Operational Noise

On-site and off-site noise can be expected to increase slightly above existing levels due to the increase in traffic resulting from the project. Noise near the site is dominated by NYS Route 94 traffic, as it is the major northeast/southwest corridor for traffic coming from or going to areas southwest of Warwick.

Off-site noise will increase slightly with the addition of traffic to local roads due to project-related traffic as well as normal growth. Traffic entering and exiting the site via NYS Route 94 at the Price Chopper Center will cause the greatest impact to the noise environment. Therefore, based on the projected traffic related increase, ambient off-site noise levels for residential areas in the vicinity of the site are not expected to increase noticeably.

On-site noise and noise at the perimeter of the site is expected to increase with the introduction of customer traffic, delivery vehicles and on-site operations, such as truck circulation and loading.

With regard to the Town of Warwick noise standards, normal operations at the project site will crease noise primarily from rooftop HVAC equipment on the building, from customer car traffic on the site, and from truck circulation and loading on the site. The normal operations on the project site are not expected to increase the ambient noise levels by the Town's noise standard thresholds at the property line.

3.7-5.3 Mitigation Measures

Based on the analysis above, no long term adverse impacts to residential properties will result from the proposed project. Permanent mitigation measures incorporated into the proposed development include building design and siting, and landscape buffering. Mitigation of construction-related impacts included the short construction period and limitation of construction to daytime hours.

3.7-6 Cultural Resources

3.7-6.1 Existing Conditions

A review of the Geographic Information System for Archeology and National Register provided by The New York State Office of Parks, Recreation and Historic Preservation show the project site located within the general boundaries of the state's known archeological areas.

A Phase 1A site assessment was conducted by Tracker Archaeology Services, Inc. in 2007 of the project site and its environs to determine the potential sensitivity of the project site to historical and archaeological resources of significance. The Phase 1A assessment identified various locations on the site as having an above average potential for containing buried Native American cultural remains, based on the presence of documented archaeological remains nearby and the physiographic character of the parcel. A Phase IB site identification survey was carried out to determine the presence or absence of archaeological sites on the property. This was accomplished through subsurface testing. No prehistoric artifacts or features were encountered. Additionally, no historic artifacts or features were encountered. The Tracker reports states that "no further work is recommended for this project area".

employees, or about 45 gpd would be needed. These figures total 1,410 gpd, well under the 2,000 projected.

The municipal water supply system has enough capacity to meet the needs of the project. There is a private water supply well on site; however, the well is proposed to be abandoned. Sprinkler systems for fire protection are not proposed.

Wastewater

For design purposes, it is assumed that all water used at the facility will be discharged to the wastewater collection and treatment systems. Therefore, the average daily design flow is 2,000 gpd.

It is proposed that the Homarc site will become part of the Town of Warwick's sewer district, and that the wastewater from the project will be discharged to the wastewater treatment plant located on the Price Chopper Plaza site. The plant discharges treated effluent to a subsurface disposal system. A pump station and force main system is proposed to provide the connection from the Homarc site to the gravity sewer mains located on the Price Chopper Plaza property.

Electric and Gas Service

The new heating systems, mechanical equipment, lighting, and related facilities will create demands for electric and gas services. It is roughly estimated that the building will use 7,000 CCF (100 cubic feet) per year of natural gas. It is estimated that the building will use 75,000 kWh (kilowatt hours) of electric per year.

3.7-7.3 Mitigation Measures

Water

The municipal water supply system has enough capacity to meet the needs of the project. There is a private water supply well on site that will be abandoned. The project sponsor will pay the fair share of costs associated with connection to, operation, and maintenance of the Town's water supply system.

The design, construction, and occupancy of the facility will be such that sprinkler systems will not be required for fire protection. Fire separation assemblies and other mitigation measures will be provided in accordance with the NYS Building Code. Access will be provided to all sides of the building to facilitate the efforts of emergency services personnel.

Wastewater

No wastewater from floor drains or other prohibited sources will be discharged to the wastewater collection system. The Town must review and approve the new pump station and force main. The project sponsor will pay the fair share of costs associated with connection to, operation, and maintenance of the Town's collection and treatment system.

Electric and Gas Service

The project sponsor will coordinate the proposed development plans with Orange and Rockland Utilities, Inc. Improvements will be constructed if needed to provide sufficient service capability.

4.0 ALTERNATIVES

The New York State Environmental Quality Review Act (SEQRA) calls for a description and evaluation of reasonable alternatives to the proposed action that are feasible, considering the objectives and capabilities of the project sponsor.

The following alternatives to the proposed action are discussed below in terms of the impact issues listed in Section 3.0 of this DEIS.

- No Action
- Original Proposed Development

4.1 No Action Alternative

The No Action alternative is represented by existing conditions on the project site. Under this alternative, the site would remain agricultural land, agricultural, meadow/brushland, freshwater wetlands and wooded uplands. This alternative is not consistent with the objectives of the project sponsor.

Land Use and Zoning/Socioeconomics: No changes would occur to the site under this alternative. Development of the land as allowed by the CB zoning designation of the site would continue to be unimplemented. Potential tax revenues resulting from the development that is allowed by current zoning would not be realized by the Town, County or School District. New sources of sales tax revenue would also not be realized.

Visual Resources: There would be no change to the visual environment as a result of this alternative.

Traffic: Area traffic levels would not increase as projected for the retail use that is permitted on the project site.

Natural Resources: Under the No Action plan, the amount of impervious surface on the site would not increase. Potential impacts on cropland and changes to on-site topography as described in Section 3.0 of this report would also not occur.

Noise: Ambient noise levels on and in the vicinity of the site would be unaffected by the noise from operation of vehicles and equipment during construction, vehicular traffic traveling to and from the site and other activities on the project site associated with a developed site.

Community Resources: As this alternative involves no changes to the existing conditions, no potential impacts to community services would exist. Property values, tax assessments and revenues generated by the property would, however, continue to be lower than a developed site would generate.

Construction Impacts: Under this alternative, the short-term impacts associated with construction including site disturbance and construction traffic would not occur.

4.2 Original Proposed Development Alternative

Homarc Land, LLC, originally proposed to develop professional office, retail, and food service uses on approximately 2.4 acres or 46 percent of a 5.1 acre site. The original proposed development was comprised of an approximately 29,120 square feet (SF) two-story building with parking around the building as well as in the basement level (see Figure 4-1). The project proposed utilizing an on-site water supply and septic system, with a total of 115 parking spaces, and a separate entrance onto NYS Route 94.

Land Use and Zoning/Socioeconomics: In terms of overall intensity, this alternative would result in a similar intensity of use of the site as the current proposed plan in terms of land use and zoning. The alternative plan was designed to be in compliance with the Town of Warwick Design Guidelines.

Visual Resources: The overall visual prominence of the site would be significantly increased due to the height of the proposed two-story building. Parking underneath the building would further increase the overall height. With a septic system adjacent to NYS Route 94 and ingress and egress directly onto NYS Route 94 a landscape buffer along NYS Route 94 would be sparse.

Traffic: Construction traffic would be greater under this alternative due to the size and type of building to be constructed. Trips generated by this alternative would increase over the current proposed development due to the additional 7,200 square feet of commercial space. Additionally, ingress and egress would be directly onto NYS Route 94. This would create delays in startup, deceleration and acceleration thus impacting the level of service along this State road.

Natural Resources: When compared to the current plan, the alternative building footprint is smaller but access around the building increased resulting in similar impervious surface. Thus stormwater would need to be managed in a similar manner. Due to more grading, more site disturbance would be necessary, resulting in additional impacts to vegetation.

Noise: Levels of operational noise on the site would be similar to the proposed development plan. With a minimal landscape buffer along NYS Route 94, noise would carry off-site. Temporary construction noise levels would increase due to the additional time and construction methods necessary to construct a taller building as well as parking underneath.

Community Resources: Due to an increase in building size, there would be an increase in demand for services such as electric, water, sewerage, and solid waste disposal.

Construction: The environmental disturbance under this plan would be slightly greater than the proposed plan. The short-term construction effects would be far greater under this alternative.

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ENVIRONMENTAL RESOURCE SPECIALISTS
11 FORESTER AVENUE WARWICK, NEW YORK 10990
Phone: (845) 987-1775 Fax: (845) 987-1788

ALTERNATIVE DEVELOPMENT PLAN

PREPARED FOR

HOMARC LAND, LLC

SECTION 51 BLOCK 1 LOT 5.231
TOWN OF WARWICK, COUNTY OF ORANGE, NEW YORK
SCALE: 1"=60' FIGURE 4-1

5.0 ADVERSE ENVIRONMENTAL IMPACTS THAT CANNOT BE AVOIDED

The development of the proposed project will result in some adverse environmental impacts which cannot be avoided. Potential adverse impacts which may occur as a result of the proposed action are discussed in Section 3.0 of the DEIS under the various subject subsections. Implementation of various mitigation measures will limit the extent of the impacts which prove unavoidable, as also discussed in Section 3.0. Some of these impacts will be temporary or short term impacts associated with the construction of the project, while others will be long term impacts associated with occupation and use of the site.

Short Term Adverse Impacts

- Soil disturbance and potential soil erosion.
- Increased local area traffic associated with construction.
- Increased local area noise from construction.

Long Term Adverse Impacts

- Increase in impervious surfaces with concomitant decrease in vegetation land cover.
- Loss of vegetation and associated wildlife habitats.
- Loss of agricultural opportunities.
- Increase in intensity of land use.
- Increase in solid waste generation and disposal needs.
- Increase in traffic to the area network.
- Increase in ambient noise levels from traffic.

6.0 OTHER ISSUES

6.1 Irreversible and Irretrievable Commitment of Resources

Implementation of the proposed plan will result in the development of one commercial building; associated parking areas; and stormwater management areas on approximately 47 percent (2.4 acres) of the 5.1 acre site. The project will preserve approximately 53 percent in meadow, woods and wetlands. Once implemented, the project site will be unavailable for other uses for the foreseeable future.

Development of the project will result in the loss of existing cropland on approximately 2.3 acres. After completion of the proposed development, however, the undisturbed areas of meadow, woods and wetland will continue to provide wildlife habitat.

The finite resources that will be irretrievably committed by implementation of the proposed action are the materials and energy required for construction and for maintenance of the development afterward. Construction will involve the commitment of a variety of natural resources. These include, but are not necessarily limited to, concrete, asphalt, steel, lumber, paint products, topsoil, and other building materials. However, it should be noted that many of the materials accumulated for construction may at some time be recycled or reused. The operation of construction equipment will result in consumption of fossil fuels and other finite energy sources. When completed, the operation of the facility will require electricity and the use of fossil fuels either directly as heating fuel or indirectly as electricity. These will also be future commitment of water resources and solid waste disposal requirements associated with the project.

6.2 Growth Inducing Aspects of the Proposed Action

Community growth will not result from the proposed project. The commercial building is proposed in response to growth of the residential community that is anticipated to support the facilities. The project will not add to the Town population. Increased levels of municipal services will be minor and, in the case of emergency services, incidental if an emergency arises. The school district will receive additional tax revenue with no growth of school-age population from the project. No significant growth-inducing effects on existing community services or facilities are expected.

The project will promote increased construction employment in the short term and, on a cumulative basis, a long term increase in demand for commercial goods and services that will have steady multiplier effect in the Warwick area.

The project will utilize municipal water and sewage. No growth inducing effects on the local utilities, or community services and facilities are expected.

6.3 Effects on the Use and Conservation of Energy Resources

Energy consumption will occur during construction and operation of the proposed project. Sources of energy will primarily include electricity, gasoline, diesel fuel, and heating oil or natural gas. During construction, energy will be used for power equipment and various construction vehicles. Once construction is completed and the project occupied, energy will be required for heating, air conditioning, and the use of various appliances and electrical equipment. It is not expected that this energy use will be higher than what is typical for this type of development.

The proposed project will cause increased consumption of these energy resources, which will need to be supplied by local energy suppliers. Construction contractors will need to buy the fuel necessary to operate their construction equipment for the duration of the construction period. Fuel and electricity will need to be purchased by each of the building tenants on an ongoing basis for the life of the project.

The proposed building will be designed and built in conformance with the energy conservation regulations of the New York State Energy and Building Codes, at a minimum. Energy conservation measures that will be included in the building designs will include sufficient building insulation to conserve heating and cooling usage, energy efficient heating and cooling systems and appliances, energy conscious layout of interior spaces, windows and doors, and door closing devices to conserve heated and cooled interior air. As the proposed building will be designed to modern standards for fuel conservation using the latest “Green Building” construction technology to address the requirements of the tenants to minimize lighting, heating and operations costs, it can be expected that their operation will minimize energy use to the greatest extent practicable.

Green Building within the construction industry is the process of designing and implementing energy efficient materials and sustainable products to maximize the long term performance, energy conservation and sustainability of structures. The Homarc building will utilize the following green building practices:

- Fly ash concrete. Flyash is defined as “the finely divided residue resulting from the combustion of ground or powdered coal, which is transported from the firebox through the boiler by flue gases.” Flyash is a by-product of coal-fired electric generating plants. Although flyash offers environmental advantages, it also improves the performance and quality of concrete. Flyash affects the plastic properties of concrete by improving workability, reducing water demand, reducing segregation and bleeding, and lowering heat of hydration. Flyash increases strength, reduces permeability, reduces corrosion of reinforcing steel, increases sulphate resistance, and reduces alkali-aggregate reaction.

- Cellulose Insulation. Cellulose is composed of 75-85% recycled paper fiber, usually post-consumer waste newsprint. The other 15% is a fire retardant such as boric acid or ammonium sulphate. Cellulose has the highest recycled content of any insulation available. Cellulose insulation has a very favorable thermal performance with an average R-value of 3.8 per inch. It is very good at fitting around items in walls like pipes and wiring, leaving few air pockets that can reduce the overall efficiency of the wall. Dense pack cellulose can seal walls from air infiltration while providing the density to limit convection, when installed properly.

- Energy-Efficient Windows. The windows installed throughout the building will be energy-efficient with a U-factor of 0.32 or less. Energy efficient windows substantially reduce the costs associated with heating and cooling.

- Brick veneer. The brick veneer provides a low-maintenance façade that will last for many years.

- High-efficiency modulating furnaces. These furnaces combine a modulating gas valve with a variable-speed blower. The furnace then adjusts automatically between 35% and 100% of total capacity, in small increments, continuously regulating the amount of fuel burned according to the thermostat setting. This maintains the temperature to within a ½ degree of the thermostat's set point. The heating mode starts with the gas at 100% and the fan at 0%, the valve reducing and the blower increasing until maximum efficiency is reached. The fan then runs continuously, ramping up or down depending upon air delivery requirements. Since the fan and burner almost never run at full capacity and energy-robbing on/off cycling is eliminated, the unit is highly fuel-efficient.

- Water-Saving Fixtures. All plumbing fixtures installed in the building will be water-efficient. The EPA's WaterSense program labels ultra-low-flow, highly water-efficient plumbing fixtures that have been independently tested and certified to meet efficiency and performance standards. In addition to being approximately 20% more water-efficient than average products, WaterSense labeled products have been verified to perform "as well or better than their less efficient counterparts." High-efficiency toilets use no more than 1.3 gallons of water per flush.

7.0 SOURCES AND BIBLIOGRAPHY

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APPENDIX A

SEQRA DOCUMENTATION

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: Homarc Land, LLC		
Project Location (describe, and attach a general location map): 152 NY State Route 94 South (New Milford Road) east of Warwick Turnpike (County Route 21) in the Town of Warwick, Orange County N.Y.		
Brief Description of Proposed Action (include purpose or need): Homarc Land, LLC, proposed to develop professional office and retail uses on approximately 2.4 acres of a 5.1 acre site. The property is zoned for this purpose. The proposed development is comprised of an approximately 21,900 square feet one-story building and will have approximately 84 parking spaces. Access is proposed from a new marginal access road that will parallel NYS Route 94 and connect with the adjoining Price Chopper Plaza. The purpose of the proposed project is to provide needed facilities to the community by utilizing the existing zoning for the site in furtherance of the comprehensive plan of the Town of Warwick. Moreover, the site, situated along a State highway in an area which is becoming an important retail corridor for the Town, is well suited for the professional office and retail uses. Such use would generate additional property and sales tax revenue to the Town of Warwick, the taxing districts in which the site is situated, and Orange County. The greatest tax benefit would accrue to the Warwick Valley Central School District without creating any burden on school services. Construction employment and long-term retail employment opportunities would also be generated. A substantial portion of these positions are expected to be filled by residents of Warwick.		
Name of Applicant/Sponsor: ERS Consultants, Inc.	Telephone: 845-987-1775 E-Mail: david@ersconsultants.com	
Address: 11 Forester Avenue		
City/PO: Warwick	State: NY	Zip Code: 10990
Project Contact (if not same as sponsor; give name and title/role): David Griggs, Senior Scientist	Telephone: 845-987-1775 E-Mail: david@ersconsultants.com	
Address: 11 Forester Avenue		
City/PO: Warwick	State: NY	Zip Code: 10990
Property Owner (if not same as sponsor): Homarc Land, LLC	Telephone: 845-978-7373 E-Mail: canevariconstruction@gmail.com	
Address: 1997 State Route 17M, #7		
City/PO: Goshen	State: NY	Zip Code: 10924-5230

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		
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Town of Warwick Planning Board	
c. City Council, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☑Yes ☐No	Orange County Planning Department and Orange County Health Department	
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYS Health Department and NYSDEC	
h. Federal agencies ☑Yes ☐No	ACOE	

i. Coastal Resources.

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

If Yes,

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):

Aquifer Overlay District

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?
CB zone (community business)

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? Warwick Valley School District

b. What police or other public protection forces serve the project site?
Warwick Town Police, NY State Police & Orange County Sheriff's Department

c. Which fire protection and emergency medical services serve the project site?
Warwick Fire Department and Warwick Ambulance

d. What parks serve the project site?
Stanley Deming Park, Veterans Memorial Park, Warwick Valley Country Club and Warwick County Park

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)? Commercial

b. a. Total acreage of the site of the proposed action? 5.1 acres
b. Total acreage to be physically disturbed? 2.49 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 5.1 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)
_____
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

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 _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____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 1
ii. Dimensions (in feet) of largest proposed structure: 35 height; 136 width; and 160 length
iii. Approximate extent of building space to be heated or cooled: 21,000 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 pond/cistern for landscaping irrigation
ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☑Other specify: Stormwater/Rainwater
iii. If other than water, identify the type of impounded/contained liquids and their source.
_____
iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: 0.17/0.01 acres
v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length
vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):
_____

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: _____
Excavated material will be used on site for regrading.
_____

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:
There would be no negative impact on wetlands or waterbodies

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: 2,000 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: Warwick Water District
- 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:
  Extension of approximately 500 feet
- Source(s) of supply for the district: Warwick Water 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: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

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

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

i. Total anticipated liquid waste generation per day: 2,000 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

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):

_____

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 1.58 acres (impervious surface)

_____ Square feet or 5.1 acres (parcel size)

ii. Describe types of new point sources. Catch basins, pipes, curbs, valley gutters

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)?

On site stormwater management facility

- 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)

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

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

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: _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

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:

_____

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: _____

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

Orange and Rockland Utilities

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: 7 am - 7 pm
- Saturday: 9 am - 7 pm
- Sunday: -
- Holidays: -

ii. During Operations:

- Monday - Friday: 8 am - 9 pm
- Saturday: 8 am - 9 pm
- Sunday: 8 am - 9 pm
- Holidays: 8 am - 9 pm

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:

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

Describe:

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:

Parking and building mounted lighting at 15' height

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

Describe:

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:

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: 42 tons per Yr (unit of time)
- Operation : 11 tons per Yr (unit of time)

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

- Construction:
- Operation:

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

- Construction:
- Operation:

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): Landfill

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: Orange County Landfill, Goshen, NY

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): _____

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	1.90	1.90
• Forested	0.13	0.13	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0.85	0.12	2.10
• Agricultural (includes active orchards, field, greenhouse etc.)	3.6	0	3.6
• Surface water features (lakes, ponds, streams, rivers, etc.)	0.02	0.02	0
• Wetlands (freshwater or tidal)	0.5	0.5	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:

_____

_____

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: _____

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

_____

_____

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

_____

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:

_____

_____

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): _____

☐ 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): _____

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

_____

_____

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): 100 foot management area buffer
- 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? 5 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:

HoB	53 %
GgA	22 %
CnB	25 %

d. What is the average depth to the water table on the project site? Average: 5.5 feet

e. Drainage status of project site soils:
- ☑ Well Drained: 66 % of site
- ☑ Moderately Well Drained: 23 % of site
- ☑ Poorly Drained 11 % of site

f. Approximate proportion of proposed action site with slopes:
- ☑ 0-10%: 90 % of site
- ☑ 10-15%: 9 % of site
- ☑ 15% or greater: 1 % 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 NYSDEC INDEX No. 139-13-61-9-13 Classification D
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name ACOE Approximate Size 0.5 acre
- Wetland No. (if regulated by DEC) _____

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: _____

m. Identify the predominant wildlife species that occupy or use the project site:

White Tail Deer | Woodchuck | Raccoon
Grey Squirrel | Garter Snake | House Sparrow
Blue Jay

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

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: _____

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No

i. If Yes: acreage(s) on project site? 2.1

ii. Source(s) of soil rating(s): HoB prime

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: _____

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

iii. Distance between project and resource: _____ 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 David Griggs Date 10/29/13

Signature _____ Title Senior Scientist

PRINT FORM

Final Scoping Document

For Preparation of a Draft Environmental Impact Statement
For The Homarc Property
NYS Route 94 Town of Warwick, Orange County, New York

Date: July 17, 2013

Classification of Action: Unlisted

Lead Agency: Town of Warwick Planning Board
132 Kings Highway
Warwick, NY 10990

INTRODUCTION

This Final Scoping Document represents a modification of the Final Scoping Document adopted by the Town of Warwick Planning Board, as Lead Agency, on March 4, 2009 due to project modifications. The modified project now consists of a smaller building of ± 21,900 square feet whereas the previous building was proposed at ± 29,120 square feet for office, retail and food services. The project is proposed in the Town's Community Business (CB) Zoning District. This represents a change from the Town's former Design Shopping (DS) Zoning District in existence in 2009. The now proposed one-story Building (previously a two-story building was proposed) calls for 84 surface parking spaces. Previously, some of the parking was proposed in the basement of the building. The applicant has proposed that the building be served by municipal water and sewage disposal. Previously, a well and septic system had been proposed. Access is proposed from a new marginal access road that parallels Route 94 and connects with the adjoining Price-Chopper Plaza.

DESCRIPTION OF PROPOSED ACTION

Homarc Land, LLC proposes to develop professional office, retail and food service uses on land totaling approximately 5.1 acres on NYS Route 94 (New Milford Road) east of Sanfordville Road in the Town of Warwick, Orange County, New York. The property is zoned for this purpose. The proposed development is comprised of an approximately 21,900 square foot one-story building. The project will utilize municipal water and sewage systems, will have a total of approximately 84 parking spaces, and have a total disturbance area of approximately 2.8 acres or 55 percent of the site. Access to and from the site will be from marginal access road parallel to NYS Route 94.

SITE DESCRIPTION

The site is currently vacant, undeveloped, mostly agricultural with freshwater wetlands. The site topography is gently sloped, rising toward the front of the property and generally draining toward the watercourse to the north and east and toward the wetland on the northeast portion of the site.

The site contains an area of US Army Corps of Engineers wetlands totaling approximately 0.4

acres. No New York State Department of Environmental Conservation wetlands are present on site or immediately adjacent. Well-drained to moderately drained soils cover the majority of the property.

The subject property is located in the Community Business (CB) zoning district. Land use in the vicinity of the site includes vacant, agricultural, commercial, and residential uses. The site has approximately 440 feet of frontage on Route 94.

GENERAL DEIS FORMAT

The applicant should closely examine the SEQR regulations for direction on the required content of a Draft EIS. Unless otherwise directed by this Draft Scoping Document, the provisions of 6 NYCRR 617.9(b) apply to the content of the Draft EIS and are incorporated herein by reference.

The DEIS shall cover all items in this Scoping Document. Each impact issue (e.g., soils, surface water, traffic, etc.) should be presented in a separate subsection as it relates to existing conditions, future conditions without the project (as may be applicable) and future conditions with the project as presently planned, and any mitigation measures designed to minimize the identified impacts.

Narrative discussions should be accompanied by appropriate tables, charts, graphs, and figures whenever possible. If a particular subject can be most effectively described in graphic format, the narrative discussion should merely summarize and highlight the information presented graphically. All plans and maps showing the site should include adjacent properties (if appropriate), neighboring uses and structures, roads, and water bodies.

Information should be presented in a manner which can be readily understood by the public. Efforts should be made to avoid the use of technical jargon.

Discussions of mitigation measures below are examples. The document should clearly indicate which measures are included within the project plans.

The document and any appendices or technical reports should be written in the third person (i.e., the terms "we" and "our" should not be used). The applicant's conclusions and opinions, if given, should be identified as those of "the applicant."

Any assumptions incorporated into assessments of impact should be clearly identified. In such cases, the "worst case" scenario analysis should also be identified and discussed.

I. INTRODUCTORY MATERIAL

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

1. That it is a Draft Environmental Impact Statement.
2. The name and description of the project.
3. The location of the project.
4. The Lead Agency for the project and the name and telephone number of the following person to be contacted for further information:

   Town of Warwick Planning Board
   Attn.: Ben Astorino, Chairman

Town Hall132 Kings Highway
Warwick, NY 10990

5. The name and address of the project sponsor, and the name and telephone number of a contact person representing the applicant.
6. The name and address of the primary preparer(s) of the DEIS and the name and telephone number of a contact person representing the preparer.
7. Date of acceptance of the DEIS (to be inserted upon acceptance).
8. Deadline for comments on the DEIS (to be inserted upon acceptance).

List of Consultants Involved With the Project: The names, addresses and project responsibilities of all consultants involved with the project shall be listed.

Table of Contents: All headings which appear in the text should be presented in the Table of Contents a ong with the appropriate page numbers. In addition, the Table of Contents should include a list of figures, a list of tables, a list of appendix items, and a list of additional DEIS volumes, if any.

II. SUMMARY

The DEIS must include a summary. The summary should only include information found elsewhere in the main body of the DEIS and should be organized as follows:

1. Brief description of the action.
2. List of Involved and Interested Agencies and required approvals/permits, incl. status of these approvals.
3. Brief listing of the anticipated impacts and proposed mitigation measures for each impact issue discussed in the DEIS. The presentation format should be simple and concise.
4. Brief description of the project alternatives considered in the DEIS. A table should be presented which assesses and compares each alternative relative to the various impact issues.
5. Listing of permits and approvals.

III. DESCRIPTION OF THE PROPOSED ACTION

A. Introduction

1. The reasons for and purpose of the DEIS and the nature of the proposed action.

B. Project Purpose, Needs, and Benefits

1. A description of benefits to be fulfilled by the project. This includes the anticipated tax revenues to the Town of Warwick and other jurisdictions including the Warwick School District and Orange County.
2. A description of public need for and benefits of the project. Identification of public need for the project is required by the SEQR regulations and is an especially important consideration if there are adverse environmental impacts identified that cannot be

mitigated or avoided.

C. Project Location, Description and Environmental Setting

1. Description of the geographic boundaries of the project in the region and Town, including proximity to other commercial development on Route 94. Provide a written and graphic description (preferably use tax maps and USGS 1 "=2,000" scale maps) of the location of the site in the context of the Town of Warwick, Orange County. Include a map or maps identifying the relationship of the site to residential and commercial development within one-half (%) mile of the site. Include an aerial photo of the site and surrounding properties.

2. Description of access to the site,

3. Description of the site including existing zoning, topography, site characteristics, and land use.

D. Project Description and Layout

1. Characteristics of the site and surrounding area.

2. Structures and Site. The proposed site plan drawings (including profiles where required) should be submitted with the Draft EIS, in conformance with the Town Zoning Law requirements. Small scale plans, profiles and drawings (i.e. 8 1/2" x 11", 11" x 17", or other suitable size) can be provided in the Draft EIS for illustration purposes. Include a description of proposed:

   a. Building layout, use and architecture. Provide architectural elevations and architectural character of all proposed structures. Typical elevation views, that would be visible from drivers on Route 94, should also be provided. The location of the mechanicals associated with the building should be clarified with the DSD.

   b. Floor area.

   c. Grading and drainage plans. Identify in graphics and text the total on-site land area to be:

      i) cleared for building, landscaping, utility, stormwater, and parking development;

      ii) on-site areas subject to grading; and

      iii) on-site areas that will not be physically altered.

   d. Parking area layout and circulation. Provide justification for the proposed number of parking spaces in relation to the Town's parking requirements. Relate Urban Land Institute and/or Institute of Transportation Engineers standards to the proposed parking generation rate. Location and number of handicapped spaces identified. Discuss how parking may be banked until demand is evident. Discuss the feasibility of providing alternative parking surfacing (such as block pavers) for peak use times (a performance bond could ensure proper compliance if demand exceeds supply). Describe the pattern of vehicle movement for entering and exiting traffic as well as site circulation including (without limitation) delivery, service, and emergency vehicles. Fire lanes should be identified on plans. Discuss whether shared parking arrangements with adjoining sites is available so that the number of on-site parking spaces can be reduced. In particular,

discuss whether an agreement with the Bowling Alley to the south is feasible since this existing parking lot is underutilized and the Bowling Alley use has its parking demands primarily in the evenings and on weekends.

e. Landscaping plan, including screening and buffering. A planting schedule should be provided describing location, type, number, and size of all proposed landscape materials. Describe whether any existing vegetation will be incorporated into the landscape plan, either in situ or transplanted. Discuss whether any existing natural barriers, that could act as a noise or light barrier or screen, will be removed by the project. Discuss the use of pesticides, herbicides and insecticides during construction and operation.

f. Lighting and signage plan. Provide illustrations of all proposed identification signage and identify location, size (including height), color, materials, and type of all signs. Identify lighting by location, direction/aim, height of fixture(s), type of bulbs and photometrics of all proposed light fixtures, including building mounted luminaries and proximity to nearest occupied structures. Provide catalogue descriptions of lights and shielding details. Discuss consistency of project with the Town of Warwick Lighting Regulations.

g. Erosion and sedimentation control plan. Emphasis should be on the Plan's relationship with the required Stormwater Pollution Prevention Plan.

h. Setbacks and buffer treatments.

i. Pedestrian safety within parking area. Pedestrian, public transit, and bicycle access for patrons should be discussed. Discuss amenities to be provided for pedestrians and bicyclists.

j. Impervious Surfaces - Provide calculations of impervious surface coverage, broken down by type and acreage.

k. Off-site Construction - Describe proposed off-site improvements (if any) including transportation, stormwater, and utility construction activities. Vegetation removal and re-grading in connection with such improvements should be described.

E. <u>Construction and Operation</u>

1. Construction.

a. Total construction period anticipated.

b. Schedule of construction (sequencing). Provide a flowchart for the estimated anticipated duration, including start and completion for key milestone tasks such as site clearing, grading and fill placement, settlement monitoring duration, infrastructure, foundations, superstructure, off-site improvements, and site amenities. Describe whether any construction activities will be ongoing after any store is occupied. If so, provide sequencing and safety plans to accommodate this situation.

c. Erosion and sedimentation control to be utilized during construction.

d. Construction equipment and staging area. Provide hours of the day construction activity will occur. Identify staging areas for material handling and storage, including access and egress during construction.

e. Truck traffic.

f. Dust suppression.

2. Operation.

a. Hours of operation. Provide hours of the day when the retail center will operate.

b. Deliveries. Discuss anticipated retailer delivery schedule. Any required loading dock areas or caged areas (for deliveries made before or after normal working hours) for any proposed purposes shall be shown on the plan, including truck turning movements.

c. Lighting and Security.

F. Approvals and Involved Agencies

A complete listing of all Involved Agencies along with their addresses and required approvals/permits they may grant.

G. Interested Parties

A listing of agencies, persons, and groups who have expressed interest in reviewing the DEIS.

IV. IMPACT ISSUES

The sub-headings presented under each impact issue below represent items of specific interest which shall be addressed. The discussion under each impact area should highlight potential impacts caused by the proposed project and any mitigation measures that minimize or eliminate adverse impacts.

This section should describe the existing environmental conditions on the site and any off-site areas that may be affected by the proposed project. Each issue identified should be addressed in the context of the baseline existing conditions, the project's potential environmental impacts on such conditions, and the applicant's proposed mitigation measures to reduce or avoid adverse impacts.

A. Soils and Topography

In order to fully assess potential impacts of the proposed project on the land and water setting, it is necessary to understand and document the existing pre-construction soil, overburden, bedrock, wetland, and disposal of stormwater.

1. Existing Conditions.

a. Existing topographic and slope conditions.

b. Soils types and characteristics. Provide any boring or test pit records conducted on-site.

2. Potential Impacts.

a. Area of disturbance, steep slopes disturbance, erosion potential.

b. Grading plan, retaining walls, amount of cut and fill.

3. Mitigation Measures, incl. alternatives to impervious paving.

B. Wetlands

1. Existing Conditions. The wetland delineation (who, when, etc.) should be discussed. The location(s), wetland type, size, and any buffer areas shall be shown. Wetland functions and benefits to be discussed. The mitigation measures should include any Agency comments, if permits are required.

2. Potential Impacts.

   Description of any permits required. Discuss short- and long-term impacts (both direct and indirect) to wetland functions.

3. Mitigation Measures.

   a. An Erosion and Sedimentation Control Plan which incorporates best management practices (BMPs) for control of erosion and sedimentation during construction.

      (1) Principal elements

      (2) Implementation technique

      (3) Monitoring

   b. Special construction techniques.

C. Terrestrial and Aquatic Ecology

1. Existing Conditions.

   a. Existing habitat types and typical associated wildlife. Discuss the site-specific habitat assessment conducted in accordance with § 164-47.9 of the Zoning Law.

   b. Potential for use by rare, endangered or protected species, including bog turtle and Indiana bat.

2. Potential Impacts. Discuss site disturbance by habitat type and any on-site or off-site impacts to aquatic ecology.

3. Mitigation measures.

D. Water Resources

1. Existing Conditions.

   a. Stormwater runoff quantity. The volume of site stormwater runoff and stormwater routed through the site, and peak discharge rates for the two (2), ten (10), and one hundred (100) year design storms. The proposed project will create impervious surfaces on the site which may increase both the volume and rate of stormwater runoff from the site. Stormwater runoff from the development site is proposed to discharge to federal jurisdictional wetlands, and to tributaries to New York State protected streams. Provide a detailed description of the proposed Stormwater Management System including the mandatory Stormwater Pollution Prevention Plan. Estimate the area of recharge for the wetlands system. Estimate how much of that area will be impervious to recharge by infiltration by project structures and parking areas. Estimate the quantitative effect of

retaining stormwater runoff and releasing it to proposed surface water points and to downstream surface waters.

b. Existing stormwater quality shall be conducted in accordance with Town of Warwick Code 164-47.10.

c. Water supply. This section shall discuss water supply and fire protection. Any necessary improvements to the existing systems shall also be discussed. The fire suppression needs for the building must be shown on the plans. The DEIS must also show the existing system has the capacity to service these needs.

d. Sanitary sewer. This section shall discuss sanitary sewer. Any necessary improvements to the existing systems shall also be discussed.

2. Potential Impacts.

a. Stormwater runoff quantity. The volume of stormwater runoff and peak discharge rates for the two (2), ten (10), and one hundred (100) year design storms resulting from the project.

b. Stormwater runoff water quality impacts in accordance with Town of Warwick Code 164-47.10.

c. Description of any permits required from State agencies.

3. Mitigation Measures.

a. Erosion and sedimentation control measures.

b. Stormwater Management Plan (quantity controls).

c. Stormwater runoff quality control measures in conformance with DEC requirements, including runoff reduction volume by use of green infrastructure measures.

d. Maintenance of Stormwater control systems.

(1) Type of maintenance.

(2) Frequency of maintenance.

(3) Responsible parties providing short and long term maintenance.

e. Compliance with NYSDEC SPDES.

f. Type of sewage treatment and approvals required.

E. <u>Zoning and Surrounding Land Uses</u>

1. Existing Conditions.

a. Description of the existing land use and zoning on and in the vicinity of the project site and the surrounding area, and a discussion of the land use patterns in the area.

b. Description of applicable provisions of the Town Comprehensive Plan, Zoning Law, and Design Standards related to the project, project site and the surrounding area, and any other relevant County or regional plans.

2. Potential Impacts.

a. Compatibility of proposed project with surrounding land use patterns.

b. Discuss compliance or non-compliance with zoning and other land development regulations. In particular, discuss compliance with §164-46.J(139)(a) through (e). Add a note to the plans for the special conditions found in §164-46.J(139). Discuss compliance with the special use permit general conditions found in §164-46.E. Provide architectural elevation views of the building as seen from Route 94. Discuss compliance of building design and layout with Town Design Standards.

c. Compatibility with Agricultural District and agricultural history of the project area.

d. Compatibility with Town Comprehensive Plan, including relationship to current zoning requirements. Analyze and discuss all applicable Comprehensive Plan policies that relate to the proposed action.

e. Compatibility with County and/or other regional plans.

3. Mitigation Measures.

F. Vehicular Traffic and Roadways

1. Existing Conditions. A description of area roadways, including pavement width conditions, number of lanes, posted speed limits, types of roadways, parking and traffic controls for NYS Route 94, Sanfordville Road, Warwick Turnpike (CR 21), and Pelton Road (CR 1A).

2. Potential Impacts. Traffic impact study and analysis conducted in accordance with §164-46.G(5)(b) of the Zoning Law. Discuss pedestrian and bicycle traffic on State Route 94 in the vicinity of the site. Discuss if bus service is available or planned to the site or surrounding area.

   Construction and operational traffic estimates and site generated added peak hour traffic. Source and distribution of truck traffic. The turning radii of the largest truck expected should be shown. Applicant to discuss whether Traffic Mitigation Fees are applicable.

3. Mitigation Measures. Discuss proposed marginal access road connection with the Price Chopper Plaza and future connection with the Bowling Alley site.

G. Community Services/Socioeconomic

1. Taxes

   a. Existing Conditions.

   b. Potential Impacts. Fiscal impact analysis in accordance with §164-46.G(5)(a) of the Zoning Law.

   c. Mitigation Measures.

2. Police/Fire Protection and Ambulance Services.

   a. Existing Conditions.

   b. Potential Impacts. See above for fiscal impact analysis.

   c. Mitigation Measures.

3. Solid Waste.

a. Existing Conditions.

b. Potential Impacts. The location(s) of dumpsters, outdoor trash receptacles, garbage truck access, and any proposed screening should be discussed.

c. Mitigation Measures.

4. Noise.

a. Existing Conditions.

b. Potential Impacts. The construction and operational noise estimates are to be included.

c. Mitigation Measures.

5. Cultural Resources.

Historic and Archaeological Resources.

a. Existing Conditions.

b. Potential Impacts. Provide correspondence from the New York State Office of Parks Recreation and Historic Preservation in regards to the Phase I Archaeological Investigation conducted on the site.

c. Mitigation Measures.

6. Utilities and Other Underground Conditions.

a. Existing Conditions. Describe all utilities that are available to serve the site including electric, cable, telephone, gas, water and sewer. Discuss whether a Phase I Site Assessment has been completed and attach the results in an Appendix. Discuss whether there has ever been a reported spill at the proposed project site or whether any remedial actions have been conducted at or adjacent to the project site.

b. Potential Impacts. Discuss the capacity of the utilities that are available to serve the site, including the proposed location of any transformer pad or other above ground appurtenances. Discuss whether the project will require a new, or an upgrade to an existing, substation.

c. Mitigation Measures. Discuss the screening that will be provided of any above ground utilities.

V. ALTERNATIVES

The following alternatives to the Proposed Action are to be evaluated in terms of the impact issues listed above.

A. No Action.

B. Compare the potential impacts of the prior plan, proposed at the time of the original issuance of a Positive Declaration on April 16, 2008, with the currently proposed plan.

VI. ADVERSE ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

Describe those impacts that cannot be avoided regardless of the mitigation measures that are implemented.

VII. OTHER ISSUES

A. Irreversible and Irretrievable Commitment of Resources.

B. Growth Inducing Impacts.

C. Effects on the Use and Conservation of Energy Resources:

1. The energy sources to be used if the Proposed Action is implemented.
2. Increased energy consumption. Estimate annual electricity demand in kilowatt hours during operation of the proposed action. Estimate consumption of fossil fuels during post-construction project operations (transportation as well as stationary).
3. Energy conservation measures to be used including LEED or other similar certification. Discuss how the project will incorporate energy conserving opportunities and onsite renewable energy sources.

VIII. SOURCES AND BIBLIOGRAPHY

IX. APPENDICES

A. All SEQR documentation, including a copy of the Environmental Assessment Form (EAF), the Positive Declaration, and the DEIS Scoping Outline.

B. Copies of all official correspondence related to issues discussed in the DEIS.

C. Copies of all technical studies, in their entirety.

APPENDIX B

CORRESPONDENCE

TOWN OF WARWICK

132 KINGS HIGHWAY
WARWICK, NEW YORK 10990

BUILDING & PLANNING DEPT (845) 986-1127
FAX NO. (845) 987-9644
BUILDING DEPT EXT. 258/260
PLANNING DEPT EXT 261
ENGINEER EXT 275

July 18, 2013

HOMARC Land, LLC.
21 Waterbury Road
Warwick, New York 10990

Re: HOMARC, LLC – *"Amended"* Adopted Final Scoping Document
SBL # 51-1-5.231

Dear Owner/Applicant:

By Resolution of the Town of Warwick Planning Board during its regularly scheduled meeting held on July 17, 2013, "Amended" Final Scoping Document was adopted (Vote 5-0-0) of a proposed site plan approval and special use permit for the construction and use of a commercial site plan of a 21,900 square foot office/retail building, situated on tax parcel S 51 B 1 L 5.231; project located on the northern side of State Route 94 425± feet east of Warwick Turnpike, in the CB zone, of the Town of Warwick, County of Orange, State of New York.

SO CERTIFIED:
TOWN OF WARWICK PLANNING BOARD

Benjamin Astorino
Chairman

cc: Michael Sweeton, Town Supervisor
Town of Warwick Town Board
Town of Warwick Planning Board
Town of Warwick DPW
Town of Warwick Conservation Board
Town of Warwick Architectural Review Board
OCHD
O.C. Department of Planning
NYSDEC
NYS Department of Health
NYSDOT
U.S. Fish & Wildlife Service
U.S. Army Corps of Engineers
HOMARC, LLC.
Lehman & Getz Engineering
ERS Consultants
Town of Warwick Planning Board's Consultants

New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, Albany, New York 12233-4757
Phone: (518) 402-8935 • **FAX:** (518) 402-8925
www.dec.state.ny.us

Alexander B. Grannis
Commissioner

September 24, 2007

Karen H Emmerich
Lehman & Getz
17 River Street
Warwick, NY 10990

Dear Ms. Emmerich:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed Commercial Facility at the Homarc Property, Project 1272, site as indicated on the map you provided, located on Rte 94, Town of Warwick, Orange County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and should not be released to the public without permission from the New York Natural Heritage Program.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environment impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

Tara Seoane

Tara Seoane, Information Services
NY Natural Heritage Program

Encs.
cc: Peter Nye, Endangered Species Unit, Albany

Natural Heritage Report on Rare Species

NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935

~This report contains **SENSITIVE** information that should not be released to the public without permission from the NY Natural Heritage Program.
~Refer to the User's Guide for explanations of codes, ranks and fields.
~We do not provide maps for species most vulnerable to disturbance.

Natural Heritage Report on Rare Species and Ecological Communities

REPTILES

Office Use

Glyptemys muhlenbergii ***(formerly Clemmys muhlenbergii)***

Bog Turtle

NY Legal Status:	Endangered	**NYS Rank:**	S2 - Imperiled	11475
Federal Listing:	Threatened	**Global Rank:**	G3 - Vulnerable	ESU
County:	Orange			USFWS
Town:	Warwick			
Location:	Documented within 1 mile of project site. Animals can move 1 mile or more from documented locations. For information on the population at this location and management considerations, please contact the NYS DEC Regional Wildlife Manager for the Region where the project is located, or the NYS DEC Endangered Species Unit at 518-402-8859.			

1 Records Processed

More detailed information about many of the rare and listed animals in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at http://www.natureserve.org/explorer, and from NYSDEC at http://www.dec.ny.gov/animals/7494.html.

JAN 2 9 2009

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF:
Regulatory Branch

SUBJECT: Permit Application Number NAN-2008-387-WOR
by Homarc Land LLC

David Griggs
ERS Consultants, Inc.
11 Forester Avenue
Warwick, New York 10990

Dear Mr. Griggs:

On March 4, 2008, the New York District of the U.S. Army Corps of Engineers received a request for a Department of the Army jurisdictional determination for the above referenced project. The site consists of approximately 5.1 acres, in the Hudson River watershed, located on New York State Route 94 in the Town of Warwick, Orange County, New York.

In the letter received on March 4, 2008, your office submitted a complete wetland delineation report of the extent of waters of the United States within the subject property. A site inspection was conducted by a representative of this office on December 12, 2007, in which no changes were made to the delineation.

Based on the material submitted and the observations of the representative of this office during the site visit, this site has been determined to contain jurisdictional waters of the United States based on: the presence of wetlands determined by the occurrence of hydrophytic vegetation, hydric soils and wetland hydrology according to criteria established in the 1987 "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1 that are either adjacent to or part of a tributary system; the presence of a defined water body (e.g. stream channel, lake, pond, river, etc.) which is part of a tributary system; and the fact that the location includes property below the ordinary high water mark, high tide line or mean high water mark of a water body as determined by known gage data or by the presence of physical markings including, but not limited to, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter or debris or other characteristics of the surrounding area.

These jurisdictional waters of the United States are shown on the drawing entitled "Wetland Delineation Map Prepared For Homarc Land, LLC Section 51 Block 1 Lot 5.231 Town of Warwick, County of Orange, New York", prepared by ERS Consultants, Inc., undated. This drawing indicates that there is one (1) principal wetland area on the project site which is part of a tributary system, and is considered to be waters of the United States. The wetland is located in the northeastern corner of the property and is approximately 0.5 acres within the subject property.

This determination regarding the delineation shall be considered valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

This determination was documented using the Approved Jurisdictional Determination Form. A copy of that document is enclosed with this letter, and will be posted on the New York District website at: http://www.nan.usace.army.mil/business/buslinks/regulat/jurisdet/index.htm.

This delineation/determination has been conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed is a combined Notification of Appeal Process (NAP) and Request For Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the North Atlantic Division Office at the following address:

Michael G. Vissichelli, Administrative Appeals Review Officer
North Atlantic Division, U.S. Army Engineer Division
Fort Hamilton Military Community
General Lee Avenue, Building 301
Brooklyn, New York 11252-6700

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Park 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by MAR 30 2009. It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

It is strongly recommended that the development of the site be carried out in such a manner as to avoid as much as possible the discharge of dredged or fill material into the delineated waters of the United States. If the activities proposed for the site involve such discharges, authorization from this office may be necessary prior to the initiation of the proposed work. The extent of such discharge of fill will determine the level of authorization that would be required.

If any questions should arise concerning this matter, please contact Brian A. Orzel, of my staff, at (917) 790-8413.

Sincerely,

Christopher S. Mallery

Christopher S. Mallery
Chief, Western Permits Section

Enclosures

May 21, 2014

RECEIVED
MAY 23 2014
Town of Warwick

Mr. Benjamin Astorino
Chairman, Town Warwick Planning Board
Town Hall
132 Kings Highway
Warwick, NY 10990

RE: Homare Project
152 NYS Route 94
Tax ID: 51-1-5.231

Dear Mr. Astorino:

The Warwick Community Ambulance Service Planning Review Committee has reviewed the site plan pertaining to the above project.

Overall, we feel that if the basic requirements of driveway width, turning radiuses, pitch/grade, building access, and clearly posted address markers are met, we will be able to adequately provide service to this commercial building.

Thank you for acknowledging the importance of our input in this matter.

Sincerely

Samantha R. Sweeton
WAS Planning Review Committee

CC: Frank Cassanite, Captain
Warwick Community Ambulance Service

APPENDIX C

STORMWATER DRAINAGE REPORT

STORMWATER POLLUTION PREVENTION PLAN

HOMARC LAND, LLC

TOWN OF WARWICK
ORANGE COUNTY, NEW YORK

NARRATIVE

Table of Contents

1.0 Applicant Information…….1

2.0 Location Map……..…….1

3.0 Executive Summary…….4

3.1 Project Description……..5

3.2 Stormwater Pollution Controls……6

3.3 Conclusion…….……..6

4.0 SWPPP Implementation Responsibilities….……..…….7

4.1 Definitions…….…..7

4.2 Owner's/Operator's Responsibilities.……..……8

4.3 Owner's/Operator's Engineers Responsibilities…….…….…..11

4.4 Contractor's Responsibilities…….13

5.0 Site Characteristics….……..…….….16

5.1 Land use and Topography……..16

5.2 Soils and groundwater……...……16

5.3 Watershed Designation…….…….……....17

5.4 Receiving Water Bodies……...…….17

5.5 Aquifer Designation…….……..17

5.6 Wetlands……17

5.7 Flood Plains……...……18

5.8 Listed, Endangered or Threatened Species……...18

5.9 Historic Places……...……18

5.10 Rainfall Data…….……19

6.0 Construction Sequence……..……...….19

7.0 Construction-Phase Pollution Control.....15
7.1 Temporary Erosion and Sediment Control Measures.....16
7.2 Permanent Erosion and Sediment Control Measures.....17
7.3 Other Pollutant Controls.....18
7.4 Construction Housekeeping Practices.....19

8.0 Post-Construction Stormwater Control.....20
8.1 Stormwater Controls Practices.....20
8.2 Stormwater Quality Analysis.....22
8.3 Stormwater Quantity Analysis.....23

9.0 Inspections, Maintenance and Reporting.....26
9.1 Inspection and Maintenance Requirements.....26
9.2 Reporting Requirements.....29

List of Tables

Table 1: Rainfall Data.....15
Table 2: Summary of Pre- and Post-Development Peak Discharge Rates.....26

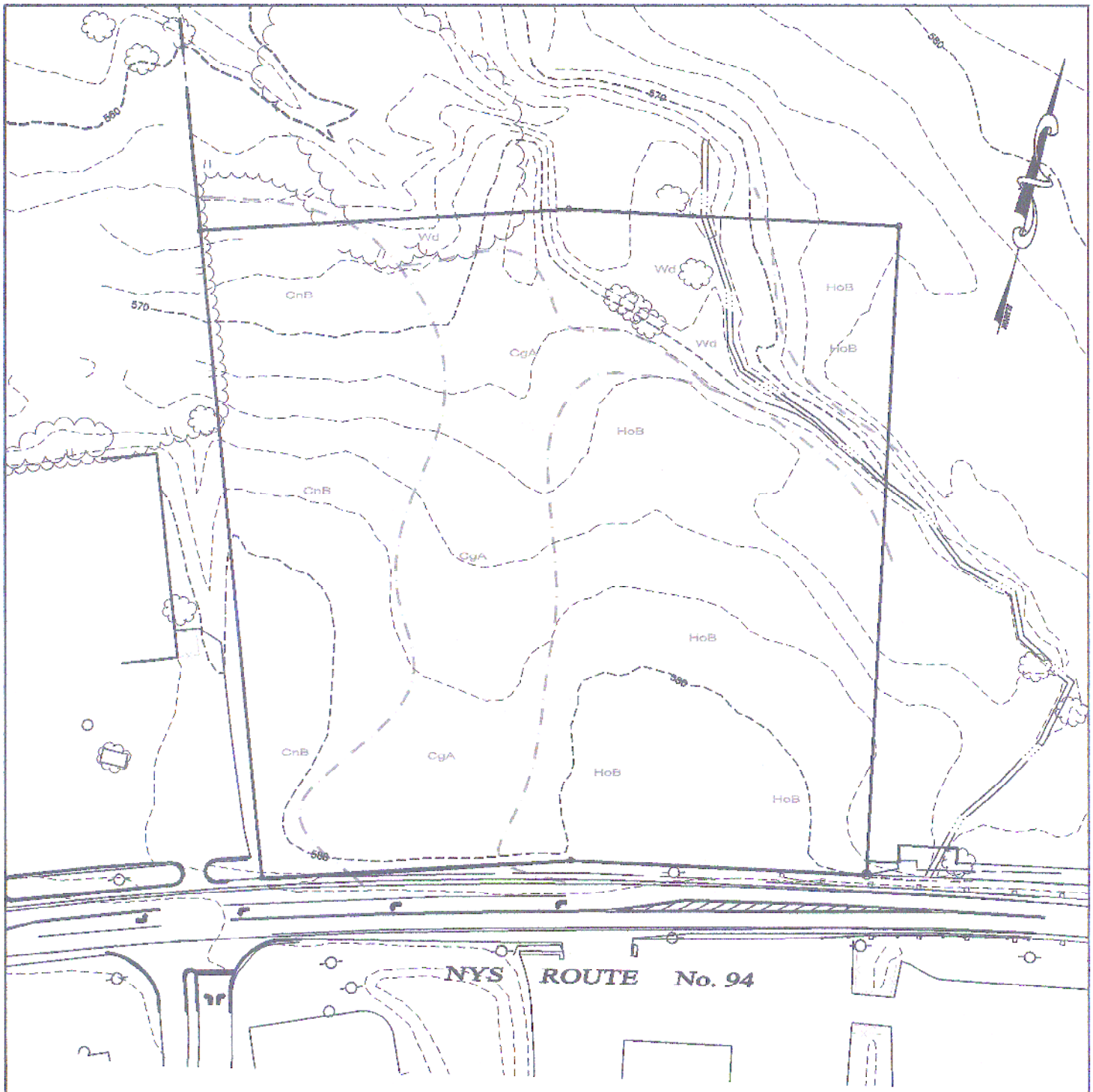
Appendices

AppendixA: Pre-Development Stormwater Modeling.....A-1
Appendix B: Post-Development Stormwater Modeling.....B-1

1.0 Application Information

Record Owner: Homarc Land, LLC
1997 State Route 17M, #7
Goshen, New York 10924-5230

2.0 Location Map



ERS CONSULTANTS, INC.
ENVIRONMENTAL RESOURCE SPECIALISTS
11 FORESTER AVENUE WARWICK, NEW YORK 10990
Phone: (845) 987-1775 Fax: (845) 987-1788

SOILS MAP

SECTION 51 BLOCK 1 LOT 5.231
TOWN OF WARWICK, COUNTY OF ORANGE, NEW YORK
SCALE: 1"=100'

FIGURE 2

ERS CONSULTANTS, INC.
ENVIRONMENTAL RESOURCE SPECIALISTS
11 FORESTER AVENUE WARWICK, NEW YORK 10990
Phone: (845) 987-1775 Fax: (845) 987-1788

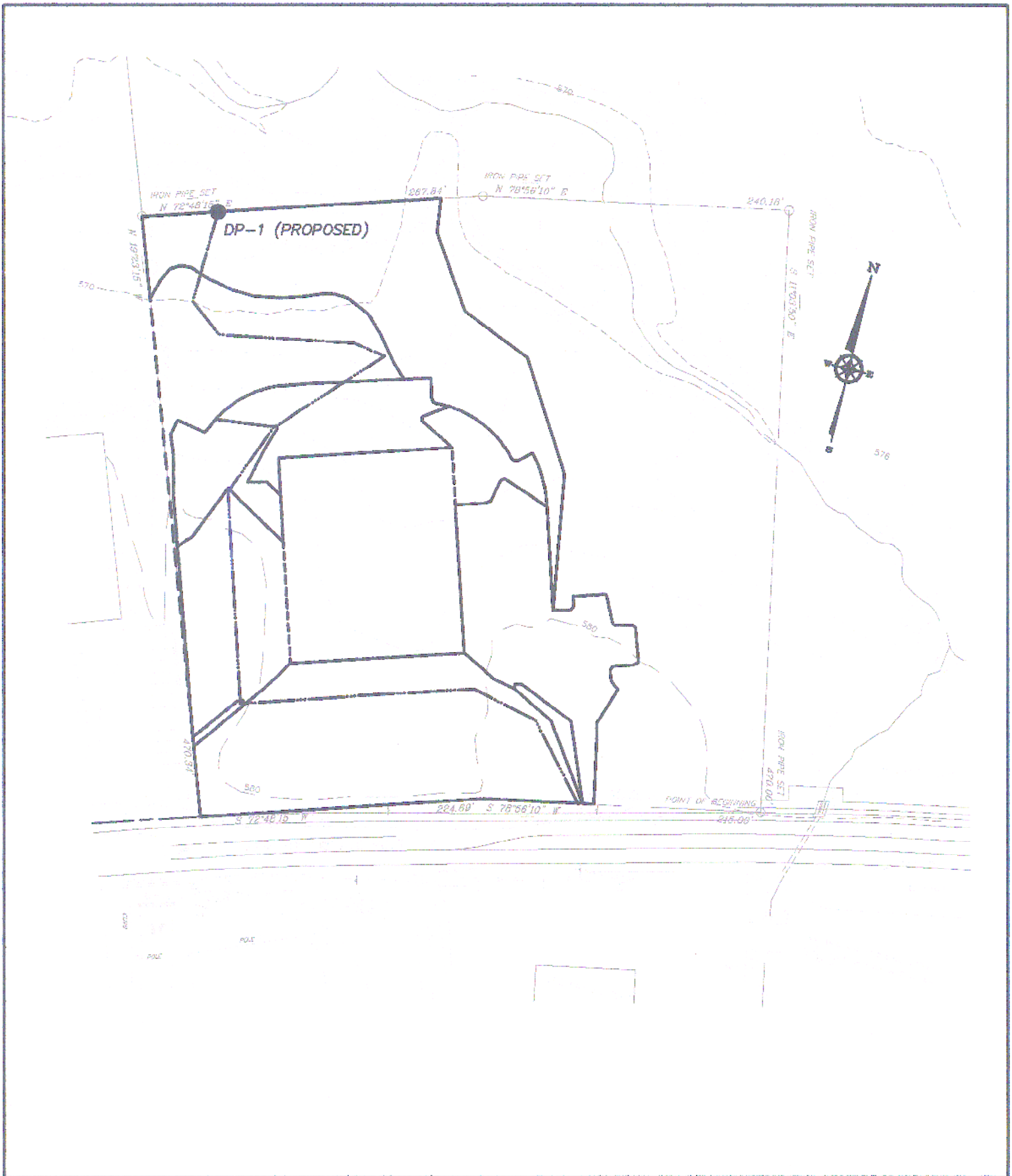
PRE- DEVELOPMENT WATERSHED DELINEATION MAP

SECTION 51 BLOCK 1 LOT 5.231

TOWN OF WARWICK, COUNTY OF ORANGE, NEW YORK

SCALE: 1"=100'

FIGURE 3



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POST- DEVELOPMENT WATERSHED DELINEATION MAP

SECTION 51 BLOCK 1 LOT 5.231
TOWN OF WARWICK, COUNTY OF ORANGE, NEW YORK
SCALE: 1"=100'
FIGURE 4

3.0 Executive Summary

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared for major activities associated with construction of Homarc in the Town of Warwick. This SWPPP includes the elements necessary to comply with the national baseline general permit for construction activities enacted by the U.S. Environmental Protection Agency (EPA) under the National Pollutant Discharge Elimination System (NPDES) program and all local governing agency requirements. This SWPPP must be implemented at the start of construction.

This SWPPP has been developed in accordance with the "New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity" General Permit Number GP-0-10-001, effective January 29, 2010 through January 28, 2015. The SWPPP and accompanying plans identify and detail stormwater management (SWM), pollution prevention and erosion and sediment control measures necessary during and following completion of construction.

This SWPPP and the accompanying plans entitled Homarc have been submitted as a set. These engineering drawings are considered an integral part of the SWPPP, therefore this SWPPP is not considered complete without them. Reference made herein to "the plans" or to a specific "sheet" refers to these drawings.

This report considers the impacts associated with the intended development with the purpose of:

1. Maintaining existing drainage patterns as much as possible while continuing the conveyance of upland watershed runoff;
2. Controlling increases in the rate of stormwater runoff resulting from the proposed development so as not to adversely alter downstream conditions; and
3. Mitigating potential stormwater quality impacts and preventing soil erosion and sedimentation resulting from stormwater runoff generated both during and after construction.

The analysis and design completed and documented in this report is intended to be part of the application made for a commercial development project completed on behalf of Homarc.

The stormwater analysis identified herein follows the NYS Standards and Specifications for Erosion and Sediment Control, the "NYS Stormwater Management Design Manual, dated August 2003" (Manual) and the USDA Technical Release No. 20. This Master SWPPP and analysis are an integral part of the project's natural resource management plan which takes into consideration existing parameters of site topography, soils, erosion potential, surface waters, their connectivity and water quality of receiving water bodies.

Stormwater mitigation measures primarily involve preventing soil erosion and sedimentation resulting from stormwater runoff during and after construction. During construction, this is accomplished by sequencing site disturbance activities to establish erosion controls, minimize disturbed areas, maintain existing vegetation as much as possible and stabilize newly disturbed areas as soon as possible. Stormwater pollutant controls utilized during construction will include temporary sediment barriers and sediment traps designed in accordance with the "NYS Standards and Specifications for Erosion and Sediment Control". Stormwater pollutant controls utilized after construction will include stormwater quality control facilities designed in accordance with the Manual.

Land development can also have an effect on site hydrology. Impervious areas such as rooftops, roads, driveways and parking lots can cause rainfall to rapidly convert into stormwater runoff. Increases in runoff can cause stream bank erosion and floodplain expansion. To mitigate these impacts, stormwater quantity controls will be implemented to capture and release runoff at less than pre-development discharge rates. A hydrologic and hydraulic analysis was performed using computer modeling and an evaluation of the proposed improvements across the project site. A conventional stormwater management system was developed, consisting of centralized stormwater management facilities designed to meet the requirements of the Manual.

3.1 Project Description

Homarc Land, LLC is proposing to develop professional office, retail and food service uses on land totaling approximately 5.1 acres on NYS Route 94 (New Milford Road) east of Sanfordville Road in the Town of Warwick, Orange County, New York. The property is zoned for this purpose. The proposed development is comprised of an approximately 21,900 square foot one-story building. The project will utilize on-site water supply and municipal sewage system, will have a total of approximately 84 parking spaces, and have a total disturbance area of 2.49 acres or 49 percent of the site. A location map of the site has been provided in Appendix A, as Figure 1.

This SWPPP includes post-construction stormwater management practices as well as erosion and sediment controls. This project is not located within a regulated, traditional land use control Municipal Separate Stormwater Sewer System (MS4).

Runoff from the project site will discharge to an unnamed tributary to the Wawayanda Creek, listed as NYSDEC index no. 139-13-61-9-13, which is a class D stream and not included in the list of Section 303(d) water bodies.

Project construction activities will consist primarily of site grading, paving, building construction and the installation of storm drainage, water supply, sewage collection and public utility infrastructure necessary to support the proposed development. Construction phase pollutant sources anticipated at the site are disturbed soil, vehicle fuels and lubricants, chemicals associated with building construction and building materials. Without adequate control there is the potential for each type of pollutant to be transported by stormwater.

3.2 Stormwater Pollution Controls

The proposed measures outlined herein have been designed to provide both quality and quantity controls by treating and detaining runoff prior to its discharge offsite. These measures have been designed and evaluated in accordance with the following standards and guidelines:

- New York State Stormwater Management Design Manual, dated August 2003
- New York State Standards and Specifications for Erosion and Sediment Control (August 2005).

A pocket pond and cistern will be used to treat the water quality volume produced from the proposed professional office, retail and food service.

Pre-development and post-development surface runoff rates have been evaluated for the 2-year, 10-year and 100 year 24-hour storm events. Comparison of pre-development and post-development watershed conditions demonstrates that the peak rate of runoff from the project site will not be increased; therefore, the project will not have a significant adverse impact on the adjacent or downstream properties or receiving water courses.

The proposed stormwater collection system consisting of pipes and on-site stormwater management facilities will adequately collect, treat and convey the stormwater.

Stormwater quality will be enhanced through the implementation of the proposed stormwater management facilities, erosion and sediment control measures and maintenance practices outlined herein.

The post-construction stormwater management practices will be privately owned by Homarc Land, LLC. Deed restrictions are in place, which require operation and maintenance of the practices in accordance with the operation and maintenance plan.

3.3 Conclusion

This project is not subject to the requirements of a regulated MS4 and this SWPPP has been prepared in conformance with the current NYS standards and specifications for Erosion and Sediment Control and NYS Stormwater Management Design Manual, dated August 2003. As such, GP-0-10-001 coverage will be effective five (5) business days from the date the NYSDEC received the complete NOI, unless notified otherwise by the NYSDEC.

It is our opinion that the proposed development will not adversely impact adjacent or downstream properties if the stormwater management facilities are properly constructed and maintained in accordance with the requirements outlined herein.

4.0 SWPPP Implementation Responsibilities

A summary of the responsibilities and obligations of all parties involved with compliance with the NYSDEC SPDES General Permit GP-0-10-001 conditions is outlined in the subsequent sections.

4.1 Definitions

1. "General SPDES Permit" means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 authorizing a category of discharges.

2. "Owner" or "Operator" means the person, persons or legal entity which owns or leases the property on which the construction activity is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications. There my be occasions during the course of the project in which there are multiple Owners/Operators, all of which need to file and maintain the appropriate SWPPP documents and plans, including without limitation, the Notice of Intent (NOI) and Notice of Termination (NOT).

3. "Owner's/Operator's Engineer" shall be that person or entity retained by an Owner/Operator to design and oversee the implementation of the SWPPP.

4. "Contractor" shall be that person or entity identified as such in the construction contract with the Owner/Operator. The term "Contractor" shall also include the Contractor's authorized representative, as well as any and all subcontractors retained by the Contractor.

5. "Qualified Inspector" means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), licensed Landscape Architect or other Department endorsed individual(s).

   It can also mean someone working under the direct supervision of and at the same company as, the licensed Professional Engineer or licensed Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that an individual performing a site inspection has received four (4) hours of training, endorsed by the Department, from Soil and Water Conservation District, CPESC, Inc. or other Department endorsed entity in proper erosion and sediment control principles. After receiving the initial training, the individual working under the direct supervision of the licensed Professional engineer or licensed landscape Architect shall receive four (4) hours of training every three (3) years.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

6. "Qualified Professional" means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, licensed Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPP's that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design and, in many cases, the principles of hydraulics in order to prepare a SWPPP that conforms to the Department's technical standards. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a Professional Engineer licensed to practice in the State of New York.

7. "Trained Contractor" means an employee from a contracting (construction) company that has received four (4) hours of training, which has been endorsed by the Department, from a Soil and Water Conservation District, CPESC, Inc. or other Department endorsed entity, in proper erosion and sediment control principles. After receiving the initial training, the "Trained Contractor" shall receive four (4) hours of training every three (3) years.

   It can also mean an employee from the contracting (construction) company that meets the "Qualified Inspector" qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect or someone working under the direct supervision of and at the same company as the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District or other Department endorsed entity).

   The "Trained Contractor" will be responsible for the day to day implementation of the SWPPP.

4.2 Owner's/Operator's Responsibilities

1. Retain the services of a "Qualified Professional", as defined under Section 2.1, to provide the services outlined in Section 2.3 "Owner/Operator's Engineer's Responsibilities".
2. Have an authorized corporate officer sign the completed NOI. A copy of the completed NOI is included in Appendix B.

3. Submit the signed NOI along with the SWPPP acceptance form to the following:

   NOTICE OF INTENT
   NYSDEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

4. Pay the required initial and annual fees upon receipt of invoices from the NYSDEC. These invoices are generally issued in the fall of each year. The initial fee is calculated as $100.00 per acre disturbed plus $600.00 per acre of net increase in impervious cover and the annual fee is $100.00.

5. Retain the services of an independent certified materials testing and inspection firm operating under the direction of a licensed Professional Engineer to perform regular tests, inspections and certifications of the construction materials used in the construction of all post-construction stormwater management practices.

6. Retain the services of a NYS licensed land surveyor to perform an as-built topographic survey of the completed post-construction stormwater management facilities.

7. Prior to the commencement of construction activity, identify the contractor(s) and subcontractor(s) that will be responsible for implementing the erosion and sediment control measures and stormwater management practices described in the SWPPP. Have each of these contractors and subcontractors identify at least one "Trained Contractor", as defined under Section 2.1 that will be responsible for the implementation of the SWPPP. Ensure that the Contractor has at least one "Trained Contractor" on site on a daily basis when soil disturbance activities are being performed.

8. Schedule a pre-construction meeting which shall include the Town of Warwick representative, Owner's/Operator's Engineer, Contractor and their subcontractors to discuss responsibilities as the relate to the implementation of this SWPPP.

9. Require the Contractor to fully implement the SWPPP prepared for the site by the Owner/Operator's Engineer to ensure that the provisions of the SWPPP are implemented from the commencement of construction activity until all areas of

disturbance have achieved final stabilization and the Notice of Termination (NOT) has been submitted.

10. Forward a copy of the NOI Acknowledgment Letter received from the regulatory agency to the Owner's/Operator's Engineer for project records and to the Contractor for display at the job site.

11. Maintain a copy of the General Permit (GP-0-10-001), NOI, NOI Acknowledgment Letter, SWPPP, inspection reports, spill prevention, countermeasures and cleanup ("SPCC") Plan, inspection records and other required records on the job site so that they may be made available to the regulatory agencies.

12. Post at the site, in a publicly accessible location, a copy of the General Permit (GP-0-10-001), a signed copy of the NOI, the NOI acknowledgment Letter and on a monthly basis a summary of the site inspection activities.

13. Prepare a written summary of project status with respect to compliance with the General Permit at a minimum frequency of every three months during which coverage under the permit exists. The summary should address the status of achieving the overall goal of the SWPPP. The summary shall be maintained at the site in a publicly accessible location.

14. Prior to submitting a Notice of Termination, ensure one of the following:

    a) The post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located.

    b) An executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

    c) For post-construction stormwater management practice(s) that are privately owned, the Owner/Operator has a deed restriction in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan,

    d) For post-construction stormwater management practice(s) that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, the Owner/Operator has policy and procedures in place that ensure operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

15. Submit a Notice of Termination (NOT) form (see Appendix B) within 48 hours of receipt of the Owner's/Operator's Engineer's certification of final site stabilization to the following:

NOTICE OF TERMINATION
NYSDEC, Bureau of Water Permits
625 Broadway, 4th Floor
Albany, New York 12233-3505

16. Request and receive all SWPPP records from the Owner's/Operator's Engineer and archive those records for a minimum of five years after the NOT is filed.

17. Require the implementation of the Post-Construction Inspection and Maintenance procedures outlined in Appendix F.

18. The NOI, SWPPP and inspection reports required by GP-0-10-001 are public documents that the Owner/Operator must make available for review and copying by any person within five (5) business days of the Owner/Operator receiving a written request by any such person to review the NOI, SWPPP or inspection reports. Copying of documents will be done at the requester's expense.

19. The Owner/Operator must keep the SWPPP current at all times. At a minimum, the Owner/Operator shall amend the SWPPP:

    a) Whenever the current provisions prove to be ineffective in minimizing pollutants in stormwater discharges from the project site;

    b) Whenever there is a change in design, construction or operation at the construction site that has or could have an effect on the discharge of pollutants; and

    c) To address issues or deficiencies identified during an inspection by the "Qualified Inspector", the Department or other Regulatory Authority.

4.3 Owner's/Operator's Engineer's Responsibilities

1. Prepare the SWPPP using good engineering practices, best management practices and in compliance with all federal, state and local regulatory requirements.

2. Prepare the Notice of Intent (NOI) form (see Appendix B), sign the "SWPPP Preparer Certification" section of the NOI and forward to Owner/Operator for signature.

3. Provide copies of the SWPPP to the Town of Warwick once all signatures and attachments are complete.

4. Prepare a construction Site Log Book to be used in maintaining a record of all inspection reports generated throughout the duration of construction.

5. Participate in a pre-construction meeting with the Town of Warwick representative, Owner/Operator, Contractor and their subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.

6. Enter Contractor's information in Section 2.5 "SWPPP Participants" once a Contractor is selected by the Owner/Operator.

7. Conduct an initial assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment control measures described within this SWPPP have been adequately installed and implemented to ensure overall preparedness of the site.

8. Provide on-site inspections to determine compliance with the SWPPP. Site inspections shall occur at an interval of at least once every seven calendar days. A written inspection report shall be provided to the Owner/Operator and general contractor within one business day of the completion of the inspection, with any deficiencies identified. A sample inspection form is provided in Appendix D.

9. Review the Contractor's SWPPP records on a periodic basis to ensure compliance with the requirements for daily reports and inspections and maintenance logs.

10. Maintain the construction Site Log Book throughout the duration of construction.

11. Update the SWPPP each time there is a significant modification to the pollution prevention measures or a change of the principle Contractor working on the project who may disturb site soil.

12. Based on the as-built survey and material testing certifications performed by others, perform evaluations of the completed stormwater management facilities to determine whether they were constructed in accordance with the SWPPP.

13. Conduct a final site assessment and prepare a certification letter to the Owner/Operator indicating that, upon review of the material testing and inspection reports prepared by the firm retained by the Owner/Operator, review of the completed topographic survey and evaluation of the completed stormwater management facilities, the stormwater management facilities have been constructed in accordance with the contract documents and should function as designed.

14. Prepare the Notice of Termination (NOT). Sign the NOT Certifications VI (Final Stabilization) and VII (Post-construction Stormwater Management Practices), and forward the NOT to the Owner/Operator for his signature on Certification VIII (Owner/Operator Certification).

15. Transfer the SWPPP documents, along with all NOI's, permit certificates, NOT's, construction Site Log Book and written records required by the General Permit to the Owner/Operator for archiving.

4.4 Contractor's Responsibilities

1. Sign the SWPPP Contractor's Certification Form contained within Appendix C and forward to the Owner's /Operator's Engineer for inclusion in the Site Log Book.

2. Identify at least one Trained Contractor that will be responsible for implementation of this SWPPP. Ensure that at least one Trained Contractor is on site on a daily basis when soil disturbance activities are being performed.

3. Provide the names and addresses of all subcontractors working on the project site. Require all subcontractors who will be involved with construction activities that will result in soil disturbance to identify at least one Trained Contractor that will be on site on a daily basis when soil disturbance activities are being performed; and to sign a copy of the Contractor's Certification Form and forward to the Owner's/Operator's Engineer for inclusion into the Site Log Book. This information must be retained as part of the Site Log Book.

4. Maintain a Spill Prevention and Response Plan in accordance with requirements outlined in Section 5.4 of the SWPPP. This plan shall be provided to the Owner's/Operator's Engineer for inclusion in the Site Log Book.

5. Participate in a pre-construction meeting which shall include the Town of Warwick representative, Owner/Operator, Owner's/Operator's Engineer, and all subcontractors to discuss responsibilities as they relate to the implementation of this SWPPP.

6. If Contractor plans on utilizing adjacent properties for material, waste, borrow, or equipment storage areas, or if Contractor plans to engage in industrial activity other than construction (such as operating asphalt and/or concrete plants) at the site, Contractor shall submit appropriate documentation to the Owner's/Operator's Engineer so that the SWPPP can be modified accordingly.

7. Implement site stabilization, erosion and sediment control measures and other requirements of the SWPPP.

8. In accordance with the requirements in the most current version of the NYS Standards and Specifications for Erosion and Sediment Control, conduct inspections of erosion and sediment control measures installed at the site to ensure that they remain in effective operating condition at all times. Prepare and retain written documentation of inspections as well as of all repairs/maintenance

activities performed. This information must be retained as part of the Site Log Book.

9. Maintain a record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated, until such time as the NOT is filed. A log for keeping such records is provided in Appendix E.

10. Begin implementing corrective actions within one business day of receipt of notification by the Qualified Inspector that deficiencies exist with the erosion and sedimentation control measures employed at the site. Corrective actions shall be completed within a reasonable time frame.

5.0 Site Characteristics

5.1 Land Use and Topography

The site is currently vacant, undeveloped, agricultural meadow/brushland, freshwater wetlands and wooded uplands. The site topography is gently sloped, rising toward the southern portion of the property and generally draining toward the watercourse to the north and east and toward the wetland on the northeast portion of the site.

The site contains an area of US Army Corps of Engineers wetlands totaling approximately 0.5 acres. A New York State protected stream flows through the Federal wetland on the site that is a tributary of the Wawayanda Creek. No New York State Department of Environmental Conservation wetlands are present on site or immediately adjacent, but such State wetlands are located in the general vicinity of the site. Well-drained to moderately drained soils cover the majority of the property.

The subject property is located in the Community Business (CB) zoning district. Land use in the vicinity of the site includes vacant, agricultural, commercial, and residential uses. The site has approximately 440 feet of frontage on Route 94.

5.2 Soil and Groundwater

The United States Department of Agriculture (USDA) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/) was used to obtain surficial soil conditions for the study area. A Soil Map, Physical Soil Properties report, Engineering Properties report, and Water Features report were obtained from the Web Soil Survey, and have been included in Appendix L.

Upon review of the soil data, the project site does not contain soils with a soil slope phase of E or F.

The Soil Conservation Service defines the hydrologic soil groups as follows:

- Type A Soils: Soils having a high infiltration rate and low runoff potential when thoroughly wet. These soils consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a moderate rate of water transmission.
- Type B Soils: Soils having a moderate infiltration rate when thoroughly wet and consisting mainly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately course textures. These soils have a moderate rate of water transmission.
- Type C Soils: Soils having a low infiltration rate when thoroughly wet and consisting chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine to fine texture. These soils have a low rate of water transmission.
- Type D Soils: Soils having a very low infiltration rate and high runoff potential when thoroughly wet. These soils consist chiefly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a clay pan or clay layer at or near the surface and soils that are shallow over nearly impervious material. These soils have a very low rate of water transmission.

The soils map for the study area is presented in Appendix A, as Figure 2.

5.3 Watershed Designation

The project site is not located in a restricted.

5.4 Receiving Water Bodies

The nearest natural classified water body into which runoff from the project site will discharge is the unnamed tributary to the Wawayanda Creek.

The unnamed tributary of the Wawayanda Creek is classified by NYSDEC as a Class C water body and is not included in the Section 303(d) list of impaired waters.

5.5 Aquifer Designation

The project site is not located over a U.S. EPA designated Sole Source aquifer; nor is it located over a Primary or Principle aquifer listed in the NYSDEC Technical and Operational Guidance Series (TOGS) 2.1.3 (1980).

5.6 Wetlands

Wetlands depicted on the accompanying plan set were delineated by ERS Consultants, Inc. on August 2007. These wetlands are federally regulated wetlands that encompass approximately 0.5 acres of the 5.1 acre property.

The New York State Department of Environmental Conservation (NYSDEC) Freshwater Wetlands Map of the Wawayanda Quadrangle, Orange County Map indicated that State regulated wetlands are not located on-site.

5.7 Flood Plains

According to the National Flood Insurance Program Flood Insurance Rate Map (FIRM), Town of Warwick, New York, Community Panel Number 3606360007B, the project site lies within Flood Zone C an area above the 100-year floodplain.

5.8 Listed, Endangered or Threatened Species

According to the NYSDEC Natural Heritage Program letter dated September 24, 2007, there are no listed, threatened or endangered species, or critical habitats, known to exist within the limits of the project site.

An ecological assessment of the site indicates that the project will not have significant adverse impact on any listed, endangered or threatened species, or on any critical habitat. In addition, the stormwater discharges from the project site will not adversely impact listed, endangered or threatened species so long as the stormwater management practices have been constructed in accordance with this SWPPP.

5.9 Historic Places

A review of the Geographic Information System for Archeology and National Register provided by The New York State Office of Parks, Recreation and Historic Preservation show the project site located within the general boundaries of the state's known archeological areas.

A Phase 1A site assessment was conducted by Tracker Archaeology Services, Inc. in 2007 of the project site and its environs to determine the potential sensitivity of the project site to historical and archaeological resources of significance. The Phase 1A assessment identified various locations on the site as having an above average potential for containing buried Native American cultural remains. A Phase IB site identification survey was carried out to determine the presence or absence of archaeological sites on the property. No prehistoric artifacts or features were encountered. Additionally, no historic artifacts or features were encountered. The Tracker reports states that "no further work is recommended for this project area".

In addition, the stormwater discharges from the project site will not adversely impact downstream properties so long as the stormwater management practices have been constructed in accordance with this SWPPP.

5.10 Rainfall Data

Rainfall data utilized in the modeling and analysis were interpolated from maps presented in Chapter 4 of the NYSDEC Stormwater Management Design Manual, dated August 2003, and in the National Weather Service (NWS) Technical Paper 40 (TP-40), Rainfall Frequency Atlas of the United States for Durations from 30 minutes to 24 Hours and Return Periods from 1 to 100 years (1961). Rainfall data specific to the portion of Orange County under consideration, for various 24-hour storm events, is presented in Table 1:

Table 1: Rainfall Data

Storm Event Return Period	**24-Hour Rainfall (inches)**
2-year	3.2
10-year	5.5
100-year	8.0

These values were used to evaluate the pre-development and post-development stormwater runoff characteristics.

6.0 Construction Sequence

This project encompasses less than five (5) acres of land and disturbance of additional off-site properties to facilitate construction is not anticipated, therefore written approval from NYSDEC allowing the disturbance of more than five (5) acres of land at any one time is not required. If the Contractor's construction sequence requires the disturbance of more than five (5) acres at any one time, written approval must be obtained from NYSDEC prior to disturbing mare than five (5) acres at once.

7.0 Construction-Phase Pollution Control

The SWPPP and accompanying plans identify the temporary and permanent erosion and sediment control measures that have been incorporated into the design of this project. These measures will be implemented during construction to minimize soil erosion and control sediment transport off-site, and after construction, to control the quality and quantity of stormwater runoff from the developed site.

Erosion control measures, designed to minimize soil loss and sediment control measures, intended to retain eroded soil and prevent it from reaching water bodies or adjoining properties, have been developed in accordance with the following documents:

- NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, Permit No. GP-0-10-001 (effective January 29, 2010 through January 28, 2015)
- New York State Standards and Specifications for Erosion and Sediment Control, NYSDEC (August 2005)

The SWPPP and Accompanying plans outline the construction scheduling for implementing the erosion and sediment control measures. The SWPPP and accompanying plans include limitations on the duration of soil exposure, criteria and specifications for placement and installation of the erosion and sediment control measures, a maintenance schedule, and specifications for the implementation of erosion and sediment control practices and procedures.

Temporary and permanent erosion and sediment control measures that shall be applied during construction generally include:

1. Minimizing soil erosion and sedimentation by stabilization of disturbed areas and by removing sediment from construction site discharges.

2. Preservation of existing vegetation as much as possible. Following the completion of construction activities in any portion of the site permanent vegetation shall be established on all exposed soils.

3. Site preparation activities shall be planned to minimize the area and duration of soil disturbance.

4. Permanent traffic corridors shall be established and “routes of convenience” shall be avoided.

7.1 Temporary Erosion and Sediment Control Measures

The temporary erosion and sediment control measures described in the following sections are included as part of the construction documents.

7.1.1 Stabilized Construction Entrance

Prior to construction, stabilized construction entrances will be installed, as shown on the detail plan, to reduce the tracking of sediment onto public roadways.

Construction traffic must enter and exit the site at the stabilized construction entrance. The intent is to trap dust and mud that would otherwise be carried off-site by construction traffic.

The entrance shall be maintained in a condition, which will control tracking of sediment onto public right-of-ways or streets. When necessary, the placement of additional aggregate atop the filter fabric will be done to assure the minimum thickness is maintained. All sediments and soils spilled, dropped or washed onto the public right-of-ways must be removed immediately. Periodic inspection and needed maintenance shall be provided after each substantial rainfall event.

7.1.2 Dust Control

Water trucks shall be used as needed during construction to reduce dust generated on the site. Dust control must be provided by the general Contractor to a degree that is acceptable to the Owner, and in compliance with the applicable local and state dust control requirements.

7.1.3 Silt Fence

Prior to the initiation of and during construction activities, a geotextile filter fabric (or silt fence) will be established along the down slope perimeter of areas to be disturbed as a result of the construction which lie up gradient of watercourses or adjacent properties. These barriers may extend into non-impact areas to provide adequate protection of adjacent lands.

Clearing and grubbing will be performed only as necessary for the installation of the sediment control barrier. To facilitate effectiveness of the silt fencing, daily inspections and inspections immediately after significant storm events will be performed by site personnel. Maintenance of the fence will be performed as needed.

7.2 Permanent Erosion and Sediment Control Measures

The permanent erosion and sediment control measures described in the following sections are included as part of the construction documents.

7.2.1 Establishment of Permanent Vegetation

Disturbed areas that will be vegetated must be seeded in accordance with the contract documents. The type of seed, mulch and maintenance measures as described in the contract documents shall also be followed.

All areas at final grade must be seeded and mulched within 14 days after completion of the major construction activity. All seeded areas should be protected with mulch.

Final site stabilization is achieved when all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of 80 percent has been established or equivalent stabilization measures (such as the use of mulches or

geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

7.2.2 Rock Outlet Protection

Rock outlet protection shall be installed at the locations as indicated and detailed on the accompanying plans. The installation of rock outlet protection will reduce the depth, velocity and energy of water, such that the flow will not erode the receiving watercourse or water body.

7.3 Other Pollutant Controls

Control of sediments has been described previously. Other aspects of this SWPPP are listed below:

7.3.1 Solid and Liquid Waste Disposal

No solid or liquid waste materials, including building materials, shall be discharged from the site with stormwater. All solid waste, including disposable materials incidental to any construction activities, must be collected and placed in containers. The containers shall be emptied periodically by a licensed trash disposal service and hauled away from the site.

Substances that have the potential for polluting surface and/or groundwater must be controlled by whatever means necessary in order to ensure that they do not discharge from the site. As an example, special care must be exercised during equipment fueling and servicing operations. If a spill occurs, it must be contained and disposed of so that it will not flow from the site or enter groundwater, even if this requires removal, treatment, and disposal of soil. In this regard, potentially polluting substances should be handled in a manner consistent with the impact they represent.

7.3.2 Sanitary Facilities

Temporary sanitary facilities will be provided by the Contractor throughout the construction phase. They must be utilized by all construction personnel and will be serviced by a licensed commercial Contractor. These facilities must comply with state and local sanitary or septic system regulations.

7.3.3 Water Source

Non-stormwater components of site discharge must be clean water. Water used for construction, which discharges from the site, must originate from a public water supply or private well approved by the Health Department. Water used for construction that does not originate from an approved public supply must not discharge from the site; such water can be retained in the ponds until it infiltrates and/or evaporates.

7.4 Construction Housekeeping Practices

During the construction phase, the general Contractor will implement the following measures:

7.4.1 Material Stockpiles

Material resulting from the clearing and grubbing operation will be stockpiled up slope from adequate sedimentation controls.

7.4.2 Equipment Cleaning and Maintenance

The general Contractor will designate areas for equipment cleaning, maintenance and repair. The general Contractor and subcontractors will utilize those areas. The areas will be protected by a temporary perimeter berm.

7.4.3 Detergents

The use of detergents for large-scale washing is prohibited (i.e., vehicles, buildings, pavement surfaces, etc.)

7.4.4 Spill Prevention and Response

A spill Prevention and Response Plan shall be developed for the site by the Contractor. The plan shall detail the steps needed to be followed in the event of an accidental spill and shall identify contact names and phone numbers of people and agencies that must be notified.

The plan shall include Material Safety Data Sheet (MSDS) for all materials to be stored on-site. All workers on-site will be required to be trained on safe handling and spill prevention procedures for all materials used during construction. Regular safety meetings shall be held and all workers that are expected on the site during the week shall be required to attend.

7.4.5 Concrete Wash Areas

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in specifically designated diked and impervious washout areas which have been prepared to prevent contact between the concrete wash and stormwater. Waste generated from concrete wash water shall not be allowed to flow into drainage ways, inlets, receiving waters or highway right-of-ways, or any location other than the designated Concrete Wash Areas. Proper signage designating the “Concrete Wash Areas” shall be placed near the facility. Concrete Wash Areas shall be located at minimum 100 linear feet from drainage ways, inlets and surface waters.

The hardened residue from the Concrete Wash Areas will be disposed of in the same manner as other non-hazardous construction waste materials. Manteca of the wash area is to include removal of hardened concrete. Facility shall have sufficient volume to contain all the concrete waste resulting from the washout and a minimum freeboard of twelve (12) inches. Facility shall not be filled beyond 95% capacity and shall be cleaned out once 75% full unless a new facility is constructed. The Contractor will be responsible for seeing that these procedures are followed.

Saw-cut Portland Cement Concrete (PCC) slurry shall not be allowed to enter storm drains or watercourses. Saw-cut residue should not be left on the surface of pavement or be allowed to flow over and off pavement.

The project may require the use of multiple concrete wash areas. All concrete wash areas will be located in an area where the likelihood of the area contributing to stormwater discharges is negligible. If required, additional BMPs must be implemented to prevent concrete wastes from contributing to stormwater discharges.

7.4.6 Material Storage

Construction materials shall be stored in a dedicated staging area. The staging area shall be located in an area that minimizes the impacts of the construction materials effecting stormwater quality.

Chemicals, paints, solvents, fertilizers and other toxic materials must be stored in waterproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the site, treated and disposed of at an approved solid waste or chemical disposal facility.

8.0 Post-Construction Stormwater Control

The goals of this Stormwater Management Plan are to analyze the peak rate of runoff under pre- and post-development conditions, to maintain the pre-developed rate of runoff in order to minimize impacts to adjacent or downstream properties and to minimize the impact to the quality of runoff exiting the site.

The NYS Stormwater Management Design Manual, dated August 2003 provides both water quality and water quantity objectives to be met by projects requiring a “Full SWPPP”. These objectives will be met by applying stormwater control practices to limit peak runoff rates and improve the quality of runoff leaving the developed site.

8.1 Stormwater Control Practices

Stormwater runoff from the proposed development will be collected and conveyed to the quantity and quality control system(s) described herein through a closed storm sewer network.

The closed storm sewer network, consisting of catch basins, drainage manholes and high density polyethylene piping (HDPE) has been designed to convey the 10-year storm event, as required by the Town of Warwick.

The stormwater quantity and quality control systems described in the following sections have been incorporated into the stormwater management plan for this project. Design calculations for each measure have been included in Appendix D.

Based upon a review of the NYS Division of Water Regulations Part 673.4, none of the stormwater management facilities to be constructed as part of this project require a dam permit for construction, reconstruction, repair, breach or removal.

8.1.1 Pocket Pond (P-5)

Wet ponds typically consist of two general components – a forebay and a permanent wet pool. The forebay provides pretreatment by capturing coarse sediment particles in order to minimize the need to remove the sediments from the primary wet pool. The wet pool serves as the primary treatment mechanism and where much of the retention capacity exists. Wet ponds can be sized foe a wide range of watershed sizes, if adequate space exists.

A variation of the conventional wet pond is as a pocket pond. The term “pocket” refers to a pond or wetland that has such as small contributing drainage area (between one to five acres) that little or no base flow is available to sustain water elevations during dry weather. Instead, water elevations are heavily influenced, and in some cases, maintained by locally high water table. Because of these smaller drainage areas and the resulting lower hydraulic loads of pocket ponds, outlet structures can be simplified and often do not have safety features such as emergency spillways and low level drains.

Pocket ponds can be used to attenuate the peak flow and provide quality treatment by sedimentation, chemical flocculation and biological removal. Sediment forebays will capture sediment and floatable trash/debris prior to entering the pond. The pocket pond is landscaped with a variety of plantings including emergent and woody shrubs, with each type of planting corresponding to the water depth. An aquatic bench will maximize the biological uptake of pollutants.

The Pocket Pond (P-5) was designed according to the criteria set forth in Section 6.1 “Stormwater Ponds” of the NYS Stormwater Management Design Manual, dated August 2003.

8.1.2 Hydrodynamic Separators

Hydrodynamic separators accelerate the separation of floating and settling pollutants from stormwater through the use of a vortex. These pre-fabricated devices come in the form of an underground manhole or vault. The devices have no moving parts and are typically fabricated from concrete and marine grade aluminum.

During operation, stormwater runoff enters the unit tangentially to promote a gentle swirling motion in a treatment chamber. A stormwater circles within the chamber, settable solids fall into a sump and are retained. Buoyant debris, oil and grease rise to the surface and are separated from the water as it flows under a baffle wall. Finally, treated water exits the treatment chamber through a flow control orifice located behind the baffle wall.

During low-flow conditions all runoff is diverted into the treatment chamber by a flow partition. At higher flow rates, a portion of the runoff spills over the flow partition and is diverted around the treatment chamber to prevent re-suspension and washout of previously trapped pollutants. Water that spills over the partition flows into a head equalization chamber above the treatment chamber outlet. As the head equalization chamber fills, the head differential driving flow through the treatment chamber collapses. The result is that flow rates in the treatment chamber remain relatively constant even as total flow rates increase substantially. This configuration further reduces the potential for re-suspension or washout.

According to Chapter 9 of the NYS Stormwater Management Design Manual, dated August 2003, hydrodynamic separators of the type proposed for this project have been approved for use as a pretreatment system in new and redevelopment projects or as a primary treatment system on redevelopment projects.

8.2 Stormwater Quality Analysis

Stormwater runoff from impervious surfaces is recognized as a significant contributor of pollution that can adversely affect the quality of receiving water bodies. Therefore, treatment of stormwater runoff is important since most runoff related water quality contaminants are transported from land, particularly the impervious surfaces, during the initial stages of storm events.

8.2.1 NYSDEC Requirements

The NYS Stormwater Management Design Manual, dated August 2003 requires that water quality treatment be provided for the initial flush of runoff from every storm. The NYSDEC refers to the amount of runoff to be treated as the “Water Quality Volume” (WQv). Section 4.2 of the Manual defines the Water Quality Volume as follows:

$$WQv = \frac{[(P)(Rv)(A)]}{12}$$

Where:
- P = 90% Rainfall Event Number
- Rv = 0.05 + 0.009 (I), minimum Rv = 0.2
- I = Impervious Cover (Percentage)
- A = Contributing Area in Acres

This definition ensures that, all other things being equal, the Water Quality Volume will increase along with the impervious cover percentage.

8.2.2 Methodology

The Water Quality Volume equation has been applied to the drainage area tributary to each of the stormwater quality practices proposed for the project. The practices have been sized to accommodate the Water Quality Volume, as per the performance criteria presented in Chapter 6 of the NYS Stormwater Management Design Manual, dated August 2003.

Design computations for the proposed stormwater quality practices are presented in Appendix D.

8.3 Stormwater Quantity Analysis

This report presents the pre-development and post-development features and conditions associated with the rate of surface water runoff within the study area. For both cases, the drainage patterns, drainage structures, soil types and ground cover types are considered in this study.

8.3.1 NYSDEC Requirements

The NYS Stormwater Management Design Manual, dated August 2003 requires that project meet three separate stormwater quantity criteria;

1. The Channel Protection (CPv) requirement is designed to protect stream channels from erosion. This is accomplished by providing 24 hours of extended detention for the 2-year, 24-hour storm event. The Manual defines the CPv detention time as the center of mass detention time through each stormwater management practice.

2. The Overbank Flood Control (Qp) requirement is designed to prevent an increase in the frequency and magnitude of flow events that exceed the bank-full capacity of a channel, and therefore must spill over into the floodplain. This is accomplished by providing detention storage to ensure that, at each design point, the post-development 10-year, 24-hour peak discharge rate does not exceed the corresponding pre-development rate.

3. The Extreme Flood Control (Qf) requirement is designed to prevent the increased risk of flood damage from large storm events, to maintain the boundaries of the pre-development 100-year floodplain, and to protect the physical integrity of stormwater management practices. This is accomplished by providing detention storage to ensure that, at each design point, the post-development 100-year, 24-hour peak discharge rate does not exceed the corresponding pre-development rate.

8.3.2 Methodology

In order to demonstrate that detention storage requirements are being met, the NYS Stormwater Management Design Manual, dated August 2003 requires that a hydrologic and hydraulic analysis of the pre- and post-development conditions be performed using the Natural Resources Conservation Service Technical Release 20 (TR-20) methodology. HydroCAD, developed by HydroCAD software Solutions LLC of Tamworth, New Hampshire, is a Computer-Aided- Design (CAD) program for analyzing the hydrologic and hydraulic characteristics of a given watershed and associated stormwater management facilities. HydroCAD uses the TR-20 algorithms and methods to create and route runoff hydrographs.

HydroCAD has the capability of computing hydrographs (which represent discharge rates characteristics of specified watershed conditions, precipitation and geologic factors) combining hydrographs and routing flows through pipes, streams and ponds. HydroCAD can also calculate the center of mass detention time for various hydraulic features. Documentation for HydroCAD can be found on their website: http://www.hydrocad.net/.

For this analysis, the watershed and drainage system was broken down into a network consisting of three types of components as describes below:

1. Subcatchment: A relatively homogeneous area of land, which produces a volume and rate of runoff unique to that area.

2. Reach: Uniform streams, channels or pipes that convey stormwater from one point to another.

3. Pond: Natural or man-made impoundment, which temporarily stores stormwater runoff and empties in a manner determined by its geometry and the hydraulic structure located at its outlets.

Subcatchments, reaches and ponds are represented by hexagons, squares and triangles respectively, on the watershed routing diagrams provided with the computations included in Appendix B and Appendix C.

The analysis of hydrologic and hydraulic conditions and proposed stormwater management facilities, servicing the study area, was performed by dividing the tributary watershed into relatively homogenous subcatchments. The separation of the watershed into subcatchments was dictated by watershed conditions, methods of collection, conveyance and points of discharge. Watershed characteristics for each subcatchment were then assessed from United States Geological Services (USGS) 7.5-minute topographic maps, aerial photographs, a topographical survey, soil surveys, site investigations and land use maps.

Proposed stormwater management facilities were designed and evaluated in accordance with the NYS Stormwater Management Design Manual, dated 2003 and local regulatory requirements. The hydrologic and hydraulic analysis considered the SCS, Type III, 24-hour, 2-year, 10-year and 100-year storm events.

8.3.3 Description of Design Points

The study area consists of an overall watershed that encompasses approximately 3.069 acres and contains the 5.1 acre project site. The overall watershed was broken down into smaller watersheds, or subcatchments to allow for analysis of runoff conditions at several locations throughout the study area. Each of these locations were defined as a Design Point (DP) in order to compare the effects resulting from stormwater management facilities proposed as part of the project.

8.3.4 Pre-development Watershed Conditions

The pre-development project site is covered predominantly by agricultural lands. Analysis of pre-development conditions considered existing drainage patterns, soil types, ground cover and topography.

The contributing pre-development watershed areas were divided into two sub-catchments. The Pre-development Watershed Delineation Map has been provided in Appendix A, as Figure 3.

The results of the computer modeling used to analyze the overall watershed under pre-development conditions are presented in Appendix B. A summary of the pre-development watershed runoff rates at each design point is presented in Table 9.

8.3.5 Post-development Watershed Conditions

The post-development project site is covered predominantly by pavement and grass. The analysis of post-development conditions considered existing drainage patterns, soil types, ground cover to remain, planned site development, site grading and stormwater management facilities proposed as part of site improvements.

The contributing post-development watershed areas were divided into five subcatchments. The Post-Development Watershed Delineation Map has been provided in Appendix A, as Figure 4.

The results of the computer modeling used to analyze the overall watershed under post-development conditions are presented in Appendix C. A summary of the post-development watershed runoff rates at each design point is presented in Table__.

There are numerous locations and methods for providing controls of off-site discharge of stormwater from the project site. Each has been designed to provide the above quantity controls by attenuating stormwater runoff and releasing runoff to off-site

locations at a rate equal to or less than that which existed prior to development of the site. Each device is detailed on the accompanying plans.

8.3.6 Performance Summary

A comparison of the pre- and post-development watershed conditions was performed for all design points and storm events evaluated herein. For all design points and design storms, this comparison demonstrates that the peak rate of runoff will not be increased. Therefore, the project will not have a significant adverse impact on the adjacent or downstream properties or receiving water courses. The results of the computer modeling used to analyze the pre- and post-development watersheds are presented in Appendix B and Appendix C, respectively. Table 2 summarizes the results of this analysis.

Table 2: Summary of Pre and Post-Development Peak Discharge Rates

Design Point (DP)	2-year, 24-hour storm		10-year, 24-hour storm		100-year, 24-hour storm	
	Pre	Post	Pre	Post	Pre	Post
1	**0**	**0**	**0.26**	**0.09**	**2.01**	**0.51**

9.0 Inspections, Maintenance and Reporting

9.1 Inspection and Maintenance Requirements

9.1.1 Pre-Construction Inspection and Certification

Prior to the commencement of construction, the Owner's/Operator's Engineer shall conduct an assessment of the site and certify that the appropriate erosion and sediment control measures have been adequately installed and implemented. The Contractor shall contact the Owner's/Operator's Engineer once the erosion and sediment control measures have been installed.

9.1.2 Construction Phase Inspections and Maintenance

A Qualified Inspector shall conduct a regular site inspection between the time this SWPPP is implemented and final site stabilization. Site inspection shall occur at an interval of at least once every seven calendar days.

The purpose of site inspections is to assess performance of pollutant controls. Based on these inspections, the Qualified Inspector will decide whether it is necessary to modify this SWPPP, add or relocate barriers, or whatever else may be needed in order to prevent pollutants from leaving the site via stormwater runoff. The general Contractor has the duty to cause pollutant control measures to be repaired, modified, maintained, and supplemented or whatever else is necessary in order to achieve effective pollutant control.

Examples of particular items to evaluate during site inspections are listed below. This list is not intended to be comprehensive. During each inspection the inspector must evaluate overall pollutant control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances.

1. Locations where vehicles enter and exit the site must be inspected for evidence of off-site sediment tracking. A stabilized construction entrance will be constructed where vehicles enter and exit the site. This entrance will be maintained or supplemented as necessary to prevent sediment from leaving the site on vehicles.

2. Sediment barriers must be inspected and, if necessary, they must be enlarged or cleaned in order to provide additional capacity. All material from behind sediment barriers will be stockpiled on the up slope side. Additional sediment barriers must be constructed as needed.

3. Inspections will evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system. If necessary, the materials must be covered or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas.

4. Grassed areas will be inspected to confirm that a healthy stand of grass is maintained. The site has achieved final stabilization once all areas are covered with building foundation or pavement, or have a stand of grass with at least 80 percent density. The density of 80 percent or greater must be maintained to be considered stabilized. Areas must be watered, fertilized and reseeded as needed to achieve this goal.

5. All discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters.

The inspection reports must be completed entirely and additional remarks should be included if needed to fully describe a situation. An important aspect of the inspection report is the description of additional measures that need to be taken to enhance plan effectiveness. The inspection report must identify whether the site was in compliance with the SWPPP at the time of inspection and specifically identify all incidents of non-compliance.

Within one business day of the completion of an inspection, the Qualified Inspector shall notify the Owner/Operator and appropriate Contractor (or subcontractor) of any corrective actions that need to be taken. The Contractor (or subcontractor) shall begin implementing corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

In addition to the inspections performed by the Owner's/Operator's Engineer, the Contractor shall perform routine inspections that include a visual check of all erosion and sediment control measures. All inspections and maintenance shall be performed in accordance with the inspection and maintenance schedule provided on the accompanying plans. Sediment removed from erosion and sediment control measures will be exported from the site, stockpiled for later use or used immediately for general non-structural fill.

It is the responsibility of the general Contractor to assure the adequacy of site pollutant discharge controls. Actual physical site conditions or Contractor practices could make it necessary to install more structural controls than are shown on the accompanying plans.

9.1.3 Temporary Suspension of Construction Activities

For construction sites where soil disturbance activities have been temporarily suspended (e.g. Winter shutdown) and temporary stabilization measures have been applied to all disturbance areas, the frequency of Qualified Inspector inspections can be reduced to once every thirty (30) calendar days. Prior to reducing the frequency of inspections, the Owner/Operator shall notify the NYSDEC Region 8 stormwater contact person in writing.

9.1.4 Partial Project Completion

For construction sites where soil disturbance activities have been shut down with partial project completion, all areas disturbed as of the project shutdown date have achieved final stabilization, and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational, the Qualified Inspector inspections can stop. Prior to the shutdown, the Owner/Operator shall notify the NYSDEC Region 8 stormwater contact person in writing.

If soil disturbance activities have not resumed within two years from the date of shutdown, a Notice of Termination (NOT) shall be properly completed and submitted to the NYSDEC.

9.1.5 Post-Construction Inspections and Maintenance

Inspections and maintenance of post-construction stormwater management practices shall be performed, when all disturbed areas are stabilized and all stormwater management systems are in place and operable.

9.2 Reporting Requirements

9.2.1 Inspection and Maintenance Reports

Inspection/maintenance reports shall be prepared prior to and during construction in accordance with the schedule outlined herein and in the SPDES General Permit GP-0-10-001 Part IV.C.2. The reports shall be prepared to identify and document the maintenance of the erosion and sediment control measures.

Specifically, each inspection shall record the following information:

1. Date and time of inspection.

2. Name and title of person(s) performing inspection.

3. A description of the weather and soil conditions at the time of the inspection.

4. A description of the condition of the runoff at all points of discharge (including conveyance systems and overload flow) from the construction site. This shall include identification of any discharges of sediment from the construction site.

5. A description of the condition of all natural surface water bodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharge of sediment to the surface water body.

6. Identification of all erosion and sediment control practices that need repair or maintenance.

7. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or repaired.

8. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since that last inspection.

9. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards.

10. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s).

11. Color photographs with date stamp, taken with a digital camera which shows the condition of all practices that have been identified as needing corrective action or have undergone corrective action, must be attached to the associated inspection report.

9.2.2 Site Log Book

The Owner/Operator shall retain a copy of the SWPPP required by NYSDEC SPDES General Permit GO-0-10-001 at the construction site from the date of initiation of construction activities to the date of final stabilization

During construction, the Owner's/Operators' Engineer shall maintain a record of all SWPPP inspection report at the site in the Site Log Book. The Site Log Book shall be maintained on-site and made available to the permitting authority.

9.2.3 Post Construction Records and Archiving

Following construction, the Owner/Operator shall retain copies of the SWPPP, the complete construction Site Log Book, and records of all data used to complete the NOI to be covered by this permit, for a period of at least five years from the date that the site is finally stabilized. This period may be extended by the NYSDEC, at its sole discretion, at any time upon written notification.

Records shall be maintained of all post-construction inspections.

APPENDIX A

PRE-DEVELOPMENT STORMWATER MODELING

Subcat (Design Point 1)

Design Point 1

Subcat Reach Pond Link

Drainage Diagram for Homarc Existing 11-11-2013
Prepared by {enter your company name here}, Printed 11/11/2013
HydroCAD® 9.00 s/n 06239 © 2009 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.069	39	Pasture/grassland/range, Good, HSG A (1S)
3.069		**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Goup	Subcatchment Numbers
3.069	HSG A	1S
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
3.069		**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Subcat (Design Point 1) Runoff Area=133,672 sf 0.00% Impervious Runoff Depth>0.00"
Flow Length=569' Tc=16.2 min CN=39 Runoff=0.00 cfs 0.000 af

Pond 1P: Design Point 1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 3.069 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
100.00% Pervious = 3.069 ac 0.00% Impervious = 0.000 ac

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Subcat (Design Point 1) Runoff Area=133,672 sf 0.00% Impervious Runoff Depth>0.00"
Flow Length=569' Tc=16.2 min CN=39 Runoff=0.00 cfs 0.000 af

Pond 1P: Design Point 1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 3.069 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
100.00% Pervious = 3.069 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: Subcat (Design Point 1)

[73] Warning: Peak may fall outside time span

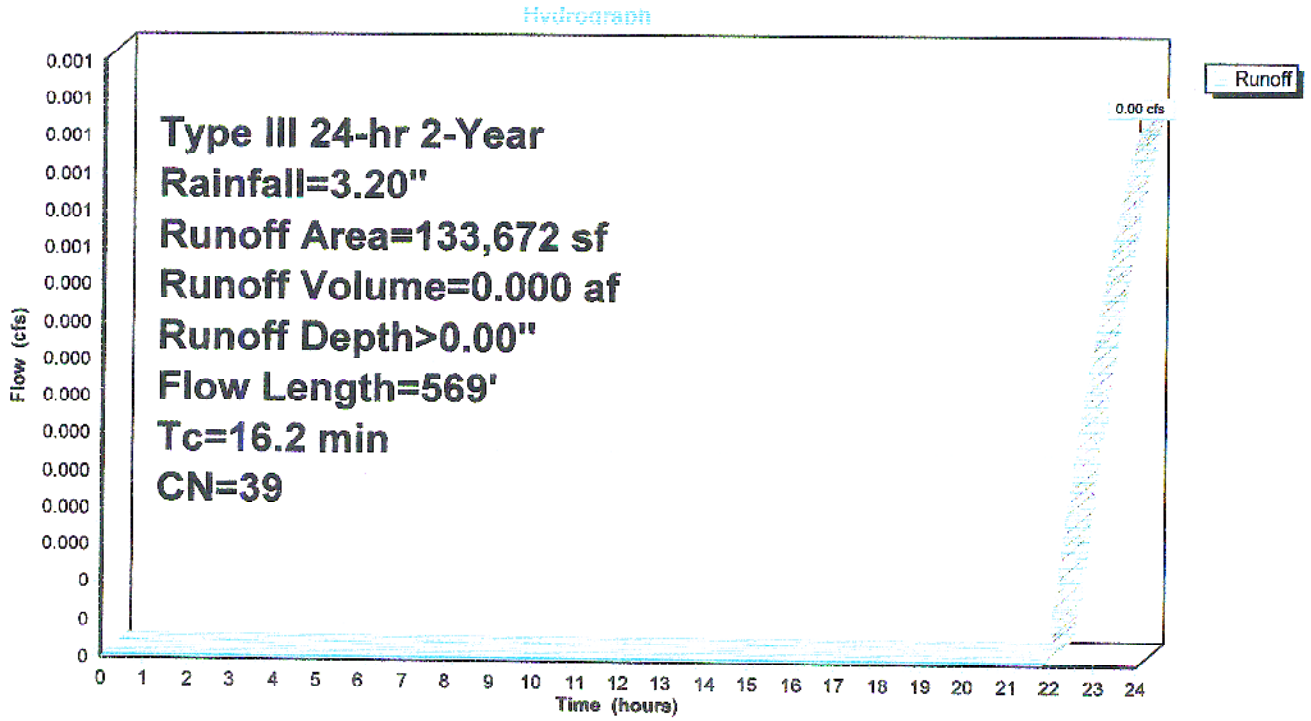
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth> 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
133,672	39	Pasture/grassland/range, Good, HSG A
133,672		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0295	0.23		**Sheet Flow, Sheet Flow - Range** Range n= 0.130 P2= 3.50"
9.0	469	0.0300	0.87		**Shallow Concentrated Flow, Shallow - Range** Woodland Kv= 5.0 fps
16.2	569	Total			

Subcatchment 1S: Subcat (Design Point 1)



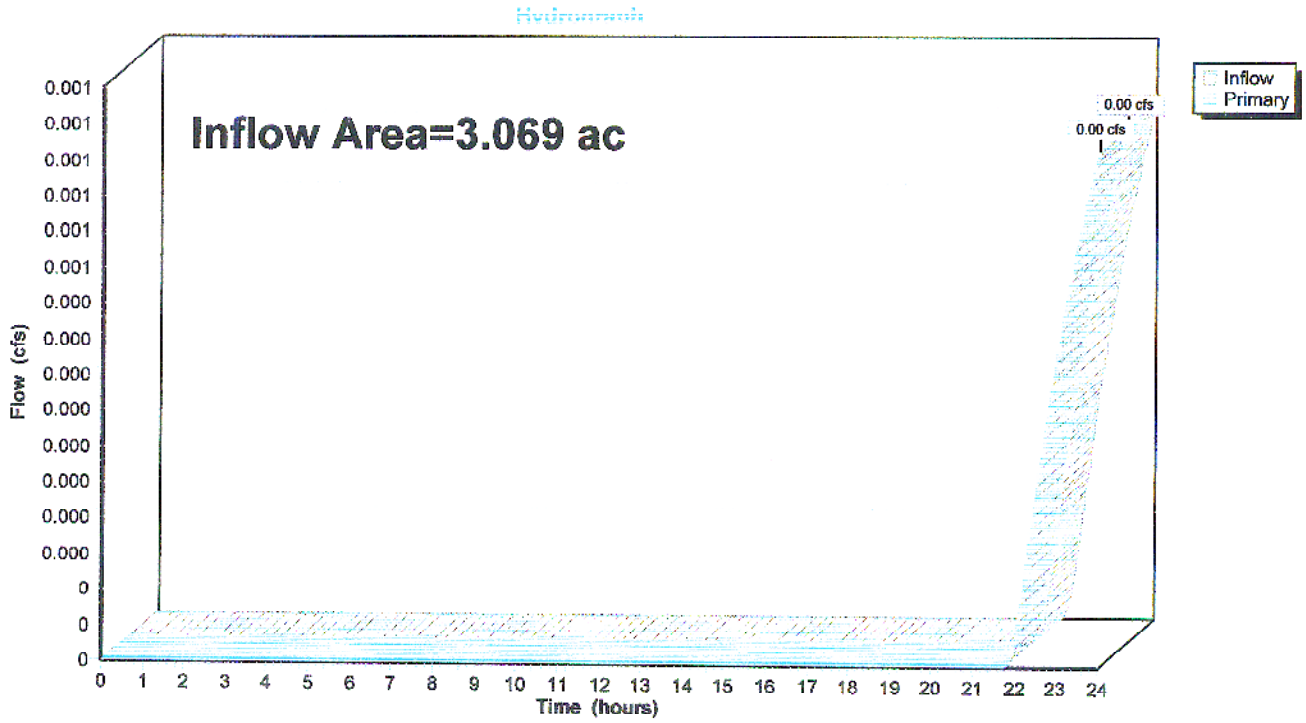
Summary for Pond 1P: Design Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	3.069 ac,	0.00% Impervious,	Inflow Depth >	0.00"	for 2-Year event
Inflow =	0.00 cfs @	24.00 hrs,	Volume=	0.000 af	
Primary =	0.00 cfs @	24.00 hrs,	Volume=	0.000 af,	Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Pond 1P: Design Point 1



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Subcat (Design Point 1) Runoff Area=133,672 sf 0.00% Impervious Runoff Depth>0.31"
Flow Length=569' Tc=16.2 min CN=39 Runoff=0.26 cfs 0.079 af

Pond 1P: Design Point 1 Inflow=0.26 cfs 0.079 af
Primary=0.26 cfs 0.079 af

Total Runoff Area = 3.069 ac Runoff Volume = 0.079 af Average Runoff Depth = 0.31"
100.00% Pervious = 3.069 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: Subcat (Design Point 1)

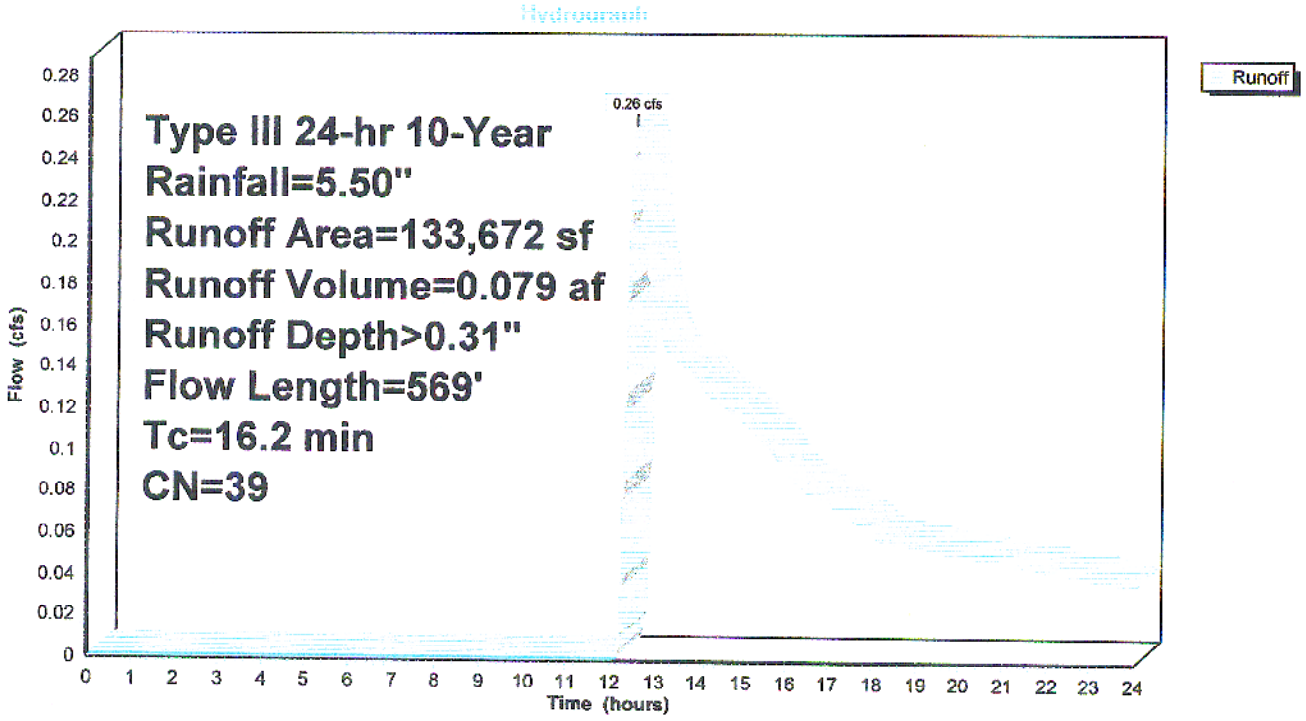
Runoff = 0.26 cfs @ 12.55 hrs, Volume= 0.079 af, Depth> 0.31"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.50"

Area (sf)	CN	Description
133,672	39	Pasture/grassland/range, Good, HSG A
133,672		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0295	0.23		**Sheet Flow, Sheet Flow - Range** Range n= 0.130 P2= 3.50"
9.0	469	0.0300	0.87		**Shallow Concentrated Flow, Shallow - Range** Woodland Kv= 5.0 fps
16.2	569	Total			

Subcatchment 1S: Subcat (Design Point 1)



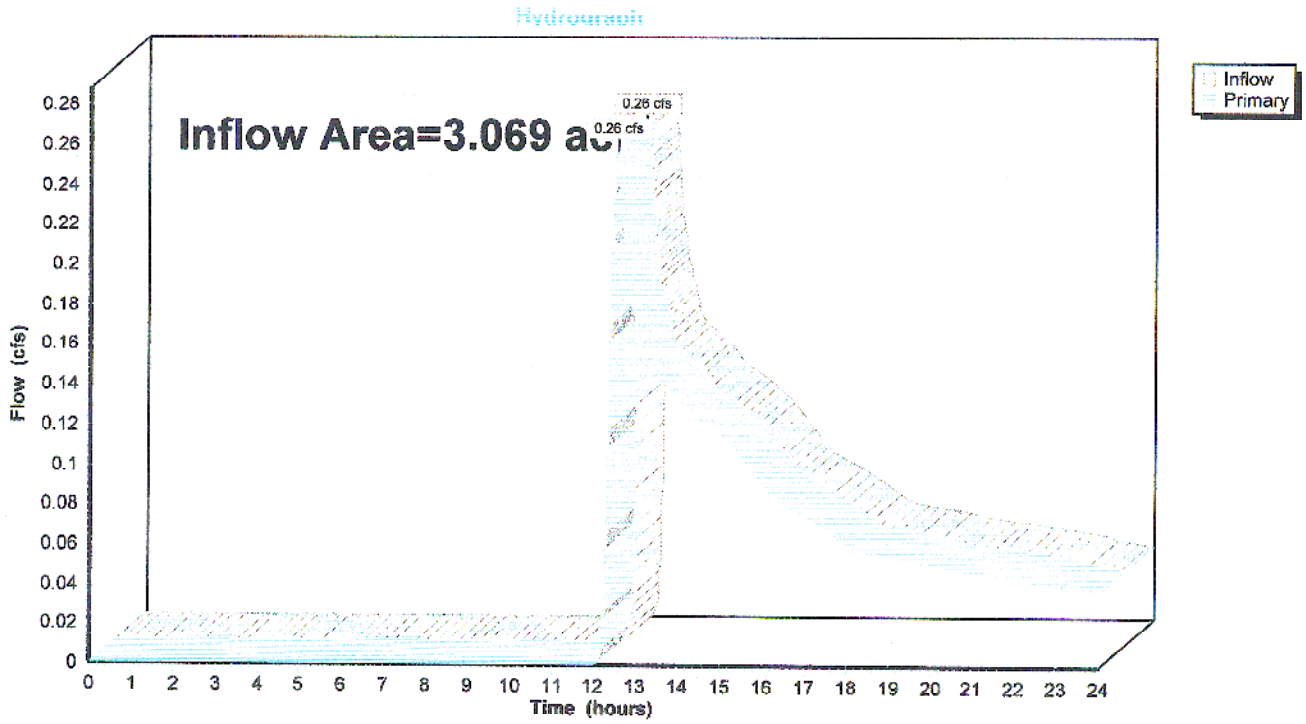
Summary for Pond 1P: Design Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	3.069 ac,	0.00% Impervious,	Inflow Depth >	0.31"	for 10-Year event
Inflow =	0.26 cfs @	12.55 hrs,	Volume=	0.079 af	
Primary =	0.26 cfs @	12.55 hrs,	Volume=	0.079 af,	Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Pond 1P: Design Point 1



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Subcat (Design Point 1) Runoff Area=133,672 sf 0.00% Impervious Runoff Depth>1.15"
Flow Length=569' Tc=16.2 min CN=39 Runoff=2.01 cfs 0.294 af

Pond 1P: Design Point 1 Inflow=2.01 cfs 0.294 af
Primary=2.01 cfs 0.294 af

Total Runoff Area = 3.069 ac Runoff Volume = 0.294 af Average Runoff Depth = 1.15"
100.00% Pervious = 3.069 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1S: Subcat (Design Point 1)

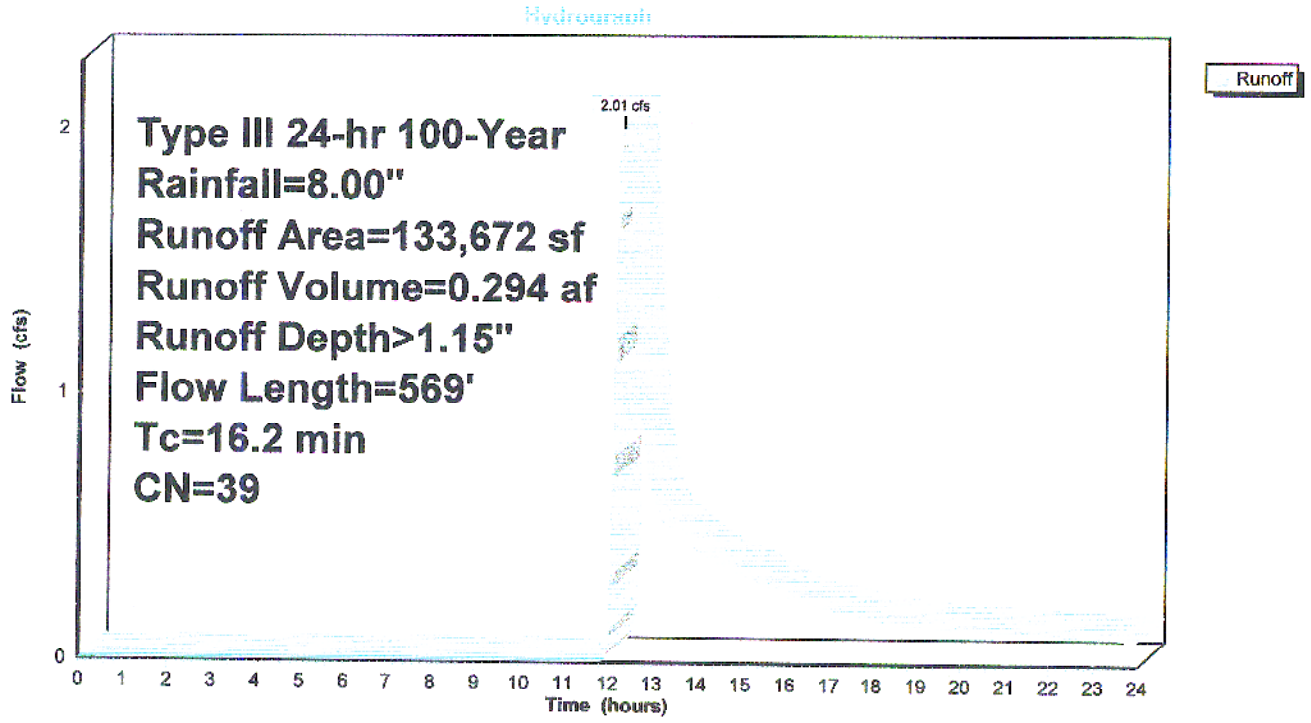
Runoff = 2.01 cfs @ 12.31 hrs, Volume= 0.294 af, Depth> 1.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.00"

Area (sf)	CN	Description
133,672	39	Pasture/grassland/range, Good, HSG A
133,672		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0295	0.23		**Sheet Flow, Sheet Flow - Range** Range n= 0.130 P2= 3.50"
9.0	469	0.0300	0.87		**Shallow Concentrated Flow, Shallow - Range** Woodland Kv= 5.0 fps
16.2	569	Total			

Subcatchment 1S: Subcat (Design Point 1)



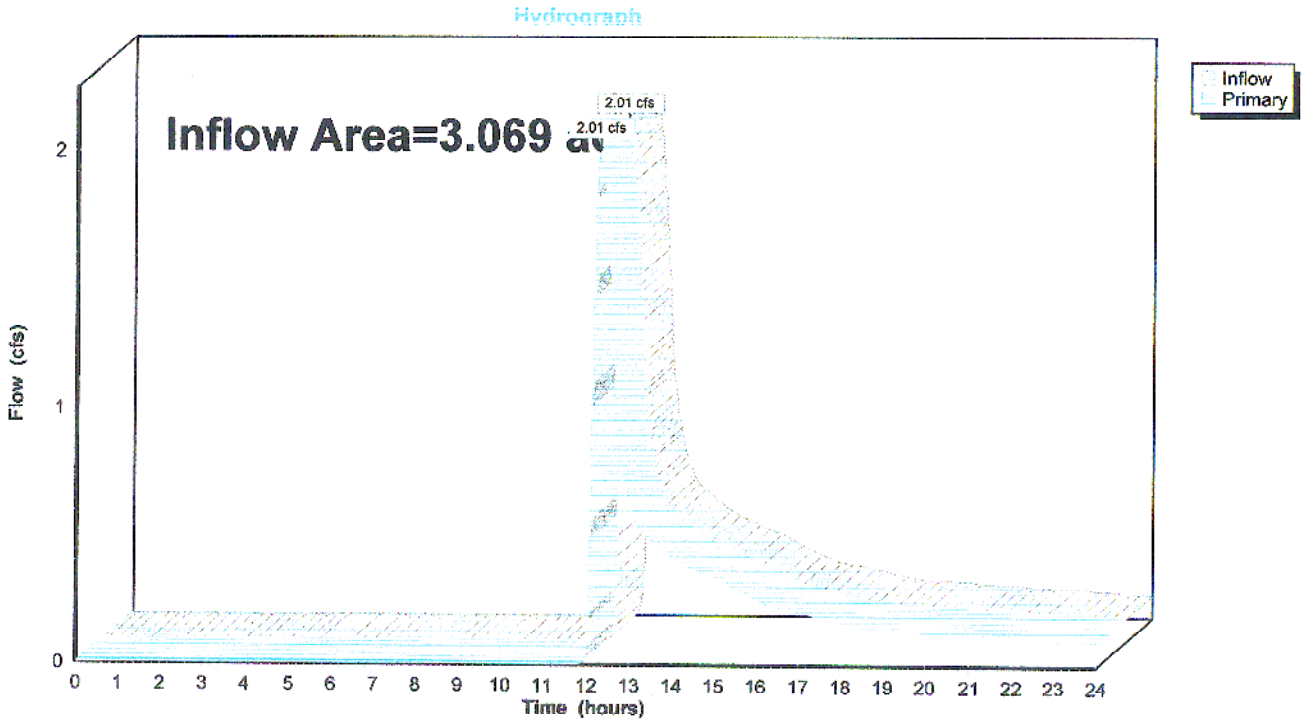
Summary for Pond 1P: Design Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	3.069 ac,	0.00% Impervious,	Inflow Depth >	1.15"	for 100-Year event
Inflow =	2.01 cfs @	12.31 hrs,	Volume=	0.294 af	
Primary =	2.01 cfs @	12.31 hrs,	Volume=	0.294 af,	Atten= 0%, Lag= 0.0 min

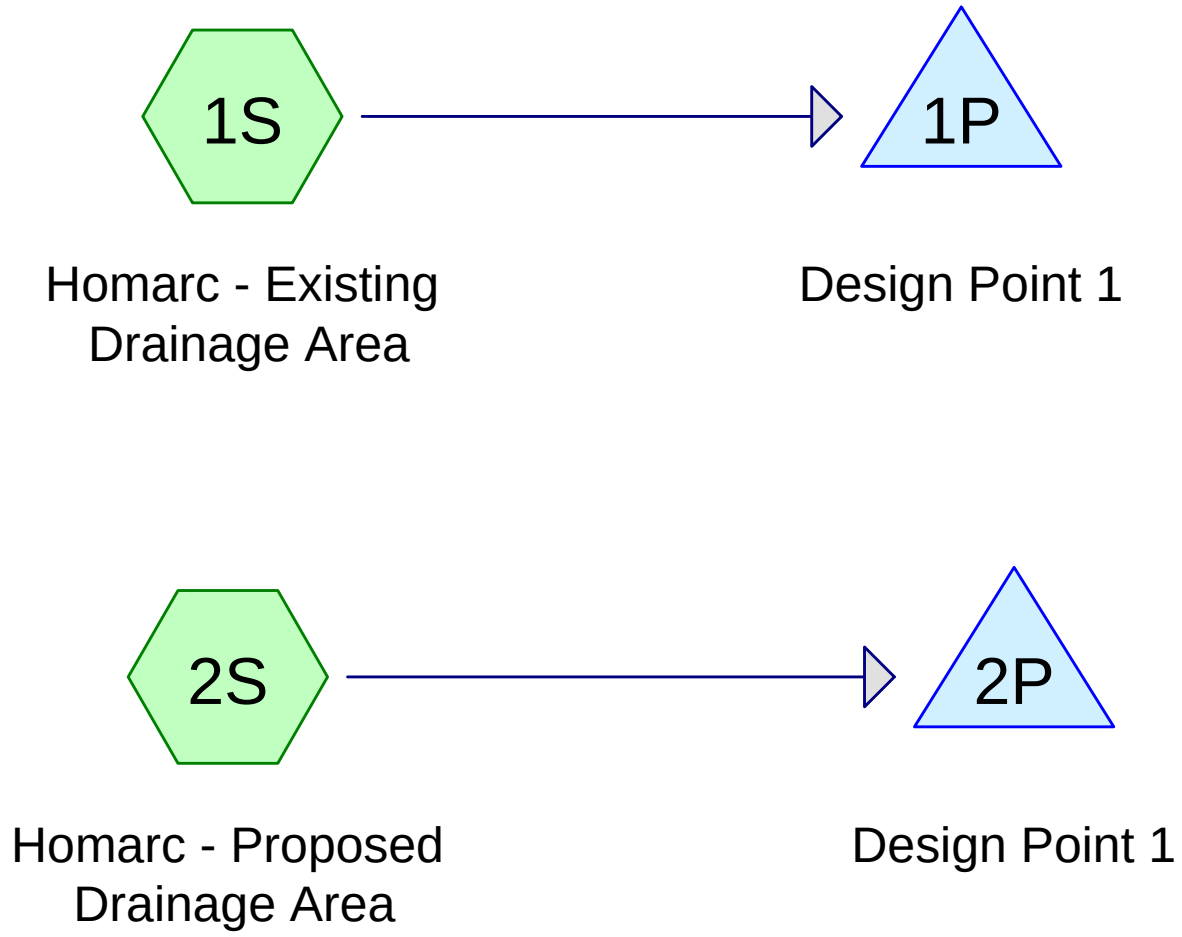
Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

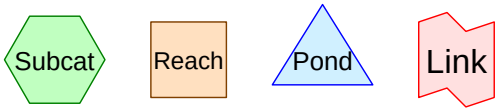
Pond 1P: Design Point 1



APPENDIX B

POST-DEVELOPMENT STORMWATER MODELING





Drainage Diagram for Homarc - Proposed Drainage
Prepared by {enter your company name here} 6/9/2014
HydroCAD® 7.00 s/n 001301 © 1986-2003 Applied Microcomputer Systems

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Homarc - Existing Drainage Area Runoff Area=133,672 sf Runoff Depth=0.00"
Flow Length=569' Tc=16.2 min CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Homarc - Proposed Drainage Area Runoff Area=104,231 sf Runoff Depth=0.56"
Flow Length=664' Tc=4.5 min CN=64 Runoff=1.24 cfs 0.111 af

Pond 1P: Design Point 1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Pond 2P: Design Point 1 Peak Elev=566.22' Storage=4,849 cf Inflow=1.24 cfs 0.111 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 5.462 ac Runoff Volume = 0.111 af Average Runoff Depth = 0.24"

Subcatchment 1S: Homarc - Existing Drainage Area

[73] Warning: Peak may fall outside time span

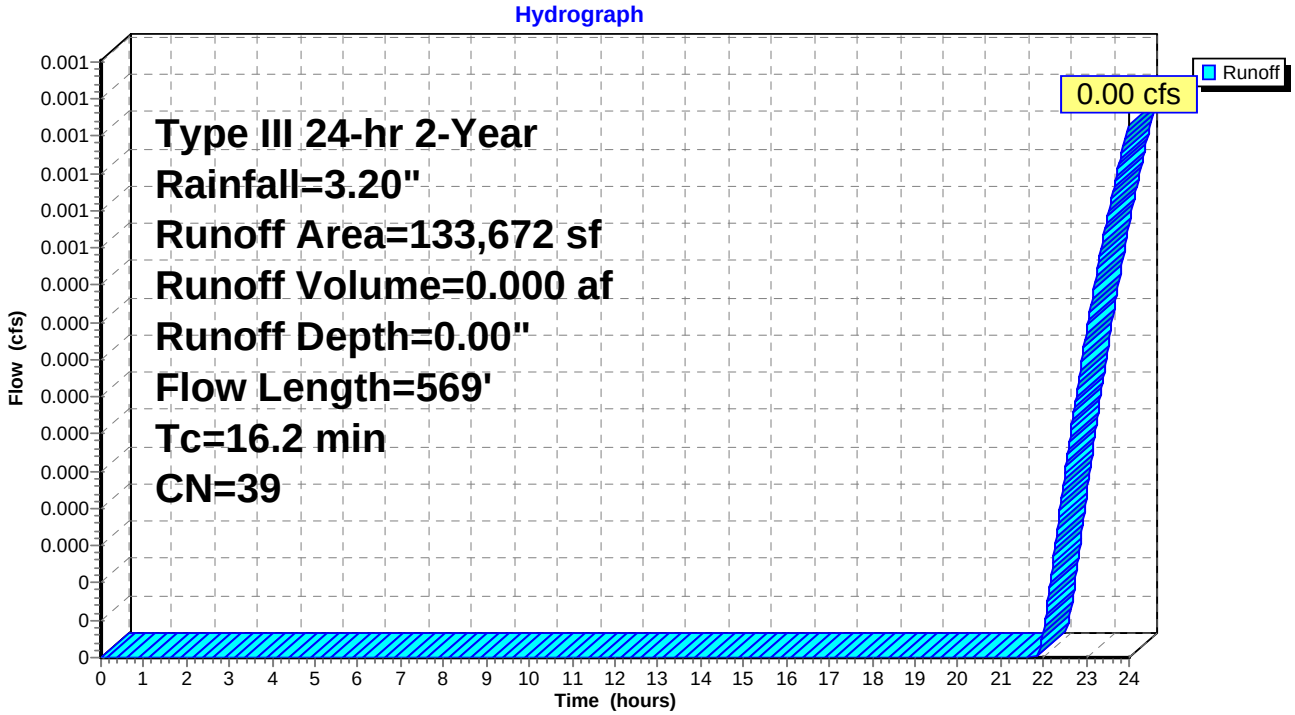
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
133,672	39	Pasture/grassland/range, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0295	0.2		**Sheet Flow, Sheet Flow Range** Range n= 0.130 P2= 3.50"
9.0	469	0.0300	0.9		**Shallow Concentrated Flow, Shallow - Range** Woodland Kv= 5.0 fps
16.2	569	Total			

Subcatchment 1S: Homarc - Existing Drainage Area



Subcatchment 2S: Homarc - Proposed Drainage Area

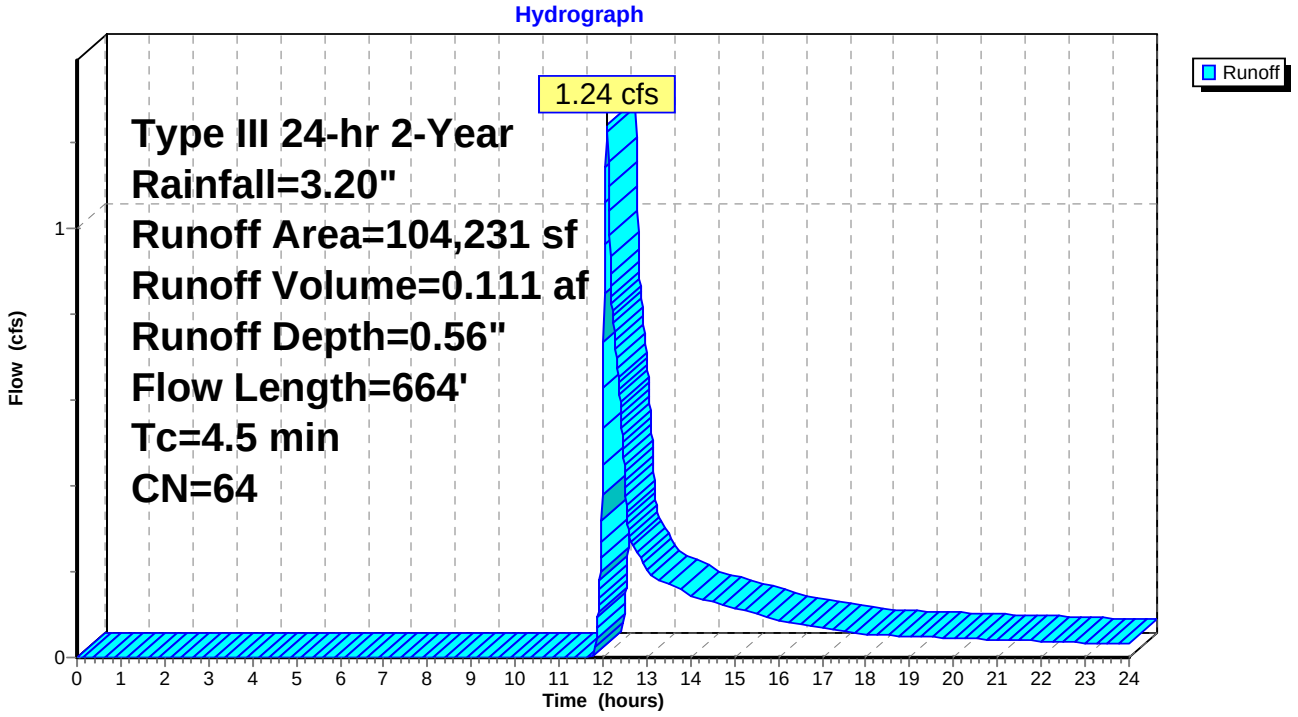
Runoff = 1.24 cfs @ 12.09 hrs, Volume= 0.111 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
59,058	39	>75% Grass cover, Good, HSG A
44,169	98	Paved parking & roofs
1,004	76	Gravel roads, HSG A
104,231	64	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	57	0.0010	0.4		**Sheet Flow, Pavement** Smooth surfaces n= 0.011 P2= 3.50"
0.6	183	0.0080	5.1	6.26	**Circular Channel (pipe), 15" HDPE** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	56	0.0050	4.0	4.95	**Circular Channel (pipe), 15" Pipe** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
1.3	336	0.0167	4.4	36.40	**Channel Flow, Dry Swale** Area= 8.2 sf Perim= 14.2' r= 0.58' n= 0.030
0.0	32	0.0630	16.2	28.56	**Circular Channel (pipe), 18" HDPE** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
4.5	664	Total			

Subcatchment 2S: Homarc - Proposed Drainage Area



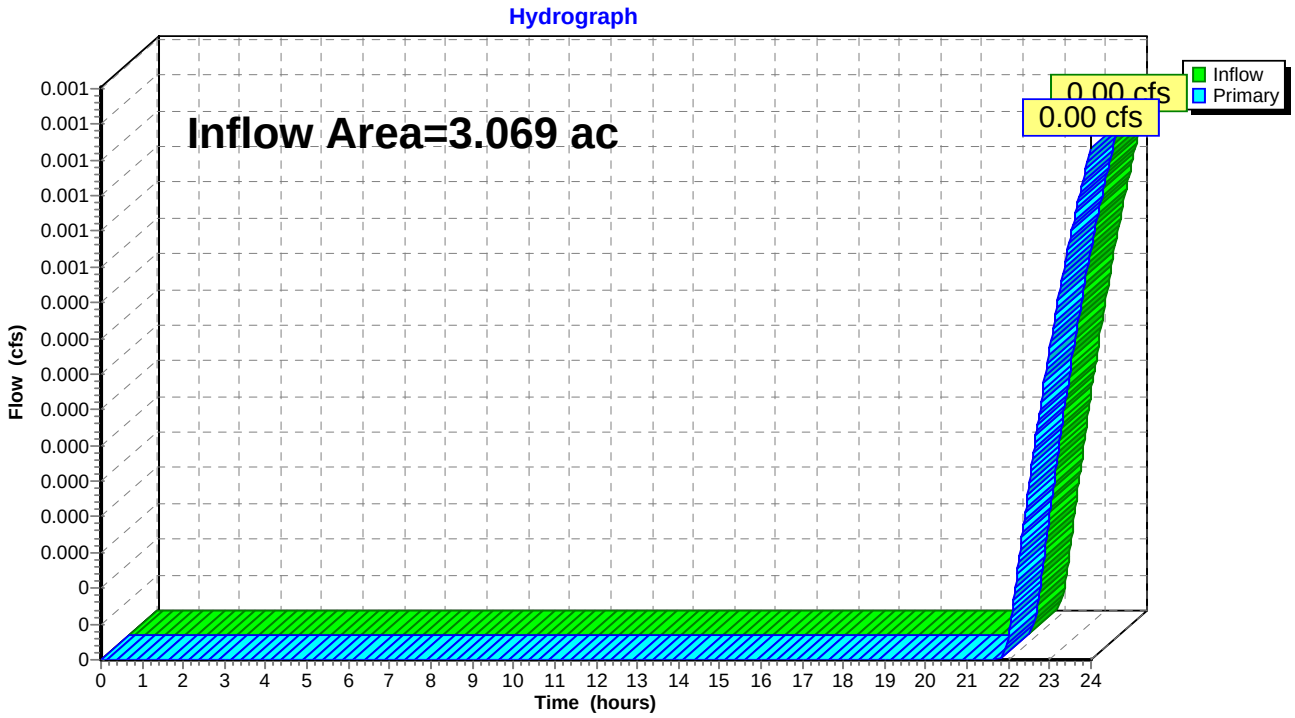
Pond 1P: Design Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.069 ac, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Pond 1P: Design Point 1



Pond 2P: Design Point 1

Inflow Area =	2.393 ac,	Inflow Depth =	0.56"	for	2-Year event
Inflow =	1.24 cfs @	12.09 hrs,	Volume=	0.111 af	
Outflow =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af,	Atten= 100%, Lag= 0.0 min
Primary =	0.00 cfs @	0.00 hrs,	Volume=	0.000 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 566.22' @ 24.00 hrs Surf.Area= 2,980 sf Storage= 4,849 cf
Flood Elev= 570.00' Surf.Area= 7,304 sf Storage= 24,116 cf
Plug-Flow detention time= (not calculated)
Center-of-Mass det. time= (not calculated)

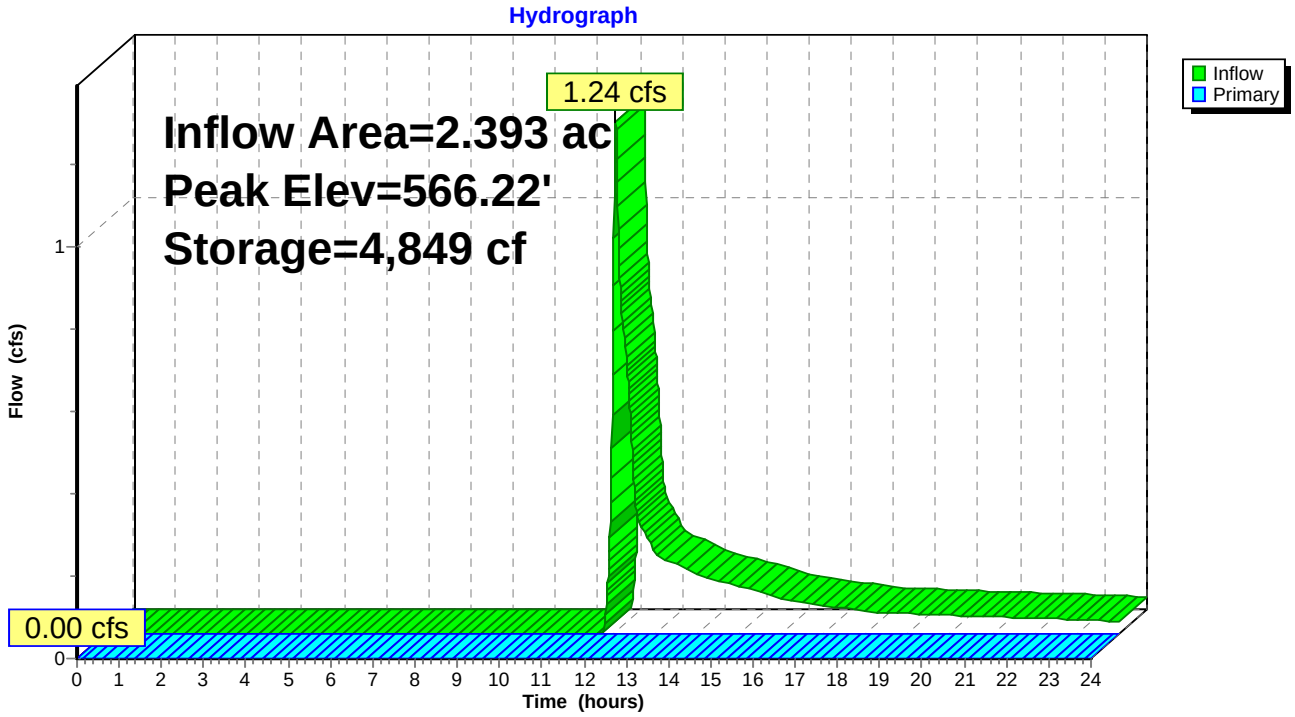
#	Invert	Avail.Storage	Storage Description
1	563.00'	24,116 cf	**Custom Stage Data (Irregular)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
563.00	405	120.5	0	0	405
564.00	926	184.8	648	648	1,975
565.00	1,702	254.5	1,294	1,942	4,421
566.00	2,722	316.9	2,192	4,134	7,273
567.00	3,914	327.8	3,300	7,434	7,918
568.00	4,983	353.6	4,438	11,872	9,358
569.00	6,119	380.0	5,541	17,413	10,942
570.00	7,304	398.8	6,703	24,116	12,171

#	Routing	Invert	Outlet Devices
1	Primary	566.16'	**15.0" x 66.0' long Culvert** Ke= 0.900
			Outlet Invert= 565.50' S= 0.0100 '/' n= 0.012 Cc= 0.900
2	Device 1	567.84'	**4.0" Vert. Orifice/Grate** C= 0.600
3	Device 2	568.50'	**15.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=563.00' (Free Discharge)
└─**1=Culvert** (Controls 0.00 cfs)
  └─**2=Orifice/Grate** (Controls 0.00 cfs)
    └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: Design Point 1



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Homarc - Existing Drainage Area Runoff Area=133,672 sf Runoff Depth=0.31"
Flow Length=569' Tc=16.2 min CN=39 Runoff=0.26 cfs 0.079 af

Subcatchment 2S: Homarc - Proposed Drainage Area Runoff Area=104,231 sf Runoff Depth=1.91"
Flow Length=664' Tc=4.5 min CN=64 Runoff=5.45 cfs 0.381 af

Pond 1P: Design Point 1 Inflow=0.26 cfs 0.079 af
Primary=0.26 cfs 0.079 af

Pond 2P: Design Point 1 Peak Elev=568.64' Storage=15,399 cf Inflow=5.45 cfs 0.381 af
Outflow=0.09 cfs 0.028 af

Total Runoff Area = 5.462 ac Runoff Volume = 0.460 af Average Runoff Depth = 1.01"

Subcatchment 1S: Homarc - Existing Drainage Area

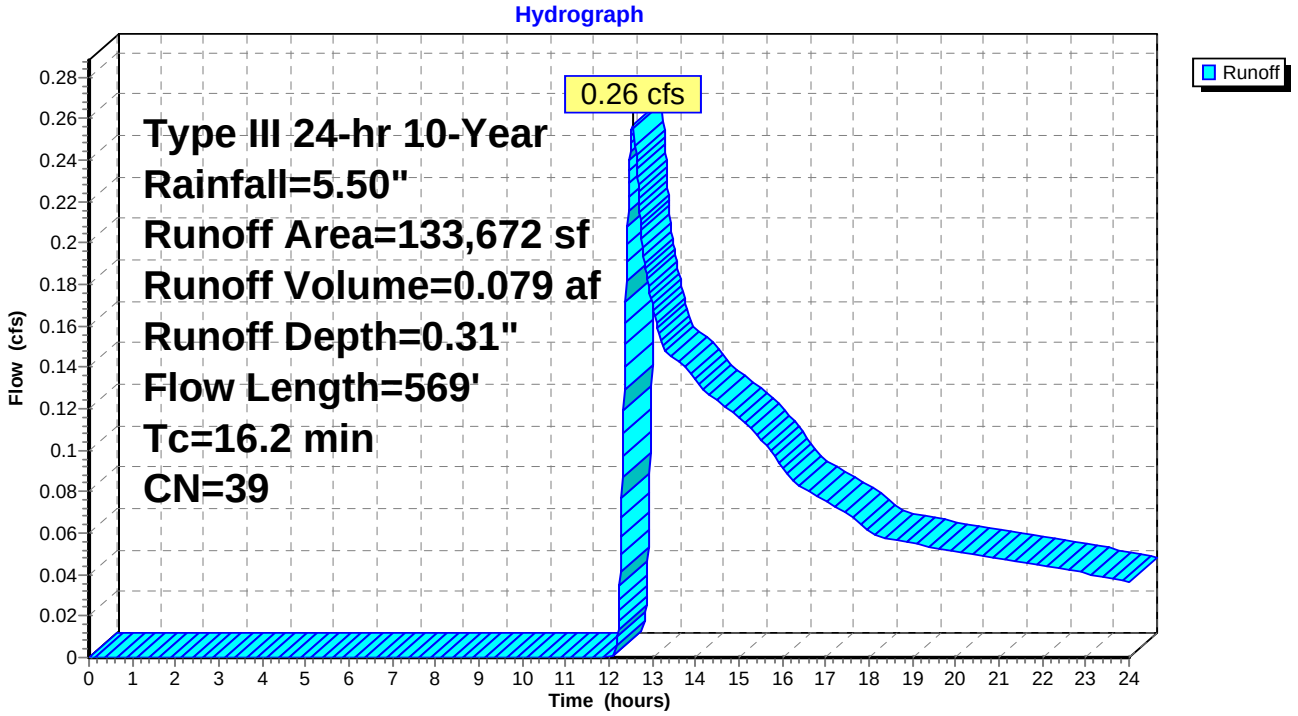
Runoff = 0.26 cfs @ 12.55 hrs, Volume= 0.079 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.50"

Area (sf)	CN	Description
133,672	39	Pasture/grassland/range, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0295	0.2		**Sheet Flow, Sheet Flow Range** Range n= 0.130 P2= 3.50"
9.0	469	0.0300	0.9		**Shallow Concentrated Flow, Shallow - Range** Woodland Kv= 5.0 fps
16.2	569	Total			

Subcatchment 1S: Homarc - Existing Drainage Area



Subcatchment 2S: Homarc - Proposed Drainage Area

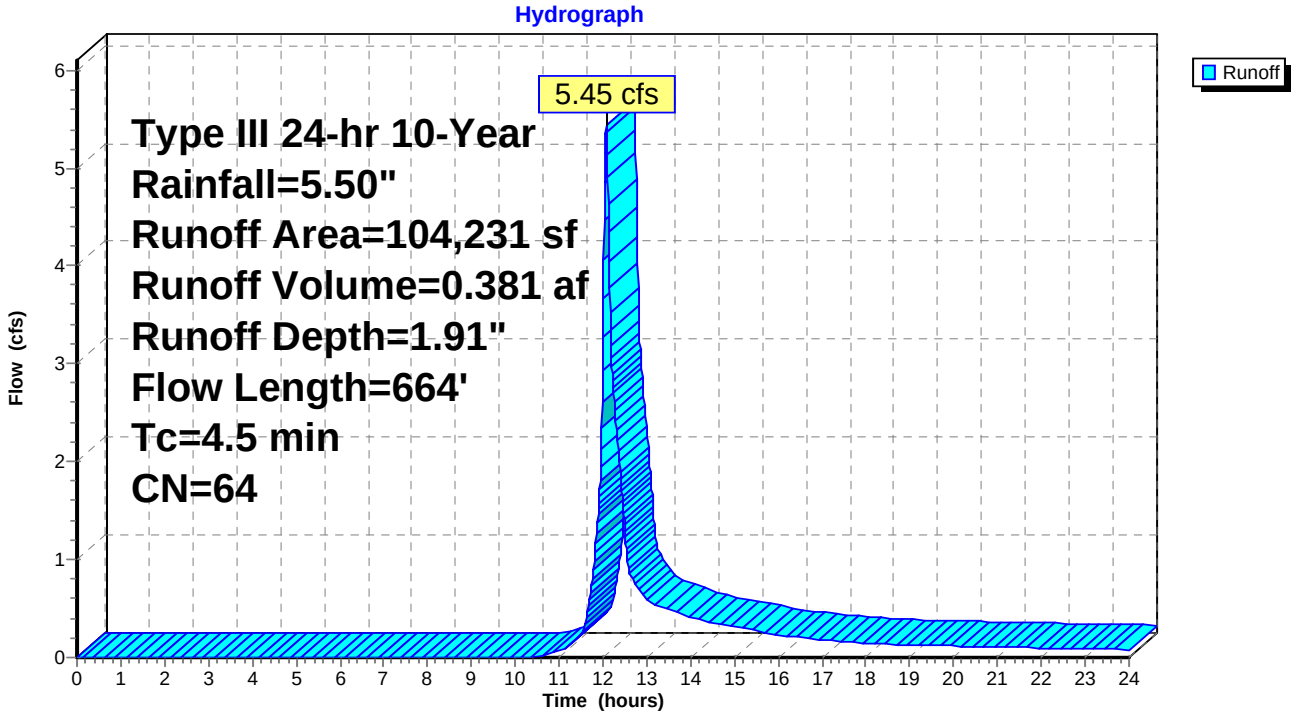
Runoff = 5.45 cfs @ 12.07 hrs, Volume= 0.381 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.50"

Area (sf)	CN	Description
59,058	39	>75% Grass cover, Good, HSG A
44,169	98	Paved parking & roofs
1,004	76	Gravel roads, HSG A
104,231	64	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	57	0.0010	0.4		**Sheet Flow, Pavement** Smooth surfaces n= 0.011 P2= 3.50"
0.6	183	0.0080	5.1	6.26	**Circular Channel (pipe), 15" HDPE** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	56	0.0050	4.0	4.95	**Circular Channel (pipe), 15" Pipe** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
1.3	336	0.0167	4.4	36.40	**Channel Flow, Dry Swale** Area= 8.2 sf Perim= 14.2' r= 0.58' n= 0.030
0.0	32	0.0630	16.2	28.56	**Circular Channel (pipe), 18" HDPE** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
4.5	664	Total			

Subcatchment 2S: Homarc - Proposed Drainage Area



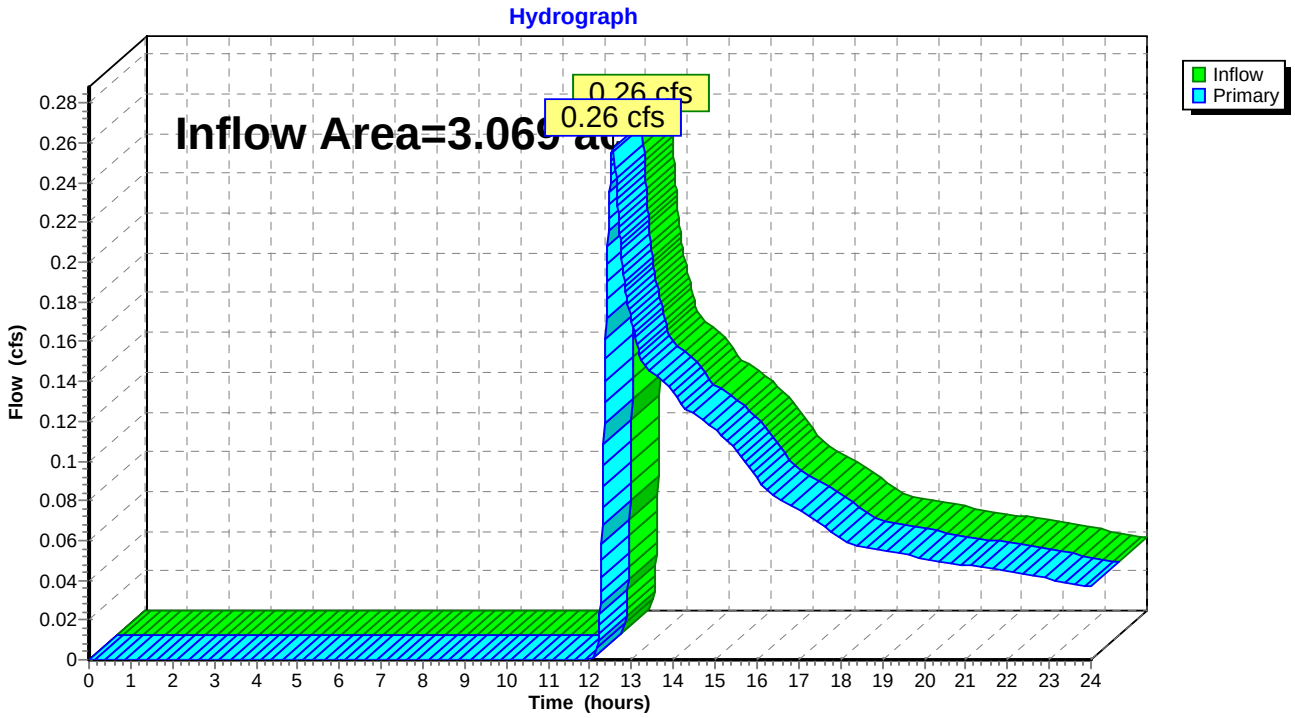
Pond 1P: Design Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.069 ac, Inflow Depth = 0.31" for 10-Year event
Inflow = 0.26 cfs @ 12.55 hrs, Volume= 0.079 af
Primary = 0.26 cfs @ 12.55 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Pond 1P: Design Point 1



Pond 2P: Design Point 1

Inflow Area =	2.393 ac,	Inflow Depth =	1.91"	for	10-Year event
Inflow =	5.45 cfs @	12.07 hrs,	Volume=	0.381 af	
Outflow =	0.09 cfs @	22.60 hrs,	Volume=	0.028 af,	Atten= 98%, Lag= 631.7 min
Primary =	0.09 cfs @	22.60 hrs,	Volume=	0.028 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 568.64' @ 22.60 hrs Surf.Area= 5,706 sf Storage= 15,399 cf
Flood Elev= 570.00' Surf.Area= 7,304 sf Storage= 24,116 cf
Plug-Flow detention time= 624.9 min calculated for 0.028 af (7% of inflow)
Center-of-Mass det. time= 465.7 min (1,321.3 - 855.7)

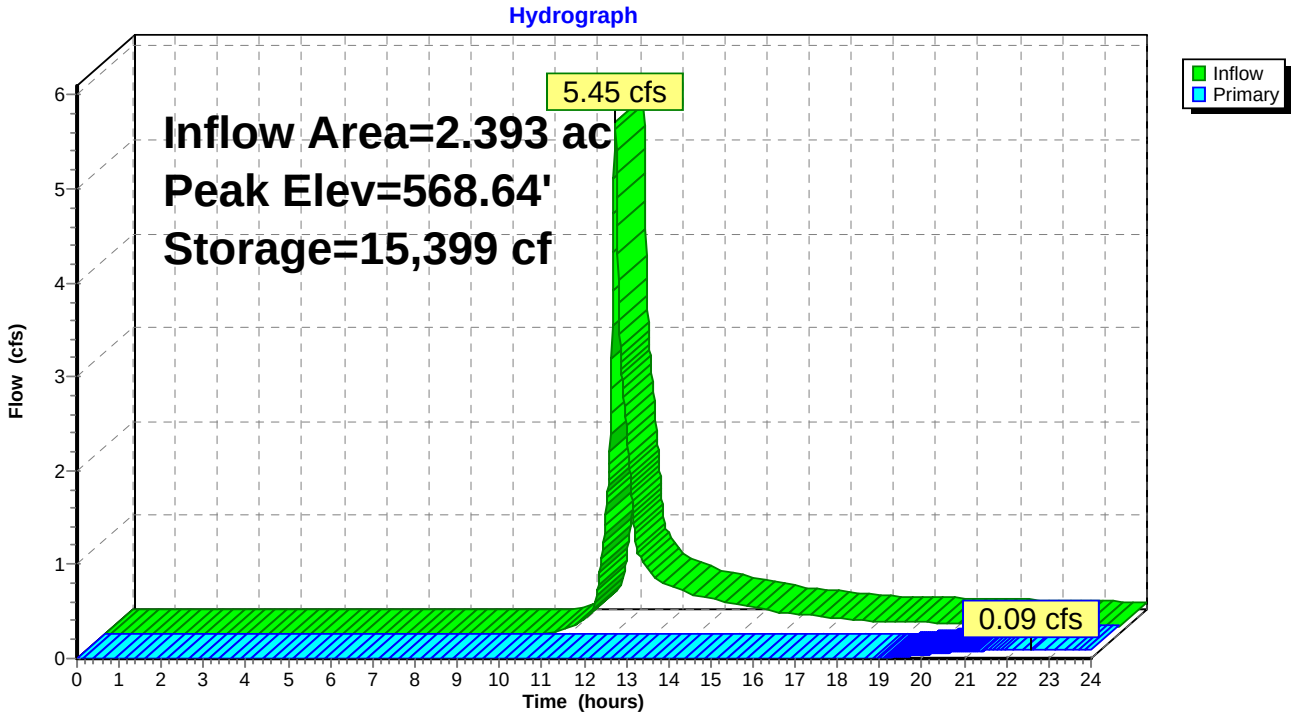
#	Invert	Avail.Storage	Storage Description
1	563.00'	24,116 cf	**Custom Stage Data (Irregular)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
563.00	405	120.5	0	0	405
564.00	926	184.8	648	648	1,975
565.00	1,702	254.5	1,294	1,942	4,421
566.00	2,722	316.9	2,192	4,134	7,273
567.00	3,914	327.8	3,300	7,434	7,918
568.00	4,983	353.6	4,438	11,872	9,358
569.00	6,119	380.0	5,541	17,413	10,942
570.00	7,304	398.8	6,703	24,116	12,171

#	Routing	Invert	Outlet Devices
1	Primary	566.16'	**15.0" x 66.0' long Culvert** Ke= 0.900
			Outlet Invert= 565.50' S= 0.0100 '/' n= 0.012 Cc= 0.900
2	Device 1	567.84'	**4.0" Vert. Orifice/Grate** C= 0.600
3	Device 2	568.50'	**15.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.09 cfs @ 22.60 hrs HW=568.64' (Free Discharge)
└─**1=Culvert** (Passes 0.09 cfs of 6.35 cfs potential flow)
  └─**2=Orifice/Grate** (Passes 0.09 cfs of 0.33 cfs potential flow)
    └─**3=Orifice/Grate** (Orifice Controls 0.09 cfs @ 1.3 fps)

Pond 2P: Design Point 1



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: Homarc - Existing Drainage Area Runoff Area=133,672 sf Runoff Depth=1.15"
Flow Length=569' Tc=16.2 min CN=39 Runoff=2.01 cfs 0.294 af

Subcatchment 2S: Homarc - Proposed Drainage Area Runoff Area=104,231 sf Runoff Depth=3.78"
Flow Length=664' Tc=4.5 min CN=64 Runoff=11.15 cfs 0.753 af

Pond 1P: Design Point 1 Inflow=2.01 cfs 0.294 af
Primary=2.01 cfs 0.294 af

Pond 2P: Design Point 1 Peak Elev=569.45' Storage=20,454 cf Inflow=11.15 cfs 0.753 af
Outflow=0.51 cfs 0.394 af

Total Runoff Area = 5.462 ac Runoff Volume = 1.047 af Average Runoff Depth = 2.30"

Subcatchment 1S: Homarc - Existing Drainage Area

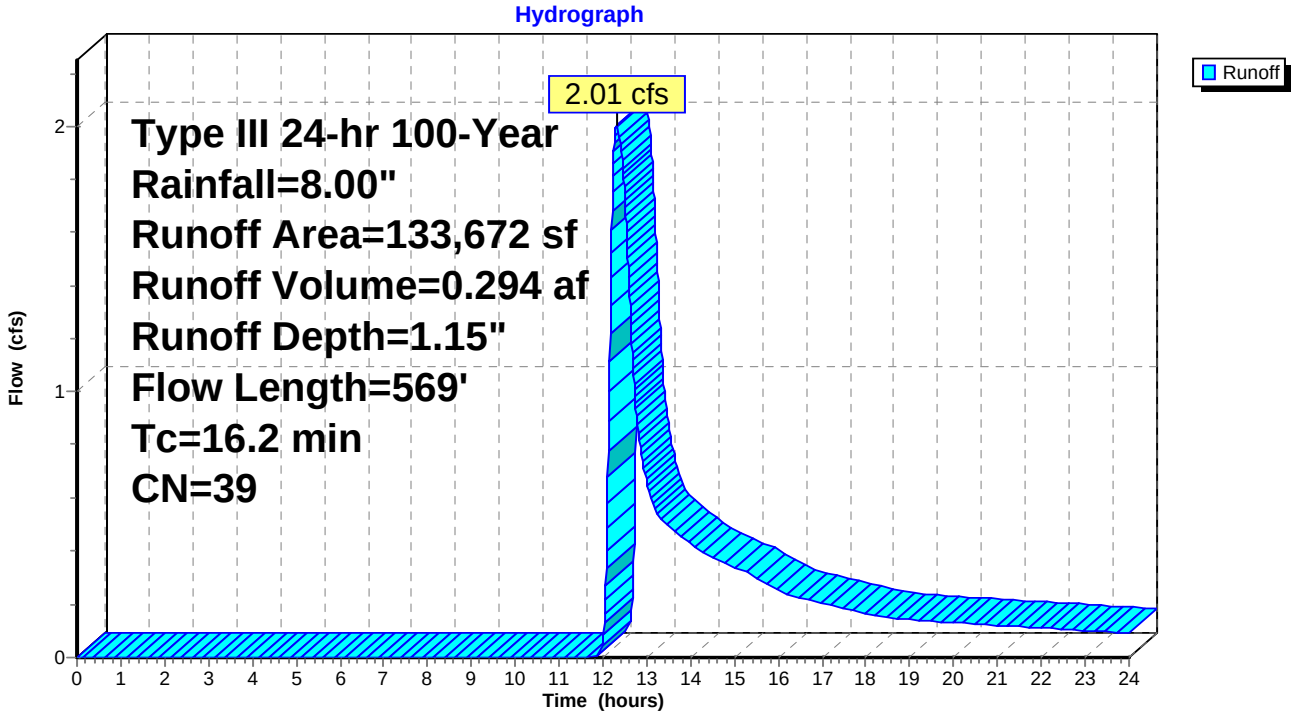
Runoff = 2.01 cfs @ 12.31 hrs, Volume= 0.294 af, Depth= 1.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.00"

Area (sf)	CN	Description
133,672	39	Pasture/grassland/range, Good, HSG A

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0295	0.2		**Sheet Flow, Sheet Flow Range** Range n= 0.130 P2= 3.50"
9.0	469	0.0300	0.9		**Shallow Concentrated Flow, Shallow - Range** Woodland Kv= 5.0 fps
16.2	569	Total			

Subcatchment 1S: Homarc - Existing Drainage Area



Subcatchment 2S: Homarc - Proposed Drainage Area

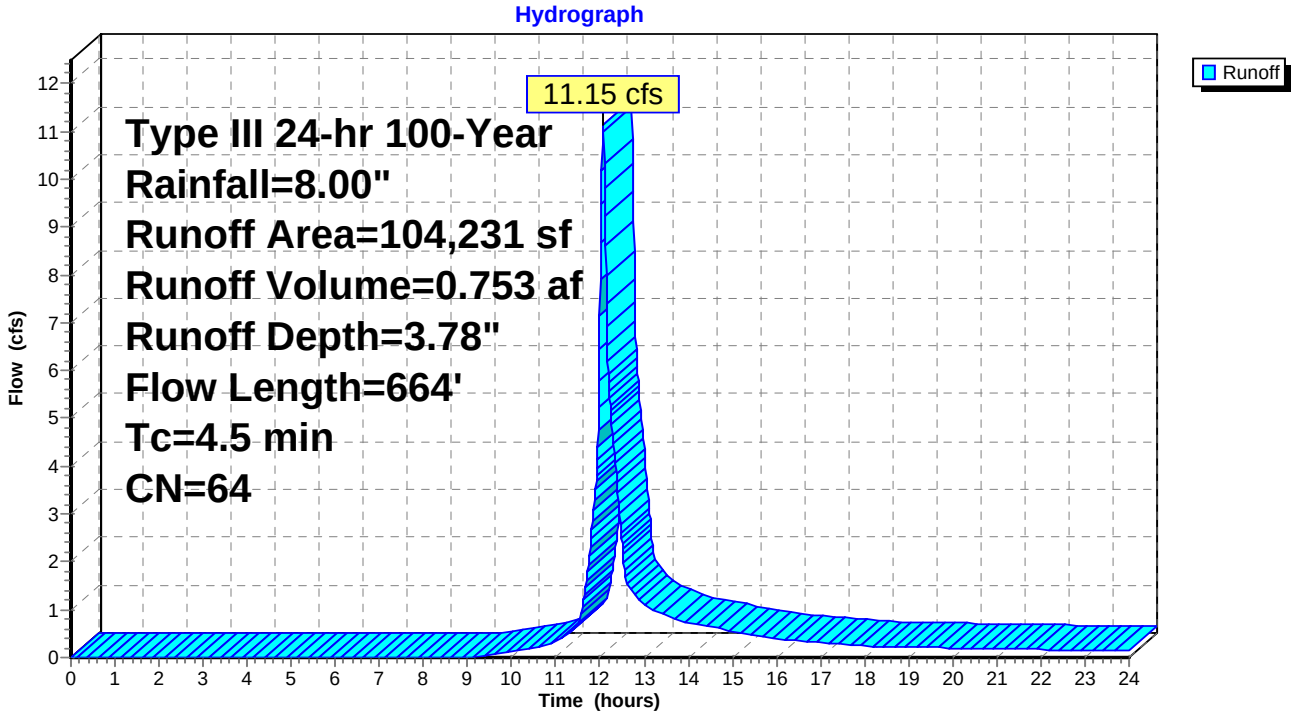
Runoff = 11.15 cfs @ 12.07 hrs, Volume= 0.753 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.00"

Area (sf)	CN	Description
59,058	39	>75% Grass cover, Good, HSG A
44,169	98	Paved parking & roofs
1,004	76	Gravel roads, HSG A
104,231	64	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.4	57	0.0010	0.4		**Sheet Flow, Pavement** Smooth surfaces n= 0.011 P2= 3.50"
0.6	183	0.0080	5.1	6.26	**Circular Channel (pipe), 15" HDPE** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.2	56	0.0050	4.0	4.95	**Circular Channel (pipe), 15" Pipe** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
1.3	336	0.0167	4.4	36.40	**Channel Flow, Dry Swale** Area= 8.2 sf Perim= 14.2' r= 0.58' n= 0.030
0.0	32	0.0630	16.2	28.56	**Circular Channel (pipe), 18" HDPE** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
4.5	664	Total			

Subcatchment 2S: Homarc - Proposed Drainage Area



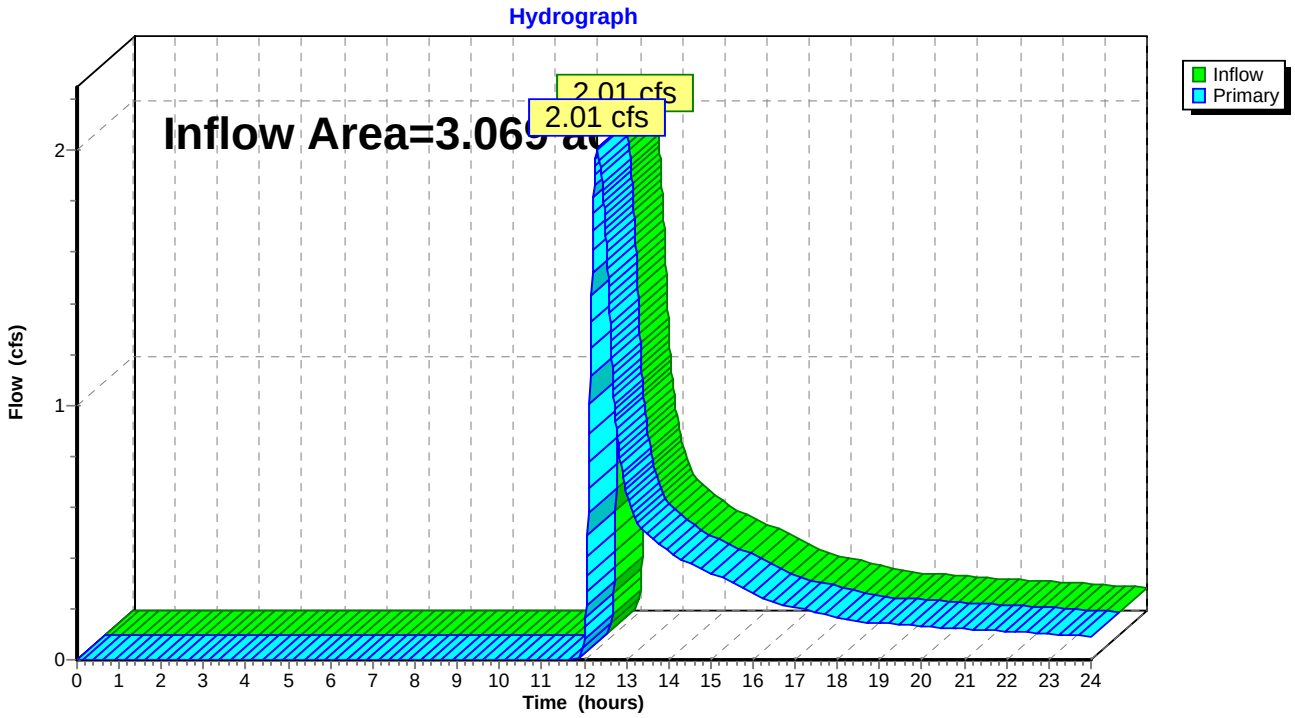
Pond 1P: Design Point 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area =	3.069 ac,	Inflow Depth =	1.15"	for	100-Year event
Inflow =	2.01 cfs @	12.31 hrs,	Volume=	0.294 af	
Primary =	2.01 cfs @	12.31 hrs,	Volume=	0.294 af,	Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Pond 1P: Design Point 1



Total WQv Calculation

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?..... No						
Design Point:	1					
P=	1.20	*inch*				
Breakdown of Subcatchments						
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Description**
1	1.32	0.133	10%	0.20	1,154	Dry Swale
2	0.60	0.60	100%	0.95	2,467	Cistern
3	0.07	0.07	100%	0.95	289	Porous Pavement
4	1.00	0.83	84%	0.80	3,487	Porous Pavement
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	2.99	1.63	55%	0.20	**7,397**	**Subtotal 1**
Total	2.99	1.63	55%	0.20	**7,397**	**Initial WQv**

Dry Swale

Design Point:	1						
Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
1	1.32	0.133	10.06%	0.20	1,154	1.20	Dry Swale
Reduced by Disconnection of		0.00	10.06%	0.20	1,154	<<WQv after adjusting for Disconnected Rooftops	
Pretreatment Provided					**Pretreatment Technique**		
Pretreatment (10% of WQv)			115	*ft^3*			
Calculate Available Storage Capacity							
Bottom Width	8	*ft*	Design with a bottom width no greater than eight feet to avoid potential gullying and channel braiding, but no less than two feet				
Side Slope (X:1)	4		Channels shall be designed with moderate side slopes (flatter than 3:1) for most conditions. 2:1 is the				
Longitudinal Slope	2%		*Maximum longitudinal slope shall be 4%*				
Flow Depth	0.75	*ft*	*Maximum ponding depth of one foot at the mid-point of the*				
Top Width	12.5	*ft*					
Area	8.25	*sf*					
Minimum Length	126	*ft*					
Actual Length	336	*ft*					
End Point Depth check	18"		*A maximum depth of 18" at the end point of the channel (for storage of the WQv)*				
Storage Capacity	2,887	*ft^3*					
Soil Group (HSG)			A				
Runoff Reduction							
Is the Dry Swale contributing flow to another practice?			No	Select Practice			
RRv	**1,155**	***ft^3***	**Runnoff Reduction equals 40% in HSG A and B and 20% in HSG C and D up to the WQv**				
Volume Treated	0	*ft^3*	This is the difference between the WQv calculated and the runoff reduction achieved in the swale				
Volume Directed	0	*ft^3*	This volume is directed another practice				
Volume √	*Okay*		Check to be sure that channel is long enough to store WQv				

Cistern

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Precipitation *(in)*	Description
2	0.60	0.60	1.00	0.95	2466.87	1.20	Cistern

Calculate Required Cistern/Rainbarrel Volume

Required Cistern Storage Volume	18,501	*Gallons*	*(WQv*7.5)*
Number of Cisterns Proposed	1		
Volume per Unit	20,000	*Gallons*	
Actual Cistern Storage Volume	20,000	*Gallons*	
Water Use Plan?	Yes		

Determine Runoff Reduction

Runoff Reduction	**2467**	***ft^3***	

Porous Pavement

Ap = Vw / (n x dt)

Ap	Required porous pavement surface area	*ft2*	
Vw	Design Volume	*ft3*	
n	porosity of gravel bed/resevoir		*Assume .4 for gravel*
dt	depth of gravel bed/resevoir		

Design Point:	**1**						
Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
3	0.07	0.07	1.00	0.95	289.37	1.20	
Enter Soil Infiltration Rate							
Soil Inflitration Rate		1.50	*in/hour*				
Calculate Required Surface Area							
Design Volume		Vw	289	*ft^3*			
Are underdrains being used?			Yes	-	Only Gravel Bed Depth below underdrain can be considered.		
Porosity of Gravel Bed		*n*	0.40	-			
Gravel Bed Depth		dt	1.00	*ft*	Must be the depth below the underdrain.		
Required Surface Area		Ap	723	*sf*			
Surface Area Provided			3,046	*sf*	*Dimensions of pavement can be provided here*		
Storage Volume Provided			1,218	*ft^3*			
Determine the Runoff Reduction							
RRv	**289**	***ft^3***					

Porous Pavement

Ap = Vw / (n x dt)

Ap	Required porous pavement surface area	*ft2*	
Vw	Design Volume	*ft3*	
n	porosity of gravel bed/resevoir		*Assume .4 for gravel*
dt	depth of gravel bed/resevoir		

Design Point:	**1**						
Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
4	1.00	0.83	0.84	0.80	3486.57	1.20	Porous Pavement
Enter Soil Infiltration Rate							
Soil Inflitration Rate		1.50	*in/hour*				
Calculate Required Surface Area							
Design Volume		Vw	3,487	*ft^3*			
Are underdrains being used?			Yes	-	Only Gravel Bed Depth below underdrain can be considered.		
Porosity of Gravel Bed		*n*	0.40	-			
Gravel Bed Depth		dt	4.00	*ft*	Must be the depth below the underdrain.		
Required Surface Area		Ap	2,179	*sf*			
Surface Area Provided			2,180	*sf*	*Dimensions of pavement can be provided here*		
Storage Volume Provided			3,488	*ft^3*			
Determine the Runoff Reduction							
RRv	**3,487**	***ft^3***					

Pond 2P: Design Point 1

Inflow Area =	2.393 ac,	Inflow Depth =	3.78"	for	100-Year event
Inflow =	11.15 cfs @	12.07 hrs,	Volume=	0.753 af	
Outflow =	0.51 cfs @	15.32 hrs,	Volume=	0.394 af,	Atten= 95%, Lag= 195.1 min
Primary =	0.51 cfs @	15.32 hrs,	Volume=	0.394 af	

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 569.45' @ 15.32 hrs Surf.Area= 6,657 sf Storage= 20,454 cf
Flood Elev= 570.00' Surf.Area= 7,304 sf Storage= 24,116 cf
Plug-Flow detention time= 332.9 min calculated for 0.394 af (52% of inflow)
Center-of-Mass det. time= 215.3 min (1,050.8 - 835.5)

#	Invert	Avail.Storage	Storage Description
1	563.00'	24,116 cf	**Custom Stage Data (Irregular)** Listed below

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
563.00	405	120.5	0	0	405
564.00	926	184.8	648	648	1,975
565.00	1,702	254.5	1,294	1,942	4,421
566.00	2,722	316.9	2,192	4,134	7,273
567.00	3,914	327.8	3,300	7,434	7,918
568.00	4,983	353.6	4,438	11,872	9,358
569.00	6,119	380.0	5,541	17,413	10,942
570.00	7,304	398.8	6,703	24,116	12,171

#	Routing	Invert	Outlet Devices
1	Primary	566.16'	**15.0" x 66.0' long Culvert** Ke= 0.900
			Outlet Invert= 565.50' S= 0.0100 '/' n= 0.012 Cc= 0.900
2	Device 1	567.84'	**4.0" Vert. Orifice/Grate** C= 0.600
3	Device 2	568.50'	**15.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.51 cfs @ 15.32 hrs HW=569.45' (Free Discharge)
└─**1=Culvert** (Passes 0.51 cfs of 7.62 cfs potential flow)
  └─**2=Orifice/Grate** (Orifice Controls 0.51 cfs @ 5.8 fps)
    └─**3=Orifice/Grate** (Passes 0.51 cfs of 3.34 cfs potential flow)

APPENDIX D

SOIL LOGS

TEST PIT RESULTS

Test Pit 1 – Witnessed by Tectonic Engineering Consultants
Date: 10-26-07

DEPTH	DESCRIPTION
0"-12"	Topsoil
12"-26"	Sandy Clay Loam with Gravel
26"-72"	Clay Loam with Gravel, Cobbles and Fine Sand

DEPTH OF PIT: 72"
GROUNDWATER: SEEPAGE AT 66"
BEDROCK: NONE ENCOUNTERED
MOTTLING: 26"

TEST PIT RESULTS

Test Pit 2 – Witnessed by Tectonic Engineering Consultants
Date: 10-26-07

DEPTH	DESCRIPTION
0"-14"	Topsoil
14"-36"	Sandy Clay Loam with Gravel and Clay
36"-64"	Clay Loam with Gravel, Cobbles

DEPTH OF PIT: 64"
GROUNDWATER: SEEPAGE AT 60"
BEDROCK: NONE ENCOUNTERED
MOTTLING: 36"

PERCOLATION TEST RESULTS

Perc. Test No. 1, 24" Deep – Witnessed by Tectonic Engineering Consultants
Date: 10-26-07

RUN	START	FINISH	ELAPSED TIME
1	12:01:26	12:10:10	8:44
2	12:12:50	12:27:35	14:45
3	12:28:40	12:45:45	17:05
4	12:47:20	1:05:05	17:45
STABILIZED PERCOLATION RATE: 17.8 MINUTES/INCH			

PERCOLATION TEST RESULTS

Perc. Test No. 2, 24" Deep – Witnessed by Tectonic Engineering Consultants
Date: 10-26-07

RUN	START	FINISH	ELAPSED TIME
1	12:08:24	12:10:40	2:16
2	12:11:47	12:15:26	3:39
3	12:16:22	12:20:13	3:51
STABILIZED PERCOLATION RATE: 3.9 MINUTES/INCH			

APPENDIX E

TRAFFIC IMPACT STUDY

JOHN COLLINS ENGINEERS, P.C. TRAFFIC • TRANSPORTATION ENGINEERS

11 BRADHURST AVENUE • HAWTHORNE, N.Y. • 10532 • (914) 347-7500 • FAX (914) 347-7266

October 5, 2007

Mr. Marc Appel
Homarc Land, LLC
45 Ronald Regan Boulevard
Warwick, NY 10990

RE: Homarc Property
NYS Route 94
Town of Warwick, NY

Dear Mr. Appel:

As requested, John Collins Engineers, P.C. has completed our traffic analysis for your proposed approximately 20,000 square foot commercial development on the site located on the west side of NYS Route 94, southwest of the Fairgrounds site (see Figure No. 1). The following sections describe the various tasks completed as part of our evaluation

A. 2007 EXISTING TRAFFIC VOLUMES (Figures No. 2 and 3)

In order to document the 2007 Existing Traffic Volumes in the vicinity of the site, reference was made to previous traffic counts collected at the intersections of NYS Route 94 and Warwick Shoprite Center and NYS Route 94 and C.R. 21. In addition, supplemental counts were conducted on September 18 and 19, 2007, and compared with the previous count data to identify the Existing Traffic Volumes for these intersections, as well as along the frontage of the site.

The resulting 2007 Existing Traffic Volumes for the weekday AM and PM peak hours (7:45–8:45 AM, 5:00–6:00 PM) are shown on Figures No. 2 and 3, respectively.

B. 2010 NO-BUILD TRAFFIC VOLUMES (Figures No. 4 through 9)

The Existing Traffic Volumes were projected to a future design year using a background growth factor. This growth factor of 2% per year was developed based on a review of historical data. The 2007 Existing Traffic Volumes were increased by a factor of 1.06 to

estimate the 2010 Projected Traffic Volumes, which are shown on Figures No. 4 and 5 for the weekday AM and PM peak hours, respectively. In addition, traffic from the other planned developments in the area were estimated and added to the projected traffic volumes to obtain the 2010 No-Build Traffic Volumes. The other development traffic volumes are shown on Figures No. 6 and 7 and the 2010 No-Build Traffic Volumes are shown on Figures No. 8 and 9.

C. SITE-GENERATED TRAFFIC VOLUMES (Table No. 1)

The expected site-generated traffic volumes to be generated by the proposed commercial development were estimated based on information published by the Institute of Transportation Engineers (ITE) as contained in their report entitled Trip Generation, 7th edition, 2003. Based on this information, the trip estimates summarized in Table No. 1 were computed. Note that for the retail portion of the development, a significant portion of the trips are expected to be captured as "pass-by or diverted link" trips which are already present on the roadway system and for this size development as much as 40 to 50% are already present on the roadway. No credit was taken in the analysis presented herein. Based on this information, the development is expected to generate up to a total of approximately 55 vehicles during the AM and a total of approximately 139 vehicles during the PM peak hours.

D. ARRIVAL AND DEPARTURE DISTRIBUTIONS (Figures No. 10 and 11)

It was necessary to develop and arrival and departure distribution to assign the site-generated traffic volumes to the roadway system. Based upon a review of the existing traffic volumes, as well as distribution patterns in the area, an arrival and departure distribution was developed for the site. The distribution patterns used are shown on Figures No. 10 and 11, respectively.

E. 2010 BUILD TRAFFIC VOLUMES (Figures No. 12, 13, 14 and 15)

The site-generated traffic volumes summarized in Table No. 1 were added to the roadway system, based on the arrival and departure distributions. The resulting site-generated traffic volumes, for each of the peak hours, are shown on Figures No. 12 and 13. These volumes were added to the 2010 No-Build Traffic Volumes to obtain the 2010 Build Traffic Volumes, which are shown on Figures No. 14 and 15.

F. DESCRIPTION OF ANALYSIS PROCEDURES

In order to determine existing and future traffic operating conditions at the study area intersections, it was necessary to perform capacity analyses. The following is a brief description of the analysis method utilized in this report:

- Signalized Intersection Capacity Analysis

  The capacity analysis for a signalized intersection was performed in accordance with the procedures described in the 2000 Highway Capacity Manual, published by the Transportation Research Board. The terminology used in identifying traffic flow conditions is Levels of Service. A Level of Service "A" represents the best condition and a Level of Service "F" represents the worst condition. A Level of Service "C" is generally used as a design standard while a Level of Service "D" is acceptable during peak periods. A Level of Service "E" represents an operation near capacity. In order to identify an intersection's Level of Service, the average amount of vehicle delay is computed for each approach to the intersection as well as for the overall intersection.

- Unsignalized Intersection Capacity Analysis

  The unsignalized intersection capacity analysis method utilized in this report was also performed in accordance with the procedures described in the 2000 Highway Capacity Manual. The procedure is based on total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. The average total delay for any particular critical movement is a function of the service rate or capacity of the approach and the degree of saturation. In order to identify the Level of Service, the average amount of vehicle delay is computed for each critical movement to the intersection.

Additional information concerning signalized and unsignalized Levels of Service can be found in Appendix "D" of this report.

G. RESULTS OF ANALYSIS

Utilizing the procedures outlined above, a capacity analysis was conducted at the intersections of C.R. 21 and NYS Route 94; NYS Route 94 and Warwick Shoprite Center driveway and NYS Route 94 and the proposed access driveway. Table No. 2 provides a summary of the levels of service for each of the intersections for the Existing, No-Build and Build conditions.

The capacity analysis of the proposed access indicates that the traffic exiting the site will experience a Level of Service "D" or better during peak periods. This considers the provision of a new traffic signal at the NYS Route 94 and Fairgrounds intersection and the resulting increase in gaps in the traffic stream along NYS Route 94.

The access was also reviewed relative to the need for any other improvements. Based on the analysis, it was determined that the intersection could be constructed as a standard commercial driveway with appropriate radii, and that a separate left turn lane would be required on Route 94.

H. SUMMARY AND CONCLUSIONS

In conclusion, based on the analysis contained herein, the completion of the proposed development will not result in significant negative impact on the surrounding roadway system. The provision of a separate left turn lane on Route 94 will have to be coordinated with the adjacent Fairgrounds development and with the NYSDOT as part of the Highway Work Permit process.

Respectfully submitted,
JOHN COLLINS ENGINEERS, P.C.

Philip J. Grealy, Ph.D., P.E.

JOHN COLLINS ENGINEERS, P.C. TRAFFIC • TRANSPORTATION ENGINEERS

11 BRADHURST AVENUE • HAWTHORNE, N.Y. • 10532 • (914) 347-7500 • FAX (914) 347-7266

October 5, 2007

Mr. Marc Appel
Homarc Land, LLC
45 Ronald Regan Boulevard
Warwick, NY 10990

RE: Homarc Property
NYS Route 94
Town of Warwick, NY

Dear Mr. Appel:

As requested, John Collins Engineers, P.C. has completed our traffic analysis for your proposed approximately 20,000 square foot commercial development on the site located on the west side of NYS Route 94, southwest of the Fairgrounds site (see Figure No. 1). The following sections describe the various tasks completed as part of our evaluation

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In order to document the 2007 Existing Traffic Volumes in the vicinity of the site, reference was made to previous traffic counts collected at the intersections of NYS Route 94 and Warwick Shoprite Center and NYS Route 94 and C.R. 21. In addition, supplemental counts were conducted on September 18 and 19, 2007, and compared with the previous count data to identify the Existing Traffic Volumes for these intersections, as well as along the frontage of the site.

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The site-generated traffic volumes summarized in Table No. 1 were added to the roadway system, based on the arrival and departure distributions. The resulting site-generated traffic volumes, for each of the peak hours, are shown on Figures No. 12 and 13. These volumes were added to the 2010 No-Build Traffic Volumes to obtain the 2010 Build Traffic Volumes, which are shown on Figures No. 14 and 15.

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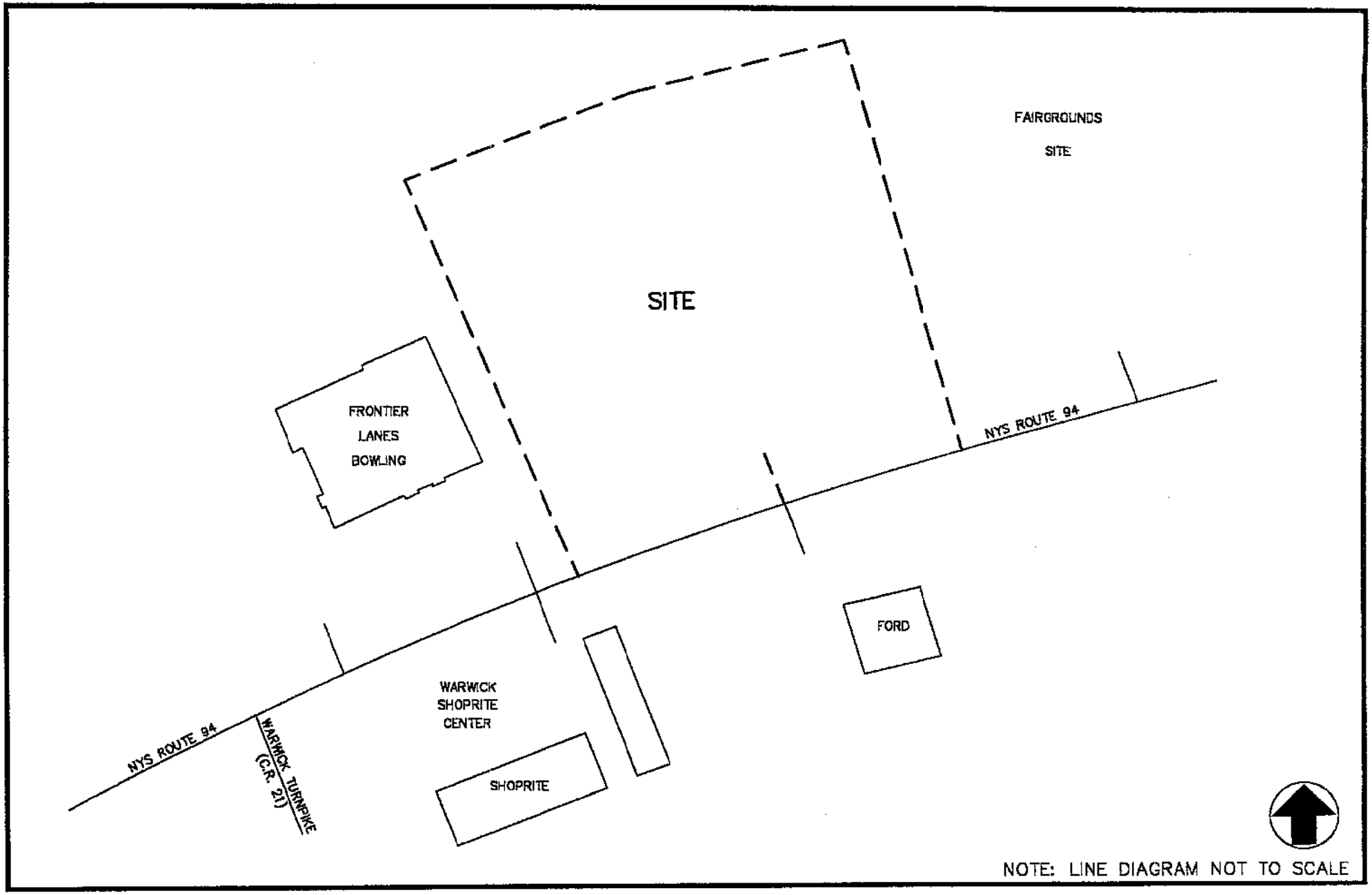
  The unsignalized intersection capacity analysis method utilized in this report was also performed in accordance with the procedures described in the 2000 Highway Capacity Manual. The procedure is based on total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. The average total delay for any particular critical movement is a function of the service rate or capacity of the approach and the degree of saturation. In order to identify the Level of Service, the average amount of vehicle delay is computed for each critical movement to the intersection.

Additional information concerning signalized and unsignalized Levels of Service can be found in Appendix "D" of this report.

APPENDIX "A"

FIGURES

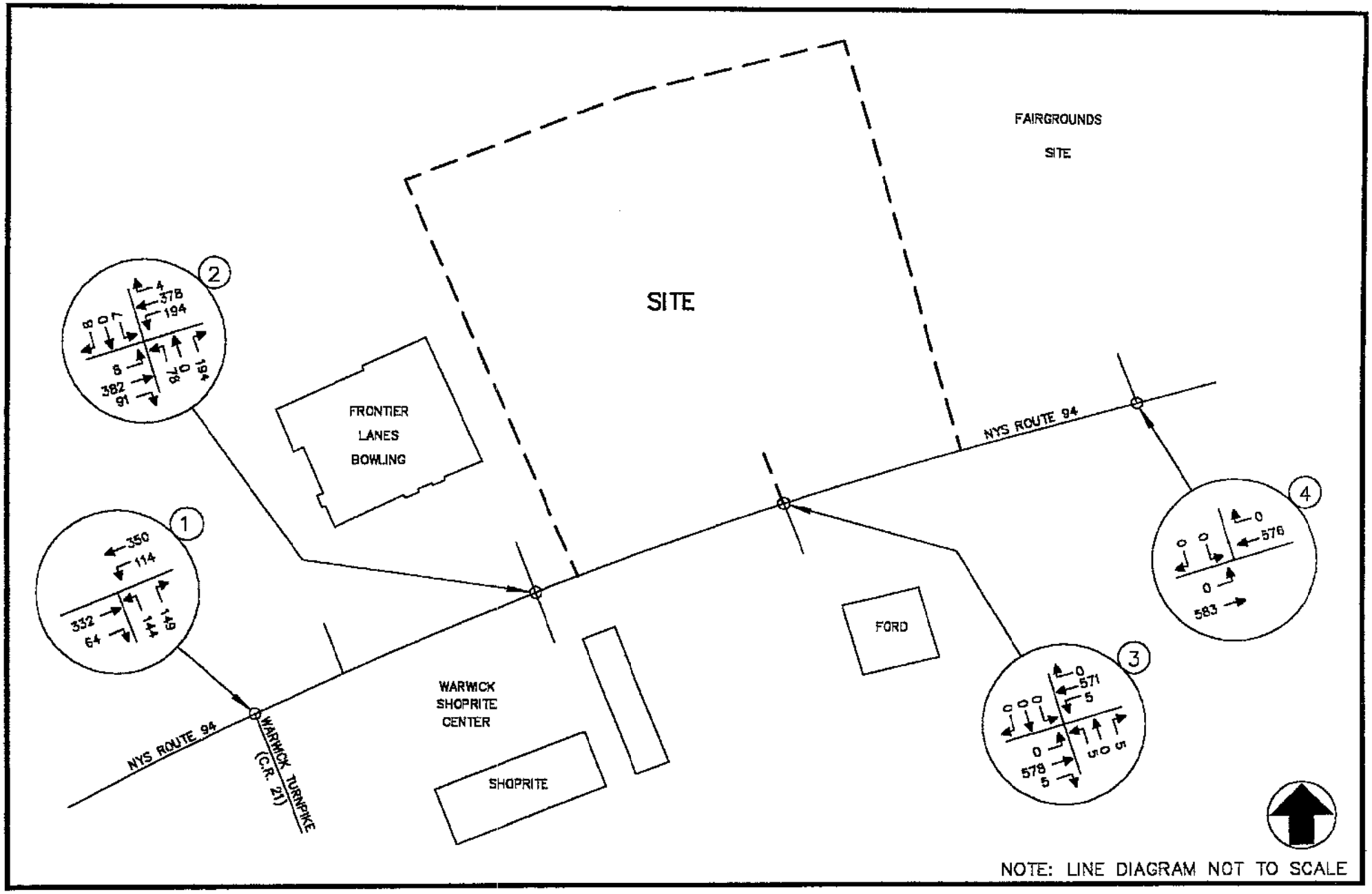


HOMARC PROPERTY
WARWICK, NEW YORK

SITE LOCATION MAP

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO. 1

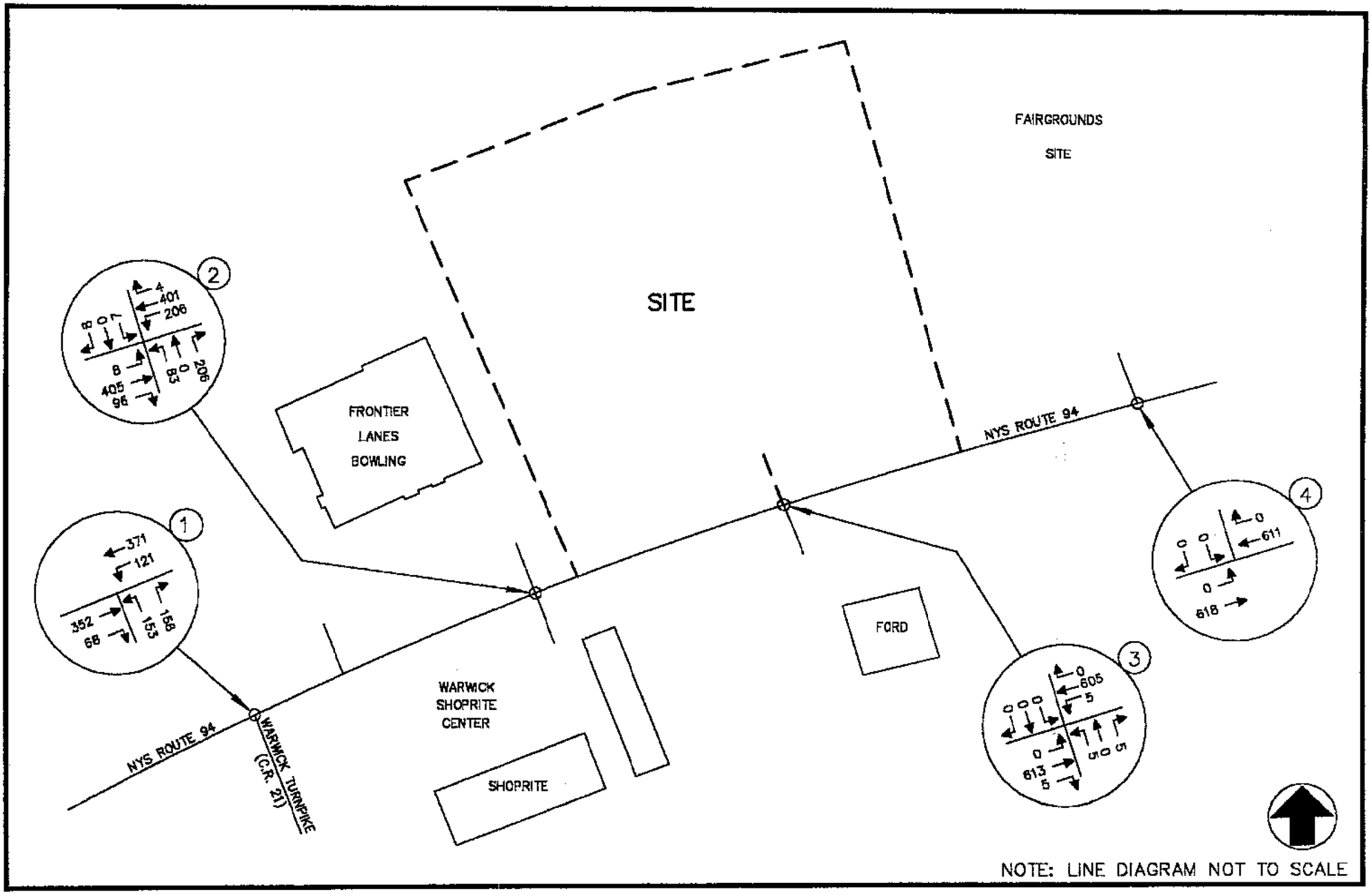


HOMARC PROPERTY
WARWICK, NEW YORK

2007 EXISTING TRAFFIC VOLUMES
WEEKDAY PEAK PM HOUR

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO. 3

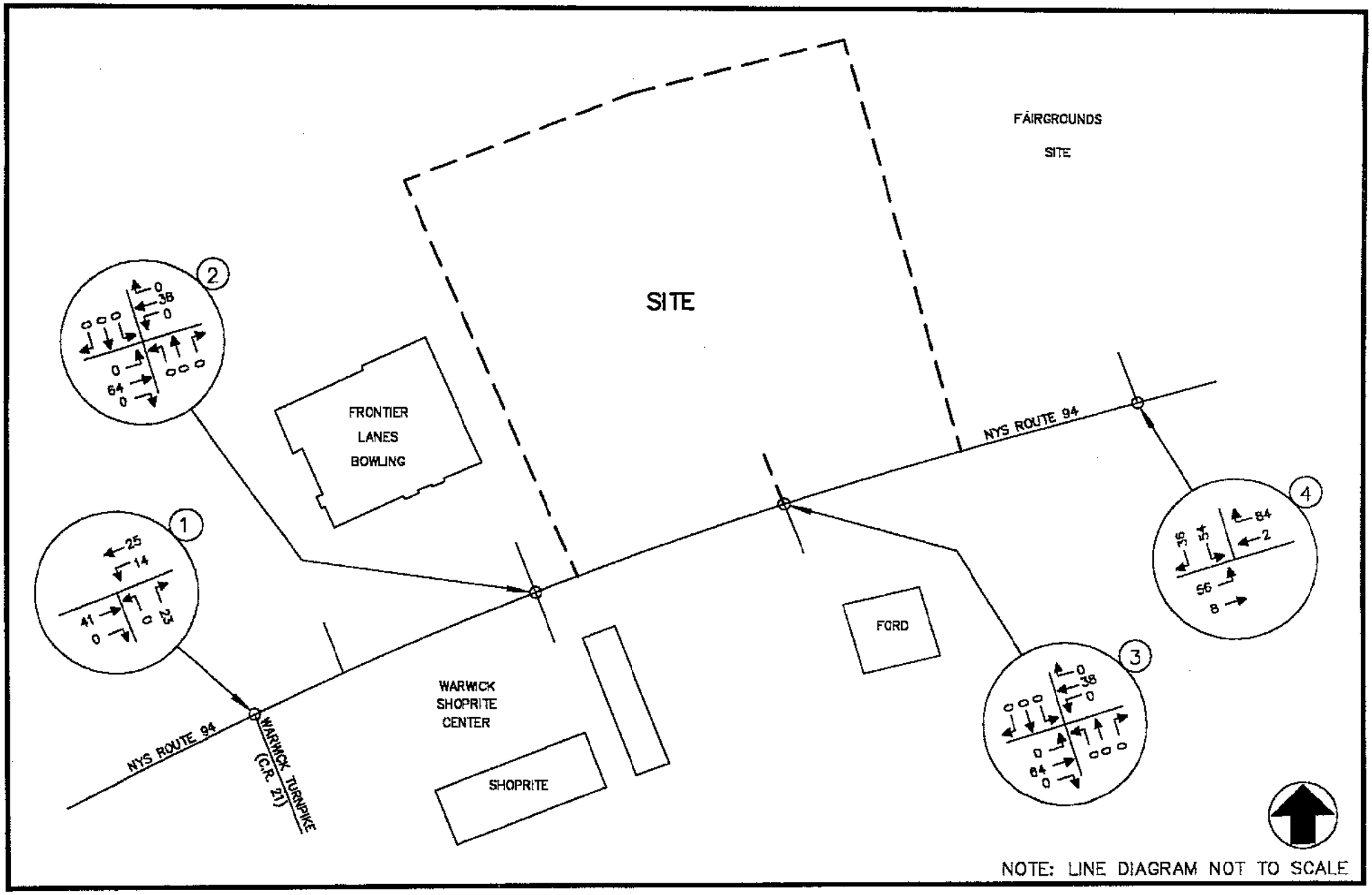


HOMARC PROPERTY
WARWICK, NEW YORK

2010 PROJECTED TRAFFIC VOLUMES
WEEKDAY PEAK PM HOUR

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO. 5

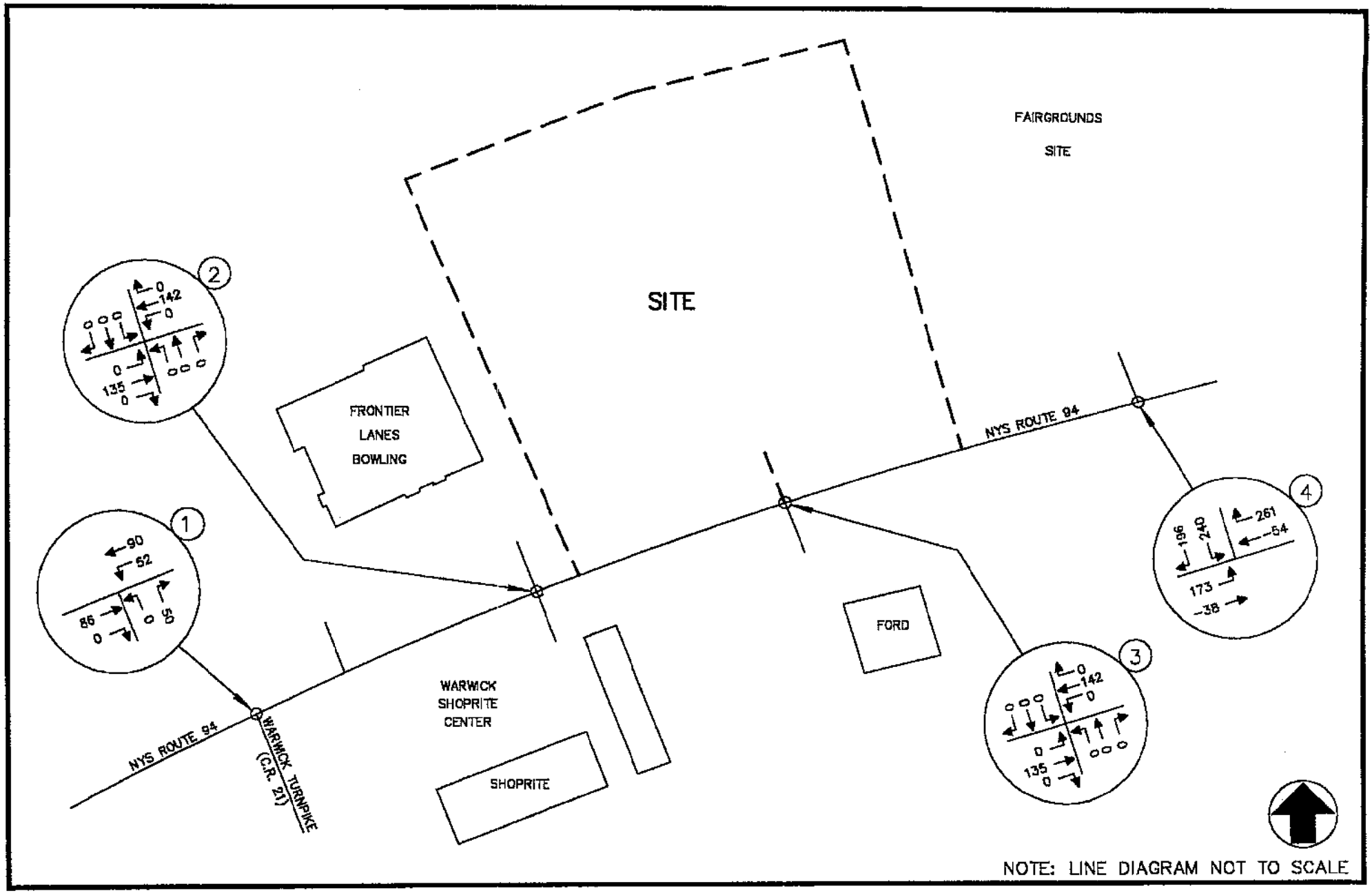


HOMARC PROPERTY
WARWICK, NEW YORK

OTHER DEVELOPMENT TRAFFIC VOLUMES
WEEKDAY PEAK AM HOUR

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO.6

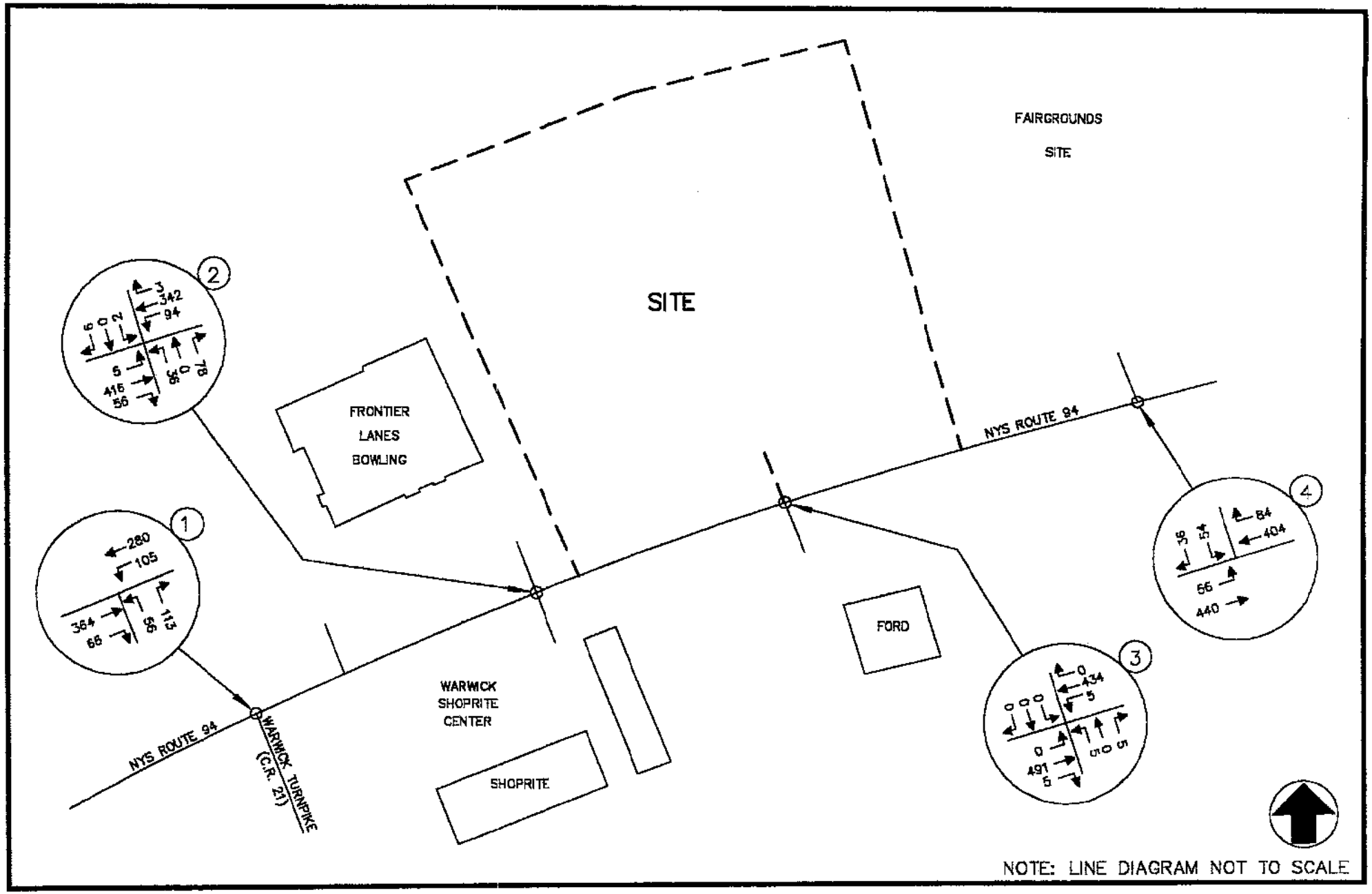


HOMARC PROPERTY
WARWICK, NEW YORK

OTHER DEVELOPMENT TRAFFIC VOLUMES
WEEKDAY PEAK PM HOUR

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO. 7

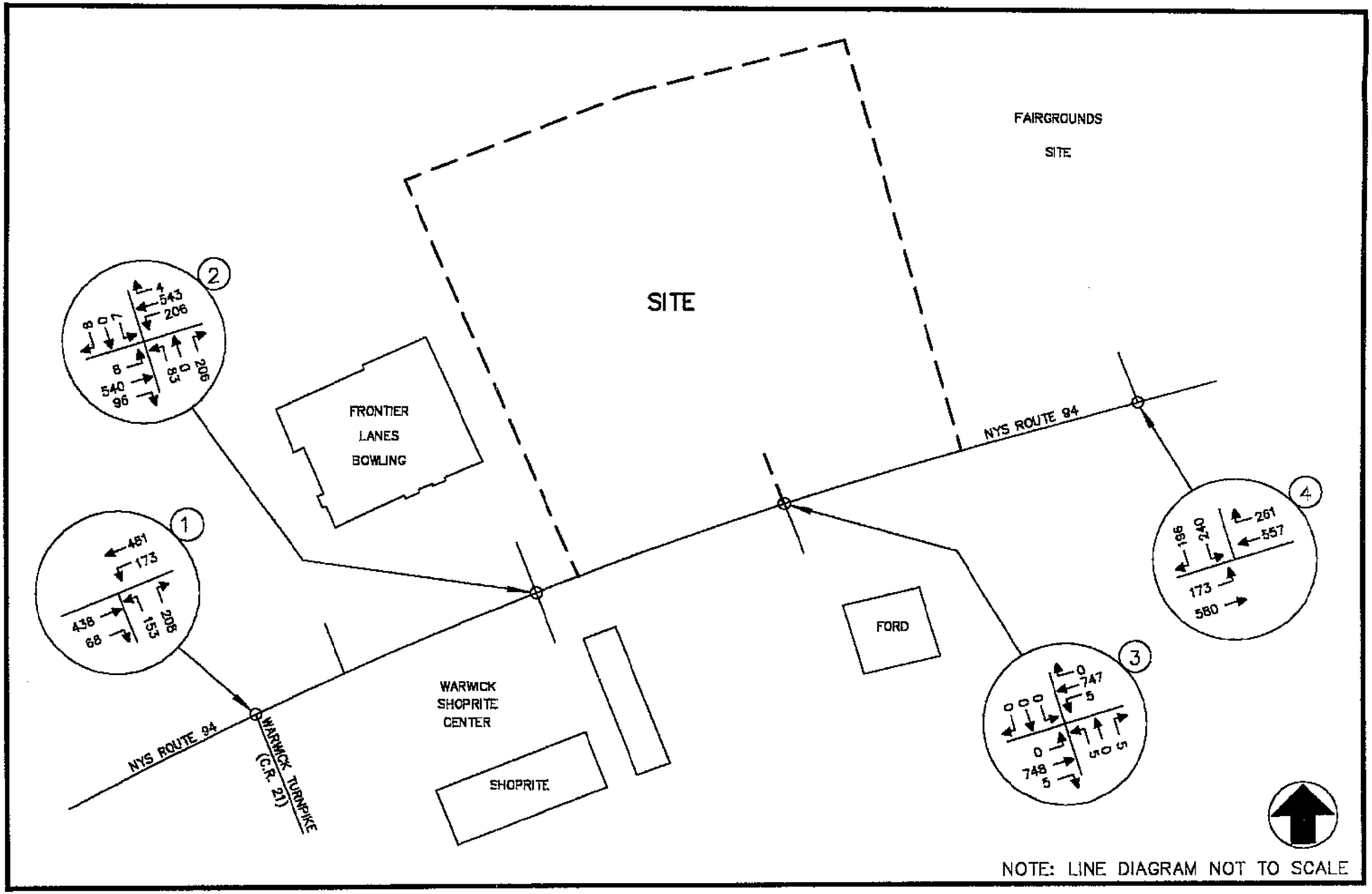


HOMARC PROPERTY
WARWICK, NEW YORK

2010 NO–BUILD TRAFFIC VOLUMES
WEEKDAY PEAK AM HOUR

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO. 8

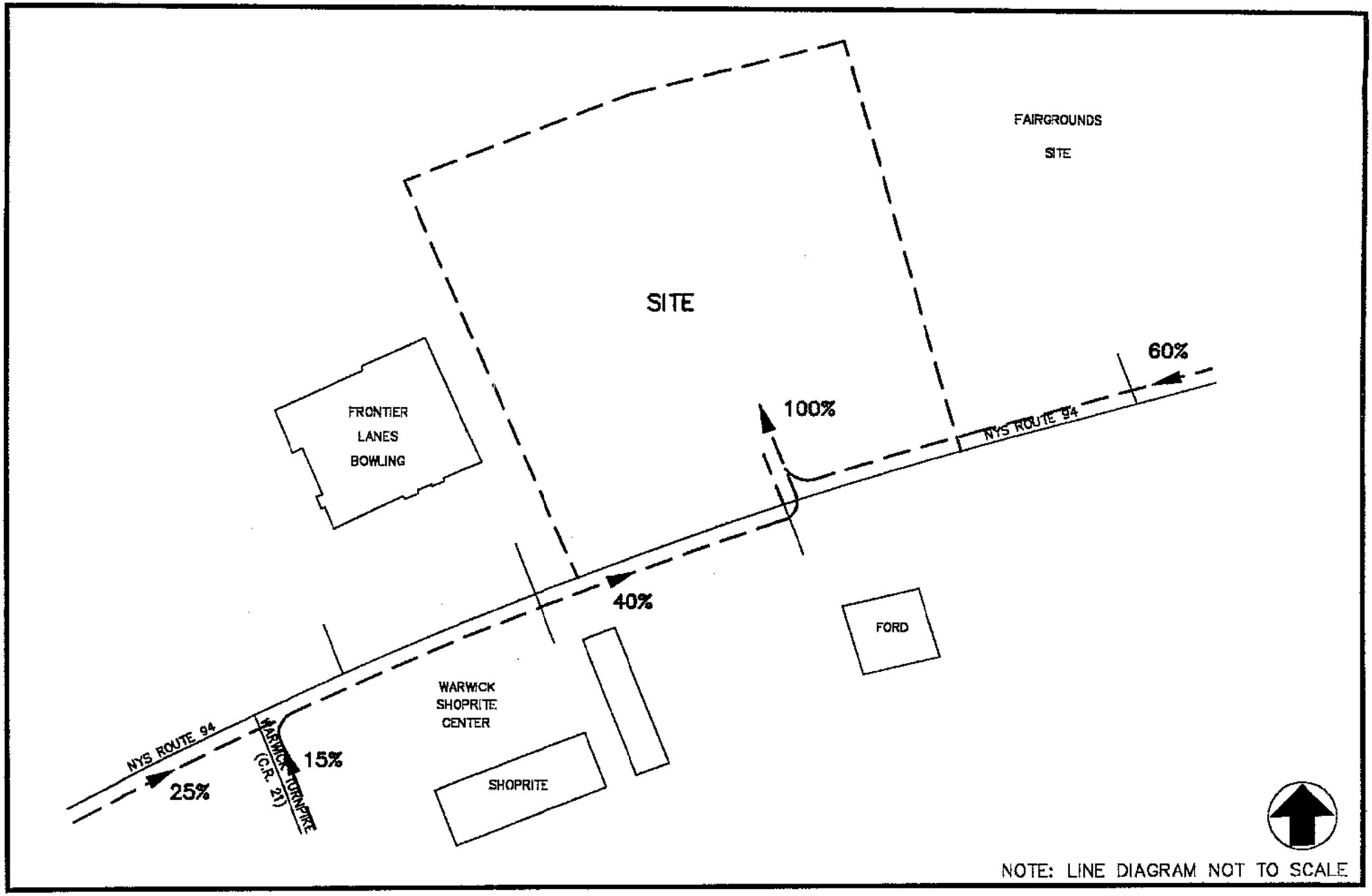


HOMARC PROPERTY
WARWICK, NEW YORK

2010 NO-BUILD TRAFFIC VOLUMES
WEEKDAY PEAK PM HOUR

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO. 9

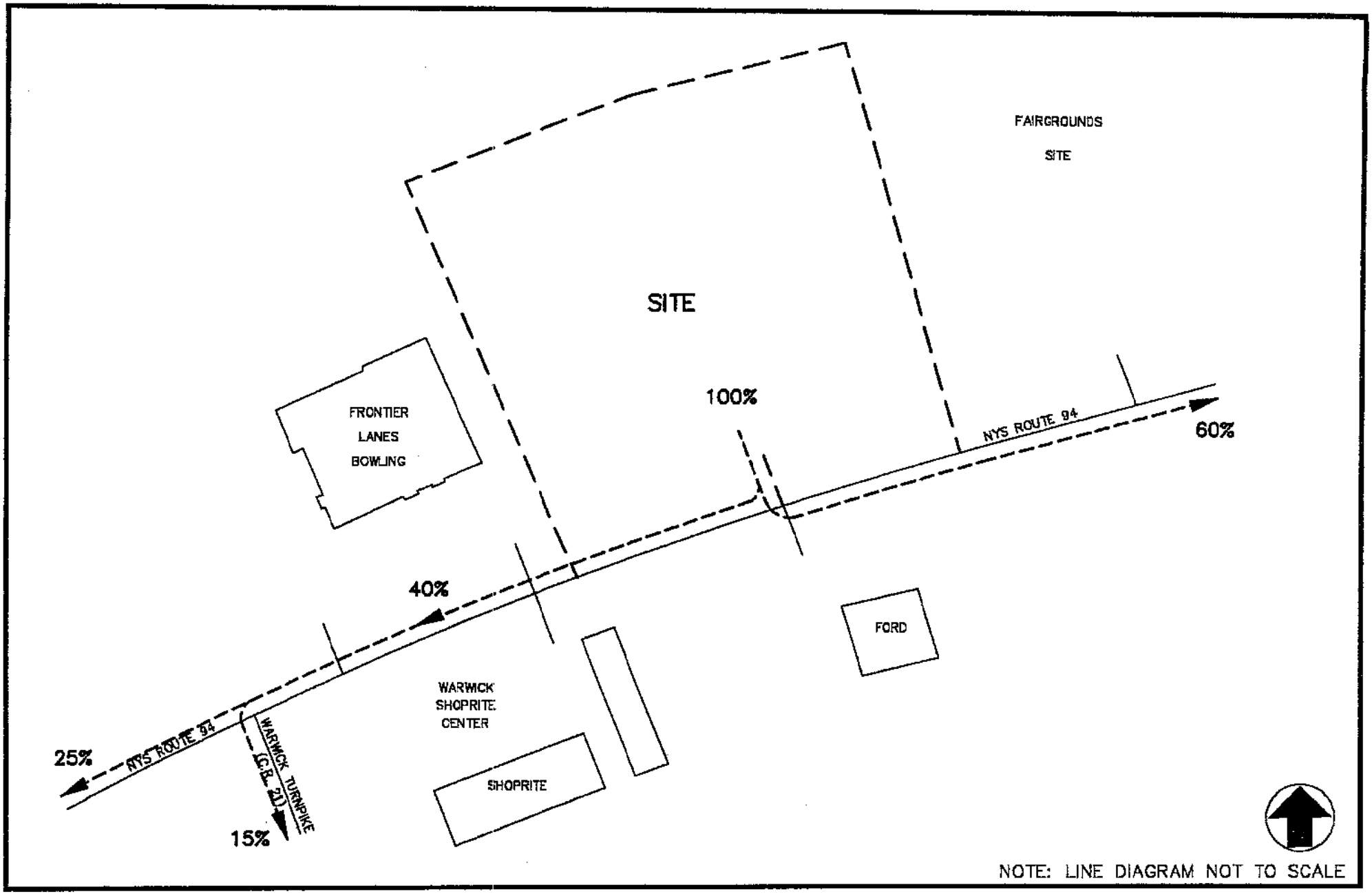


HOMARC PROPERTY
WARWICK, NEW YORK

ARRIVAL DISTRIBUTION

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO.10

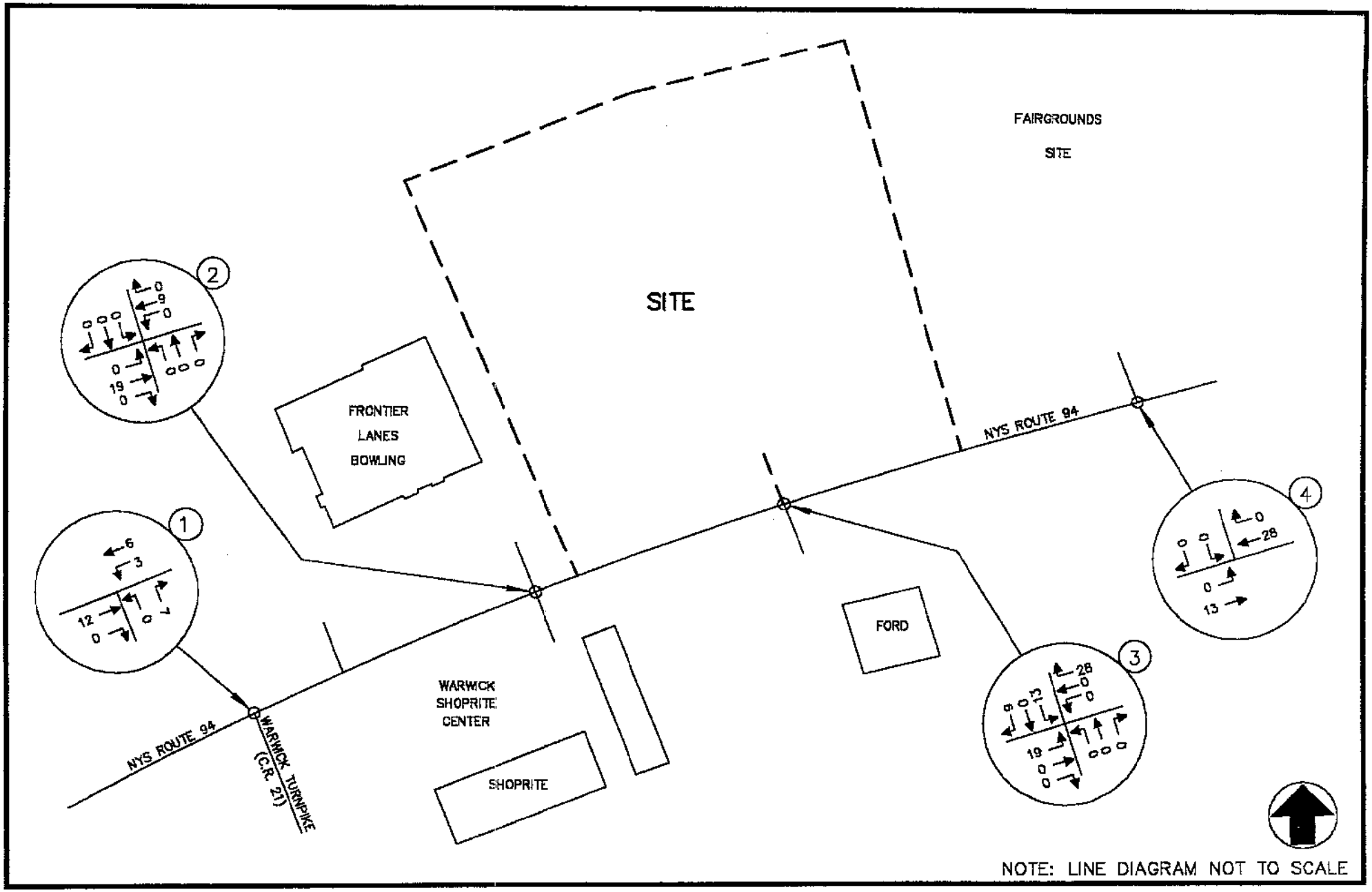


HOMARC PROPERTY
WARWICK, NEW YORK

DEPARTURE DISTRIBUTION

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO. 11

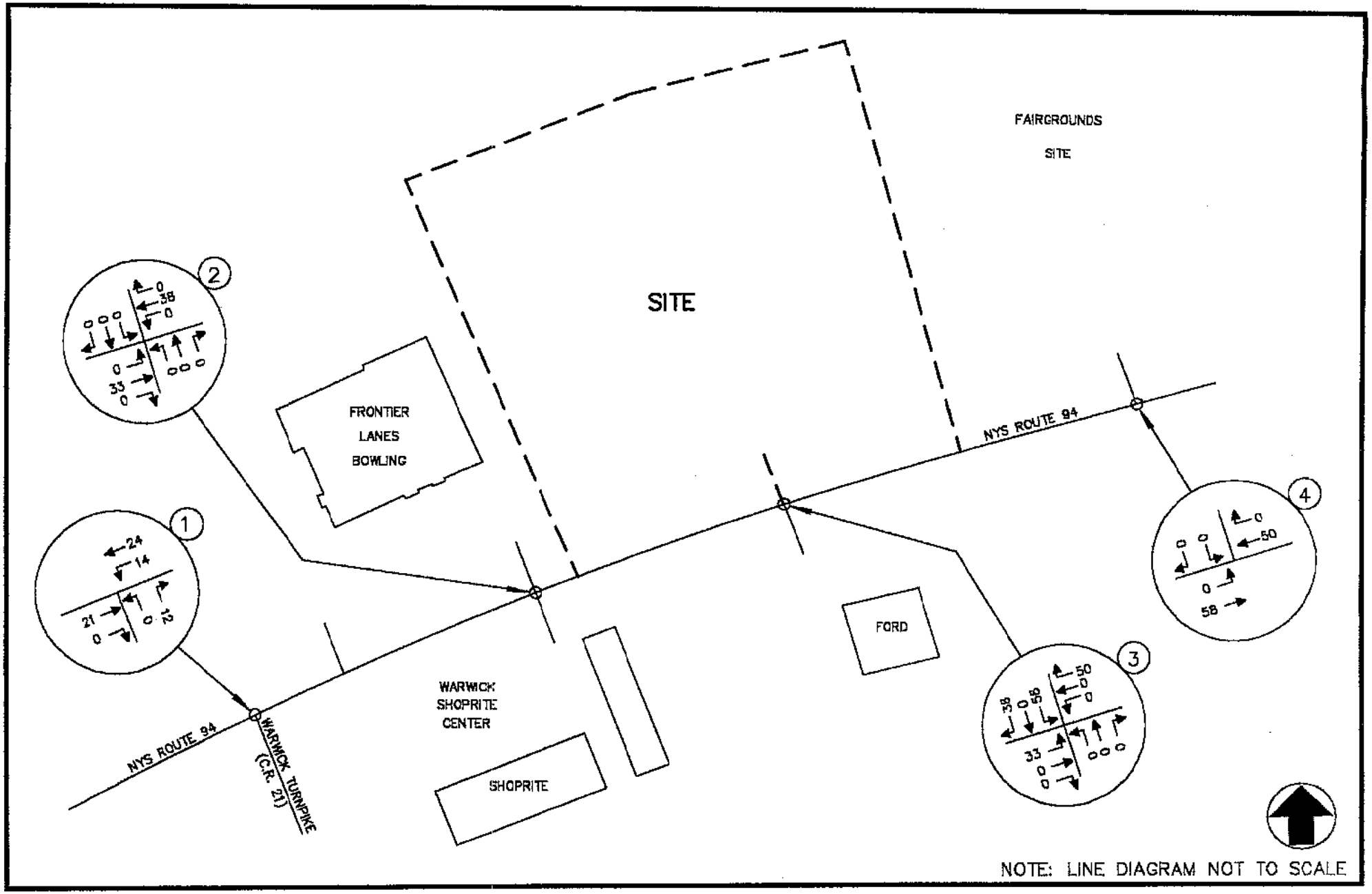


HOMARC PROPERTY
WARWICK, NEW YORK

SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PEAK AM HOUR

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO. 12

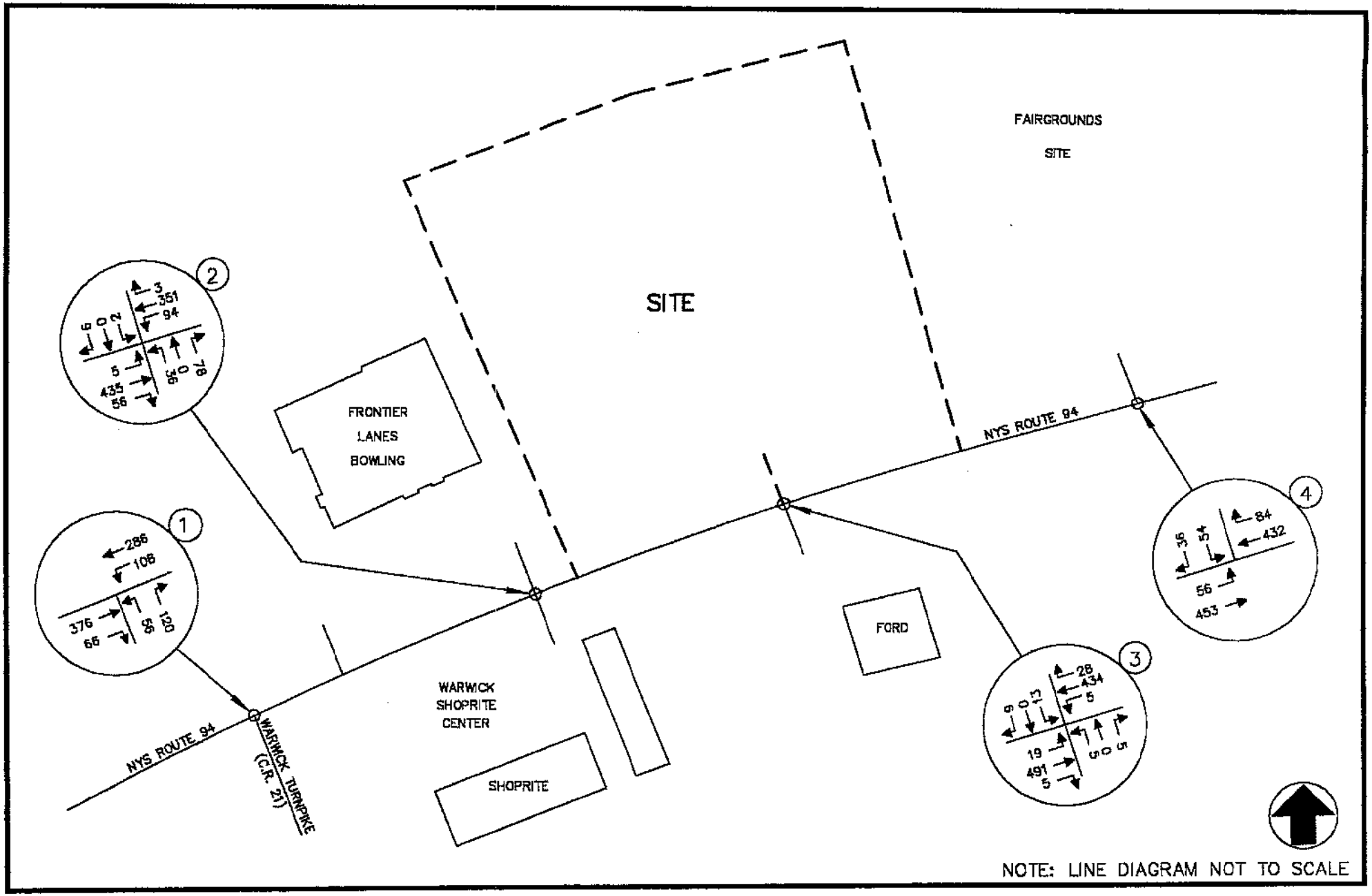


HOMARC PROPERTY
WARWICK, NEW YORK

SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PEAK PM HOUR

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO.13

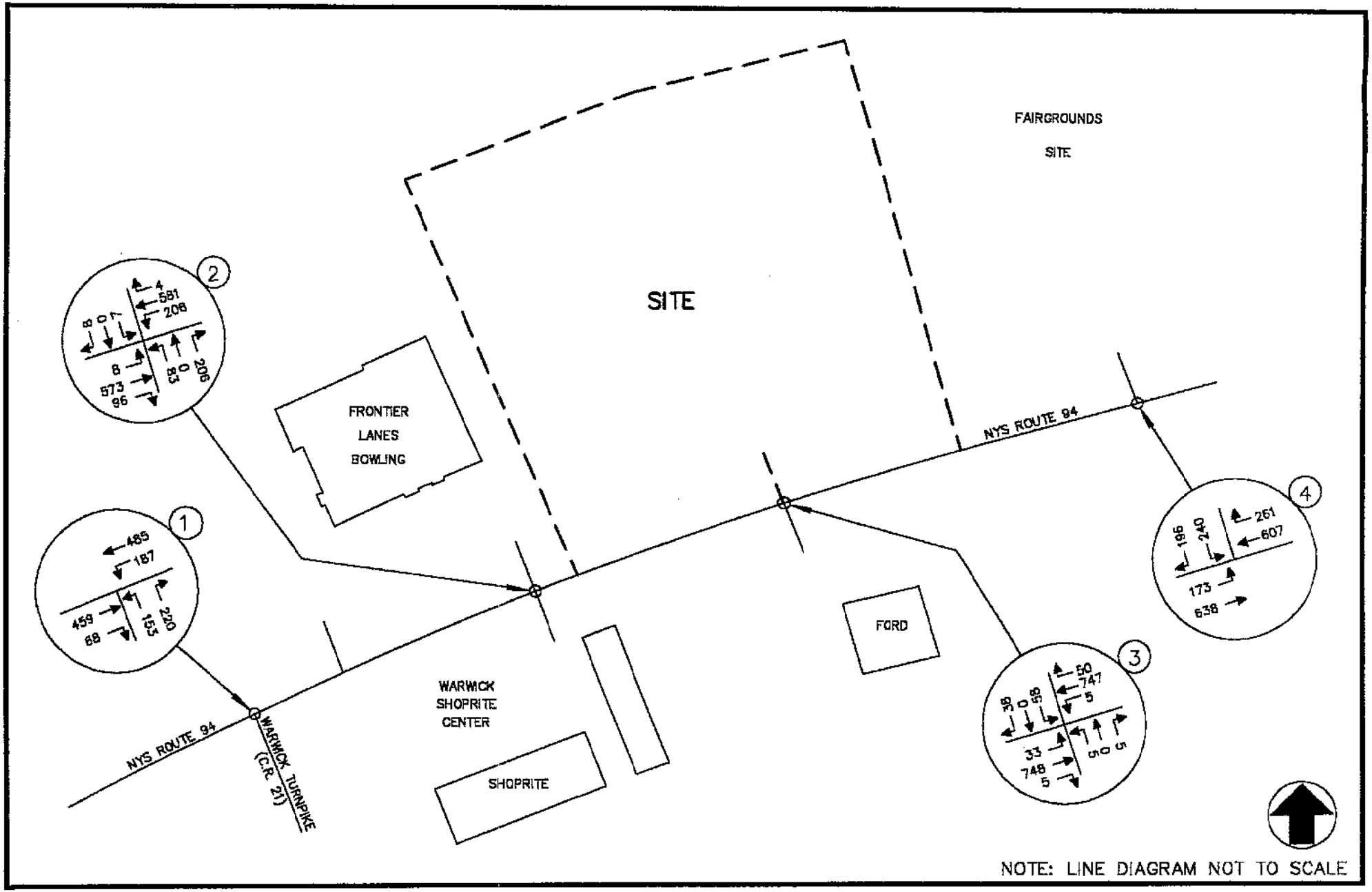


HOMARC PROPERTY
WARWICK, NEW YORK

2010 BUILD TRAFFIC VOLUMES
WEEKDAY PEAK AM HOUR

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO.14



HOMARC PROPERTY
WARWICK, NEW YORK

2010 BUILD TRAFFIC VOLUMES
WEEKDAY PEAK PM HOUR

JOHN COLLINS ENGINEERS, P.C.
HAWTHORNE, NEW YORK

PROJECT NO. 453 DATE: SEPTEMBER 2007 FIG. NO.15

APPENDIX "B"

TABLES

TABLE 1

HOURLY TRIP GENERATION RATES (HTGR) AND ANTICIPATED SITE GENERATED TRAFFIC VOLUMES

HOMARC PROPERTY WARWICK, NEW YORK	ENTRY			EXIT		
	HTGR*	VOLUME	NEW TRIPS	HTGR*	VOLUME	NEW TRIPS
RETAIL (15,000 S.F.)						
PEAK AM HOUR	2.04	31	23	1.30	20	15
PEAK PM HOUR	5.41	81	61	5.41	81	61
OFFICE (5,000 S.F.)						
PEAK AM HOUR	3.01	15	15	0.41	2	2
PEAK PM HOUR	2.89	2	2	14.09	15	15
TOTAL						
PEAK AM HOUR	-	46	38	-	22	17
PEAK PM HOUR	-	83	63	-	96	76

NOTES:

1) * THE HOURLY TRIP GENERATION RATES (HTGR) ARE BASED ON THE DATA PUBLISHED BY THE INSTITUTE TRANSPORTATION ENGINEERS (ITE) AS CONTAINED IN THE TRIP GENERATION HANDBOOK, 7TH EDITION , JANUARY 2003. OFFICE BUILDING LAND USE 710 AND SHOPPING CENTER LAND USE 820.

2) "NEW" TRIPS REFLECTS A 25% PASS-BY FOR RETAIL USES.

TABLE NO. 2

LEVEL OF SERVICE SUMMARY TABLE

			2007 EXISTING		2010 NO-BUILD		2010 BUILD	
			AM	PM	AM	PM	AM	PM
1	NYS ROUTE 94 &	**UNSIGNALIZED**						
	WARWICK TURNPIKE (C.R. 21)	WB	A[8.5]	A[8.5]	A[8.7]	A[9.2]	A[8.8]	A[9.4]
		NB	B[14.4]	D[26.0]	C[16.4]	E[35.5]	C[16.8]	E[43.4]
2	NYS ROUTE 94 &	**UNSIGNALIZED**						
	SHOPRITE DRIVEWAY/FRONTIER LANES	EB	A[8.0]	A[8.2]	A[8.1]	A[8.6]	A[8.1]	A[8.7]
		WB	A[8.5]	A[9.2]	A[8.8]	B[10.0]	A[8.9]	B[10.2]
		NB	B[14.2]	D[25.5]	C[16.6]	D[30.4]	C[17.2]	D[35.0]
3	NYS ROUTE 94 &	**UNSIGNALIZED**						
	FORD DEALER DRIVEWAY/SITE ACCESS	EB	-	-	-	-	A[8.5]	B[10.0]
		WB	A[8.3]	A[8.9]	A[8.6]	A[9.6]	A[8.6]	A[9.6]
		NB	B[13.9]	C[19.6]	C[15.9]	D[29.2]	B[14.5]	C[22.8]
		SB	-	-	-	-	C[15.1]	D[25.7]
4	NYS ROUTE 94 &	**SIGNALIZED**						
	FAIRGROUNDS DRIVEWAY	EB	-	-	B[11.8]	B[14.1]	B[12.0]	B[15.6]
		WB	-	-	B[11.4]	B[12.8]	B[11.6]	B[13.4]
		SB	-	-	C[20.7]	C[23.6]	C[20.7]	C[23.6]
		OVERALL	-	-	B[12.3]	B[15.6]	B[12.5]	B[16.4]

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH AS WELL AS FOR THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTION.

2) UNDER THE NO-BUILD AND BUILD CONDITIONS, A NEW TRAFFIC SIGNAL AT THE FAIRGROUNDS ACCESS HAS BEEN CONSIDERED.

APPENDIX "C"

CAPACITY ANALYSIS

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK AM HOUR
Intersection: NYS ROUTE 94 & C.R. 21
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2007 EXISTING TRAFFIC VOLUMES
Project ID: 453AMEX1
East/West Street: NYS ROUTE 94
North/South Street: WARWICK TURNPIKE (C.R. 21)
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		305	62	86	241	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		338	68	95	267	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	1	1	
Configuration			TR	L	T	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	53		85			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	58		94			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		/
Lanes		1	1			
Configuration		L	R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		95	58		94			
C(m) (vph)		1137	308		667			
v/c		0.08	0.19		0.14			
95% queue length		0.27	0.68		0.49			
Control Delay		8.5	19.4		11.3			
LOS		A	C		B			
Approach Delay				14.4				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK PM HOUR
Intersection: NYS ROUTE 94 & C.R. 21
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2007 EXISTING TRAFFIC VOLUMES
Project ID: 453PMEX1
East/West Street: NYS ROUTE 94
North/South Street: WARWICK TURNPIKE (C.R. 21)
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		332	64	114	350	
Peak-Hour Factor, PHF		0.96	0.96	0.96	0.96	
Hourly Flow Rate, HFR		345	66	118	364	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	1	1	
Configuration			TR	L	T	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	144		149			
Peak Hour Factor, PHF	0.96		0.96			
Hourly Flow Rate, HFR	150		155			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		/
Lanes	1		1			
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		118	150		155			
C(m) (vph)		1132	245		662			
v/c		0.10	0.61		0.23			
95% queue length		0.35	3.63		0.90			
Control Delay		8.5	40.4		12.1			
LOS		A	E		B			
Approach Delay				26.0				
Approach LOS				D				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK AM HOUR
Intersection: NYS ROUTE 94 & C.R. 21
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 NO-BUILD TRAFFIC VOLUMES
Project ID: 453AMNB1
East/West Street: NYS ROUTE 94
North/South Street: WARWICK TURNPIKE (C.R. 21)
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		364	66	105	280	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		404	73	116	311	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	1	1	
Configuration			TR	L	T	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	56		113			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	62		125			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes	1		1			
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		116	62		125			
C(m) (vph)		1085	246		617			
v/c		0.11	0.25		0.20			
95% queue length		0.36	0.97		0.75			
Control Delay		8.7	24.5		12.3			
LOS		A	C		B			
Approach Delay				16.4				
Approach LOS				C				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK PM HOUR
Intersection: NYS ROUTE 94 & C.R. 21
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 NO-BUILD TRAFFIC VOLUMES
Project ID: 453PMNB1
East/West Street: NYS ROUTE 94
North/South Street: WARWICK TURNPIKE (C.R. 21)
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		438	68	173	461	
Peak-Hour Factor, PHF		0.96	0.96	0.96	0.96	
Hourly Flow Rate, HFR		456	70	180	480	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	1	1	
Configuration			TR	L	T	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	153		208			
Peak Hour Factor, PHF	0.96		0.96			
Hourly Flow Rate, HFR	159		216			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		/
Lanes		1	1			
Configuration		L	R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		180	159		216			
C(m) (vph)		1041	204		662			
v/c		0.17	0.78		0.33			
95% queue length		0.62	5.41		1.42			
Control Delay		9.2	66.0		13.0			
LOS		A	F		B			
Approach Delay				35.5				
Approach LOS				E				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK AM HOUR
Intersection: NYS ROUTE 94 & C.R. 21
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 BUILD TRAFFIC VOLUMES
Project ID: 453AMB1
East/West Street: NYS ROUTE 94
North/South Street: WARWICK TURNPIKE (C.R. 21)
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		376	66	108	286	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		417	73	120	317	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	1	1	
Configuration			TR	L	T	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	56		120			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	62		133			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		/
Lanes	1		1			
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		120	62		133			
C(m) (vph)		1073	235		606			
v/c		0.11	0.26		0.22			
95% queue length		0.38	1.03		0.83			
Control Delay		8.8	25.7		12.6			
LOS		A	D		B			
Approach Delay				16.8				
Approach LOS				C				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK PM HOUR
Intersection: NYS ROUTE 94 & C.R. 21
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 BUILD TRAFFIC VOLUMES
Project ID: 453PMB1
East/West Street: NYS ROUTE 94
North/South Street: WARWICK TURNPIKE (C.R. 21)
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		459	68	187	485	
Peak-Hour Factor, PHF		0.96	0.96	0.96	0.96	
Hourly Flow Rate, HFR		478	70	194	505	
Percent Heavy Vehicles		--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	1	1	
Configuration			TR	L	T	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	153		220			
Peak Hour Factor, PHF	0.96		0.96			
Hourly Flow Rate, HFR	159		229			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		/
Lanes	1		1			
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		L	L		R			
v (vph)		194	159		229			
C(m) (vph)		1021	184		647			
v/c		0.19	0.86		0.35			
95% queue length		0.70	6.32		1.59			
Control Delay		9.4	86.4		13.6			
LOS		A	F		B			
Approach Delay				43.4				
Approach LOS				E				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK AM HOUR
Intersection: NYS RTE 94 & SHOPRITE/FRONTIER
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2007 EXISTING TRAFFIC VOLUMES
Project ID: 453AMEX2
East/West Street: NYS ROUTE 94
North/South Street: SHOPRITE/FRONTIER LANES
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	5	332	53	89	287	3
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	368	58	98	318	3
Percent Heavy Vehicles	5	--	--	5	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	34		74			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	37		82			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes	1		1			
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L	L		R			
v (vph)	5	98	37		82			
C(m) (vph)	1222	1117	269		646			
v/c	0.00	0.09	0.14		0.13			
95% queue length	0.01	0.29	0.47		0.43			
Control Delay	8.0	8.5	20.5		11.4			
LOS	A	A	C		B			
Approach Delay				14.2				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK PM HOUR
Intersection: NYS RTE 94 & SHOPRITE/FRONTIER
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2007 EXISTING TRAFFIC VOLUMES
Project ID: 453PMEX2
East/West Street: NYS ROUTE 94
North/South Street: SHOPRITE/FRONTIER LANES
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	8	382	91	194	378	4
Peak-Hour Factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Hourly Flow Rate, HFR	8	397	94	202	393	4
Percent Heavy Vehicles	5	--	--	5	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	78		194			
Peak Hour Factor, PHF	0.96		0.96			
Hourly Flow Rate, HFR	81		202			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes	1		1			
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L	L		R			
v (vph)	8	202	81		202			
C(m) (vph)	1145	1057	149		608			
v/c	0.01	0.19	0.54		0.33			
95% queue length	0.02	0.70	2.71		1.45			
Control Delay	8.2	9.2	54.8		13.8			
LOS	A	A	F		B			
Approach Delay				25.5				
Approach LOS				D				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK AM HOUR
Intersection: NYS RTE 94 & SHOPRITE/FRONTIER
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 NO-BUILD TRAFFIC VOLUMES
Project ID: 453AMNB2
East/West Street: NYS ROUTE 94
North/South Street: SHOPRITE/FRONTIER LANES
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	5	416	56	94	342	3
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	462	62	104	380	3
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	36		78			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	40		86			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes	1		1			
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L	L		R			
v (vph)	5	104	40		86			
C(m) (vph)	1175	1043	212		576			
v/c	0.00	0.10	0.19		0.15			
95% queue length	0.01	0.33	0.68		0.52			
Control Delay	8.1	8.8	25.9		12.3			
LOS	A	A	D		B			
Approach Delay				16.6				
Approach LOS				C				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK PM HOUR
Intersection: NYS RTE 94 & SHOPRITE/FRONTIER
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 NO-BUILD TRAFFIC VOLUMES
Project ID: 453PMNB2
East/West Street: NYS ROUTE 94
North/South Street: SHOPRITE/FRONTIER LANES
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	8	540	96	206	543	4
Peak-Hour Factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Hourly Flow Rate, HFR	8	562	100	214	565	4
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	83		206			
Peak Hour Factor, PHF	0.96		0.96			
Hourly Flow Rate, HFR	86		214			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		/
Lanes	1		1			
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L	L		R			
v (vph)	8	214	86		214			
C(m) (vph)	1003	927	135		584			
v/c	0.01	0.23	0.64		0.37			
95% queue length	0.02	0.89	3.39		1.67			
Control Delay	8.6	10.0+	69.6		14.7			
LOS	A	B	F		B			
Approach Delay				30.4				
Approach LOS				D				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK AM HOUR
Intersection: NYS RTE 94 & SHOPRITE/FRONTIER
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 BUILD TRAFFIC VOLUMES
Project ID: 453AMB2
East/West Street: NYS ROUTE 94
North/South Street: SHOPRITE/FRONTIER LANES
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	5	435	56	94	351	3
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	483	62	104	390	3
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L		TR	L		TR
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	36		78			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	40		86			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		/
Lanes	1		1			
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L	L		R			
v (vph)	5	104	40		86			
C(m) (vph)	1166	1024	203		560			
v/c	0.00	0.10	0.20		0.15			
95% queue length	0.01	0.34	0.71		0.54			
Control Delay	8.1	8.9	27.0		12.6			
LOS	A	A	D		B			
Approach Delay				17.2				
Approach LOS				C				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK PM HOUR
Intersection: NYS RTE 94 & SHOPRITE/FRONTIER
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 BUILD TRAFFIC VOLUMES
Project ID: 453PMB2
East/West Street: NYS ROUTE 94
North/South Street: SHOPRITE/FRONTIER LANES
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	8	573	96	206	581	4
Peak-Hour Factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Hourly Flow Rate, HFR	8	596	100	214	605	4
Percent Heavy Vehicles	2	--	--	2	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes	1	1	0	1	1	0
Configuration	L	TR		L	TR	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	83		206			
Peak Hour Factor, PHF	0.96		0.96			
Hourly Flow Rate, HFR	86		214			
Percent Heavy Vehicles	2		2			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			/			/
Lanes	1		1			
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	L	L	L		R			
v (vph)	8	214	86		214			
C(m) (vph)	970	900	123		564			
v/c	0.01	0.24	0.70		0.38			
95% queue length	0.02	0.93	3.82		1.76			
Control Delay	8.7	10.2	84.0		15.2			
LOS	A	B	F		C			
Approach Delay				35.0-				
Approach LOS				D				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK AM HOUR
Intersection: NYS ROUTE 94 & FORD DRIVEWAY
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2007 EXISTING TRAFFIC VOLUMES
Project ID: 453AMEX3
East/West Street: NYS ROUTE 94
North/South Street: FORD DEALER DRIVEWAY
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		403	5	5	374	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		447	5	5	415	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR	LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5		5			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	5		5			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		5		10				
C(m) (vph)		1093		414				
v/c		0.00		0.02				
95% queue length		0.01		0.07				
Control Delay		8.3		13.9				
LOS		A		B				
Approach Delay				13.9				
Approach LOS				B				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK PM HOUR
Intersection: NYS ROUTE 94 & FORD DRIVEWAY
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2007 EXISTING TRAFFIC VOLUMES
Project ID: 453PMEX3
East/West Street: NYS ROUTE 94
North/South Street: FORD DEALER DRIVEWAY
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		578	5	5	571	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		642	5	5	634	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR	LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5		5			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	5		5			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes		0	0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		5		10				
C(m) (vph)		924		257				
v/c		0.01		0.04				
95% queue length		0.02		0.12				
Control Delay		8.9		19.6				
LOS		A		C				
Approach Delay				19.6				
Approach LOS				C				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK AM HOUR
Intersection: NYS ROUTE 94 & FORD DRIVEWAY
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 NO-BUILD TRAFFIC VOLUMES
Project ID: 453AMNB3
East/West Street: NYS ROUTE 94
North/South Street: FORD DEALER DRIVEWAY
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		491	5	5	434	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		545	5	5	482	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR	LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5		5			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	5		5			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		5		10				
C(m) (vph)		1005		341				
v/c		0.00		0.03				
95% queue length		0.01		0.09				
Control Delay		8.6		15.9				
LOS		A		C				
Approach Delay				15.9				
Approach LOS				C				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK PM HOUR
Intersection: NYS ROUTE 94 & FORD DRIVEWAY
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 NO-BUILD TRAFFIC VOLUMES
Project ID: 453PMNB3
East/West Street: NYS ROUTE 94
North/South Street: FORD DEALER DRIVEWAY
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		748	5	5	747	
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR		831	5	5	830	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided			/		
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR	LT		
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5		5			
Peak Hour Factor, PHF	0.90		0.90			
Hourly Flow Rate, HFR	5		5			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No	/		/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		5		10				
C(m) (vph)		785		159				
v/c		0.01		0.06				
95% queue length		0.02		0.20				
Control Delay		9.6		29.2				
LOS		A		D				
Approach Delay				29.2				
Approach LOS				D				

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK AM HOUR
Intersection: NYS ROUTE 94 & FORD/SITE
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 BUILD TRAFFIC VOLUMES
Project ID: 453AMB3
East/West Street: NYS ROUTE 94
North/South Street: FORD DEALER DRIVEWAY/SITE
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	19	491	5	5	434	28
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	21	545	5	5	482	31
Percent Heavy Vehicles	5	--	--	5	--	--
Median Type/Storage	TWLTL			/ 1		
RT Channelized?						
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5	0	5	13	0	9
Peak Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	0	5	14	0	10
Percent Heavy Vehicles	5	5	5	5	5	5
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			No /
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LTR	LTR		LTR			LTR	
v (vph)	21	5		10			24	
C(m) (vph)	1037	1005		387			381	
v/c	0.02	0.00		0.03			0.06	
95% queue length	0.06	0.01		0.08			0.20	
Control Delay	8.5	8.6		14.5			15.1	
LOS	A	A		B			C	
Approach Delay				14.5			15.1	
Approach LOS				B			C	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: R.H.
Agency/Co.: JCE
Date Performed: SEPTEMBER 2007
Analysis Time Period: PEAK PM HOUR
Intersection: NYS ROUTE 94 & FORD/SITE
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2010 BUILD TRAFFIC VOLUMES
Project ID: 453PMB3
East/West Street: NYS ROUTE 94
North/South Street: FORD DEALER DRIVEWAY/SITE
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	33	748	5	5	747	50
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	36	831	5	5	830	55
Percent Heavy Vehicles	5	--	--	5	--	--
Median Type/Storage	TWLTL			/ 1		
RT Channelized?						
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	5	0	5	58	0	38
Peak Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	0	5	64	0	42
Percent Heavy Vehicles	5	5	5	5	5	5
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			No /
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config	LTR	LTR		LTR			LTR	
v (vph)	36	5		10			106	
C(m) (vph)	752	785		212			278	
v/c	0.05	0.01		0.05			0.38	
95% queue length	0.15	0.02		0.15			1.71	
Control Delay	10.0+	9.6		22.8			25.7	
LOS	B	A		C			D	
Approach Delay				22.8			25.7	
Approach LOS				C			D	

HCS+: Signalized Intersections Release 5.2

Analyst: R.H.
Agency: JCE
Date: SEPTEMBER 2007
Period: PEAK AM HOUR
Project ID: 453AMNB4
E/W St: NYS ROUTE 94

Inter.: NYS ROUTE 94 & FAIRGROUNDS
Area Type: All other areas
Jurisd:
Year : 2010 NO-BUILD TRAFFIC VOLUMES

N/S St: FAIRGROUNDS DRIVEWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	0	0	0	1	0	1
LGConfig	L	T			T	R				L		R
Volume	56	440			404	84				54		36
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
RTOR Vol						0						0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left				
Thru	A				Thru				
Right					Right				
Peds					Peds				
WB Left					SB Left	A			
Thru	A				Thru				
Right	A				Right	A			
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	50.0					30.0			
Yellow	3.0					3.0			
All Red	2.0					2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	457	823	0.13	0.56	9.7	A		
T	1035	1863	0.44	0.56	12.1	B	11.8	B
Westbound								
T	1035	1863	0.41	0.56	11.7	B	11.4	B
R	879	1583	0.10	0.56	9.5	A		
Northbound								
Southbound								
L	590	1770	0.09	0.33	20.7	C		
							20.7	C
R	528	1583	0.07	0.33	20.5	C		

Intersection Delay = 12.3 (sec/veh) Intersection LOS = B

HCS+: Signalized Intersections Release 5.2

Analyst: R.H.
Agency: JCE
Date: SEPTEMBER 2007
Period: PEAK PM HOUR
Project ID: 453PMNB4
E/W St: NYS ROUTE 94

Inter.: NYS ROUTE 94 & FAIRGROUNDS
Area Type: All other areas
Jurisd:
Year : 2010 NO-BUILD TRAFFIC VOLUMES

N/S St: FAIRGROUNDS DRIVEWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	0	0	0	1	0	1
LGConfig	L	T			T	R				L		R
Volume	173	580			557	261				240		196
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
RTOR Vol						0						0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left				
Thru	A				Thru				
Right					Right				
Peds					Peds				
WB Left					SB Left	A			
Thru	A				Thru				
Right	A				Right	A			
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	50.0					30.0			
Yellow	3.0					3.0			
All Red	2.0					2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	332	598	0.54	0.56	14.5	B		
T	1035	1863	0.58	0.56	14.0	B	14.1	B
Westbound								
T	1035	1863	0.56	0.56	13.6	B	12.8	B
R	879	1583	0.31	0.56	10.9	B		
Northbound								
Southbound								
L	590	1770	0.42	0.33	23.8	C		
							23.6	C
R	528	1583	0.39	0.33	23.4	C		

Intersection Delay = 15.6 (sec/veh) Intersection LOS = B

HCS+: Signalized Intersections Release 5.2

Analyst: R.H.
Agency: JCE
Date: SEPTEMBER 2007
Period: PEAK AM HOUR
Project ID: 453AMB4
E/W St: NYS ROUTE 94

Inter.: NYS ROUTE 94 & FAIRGROUNDS
Area Type: All other areas
Jurisd:
Year : 2010 BUILD TRAFFIC VOLUMES

N/S St: FAIRGROUNDS DRIVEWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	0	0	0	1	0	1
LGConfig	L	T			T	R				L		R
Volume	56	453			432	84				54		36
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
RTOR Vol						0						0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A				NB	Left				
	Thru	A					Thru				
	Right						Right				
	Peds						Peds				
WB	Left					SB	Left	A			
	Thru	A					Thru				
	Right	A					Right	A			
	Peds						Peds				
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		50.0						30.0			
Yellow		3.0						3.0			
All Red		2.0						2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	434	781	0.13	0.56	9.7	A		
T	1035	1863	0.46	0.56	12.2	B	12.0	B
Westbound								
T	1035	1863	0.43	0.56	12.0	B	11.6	B
R	879	1583	0.10	0.56	9.5	A		
Northbound								
Southbound								
L	590	1770	0.09	0.33	20.7	C		
							20.7	C
R	528	1583	0.07	0.33	20.5	C		

Intersection Delay = 12.5 (sec/veh) Intersection LOS = B

HCS+: Signalized Intersections Release 5.2

Analyst: R.H.
Agency: JCE
Date: SEPTEMBER 2007
Period: PEAK PM HOUR
Project ID: 453PMB4
E/W St: NYS ROUTE 94

Inter.: NYS ROUTE 94 & FAIRGROUNDS
Area Type: All other areas
Jurisd:
Year : 2010 BUILD TRAFFIC VOLUMES

N/S St: FAIRGROUNDS DRIVEWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	0	1	1	0	0	0	1	0	1
LGConfig	L	T			T	R				L		R
Volume	173	638			607	261				240		196
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
RTOR Vol						0						0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left	A				NB	Left				
Thru	A					Thru				
Right						Right				
Peds						Peds				
WB Left					SB	Left	A			
Thru	A					Thru				
Right	A					Right	A			
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green	50.0						30.0			
Yellow	3.0						3.0			
All Red	2.0						2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	293	528	0.61	0.56	17.3	B		
T	1035	1863	0.64	0.56	15.2	B	15.6	B
Westbound								
T	1035	1863	0.61	0.56	14.5	B	13.4	B
R	879	1583	0.31	0.56	10.9	B		
Northbound								
Southbound								
L	590	1770	0.42	0.33	23.8	C		
							23.6	C
R	528	1583	0.39	0.33	23.4	C		

Intersection Delay = 16.4 (sec/veh) Intersection LOS = B

APPENDIX "D"

STANDARDS

LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS

Level of Service (LOS) for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-minute analysis period. The criteria are given in Exhibit 16-2 from the 2000 Highway Capacity Manual published by the Transportation Research Board.

EXHIBIT 16-2

LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE (LOS)	CONTROL DELAY PER VEHICLE (S/VEH)
A	≤10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	>80

LEVEL OF SERVICE A describes operations with low control delay, up to 10 seconds per vehicle (s/veh). This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

LEVEL OF SERVICE B describes operations with control delay greater than 10 and up to 20 seconds per vehicle (s/veh). This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with Level of Service "A", causing higher levels of delay.

LEVEL OF SERVICE C describes operations with control delay greater than 20 and up to 35 seconds per vehicle (s/veh). These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

LEVEL OF SERVICE D describes operations with control delay greater than 35 and up to 55 seconds per vehicle (s/veh). At Level of Service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LEVEL OF SERVICE E describes operations with control delay greater than 55 and up to 80 seconds per vehicle (s/veh). This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

LEVEL OF SERVICE F describes operations with control delay in excess of 80 seconds per vehicle (s/veh). This level is considered unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

The Level of Service (LOS) for unsignalized intersections is determined by the computed or measured control delay and is defined for each minor movement. Control delay is defined as the total elapsed time a vehicle stops at the end of the queue to the time the vehicle departs from the stop line. This total elapsed time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to speed of vehicles in queue. Average control delay for any particular minor movement is a function of the capacity of the approach and the degree of saturation. The Level of Service Criteria are given in Exhibit 17-2 from the 2000 Highway Capacity Manual published by the Transportation Research Board.

EXHIBIT 17-2

LEVEL OF SERVICE FOR CRITERIA
FOR UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE (LOS)	AVERAGE CONTROL DELAY (S/VEH)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

The Level of Service Criteria for unsignalized intersections are somewhat different from the criteria for signalized intersections.

APPENDIX F

AIR QUALITY DATA

SULFUR DIOXIDE - Continuous Pulsed Fluorescence

NYSDEC Region **3**

Annual Averages 2002 through 2012
Annual Arithmetic Mean (ppb) - Primary Standard
(12 month average not to exceed 30 PPB *)

Station	Site No.	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Mt. Ninham	3951-01	2.16	2.41	2.22	2.18	1.67	1.53	1.33	1.14	0.80	0.86	0.73
Belleayre Mtn.	5565-03	1.64	1.68	1.27	1.38	1.25	1.19	0.90	0.71	0.50	0.52	0.31

Comparison Between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2012

		One Hour Averages average of 99th percentile for last 3 years not to exceed 75 PPB *						**3-Hour Block Averages** Maximum not to exceed 500 PPB more than once per calendar year *			**24 Hour Average** Maximum not to exceed 140 PPB more than once per calendar year *		
		Observations		**99th Percentile, PPB**				**Obs.**	**Highest Values, PPB**		**Obs.**	**Highest Values, PPB Midnight - Midnight**	
Station	**Site No.**	**Total Obs.**	**% Avail**	**2012**	**2011**	**2010**	**3-yr avg**	**Total**	**1st**	**2nd**	**Total**	**1st**	**2nd**
Mt. Ninham	3951-01	8,207	93	7.1	10.6	10.0	9.2	2,701	10.4 [02/22, 14]	6.3 [02/06, 14]	345	3.0 [02/14]	2.6 [02/10]
Belleayre Mtn.	5565-03	8,324	95	3.9	7.0	6.2	5.7	2,736	6.2 [02/27, 11]	4.1 [01/05, 02]	351	2.9 [01/06]	2.2 [01/07]

(Annual Means in parentheses are based on less than 75% available data)
*New York and Federal Ambient Air Quality Standard

[Date of Occurrence, Hour]
– Denotes a contravention of NYS/Federal AAQS

INHALABLE PARTICULATES ($PM_{2.5}$) - Rupprecht & Patashnick Sampler

NYSDEC Region 3

Comparison Between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2012

(Average of last 3 years' annual means not to exceed 15 $\mu g/m^3$ *;
and average of 98th percentile for last 3 years not to exceed 35 $\mu g/m^3$ *, *changed* from 65 $\mu g/m^3$ on 12/17/06)

Station	Site No.	Total Obs.	Maximum Values, $\mu g/m^3$			98th Percentile, $\mu g/m^3$				Quarterly Averages, 2012				Annual Mean, $\mu g/m^3$			
			1st	2nd	3rd	2012	2011	2010	3-yr avg	1st	2nd	3rd	4th	2012	2011	2010	3-yr avg
Newburgh (F)	3502-04	111	23.2 [12/02]	22.4 [11/11]	20.2 [02/15]	20.2	20.8	26.5	23	7.9	7.2	7.6	8.4	7.8	8.6	8.1	8.2
Newburgh (T)	3502-04	336	23.6 [06/29]	23.5 [07/18]	23.1 [08/03]	19.3	20.9	22.1	21	8.6	5.6	7.0	8.6	7.5	8.4	7.9	7.9
Rockland Co. (T)	4352-02	325	25.8 [07/17]	23.7 [04/16]	23.1 [06/22]	18.7	22.3	24.6	22	8.4	6.2	7.2	7.7	7.4	8.1	7.1	7.5
Mamaroneck (F)	5956-01	xxx	xxx	xxx	xxx	xxx	22.7	26.7	xx	xx	xx	xx	xx	xx	9.3	8.9	xx
White Plains (T)	5902-04	325	30.5 [06/29]	20.5 [06/30]	19.7 04/16]	18.8	24.5	22.4	22	10.2	5.1	5.2	8.2	7.2	9.0	7.4	7.9

Sampling was terminated at 5956-01 on 12/31/11.

(Annual Means in parentheses are based on less than 75% available data)
F – Federal Reference Method T = TEOM (Tapered Element Oscillating Microbalance) not for Standards determination

* Federal Ambient Air Quality Standard
– Denotes a contravention of Federal AAQS

OZONE - Continuous UV Light Absorption

NYSDEC Region **3**

Annual Averages 2002 through 2012
Annual Arithmetic Mean (ppm)

Station	Site No.	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Valley Central	3527-01	.029	.029	.028	.031	.029	.030	.026	.025	.029	.025	.023
Rockland County	4353-02	---	---	---	---	---	---	---	.025	.032	.029	.029
White Plains	5902-04	.024	.024	.019	.025	.025	.027	.024	.024	.025	.023	.026

Sampling at 4353-02 commenced on 06/04/09

Comparison Between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2012

		One Hour Averages							**4th Highest Daily Maximum 8-Hour Average-** Not to exceed an avg of 0.075 ppm during the last 3 years, *changed* from 0.08 ppm on 5/27/08*			
		Observations			**Highest Values, PPM**							
Station	**Site No.**	**Total Obs.**	**% Avail**	**>.12 PPM**	**1st**	**2nd**	**3rd**	**4th**	**2010**	**2011**	**2012**	**Avg**
Valley Central	3527-01	8,527	97	0	.090 [07/11, 17]	.082 [07/17, 14]	.080 [08/04, 15]	.072 [06/10, 19]	.075 [07/28]	.067 [05/26]	.065 [08/04]	.069
Rockland County	4353-02	8,405	96	0	.108 [08/08, 15]	.100 [08/09, 14]	.092 [07/13, 14]	.092 [07/17, 14]	.076 [07/12]	.074 [06/28]	.079 [08/09]	.076 +
White Plains	5902-04	8,758	100	0	.095 [08/03, 14]	.091 [07/26, 16]	.091 [08/08, 13]	.089 [05/28, 16]	.075 [07/07]	.076 [07/11]	.079 [08/31]	.077 +

(Annual Means in parentheses are based on less than 75% available data)
*Federal Ambient Air Quality Standard

[Date of Occurrence, Hour]
+ Denotes a contravention of Federal AAQS

OZONE - Continuous UV Light Absorption

NYSDEC Region **3**

Annual Averages 2002 through 2012
Annual Arithmetic Mean (ppm)

Station	Site No.	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Millbrook	1328-01	.029	.028	.025	.025	.024	.027	.027	.027	.029	.027	.027
Mt. Ninham	3951-01	0.35	.031	.028	.029	.028	.029	.027	.027	.031	.027	.024
Belleayre Mtn.	5565-03	.036	.036	.034	.035	.034	.034	.030	.032	.035	.033	.033

Comparison Between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2012

		One Hour Averages							**4th Highest Daily Maximum 8-Hour Average-** Not to exceed an avg of 0.075 ppm during the last 3 years, *changed* from 0.08 ppm on 5/27/08*			
		Observations			**Highest Values, PPM**							
Station	**Site No.**	**Total Obs.**	**% Avail**	**>.12 PPM**	**1st**	**2nd**	**3rd**	**4th**	**2010**	**2011**	**2012**	**Avg**
Millbrook	1328-01	8,230	94	0	..092 [07/17, 17]	..086 [08/09, 15]	.083 [08/03, 15]	.081 [04/16, 18]	.076 [08/04]	.072 [06/07]	.075 [08/09]	.074
Mt. Ninham	3951-01	8,085	92	0	.091 [08/22, 15]	.090 [08/09, 14]	.086 [08/23, 14]	.082 [05/29, 14]	.077 [06/19]	.068 [06/28]	.069 [08/25]	.071
Belleayre Mtn.	5565-03	8,449	96	0	.076 [07/17, 15]	.074 [06/21, 10]	.072 [05/16, 16]	.071 [04/16, 22]	.070 [04/02]	.071 [06/07]	..067 [07/13]	.069

(Annual Means in parentheses are based on less than 75% available data)
*Federal Ambient Air Quality Standard

[Date of Occurrence, Hour]
+ Denotes a contravention of Federal AAQS

LEAD - High Volume Air Samplers (Glass Fiber Filters)

NYSDEC Region **3**

Annual Geometric Means (µg/m³) 2002 through 2012

Station	Site No.	2002	2003	2004	2005*	2006	2007	2008	2009	2010	2011	2012
Wallkill	3566-02	0.05	0.04	(0.05)	0.03	0.02	0.02	0.018	0.016	0.011	0.015	0.011
Wallkill	3566-09	0.07	0.07	(0.05)	0.05	0.02	0.02	0.038	0.027	0.026	0.027	0.032
Scotchtown	3566-11	0.03	0.03	(0.04)	0.01	0.01	0.01	0.005	0.006	0.003	0.004	0.005

* Only 1st quarter data received from lab in 2005.

Comparison Between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2012

		24-Hour Concentrations - µg/m³								THREE MONTH ROLLING AVERAGES Maximum not to exceed 0.15 µg/m³, effective beginning 1/1/13 * (the old standard of 1.5 µg/m³ will remain in force until that date)		
				Maximum		2nd Max.		3rd Max.		Highest Values, µg/m3		
Station	Site No.	Total Obs.	% Avail	Value	Date	Value	Date	Value	Date	2010	2011	2012
Wallkill	3566-02	56	92	.062	10/18	.052	08/25	.037	10/06	0.04	0.10	0.02
Wallkill	3566-09	60	98	.162	04/27	.145	12/05	.119	04/03	0.08	1.03	0.06
Scotchtown	3566-11	58	95	.037	07/14	.016	08/25	.013	02/21	0.01	0.01	0.01

(Annual Means in parentheses are based on less than 75% available data)
* Federal Ambient Air Quality Standard

← Denotes a contravention of Federal AAQS

CARBON MONOXIDE - Continuous Non-Dispersive Infrared

NYSDEC Region 4

Annual Averages 2002 through 2012
Annual Arithmetic Mean (ppm)

Station	Site No.	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Loudonville	0101-33	0.4	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3
Schenectady	4601-05	0.5	0.5	0.4	0.4	0.5	0.5	0.3	0.3	0.4	xxx	xxx

Sampling at 4601-05 was terminated on 12/31/2010.

Comparison Between NYS Ambient Air Quality and Ambient Air Quality Standards for Calendar Year 2012

		One-Hour Average Maximum not to exceed 35 PPM more than once per calendar year *						**Running 8-Hour Average** (Non-Overlapping) Maximum not to exceed 9 PPM more than once per calendar year *				
		Observations			**Highest Values, PPM**			**Observations**		**Highest Values, PPM**		
Station	**Site No.**	**Total Obs.**	**% Avail**	**>35 PPM**	**1st**	**2nd**	**3rd**	**Total**	**>9 PPM**	**1st**	**2nd**	**Days> 9PPM**
Loudonville	0101-33	8,650	98	0	1.4 [05/30, 10]	1.1 [05/12, 23]	1.1 [12/13, 09]	8,625	0	.8 [12/13, 09]	.7 [11/22, 03]	0

(Annual Means in parentheses are based on less than 75% available data)
*New York and Federal Ambient Air Quality Standard

[Date of Occurrence, Hour]
+ Denotes a contravention of NYS/Federal AAQS (Note: 9PPM standard is not exceeded unless 8-hour avg > 9.4 PPM)

APPENDIX G

CULTURAL RESOURCES REPORTS

TRACKER

Archaeology Services, Inc.

Tracking the Footsteps of the Ancestors

REPORTS OF INVESTIGATIONS

Phase I Archaeological Investigation
for the proposed Homarc subdivision
Town of Warwick, Orange County, New York

December 2007

Prepared for:

Lehman & Getz, P.C., Warwick, New York

Prepared by:

Alfred G. Cammisa, RPA
Felicia Cammisa, Alexander Padilla

Report #: 542

TRACKER ARCHAEOLOGY SERVICES, INC.
MONROE, NY 10950 • (845) 783-4082
NORTH BABYLON, NY 11703 • (631) 321-1380

MANAGEMENT SUMMARY

PR#:
none known

Involved agencies:
Town of Warwick

Phase:
Phase IA & IB

Location:
Town of Warwick
Orange County

Survey Area:
Length: about 385 feet (117 meters) north-south
Width: about 280 feet (85 m) east-west.
Acres Surveyed: 2.5 acres (1 hectares)

USGS:
Wawayanda, NY

Survey overview:
ST no. & interval: 51 ST's at 50-25 ft (15-7.5m) intervals.
Size of freshly plowed area: na
Surface survey transect interval: na

Results:
No prehistoric or historic remains

Results of Architectural Survey:
No. Of buildings/structures/cemeteries in project area: none
No. Of buildings/structures/cemeteries adjacent to project area: 1
No. Of previously determined NR listed or eligible buildings/structures/cemeteries/districts: none
No. Of identified eligible buildings/structures/cemeteries/districts: none

Authors:
Alfred G. Cammisa, M.A./RPA
Felicia Cammisa, B.A.
Alexander Padilla, B.A.

Date of Report:
Report completed December, 2007

TABLE OF CONTENTS

Introduction 1

Environment 1-2

Prehistoric Potential 2-3

Historic Potential 4-5

Field Methods 5-6

Field Results 6

Conclusions and Recommendations 6

Bibliography 6-8

Appendix 1: Figures and Photos

Appendix 2: Shovel Tests

LIST OF FIGURES

Figure 1 Portion of the Wawayanda, New York USGS.

Figure 2 Location of the shovel tests on the project area.

Figure 3 Portion of the De Witt map (Ruttenber, E.M. and L.H. Clark 1881).

Figure 4 Portion of the 1779 Sauthier map.

Figure 5 Portion of the 1840 Burr map.

Figure 6 Portion of the 1850 Sidney map.

Figure 7 Portion of the 1863 Farm Map.

Figure 8 Portion of the 1875 Beers Atlas.

Figure 9 Portion of the 1908 U.S.G.S.

Figure 10 Portion of the County Soil Survey.

LIST OF PHOTOGRAPHS

Photo 1 Looking east from ST 1.

Photo 2 Looking northwest from ST 31.

INTRODUCTION

Between October 19 and November 28, 2007, TRACKER-Archaeology Services, Inc. conducted a Phase IA documentary study and a Phase IB field testing for the proposed Homarc subdivision in the Town of Warwick, Orange County, New York.

The purpose of the Phase IA documentary study was to determine the prehistoric and historic potential of the project area for the recovery of archaeological remains. This was implemented by a review of the original and current environmental data, archaeological site files, other archival literature, maps, and documents.

The prehistoric and historic site file search was conducted at the New York State Historic Preservation Office in Waterford, New York. Various historic and/or archaeological web sites were visited to review any pertinent site information.

The purpose of the Phase IB survey was to recover physical evidence for the presence or absence of archaeological sites on the property. This was accomplished through subsurface testing and ground surface reconnaissance.

These investigations have been conducted in accordance with the standards set forth by the New York Archaeological Council and the New York State Historic Preservation Office.

The project area (APE) is approximately 2.5 acres in size from a larger parcel, excluding wetlands and setbacks. The property as a whole is bounded to the southeast by NYS Route 94 and to the remaining sides by private properties.

The investigation was completed by TRACKER-Archaeology Services, Inc. of Monroe, New York. Prehistoric and historic research was conducted by Alfred G. Cammisa, M.A. and Felicia Cammisa, B.A. Field work was conducted by Alexander Padilla, B.A. field director and crew technician, Michael Barrett, B.A. Report preparation was by Alfred Cammisa, Felicia Cammisa, and Alexander Padilla.

The work was performed for the engineering firm of Lehman & Getz of Warwick, New York.

ENVIRONMENT

Geology

The study area is located in the southeast portion of New York State in the south part of Orange County. This region of New York lies within the Ridge and Valley Physiographic Province. This province, also known as the Newer Appalachians, extends from Lake Champlain to Alabama. It passes as a narrow lowland belt between the New England Uplands (Taconic Mountains and Hudson Highlands) to the east and the Appalachian Plateau (Catskill and Shawangunk Mountains) and Adirondack Mountains to the west. The characteristic topography is a succession of parallel valleys and ridges trending roughly in a northeasterly direction. This is a region of sedimentary rocks which were easily eroded and subjected to folding or bedding of the rock layers (Schuberth 1968: cover map, 16-18; Isachsen et al 2000: 4, 53-54; New York-New Jersey Trail Conference 1998: cover map).

Soils and Topography

Soils on the project area consist of:

Name	Soil Horizon Depth in(cm)	Color	Texture Inclusion	Slope %	Drainage	Landform
Hoosic	Ap=0-6in (0-15cm) B=6-11 (-28)	10YR4/2 10YR5/6	GrSaLo	3-8	excessive	glacial outwash

(Olsson 1981: Map 93 pgs. 34, 93).

KEY:

Shade: Lt=Light, Dk=Dark, V=Very
Color: Br=Brown, Blk=Black, Gry=Gray, Gbr=Gray Brown, StBr=Strong Brown, Rbr=Red Brown, Ybr= Yellow Brown
Soils: Si=Silt, Lo=Loam, Sa=Sand, Cl=Clay
Other: Sh=shale, M=Mottle, Gr=Gravelly, Cb=cobbles, /=or

The elevation on the project area is approximately 550 feet above mean sea level.

Hydrology
A tributary to the Wawayanda Creek flows through the property and adjacent to the project area.

Vegetation
The predominant forest community in this area was probably the Oak Hickory Forest. This forest is a nut producing forest with acorns and hickory nuts usually an obvious part of the leaf litter on the forest floor. The Oak Hickory Forest intermingles with virtually all other forest types. The northern extension of this forest community was also originally called the Oak-Chestnut forest, before the historic Chestnut blight (Kricher 1988:38, 57-60).

At the time of the Phase IB survey, the property consisted of a grassy field.

PREHISTORIC POTENTIAL

A prehistoric site file search was conducted at the New York State Historic Preservation Office. The search included a 1 mile radius around the study area. The following sites were recorded:

NYSM	NYSHPO	Distance from APE ft(m)	Site Type
	A07118.0040	3500 ft (1067m)	Baird site: surface finds
	A07118.0052	2250 (686)	Barrett Site: excavation of Transitional site.

	A07118.000167	adjacent to property (not project area)	Warwick I Site: no info. (Hartgen Assoc.)
	A07118.000168	1000 (305)	Warwick II site: no info (Hartgen Assoc.)
	A07118.000169	1750 (534)	Warwick III: no info (Hartgen Assoc.)
6208		3500 ft (1067m)	No info.
6207		3200 (9763)	No info.
		850 (259)	Bon Secours Site: Late Woodland small base camp & procurement/ processing station (Cammisa et al 2006)
		2250 (686)	unnamed Archaic site(Gramm et al 2005)
		4500 (1372)	Pennings Farm site (see Cammisa et al 2006)

An Indian foot trail followed roughly along the path of Kings Highway (Oakland Road/Route 94), adjacent to or close by the study area. Although this foot path was recorded historically, it undoubtedly existed prehistorically, to some extent (see Historic Potential).

Assessing the known environmental and prehistoric data, we can summarize the following points:

-A tributary to the Wawayanda Creek flows through the property and adjacent to the project area.

-The project area consists of level well drained soils.

-Numerous prehistoric sites are nearby the study property, including one very close by.

-An Indian foot trail was located near current Kings Highway and Route 94-Oakland Avenue, close to the project area. Prehistoric sites are found along this former foot trail (Cammisa et al 2005, Cammisa et al 2006A, Cammisa et al 2006B).

In our opinion, the project area has an above average potential for the recovery of prehistoric sites. The type of site encountered could be a procurement/processing or small base camp site from either Woodland or Archaic Periods.

HISTORIC POTENTIAL

Seventeenth Century

At the time of European contact and settlement, the study area was probably occupied by the Waoranecks who lived between Stony Point and Danns Kammer (near Newburgh Bay). Their western boundary was unknown. These peoples were likely a sub-branch and/or clan related to the large Munsee (Minsi) tribe belonging to the Delawarean linguistic family. The term "Minsi" (or "Munsee") means people of the stony country" or abbreviated as "mountaineers" (Ruttenber 1992A:35, 44-45, 49-50, 93; Ruttenber 1992B:221; Becker 1993:16-22; Hearne Brothers nd:wall map; Weslager 1991:45; Synder 1969:2).

Population estimates for the Munsee are 600 to 800 individuals. The Munsee are described by Becker (1993:18) as possibly horticultural. Hull (1996:10) mentions that they were hunters, gatherers, and horticulturalists. They fished in the fast running waters of the Wawayanda and Pochuck creeks.

An Indian trail known as the Wawayanda Trail started at the tribal meeting grounds at Danns Kammer, then passed through Washingtonville, Warwick and Vernon villages, and eventually on to Philadelphia. This road, or the close approximation, is currently known as Kings Highway (Hull 1996:127; Figure 5).

Eighteenth Century

The early settlers in Warwick were mainly English by way of Connecticut, Massachusetts, and Long Island (Eager 1847:422).

The Waoraneck Munsees living in Warwick had a large settlement a few hundred yards from the old Welling farm on Route 94 (Kings Highway). This group was known locally, or their village was known locally as the Mistucky. (Hull 1996:9-10, 13; Ruttenber and Clarke 1881:568; Sanford 1903:427).

The DeWitt map of Land Patents shows the approximate location of the project area. The study area is west of the village and south of the Wawayanda Creek on land possibly belonging to the Expense Lot or Aske (Figure 3).

The 1779 Sauthier map shows the property south of the Wawayanda Creek near its bend (Figure 4).

Nineteenth Century

The 1840 Burr map shows the project property west of the village and south of the Wawayanda Creek (Figure 5).

The 1850 Sydney map depicts the tributary flowing through part of the property, adjacent to the project area. No structures are on or immediately adjacent to the project area (Figure 6).

The backbone of Warwick's small industries, which had grown steadily since the last century, was based on its many mills located on fast running creeks, such as Wawayanda, Longhouse and Pochuck. The mills help cord wool, grind grain, and saw timber. The farming was largely dairy. However, orchards also produced apples and peaches, and onions, hay, and potatoes were also grown. Between 1862 to 1918 the milk boom was especially a boom to the farms in town. Mining was also conducted for iron ore at Sterling Mine/Iron Works. Other minerals mined were granite, mica, white and blue limestone (Hull 1996:145, 150, 162-163; Sanford 1903:431).

The 1863 Farm map depicts no structures on or immediately adjacent to the property. The project area appears to be part of the Major S. Blain farm (Figure

7).

The 1875 Beers atlas depicts no structures on or immediately adjacent to the project area, on the former lands of Aske (Figure 8).

Twentieth Century
The 1908 U.S.G.S. shows no structures on or immediately adjacent to the project area (Figure 9).

An historic site file search was conducted at the New York State Historic Preservation Office. The search included a 1 mile radius around the study area.

NYSM	NYSHPO	Distance from APE ft(m)	Site Type
4393		5250 + (1601+)	Mistucky: Contact Period village & orchard

Assessing the known environmental and historic data, we can summarize the following points:

-A tributary to the Wawayanda Creek flows through the property and adjacent to the project area.

-The project area consists of level well drained soils.

-No historic map documented structure, are on or adjacent to the project area.

-An Indian foot trail was located near current Kings Highway and Route 94-Oakland Avenue, close to the study area.

In our opinion, the study area has a moderate potential for encountering historic aboriginal sites.

FIELD METHODS

Walkover
Exposed ground surfaces were subjected to a close quarters walk-over, when possible, at 3 to 5 meter intervals to observe for artifacts. Covered ground terrain was reconnoitered at about 15 to 7.5 meter intervals, or less, to observe for any above ground features, such as berms, depression, or rock configurations, which could be evidence for a prehistoric or historic site. Photographs were taken of the project area.

Shovel Testing
Shovel tests (ST's) were excavated at about 15 to 7.5 meter (50-25ft) intervals, across the project area.

Each ST measured about 30 to 40 cm. in diameter and was dug into the underlying subsoil (B horizon) 10 to 20 cm. when possible. All soils were screened through 1/4 inch wire mesh and observed for artifacts. Shovel tests were flagged in the field. All ST's were mapped on the project area map at this time.

Soil stratigraphy was recorded according to texture and color. Soil color was matched against the Munsell color chart for soils. Notes were transcribed in a notebook and on pre-printed field forms.

FIELD RESULTS

Field testing of the project area included the excavation of 51 shovel tests (ST's) across the project area. No prehistoric artifacts or features were encountered. No historic artifacts or features were encountered.

Stratigraphy
Stratigraphy across the project area included the following:

-A/O horizon - 1 to 15 cm. rootmat, leaf litter, and humus.

-A horizon - 15 to 39 cm. thick of 10YR4/3 brown gravelly sandy loam.

-B horizon - 10 to 18 cm. dug into where possible of 10YR5/6, yellow brown, gravelly sandy loam.

CONCLUSIONS AND RECOMMENDATIONS

Based on distance to water sources and prehistoric sites and Indian foot trails, well drained soils and moderately sloping terrain, the property was seen as having an above average potential for encountering prehistoric Native American sites.

Based upon similar topographic characteristics, as well as proximity to historic map documented structures and Indian foot trails, the property was assessed as having a moderate potential for historic sites.

The field testing included the excavation of 51 ST's across the property. No prehistoric artifacts or features were encountered. No historic artifacts or features were encountered. No further work is recommended for the project area.

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APPENDIX 1

Figure 1

Portion of the Wawayanda, NY USGS

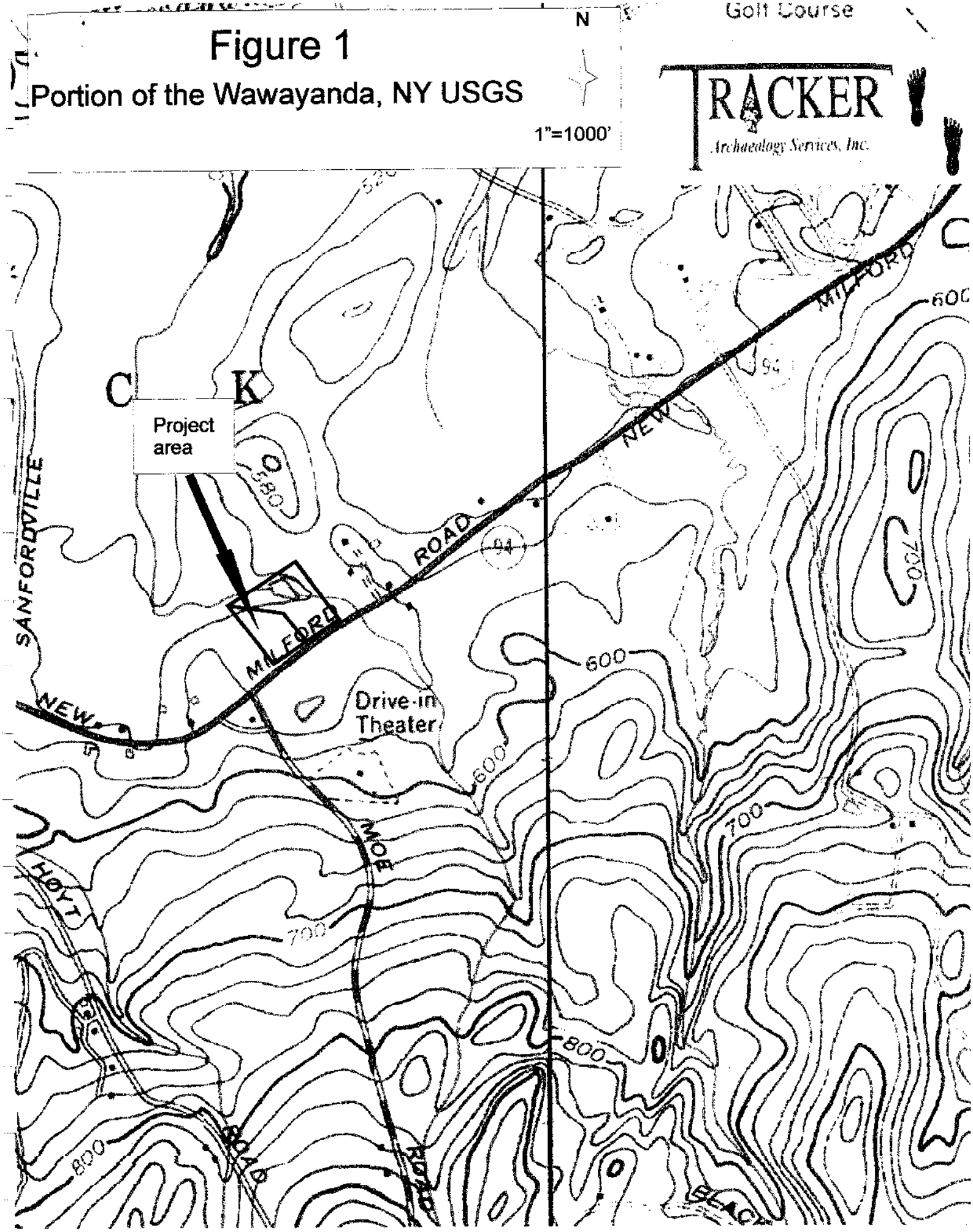
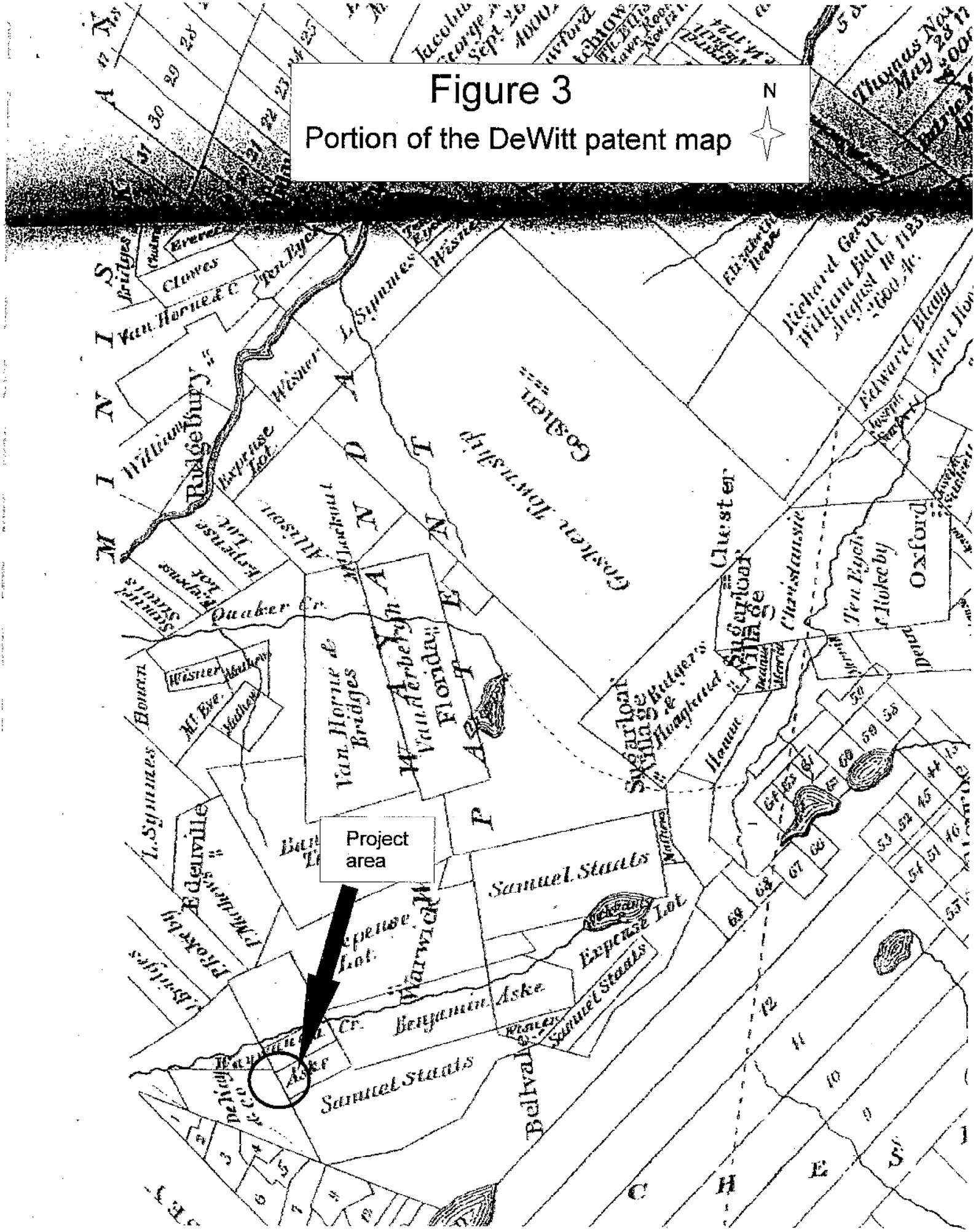
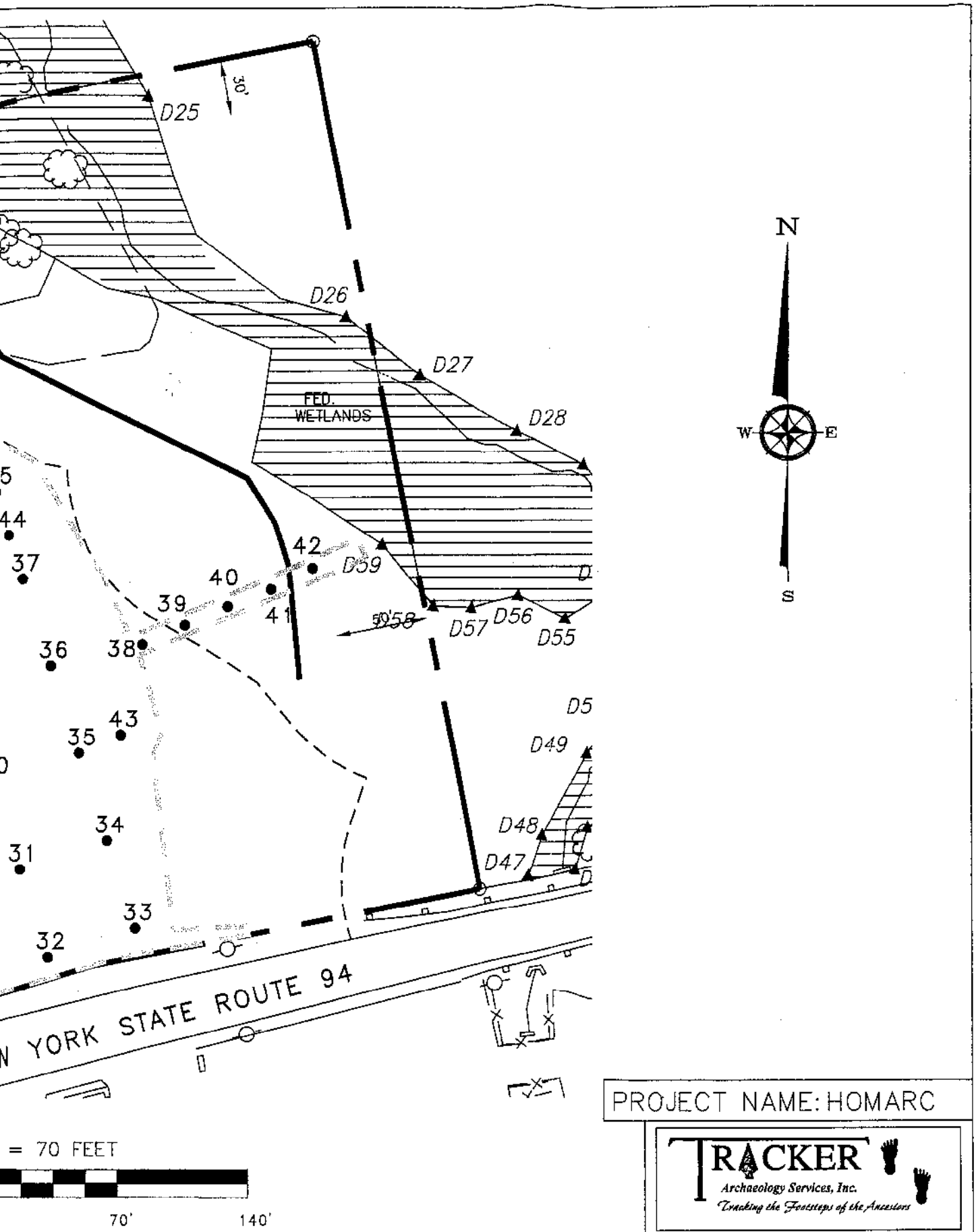


Figure 3

Portion of the DeWitt patent map





PROJECT NAME: HOMARC

TRACKER
Archaeology Services, Inc.
Tracking the Footsteps of the Ancestors

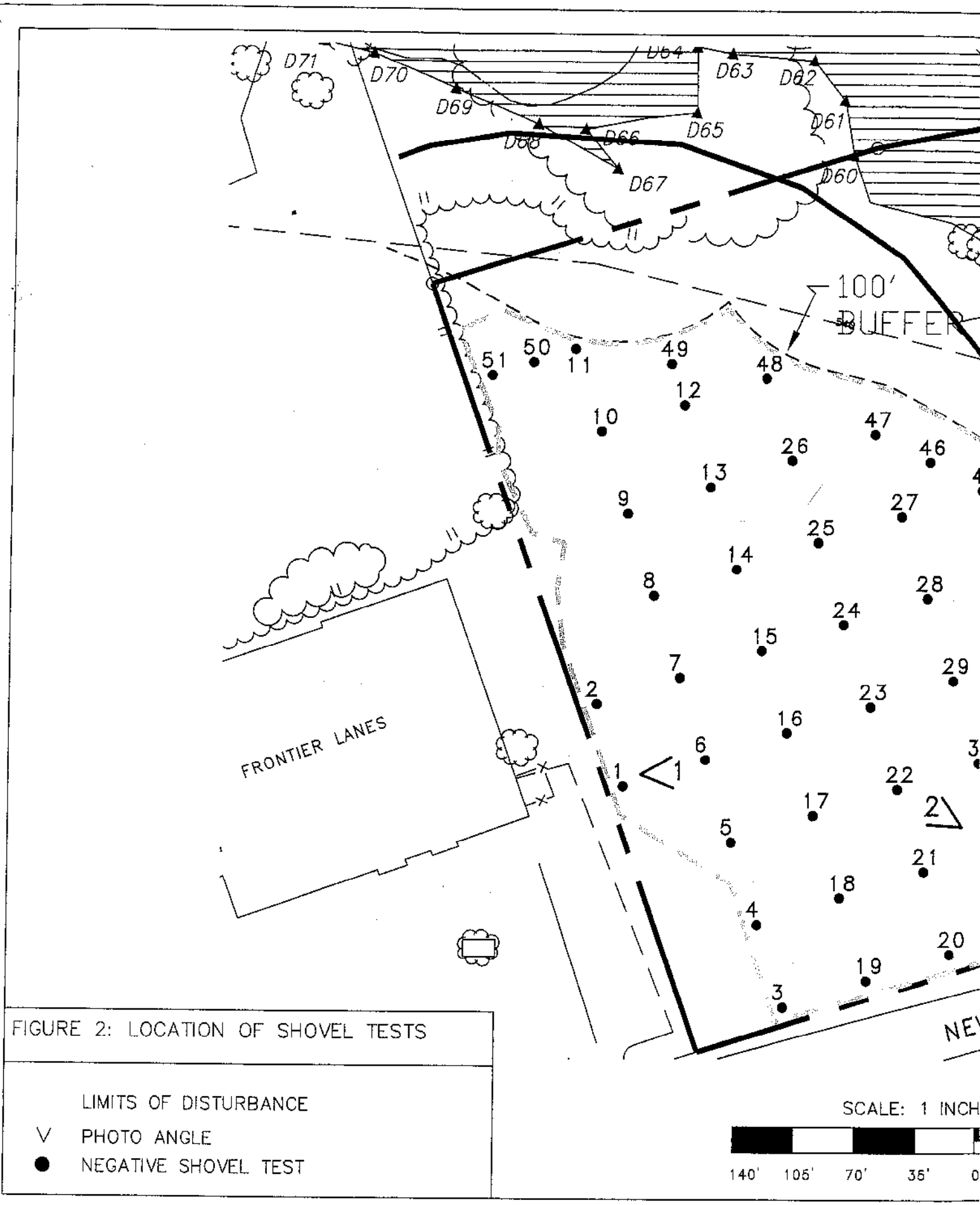


FIGURE 2: LOCATION OF SHOVEL TESTS

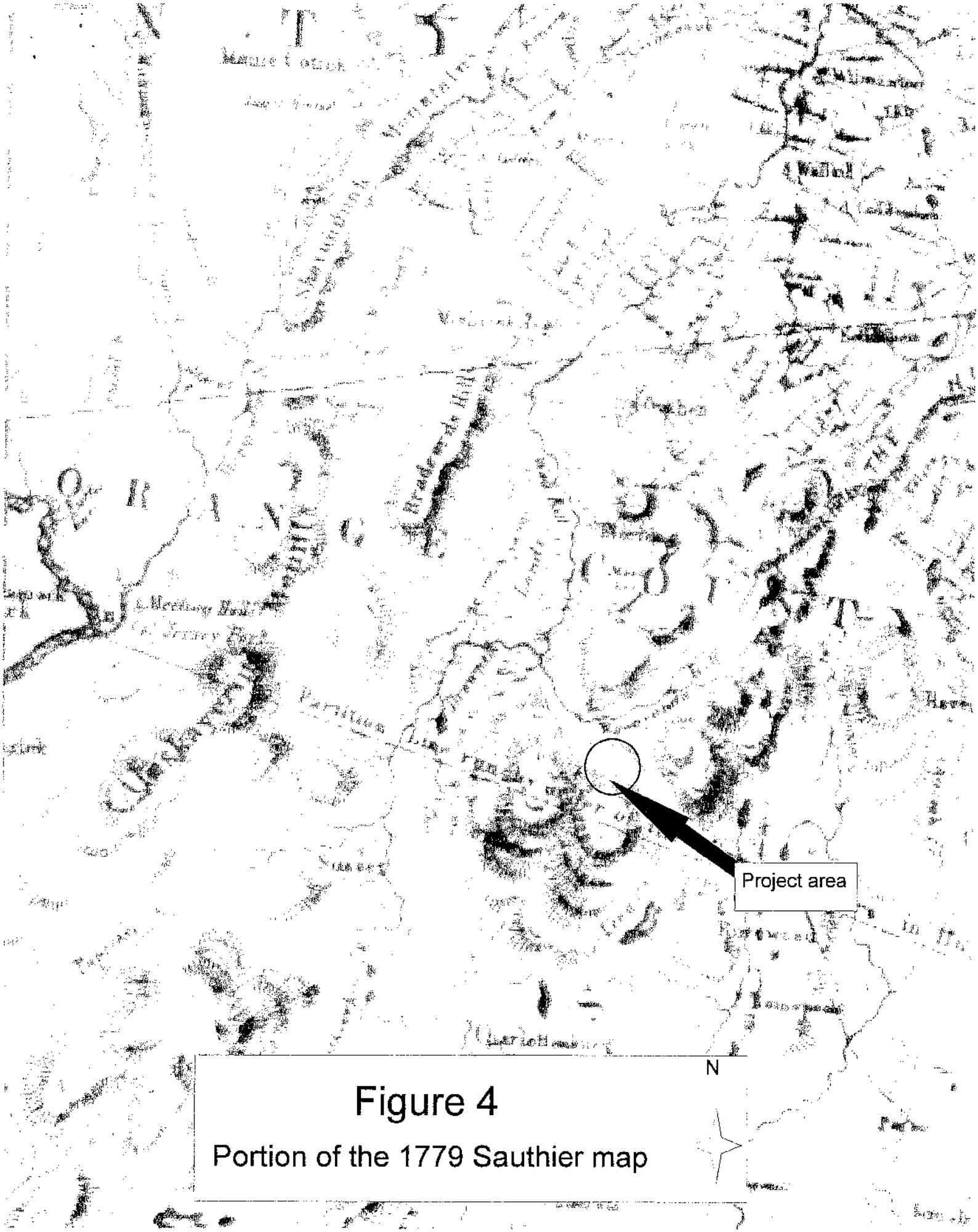


Figure 4

Portion of the 1779 Sauthier map

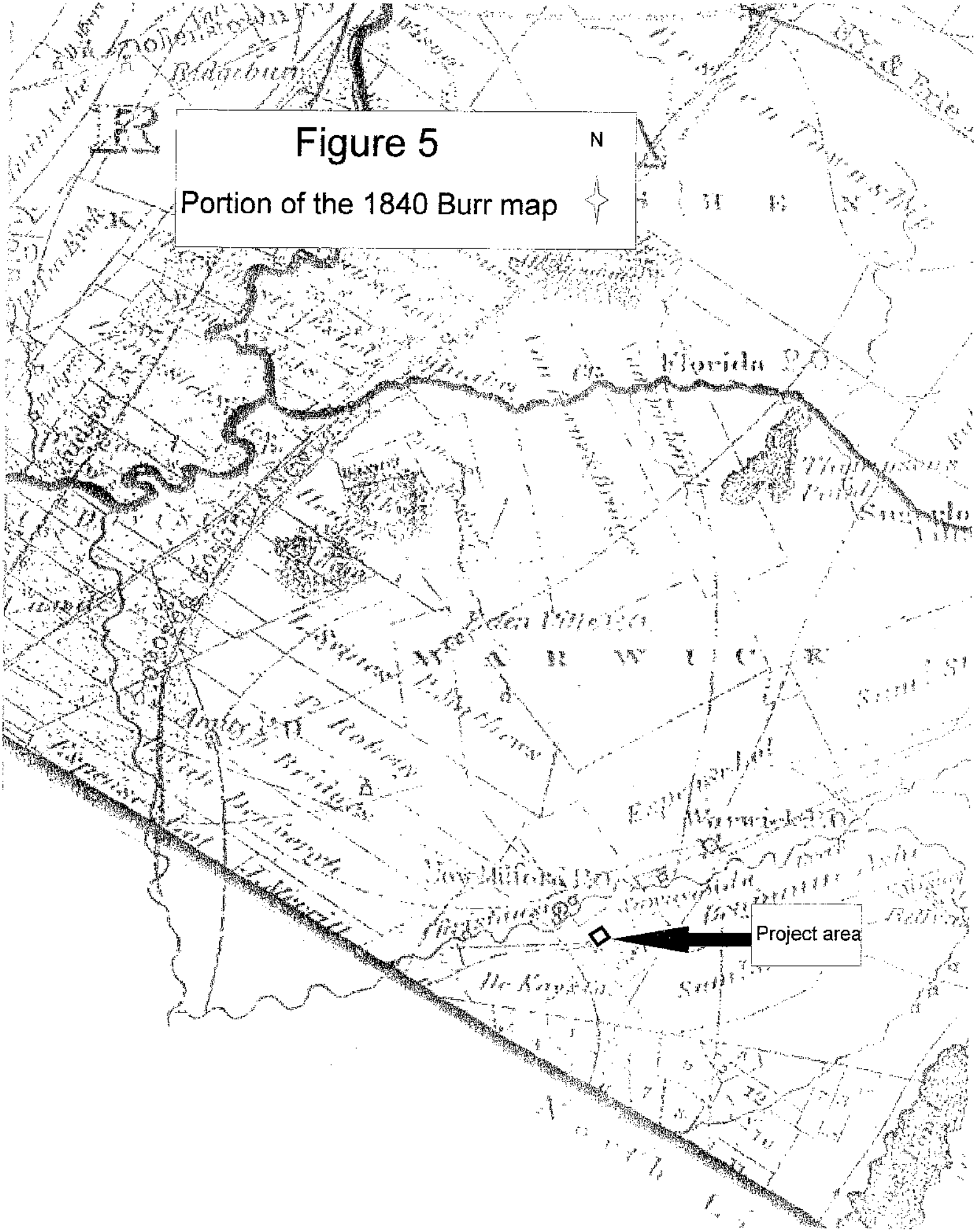


Figure 5

Portion of the 1840 Burr map

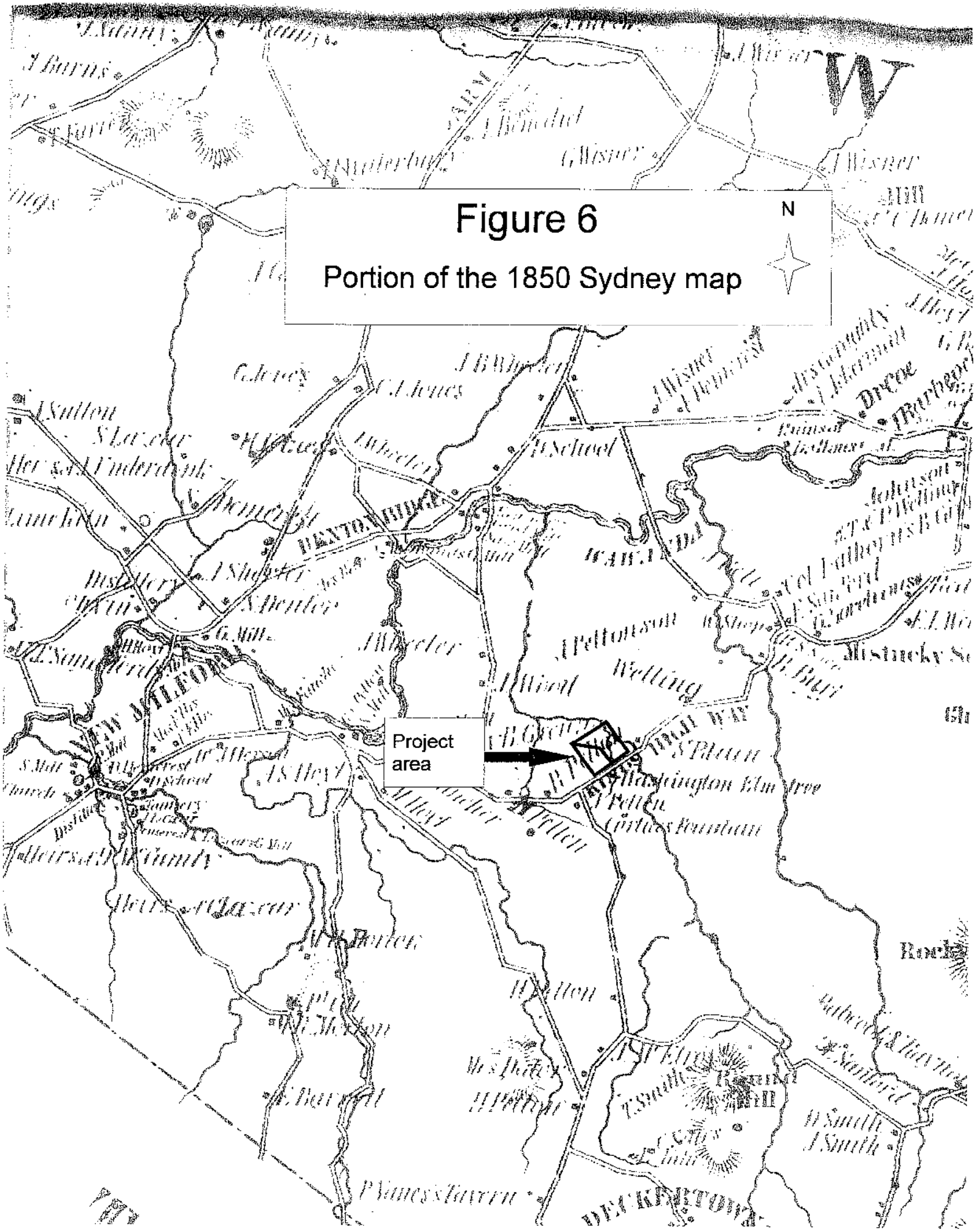


Figure 6

Portion of the 1850 Sydney map

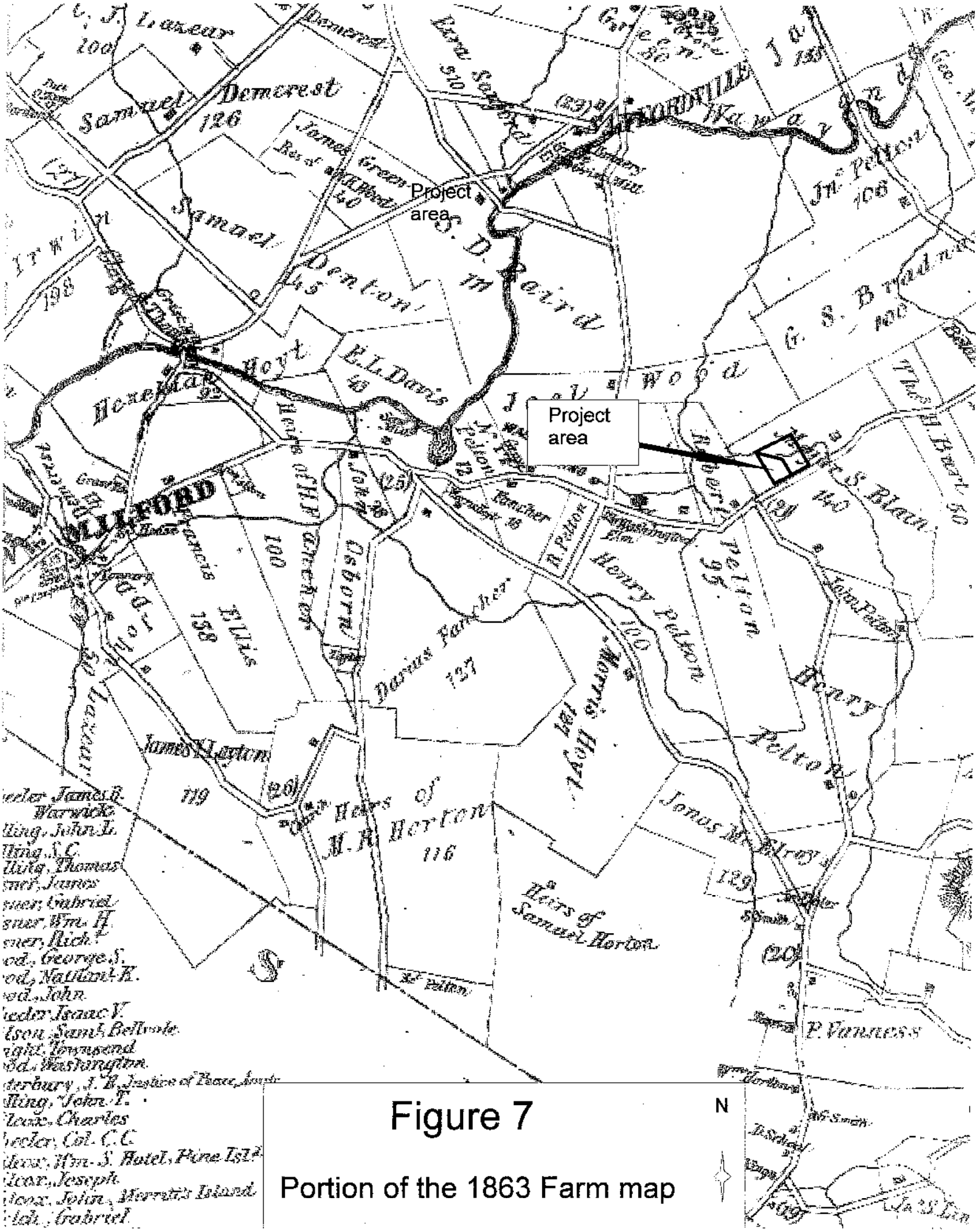


Figure 7

Portion of the 1863 Farm map

Figure 8

Portion of the 1875 Beers atlas

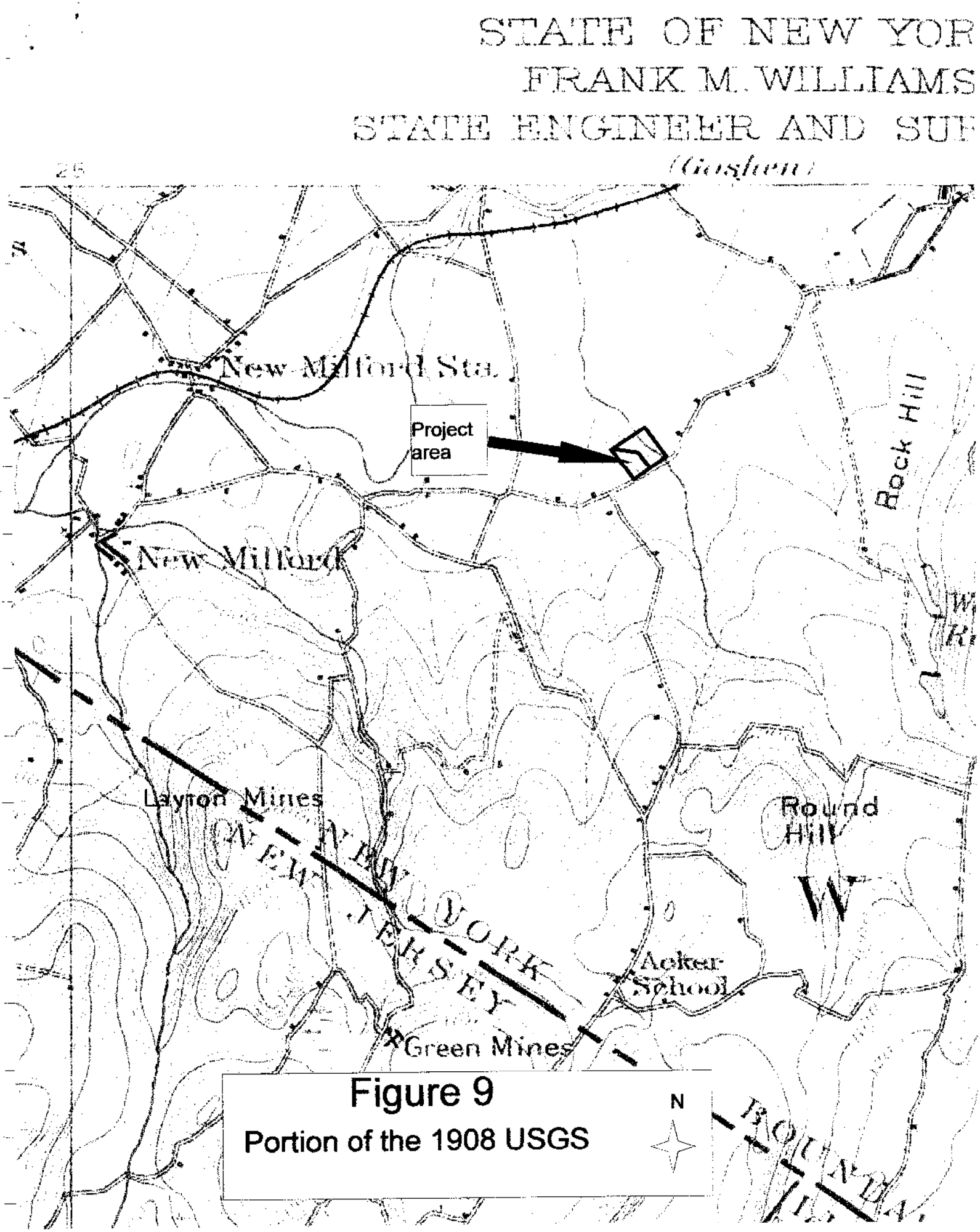


Figure 9

Portion of the 1908 USGS

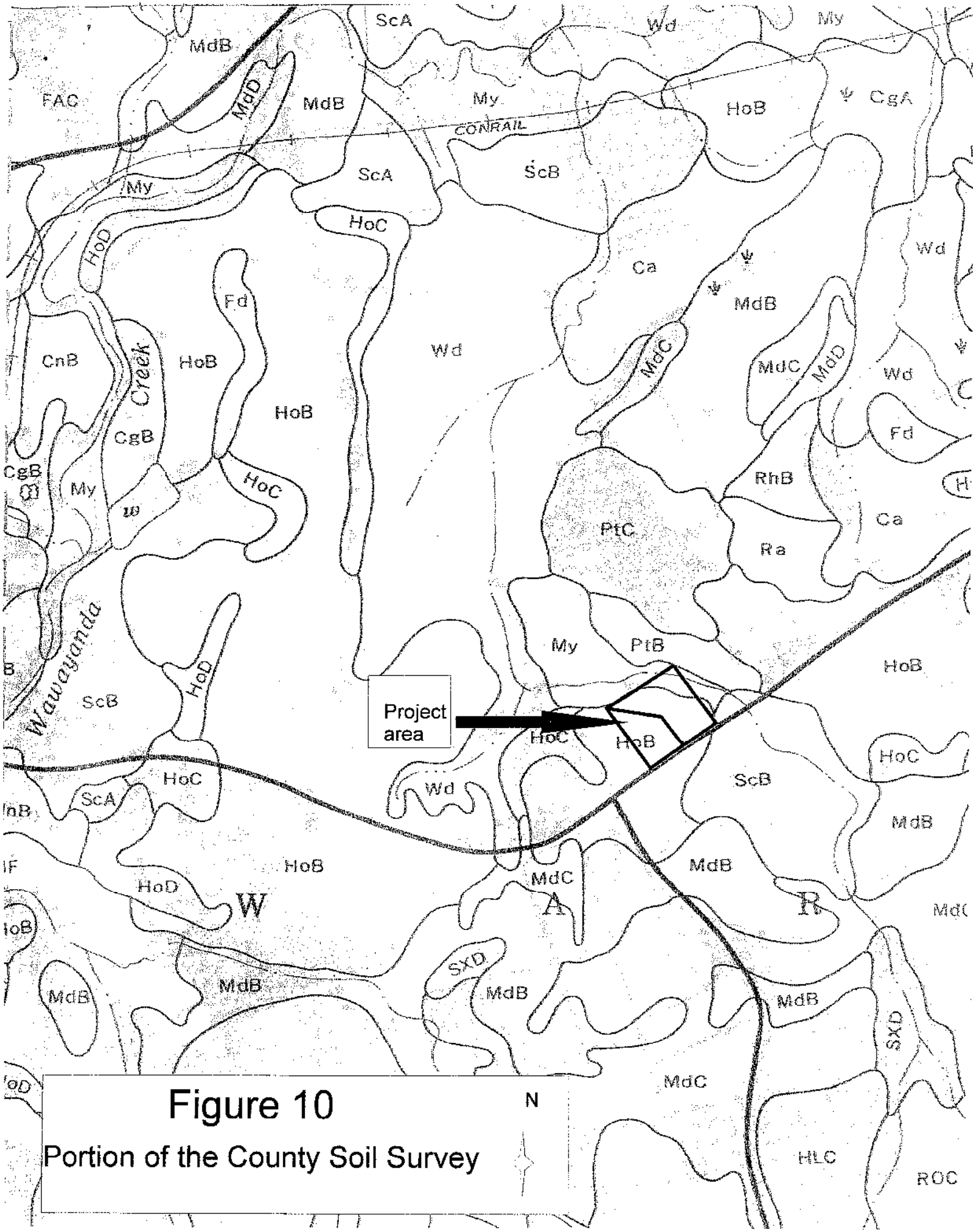


Figure 10

Portion of the County Soil Survey

Photo 1

Looking east
from ST 1

Photo 2

Looking northwest from ST 31

APPENDIX 2

SHOVEL TESTS

STP	LV	DEPTH(CM)	TEXTURE	COLOR	HOR	COMMENT
1	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-34	GrSaLo	10YR4/3	A	NCM
	3	34- 45	GrSaLo	10YR5/6	B	NCM
2	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-28	GrSaLo	10YR4/3	A	NCM
	3	28-39	GrSaLo	10YR5/6	B	NCM
3	1	0-5	rootmat,leave,humus		A/O	NCM
	2	5-30	GrSaLo	10YR4/3	A	NCM
	3	30-42	GrSaLo	10YR5/6	B	NCM
4	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-20	GrSaLo	10YR4/3	A	NCM
	3	23-30	GrSaLo	10YR5/6	B	NCM
5	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-32	GrSaLo	10YR4/3	A	NCM
	3	32-42	GrSaLo	10YR5/6	B	NCM
6	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-24	GrSaLo	10YR4/3	A	NCM
	3	24-37	GrSaLo	10YR5/6	B	NCM
7	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-30	GrSaLo	10YR4/3	A	NCM
	3	30-40	GrSaLo	10YR5/6	B	NCM
8	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-31	GrSaLo	10YR4/3	A	NCM
	3	31-42	GrSaLo	10YR5/6	B	NCM
9	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-29	GrSaLo	10YR4/3	A	NCM
	3	29-39	GrSaLo	10YR5/6	B	NCM
10	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-30	GrSaLo	10YR4/3	A	NCM
	3	30-40	GrSaLo	10YR5/6	B	NCM
11	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-31	GrSaLo	10YR4/3	A	NCM
	3	31-43	GrSaLo	10YR5/6	B	NCM
12	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-25	GrSaLo	10YR4/3	A	NCM
	3	25-40	GrSaLo	10YR5/6	B	NCM
13	1	0-5	rootmat,leaves,humus		A/O	NCM
	2	5-25	GrSaLo	10YR4/3	A	NCM
	3	25-35	GrSaLo	10YR5/6	B	NCM

28	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-33	GrSaLo	10YR4/3	A	NCM
	3	33-43	GrSaLo	10YR5/6	B	NCM
29	1	0-5	rootmat,leaves,humus		A/O	NCM
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30	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-35	GrSaLo	10YR4/3	A	NCM
	3	35-47	GrSaLo	10YR5/6	B	NCM
31	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-37	GrSaLo	10YR4/3	A	NCM
	3	37-47	GrSaLo	10YR5/6	B	NCM
32	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-34	GrSaLo	10YR4/3	A	NCM
	3	34-49	GrSaLo	10YR5/6	B	NCM
33	1	0-3	rootmat,leaves,humus		A/O	NCM
	2	3-35	GrSaLo	10YR4/3	A	NCM
	3	35-47	GrSaLo	10YR5/6	B	NCM
34	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-30	GrSaLo	10YR4/3	A	NCM
	3	30-41	GrSaLo	10YR5/6	B	NCM
35	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-27	GrSaLo	10YR4/3	A	NCM
	3	27-38	GrSaLo	2.5YR6/4	B	NCM
36	1	0-3	rootmat,leave,humus		A/O	NCM
	2	3-22	GrSaLo	10YR4/3	A	NCM
	3	22-38	GrSaLo	10YR5/6	B	NCM
37	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-28	GrSaLo	10YR4/3	A	NCM
	3	28-40	GrSaLo	10YR5/6	B	NCM
38	1	0-2	rootmat,leaves,humus		A/O	NCM
	2	2-25	GrSaLo	10YR4/3	A	NCM
	3	25-water				
39	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-30	GrSaLo	10YR4/3	A	NCM
	3	30-water				
40	1	0-4	rootmat,leaves,humus		A/O	NCM
	2	4-28	GrSaLo	10YR4/3	A	NCM
	3	28-water				
41	1	0-6	rootmat,leaves,humus		A/O	NCM
	2	6-38	GrSaLo	10YR4/3	A	NCM
	3	38-48	GrSaLo	10YR5/6	B	NCM

APPENDIX H

MANUFACTURE’S DATA SHEETS

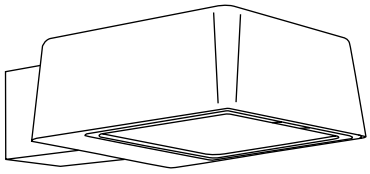
NITE BRITES

JOB NAME

TYPE

SBX400-AREA/SITE LIGHT
TYPE IV FORWARD THROW

150-400 watt Metal Halide
150-400 watt High Pressure Sodium
150-400 watt Pulse Start Metal Halide



The SBX400 Area/Site Luminaire puts light exactly where you need it, with no spill light. Tough and attractive, this luminaire can light roadways and large areas with control and precision.

Day-Brite Lighting

ORDERING MATRIX

SAMPLE CATALOG NUMBER: SBX400MMT-FWT-PE

SBX [ ] [ ] [ ] – FWT – [ ]

FAMILY
SBX

LAMP SOURCE
M - Metal Halide
S - High Pressure Sodium
P - Pulse Start Metal Halide (Ballast option must also be specified)

IES TYPE
FWT -Forward Throw Type IV[15]

WATTAGE
150 - 150
175 - 175[1]
200 - 200[31]
250 - 250
320 - 320[30]
350 - 350[30]
400 - 400

VOLTAGE
12 - 120
20 - 208
24 - 240
27 - 277
34 - 347
48 - 480
MT - 120/208
240/277
TT - 120/277
347

OPTIONS (add as suffix)
A - Adjustable Arm
PCRPC - Photo Control and Twist Lock Receptacle (Control matches specified voltage)
PE - Photo Control (not available in 480 volt)
PSC - Pulse Start CWA
PSR - Pulse Start Reactor Ballast[38]
WDF - Wired Double Fuse[45]
WSF - Wired Single Fuse[46]

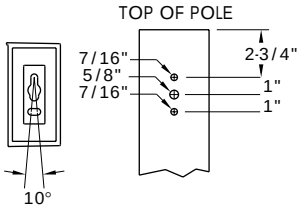
Footnotes:
[1]Standard Metal Halide only.
[15]Requires ED-28 size lamp.
[30]Pulse Start Metal Halide only.
[31]Not available in standard Metal Halide.
[38]Available in 400 watt and below, except for 175 watt. 277 volt only.
[45]Use with 208, 240 and 480 volt.
[46]Use with 120, 277 and 347 volt.

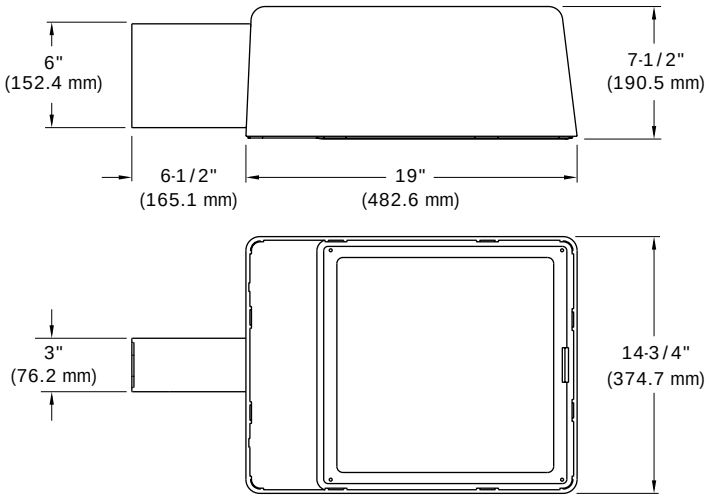
General Notes:
All options factory installed.
Mogul base lamp only.
All accessories are field installed.

ACCESSORIES (order separately)

MCLVS - Visor Shield
MCLGS - Glare Shield
MCLHSS - House Side Shield
MCLRPA4 - 4" Round Pole Adapter
MCLTA10R - Tenon Adapter (2-3/8" O.D.) drilled for one/incl. MCLRPA4 (Round Pole)
MCLTA20R - Tenon Adapter (2-3/8" O.D.) drilled for two at 180 degrees/incl. MCLRPA4 (Round Pole)
MCLTA30R - Tenon Adapter (2-3/8" O.D.) drilled for three/incl.MCLRPA4 (Round Pole)
MCLTA40R - Tenon Adapter (2-3/8" O.D.) drilled for four/incl. MCLRPA4 (Round Pole)
MCLTA10S - Tenon Adapter (2-3/8" O.D.) drilled for one (Square Pole)
MCLTA20S - Tenon Adapter (2-3/8" O.D.) drilled for two at 180 degrees (Square Pole)
MCLTA30S - Tenon Adapter (2-3/8" O.D.) drilled for three (Square Pole)
MCLTA40S - Tenon Adapter (2-3/8" O.D.) drilled for four (Square Pole)
MC10 - 5" SQ Wall Mounting Plate
206WBR - 5" SQ Thru Wire Box
MCL11A - 11" Arm
MCLARMTLRSC - 6" arm with Twist Lock Photo Control and Shorting Cap
(For additional descriptions of Area/Site Lighting accessories refer to sheet number OA-50020.)

DIMENSIONS





ENERGY DATA

HIGH PRESSURE SODIUM

HX BALLAST INPUT WATTS
150 watt–188 watts

CWA BALLAST INPUT WATTS
200 watt–240 watts
250 watt–295 watts
310 watt–365 watts
400 watt–464 watts

METAL HALIDE

HX BALLAST INPUT WATTS
150 watt–185 watts

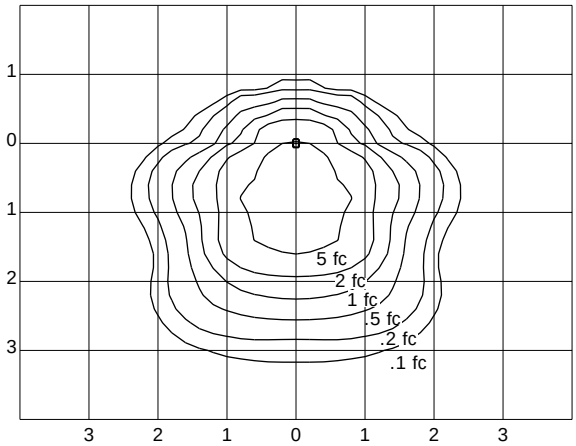
CWA BALLAST INPUT WATTS
150 watt–189 watts
175 watt–210 watts
200 watt–232 watts
250 watt–295 watts
320 watt–368 watts
350 watt–400 watts
400 watt–458 watts

EPA = 1.50 sq. ft.
WEIGHT = 40 lbs. (max.)

SBX400-AREA/SITE LIGHT TYPE IV

AS-42012

PHOTOMETRICS



UNITS SHOWN IN TERMS OF MOUNTING HEIGHT
INITIAL FOOTCANDLES SHOWN

CATALOG NUMBER:	SBX400MMT-FWT
TEST NUMBER:	SBX400M4
LAMP:	METAL HALIDE
WATTAGE:	400
LUMENS:	36,000
TILT ANGLE:	0°
MOUNTING HEIGHT:	25 FEET

LIGHT LEVEL MULTIPLYING FACTORS

MOUNTING HEIGHT	MULTIPLIER
40'	0.39
35'	0.51
30'	0.69
25'	1.00
20'	1.56
15'	2.77

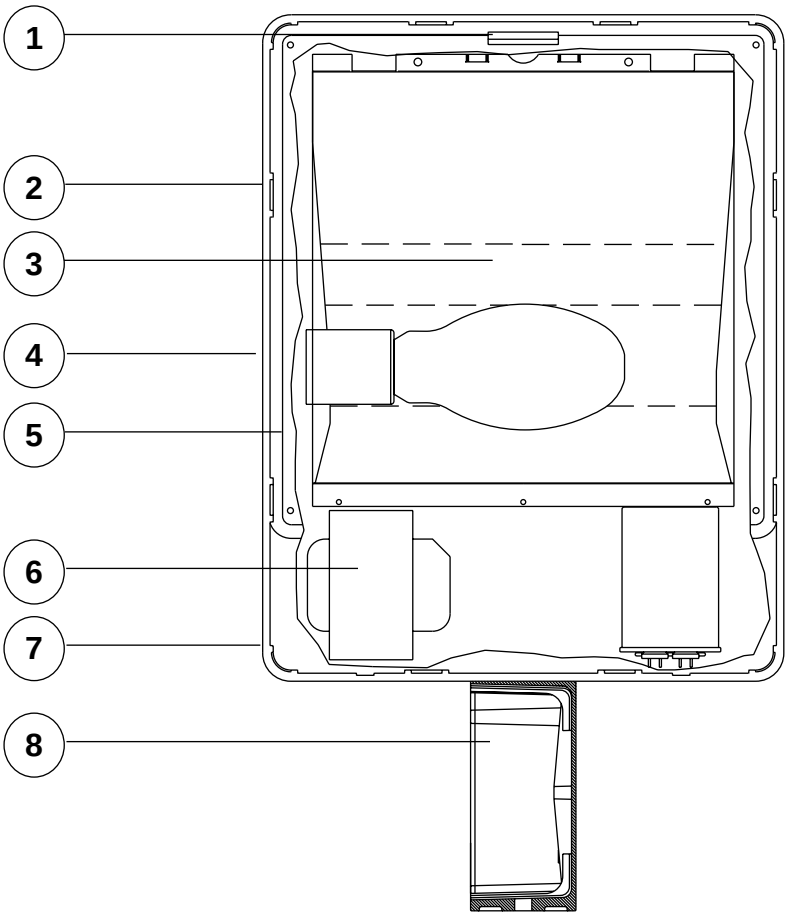
ADDITIONAL TEST NUMBERS

DESCRIPTION / CATALOG NUMBER	TEST NUMBER
SBX400SMT-FWT	SBX400S4

PRODUCT FEATURES

UL 1598 Listed suitable for wet location and 25°C ambient for all wattages listed.

1. Lens frame opens by releasing a stainless steel latch.
2. One-piece hinged, die cast aluminum door with heat and shock resistant tempered glass lens.
3. Durable formed reflector with clear anodized finish.
4. Rugged one piece die cast aluminum housing.
5. One piece silicone rubber gasket seals door to housing.
6. Swing-down ballast tray allows for easy maintenance of all electrical components.
7. Dark bronze polyester powder finish for excellent impact, corrosion and UV resistance.
8. Die cast aluminum arm with integral wiring compartment and slide access cover standard. Designed to mount to minimum 4 inch square pole.



Visit our web site at www.daybritelighting.com
776 South Green Street Tupelo, MS 38804 Phone: 662-842-7212 Fax: 662-841-5501
189 Bullock Drive Markham, Ontario Canada L3P 1W4 Phone: 905-294-9570 Fax: 905-294-8911

AS-42012

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Day-Brite Lighting is a Genlyte Thomas Group.

Day-Brite Lighting

PROFESSIONAL
OUTDOOR LIGHTING

Type: _____

Model: _____

Project: _____

SPECIFICATION SHEET

MODEL 5285-LED Landscape Series • In-Ground & Well Lights

FIXTURE SPECIFICATIONS:

HOUSING:
Injection-molded, glass-reinforced Ryton® R-4 composite for strength and high UV stability – warranted for ten years against corrosion, suspended inside a 6" black ABS well. Housing bracket within ABS well provides up to ±45° of tilt.

LENS COVER:
Precision CNC machined solid brass or solid stainless steel fitted to housing with a silicone O-ring gasket – providing a superior weather-tight seal.

FINISH:
Natural brass, Olde Brass or stainless steel lens cover. Housing available in black only.

LENS:
Clear, tempered, shock and heat-resistant, soda-lime glass lens- crowned (convex) to promote water runoff. Optical effect lenses are available; see accessories column on fixture ordering information chart.

LAMP TYPE:
High Output LED with Vista exclusive smart-driver, powered to operate for 50,000 hours.

OPTICS:
Integral high-efficiency optics available in spot through flood beam spreads.

ELECTRICAL:
Input voltage range 10.5–15V AC, regulated to achieve uniform illumination throughout the cable run of fixtures. Integral surge & reverse polarity protection.

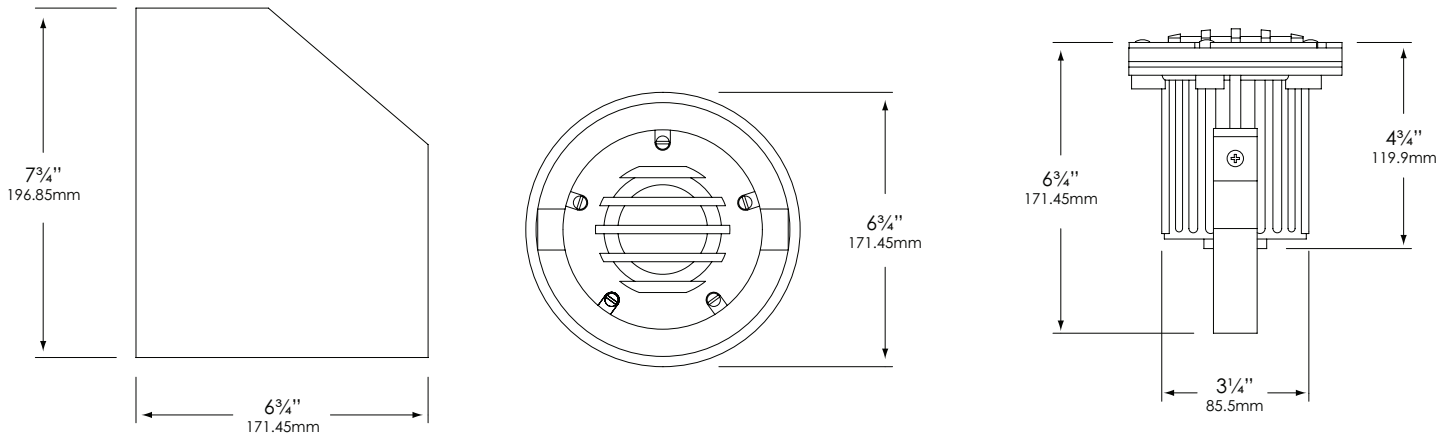
MOUNTING:
In-grade. Conduit mount fixtures have two ¾" NPT inlets on bottom. Optional concrete mounting kit available; please see accessories column on fixture ordering information chart.

FASTENERS/INSERTS:
All fasteners are stainless steel with brass inserts.

WIRING:
Prewired with a three-foot pigtail of 18-2 direct-burial cable and underground connectors for a secure connection to supply cable.

All Vista luminaires are MADE IN U.S.A.

DIMENSIONS:



Vista Professional Outdoor Lighting reserves the right to modify the design and/or construction of the fixture shown without further notification.

1625 Surveyor Avenue • Simi Valley, CA 93063 • (805) 527-0987 • (800) 766-VISTA (8478)
FAX: (888) 670-VISTA (8478) • email@vistapro.com • www.vistapro.com

PROFESSIONAL
OUTDOOR LIGHTING

SPECIFICATION SHEET

MODEL 5285-LED Landscape Series • In-Ground & Well Lights

FIXTURE ORDERING INFORMATION

TO ORDER FIXTURE: Select appropriate choice from each column as in the following example.

EXAMPLE: GW-5285-BSN-W-LF3MF-SL

MOUNTING	MODEL	LENS COVER	COLOR TEMP	LAMP	ACCESSORIES
GW- In-grade	5285	BSN - Natural Brass BSO - Olde Brass SS - Stainless Steel	W - Warm C - Cool	LF3SP - 3 emitter, 5W, Spot LF3MF - 3 emitter, 5W, Med. Flood LF3WF - 3 emitter, 5W, Wide Flood LED - Group F Emitter Qty - 3 Temperature - Warm (W) or Cool (C) Operating voltage range - 10.5 to 15V. (Please see lamp order code column on lamp guide, Vista product catalog.)	CBL - Crowned Cool Blue lens CFR - Crowned Frosted lens SL- Flat Spread lens DBL- Flat Dark Blue lens GL- Flat Dark Green lens RL- Flat Red lens YL- Flat Amber lens HL- Honeycomb louver

Fixtures shipped with standard lamp, unless otherwise specified.

Vista Professional Outdoor Lighting reserves the right to modify the design and/or construction of the fixture shown without further notification.

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FAX: (888) 670-VISTA (8478) • email@vistapro.com • www.vistapro.com

NITE BRITES

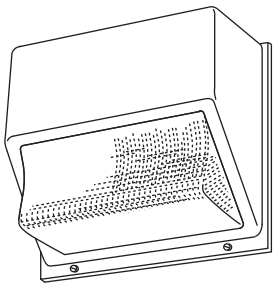
JOB NAME

TYPE

WLL-LARGE WALL LIGHT

150-400 watt Metal Halide
200-400 watt High Pressure Sodium
200-400 watt Pulse Start Metal Halide
55-165 watt Induction

The Large Wall Light is ideal for general and security lighting in areas requiring high light levels at higher mounting heights. Use for exterior applications such as retail buildings, residential complexes, educational facilities, hotels, tunnels, underpasses, warehouses and industrial applications.



Day-Brite® Lighting

ORDERING MATRIX

SAMPLE CATALOG NUMBER: WLL320PMT-PSC-LP

WLL [ ] [ ] [ ] – [ ]

FIXTURE
WLL

LAMP SOURCE
M - Metal Halide
S - High Pressure Sodium
P - Pulse Start Metal Halide (Ballast option must also be specified)
N - Induction

WATTAGE
055 - 55[91, 92]
085 - 85[91, 92]
165 - 165[91, 92]
175 - 175[1, 33]
200 - 200[31]
250 - 250
320 - 320[30]
350 - 350[30]
400 - 400

VOLTAGE
48 - 480
MT - 120/208
240/277
TT - 120/277
347
5T - 120/208
240/277
480[98]

OPTIONS (add as suffix)
CUL - UL Listing to meet CSA standards
HR - Hot Restrike[34]
LP - Lamp with fixture
PCR - Photo Control Receptacle[13]
PE - Photo Control (not available in 480 V)
PSC - Pulse Start CWA Ballast
Q - Quartz Standby[39]
QEM - Quartz Emergency[40]
QTD - Quartz Time Delay[39]
WDF - Wired Double Fuse[45]
WSF - Wired Single Fuse[46]

Footnotes:
[1]Metal Halide only.
[13]Order Twist Lock Photo Control separately.
[30]Pulse Start Metal Halide only.
[31]Not available in standard Metal Halide.
[33]Not available in Pulse Start Metal Halide.
[34]Available in 150 High Pressure Sodium only.
[39]Pre-wired by factory.
[40]Requires 120 volt secondary power supply.
[45]Use with 208, 240 and 480 volt.
[46]Use with 120, 277 and 347 volt.
[91]Induction Lamp Only.
[92]120 through 277 volt only.
[98]Available in 250 or 400 watt.

ACCESSORIES (order separately)
FDF - Double Fuse Holder only
FSF - Single Fuse Holder only
GSWLL - Glare Shield
VCWLL - Cutoff Visor
VSWLL - Vandal Shield
WGWLL - Wire Guard
PC-MT - Photo Control Twist Lock multi-volt (Must have PCR option)
PC-48 - Photo Control Twist Lock 480 volt (Must have PCR option)
PCR-SC - PCR Shorting Cap
WLS-PEC12 - Photo Control 120 volt
WLS-PEC27 - Photo Control 208-277 volt
WLL-PMK - Pole Mounting Kit
TP - Tamper Proof

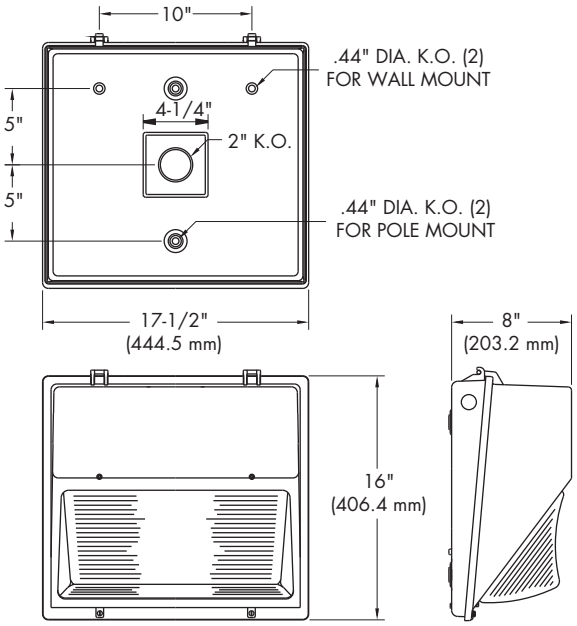
(For additional descriptions of Wall Light accessories refer to sheet number OA-50030.2)

General Notes:
Mogul base lamp only.
All options are factory installed.
All accessories are field installed.

Data subject to change without notice.

Warning: Refer to and follow the lamp manufacturer's warnings and instructions.

DIMENSIONS



WEIGHT = 37 lbs. (max.)

ENERGY DATA

HIGH PRESSURE SODIUM

CWA BALLAST INPUT WATTS
200 watt–240 watts
250 watt–295 watts
310 watt–365 watts
400 watt–464 watts

METAL HALIDE

HX BALLAST INPUT WATTS
150 watt–189 watts
CWA BALLAST INPUT WATTS
175 watt–210 watts
250 watt–285 watts
400 watt–485 watts

PULSE START METAL HALIDE

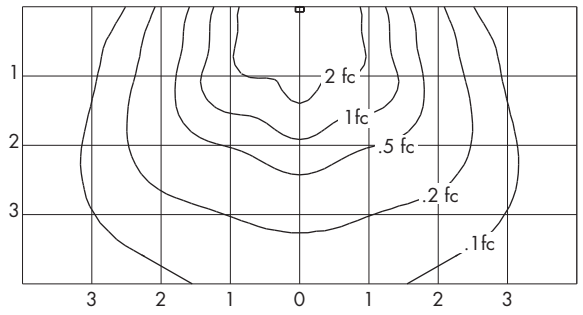
CWA BALLAST INPUT WATTS
200 watt–232 watts
250 watt–288 watts
320 watt–368 watts
350 watt–400 watts
400 watt–452 watts

INDUCTION

55 watt–57 watts
85 watt–89 watts
165 watt–190 watts

WLL-LARGE WALL LIGHT **WL-43010.2**

PHOTOMETRICS



UNITS SHOWN IN TERMS OF MOUNTING HEIGHT
INITIAL FOOTCANDLES SHOWN

CATALOG NUMBER:	WLL400M
TEST NUMBER:	13230
LAMP:	METAL HALIDE
WATTAGE:	400
LUMENS:	40,000
TILT ANGLE:	0°
MOUNTING HEIGHT:	25 FEET

LIGHT LEVEL MULTIPLYING FACTORS

MOUNTING HEIGHT	MULTIPLIER
40'	0.39
35'	0.51
30'	0.69
25'	1.00
20'	1.56
15'	2.77

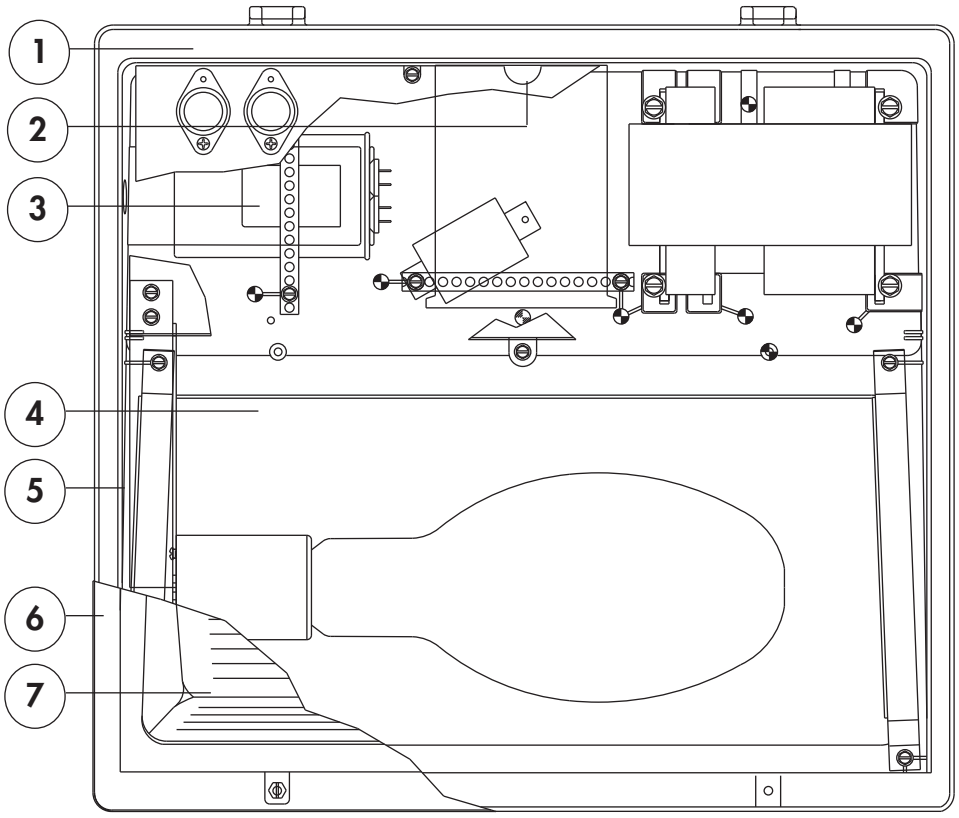
ADDITIONAL TEST NUMBERS

DESCRIPTION/CATALOG NUMBER	TEST NUMBER
WLL250M	13232
WLL175M	13235
WLL400S	13222
WLL250S	13224
WLL150S	13226

PRODUCT FEATURES

Third party certified to meet UL1598 standards for wet location, 25°C ambient, and feed-through wiring for all lamp wattages listed.

1. Heavy duty two piece die cast aluminum housing is top hinged for ease of maintenance. Two captive stainless steel door fasteners.
2. 3/4" threaded conduit top entry with plug, and 3/4" knock outs on each side for surface conduit entry.
3. All electrical components in front housing with quick disconnect for ease of installation and service. Lightweight back plate is easily attached to wall, and quick disconnect eases front housing installation.
4. Computer designed and precision formed specular aluminum reflector.
5. Gaskets are long lasting silicone rubber.
6. Dark bronze polyester powder finish for excellent impact, corrosion, and UV resistance.
7. Clear prismatic borosilicate glass refractor is thermal and shock resistant.



DAY-BRITE LIGHTING • www.daybritelighting.com
776 South Green Street • Tupelo, Mississippi 38804 • PH: (662) 842-7212 • FAX: (662) 841-5501
CANADIAN DIVISION
189 Bullock Drive • Markham, Ontario L3P 1W4 • PH: (905) 294-9570 • FAX: (905) 294-9811

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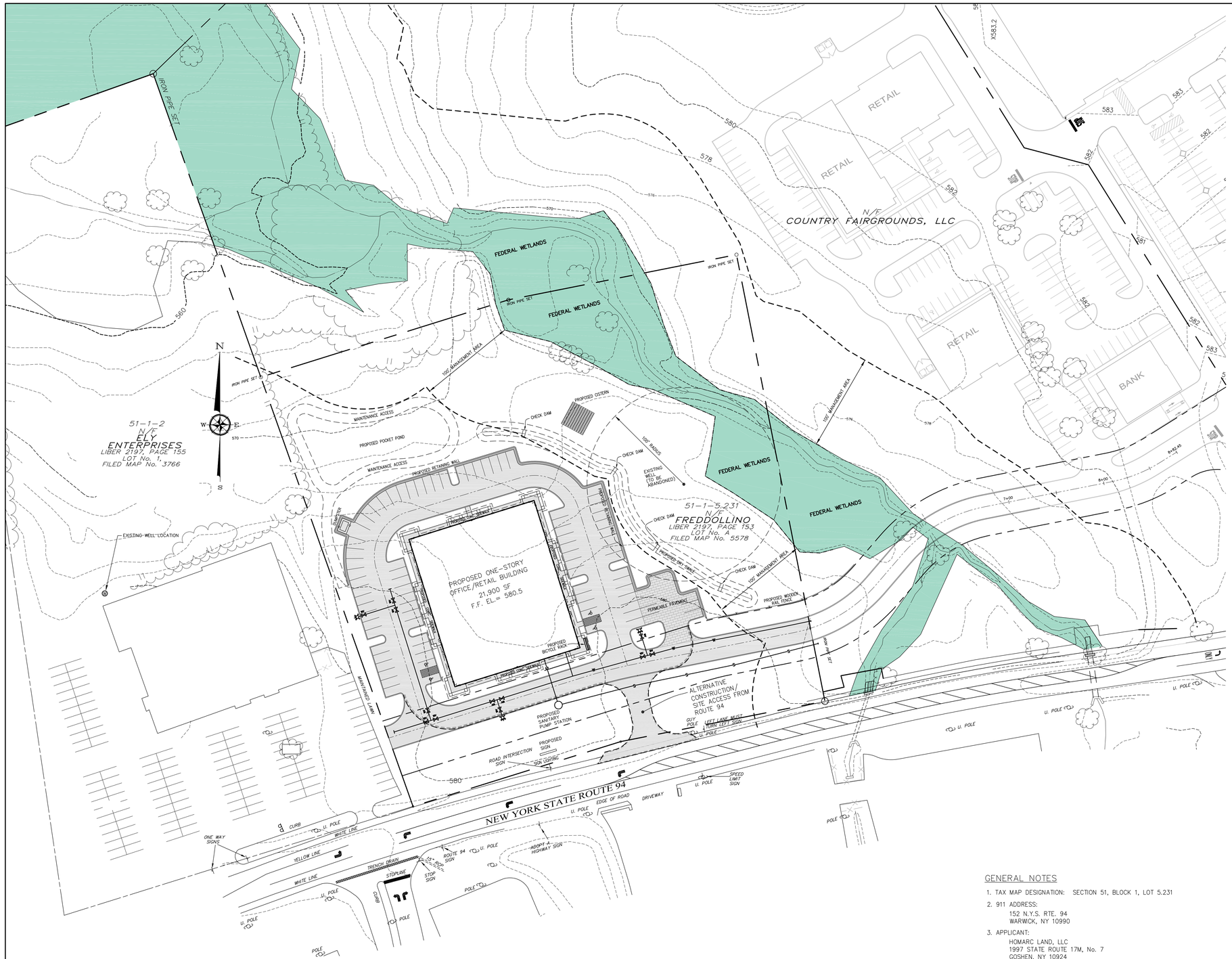
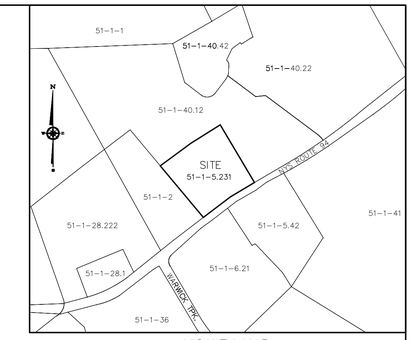
PHILIPS





VICINITY MAP
1"=500'±

SUMMARY OF ZONING REQUIREMENTS
(CB DISTRICT)

BULK REQUIREMENT	REQUIRED OR ALLOWED	PROPOSED
LOT AREA	3 acres	5.1 acres
LOT WIDTH	TOWDS	460 ft. ±
LOT DEPTH	TOWDS	470 ft. ±
FRONT SETBACK	TOWDS	105 ft. ±
REAR SETBACK	TOWDS	205 ft. ±
ONE SIDE SETBACK	TOWDS	81 ft. ±
BOTH SIDE SETBACKS	TOWDS	318 ft. ±
BUILDING HEIGHT	TOWDS	37.5 ft.
SETBACK TO MARGINAL ACCESS	TOWDS	10 ft.

TOWDS: AS PER TOWN OF WARWICK DESIGN STANDARDS

PARKING CALCULATIONS

REQUIRED PARKING SPACES: TO BE DETERMINED
PROPOSED PARKING SPACES: 84

LIST OF DRAWINGS:

1. COVER SHEET
2. GRADING AND UTILITIES
3. LANDSCAPING PLAN
4. LIGHTING PLAN
5. PROFILES AND DETAILS
6. DETAILS

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)

GENERAL NOTES

1. TAX MAP DESIGNATION: SECTION 51, BLOCK 1, LOT 5.231
2. 911 ADDRESS:
   152 N.Y.S. RTE. 94
   WARWICK, NY 10990
3. APPLICANT:
   HOMARC LAND, LLC
   1997 STATE ROUTE 17M, No. 7
   GOSHEN, NY 10924
4. PROPERTY AREA: 5.1± ACRES
5. ZONING DISTRICT: COMMUNITY BUSINESS (CB)
6. PROPOSED USE: VARIOUS BUSINESS USES
7. PROPOSED WATER SUPPLY: CONNECTION TO TOWN SYSTEM
9. PROPOSED SEWAGE DISPOSAL: CONNECTION TO TOWN SYSTEM
10. SURVEY INFORMATION PROVIDED BY JOHN McGLOIN, PLS, WARWICK, NY
11. NO CONSTRUCTION OR USE SHALL BEGIN UNTIL THE MAPS ARE SIGNED BY THE PLANNING BOARD CHAIRMAN AND BUILDING DEPARTMENT PERMITS ARE OBTAINED.

NO.	DESCRIPTION	DATE
1	REVISED PER PB COMMENTS DATED 03-05-14	04-28-14

REVISIONS

COVER SHEET

DESIGNED BY: | DRAWN BY:
APPROVED BY: | CHECKED BY:

JOHN D. FULLER, P.E.

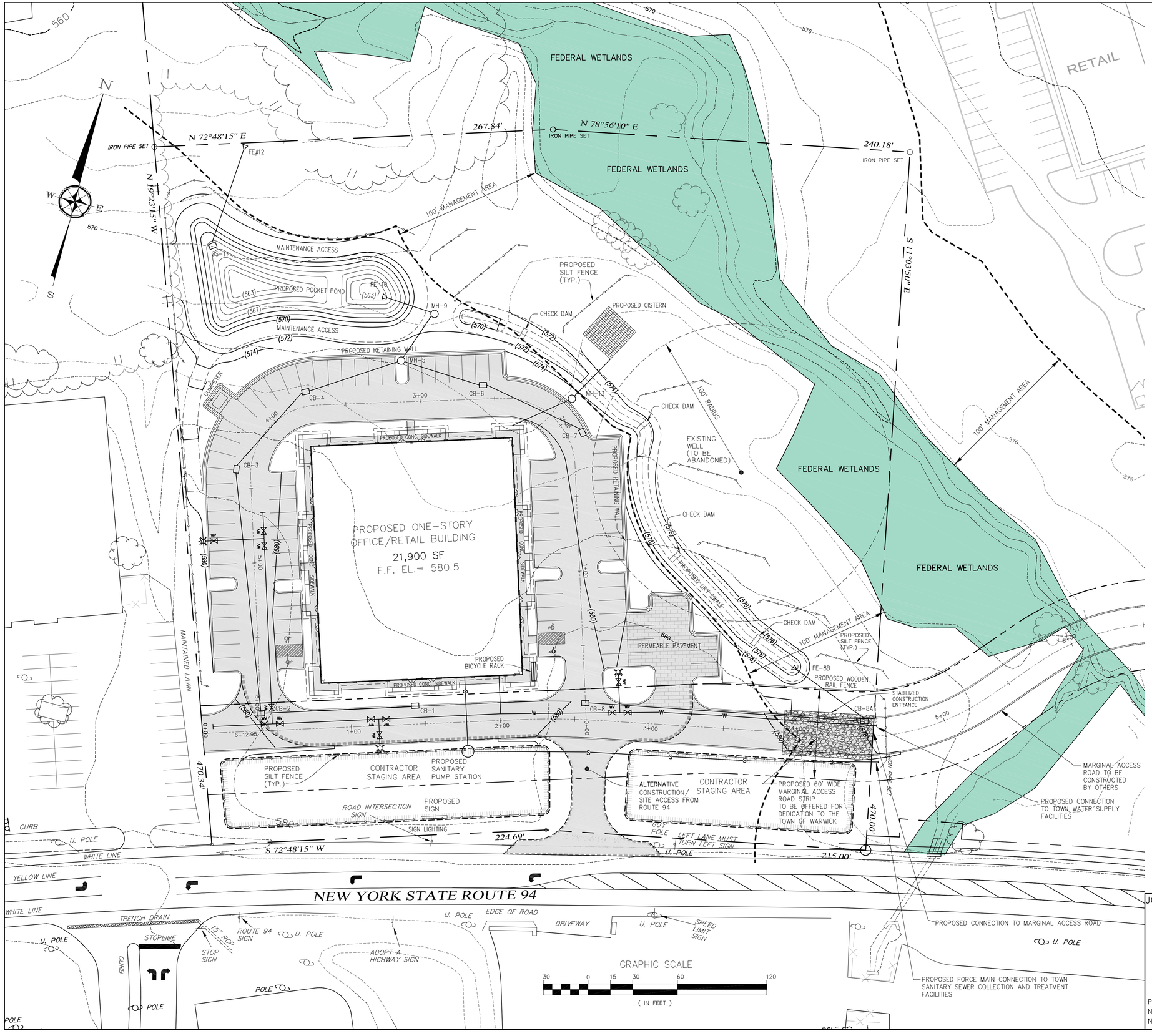
STATE OF NEW YORK · JOHN DOUGLAS FULLER · No. 077703 · LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER
N.J. LIC. NO. 42708
N.Y. LIC. NO. 077703

PROPOSED RETAIL BUILDING
PREPARED FOR
HOMARC PROPERTY
SECTION 51 BLOCK 1 LOT 5.231
TOWN OF WARWICK
ORANGE COUNTY NEW YORK

ERS ENGINEERING CONSULTANTS, P.C.
PHONE: (845) 987-1775 FAX: (845) 987-1788
11 FORESTER AVE., WARWICK, NEW YORK 10990

SCALE:	DATE:	JOB NO.	SHEET NO.
1"=50'	10-01-13	3101	1 OF 6



CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES, ABOVE-GROUND AND BELOW-GROUND, WHETHER IN THE PUBLIC RIGHT-OF-WAY, IN EASEMENTS, OR ON PRIVATE PROPERTY PRIOR TO STARTING ANY EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITY LINES THROUGHOUT THE COURSE OF CONSTRUCTION. PROJECT SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. UNLESS LABELED OTHERWISE, ALL NEW STORMWATER DRAINAGE SYSTEM PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) PIPES, N-12, AS MANUFACTURED BY ADS OR APPROVED EQUAL WITH FLARED END SECTIONS AT ALL FREE DISCHARGE ENDS.
3. MANHOLES AND CATCH BASINS SHALL BE PRECAST REINFORCED CONCRETE, SUITABLE FOR H20 LOADING, AS MANUFACTURED BY PRECAST CONCRETE SALES OR APPROVED EQUAL.
4. ALL NEW UTILITIES SHALL BE CONSTRUCTED UNDERGROUND.
5. ALL CONSTRUCTION, TRAFFIC CONTROL, AND RELATED WORK IN THE VICINITY OF ROUTE 94 SHALL BE COMPLETED IN ACCORDANCE WITH NYSDOT HIGHWAY WORK PERMIT _____, ISSUED _____.
6. NO OUTSIDE STORAGE OF ANY QUANTITY OF PESTICIDES AND/OR HERBICIDES IS PERMITTED WITHIN THE AQ-O DISTRICT.
7. UPON THE COMPLETION OF CONSTRUCTION, SCREENING WILL BE PROVIDED TO OBSCURE ANY NEW PARKING AREAS THAT ARE HIGHLY VISIBLE FROM ROUTE 94.

STORM SEWER CHART

CB-1 RIM 578.43 INV. OUT 576.43	15" HDPE 104 LF S=0.50%
CB-2 RIM 579.85 INV. IN 575.91 INV. OUT 575.81	15" HDPE 164 LF S=1.00%
CB-3 RIM 578.62 INV. IN 574.17 INV. OUT 574.07	15" HDPE 70 LF S=0.50%
CB-4 RIM 578.52 INV. IN 573.72 INV. OUT 573.62	15" HDPE 68 LF S=0.50%
MH-5 RIM 578.81 INV. IN 573.28 INV. IN 573.21 INV. OUT 573.11	18" HDPE 34 LF S=5.90%
MH-9 RIM 571.40 INV. IN 567.90 INV. IN 567.90 (SWALE) INV. OUT 565.90	18" HDPE 32 LF S=7.50%
FE-10 INV. OUT 563.50	
OS-11 GR.=569.5 INV. IN 568.5 INV. OUT 566.16	15" HDPE 66 LF S=1.00%
FE-12 INV. OUT 565.50	

CB-6 RIM 578.89 INV. IN 574.17 INV. OUT 574.07	15" HDPE 57 LF S=0.50%
CB-7 RIM 579.21 INV. IN 574.64 INV. OUT 574.54	15" HDPE 75 LF S=0.50%
CB-8 RIM 580.20 INV. OUT 577.20	15" HDPE 183 LF S=0.08%
CB-8A RIM 578.01 INV. IN 575.76 INV. OUT 575.76	15" HDPE 56 LF S=0.05%
FE-8B INV. OUT 575.48	

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

NO.	DESCRIPTION	DATE
1	REVISED PER PB COMMENTS DATED 03-05-14	04-28-14

REVISIONS

GRADING AND UTILITIES

PROPOSED RETAIL BUILDING
PREPARED FOR
HOMARC PROPERTY
SECTION 51 BLOCK 1 LOT 5.231
TOWN OF WARWICK
ORANGE COUNTY NEW YORK

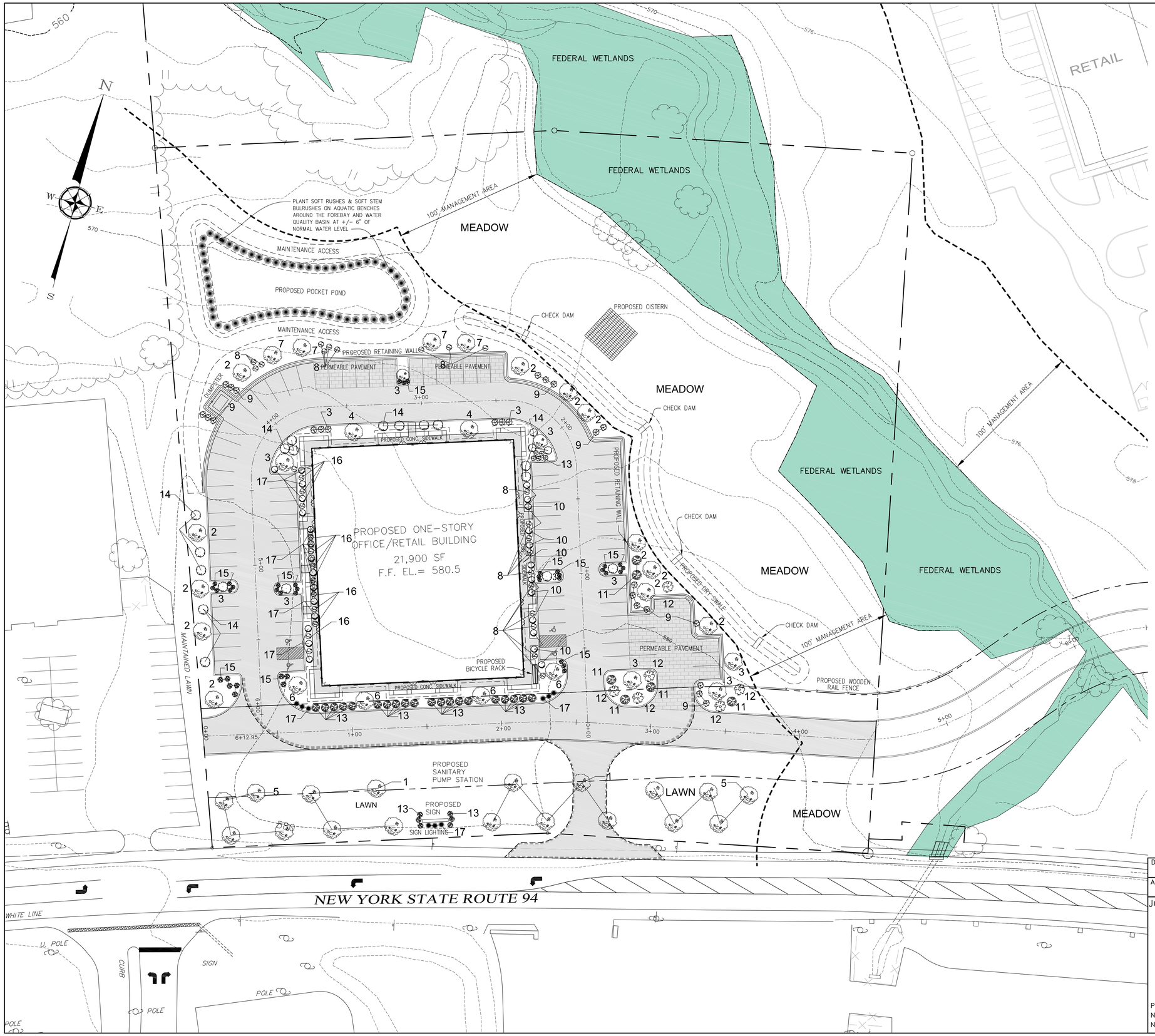
JOHN D. FULLER, P.E.

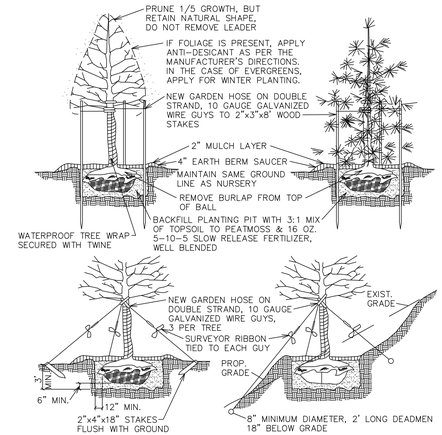
STATE OF NEW YORK · DOUGLAS J. FULLER · No. 077703-1 · LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER
N.J. LIC. NO. 42708
N.Y. LIC. NO. 077703

ERS ENGINEERING CONSULTANTS, P.C.
PHONE: (845) 987-1775 FAX: (845) 987-1788
11 FORESTER AVE., WARWICK, NEW YORK 10990

SCALE:	DATE:	JOB NO.	SHEET NO.
1"=30'	10-01-13	3101	2 OF 6





LANDSCAPING DETAILS

NOT TO SCALE

SYM	QTY	SCIENTIFIC NAME	COMMON NAME	SIZE
TREES				
1	9	Acer saccharum	Sugar Maple	3-4 "
2	12	Acer rubrum October Glory	October Glory Red Maple	2-2½"
3	16	Betula nigra Heritage	Heritage River Birch	8-10' clump
4	2	Cornus florida	Flowering Dogwood	2-2½"
5	9	Pinus strobus	White Pine	7-8'
6	4	Pyrus calleryana Chanticleer or Cleveland S.	Chanticleer or Cleveland S. Pear	2-2½"
7	4	Quercus palustris	Pin Oak	2-2½"
SHRUBS				
8	20	Clethra alnifolia	Sweet Pepper Bush	18-24"
9	18	Cornus sericea	Redtwig Dogwood	30-36"
10	12	Cornus sericea Silver & Gold	S. & Gold Yellowtwig Dogwood	30-36"
11	6	Ilex meservaeae Blue Princess	Blue Princess Holly	24-30"
12	6	Ilex meservaeae Blue Prince	Blue Prince Holly	24-30"
13	31	Rhododendron hybrids azalea	Evergreen Azalea	18-24"
14	17	Rhododendron hybrids PJM	Rhododendron PJM	30-36"
PERENNIALS				
15	38	Hemmerocallis Stella d'Oro	Stella d'Oro Daylily	2 gal.
16	13	Pennisetum alopecuroides Hameln	Hameln Fountain Grass	2 gal.
17	24	Rudbeckia fulgida Goldsturm	Black-Eyed Susan	2 gal.

TEMPORARY SEEDING SPECIFICATION :

SEEDING : 4 lbs. ANNUAL (OR PERENNIAL) RYE/1000 SQ. FT.

FERTILIZING : 16 lbs. 10-20-10 COMMERCIAL FERTILIZER/1000 SQ. FT.

LIMING : 90 lbs. PULVERIZED LIMESTONE/1000 SQ. FT.

MULCH : 80 lbs. SALT HAY OR STRAW/1000 SQ. FT. ANCHOR WITH A STARCH POWDER TACKING MIX APPLIED AT 50 lbs./ACRE.

PERMANENT SOIL STABILIZATION TO BE COMPLETED WITHIN 10 DAYS OF FINAL GRADING.

CHARACTERISTICS THAT SHOULD BE EVALUATED PRIOR TO REMOVING OR PROTECTING A TREE :

a) TREE VIGOR : AVOID SAVING HOLLOW OR ROTTEN TREES, TREES THAT ARE CRACKED, SPLIT, LEANING OR CROOKED, OOZING SAP OR WITH BROKEN TOPS OR TREES SUBJECT TO INSECT AND DISEASE.
b) TREE AGE : OLD TREES REQUIRE EXTENSIVE PROTECTION MEASURES. IF LEAVING AN OLD TREE, MAKE SURE IT IS HEALTHY.
c) BOX TREES WITHIN 25' OF CONSTRUCTION. FENCE SHOULD BE INSTALLED AT DRIP LINE AND FEEDER ROOTS SHOULD NOT BE CUT BEYOND THE FENCE.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)

NO.	DESCRIPTION	DATE
1	REVISED PER PB COMMENTS DATED 03-05-14	04-28-14

REVISIONS

LANDSCAPING PLAN

DESIGNED BY: | DRAWN BY:

APPROVED BY: | CHECKED BY:

JOHN D. FULLER, P.E.

STATE OF NEW YORK · DOUGLAS · No. 077703-1 · LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER
N.J. LIC. NO. 42708
N.Y. LIC. NO. 077703

PROPOSED RETAIL BUILDING
PREPARED FOR
HOMARC PROPERTY
SECTION 51 BLOCK 1 LOT 5.231
TOWN OF WARWICK
ORANGE COUNTY NEW YORK

ERS ENGINEERING CONSULTANTS, P.C.
PHONE: (845) 987-1775 FAX: (845) 987-1788
11 FORESTER AVE., WARWICK, NEW YORK 10990

SCALE:	DATE:	JOB NO.	SHEET NO.
1"=30'	10-01-13	3101	3 OF 6

FEDERAL WETLANDS

FEDERAL WETLANDS

FEDERAL WETLANDS

FEDERAL WETLANDS

RETAIL

100' MANAGEMENT AREA

100' MANAGEMENT AREA

100' MANAGEMENT AREA

MAINTENANCE ACCESS

MAINTENANCE ACCESS

PROPOSED POCKET POND

PROPOSED CISTERN

CHECK DAM

CHECK DAM

CHECK DAM

CHECK DAM

PROPOSED RETAINING WALL

PROPOSED RETAINING WALL

DUMPSTER

PROPOSED CONC. SIDEWALK

PROPOSED CONC. SIDEWALK

PROPOSED CONC. SIDEWALK

PROPOSED ONE-STORY OFFICE/RETAIL BUILDING

21,900 SF

F.F. EL.= 580.5

PROPOSED DRY SWALE

PERMEABLE PAVEMENT

PROPOSED BICYCLE RACK

PROPOSED WOODEN RAIL FENCE

MAINTAINED LAWN

PROPOSED SANITARY PUMP STATION

PROPOSED SIGN

SIGN LIGHTING

ALTERNATIVE CONSTRUCTION/ SITE ACCESS FROM ROUTE 94

NEW YORK STATE ROUTE 94

WHITE LINE

U. POLE

CURB

SIGN

POLE

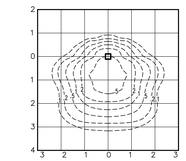
POLE

POLE

GRAPHIC SCALE

30 0 15 30 60 120

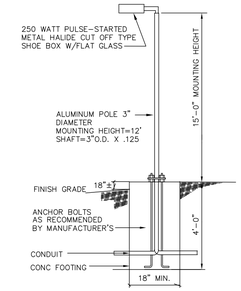
(IN FEET)



DAY BRIGHT LIGHTING
MODEL No. SRX400MMT-FWT
250 WATT METAL HALIDE

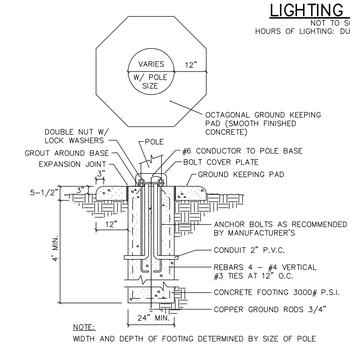
PHOTOMETRIC DATA

(BASED ON 15 FT. MTG. HT.)



LIGHTING DETAIL

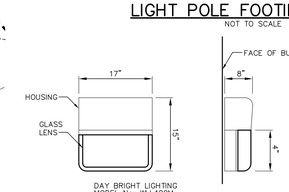
NOT TO SCALE
HOURS OF LIGHTING: DUSK – 8:00 AM.



NOTE:
WIDTH AND DEPTH OF FOOTING DETERMINED BY SIZE OF POLE

LIGHT POLE FOOTING DETAIL

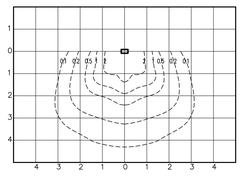
NOT TO SCALE



DAY BRIGHT LIGHTING
MODEL No. WLL400M
250 WATT METAL HALIDE

WALL LIGHT DETAIL

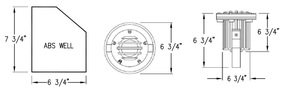
N.T.S.

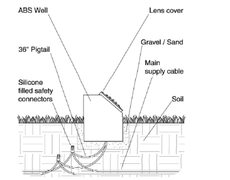


DAY BRIGHT LIGHTING
MODEL No. WLL400M
250 WATT METAL HALIDE

WALL LIGHT PHOTOMETRIC DATA

N.T.S.





VISTA PROFESSIONAL OUTDOOR LIGHTING
MODEL 5285 No. OR APPROVED EQUAL.

IN-GROUND WELL SIGN LIGHT

N.T.S.

NO.	DESCRIPTION	DATE
1	REVISED PER PB COMMENTS DATED 03-05-14	04-28-14

REVISIONS

LIGHTING PLAN

DESIGNED BY:	DRAWN BY:
APPROVED BY:	CHECKED BY:

JOHN D. FULLER, P.E.

STATE OF NEW YORK · JOHN DOUGLAS FULLER · No. 077703-1 · LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER
N.J. LIC. NO. 42708
N.Y. LIC. NO. 077703

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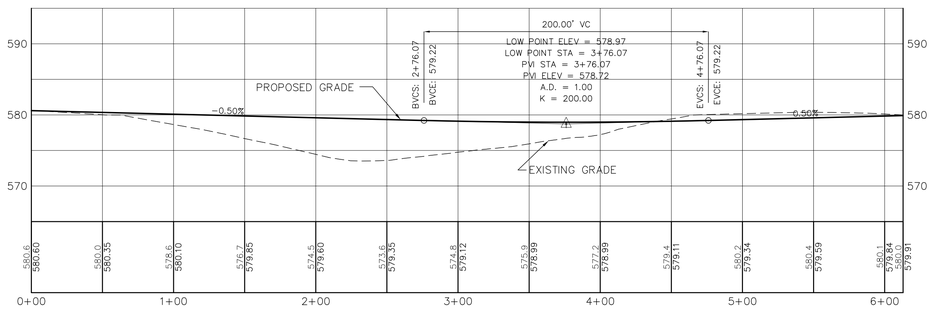
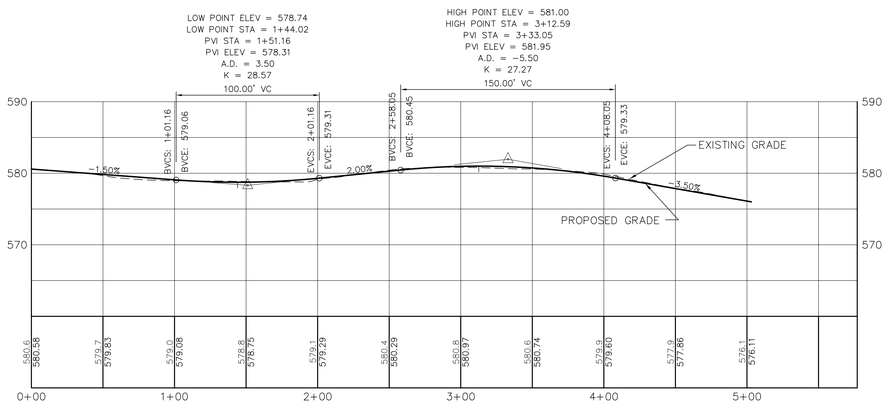
1"=30'	10-01-13	3101	4 OF 6



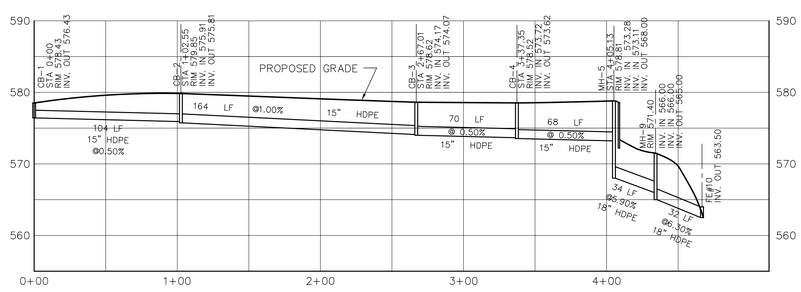
PARKING AREA CENTERLINE PROFILE

SCALE: HORIZ. 1"=50' VERT. 1"=10'



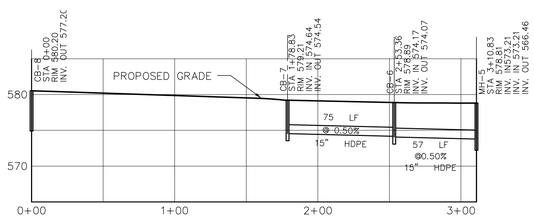
MARGINAL ACCESS ROAD CENTERLINE PROFILE

SCALE: HORIZ. 1"=50' VERT. 1"=10'



CENTERLINE PROFILE CB-1 TO FES No. 10

SCALE: HORIZ. 1"=50' VERT. 1"=10'

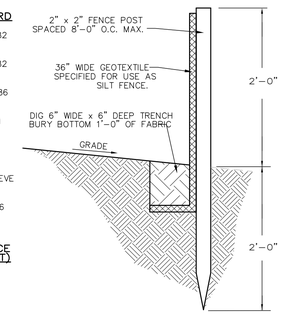


CENTERLINE PROFILE CB-8 TO MH-5

SCALE: HORIZ. 1"=50' VERT. 1"=10'

FENCE PROPERTIES	MINIMUM VALUE	STANDARD
GRAB TENSILE STRENGTH (LBS)	90	ASTMD 1682
ELONGATION AT FAILURE(%)	50	ASTM D1682
MULEN BURST STRENGTH (PSI)	190	ASTM D3786
PUNCTURE STRENGTH (LBS)	40	ASTM D751 (MODIFIED)
SLURRY FLOW RATE (GAL/MIN/SF)	0.3	
EQUIVALENT OPENING SIZE	40-80	US STD SIEVE CW-02215
ULTRAVIOLET RADIATION STABILITY (%)	90	ASTM G-26

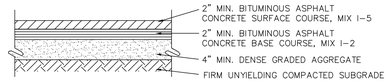
SLOPE STEEPNESS	MAXIMUM FENCE SPACING (FT)
2:1	50
3:1	75
4:1	125
5:1	175
FLATTER THAN 5:1	200



NOTES:
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION
3. ALL SILT FENCES SHALL RUN PARALLEL TO THE CONTOUR OF THE LAND.
4. ALL SILT FENCING SHALL MEET THE MINIMUM REQUIREMENTS AS STATED UNLESS OTHERWISE NOTED AND APPROVED BY THE BUILDING INSPECTOR AND ENGINEER.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL SHALL BE REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE

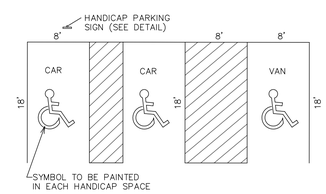
FILTER FABRIC SILT FENCE DETAIL

NOT TO SCALE



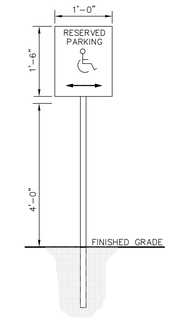
TYPICAL PARKING LOT PAVEMENT SECTION

NOT TO SCALE



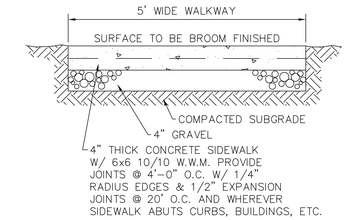
HANDICAP PARKING DETAIL

NOT TO SCALE



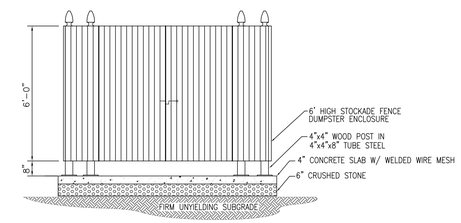
HANDICAP SIGN DETAIL

NOT TO SCALE

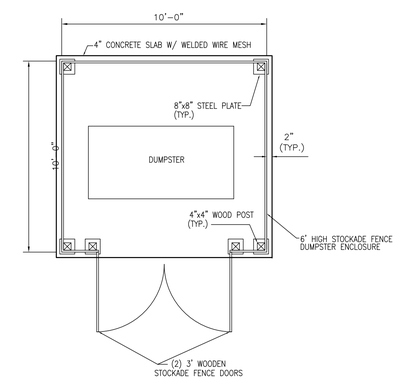


CONCRETE WALK DETAIL

NOT TO SCALE



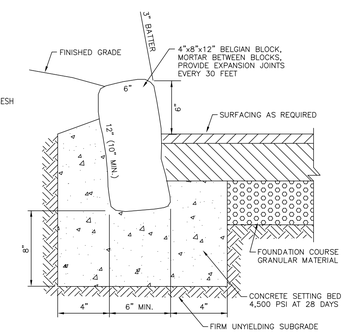
ELEVATION



PLAN

DUMPSTER AREA DETAIL

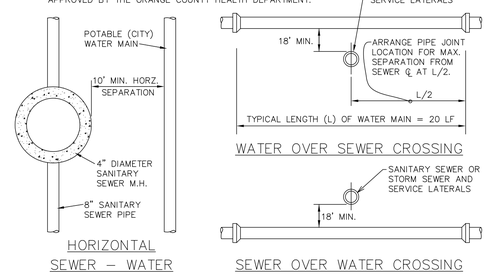
NOT OT SCALE



GRANITE BLOCK CURB DETAIL

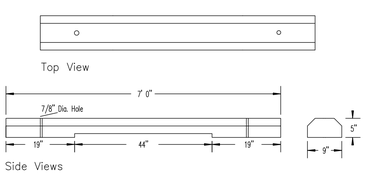
NOT OT SCALE

NOTE:
ANY DEVIATION FROM THE MINIMUM HORIZONTAL AND VERTICAL SEPARATION REQUIREMENTS MUST BE EXPRESSLY APPROVED BY THE ORANGE COUNTY HEALTH DEPARTMENT.



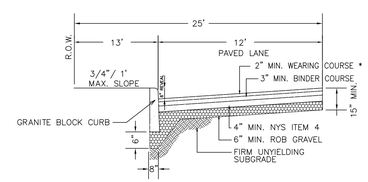
TYPICAL SEWER-WATER SEPARATION DETAILS

NOT TO SCALE



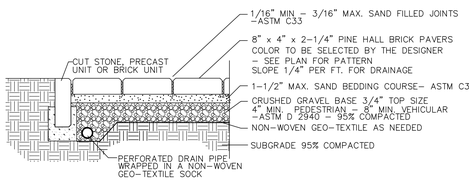
CONCRETE BUMPER STOP DETAIL

NOT TO SCALE



MARGINAL ACCESS ROAD HALF SECTION

NOT OT SCALE



PERMEABLE PAVEMENT

NOT OT SCALE

NO.	DESCRIPTION	DATE
1	REVISED PER PB COMMENTS DATED 03-05-14	04-28-14

REVISIONS

PROFILES & DETAILS

DESIGNED BY: | DRAWN BY:
APPROVED BY: | CHECKED BY:

JOHN D. FULLER, P.E.

STATE OF NEW YORK · JOHN DOUGLAS FULLER · No. 077703-1 · LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER
N.J. LIC. NO. 42708
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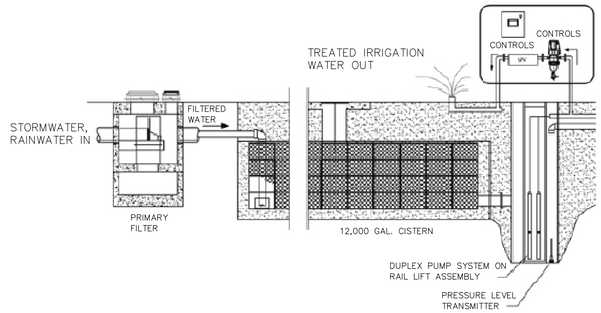
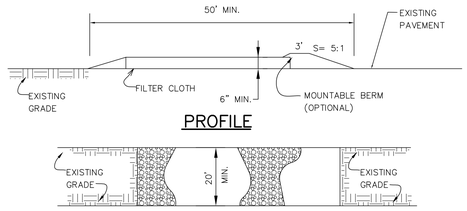
SCALE:	DATE:	JOB NO.	SHEET NO.
AS NOTED	10-01-13	3101	5 OF 6



CISTERN SCHEMATIC SECTION

NOT TO SCALE



PROFILE

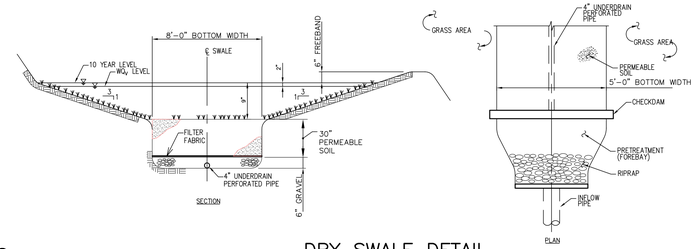
PLAN VIEW

STABILIZED CONSTRUCTION ENTRANCE SPECIFICATIONS:

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – AS REQUIRED, BUT NOT LESS THAN 50 FT.
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TWENTY (20) FT. MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO A APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

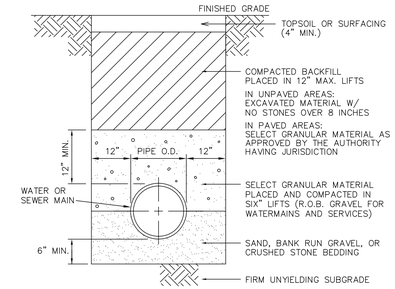
GRAVEL CONSTRUCTION BLANKET

NOT TO SCALE



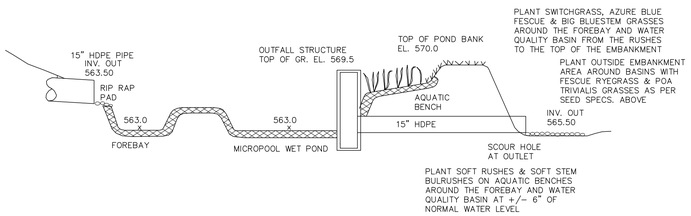
DRY SWALE DETAIL

NOT TO SCALE



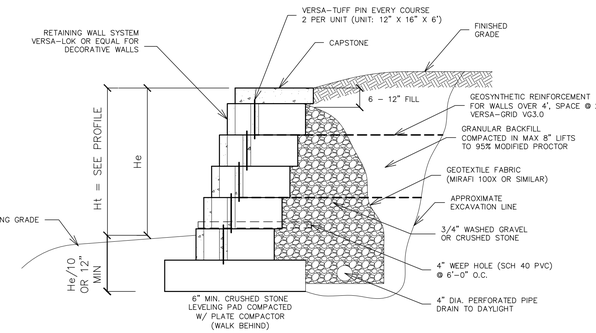
PIPE BEDDING DETAIL

NOT TO SCALE



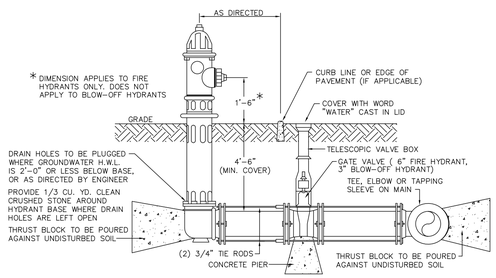
POCKET POND SCHEMATIC SECTION

NOT TO SCALE



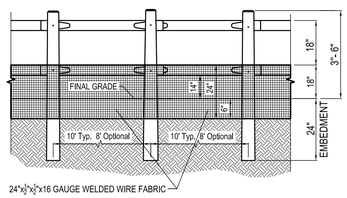
TYPICAL RETAINING WALL SECTION

NOT OT SCALE



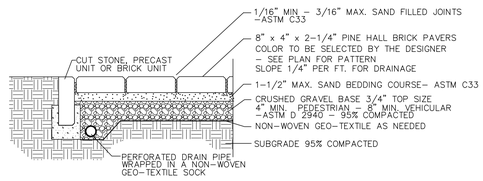
HYDRANT DETAIL

NOT TO SCALE



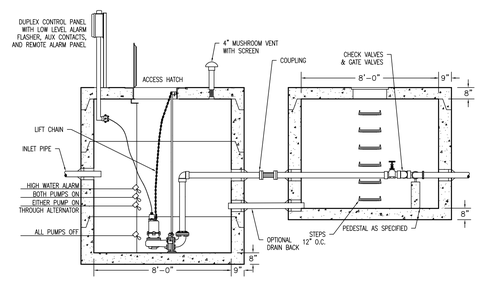
ROUNDED ROUGH CUT TWO RAIL WOODEN FENCE

NOT OT SCALE



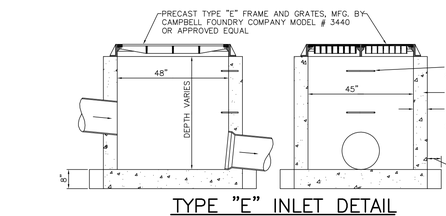
PERMEABLE PAVEMENT

NOT OT SCALE



DUPLEX PUMP STATION

NOT TO SCALE

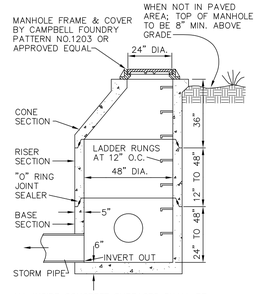


TYPE "E" INLET DETAIL

NOT TO SCALE

MANHOLES SHALL BE PLACED DIRECTLY ON UNDISTURBED NATURAL SOIL OR A MAXIMUM OF 1' OF SAND IF NEEDED TO ACHEIVE PROPER ELEVATION.

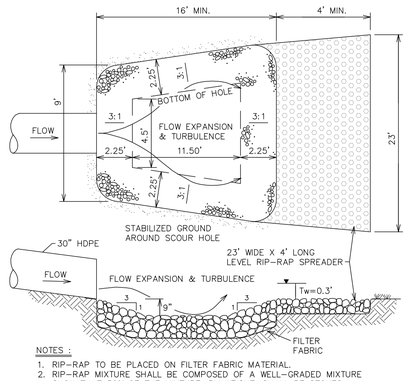
PRECAST CONCRETE MANHOLE; MFG. BY MODERN CONCRETE SEPTIC TANK CO. OR APPROVED EQUAL.



ALL INSIDE CONCRETE SURFACES SHALL BE SEALED WITH TWO COATINGS OF A BITUMINOUS COATING TO MINIMIZE CORROSION.

STORM SEWER MANHOLE DETAIL

NOT TO SCALE



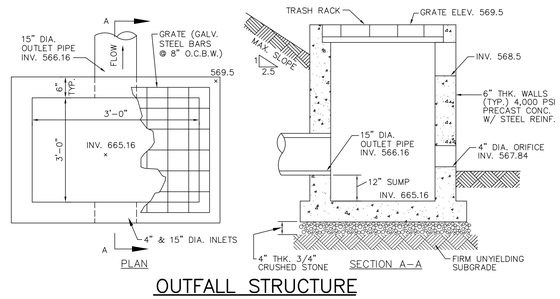
NOTES :

1. RIP-RAP TO BE PLACED ON FILTER FABRIC MATERIAL.
2. RIP-RAP MIXTURE SHALL BE COMPOSED OF A WELL-GRADED MIXTURE SUCH THAT 50% OF THE MIXTURE, BY WEIGHT, SHALL BE STONES SMALLER THAN 8.0".
3. THE LARGEST STONE IN THE MIXTURE SHALL BE 14.0".
4. THE THICKNESS OF THE RIP-RAP APRON MAY BE TWO (2) TIMES THE MEDIAN STONE DIAMETER PROVIDED THAT THE APRON IS CONSTRUCTED ON A BEDDING OF FOUR INCHES OF 3/4" CLEAN STONE ON APPROVED FILTER FABRIC MATERIAL.

   WITHOUT FILTER FABRIC, THE APRON LINING MUST EQUAL AT LEAST THREE (3) TIMES THE MEDIAN STONE DIAMETER.
5. RIP-RAP AND FILTER FABRIC SHALL MEET THE STANDARDS OF THE GOVERNING SOIL CONSERVATION DISTRICT AS WELL AS THE REQUIREMENTS OF THE LOCAL MUNICIPALITY.
6. ENTIRE BOTTOM OF SCOUR HOLE TO BE LEVEL (0.00%).

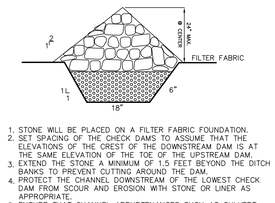
MICROPOOL WET POND OUTLET (FE No.12) PREFORMED ARMORED SCOUR HOLE

NOT TO SCALE



OUTFALL STRUCTURE

NOT TO SCALE



1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. SET SPACING OF THE CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.

CHECK DAM DETAIL

NOT TO SCALE

NO.	DESCRIPTION	DATE
1	REVISED PER PB COMMENTS DATED 03-05-14	04-28-14

REVISIONS

DETAILS

DESIGNED BY:	DRAWN BY:
APPROVED BY:	CHECKED BY:

JOHN D. FULLER, P.E.

STATE OF NEW YORK · JOHN DOUGLAS FULLER · No. 077703 · LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL ENGINEER
N.J. LIC. NO. 42708
N.Y. LIC. NO. 077703

PROPOSED RETAIL BUILDING
PREPARED FOR
HOMARC PROPERTY
SECTION 51 BLOCK 1 LOT 5.231
TOWN OF WARWICK
ORANGE COUNTY NEW YORK

ERS ENGINEERING CONSULTANTS, P.C.
PHONE: (845) 987-1775 FAX: (845) 987-1788
11 FORESTER AVE., WARWICK, NEW YORK 10990

SCALE:	DATE:	JOB NO.	SHEET NO.
AS NOTED	10-01-13	3101	6 OF 6