	1177	54	29	816	58	15	0	35	32	0	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	1177	54	29	816	58	0	15	35	0	32	41
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.06	1.06	1.06	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	pm+ov
Protected Phases	5	2		1	6			4	1		8	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	1	6	6	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	10.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	16.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	12.0	63.0	63.0	12.0	63.0	63.0	15.0	15.0	12.0	15.0	15.0	12.0
Total Split (%)	13.3%	70.0%	70.0%	13.3%	70.0%	70.0%	16.7%	16.7%	13.3%	16.7%	16.7%	13.3%
Maximum Green (s)	6.0	57.0	57.0	6.0	57.0	57.0	9.0	9.0	6.0	9.0	9.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes			Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
v/c Ratio	0.21	0.81	0.07	0.21	0.66	0.05		0.18	0.19		0.27	0.16
Control Delay	3.3	18.5	0.3	6.5	12.4	0.3		42.5	12.0		43.2	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	3.3	18.5	0.3	6.5	12.4	0.3		42.5	12.0		43.2	10.6
Queue Length 50th (ft)	9	542	0	3	269	0		8	0		17	0
Queue Length 95th (ft)	21	#955	2	9	467	3		27	24		45	26
Internal Link Dist (ft)		457			1127			684			442	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	486	1446	830	146	1241	1145		114	197		161	265
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.20	0.81	0.07	0.20	0.66	0.05		0.13	0.18		0.20	0.15

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 83.7	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	1071	49	26	743	53	14	0	32	29	0	37
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1909	1837	1205	1134	1680	1779	1900	1188	1188	1900	1681	1638
Adj Flow Rate, veh/h	98	1177	54	29	816	58	15	0	35	32	0	41
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	5	60	60	8	2	2	2	60	2	2	16
Cap, veh/h	361	1236	690	126	1098	988	83	0	142	83	0	168
Arrive On Green	0.04	0.67	0.67	0.02	0.65	0.65	0.10	0.00	0.10	0.10	0.00	0.10
Sat Flow, veh/h	1818	1837	1025	1080	1680	1512	0	0	1009	0	0	1392
Grp Volume(v), veh/h	98	1177	54	29	816	58	15	0	35	32	0	41
Grp Sat Flow(s),veh/h/ln	1818	1837	1025	1080	1680	1512	0	0	1009	0	0	1392
Q Serve(g_s), s	1.5	50.9	1.6	0.8	28.6	1.2	0.0	0.0	2.7	0.0	0.0	2.3
Cycle Q Clear(g_c), s	1.5	50.9	1.6	0.8	28.6	1.2	9.0	0.0	2.7	9.0	0.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	361	1236	690	126	1098	988	83	0	142	83	0	168
V/C Ratio(X)	0.27	0.95	0.08	0.23	0.74	0.06	0.18	0.00	0.25	0.39	0.00	0.24
Avail Cap(c_a), veh/h	419	1236	690	182	1098	988	83	0	142	83	0	168
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	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	1.00
Uniform Delay (d), s/veh	9.9	13.0	4.9	20.3	10.2	5.5	43.6	0.0	33.4	43.6	0.0	34.8
Incr Delay (d2), s/veh	0.1	16.4	0.2	0.3	4.6	0.1	0.4	0.0	0.3	1.1	0.0	0.3
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	30.8	0.5	0.4	14.3	0.5	0.4	0.0	0.8	0.8	0.0	0.9
LnGrp Delay(d),s/veh	10.1	29.4	5.1	20.7	14.8	5.6	44.0	0.0	33.7	44.7	0.0	35.0
LnGrp LOS	B	C	A	C	B	A	D		C	D		D
Approach Vol, veh/h		1329			903			50			73	
Approach Delay, s/veh		27.0			14.4			36.8			39.3	
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	7.5	64.7		15.0	9.2	63.0		15.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	6.0	57.0		9.0	6.0	57.0		9.0
Max Q Clear Time (g_c+I1), s	2.8	52.9		11.0	3.5	30.6		11.0
Green Ext Time (p_c), s	0.0	3.0		0.0	0.0	10.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	22.7
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	912	0	0	1332	0	0	0	0	0	0	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			0%	
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												0.865
Flt Protected												
Satd. Flow (prot)	0	1879	0	0	1782	0	1928	0	0	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	1879	0	0	1782	0	1928	0	0	0	0	1611
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		552			535			353			372	
Travel Time (s)		8.4			8.1			8.0			8.5	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	1%	8%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	0	960	0	0	1402	0	0	0	0	0	0	63
Shared Lane Traffic (%)							0%					
Lane Group Flow (vph)	0	960	0	0	1402	0	0	0	0	0	0	63
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)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

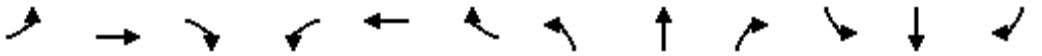
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	912	0	0	1332	0	0	0	0	0	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	1	1	8	2	1	2	1	2	2	2
Mvmt Flow	0	960	0	0	1402	0	0	0	0	0	0	63

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1402	0	0	960	0	0	2362	2362	960	2362	2362	1402
Stage 1	-	-	-	-	-	-	960	960	-	1402	1402	-
Stage 2	-	-	-	-	-	-	1402	1402	-	960	960	-
Critical Hdwy	4.12	-	-	4.11	-	-	6.11	5.52	5.71	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	487	-	-	721	-	-	48	68	357	25	35	171
Stage 1	-	-	-	-	-	-	404	437	-	173	207	-
Stage 2	-	-	-	-	-	-	257	305	-	308	335	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	487	-	-	721	-	-	30	68	357	25	35	171
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	68	-	25	35	-
Stage 1	-	-	-	-	-	-	404	437	-	173	207	-
Stage 2	-	-	-	-	-	-	162	305	-	308	335	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0	0	0	37.9
HCM LOS			A	E

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	487	-	-	721	-	-	171
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.369
HCM Control Delay (s)	0	0	-	-	0	-	-	37.9
HCM Lane LOS	A	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.6



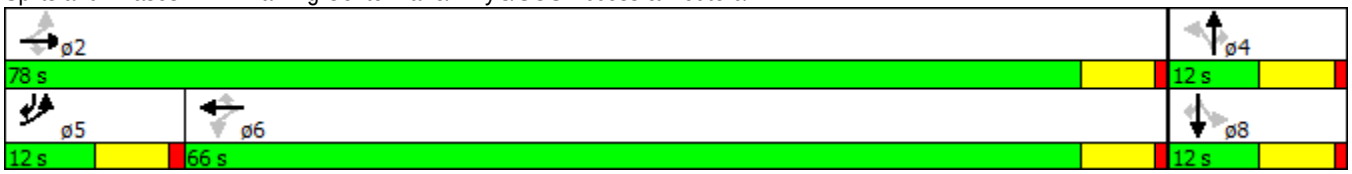
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	780	7	2	1202	87	18	0	9	83	0	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.061			0.353				0.700			0.745	
Satd. Flow (perm)	112	1837	1623	664	1888	1538	0	1317	1599	0	1287	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			109			109			85
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		535			705			798			469	
Travel Time (s)		8.1			8.7			21.8			10.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	134	830	7	2	1279	93	19	0	10	88	0	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	830	7	2	1279	93	0	19	10	0	88	120
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	5
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	12.0	78.0	78.0	66.0	66.0	66.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Split (%)	13.3%	86.7%	86.7%	73.3%	73.3%	73.3%	13.3%	13.3%	13.3%	13.3%	13.3%	13.3%
Maximum Green (s)	6.0	72.0	72.0	60.0	60.0	60.0	6.0	6.0	6.0	6.0	6.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.68	0.57	0.01	0.00	1.01	0.09		0.22	0.05		1.04	0.33
Control Delay	32.3	5.0	0.0	5.0	46.0	1.0		46.1	0.4		152.5	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	32.3	5.0	0.0	5.0	46.0	1.0		46.1	0.4		152.5	14.2
Queue Length 50th (ft)	23	127	0	0	~695	0		10	0		~53	16
Queue Length 95th (ft)	#105	191	0	3	#1024	11		33	0		#148	63
Internal Link Dist (ft)		455			625			718			389	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	198	1469	1305	443	1261	1063		87	208		85	367
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.68	0.57	0.01	0.00	1.01	0.09		0.22	0.05		1.04	0.33

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ 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: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	126	780	7	2	1202	87	18	0	9	83	0	113
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	134	830	7	2	1279	93	19	0	10	88	0	120
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	175	1469	1298	499	1314	1064	80	0	107	80	0	1134
Arrive On Green	0.04	0.80	0.80	0.69	0.69	0.69	0.07	0.00	0.07	0.07	0.00	0.07
Sat Flow, veh/h	1749	1837	1623	660	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	134	830	7	2	1279	93	19	0	10	88	0	120
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	660	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	1.8	14.8	0.1	0.1	57.2	1.8	0.0	0.0	0.5	0.0	0.0	1.9
Cycle Q Clear(g_c), s	1.8	14.8	0.1	5.2	57.2	1.8	6.0	0.0	0.5	6.0	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	1469	1298	499	1314	1064	80	0	107	80	0	1134
V/C Ratio(X)	0.77	0.56	0.01	0.00	0.97	0.09	0.24	0.00	0.09	1.10	0.00	0.11
Avail Cap(c_a), veh/h	219	1469	1298	499	1314	1064	80	0	107	80	0	1134
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	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	1.00
Uniform Delay (d), s/veh	25.4	3.3	1.8	6.0	13.1	4.6	45.0	0.0	39.4	45.0	0.0	2.9
Incr Delay (d2), s/veh	9.0	1.6	0.0	0.0	19.2	0.2	0.6	0.0	0.1	130.4	0.0	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	0.3	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	8.0	0.0	0.0	36.1	0.8	0.5	0.0	0.2	4.9	0.0	3.0
LnGrp Delay(d),s/veh	34.4	4.9	1.8	6.0	32.3	4.7	45.6	0.0	39.6	175.7	0.0	2.9
LnGrp LOS	C	A	A	A	C	A	D		D	F		A
Approach Vol, veh/h		971			1374			29			208	
Approach Delay, s/veh		8.9			30.4			43.5			76.0	
Approach LOS		A			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		78.0		12.0	9.8	68.2		12.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		72.0		6.0	6.0	60.0		6.0
Max Q Clear Time (g_c+I1), s		16.8		8.0	3.8	59.2		8.0
Green Ext Time (p_c), s		13.2		0.0	0.1	0.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.1
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	823	0	0	1255	0	0	0	0	0	0	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			0%	
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												0.865
Flt Protected												
Satd. Flow (prot)	0	1879	0	0	1782	0	1928	0	0	0	0	1611
Flt Permitted												
Satd. Flow (perm)	0	1879	0	0	1782	0	1928	0	0	0	0	1611
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2765			507			353			575	
Travel Time (s)		41.9			7.7			8.0			13.1	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	1%	8%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	0	866	0	0	1321	0	0	0	0	0	0	58
Shared Lane Traffic (%)							0%					
Lane Group Flow (vph)	0	866	0	0	1321	0	0	0	0	0	0	58
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)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

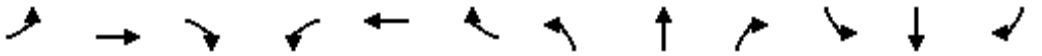
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	823	0	0	1255	0	0	0	0	0	0	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	1	1	8	2	1	2	1	2	2	2
Mvmt Flow	0	866	0	0	1321	0	0	0	0	0	0	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1321	0	0	866	0	0	2187	2187	866	2187	2187	1321
Stage 1	-	-	-	-	-	-	866	866	-	1321	1321	-
Stage 2	-	-	-	-	-	-	1321	1321	-	866	866	-
Critical Hdwy	4.12	-	-	4.11	-	-	6.11	5.52	5.71	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	523	-	-	782	-	-	61	84	399	33	46	191
Stage 1	-	-	-	-	-	-	444	471	-	193	226	-
Stage 2	-	-	-	-	-	-	280	326	-	348	370	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	523	-	-	782	-	-	43	84	399	33	46	191
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	84	-	33	46	-
Stage 1	-	-	-	-	-	-	444	471	-	193	226	-
Stage 2	-	-	-	-	-	-	196	326	-	348	370	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0	0	0	31.8
HCM LOS			A	D

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	WBR	SWLn1
Capacity (veh/h)	-	523	-	-	782	-	-	191
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.302
HCM Control Delay (s)	0	0	-	-	0	-	-	31.8
HCM Lane LOS	A	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1.2



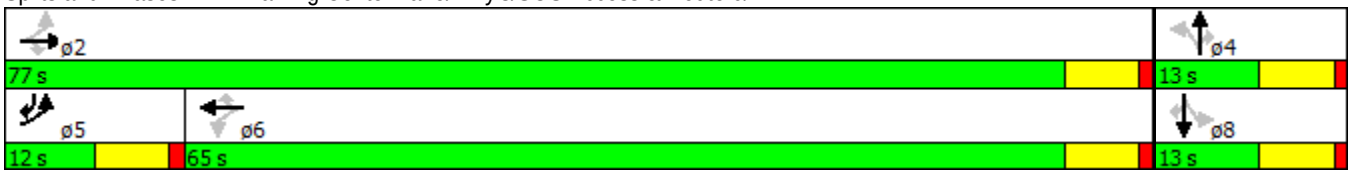
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	767	5	5	1215	36	5	0	5	37	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1745	1837	1623	1787	1888	1538	0	1787	1599	0	1641	1495
Flt Permitted	0.056			0.358				0.976			0.976	
Satd. Flow (perm)	103	1837	1623	673	1888	1538	0	1836	1599	0	1686	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			109			109			36
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		507			1222			776			433	
Travel Time (s)		7.7			15.1			21.2			9.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	5%	5%	1%	1%	4%	5%	1%	2%	1%	10%	2%	8%
Adj. Flow (vph)	54	816	5	5	1293	38	5	0	5	39	0	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	816	5	5	1293	38	0	5	5	0	39	36
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			4			8	5
Permitted Phases	2		2	6		6	4		4	8		8
Detector Phase	5	2	2	6	6	6	4	4	4	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	10.0	10.0	10.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	16.0	16.0	16.0	16.0	16.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	12.0	77.0	77.0	65.0	65.0	65.0	13.0	13.0	13.0	13.0	13.0	12.0
Total Split (%)	13.3%	85.6%	85.6%	72.2%	72.2%	72.2%	14.4%	14.4%	14.4%	14.4%	14.4%	13.3%
Maximum Green (s)	6.0	71.0	71.0	59.0	59.0	59.0	7.0	7.0	7.0	7.0	7.0	6.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Max	Max	Max	Max	Max	None	None	None	None	None	None
v/c Ratio	0.30	0.51	0.00	0.01	0.91	0.03		0.04	0.02		0.33	0.15
Control Delay	7.5	4.0	0.0	5.4	24.9	0.1		39.2	0.2		46.5	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	7.5	4.0	0.0	5.4	24.9	0.1		39.2	0.2		46.5	11.7
Queue Length 50th (ft)	5	133	0	1	~796	0		3	0		21	0
Queue Length 95th (ft)	18	200	0	5	#1052	0		14	0		53	24
Internal Link Dist (ft)		427			1142			696			353	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	199	1604	1421	507	1422	1185		146	228		135	262
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.27	0.51	0.00	0.01	0.91	0.03		0.03	0.02		0.29	0.14

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 87.8
Natural Cycle: 90
Control Type: Semi Act-Uncoord
~ 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: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	51	767	5	5	1215	36	5	0	5	37	0	34
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1837	1837	1909	1881	1900	1810	1900	1881	1881	1900	1727	1759
Adj Flow Rate, veh/h	54	816	5	5	1293	38	5	0	5	39	0	36
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	1	1	4	5	2	2	1	2	2	8
Cap, veh/h	145	1449	1280	496	1325	1073	80	0	124	80	0	1159
Arrive On Green	0.02	0.79	0.79	0.70	0.70	0.70	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1749	1837	1623	670	1900	1538	0	0	1599	0	0	1495
Grp Volume(v), veh/h	54	816	5	5	1293	38	5	0	5	39	0	36
Grp Sat Flow(s),veh/h/ln	1749	1837	1623	670	1900	1538	0	0	1599	0	0	1495
Q Serve(g_s), s	0.7	15.2	0.1	0.3	58.0	0.7	0.0	0.0	0.3	0.0	0.0	0.5
Cycle Q Clear(g_c), s	0.7	15.2	0.1	7.2	58.0	0.7	7.0	0.0	0.3	7.0	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	145	1449	1280	496	1325	1073	80	0	124	80	0	1159
V/C Ratio(X)	0.37	0.56	0.00	0.01	0.98	0.04	0.06	0.00	0.04	0.49	0.00	0.03
Avail Cap(c_a), veh/h	218	1449	1280	496	1325	1073	80	0	124	80	0	1159
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	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	1.00
Uniform Delay (d), s/veh	25.4	3.6	2.0	6.5	12.9	4.2	45.0	0.0	38.4	45.0	0.0	2.3
Incr Delay (d2), s/veh	0.6	1.6	0.0	0.0	19.5	0.1	0.1	0.0	0.0	1.7	0.0	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	0.0
%ile BackOfQ(50%),veh/ln	1.0	8.1	0.0	0.1	37.0	0.3	0.1	0.0	0.1	1.0	0.0	0.9
LnGrp Delay(d),s/veh	26.0	5.2	2.0	6.6	32.4	4.3	45.1	0.0	38.4	46.7	0.0	2.3
LnGrp LOS	C	A	A	A	C	A	D		D	D		A
Approach Vol, veh/h		875			1336			10			75	
Approach Delay, s/veh		6.5			31.5			41.8			25.4	
Approach LOS		A			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		77.0		13.0	8.2	68.8		13.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s		71.0		7.0	6.0	59.0		7.0
Max Q Clear Time (g_c+I1), s		17.2		9.0	2.7	60.0		9.0
Green Ext Time (p_c), s		12.9		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	864	0	0	924	0	1	0	0	0	0	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	13	12	12	12	12	12	12	12
Grade (%)		-1%			4%			-5%			0%	
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												0.865
Flt Protected							0.950					
Satd. Flow (prot)	0	1879	0	0	1782	0	1832	0	0	0	0	1611
Flt Permitted							0.950					
Satd. Flow (perm)	0	1879	0	0	1782	0	1832	0	0	0	0	1611
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		2765			521			353			672	
Travel Time (s)		41.9			7.9			8.0			15.3	
Peak Hour Factor	0.92	0.95	0.95	0.95	0.95	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	1%	1%	8%	2%	1%	2%	1%	2%	2%	2%
Adj. Flow (vph)	0	909	0	0	973	0	1	0	0	0	0	26
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	0	909	0	0	973	0	1	0	0	0	0	26
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)		12			12			12			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.99	0.95	0.99	1.03	0.98	1.03	0.97	0.97	0.97	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Vol, veh/h	0	864	0	0	924	0	1	0	0	0	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	0	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	4	-	-	-5	-	-	0	-
Peak Hour Factor	92	95	95	95	95	92	95	92	95	92	92	92
Heavy Vehicles, %	2	5	1	1	8	2	1	2	1	2	2	2
Mvmt Flow	0	909	0	0	973	0	1	0	0	0	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	973	0	0	909	0	0	1882	1882	909	1882	1882	973
Stage 1	-	-	-	-	-	-	909	909	-	973	973	-
Stage 2	-	-	-	-	-	-	973	973	-	909	909	-
Critical Hdwy	4.12	-	-	4.11	-	-	6.11	5.52	5.71	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.11	4.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.209	-	-	3.509	4.018	3.309	3.518	4.018	3.318
Pot Cap-1 Maneuver	709	-	-	753	-	0	92	120	380	54	71	306
Stage 1	-	-	-	-	-	0	426	455	-	303	330	-
Stage 2	-	-	-	-	-	0	399	433	-	329	354	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	709	-	-	753	-	-	84	120	380	54	71	306
Mov Cap-2 Maneuver	-	-	-	-	-	-	84	120	-	54	71	-
Stage 1	-	-	-	-	-	-	426	455	-	303	330	-
Stage 2	-	-	-	-	-	-	365	433	-	329	354	-

Approach	EB	WB	NE	SW
HCM Control Delay, s	0	0	48.4	17.9
HCM LOS			E	C

Minor Lane/Major Mvmt	NELn1	EBL	EBT	EBR	WBL	WBT	SWLn1
Capacity (veh/h)	84	709	-	-	753	-	306
HCM Lane V/C Ratio	0.013	-	-	-	-	-	0.085
HCM Control Delay (s)	48.4	0	-	-	0	-	17.9
HCM Lane LOS	E	A	-	-	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	0.3

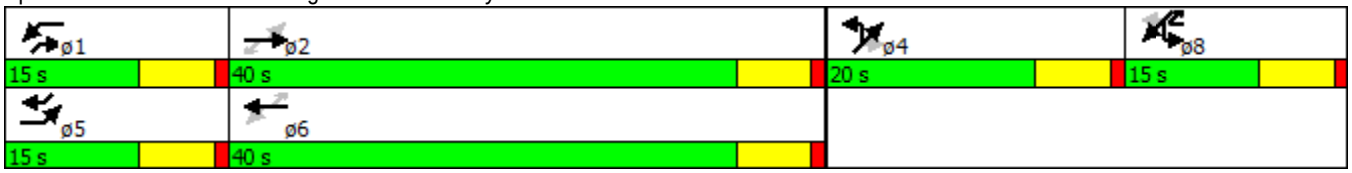
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	35	717	113	42	777	26	101	0	63	38	0	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	13	12	12	12	12	12	12	12
Grade (%)		-3%			0%			0%			0%	
Storage Length (ft)	200		100	200		135	0		200	0		0
Storage Lanes	1		1	1		1	0		1	0		1
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			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1666	1891	1591	1671	1925	1495	0	1752	1509	0	1492	1346
Flt Permitted	0.102			0.149				0.950			0.950	
Satd. Flow (perm)	179	1891	1591	262	1925	1495	0	1752	1509	0	1492	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182			109			109			109
Link Speed (mph)		45			55			25			30	
Link Distance (ft)		521			1215			802			646	
Travel Time (s)		7.9			15.1			21.9			14.7	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	10%	2%	3%	8%	2%	8%	3%	2%	7%	21%	2%	20%
Adj. Flow (vph)	37	763	120	45	827	28	107	0	67	40	0	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	763	120	45	827	28	0	107	67	0	40	50
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)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.98	0.98	0.98	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	2	2	2	2	1	2	2	2	2	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	83	83	83	83	83	83	50	83	83	83	83	83
Trailing Detector (ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Position(ft)	-5	-5	-5	-5	-5	-5	0	-5	-5	-5	-5	-5
Detector 1 Size(ft)	40	40	40	40	40	40	50	40	40	40	40	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	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	43	43	43	43	43	43		43	43	43	43	43
Detector 2 Size(ft)	40	40	40	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	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	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	Split	NA	pm+ov	Split	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Protected Phases	5	2		1	6	8	4	4	1	8	8	5
Permitted Phases	2		2	6		6			4			8
Detector Phase	5	2	2	1	6	8	4	4	1	8	8	5
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	3.0	10.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0
Minimum Split (s)	9.0	16.0	16.0	9.0	16.0	11.0	11.0	11.0	9.0	11.0	11.0	9.0
Total Split (s)	15.0	40.0	40.0	15.0	40.0	15.0	20.0	20.0	15.0	15.0	15.0	15.0
Total Split (%)	16.7%	44.4%	44.4%	16.7%	44.4%	16.7%	22.2%	22.2%	16.7%	16.7%	16.7%	16.7%
Maximum Green (s)	9.0	34.0	34.0	9.0	34.0	9.0	14.0	14.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag				Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				Yes			Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	None	Min	None	None	None	None	None	None	None
v/c Ratio	0.17	0.73	0.13	0.17	0.78	0.03		0.50	0.17		0.30	0.15
Control Delay	10.7	26.7	1.1	10.3	28.5	0.0		41.2	2.1		41.2	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	10.7	26.7	1.1	10.3	28.5	0.0		41.2	2.1		41.2	1.0
Queue Length 50th (ft)	7	351	0	9	395	0		51	0		19	0
Queue Length 95th (ft)	23	#681	10	27	#749	0		103	8		52	1
Internal Link Dist (ft)		441			1135			722			566	
Turn Bay Length (ft)	200		100	200		135			200			
Base Capacity (vph)	298	1042	958	340	1064	1004		342	456		187	387
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.12	0.73	0.13	0.13	0.78	0.03		0.31	0.15		0.21	0.13

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 73.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Training Center Lane/Amy's/SOS Access & Route 6/17M



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	35	717	113	42	777	26	101	0	63	38	0	47
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	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		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	1.00
Adj Sat Flow, veh/h/ln	1753	1891	1872	1759	1937	1759	1900	1845	1776	1900	1570	1583
Adj Flow Rate, veh/h	37	763	120	45	827	28	107	0	67	40	0	50
Adj No. of Lanes	1	1	1	1	1	1	0	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	10	2	3	8	2	8	2	2	7	2	2	20
Cap, veh/h	190	882	743	212	910	837	158	0	170	91	0	116
Arrive On Green	0.02	0.47	0.47	0.03	0.47	0.47	0.09	0.00	0.09	0.06	0.00	0.06
Sat Flow, veh/h	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Grp Volume(v), veh/h	37	763	120	45	827	28	107	0	67	40	0	50
Grp Sat Flow(s),veh/h/ln	1670	1891	1591	1675	1937	1495	1757	0	1509	1495	0	1346
Q Serve(g_s), s	0.8	24.2	2.9	0.9	26.5	0.6	4.0	0.0	2.8	1.7	0.0	2.4
Cycle Q Clear(g_c), s	0.8	24.2	2.9	0.9	26.5	0.6	4.0	0.0	2.8	1.7	0.0	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	190	882	743	212	910	837	158	0	170	91	0	116
V/C Ratio(X)	0.20	0.86	0.16	0.21	0.91	0.03	0.68	0.00	0.40	0.44	0.00	0.43
Avail Cap(c_a), veh/h	376	957	806	394	981	892	366	0	348	200	0	214
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	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	1.00
Uniform Delay (d), s/veh	14.5	16.0	10.3	13.6	16.5	6.6	29.6	0.0	27.7	30.5	0.0	29.1
Incr Delay (d2), s/veh	0.2	7.3	0.0	0.2	11.0	0.0	1.9	0.0	0.6	1.3	0.0	0.9
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	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	14.3	1.3	0.4	16.8	0.3	2.0	0.0	1.2	0.7	0.0	0.9
LnGrp Delay(d),s/veh	14.6	23.3	10.4	13.8	27.5	6.6	31.5	0.0	28.2	31.7	0.0	30.1
LnGrp LOS	B	C	B	B	C	A	C		C	C		C
Approach Vol, veh/h		920			900			174			90	
Approach Delay, s/veh		21.3			26.2			30.2			30.8	
Approach LOS		C			C			C			C	

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	37.3		12.0	7.5	37.6		10.1
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	9.0	34.0		14.0	9.0	34.0		9.0
Max Q Clear Time (g_c+I1), s	2.9	26.2		6.0	2.8	28.5		4.4
Green Ext Time (p_c), s	0.0	3.9		0.3	0.0	3.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	24.6
HCM 2010 LOS	C