# A Scope

**DEIS SCOPING OUTLINE**

**Avalon at Harrison**
**Harrison, Westchester County, New York**
**January 25, 2016**

**Project Sponsor:** Avalon Bay Communities, Inc.

**Description of the Proposed Action:**
A Draft Environmental Impact Statement ("DEIS") will be prepared for the redevelopment of a 3.79 acre site currently containing approximately 245 commuter and 12 non-commuter public parking spaces with a mixed-use community having 136 market rate and 7 affordable residential units and 27,000 square feet of commercial space (the "Project"). The proposed development is a result of a joint development agreement between the Town/Village of Harrison, Avalon Bay Communities, Inc., Metropolitan Transportation Authority, and Metro-North Railroad.

The proposed Project would facilitate goals of the Village/Town of Harrison expressed in their 2013 Comprehensive Plan which called for redeveloping this site. The Project site is currently zoned PB, Professional Business. The Proposed Action includes adoption and rezoning the site to a "Transit Oriented Development District" (TOD), TOD special exemption, architectural review, and site plan approvals for the Project.

**Lead Agency**: Harrison Planning Board
One Heineman Place
Harrison, NY 10528

**Contact:** Thomas Heaslip, Planning Board Chairman
914-670-3077

**General Guidelines:**

The DEIS will discuss relevant and material facts and evaluate the reasonable alternatives to the Proposed Action identified in this Scoping Document. It will be clearly and concisely written in plain language that can be easily read and understood by the public. Highly technical material will be summarized and, if it must be included in its entirety, will be referenced in the DEIS and included as an appendix. In addition, all relevant project correspondence from involved and interested agencies will be included in an appendix to the DEIS.

Narrative discussions will be accompanied to the greatest extent possible by illustrative tables and graphics. Each potential impact category (such as land use and zoning impacts and traffic impacts) will be the subject of a separate section describing existing conditions, anticipated impacts, and proposed mitigation.

The full DEIS will be made available to the Lead Agency in both hard copy and electronic formats (Adobe Acrobat (.pdf) file). When the DEIS is accepted for public review by the Lead Agency, sufficient hard copies will be provided as requested by the Lead Agency. In addition, the full DEIS will be posted on the internet for public review as required by law.

The organization and expected content of the DEIS are as follows:

***Cover sheet and General Information***

- A Cover Sheet shall be provided that includes:
  - Title of the document;
  - Title of the Proposed Action;
  - Location of the Proposed Action;
  - Name and address of the Applicant of the Proposed Action and name, address, and telephone number of contact person representing the Applicant;
  - Name, address and phone number of the Lead Agency, including name of the contact person;
  - Name, address and phone number of the preparer of the DEIS and contact person;
  - Date and acceptance of the DEIS (to be inserted at later time);
  - Date of the public hearing, deadline by which comments on the DEIS are due (to be inserted at later time).
- The DEIS shall include a list of the participating consultants, with their address, telephone number and project responsibilities.
- The DEIS shall also include a Table of Contents, List of Exhibits, List of Tables and List of Appendices.

***Chapter I: Executive Summary***

A. Introduction
B. Description of the Proposed Action
C. Required Approvals and Permits
D. Involved and Interested Agencies
E. Summary of Significant Impacts and Proposed Mitigation Measures
F. Summary of Alternatives

***Chapter II: Project Description***

A. Introduction
   Provide a brief overall description of the Proposed Action.

B. Project Description
   1. Identify Project location, site ownership, tax lot numbers and acreage.
   2. Describe the existing condition of the Project site and any natural features including environmental constraints, if applicable.
   3. Provide a comprehensive description of the proposed residential and commercial development. Include the number and description of residential units/commercial square footage; description of affordable units; number of parking spaces and description of shared parking and parking distribution amongst the site; architectural design; landscape and lighting design; and open space and recreation uses.
   4. Summarize required approvals and provide a list of Involved and Interested Agencies.
   5. Describe the Project purpose and public need and benefits.

***Chapter III: Environmental Impacts and Mitigation Measures***

A. Land Use and Zoning
   1. Land Use
      a. Existing Conditions
         Identify and describe land uses within:
         i. The Central Business District as defined in the 2013 Comprehensive Plan.
         ii. The surrounding single, two-family, and multi-family residential districts located within Downtown Harrison as defined in the 2013 Comprehensive Plan.
      b. Potential Impacts
         Compare the proposed development with existing land uses within:
         i. The Central Business District as defined in the 2013 Comprehensive Plan.
         ii. The surrounding zoning districts located around the perimeter of Downtown Harrison as defined in the 2013 Comprehensive Plan.
         This section will discuss any potential conflicts on use incompatibilities associated with the Project and the Central Business District or Downtown Harrison as defined in the 2013 Comprehensive Plan and the immediately surrounding area.
      c. Mitigation Measures
         Discuss and evaluate mitigation measures to minimize any potential impacts to surrounding land use patterns.
   2. Zoning
      a. Existing Conditions
         Identify and describe all zoning districts within:
         i. The Central Business District as defined in the 2013 Comprehensive Plan.
         ii. The surrounding zoning districts located around the perimeter of Downtown Harrison as defined in the 2013 Comprehensive Plan.
         iii. Describe the requirements of the existing PB, Professional Business zoning district.
      b. Potential Impacts
         i. Describe the requirements of the proposed TOD Transit Oriented Development District zoning.
         ii. Identify zoning controls unique to the TOD zone, and why they are applicable to facilitate TOD development.
         iii. Discuss relationship of the proposed TOD zoning to the Town zoning Ordinance and to nearby zoning districts within and immediately adjacent to the Central Business District and Downtown Harrison as defined in the 2013 Comprehensive Plan.
         iv. Identify potential impacts of the proposed zoning on the Town's zoning pattern and on the zoning of nearby properties within and immediately adjacent to the Central Business District and Downtown Harrison as defined in the 2013 Comprehensive Plan.
      c. Mitigation Measures
         Discuss and evaluate mitigation measures to minimize any potential adverse impacts to the Town Zoning Code.

3. Policy Documents
   a. Existing Conditions
      Review and analyze the goals and recommendations of the following documents as they relate to the Proposed Action:
      i. Village/Town of Harrison 2013 Comprehensive Plan
      ii. Westchester 2025/Patterns
      iii. 2015 Westchester County Multi-jurisdictional Hazard Mitigation Plan
      iv. The Third regional Plan for NY, NJ and CT Metropolitan Area, Regional Plan Association, 1996.
      v. FEMA National Floor Insurance Program
      vi. NYSDEC Stormwater management Program
      vii. NYSDEC Climate Action Plan
   b. Potential Impacts
      Compare the consistency of the Proposed Action with the relevant policy documents listed above.
   c. Mitigation Measures
      Provide mitigation measures for any potential adverse impacts to the identified policy documents.

B. Visual Resources and Community Character
   1. Existing Conditions
      Describe and photographically document the existing visual conditions of the Project site and surrounding properties.
   2. Potential Impacts
      a. Describe the proposed development in relation to surrounding buildings and uses using the <u>NYSDEC Program Policy, Assessing and Mitigating Visual Impacts, DEP-00-2</u> as a guideline.
      b. Provide renderings, massing models, sketches, site sections or other graphic depictions of the proposed development.
      c. Illustrate visibility of the proposed development as viewed from adjacent street and properties with common graphic design using photographic simulations at the following locations:
         - Halstead Avenue (CR 54) and Harrison Avenue (Route 127)
         - Harrison Recreation Department (270 Harrison Avenue)
         - Harrison Train Station/Platforms/Bridge Overpass
         - Harrison Public Library
         - Sunnyside Place and Emerson Place
         - Parking lot on S Road across from Rye Racquet Club
         - Intersection of Osborne Road, Oakland Avenue, and Halstead Avenue (389 Halstead Ave)
         - Halstead Ave and Parsons Street
      d. Describe in general terms the architecture design of the site.
      e. Describe proposed signage type and size for the site.

f. Undertake shadow analysis for the solstice and equinox at 9:00 am, 12:00 noon, and 3:00 pm. The analysis will show all properties that are impacted by the Project building shadows.
g. Discuss the proposed interior and exterior lighting taking into account the various uses that will be located on the Project site and its relationship to neighboring properties.

3. Mitigation Measures
   Discuss possible methods for mitigation of potential adverse impacts that could result from the proposed development.

C. Natural Resources
1. Existing Conditions
   i. Describe any vegetation and wildlife currently found on and in the immediate vicinity of the Project site.
   ii. Describe any threatened or endangered species that may be present on or in the vicinity of the project site.
2. Potential Impacts
   Describe potential impacts to vegetation and wildlife on-site or in the immediate vicinity as a result of the proposed development and the Harrison tree removal permit regulations (Chapter 220-5, Tree Removal, of the Harrison Town Code).
3. Mitigation Measures
   Discuss possible methods for mitigation of potential adverse impacts that could result from the proposed development.

D. Wetlands, Waterbodies, Watercourses, and Floodplains
1. Existing Conditions
   a. Identify wetlands located on the Project site as per Chapter 149, Freshwater Wetlands of the Harrison Town Code.
   b. Identify waterbodies, watercourses, or floodplains located on the Project site as per FEMA flood maps and as per Chapter 146 Flood Damage Prevention Regulations of the Harrison Town Code. Include information on historic flooding event on and around the Project Site.
   c. Identify any hydrological connection to the Beaver Swamp Brook.
2. Potential Impacts
   Describe any potential impacts to wetlands, waterbodies, watercourses, or floodplains. To the extent that grading activities on-site, or addition or modifications to impervious surfaces may impact wetlands, waterbodies, watercourses, or floodplains located on adjacent properties, discuss potential impacts. Discuss compliance with Chapter 149 and Chapter146 of the Town Code.
3. Mitigation Measures
   Discuss potential methods for mitigation of potential adverse impacts that could result from the proposed development.

E. Geology – Soils, Topography, and Steep Slopes
   1. Existing Conditions
      a. A topographic survey based on a two-foot contour interval will be prepared. Existing topography will be mapped based on the following slope categories: 0-15%, 15-25%, and 25% and greater.
      b. Describe regional and on-site bedrock geology.
      c. Specifically identify depths to bedrock, and properties on on-site bedrock.
      d. Identify and list soil types on the site, with discussion of soil characteristics and suitability for construction.
   2. Potential Impacts
      a. Provide preliminary grading plan and limit of disturbance line.
      b. A comparison of existing and proposed topography will be evaluated. A preliminary cut and fill analysis will be presented, including an analysis of the disposal of excess cut or the import of fill materials, if fill is required.
      c. If excess earth materials will need to be removed from the site, estimate the number of tons and truck trips necessary to carry out the construction and identify the routes the trucks will take and describe the method of removal.
      d. Identify rock removal necessary to accommodate the project and proposed methods of rock removal. Identify if blasting will be necessary.
   3. Mitigation Measures
      Describe mitigation measures and best management practices that will be implemented on-site, and off-site, including rock removal protocols.

F. Cultural, Archeological and Historical Resources
   1. Existing Conditions
      a. A descriptive detail of the Project including the proposed direct impact areas will be submitted to the New York State Office of Parks, Recreation and Historic Preservation (NYOPRHP) as part of the SEQR consultation process. The project notification paperwork will be submitted electronically to NYOPRHP using that agency's Cultural Resources Information System (CRIS). If NYOPRHP determines that a Phase I or II cultural resources assessment is needed, the appropriate Cultural Resources study will be conducted.
   2. Potential Impacts
      a. Identify potential impacts to cultural, archeological, or historical resources, if any, based on the results of the project notification paperwork in accordance with NYOPRHPand Phase I studies, if required.
      b. Identify any potential impacts that the Project could have on the integrity of the National Register of Historic Places-eligible original Harrison Train Station (NYOPRHP USN #11905.000002) and describe how the Project will meet the intent of the Secretary of Interior's Standards of "New Construction within the Boundaries of Historic Properties".
   3. Mitigation Measures
      Discuss possible methods for mitigation of potential adverse impacts that could result from the proposed development including, if necessary, any mitigation measures for impacts.

G. Fiscal Impacts
   1. Existing Conditions
      Describe the existing tax revenues generated by the Project site.
   2. Potential Impacts
      a. Analyze the fiscal impact to the Town/Village of Harrison, Harrison Central School District, the Town/Village of Harrison's special districts, and Westchester County as a result of the proposed development.
      b. Describe the secondary economic impacts of the proposed mixed use development including jobs, resident spending, and relationship to the central business district businesses.
      c. Identify any tax abatements, grants or financial incentives that will be employed by the project.
   3. Mitigation Measures
      Identify the fiscal costs and benefits of the Proposed Action.

H. Community Services
   1. Police Services
      a. Existing Conditions
         i. Identify the staff size and organization of the Police Department.
         ii. Identify the location of police station.
         iii. Identify average response time to the Project site.
         iv. Identify crime trends in the vicinity of the site
      b. Potential Impacts
         i. Evaluate increased demand for police services.
         ii. Identify concerns of the Police Department (if any).
         iii. Analyze the adequacy of access to the proposed development.
      c. Mitigation Measures
         Discuss possible methods for mitigation of potential adverse impacts that could result from the proposed development.
   2. Fire Services
      a. Existing Conditions
         i. Identify the staff size and organization of the Fire Department.
         ii. Identify the fire station nearest the Project site.
         iii. Identify the number of calls for service per year.
         iv. Identify the average response time to the Project site.
         v. Describe how the site plan will adequately provide emergency service access and fire safety measures to the residences and surrounding properties and how the Project meets all applicable local and NYS fire codes.
      b. Potential Impacts
         i. Evaluate the increased demand for fire department services.
         ii. Identify concerns from the Fire Department (if any).
         iii. Discuss existing adequacy of access to the Project site.
      c. Mitigation Measures
         Discuss possible methods for mitigation of potential adverse impacts that could result from the proposed development.

3. Emergency Services
   a. Existing Conditions
      i. Identify ambulance/EMS service staff size and organization.
      ii. Identify location of nearest EMS station and hospital(s).
      iii. Identify number of calls for service per year from EMS.
      iv. Identify response time to the Project site and identify distance to nearest hospital.
   b. Potential Impacts
      i. Evaluate and discuss increased demand for ambulance service, including average number of calls per year.
      ii. Identify concerns from the ambulance service (if any).
      iii. Analyze adequacy of access to proposed development.
   c. Mitigation Measures
      Discuss possible methods for mitigation of potential adverse impacts that could result from the proposed development.
4. Solid Waste
   a. Existing Conditions
      Discuss existing solid waste generation, including recycling, from the Project Site and current solid waste collection, including recycling, and disposal for the Project Site.
   b. Potential Impacts
      i. Discuss anticipated Project generated solid waste and disposal at full build out.
      ii. Discuss on-site storage location and containers, and removal process.
   c. Mitigation Measures
      i. Discuss potential methods for mitigation of potential adverse impacts that could result from the proposed development.
5. Recreation and Open Space
   a. Existing Conditions
      Describe existing public recreation and open space facilities in the Town and immediate vicinity.
   b. Potential Impacts
      i. Discuss possible impacts to public recreation and open space facilities that would result from the Proposed Action.
      ii. Describe the recreation space, open space, and green space provided by the Project.
   c. Mitigation Measures
      Discuss potential methods for mitigation of potential adverse impacts that could result from the proposed development.
6. Schools
   a. Existing Conditions
      i. Identify location and capacity of existing schools.
      ii. Identify current enrollments and education cost per pupil.
   b. Potential Impacts

i. Analyze the generation of school children from the Project, the potential increase in school enrollments and any anticipated increase in costs to the Harrison Central School District due to the potential increase in enrollment.
ii. Analyze the programmatic impact to the Harrison Central School District as a result of the potential increase in school enrollment.
iii. Analyze the potential tax revenue to the Harrison Central School District that would be generated from the proposed development and compare to projected costs.

c. Mitigation Measures
Discuss potential methods for mitigation of potential adverse impacts that could result from the proposed development.

I. Traffic and Transportation
1. Existing Conditions
a. Provide a detailed description of roadways in the area, as well as regional access and roadways serving the site. Roadway characteristics will include classifications, general condition, and number of lanes by direction, on-street parking, bus stops and traffic control.
b. Provide a detailed description of on-street and off-street parking, both municipal and private, located at and immediately surrounding the Project site.
c. Existing traffic conditions will be documented for the weekday AM and PM peak hours from historical data and by conducting turning movement manual counts at the following intersections:
- Halstead Avenue (CR 54) and Harrison Avenue (Route 127)
- Halstead Avenue (CR 54) and Purdy Street/Surface Lot # 1
- Halstead Avenue (CR 54) and Surface Lot # 2 (MTA)
- Halstead Avenue (CR 54) and Surface Lot # 3
- Halstead Avenue (CR 54) and Haviland Street/Surface Lot # 4
- Halstead Avenue (CR 54) and Macy Road/Oakland Avenue
- Halstead Avenue (CR 54) and Osborne Road
- Halstead Avenue (CR 54) and Newport Towers Driveway
- Harrison Avenue and Heineman Place/Calvert Street

Conduct Capacity Analyses (Level of Service) for each of the above intersections (SYNCHRO Analysis).
d. Identify public transportation services for the area.
e. Study the use of area roads for purposes other than passenger traffic, i.e. trucks and delivery vehicles, walkers, joggers, bikers and other recreational uses.
f. Evaluate school bus traffic.
g. Accident analysis.
h. Describe existing site parking, on-street parking, public parking and private parking within the project area.
i. Address taxi cab usage locations and circulation.
2. Potential Impacts

a. Prepare "No Build" Traffic Volumes and undertake Capacity Analyses - to include background traffic growth and other proposed projects in the area (to be provided by the Town).
b. Prepare "Build" Traffic Volumes and undertake Capacity Analyses - to include anticipated trip generation for the Proposed Action (including the traffic generated by the additional commuter parking). Arrival and departure distributions will be developed based upon a review of existing traffic volumes on the roadway network. The Site Generated Traffic Volumes will be assigned to the roadway network based on the anticipated arrival and departure distributions. The Site Generated Traffic Volumes will be combined with the No Build Traffic Volumes to obtain the Build Traffic Volumes for each of the peak hours.
    - Build capacity analyses will include evaluation of the proposed parking garage entrances to the Project site.
c. Describe on-site traffic circulation.
d. Describe potential impacts to character of surrounding streets.
e. Provide a parking analysis for proposed uses on site for each of the weekday midday, the weekday evening and the weekend midday periods.
f. Provide a discussion of the Project's impacts concerning on-street and off-street parking, both municipal and private, located at and immediately surrounding the Project site.
g. Discuss Project generated demand for public transportation that is accessible adjacent to the proposed development.
h. Discuss pedestrian and bicycle circulation of the Project site.
i. Discuss accident analysis issues.
j. Address relocation of existing train station taxi cab operation.
k. Discuss any streetscape improvements and any anticipated improvements that may be required or become necessary.

3. Mitigation Measures
   Discuss whether there is need for any geometric or traffic control modifications to the site driveway and studied intersections.

J. Stormwater Management
1. Existing Conditions
   a. Identify and map existing drainage infrastructure on site and in the vicinity of the property.
   b. Discuss existing drainage patterns and hydrologic characteristics of the site. Study ultimate points of stormwater discharge from the site.
   c. Prepare a pre-development hydrologic analysis to determine existing peak rates of runoff from the Project area during the statistical 2-, 10-, 25-, 50-, and 100-year storm events. This analysis will be the basis for determining stormwater management requirements.
2. Potential Impacts
   a. Discuss any changes to the quality or quantity of stormwater runoff due to the development.
   b. Discuss the proposed drainage collection system.

c. Prepare a post-development hydrologic analysis to determine the changes in the pre-development peak runoff rates.
d. Discuss the capacity of the proposed storm sewer system and any connections to the existing storm sewer or adjacent watercourses.

3. Mitigation Measures
   a. Prepare a Storm Water Pollution Prevention Plan and discuss compliance with local stormwater management regulation (Town Code Chapter 130 Stormwater Management and Erosion and Sediment Control) and NYSDEC general permits.
   b. Mitigation measures will be provided to minimize impacts from the stormwater quantity and minimize adverse stormwater quality impacts. Outline stormwater treatment methods per current New York State Department of Environmental Conservation ("NYSDEC") Design Standards and local regulations.
   c. Design stormwater management according to the NYSDEC Stormwater Management Design Manual. Peak flow mitigation will be provided for the statistical 2-, 10-, 25-, 50-, and 100-year storm events.
   d. Design the proposed drainage collection system which will convey stormwater runoff to the proposed stormwater management facility.

K. Utilities
1. Sewer and Water
   a. Existing Conditions
      Identify location of existing public water and sewer mains and current capacity levels. Pressure and flow of the existing water and sewer mains will be determined and discussed to ensure adequacy and proposed connections and required improvements will be discussed.
   b. Potential Impacts
      i. Identify water demands of the proposed development and compare to current capacity levels. Calculate water demand for the Project based on Department of Health multipliers. Conduct capacity analysis for the existing water supply system.
      ii. Estimate the potential sewage generation from the proposed Project. Identify the sewer district in which the site is located and the location where the sewage is treated and discharged. Conduct capacity analysis for the existing sanitary sewer system.
   c. Mitigation Measures
      Discuss potential methods for mitigation of potential adverse impacts that could result from the proposed development. Discuss mitigation measures including emergency/backup systems, water conservation, or upgrades required to the system, if any. Mitigation measures for sanitary sewer systems should incorporate reductions in inflow and infiltration (I&I) that may be required by the County.
2. Electricity
   a. Existing Conditions
      Discuss existing electrical supply to the Project site.
   b. Potential Impacts
      Discuss projected electrical demands for the Project.
   c. Mitigation Measures

Discuss potential methods for mitigation of potential adverse impacts that could result from the proposed development.

3. Telecommunications and Cable
   a. Existing Conditions
      Discuss current telecommunications at the Project site including wireless communications, cable, and internet.
   b. Potential Impacts
      Discuss anticipated telecommunications at the Project site including wireless communications, cable, and internet.
   c. Mitigation Measures
      Discuss potential methods for mitigation of potential adverse impacts that could result from the proposed development.

L. Noise
   1. Existing Conditions
      Summarize a qualitative description of the existing noise environment at the Project Site.
   2. Potential Impacts
      i. Provide qualitative discussion of the construction related impacts of noise and the Project's adherence to the Chapter 177, Noise, of the Harrison Town Code.
      ii. Provide qualitative discussion of post construction noise and the Project's adherence to the Chapter 177, Noise, of the Harrison Town Code.
      iii. Discuss noise in relation to Metro-North railroad operations.
   3. Mitigation Measures
      Discuss potential methods for mitigation of potential adverse impacts that could result from the proposed development, including project mitigation measures to address the projects proximity to the Metro-North railroad

M. Air
   1. Existing Conditions
      Summarize existing ambient air quality conditions in the region based on published New York State Department of Environmental Conservation ambient air monitoring data.
   2. Potential Impacts
      i. Provide a qualitative analysis of the potential air impacts resulting from site preparation, construction activities, and post-construction activities.
   3. Mitigation Measures
      Discuss potential methods for mitigation of potential adverse impacts that could result from the proposed development.

N. Hazardous Materials
   1. Existing Conditions
      Prepare and summarize the findings of a Phase I Environmental Site Assessment of the Project site and the adjacent Metro-North rail line.
   2. Potential Impacts
      If any environmental contaminants are discovered on site, describe methods for abatement that would occur prior to commencement of construction activities.
   3. Mitigation Measures

Describe mitigation measures and best management practices that will be implemented on-site in the event that environmental contaminants are discovered.

O. Construction
   1. Potential Impacts
      a. Describe the construction schedule and construction phasing plan.
      b. Discuss impacts on adjacent land uses associated with proposed construction activities, including access to the site for construction vehicles, effects of construction traffic on adjacent roadways, construction staging and management of fill export and import.
   2. Mitigation Measures
      a. Discuss techniques to properly dispose of excess soils and construction and demolition debris at approved off-site facilities.

P. Greenhouse Gas Emissions, Energy Conservation, Green Building and Sustainability
   1. Existing Conditions
      Summarize the existing use of energy resources at the Project site. This section will include a qualitative discussion of current greenhouse gas sources.
   2. Potential Impacts
      i. Summarize the use of energy resources to be used at the Project site and strategies to reduce energy consumption. Provide a description of the effect of the Proposed Action on the conservation of energy resources; and a discussion of applicable energy building codes.
      ii. Design elements suggested by the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) program will be evaluated for potential incorporation in the project design. This section will include an analysis of greenhouse gas emissions that will result from development of the project. The NYS Department of Environmental Conservation's Guides for Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements will be used to guide this analysis.
      iii. Identify how TOD development achieves long term sustainability goals.
   3. Mitigation Measures
      Discuss potential methods for mitigation of potential adverse impacts that could result from the proposed development.

***Chapter IV: Alternatives***

Provide a brief description of impacts for each alternative identified below. Include a comparable level of analysis for each potential impact area to allow the Planning Board to evaluate the Proposed Action in relation to each of the alternatives below.

A. No Action Alternative
   Under this alternative, the Project site would remain as it exists now.
B. Alternative Plan Under the Existing Zoning
   Under this alternative, the site would be redeveloped as permitted under the requirements of the existing PB, Professional Business District.

C. Development under traditional zoning controls, not employing TOD principles such as transitional parking ratios, no shared parking, and a decrease focus on pedestrian or alternative transportation.
D. Alternative Plan Based on Identified Significant Environmental Impacts
As a result of the DEIS analysis, if a significant environmental impact is identified that cannot be mitigated without a change in the site plan, the revised site plan will be evaluated in this section.

***Chapter V: Adverse Environmental Impacts That Cannot Be Avoided***
Identify adverse environmental impacts identified in Chapter III of the DEIS that cannot be avoided based on the implementation and construction of the Proposed Action. Discussion will include short term construction impacts.

A. There should be a description of methods of recycling waste and natural materials on site during construction.

B. Describe the construction schedule and any limitation to the amount of acreage of disturbed soil exposed at any one time.

***Chapter VI: Irreversible and Irretrievable Commitment of Resources***
Identify natural and human resources that will be consumed, converted or made unavailable for future use from the implementation and construction of the Proposed Action.

***Chapter VII: Growth Inducing Impacts***
Identify secondary and/or indirect impacts that could result as potential impacts from the implementation and construction of the Proposed Action.

***Chapter VIII: Short and Long Term Impacts, Cumulative Impacts, and Other Associated Environmental Impacts***

***Appendix:***
A. EAF Parts 1 and 2
B. Positive Declaration and Planning Board Lead Agency notice
C. DEIS Scoping Outline
D. Copies of all official correspondence related to issues discussed in the DEIS.
E. Traffic Impact Study
F. Stormwater Pollution Prevention Plan

# D TOD Regulations

## ARTICLE □VI

## TRANSIT ORIENTED DEVELOPMENT □TOD□□ONING DISTRICT

### □□□□□□ B□□□□r□□□d □ A□□□□r□□

The To□n o□Harri□on □ind□that tran□it oriented de□elopment □ene□it□the general health and □el□are o□the comm□nity □y recogni□ing the □ni□□e characteri□tic□ o□the area □□rro□nding the Harri□on Train Station, and □y pro□iding a □oning mechani□m to □acilitate the de□elopment o□high □□ality, pede□trian oriented, mi□ed-□□e de□elopment, there□y pro□iding □or m□ch needed ho□□ing opport□nitie□, □tim□lating the local economy, addre□□ing long-term par□ing need□, enco□raging the □□e o□e□i□ting tran□it □acilitie□, decrea□ing dependency on a□tomo□ile□, □hile mitigating the e□ect□ o□ poll□tion and □ehicle conge□tion in the Central B□□ine□□ Di□trict.

The TOD Di□trict implement□ the □i□ion □or do□nto□n Harri□on a□ □et □orth in the Comprehen□i□e Plan □y e□ta□li□hing a □ia□le □rame□or□ □or □□t□re pri□ate in□e□tment.

### □□□□□□ P□r□□□□

The p□rpo□e o□the TOD Di□trict i□ to enco□rage □ell-integrated, mi□ed-□□e, moderate den□ity de□elopment □ithin □al□ing di□tance o□the Harri□on Train Station, Co□nty Bee-Line □□□ □top□and other tran□it re□o□rce□and □acilitie□ □a □TOD De□elopment□□, □hich□

A. Pro□ide□ an alternati□e to traditional de□elopment □y empha□i□ing mi□ed-□□e, pede□trian oriented de□elopment.

B. Enco□rage□ de□elopment on a □h□man □cale□that pro□ide□ □or a pede□trian oriented en□ironment that enco□rage□ and □acilitate□ □al□ing, □icycling and tran□it □□e.

C. Create□ an identity in the Central B□□ine□□ Di□trict that promote□ pede□trian acti□ity, h□man interaction□, commercial enterpri□e, li□a□ility and □a□ety.

D. Red□ce□ a□tomo□ile dependency and road□ay conge□tion □y locating m□ltiple de□tination and trip p□rpo□e□ □ithin □al□ing di□tance o□one another.

E. Impro□e□ acce□□ to Metro-North Railroad □er□ice□, incl□ding enhanced intermodal connection□.

F. Pro□ide□ □or ade□□ate o□-□treet par□ing □or comm□ter□, re□ident□ and tenant□ o□ the de□elopment □ithin par□ing □acilitie□ o□high □□ality de□ign, that are □creened and hidden to the e□tent practica□le, □o that in no in□tance are large e□pan□e□ o□ □treet □rontage dominated □y par□ing area□ or □tr□ct□re□.

G. Manage□ par□ing and □ehic□lar acce□□ □y □tili□ing □hared par□ing and dri□e□ay acce□□ to a□oid pede□trian con□lict□.

H. Pro□ide□ □treet le□el □□□ine□□ □□e□ that are con□i□tent □ith the character o□the Harri□on Central B□□ine□□ Di□trict.

I. Pro□ide□ a range o□ho□□ing option□ □or people o□□aried income□ and at di□□erent □tage□ o□li□e.

□. Incorporate□ open □pace□, pla□a□ and other de□ign □eat□re□ that create an in□iting en□ironment that enco□rage□ □□e and e□ploration □y re□ident□ and □i□itor□ali□e.

□□□□□□ **A□□□□□□□□□□□□□Pr□□□□□□□□□ S□□□r□□d□**

The TOD Di□trict con□i□t□ o□tho□e area□ identi□ied on the To□n o□Harri□on □oning Map, on □ile in the To□n Cler□□□ o□ice, dated XX, 201□. The pro□i□ion□ o□thi□ Article XVI □□per□ede any incon□i□tent pro□i□ion□ o□thi□ chapter.

**[illegible] Pr[illegible]d [illegible]**

The [illegible]e[illegible] permitted in the TOD Di[illegible]trict are [illegible]et [illegible]orth in the Ta[illegible]le o[illegible]U[illegible]e Reg[illegible]lation[illegible] [illegible]or the TOD Di[illegible]trict [illegible]235 - Attachment 5[illegible].

**[illegible] O[illegible]S[illegible]r[illegible]P[illegible]r[illegible] [illegible] L[illegible]d[illegible] R[illegible]r[illegible]**

O[illegible]-[illegible]treet par[illegible]ing [illegible]hall [illegible]e pro[illegible]ided [illegible]or a TOD De[illegible]elopment in accordance [illegible]ith the pro[illegible]i[illegible]ion[illegible] o[illegible]the Sched[illegible]le o[illegible]O[illegible]-Street Par[illegible]ing Space Re[illegible]irement[illegible] [illegible]or Re[illegible]idential U[illegible]e[illegible] [illegible]235-36[illegible]and Non-Re[illegible]idential U[illegible]e[illegible] [illegible]235-37[illegible], e[illegible]cept a[illegible] [illegible]et [illegible]orth in [illegible] 235-17 U[illegible]1[illegible]. Additionally, the [illegible]ollo[illegible]ing o[illegible]-[illegible]treet par[illegible]ing and loading re[illegible]irement[illegible] [illegible]hall apply [illegible]ithin the TOD Di[illegible]trict.

A. The area [illegible]ithin the TOD Di[illegible]trict i[illegible] al[illegible]o located [illegible]ithin the Do[illegible]nto[illegible]n Re[illegible]itali[illegible]ation Target Area, and the par[illegible]ing re[illegible]irement[illegible] o[illegible] the Do[illegible]nto[illegible]n Re[illegible]itali[illegible]ation Target Area [illegible]et [illegible]orth in the Sched[illegible]le o[illegible]O[illegible]-Street Par[illegible]ing Space Re[illegible]irement[illegible] [illegible]or Re[illegible]idential U[illegible]e[illegible] [illegible]235-36[illegible]and Non-Re[illegible]idential U[illegible]e[illegible] [illegible]235-37[illegible]hall apply.

B. To achie[illegible]e the [illegible]tated p[illegible]rpo[illegible]e[illegible] o[illegible]the TOD Di[illegible]trict [illegible]et [illegible]orth in [illegible]235-87, a TOD De[illegible]elopment on the parcel[illegible] [illegible]hich a[illegible] o[illegible]the date o[illegible]adoption o[illegible]thi[illegible] Article XVI are o[illegible]ned [illegible]y Metropolitan Tran[illegible]portation A[illegible]thority and de[illegible]ignated on the To[illegible]n ta[illegible] map a[illegible] Section 18, Bloc[illegible] 182, Lot[illegible] 12 and 15 [illegible]the [illegible]MTA Parcel[illegible][illegible], [illegible]hall incl[illegible]de a par[illegible]ing [illegible]tr[illegible]ct[illegible]re [illegible]the [illegible]Comm[illegible]ter Par[illegible]ing Str[illegible]ct[illegible]re[illegible] accommodating a minim[illegible]m o[illegible]475 comm[illegible]ter par[illegible]ing [illegible]pace[illegible] [illegible]or Metro-North Railroad c[illegible]tomer[illegible], 45 [illegible]hort-term daily metered par[illegible]ing [illegible]pace[illegible] to [illegible]er[illegible]e retail and other on-[illegible]ite commercial [illegible]e[illegible], and 64 o[illegible]-[illegible]treet par[illegible]ing [illegible]or the re[illegible]idential component o[illegible]the TOD De[illegible]elopment.

C. O[illegible]-[illegible]treet par[illegible]ing and loading area[illegible] [illegible]hall [illegible]e de[illegible]igned and located in a manner that i[illegible]e[illegible]icient and pro[illegible]imate to the [illegible]e[illegible] they are intended to [illegible]er[illegible]e.

D. Section 235-38 □hall not apply. The Planning Board □hall determine the appropriate n□m□er o□o□-□treet tr□c□loading □pace□.

E. The Sched□le o□Minim□m Dimen□ion□ □or Par□ing Space□ and Ai□le□in □235-41 C □hall not apply. The Planning Board □hall determine appropriate par□ing □pace and ai□le dimen□ional re□□irement□, e□cept □or the Comm□ter Par□ing Garage, □hich □hall □e □a□ed on Metro-North Station Standard□.

F. The n□m□er o□o□-□treet par□ing □pace□ re□□ired □or a TOD De□elopment may □e red□ced thro□gh the □□e o□ □hared par□ing, □□□ect to a □inding □y the Planning Board that the pea□ par□ing demand o□the □□e□ do not coincide, and that the acc□m□lated par□ing demand at any one time □hall not e□ceed the total on-□ite par□ing capacity. Thi□ □inding □hall ta□e into acco□nt the par□ing demand o□re□ident□, employee□, c□□tomer□, □i□itor□, comm□ter□ and any other □□er□ o□ the on-□ite par□ing. It □hall al□o ta□e into acco□nt par□ing demand□ on □oth □ee□end□ and □ee□day□, d□ring daytime and o□ernight period□.

G. Shared □□e o□ the 475 comm□ter par□ing □pace□ in the Comm□ter Par□ing Str□ct□re on the MTA Parcel□ □hall only □e permitted □□□ect to an agreement □et□een the MTA and the applicant □or appro□al o□a TOD De□elopment, and □□□ect to the appro□al o□the Planning Board.

H. Short-term daily par□ing □hall □e located at grade, or on the le□el o□the par□ing □tr□ct□re that pro□ide□ ea□ie□t acce□□ to the retail and commercial □□e□ o□the TOD De□elopment.

I. Bicycle par□ing rac□□ or loc□er□ □hall □e pro□ided at a ratio o□1 rac□ or loc□er □or e□ery 20 a□tomo□ile par□ing □pace□ □or portion thereo□□ re□□ired □or the □□e□ □ithin the TOD De□elopment □e□cl□□i□e o□any comm□ter par□ing □pace□□.

§235-91 **D**imensional **R**egulations

The dimen□ional reg□lation□ □or the TOD Di□trict are de□igned to achie□e the p□rpo□e□ o□ §235-87. The dimen□ional reg□lation□ are □et □orth in the Ta□le o□ Dimen□ional Reg□lation□ □or the TOD Di□trict (§235 - Attachment 6)

§235-92 **S**pecial **E**xception Use **S**pecial **S**afegua **rd**s an **d C**on **d**itions

A TOD De□elopment m□□t comply □ith the Special E□ception U□e General Condition□ □et □orth in §235-16, a□ □ell a□ the Special Condition□ and Sa□eg□ard□ □or TOD De□elopment □et □orth in §235-17 U.

§235-93 **D**ensity **B**onus

S□□ect to Special E□ception U□e appro□al, a den□ity bonus, not to e□ceed 10 re□idential □nit□, may □e allo□ed, pro□ided a TOD De□elopment con□orm□ to the eligi□ility criteria o□ §235-94 A or B □elo□. Bon□□ □nit□ □hall □e limited to □t□dio or 1-□edroom □nit□. I□ bonus □nit□ are pro□ided, a 5th □tory □hall □e allo□ed, pro□ided the 5th □tory doe□ not e□ceed 15′ in height and i□ □et□ac□ □rom Hal□tead A□en□e a di□tance o□ at lea□t 1/3 the total depth o□ the □□ilding. Bon□□ □nit□ □hall not □e re□tricted to the 5th □loor, but can □e located in appropriate location□, con□i□tent □ith the character o□ the TOD De□elopment.

A. At lea□t 10% o□ the total n□m□er o□ re□idential □nit□ □ithin the TOD De□elopment are re□er□ed □or □or□ □orce ho□□ing.

B. The TOD De□elopment i□ de□igned to meet LEED Sil□er certi□ication □or higher) criteria, a□ □et □orth □y The Green B□ilding Certi□ication In□tit□te.

§235-94 **R**eview **Pr□□□d□r□**

Appro□al o□ a TOD De□elopment □hall re□□ire Special E□ception U□e appro□al □y the Planning Board, □□□ect to con□irmation □y the To□n Board, in accordance □ith the pro□i□ion□ o□ Article V, §235-14, and Site Plan appro□al □y the Planning Board, in

accordance □ith Article XII, □235-71. An application □or Special E□ception U□e appro□al o□a TOD De□elopment □hall □e deemed to incl□de application □or appro□al o□all □□e□o□ a TOD De□elopment □or □hich Special E□ception U□e appro□al i□ re□□ired a□ □et □orth in the Ta□le o□U□e Reg□lation□ □or the TOD Di□trict □□235 - Attachment 5□, and all □□e□o□ a TOD De□elopment □hall □e □□□ect only to the Special Condition□ and Sa□eg□ard□ □or TOD De□elopment □et □orth in □235-17 U.

The □ollo□ing re□ie□ proced□re □hall apply.

A. Pre-□□□mi□□ion con□erence □ The applicant □hall, prior to the □ormal □□□mi□□ion o□the TOD De□elopment □ite plan, meet □ith To□n □ta□□to re□ie□ the propo□ed pro□ect, addre□□ □ite plan re□□irement□ and detail□, and proced□ral □tep□ □o the applicant clearly □nder□tand□ the proce□□, and the To□n □nder□tand□ the de□elopment concept.

B. Application □ An application □or appro□al o□a TOD De□elopment □hall □e □□□mitted at lea□t t□enty-one □21□ day□ in ad□ance o□the Planning Board meeting at □hich the application i□ to □e pre□ented. Se□enteen □17□□et□ o□the application pac□age □hall □e pro□ided. The application □hall con□i□t o□ the □ollo□ing□

1. Site Plan application □orm
2. Special E□ception U□e application □orm
3. F□ll En□ironmental A□□e□□ment Form
4. A narrati□e de□cription o□the TOD De□elopment, incl□ding a de□cription o□ the ho□ the pro□ect complie□ □ith the p□rpo□e□ o□□235-87 and the To□n Comprehen□i□e Plan, and ho□ it □ill □ene□it the To□n o□Harri□on a□a □hole.
5. A tra□ic □t□dy, addre□□ing the pro□ect□□ impact on e□i□ting and □□t□re tra□ic condition□ in the □icinity o□the □ite and in the Central B□□ine□□ Di□trict.
6. A mar□et analy□i□ that □ho□□ade□□ate demand □or the propo□ed mi□o□□□e□.
7. A □ite plan, prepared p□r□□ant to the re□□irement□o□□235-71 F.

8. A Storm□ater Poll□tion Pre□ention Plan.
9. A land □□e plan, □ho□ing the □ario□□ propo□ed land □□e□ and their □patial arrangement, incl□ding the location o□□□ilding□, par□ing area□ and □tr□ct□re□, p□□lic □pace□ and pla□a□, pede□trian circ□lation connection□, □tility and maintenance □acilitie□ and open □pace□.
10. A ta□□lation o□all □□ilding □pace□, incl□ding □□□are □ootage□ o□ □□ilding□, n□m□er o□d□elling □nit□ and type□ and the □oor area o□each □□e.
11. An o□-□treet par□ing compliance ta□□lation.
12. A TOD De□elopment comm□nity integration plan, depicting the relation□hip o□ the propo□ed TOD De□elopment □ith e□i□ting □□rro□nding land □□e□ and □acilitie□.
13. A con□tr□ction pha□ing plan, and, □or the MTA Parcel□, temporary par□ing relocation plan. Said plan □hall ade□□ately accommodate e□i□ting comm□ter and □hort term par□ing d□ring the period o□con□tr□ction, □ntil the Comm□ter Par□ing Str□ct□re on the MTA Parcel□ i□ complete.
14. De□cription□, □□etche□, □ection, ele□ation□ and rendering□ □ho□ing the architect□ral treatment and de□ign □cheme contemplated □or the entire TOD De□elopment.
15. S□ch additional in□ormation a□ deemed nece□□ary in the pre-□□□mi□□ion con□erence, in order to properly e□al□ate the application.

C. SE□RA Compliance □ The appro□al o□a TOD De□elopment i□ an action □□□ect to the State En□ironmental □□ality Re□ie□ Act □SE□RA□ □En□ironmental Con□er□ation La□ □8-0101 et □e□.□, and re□ie□ o□a TOD De□elopment □hall comply □ith the applica□le SE□RA reg□lation□. Depending on the □cope o□the TOD De□elopment, the preparation o□an En□ironmental Impact Statement □EIS□ may □e re□□ired. I□□o, and to the e□tent permi□□i□le □y la□, the EIS re□ie□ □hall □e integrated into the o□erall pro□ect re□ie□ proce□□, and coordinated □ith other In□ol□ed Agencie□, and to a□oid d□plication, and □acilitate the re□ie□ proce□□, conc□rrent p□□lic hearing□ □hall □e held to the e□tent practica□le.

I□in con□□nction □ith the initial application the applicant □or appro□al o□a TOD De□elopment agree□ to □□□mit an EIS in con□□nction □ith the application, then certain material□ □peci□ied in □235-95 B. need not □e □□□mitted □ith the initial application □□□ch a□ the tra□ic □t□dy, a□ e□ta□li□hed d□ring the pre-□□□mi□□ion con□erence□in recognition that the□e □t□die□ □ill later □e incl□ded in the EIS.

D. Special E□ception U□e Re□ie□

P□r□□ant to the pro□i□ion□ o□Article V, □235-14, the Planning Board, □□□ect to con□irmation □y the To□n Board, □hall re□ie□ and act on the Special E□ception U□e application. The Planning Board □hall appro□e, conditionally appro□e or di□appro□e the Special E□ception U□e application □a□ed on the criteria e□ta□li□hed in Article V.

E. Site Plan Re□ie□

The Planning Board □hall act on a Site Plan application, prepared and □iled in accordance □ith the pro□i□ion□ o□□235-71. The □ite plan □hall con□orm to the re□□irement□ o□ □235-71 F. The Planning Board □hall appro□e, conditionally appro□e or di□appro□e the Site Plan application.

F. S□□di□i□ion

Sho□ld the TOD De□elopment re□□ire a □□□di□i□ion o□ land to □acilitate the a□□em□ly o□the pro□ect □ite or the o□ner□hip □y the MTA o□the Comm□ter Par□ing Str□ct□re and the land on □hich it i□ located, □aid □□□di□i□ion □hall □e □nderta□en in accordance □ith Chapter 204 o□the Code o□the To□n o□Harri□on, and □hall □e □nderta□en a□ part o□the o□erall TOD De□elopment appro□al □action□, pro□ided that the lot on □hich the Comm□ter Par□ing Str□ct□re i□ located □hall not □e □□□ect to any minim□m lot area, ma□im□m lot co□erage, or yard □et□ac□ other□i□e re□□ired in the TOD Di□trict □et □orth in the Ta□le o□ Dimen□ional Reg□lation□ □or the TOD Di□trict □□235 - Attachment 6□.

G. P□□lic Hearing & Notice

Re□ie□ o□the TOD De□elopment □hall comply □ith all applica□le p□□lic hearing re□□irement□ □or Special E□ception U□e, Site Plan, and S□□di□i□ion □i□nece□□ary□ appro□al□, and SE□RA □in the ca□e o□an EIS□. To the e□tent permi□□i□le □y la□, □aid p□□lic hearing□ □hall □e held conc□rrently. Additionally, all p□□lic notice and □ignage re□□irement□in Article XV □hall al□o □e complied □ith.

H. Re□erral□

The To□n □hall comply □ith the applica□le pro□i□ion o□General M□nicipal La□ □239-m. In the in□tance □here a dra□t EIS i□ re□□ired, it □hall □e circ□lated a□ pro□ided □y la□. The To□n may re□er the application to any other To□n □oard, department, o□icial, con□□ltant or pro□e□□ional, a□nece□□ary.

I. E□cro□ Acco□nt

In accordance □ith the pro□i□ion□ o□□235-79, at the time o□the □□□mi□□ion o□ the TOD De□elopment application, an e□cro□ acco□nt □hall □e e□ta□li□hed, in an amo□nt □et □y the To□n, to co□er the co□t□ o□the To□n□□ pro□e□□ional re□ie□ □er□ice□, incl□ding the co□t o□ pro□e□□ional re□ie□ □er□ice□ permitted □nder SE□RA.

□235 □Attachment 5

**T□□□□ □□□ □□ R□□□□□□□□□ □□r □□□ TOD D□□□r□□□**

Re□idential U□e□

- D□elling □nit□ - **SE**

Re□idential Comm□nity Facilitie□

- P□□lic li□rary, police □tation, □ire □tation, To□n Hall or m□nicipal □er□ice □□ilding - **P**

General Comm□nity Facilitie□

- B□□ pa□□enger □helter - **SE**
- P□□lic pa□□enger tran□portation □tation or terminal - **SE**
- P□□lic □tility □tr□ct□re or right-o□-□ay, incl□ding o□ice□ - **SE**
- P□□lic par□ or pla□a - **P**
- P□□lic o□□-□treet par□ing lot or garage - **SE**

B□□ine□□ U□e□

- Pri□ate o□□-□treet par□ing lot or garage - **SE**
- Retail □tore - **SE**
- Re□ta□rant - **SE**
- Delicate□□en - **SE**
- Pro□e□□ional and □□□ine□□ o□ice and □inancial in□tit□tion - **SE**
- Theater - **SE**
- Art gallery - **SE**
- Dance and martial art□ □t□dio - **SE**
- Ba□ery - **SE**
- Co□ee Shop - **SE**

Acce□□ory U□e□

- C□□tomary acce□□ory □□e incidental to a permitted □□e on the □ame premi□e□ - **P**
- Retail □er□ice or □hole□ale trade only a□ an incidental acti□ity to a permitted □□e. - **P**
- Sign□ p□r□□ant to Article VIII - **P**
- □io□□□ □ **P**

□235 □ Attachment 6

**T□□□□ □□D□□ □□□□□□□R□□□□□□□□□□ □□r □□□**

**TOD D□□□r□□□**

| | |
|---|---|
| Minim□m Lot Area | 2.0 acre□ |
| Minim□m Lot Area Per D□elling Unit | 1,000 □□ □t |
| Ma□im□m Lot Co□erage | 95□ |
| Ma□im□m Lot Co□erage □or M□ltiple D□elling□ | 50□ [a□] |
| Front Yard | No Re□□irement |
| Side Yard | |
| Ad□oining a Re□idence Di□trict | No Re□□irement, □□t i□pro□ided, 10□ |
| Ad□oining a B□□ine□□ Di□trict | No Re□□irement, □□t i□pro□ided, 10□ |
| Rear Yard | No Re□□irement |
| Ha□ita□le Floor Area | 600 □□ □t |
| B□□□er Strip□ | No Re□□irement |
| Height | |
| Feet | 50□[□□□] |
| Storie□ | 4 [c□] |
| Floor Area Ratio | 1.5 |

□a□ Applie□ to □□ilding□ in the TOD Di□trict □□ed e□cl□□i□ely □or m□lti□amily re□idential □□e. A TOD De□elopment i□ □□□□ect to the 95□ co□erage re□□irement.

□□□ The ma□im□m height o□a TOD De□elopment on the MTA Parcel□ □hall □e 75 □eet. In the TOD Di□trict, nece□□ary architect□ral □eat□re□ □□ch a□ roo□ parapet□ □hall □e permitted to e□ceed the ma□im□m height, □□□□ect to the appro□al o□the Planning Board and Architect□ral Re□ie□ Board, and in accordance □ith the pro□i□ion□o□□235-23 A.

□c□The ma□im□m n□m□er o□□torie□ □or a TOD De□elopment on the MTA Parcel□ □hall □e 5 □torie□. Any le□el o□a par□ing □tr□ct□re that i□ more than □ o□it□ clear height □elo□ the a□erage □ini□hed grade aro□nd the □tr□ct□re, □or at lea□t □ o□it□length, □hall □e con□idered a cellar.

## □□□□□ D□□□□□□□□□

**BA□ERY** □ A place □or preparing, □a□ing and □elling □a□ed good□ and prod□ct□ prepared on the premi□e□. A □a□ery a□ herein de□ined □hall not incl□de a □hole□ale operation.

**COFFEE S□OP** □ a type o□□ood e□ta□li□hment o□no more than t□o tho□□and □□□are □eet o□gro□□ □oor area □ho□e principal □□□ine□□ i□ the □ale o□co□ee and other hot □e□erage□. Pa□trie□, □and□iche□ and other light □are may al□o □e □old incidental to the □er□ice o□co□ee. Area□ □or patron □eating may □e pro□ided, ho□e□er, ta□le □er□ice i□ prohi□ited.

**COMM□TER PAR□ING SPACES** □ par□ing □pace□ in the Comm□ter Par□ing Str□ct□re on the MTA Parcel□, controlled and operated □y the MTA and/or Metro-North Railroad and □□ed a□comm□ter par□ing □y patron□ o□the Metro-North Railroad.

**DELICATESSEN** □ A □tore □elling □ario□□ □ood□, e□pecially □n□□□al or imported □ood□ and ingredient□, incl□ding prepared and ready to eat □ood□, ha□ing □eating □or no more than 5 per□on□.

□**IOS**□ □ a □mall roo□ed □tr□ct□re, o□ten located □ithin the p□□lic □treet□cape that □ell□ item□ □□ch a□ ne□□paper□ and candy or i□ □□ed □or ad□erti□ing, po□ting notice□ or anno□ncement□ o□e□ent□.

**PEA□ PAR□ING DEMAND** □ the n□m□er o□ o□-□treet par□ing □pace□ re□□ired to accommodate a □□e or □□e□d□ring it□ pea□ ho□r o□daily operation.

**S□ARED PAR□ING** □ re□□ired par□ing □or t□o or more □□e□, □tr□ct□re□, tenant□ or parcel□ □ati□ied □ointly □y the □ame par□ing □pace□ or □acilitie□ □a□ed on di□□erence□ in operating ho□r□ and pea□ par□ing demand, to gain a higher e□□iciency o□ par□ing □acility operation.

**TOD DEVELOPMENT** - An integrated, moderate density, pedestrian-oriented, mixed-use development, consistent with the character of Harrison's Central Business District, located in the Transit Oriented Development (TOD) District, and within walking distance of the Harrison Train Station, County Bee-Line bus stops and other transit resources and facilities. A TOD Development is subject to Article XVI of this chapter.

**TRANSIT** - the transportation of passengers by means of a local public transportation system.

U. TOD Development

1. The off-street parking requirements for retail and retail service use, and office use, in a TOD Development shall be 2 spaces for each 1,000 square feet of gross floor area.

2. The Commuter Parking Structure constructed on the MTA Parcel shall include a minimum of 475 commuter spaces.

3. The Commuter Parking Structure on the MTA Parcel shall be designed to conform with all applicable MTA requirements.

4. Shared use of the commuter parking spaces in the Commuter Parking Structure on the MTA Parcel shall only be permitted between the hours of 4:00 pm to 4:00 am, or as otherwise agreed to by the MTA.

5. All parking structures shall include appropriate security measures and facilities.

6. The Commuter Parking Structure on the MTA Parcel shall include an office to facilitate the administration of the facility and to provide customer service.

7. The maximum floor area for any single retail space shall not exceed 12,000 square feet.

8. The Commuter Parking Structure on the MTA Parcel shall be wrapped with residential and/or non-residential uses, so as to disguise the presence of the parking structure.

□9□ B□ilding□ □hall □e de□igned □ith con□ideration gi□en to all □antage point□. Blan□, □eat□rele□□, □ninterr□pted □all□, □oth hori□ontally and □ertically, □hall not □e permitted.

□10□ All □ir□t □loor □tore□ront□ □hall incl□de occ□pied □pace□ along Hal□tead A□en□e containing a minim□m o□70□ □indo□ and/or door gla□□. Fa□□ □tore□ront□ are prohi□ited.

□11□ To en□□re an appropriate mi□ o□commercial □□e□ in the TOD De□elopment, no more than 40□ o□the non-re□idential gro□□ □oor area □hall □e compri□ed o□o□ice □pace, not incl□ding o□ice □pace acce□□ory to any permitted □□e or Special E□ception U□e.

□12□ High □□ality architect□ral element□ □hall □e employed to pro□ide □i□□al intere□t, red□ce □□ilding □cale, and promote the integration o□□ario□□ de□ign element□.

□13□ At lea□t 5□ o□ the pro□ect □ite □hall □e de□oted to open □pace area□, pede□trian pla□a□ or other pede□trian oriented □pace□. The□e area□ □hall □e p□□lically acce□□i□le.

□14□ The TOD De□elopment □hall incl□de □treet□cape impro□ement□ □hich □hall incl□de, □□t not □e limited to, □treet tree□, land□caping, planter□, tra□h receptacle□, □enche□, p□□lic art, □ide□al□□ and pa□er□, c□r□ing and □treet lighting. Additionally, the TOD De□elopment on the MTA Parcel□ □hall □□ita□ly incorporate the e□i□ting cloc□ located on Hal□tead A□en□e.

□15□ All ne□ □tilitie□ □hall □e placed □ndergro□nd.

16. No utility facilities, refuse collection areas, HVAC systems or other mechanical equipment shall be located on the Halstead Avenue side of the development, and in any case, shall be visually screened.

17. The TOD Development on the MTA Parcel shall be designed to facilitate and encourage public access through the project, to the Harrison Train Station and other transit facilities.

**□□□□□□□ S□□□d□□□ □□O□□□S□r□□□P□r□□□□ S□□□□ R□□□□r□□ □□□□ □□r N□□□R□□□d□□□□□□□□□□□**

- Art gallery □ 1 □pace per each 600 □□□are □eet □loor area.
- Dance and martial art□ □t□dio □ 3 □pace□ pl□□ 1 additional □pace per each 500 □□□are □eet o□□loor area.
- Delicate□□en □ 1 □pace per each 175 □□□are □eet o□□loor area.
- Ba□ery □ 1 □pace per each 200 □□□are □eet o□□loor area.
- Co□□ee Shop □ 1 □pace per each 175 □□□are □eet o□□loor area.

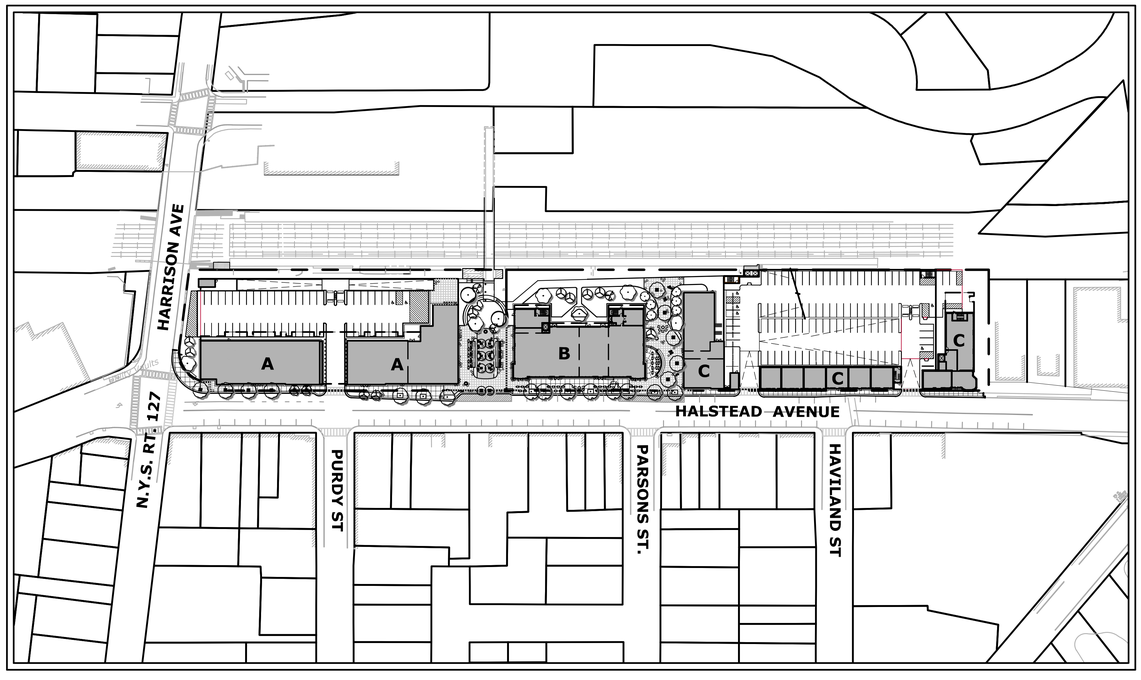
Avalon Bay Harrison
Town/Village of Harrison,
Westchester County, New York
Draft Environmental Impact Statement

# C Site Plans and Topographic Survey

# AVALONBAY HARRISON

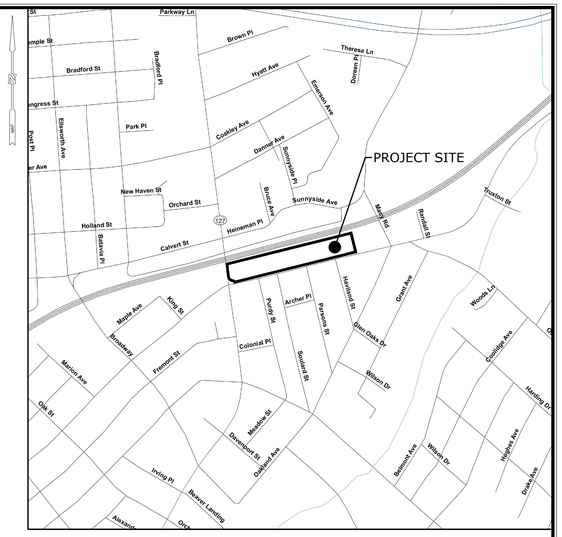
## HALSTEAD AVENUE
## HARRISON, NEW YORK

PRELIMINARY DESIGN
JULY 29, 2016




**PROJECT SITE VICINITY MAP:**

0' 40' 80'
0 10' 1"
SCALE 1" = 80'




**LOCATION MAP:**

0' 250' 500'
0 1/2" 1"
SCALE 1" = 500'

| ZONING DATA TABLE | | |
|---|---|---|
| REQUIREMENT | TOD ZONE REQUIRED/PERMITTED | PROPOSED |
| MINIMUM LOT AREA | 2.0 ACRES | 3.78 ACRES |
| MINIMUM LOT AREA PER FAMILY UNIT | 1000 SF | 1153 SF (143 APARTMENTS) |
| MAXIMUM BUILDING COVERAGE | 95% | 94% |
| MAXIMUM BUILDING COVERAGE FOR MULTIPLE DWELLINGS | 50% | 34% |
| MINIMUM LOT WIDTH | 50' | >1000' |
| FRONT YARD | 0 | 0 |
| SIDE YARD | 0 | ±14' |
| REAR YARD | 0 | 0 |
| MINIMUM HABITABLE FLOOR AREA | 600 SF | >600 SF |
| BUILDING HEIGHT | 75 ' | ±68' MAX. |
| STORIES | 5 | 4 |
| FLOOR AREA RATIO | 1.25 | 1.42 |
| COMMERCIAL DEVELOPMENT | 27,000 SF RETAIL | 27,000 SF RETAIL |

**PARKING SUMMARY:**
REQUIRED & PROPOSED PARKING: 751 SPACES

**EAST PARCEL**
584 SPACE PARKING GARAGE
- 475 SPACES FOR MTA COMMUTERS
- 64 SPACES FOR APARTMENTS
- 45 SPACES FOR COMMERCIAL

**WEST PARCEL**
167 SPACES

**PREPARED FOR:**

AVALONBAY COMMUNITIES
1499 POST ROAD 2ND FLOOR
FAIRFIELD, CONNECTICUT 06824

**LIST OF DRAWINGS**

| NO. | NAME | TITLE |
|---|---|---|
| 01 | -- | TITLE SHEET |
| 02 | IN | INDEX & OVERALL SITE PLAN |
| 03 | EX-1 | SITE PLAN - EXISTING CONDITIONS |
| 04 | EX-2 | SITE PLAN - EXISTING CONDITIONS |
| 05 | LA-1 | SITE PLAN - LAYOUT AND LANDSCAPING |
| 06 | LA-1 | SITE PLAN - LAYOUT AND LANDSCAPING |
| 07 | GR-1 | SITE PLAN - GRADING |
| 08 | GR-2 | SITE PLAN - GRADING |
| 09 | UT-1 | SITE PLAN - UTILITIES |
| 10 | UT-2 | SITE PLAN - UTILITIES |
| 11 | SE-1 | SITE PLAN - SEDIMENT AND EROSION CONTROL |
| 12 | SED-1 | SEDIMENT & EROSION CONTROL NOTES & DETAILS |
| 13 | SD-1 | SITE LAYOUT DETAILS |
| 14 | SD-2 | SITE LAYOUT DETAILS |
| 15 | SD-3 | SITE LAYOUT DETAILS |
| 16 | SD-4 | SITE UTILITY DETAILS |
| 17 | SD-5 | SITE UTILITY DETAILS |

**PREPARED BY:**

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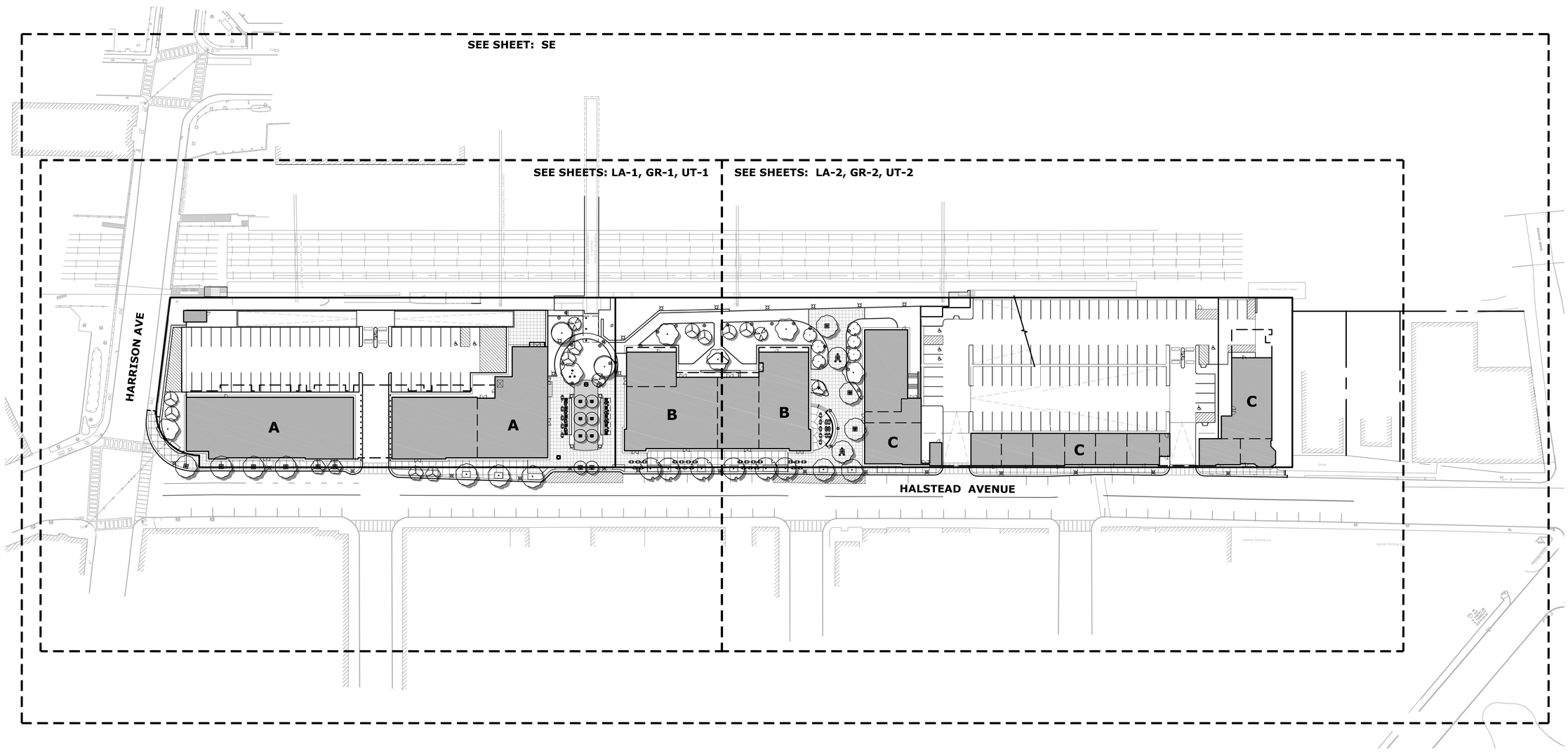
## GENERAL NOTES

1. BOUNDARY AND TOPOGRAPHIC INFORMATION IS BASED UPON A MAP PREPARED BY WELSH ENGINEERING & LAND SURVEYING P.C, ENTITLED "TOPOGRAPHIC & BOUNDARY SURVEY AND LOT LINE CORRECTION - HARRISON STATION", SCALE 1"=20', DATED: APRIL 8, 2016. SEE SHEETS 1-4.
2. MILONE & MACBROOM INC. ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF MAPS AND DATA WHICH HAVE BEEN SUPPLIED BY OTHERS.
3. SEDIMENT AND EROSION CONTROL MEASURES AS DEPICTED ON THESE PLANS AND DESCRIBED WITHIN THE SEDIMENT AND EROSION CONTROL NARRATIVE SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT COVER AND STABILIZATION IS ESTABLISHED. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL CONFORM TO THE "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, NEW YORK - 2005", AND IN ALL CASES BEST MANAGEMENT PRACTICES SHALL PREVAIL.
4. INFORMATION REGARDING THE LOCATION OF EXISTING UTILITIES HAS BEEN BASED UPON AVAILABLE INFORMATION AND MAY BE INCOMPLETE, AND WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CALL "DIG SAFELY NEW YORK", 1-800-968-7962. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.
5. ALL PROPOSED UTILITY SERVICES ARE TO BE UNDERGROUND. THE EXACT LOCATION AND SIZE OF ELECTRIC, TELEPHONE, CABLE TELEVISION, AND GAS ARE TO BE DETERMINED BY THE RESPECTIVE UTILITY COMPANIES. CERTAIN PORTION OF OVERHEAD ELECTRICAL UTILITY SERVICES TO REMAIN ABOVE GROUND, REFER TO PLANS FOR THAT INFORMATION.
6. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
7. ALL DISTURBED AREAS SHALL RECEIVE A MINIMUM OF 4" OF TOPSOIL, AND BE SEEDED WITH GRASS, AS SHOWN ON THE PLANS. ALL DISTURBED AREAS OUTSIDE OF THE CONSTRUCTION AREA SHALL BE REPAIRED IN ACCORDANCE WITH TOWN OF HARRISON REQUIREMENTS AND TO THE APPLICABLE SECTIONS OF THE STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
8. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS INDICATE FINISHED GRADE.
9. ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM TO THE TOWN OF HARRISON REQUIREMENTS AND TO THE APPLICABLE SECTIONS OF THE STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
10. ALL GUTTERS AND ROOF DRAINS SHALL BE TIED INTO THE PROPOSED STORM DRAINAGE SYSTEM.
11. THE PLANS REQUIRE A CONTRACTOR'S WORKING KNOWLEDGE OF LOCAL, MUNICIPAL, WATER AUTHORITY, AND STATE CODES FOR UTILITY SYSTEMS. ANY CONFLICTS BETWEEN MATERIALS AND LOCATIONS SHOWN, AND LOCAL REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE EXECUTION OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION WITH UTILITIES IMPACTED BY THIS PROJECT INCLUDING DEMOLITION AND NEW WORK. ALL UTILITY WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF EACH UTILITY COMPANY HAVING JURISDICTION IN THE PROJECT AREA. THE ENGINEER WILL NOT BE HELD LIABLE FOR COSTS INCURRED TO IMPLEMENT OR CORRECT WORK WHICH DOES NOT CONFORM TO LOCAL CODE.
12. THE PROPOSED BUILDINGS ARE TO BE CONNECTED TO PUBLIC WATER AND SANITARY SEWER.
13. ALL RETAINING WALLS IN EXCESS OF 4 FT. EXPOSED HEIGHT SHALL BE DESIGNED BY A NEW YORK STATE PROFESSIONAL ENGINEER AND BE ACCOMPANIED BY A CONSTRUCTION DETAIL AND CROSS SECTION VIEW SHOWING MATERIALS TO DESCRIBE THE PROPOSED WALL DESIGN AND AESTHETICS, AND CALCULATIONS. ALL DESIGN MATERIALS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER.
14. THE CONTRACTOR MUST MAINTAIN (REPAIR/REPLACE WHEN NECESSARY) THE SILTATION CONTROLS UNTIL ALL CONSTRUCTION ACTIVITY IS COMPLETED AND ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.
15. THE CONTRACTOR IS RESPONSIBLE FOR SECURING WORK AREA.
16. COMPLIANCE WITH THE PERMIT CONDITIONS IS THE RESPONSIBILITY OF BOTH THE CONTRACTOR AND THE PERMITTEE.

## EROSION CONTROL NOTES

1. SEDIMENT AND EROSION CONTROLS SHALL BE INSPECTED AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER.
2. THE SEDIMENT AND EROSION CONTROL PLAN SHALL BE MODIFIED BY THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER AND THE TOWN'S DESIGNATED REPRESENTATIVE AS NECESSITATED BY CHANGING SITE CONDITIONS.
3. ALL DEWATERING WASTE WATERS SHALL BE DISCHARGED IN A MANNER WHICH MINIMIZES THE DISCOLORATION OF THE RECEIVING WATERS.
4. THE SITE SHOULD BE KEPT CLEAN OF LOOSE DEBRIS, LITTER, AND BUILDING MATERIALS SUCH THAT NONE OF THE ABOVE ENTER WATERS OR WETLANDS.
5. A COPY OF ALL PLANS AND REVISIONS, AND THE SEDIMENT AND EROSION CONTROL PLAN SHALL BE MAINTAINED ON-SITE AT ALL TIMES DURING CONSTRUCTION.

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| DESCRIPTION | DATE | BY |
|---|---|---|

PRELIMINARY DESIGN

# INDEX & OVERALL SITE PLAN

## AVALONBAY HARRISON

HALSTEAD AVENUE
HARRISON, NEW YORK

| SJK | PKG | TD |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE 1"=40'

DATE JULY 29, 2016

PROJECT NO. 1218-74

SHEET NO. 02 OF 17

SHEET NAME IN

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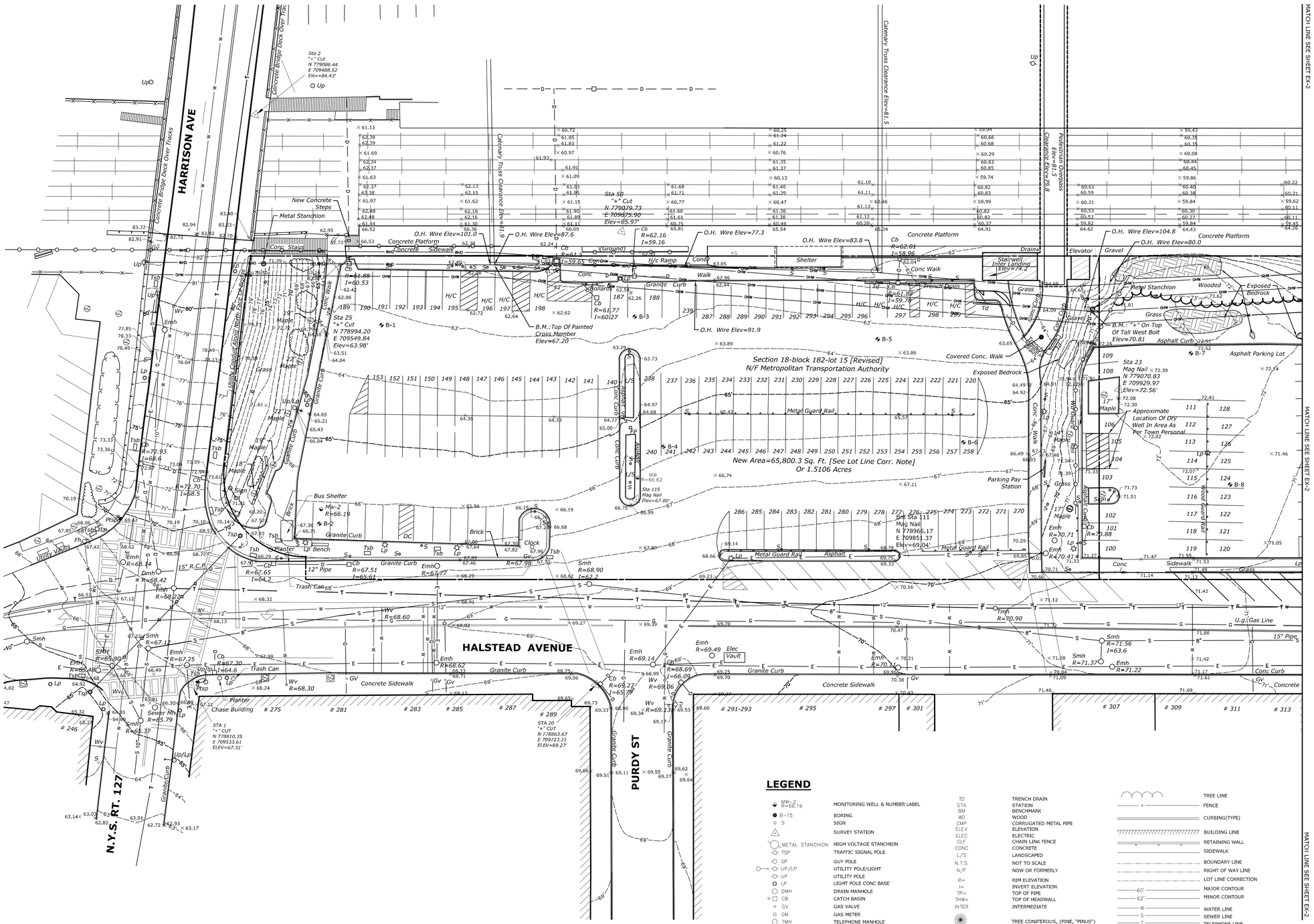


## LEGEND

| | | | |
|---|---|---|---|
| MW-2 R=66.19 | MONITORING WELL & NUMBER LABEL | TD | TRENCH DRAIN |
| B-15 | BORING | STA | STATION |
| S | SIGN | BM | BENCHMARK |
| | SURVEY STATION | WD | WOOD |
| | | CMP | CORRUGATED METAL PIPE |
| METAL STANCHION | HIGH VOLTAGE STANCHION | ELEV | ELEVATION |
| TSP | TRAFFIC SIGNAL POLE | ELEC | ELECTRIC |
| GP | GUY POLE | CLF | CHAIN LINK FENCE |
| UP/LP | UTILITY POLE/LIGHT | CONC | CONCRETE |
| UP | UTILITY POLE | L/S | LANDSCAPED |
| LP | LIGHT POLE CONC BASE | N.T.S. | NOT TO SCALE |
| DMH | DRAIN MANHOLE | N/F | NOW OR FORMERLY |
| CB | CATCH BASIN | R= | RIM ELEVATION |
| GV | GAS VALVE | I= | INVERT ELEVATION |
| GM | GAS METER | TP= | TOP OF PIPE |
| TMH | TELEPHONE MANHOLE | THW= | TOP OF HEADWALL |
| EMH | ELECTRIC MANHOLE | INTER | INTERMEDIATE |
| SMH | SEWER MANHOLE | | TREE CONIFEROUS, (PINE, "PINUS") |
| WG | WATER GATE | | TREE DECIDUOUS (MAPLE, "ACER") |
| FH | HYDRANT | | TREE DECIDUOUS (ELM, "ULMUS") |
| WM | WATER METER | | |
| WV | WATER VALVE | | SHRUB |
| TSB | TRAFFIC SIGNAL BOX | | |
| PTSP | PEDESTRIAN TRAFFIC SIGNAL POLE | | "FIELD MARKERS" SET ALONG R.O.W. OR PROPOSED R.O.W. |
| TSP | TRAFFIC SIGNAL POLE | | |
| 200.15 | SPOT ELEVATION | | EXPOSED BEDROCK |

TREE LINE
FENCE
CURBING(TYPE)
BUILDING LINE
RETAINING WALL
SIDEWALK
BOUNDARY LINE
RIGHT OF WAY LINE
LOT LINE CORRECTION
60' MAJOR CONTOUR
62' MINOR CONTOUR
W WATER LINE
S SEWER LINE
T TELEPHONE LINE
E ELECTRIC LINE
D DRAIN LINE
G GAS LINE

NOTE:
1. EXISTING CONDITION PLAN INFORMATION IS BASED UPON A MAP PREPARED BY WELSH ENGINEERING & LAND SURVEYING P.C, ENTITLED "TOPOGRAPHIC & BOUNDARY SURVEY AND LOT LINE CORRECTION - HARRISON STATION", SCALE 1"=20', DATED: APRIL 8, 2016. SEE SHEETS 1-4.

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|---|---|---|
| | | |

PRELIMINARY DESIGN

# EXISTING CONDITIONS
## AVALONBAY HARRISON

HALSTEAD AVENUE
HARRISON, NEW YORK

| TRS | BDK | TRS |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE: 1"=20'

DATE: JULY 29, 2016

PROJECT NO.: 1218-74

SHEET NO.: 03 OF 17

SHEET NAME: EX-1

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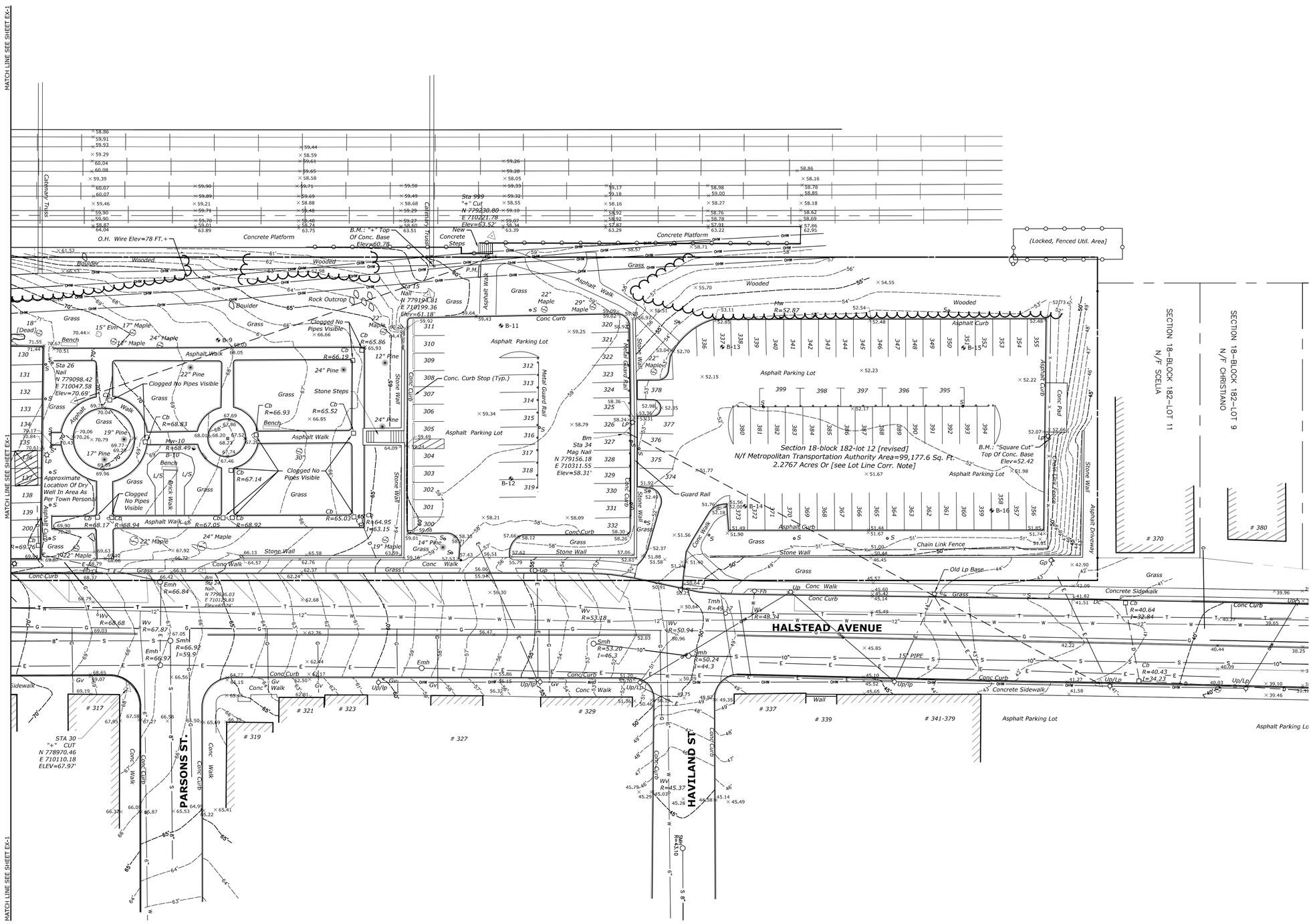


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SCALE 1" = 20'


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# EXISTING CONDITIONS

## AVALONBAY HARRISON

HALSTEAD AVENUE
HARRISON, NEW YORK

| TRS | BDK | TRS |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE: 1"=20'

DATE: JULY 29, 2016

PROJECT NO.: 1218-74

SHEET NO.: 04 OF 17

SHEET NAME: EX-2

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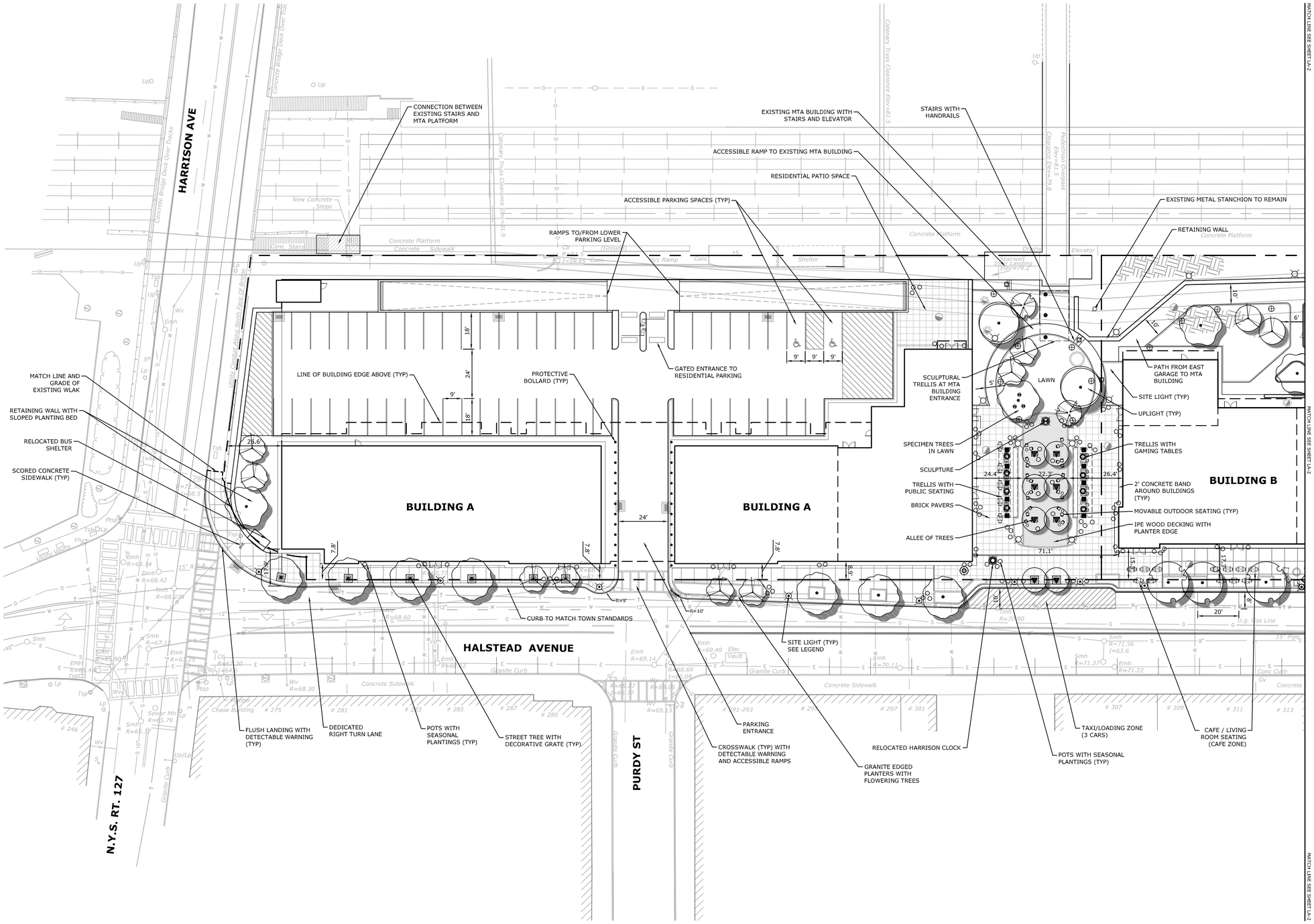


## MATERIALS LEGEND

- BRICK PAVERS
- SCORED CONCRETE SIDEWALK - TINTED WITH FLY ASH, TREATED WITH MICA, BROOM FINISHED. SAW CUT JOINTS, JOINT SEALANT TO MATCH COLOR CONCRETE
- CURB - MATERIAL PER TOWN STANDARDS
- SAWCUT LIMITS

## LIGHTING SCHEDULE

| SYMBOL | DESCRIPTION | QTY |
|---|---|---|
| | HIGH-HEIGHT SITE LIGHT | 16 |
| | MID-HEIGHT SITE LIGHT | 14 |
| | LOW-HEIGHT BOLLARD LIGHT | 22 |
| | WALL LIGHT/STEP LIGHT | 6 |
| | UP-LIGHT CANS FOR FEATURE TREES | 9 |
| | PENDANT LIGHT | 8 |
| | ILLUMINATED HARRISON CLOCK (EXISTING) | 1 |
| | PLACE-MAKING SCULPTURE LIGHT | 1 |
| | TWINKLE TREE LIGHTS | 11 |

1. LIGHTING ASSOCIATED WITH NEW TRELLIS AT MTA STATION ENTRANCE NOT SHOWN (TBD)

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PRELIMINARY DESIGN

# SITE PLAN - LAYOUT & LANDSCAPING

## AVALONBAY HARRISON

HALSTEAD AVENUE
HARRISON, NEW YORK

| TRS | BDK | TRS |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE: 1"=20'

DATE: JULY 29, 2016

PROJECT NO.: 1218-74

SHEET NO.: 05 OF 17

SHEET NAME: LA-1

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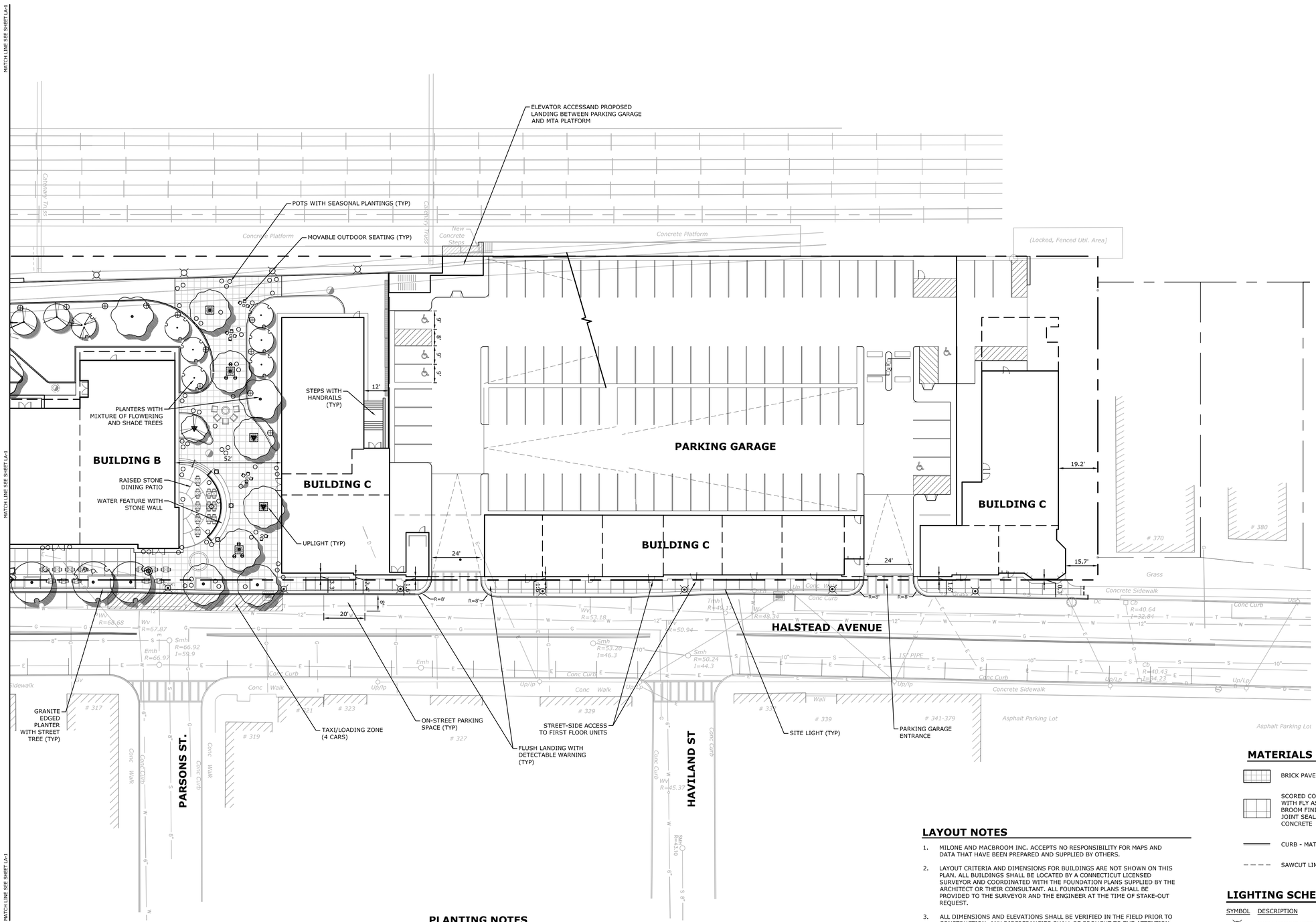


## PLANT SCHEDULE

| TREES | QTY | BOTANICAL NAME | COMMON NAME | SIZE | CONT. | COMMENTS |
|---|---|---|---|---|---|---|
| AR | 6 | Acer rubrum `Red Sunset` | Red Sunset Maple | 3.5" Cal. | B&B | 6` MIN. BRANCHING HT. |
| AF | 6 | Acer x freemanii `Armstrong` | Armstrong Freeman Maple | 3.5" Cal. | B&B | 6` MIN. BRANCHING HT. |
| AG | 3 | Amelanchier x grandiflora `Autumn Brilliance` | `Autumn Brilliance` Serviceberry | 2.5" Cal. | B&B | MULTI-STEM |
| CB | 8 | Carpinus betulus `Columnaris` | Columnar European Hornbeam | 3.5" Cal. | B&B | 5` MIN. BRANCHING HT. |
| CF | 4 | Cornus florida `Cherokee Brave` | Cherokee Brave Dogwood | 3.0" Cal. | B&B | FULL & DENSE |
| CR | 4 | Cornus x rutgersensis `Constellation` | White Stellar Series Dogwood | 3.0" Cal. | B&B | FULL & DENSE |
| CS | 6 | Cornus x rutgersensis `Stellar Pink` | Pink Flowering Stellar Dogwood | 3.0" Cal. | B&B | FULL & DENSE |
| FG | 2 | Fagus grandifolia | American Beech | 4.0" Cal. | B&B | FULL & DENSE |
| GS | 12 | Gleditsia triacanthos inermis `Shademaster` TM | Shademaster Locust | 4.0" Cal. | B&B | 6` MIN. BRANCHING HT. |
| PB | 6 | Platanus x acerifolia `Bloodgood` | London Plane Tree | 4.0" Cal. | B&B | 6` MIN. BRANCHING HT. |

## PLANTING NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATING PLANT PITS.
2. SEED ALL DISTURBED AREAS TO LAWN UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL PROVIDE A 6" MINIMUM DEPTH OF SCREENED TOPSOIL, AS SPECIFIED, FOR ALL LAWN AREAS.
3. ALL PLANTING BEDS SHALL HAVE 12" MINIMUM DEPTH OF TOPSOIL.
4. THE CONTRACTOR SHALL PROVIDE A 4" MIN. DEPTH OF SHREDDED BARK MULCH OVER ALL PLANTING BEDS AND TREE PLANTINGS. MULCHED PLANT BEDS SHALL EXTEND 12" FURTHER THAN THE ADJACENT PLANTINGS. NO DYED MULCH.
5. ALL PLANT MATERIAL IS SUBJECT TO INSPECTION AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO AND AFTER PLANTING.
6. PLANT SPECIES MAY BE ADJUSTED BASED ON AVAILABILITY AT TIME OF PLANTING. ALL PLANT MATERIAL SUBSTITUTIONS ARE SUBJECT TO REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT.
7. ALL PLANT MATERIALS SHALL CARRY A FULL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE, TO INCLUDE PROMPT TREATMENT OR REMOVAL AND REPLACEMENT OF ANY PLANTS FOUND TO BE IN AN UNHEALTHY CONDITION BY THE LANDSCAPE ARCHITECT. ALL REPLACEMENTS SHALL BE OF THE SAME KIND AND SIZE OF PLANTS SPECIFIED IN THE PLANT LIST.
8. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND SHALL CONTINUE UNTIL ACCEPTANCE BY THE LANDSCAPE ARCHITECT AT THE END OF THE WARRANTY PERIOD. MAINTENANCE SHALL INCLUDE WATERING, MULCHING, TIGHTENING & REPLACING OF GUYS, REPLACEMENT OF SICK OR DEAD PLANTS, RESETTING PLANTS TO PROPER GRADE OR UPRIGHT (PLUMB) POSITION, RESTORATION OF SAUCERS, AND ALL OTHER CARE NEEDED FOR PROPER GROWTH OF THE PLANTS.
9. WHERE A SIZE RANGE IS SPECIFIED AT LEAST 50% OF PLANTS PROVIDED SHALL BE OF THE LARGER SIZE.
10. CONTRACTOR TO REMOVE TREE STAKES AFTER ONE GROWING SEASON.

## LAYOUT NOTES

1. MILONE AND MACBROOM INC. ACCEPTS NO RESPONSIBILITY FOR MAPS AND DATA THAT HAVE BEEN PREPARED AND SUPPLIED BY OTHERS.
2. LAYOUT CRITERIA AND DIMENSIONS FOR BUILDINGS ARE NOT SHOWN ON THIS PLAN. ALL BUILDINGS SHALL BE LOCATED BY A CONNECTICUT LICENSED SURVEYOR AND COORDINATED WITH THE FOUNDATION PLANS SUPPLIED BY THE ARCHITECT OR THEIR CONSULTANT. ALL FOUNDATION PLANS SHALL BE PROVIDED TO THE SURVEYOR AND THE ENGINEER AT THE TIME OF STAKE-OUT REQUEST.
3. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
4. FOR DETAILED INFORMATION PERTAINING TO PROPOSED BUILDINGS REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS.
5. SEE EXISTING CONDITIONS PLAN FOR VERTICAL AND HORIZONTAL BENCH MARK INFORMATION.

## MATERIALS NOTES

1. CONCRETE SIDEWALKS, ENTRY AREAS, AND TERRACES SHALL INCORPORATE EXPANSION JOINTS, SCORE JOINTS, AND CONSTRUCTION JOINTS PER THE SPECIFICATIONS AND DETAILS, TYPICALLY NO MORE THAN 144 SQUARE FEET SHALL BE A CONTIGUOUS SLAB. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR JOINTING PERTAINING TO THESE DISCIPLINES.
2. IN ALL CASES WHERE CONCRETE SIDEWALKS ABUT CONCRETE CURBS THE CONTRACTOR IS TO UTILIZE THE INTEGRAL CONCRETE CURB AND WALK DETAIL. ALL PROPOSED CURBING SHALL BE CONCRETE, UNLESS SPECIFIED OTHERWISE.
3. SITE LIGHTS DEPICTED WITHIN LAWN/LANDSCAPE AREAS SHALL MAINTAIN A 4'-6" FOUNDATION REVEAL MAXIMUM. SEE ELECTRICAL PLAN FOR MORE INFORMATION.
4. WHERE WALK AND PAVED DRIVE ARE SPECIFIED TO BE FLUSH, A FLUSH (FULL DEPTH) CONCRETE CURB SHALL ALSO BE INSTALLED. SEE DETAIL.

## MATERIALS LEGEND

- BRICK PAVERS
- SCORED CONCRETE SIDEWALK - TINTED WITH FLY ASH, TREATED WITH MICA, BROOM FINISHED. SAW CUT JOINTS, JOINT SEALANT TO MATCH COLOR CONCRETE
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PRELIMINARY DESIGN

# SITE PLAN - LAYOUT & LANDSCAPING

AVALONBAY HARRISON

HALSTEAD AVENUE
HARRISON, NEW YORK

| TRS | BDK | TRS |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE 1"=20'

DATE JULY 29, 2016

PROJECT NO. 1218-74

SHEET NO. 06 OF 17

SHEET NAME LA-2

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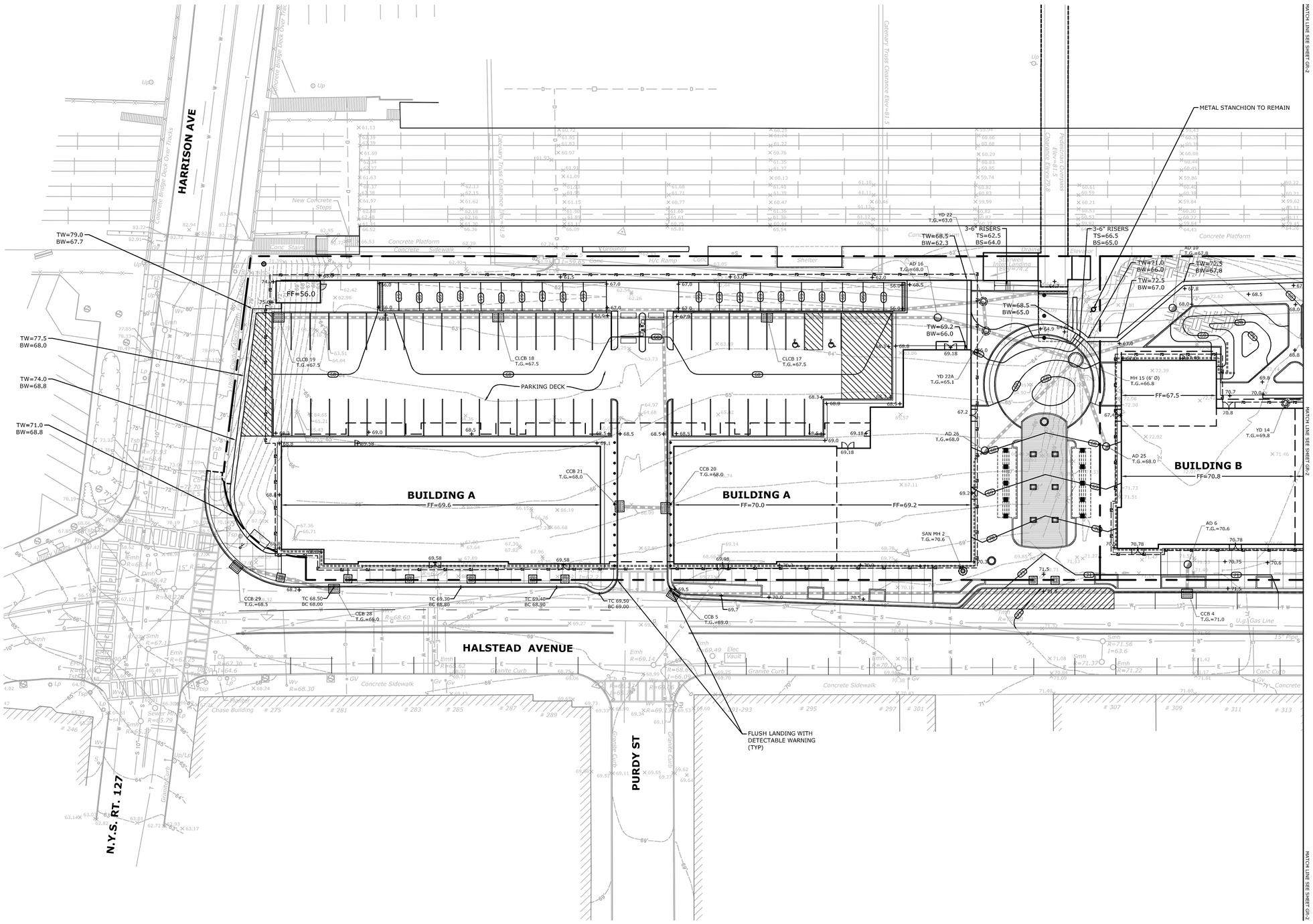


## GRADING LEGEND

| | |
|---|---|
| × 70.5 | EXISTING SPOT ELEVATION |
| + 70.5 | PROPOSED SPOT ELEVATION |
| ———70——— | EXISTING CONTOUR |
| ——(124)—— | PROPOSED CONTOUR |

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N W E S

SCALE 1" = 20'

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|---|---|---|

PRELIMINARY DESIGN

# SITE PLAN - GRADING

## AVALONBAY HARRISON

HALSTEAD AVENUE
HARRISON, NEW YORK

| TRS | BDK | TRS |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE 1"=20'

DATE JULY 29, 2016

PROJECT NO. 1218-74

SHEET NO. 07 OF 17

SHEET NAME GR-1

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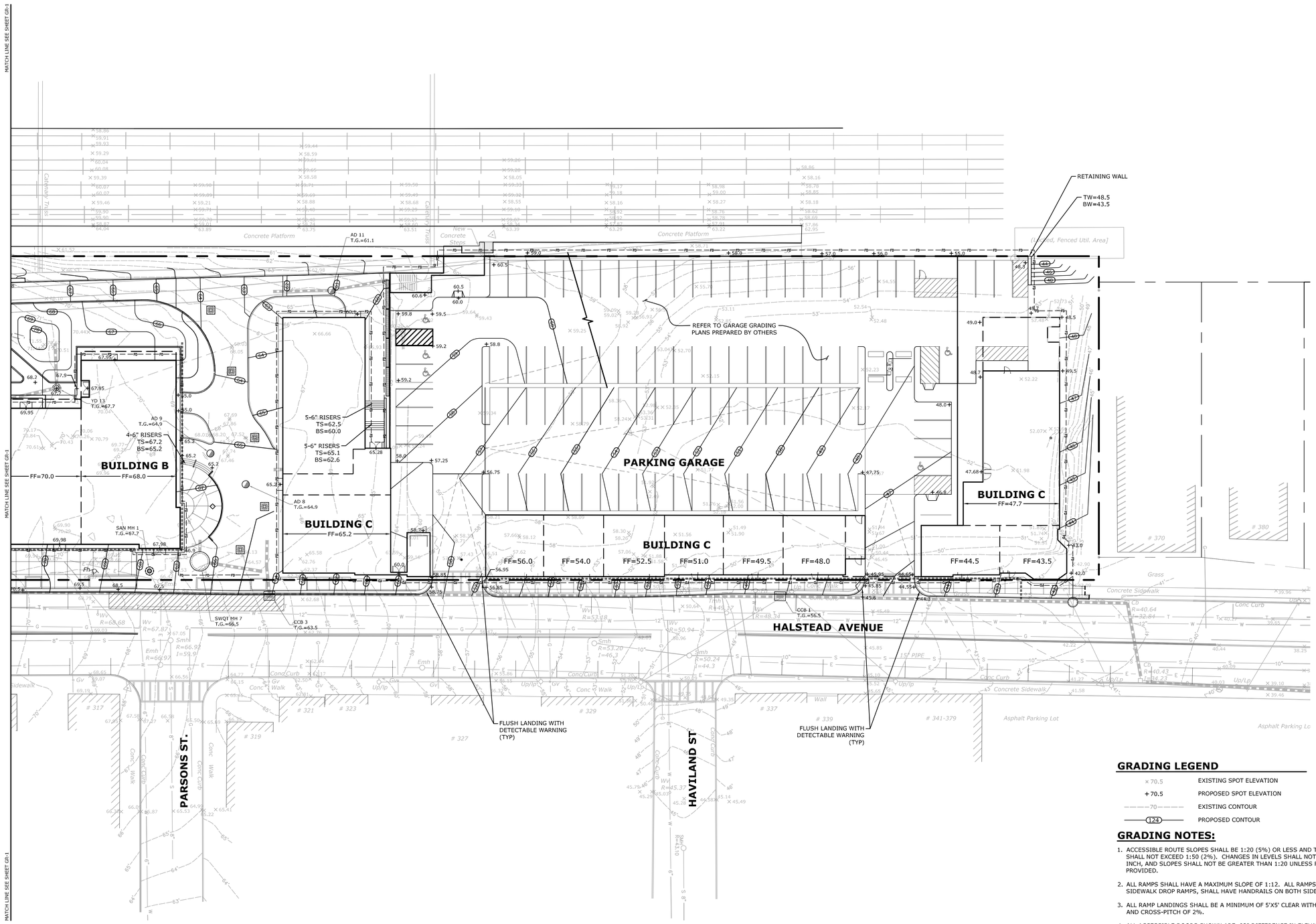


## GRADING LEGEND

| | |
|---|---|
| × 70.5 | EXISTING SPOT ELEVATION |
| + 70.5 | PROPOSED SPOT ELEVATION |
| ——70—— | EXISTING CONTOUR |
| ——124—— | PROPOSED CONTOUR |

## GRADING NOTES:

1. ACCESSIBLE ROUTE SLOPES SHALL BE 1:20 (5%) OR LESS AND THE CROSS SLOPES SHALL NOT EXCEED 1:50 (2%). CHANGES IN LEVELS SHALL NOT BE GREATER THAN 1/2 INCH, AND SLOPES SHALL NOT BE GREATER THAN 1:20 UNLESS RAMPS OR LIFTS ARE PROVIDED.
2. ALL RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1:12. ALL RAMPS, EXCLUDING SIDEWALK DROP RAMPS, SHALL HAVE HANDRAILS ON BOTH SIDES.
3. ALL RAMP LANDINGS SHALL BE A MINIMUM OF 5'X5' CLEAR WITH A MAXIMUM SLOPE AND CROSS-PITCH OF 2%.
4. ALL ACCESSIBLE DOORS SHOWN ARE .02" DIFFERENCE IN ELEVATION FROM EXTERIOR TO INTERIOR FINISHED FLOOR ELEVATIONS. LINES AT ACCESSIBLE DOORS DO NOT INDICATE A CHANGE IN ELEVATION GREATER THAN .02".
5. EXISTING CONTOURS SHOWN ARE AT ONE FOOT INTERVALS
6. IN ALL CASES IN WHICH PROPOSED ROADS, SIDEWALKS AND CURBING WILL BE TIED INTO EXISTING ROAD/SIDEWALK AND/OR CURBS THE CONTRACTOR SHALL MATCH THE LINE AND GRADE OF THE EXISTING SITE.

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| | | |

PRELIMINARY DESIGN

# SITE PLAN - GRADING

## AVALONBAY HARRISON

HALSTEAD AVENUE
HARRISON, NEW YORK

| TRS | BDK | TRS |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE: 1"=20'

DATE: JULY 29, 2016

PROJECT NO.: 1218-74

SHEET NO.: 08 OF 17

SHEET NAME: GR-2

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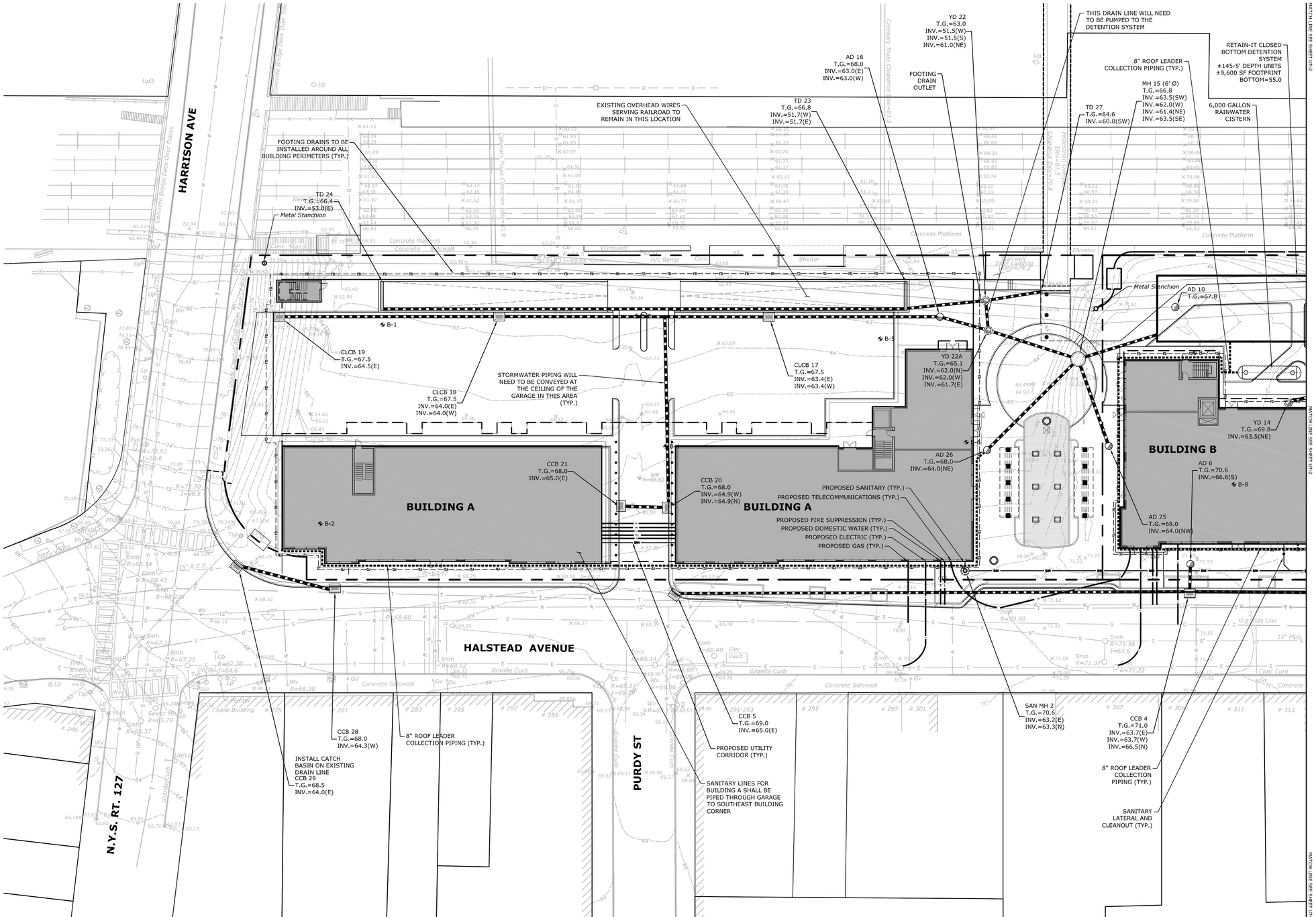


## UTILITIES LEGEND

| | |
|---|---|
| PROPOSED STORM PIPE | PROPOSED GAS |
| PROPOSED SANITARY PIPE | PROPOSED ELECTRIC |
| PROPOSED ROOF DRAIN | PROPOSED DOMESTIC WATER |
| PROPOSED FOOTING DRAIN | PROPOSED FIRE PROTECTION |
| PROPOSED STORM MANHOLE | PROPOSED TELECOMMUNICATIONS |
| PROPOSED CATCH BASIN | |
| PROPOSED YARD DRAIN | |
| PROPOSED AREA DRAIN | |
| PROPOSED SANITARY MANHOLE | |

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# SITE PLAN - UTILITIES

## AVALONBAY HARRISON

HALSTEAD AVENUE
HARRISON, NEW YORK

| SJK | PKG | TD |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE 1"=20'

DATE JULY 29, 2016

PROJECT NO. 1218-74

SHEET NO. 09 OF 17

SHEET NAME UT-1

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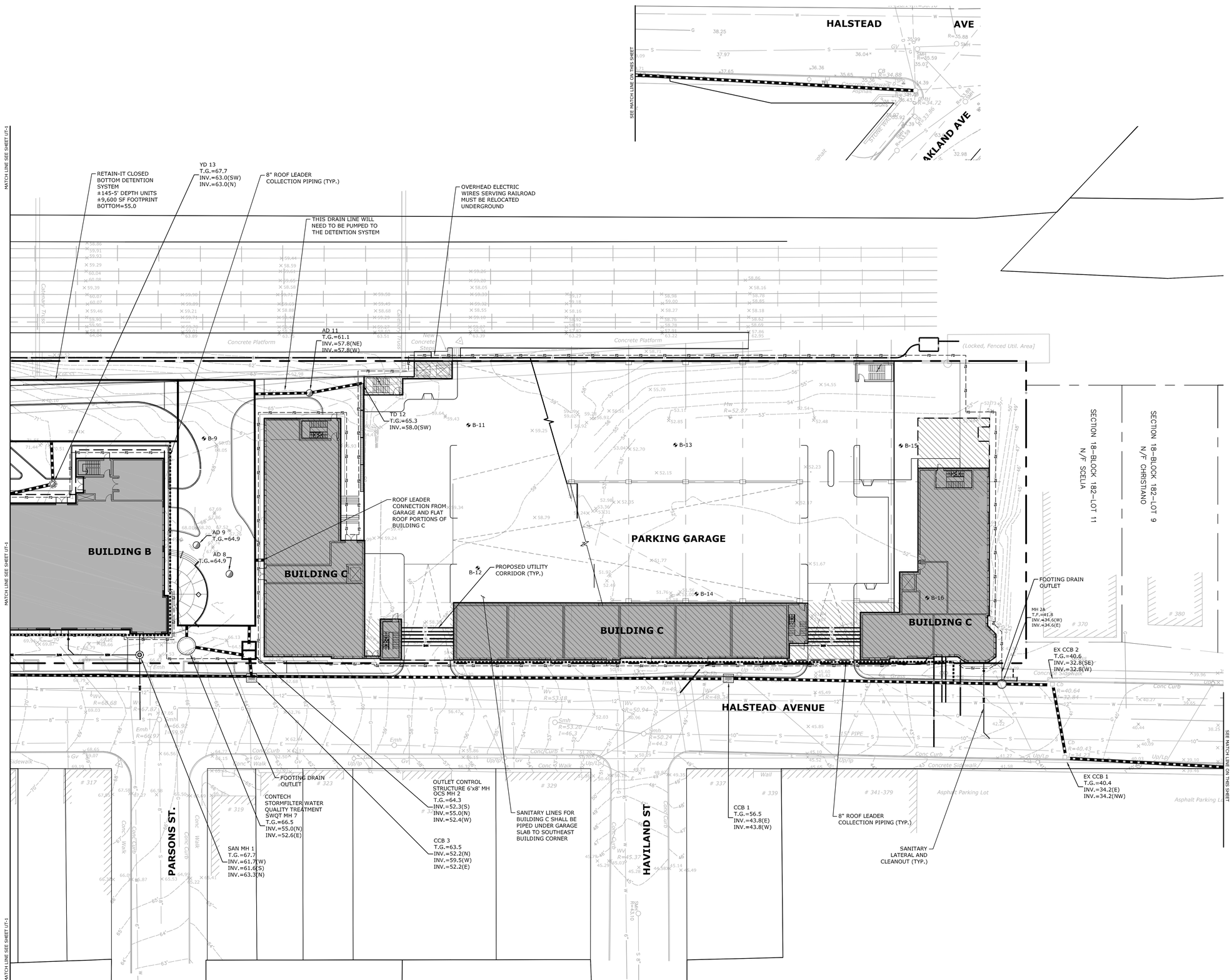


## UTILITIES LEGEND

| | |
|---|---|
| PROPOSED STORM PIPE | PROPOSED GAS |
| PROPOSED SANITARY PIPE | PROPOSED ELECTRIC |
| PROPOSED ROOF DRAIN | PROPOSED DOMESTIC WATER |
| PROPOSED FOOTING DRAIN | PROPOSED FIRE PROTECTION |
| PROPOSED STORM MANHOLE | PROPOSED TELECOMMUNICATIONS |
| PROPOSED CATCH BASIN | |
| PROPOSED YARD DRAIN | |
| PROPOSED AREA DRAIN | |
| PROPOSED SANITARY MANHOLE | |

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# SITE PLAN - UTILITIES

## AVALONBAY HARRISON

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PROJECT NO.: 1218-74

SHEET NO.: 10 OF 17

SHEET NAME: UT-2

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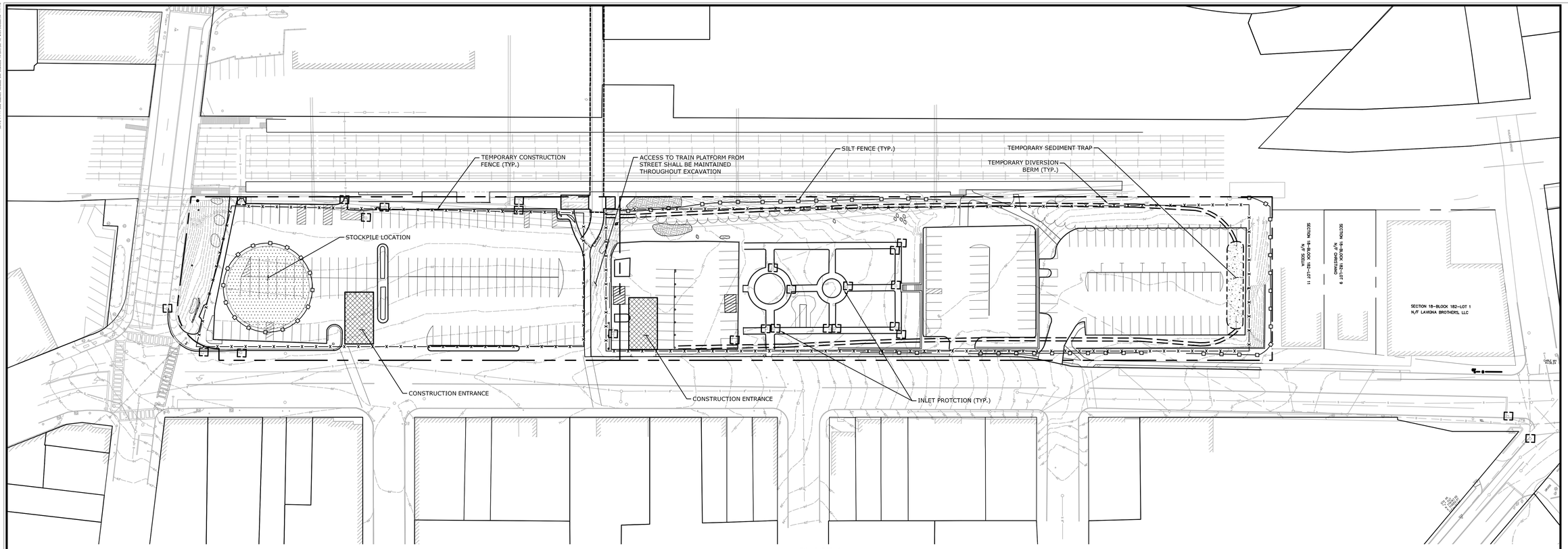
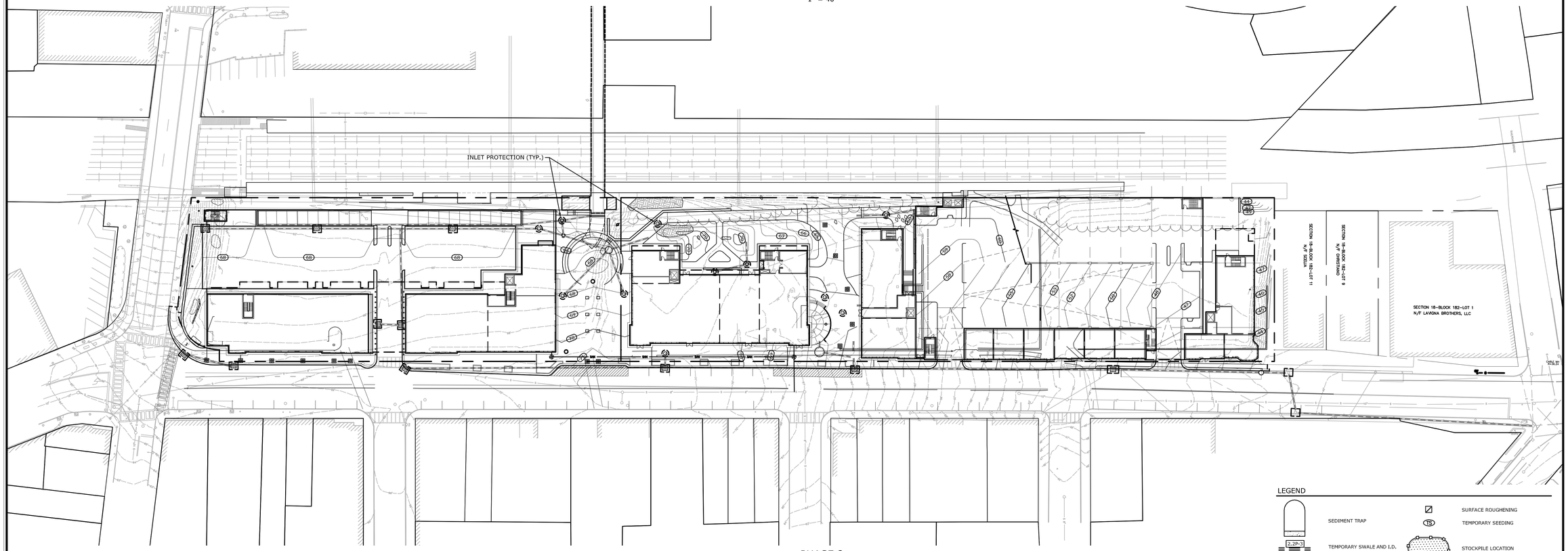



PHASE 1
1" = 40'




PHASE 2
1" = 40'

LEGEND

- SEDIMENT TRAP
- TEMPORARY SWALE AND I.D.
- SILT FENCE
- CLEARING LIMITS
- STABILIZED CONSTRUCTION ENTRANCE
- DUST CONTROL
- EARTHWORK
- SURFACE ROUGHENING
- TEMPORARY SEEDING
- STOCKPILE LOCATION
- EROSION CONTROL BLANKET OR SPRAYED BONDED FIBER
- FILTER FABRIC DROP INLET PROTECTION
- STONE CHECK DAM OR SILT FENCE *J-HOOK* AS APPROPRIATE
- WATER BAR

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| DESCRIPTION | DATE | BY |
|---|---|---|

PRELIMINARY DESIGN

# SITE PLAN - SEDIMENT & EROSION CONTROL

## AVALONBAY HARRISON

HALSTEAD AVENUE
HARRISON, NEW YORK

| SJK | PKG | TD |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE: 1"=40'

DATE: JULY 29, 2016

PROJECT NO.: 1218-74

SHEET NO.: 11 OF 17

SHEET NAME: SE

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## SEDIMENT AND EROSION CONTROL SPECIFICATIONS

GENERAL:

THESE GUIDELINES SHALL APPLY TO ALL WORK CONSISTING OF ANY AND ALL TEMPORARY AND/OR PERMANENT MEASURES TO CONTROL WATER POLLUTION AND SOIL EROSION, AS MAY BE REQUIRED, DURING THE CONSTRUCTION OF THE PROJECT. IN GENERAL, ALL CONSTRUCTION ACTIVITIES SHALL PROCEED IN SUCH A MANNER SO AS NOT TO POLLUTE ANY WETLANDS, WATERCOURSE, WATERBODY, AND CONDUIT CARRYING WATER, ETC. THE CONTRACTOR SHALL LIMIT, INSOFAR AS POSSIBLE, THE SURFACE AREA OF EARTH MATERIALS EXPOSED BY CONSTRUCTION METHODS AND IMMEDIATELY PROVIDE PERMANENT AND TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT WETLANDS, WATERCOURSES, AND WATERBODIES, AND TO PREVENT, INSOFAR AS POSSIBLE, EROSION ON THE SITE.

### LAND GRADING

GENERAL:

1. THE RESHAPING OF THE GROUND SURFACE BY EXCAVATION AND FILLING OR A COMBINATION OF BOTH, TO OBTAIN PLANNED GRADES, SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING CRITERIA:
    a. THE CUT FACE OF EARTH EXCAVATION SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
    b. THE PERMANENT EXPOSED FACES OF FILLS SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).
    c. THE CUT FACE OF ROCK EXCAVATION SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO FOUR VERTICAL (1:4).
    d. PROVISION SHOULD BE MADE TO CONDUCT SURFACE WATER SAFELY TO STORM DRAINS TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES.
    e. EXCAVATIONS SHOULD NOT BE MADE SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTY WITHOUT PROTECTING SUCH PROPERTY FROM EROSION, SLIDING, SETTLING, OR CRACKING.
    f. NO FILL SHOULD BE PLACED WHERE IT WILL SLIDE OR WASH UPON THE PREMISES OF ANOTHER OWNER OR UPON ADJACENT WETLANDS, WATERCOURSES, OR WATERBODIES.
    g. PRIOR TO ANY REGRADING, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT THE ENTRANCE TO THE WORK AREA IN ORDER TO REDUCE MUD AND OTHER SEDIMENTS FROM LEAVING THE SITE.

### TOPSOILING

GENERAL:

1. TOPSOIL SHALL BE SPREAD OVER ALL EXPOSED AREAS IN ORDER TO PROVIDE A SOIL MEDIUM HAVING FAVORABLE CHARACTERISTICS FOR THE ESTABLISHMENT, GROWTH, AND MAINTENANCE OF VEGETATION.
2. UPON ATTAINING FINAL SUBGRADES, SCARIFY SURFACE TO PROVIDE A GOOD BOND WITH TOPSOIL.
3. REMOVE ALL LARGE STONES, TREE LIMBS, ROOTS AND CONSTRUCTION DEBRIS.
4. APPLY SOIL AMENDMENTS AS FOLLOWS:
    LIME: ACCORDING TO SOIL TEST OR AT THE RATE OF 2 TONS PER ACRE.

    ROCK DUST: ACCORDING TO SOIL TEST OR AT THE RATE OF 2 TONS PER ACRE

MATERIAL:

1. TOPSOIL SHOULD HAVE PHYSICAL, CHEMICAL, AND BIOLOGICAL CHARACTERISTICS FAVORABLE TO THE GROWTH OF PLANTS.
2. TOPSOIL SHOULD HAVE A SANDY OR LOAMY TEXTURE.
3. TOPSOIL SHOULD BE RELATIVELY FREE OF SUBSOIL MATERIAL AND MUST BE FREE OF LARGE STONES , LUMPS OF SOIL, ROOTS, TREE LIMBS, TRASH, OR CONSTRUCTION DEBRIS. IT SHOULD BE FREE OF ROOTS OR RHIZOMES SUCH AS THISTLE, NUTGRASS, AND QUACKGRASS.
4. AN ORGANIC MATTER CONTENT OF SIX PERCENT (6%) IS REQUIRED. AVOID LIGHT COLORED SUBSOIL MATERIAL.
5. SOLUBLE SALT CONTENT OF LESS THAN 400 PPM IS REQUIRED.
6. THE TOPSOIL SHALL BE WARRANTED BY SELLER TO BE FREE OF DETECTABLE RESIDUES OF CHEMICAL PESTICIDES, HERBICIDES, PETROLEUM PRODUCTS, OR OTHER UNSUITABLE TOXINS.

APPLICATION:

1. AVOID SPREADING WHEN TOPSOIL IS WET OR FROZEN.
2. SPREAD TOPSOIL UNIFORMLY TO A DEPTH OF AT LEAST FOUR INCHES (4"), OR TO THE DEPTH SHOWN ON THE LANDSCAPING PLANS.

### TEMPORARY VEGETATIVE COVER

TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED ON ALL UNPROTECTED AREAS THAT PRODUCE SEDIMENT, AREAS WHERE FINAL GRADING HAS BEEN COMPLETED, AND AREAS WHERE THE ESTIMATED PERIOD OF BARE SOIL EXPOSURE IS LESS THAN 12 MONTHS. TEMPORARY VEGETATIVE COVER SHALL BE APPLIED IF AREAS WILL NOT BE PERMANENTLY SEEDED BY SEPTEMBER 1.

GENERAL:

1. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
2. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
3. APPLY SOIL AMENDMENTS AS FOLLOWS:
    LIME: ACCORDING TO SOIL TEST OR AT THE RATE OF 1 TONS PER ACRE.
    ROCK DUST: ACCORDING TO SOIL TEST OR AT THE RATE OF 1 TONS PER ACRE
4. UNLESS HYDROSEEDED, WORK IN LIME TO A DEPTH OF 4 INCHES WITH A DISK OR ANY SUITABLE EQUIPMENT. DO NOT WORK FINISHED COMPOST INTO THE SOIL - APPLY IT EVENLY TO SOIL SURFACE AS A SEED BED.
5. TILLAGE SHOULD ACHIEVE A REASONABLY UNIFORM LOOSE SEEDBED. WORK ON CONTOUR IF SITE IS SLOPING.

SITE PREPARATION:

1. SELECT APPROPRIATE SPECIES FOR THE SITUATION. NOTE RATES AND SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING)
2. APPLY SEED UNIFORMLY ACCORDING TO THE RATE INDICATED BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
3. UNLESS HYDROSEEDED, COVER RYEGRASS SEEDS WITH NOT MORE THAN 1/4 INCH OF SOIL USING SUITABLE EQUIPMENT.
4. MULCH IMMEDIATELY AFTER SEEDING IF REQUIRED. (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW.) APPLY STRAW AND ANCHOR TO SLOPES GREATER THAN 3%%% OR WHERE NEEDED.

### PERMANENT VEGETATIVE COVER

GENERAL:

PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED AS VARIOUS SECTIONS OF THE PROJECT ARE COMPLETED IN ORDER TO STABILIZE THE SOIL, REDUCE DOWNSTREAM DAMAGE FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE AESTHETIC NATURE OF THE SITE. IT WILL BE APPLIED TO ALL CONSTRUCTION AREAS SUBJECT TO EROSION WHERE FINAL GRADING HAS BEEN COMPLETED AND A PERMANENT COVER IS NEEDED.

SITE PREPARATION:

1. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
2. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
3. PERFORM ALL PLANTING OPERATIONS PARALLEL TO THE CONTOURS OF THE SLOPE.
4. APPLY TOPSOIL AS INDICATED ELSEWHERE HEREIN.
5. APPLY SOIL AMENDMENTS AS FOLLOWS:
    LIME: ACCORDING TO SOIL TEST OR AT THE RATE OF 1 TONS PER ACRE.
    ROCK DUST: ACCORDING TO SOIL TEST OR AT THE RATE OF 1 TONS PER ACRE
6. UNLESS HYDROSEEDED, WORK IN LIME TO A DEPTH OF 4 INCHES WITH A DISK OR ANY SUITABLE EQUIPMENT. DO NOT WORK FINISHED COMPOST

### VEGETATED COVER SELECTION AND MULCHING

TEMPORARY VEGETATIVE COVER:

PERENNIAL RYEGRASS 5 LBS./1,000 SQ.FT. (LOLIUM PERENNE)
DUTCH WHITE CLOVER (TRIFOLIUM REPENS) 1/4 LBS PER 1000 SF. OR 6LBS/AC.

* PERMANENT VEGETATIVE COVER:

DUTCH WHITE CLOVER 30%
BARON KENTUCKY BLUEGRASS 30%
JAMESTOWN II CHEWINGS FESCUE 20%
PALMER PERENNIAL RYEGRASS 20%

NEW ENGLAND EROSION CONTROL/R3ESOTRATION MIX FOR MOIST SITES AT 1/8 LB PER 1000 S.F. FOR 5 LBS/AC.

NEW ENGLAND SHOWY WILD FLOW MIX AT 1/16 LB PER 1000 S.F. OR 2 LBS/AC

* LOFTS - "TRIPLEX GENERAL" MIX OR APPROVED EQUAL. RECOMMENDED RATE/TIME SEEDING.
SPRING SEEDING: 4/1 to 5/31
FALL SEEDING: 8/16 to 10/15

TEMPORARY MULCHING:

STRAY 70-90 LBS./1,000 SQ.FT. (TEMPORARY VEGETATIVE AREAS) WOOD FIBER IN HYDROMULCH SLURRY 25-50 LBS./1,000 SQ. FT.

ESTABLISHMENT:
1. SMOOTH AND FIRM SEEDBED WITH CULTIPACKER OR OTHER SIMILAR EQUIPMENT PRIOR TO SEEDING (EXCEPT WHEN HYDROSEEDING).
2. SELECT ADAPTED SEED MIXTURE FOR THE SPECIFIC SITUATION. NOTE RATES AND THE SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING SPEC. BELOW).
3. APPLY SEED UNIFORMLY ACCORDING TO RATE INDICATED, BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
4. COVER GRASS AND LEGUME SEED WITH NOT MORE THAN 1/4 INCH OF SOIL WITH SUITABLE EQUIPMENT (EXCEPT WHEN HYDROSEEDING).
5. MULCH IMMEDIATELY AFTER SEEDING, IF REQUIRED, ACCORDING TO TEMPORARY MULCHING SPECIFICATIONS. (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW).
6. USE PROPER INOCULANT ON ALL LEGUME SEEDINGS, USE FOUR (4) TIMES NORMAL RATES WHEN HYDROSEEDING.
7. USE SOD WHERE THERE IS A HEAVY CONCENTRATION OF WATER AND IN CRITICAL AREAS WHERE IT IS IMPORTANT TO GET A QUICK VEGETATIVE COVER TO PREVENT EROSION.

MAINTENANCE:

1. TEST FOR SOIL ACIDITY EVERY THREE (3) YEARS AND LIME AS REQUIRED.

### EROSION CHECKS

GENERAL:

1. TEMPORARY PERVIOUS BARRIERS USING BALES OF HAY OR STRAW, HELD IN PLACE WITH STAKES DRIVEN THROUGH THE BALES AND INTO THE GROUND OR GEOTEXTILE FABRIC FASTENED TO A FENCE POST AND BURIED INTO THE GROUND, SHALL BE INSTALLED AND MAINTAINED AS REQUIRED TO CHECK EROSION AND REDUCE SEDIMENTATION.

CONSTRUCTION:

1. BALES SHOULD BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED INTO THE SOIL A MINIMUM OF FOUR (4") INCHES.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY WOOD STAKES OR REINFORCEMENT BARS DRIVEN THROUGH THE BALES AND INTO THE GROUND. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. GEOTEXTILE FABRIC SHALL BE SECURELY ANCHORED AT THE TOP OF A THREE FOOT (3') HIGH FENCE AND BURIED A MINIMUM OF FOUR INCHES (4") TO THE SOIL. SEAMS BETWEEN SECTIONS OF FILTER FABRIC SHALL OVERLAP A MINIMUM OF TWO FEET (2').

INSTALLATION AND MAINTENANCE:

1. BALED HAY EROSION BARRIERS SHALL BE INSTALLED AT ALL STORM SEWER INLETS.
2. BALED HAY EROSION BARRIERS AND GEOTEXTILE FENCE SHALL BE INSTALLED AT THE LOCATION INDICATED ON THE PLAN AND IN ADDITIONAL AREAS AS MAY BE DEEMED APPROPRIATE DURING CONSTRUCTION.
3. ALL EROSION CHECKS SHALL BE MAINTAINED UNTIL ADJACENT AREAS ARE STABILIZED.
4. INSPECTION SHALL BE FREQUENT (AT MINIMUM MONTHLY AND BEFORE AND AFTER HEAVY RAIN) AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. EROSION CHECKS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORMWATER FLOW OR DRAINAGE.

## EROSION CONTROL MAINTENANCE INTERVALS

| EROSION CONTROL MEASURE | CONTROL OBJECTIVE | INSPECTION/MAINTENANCE | FAILURE INDICATORS | REMOVAL |
|---|---|---|---|---|
| TEMPORARY SEDIMENT TRAP (TST) | - DETAIN SEDIMENT-LADEN RUNOFF FROM SMALL DISTURBED AREAS LONG ENOUGH TO ALLOW A MAJORITY OF THE SEDIMENT TO SETTLE OUT. | INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. STONE OUTLET SHOULD BE AT LEAST 1 FOOT BELOW CREST OF EMBANKMENT. SEDIMENT MUST BE REMOVED WHEN ACCUMULATION REACHES ½ OF THE REQUIRED WET STORAGE. | - TURBID WATER<br>- EXCESSIVE SEDIMENT ACCUMULATION<br>- OVERTOPPING EVIDENCE | TST MAY BE REMOVED ONCE THE CONTRIBUTING DRAINAGE AREA IS PERMANENTLY STABILIZED. |
| TEMPORARY SEDIMENT BASIN (DETENTION BASIN) (SB/PST) | - INTERCEPT/RETAIN SEDIMENT DURING CONSTRUCTION.<br>- PREVENT TRANSPORT AND DEPOSITION OF SEDIMENT OFF CONSTRUCTION SITE. | INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCHES OR GREATER. CLEAN OUT SEDIMENT WHEN ACCUMULATION EXCEEDS ½ OF THE WET STORAGE CAPACITY OR WHEN DEPTH OF AVAILABLE POOL IS REDUCED TO 18". PLACE STAKES OR OTHER MEANS TO INDICATE THE THRESHOLD ELEVATION FOR SEDIMENT CLEANOUT. | - TURBID WATER<br>- EXCESSIVE SEDIMENT ACCUMULATION<br>- OVERTOPPING EVIDENCE<br>- EROSION OF EMBANKMENTS | TEMPORARY SEDIMENT BASINS THAT ARE NOT TO FUNCTION AS PERMANENT DETENTION BASINS MAY BE REMOVED ONCE THE CONTRIBUTING DRAINAGE AREA IS PERMANENTLY STABILIZED. |
| SILT FENCE (SF) (RELATED: IP, STK) | - INTERCEPT, AND REDIRECT/DETAIN SMALL AMOUNTS OF SEDIMENT FROM SMALL DISTURBED AREAS.<br>- DECREASE VELOCITY OF SHEET FLOW.<br>- PROTECT SENSITIVE SLOPES OR SOILS FROM EXCESSIVE WATER FLOW. | INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. ACCUMULATED SEDIMENT MUST BE REMOVED ONCE ITS DEPTH IS EQUAL TO ½ THE TRENCH HEIGHT. INSPECT FREQUENTLY DURING PUMPING OPERATIONS IF USED FOR DEWATERING OPERATIONS. | - PHYSICAL DAMAGE OR DECOMPOSITION<br>- EVIDENCE OF OVERTOPPED OR UNDERCUT FENCE<br>- EVIDENCE OF SIGNIFICANT FLOWS EVADING CAPTURE<br>- REPETITIVE FAILURE | SILT FENCE MAY BE REMOVED AFTER UPHILL AND SENSITIVE AREAS HAVE BEEN PERMANENTLY STABILIZED. |
| HAY BALES (HB) | - INTERCEPT, AND REDIRECT/DETAIN SMALL AMOUNTS OF SEDIMENT FROM SMALL DISTURBED AREAS.<br>- DECREASE VELOCITY OF SHEET FLOW.<br>- PROTECT SENSITIVE SLOPES OR SOILS FROM EXCESSIVE WATER FLOW. | INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. ACCUMULATED SEDIMENT MUST BE REMOVED ONCE THE DEPTH OF SEDIMENT IS EQUAL TO ½ THE HEIGHT OF THE BARRIER. INSPECT FREQUENTLY DURING PUMPING OPERATIONS IF USED FOR DEWATERING OPERATIONS. | - PHYSICAL DAMAGE OR DECOMPOSITION<br>- EVIDENCE OF OVERTOPPED OR UNDERCUT FENCE<br>- EVIDENCE OF SIGNIFICANT FLOWS EVADING CAPTURE<br>- REPETITIVE FAILURE | HAY BALES MAY BE REMOVED AFTER UPHILL AREAS HAVE BEEN PERMANENTLY STABILIZED. |
| TEMPORARY DIVERSION BERM/SWALE (DB)<br>OR<br>TEMPORARY SWALE (TSW)<br>OR<br>WATER BAR (WB) | - MINIMIZE VELOCITY AND CONCENTRATION OF SHEET FLOW ACROSS CONSTRUCTION SITE TO A SEDIMENT TRAPPING FACILITY.<br>- DIVERT WATER ORIGINATING FROM UNDISTURBED AREA AWAY FROM CONSTRUCTION. | WHEN LOCATED WITHIN CLOSE PROXIMITY TO ONGOING CONSTRUCTION ACTIVITIES, INSPECT AT THE END OF EACH WORK DAY AND IMMEDIATELY REPAIR DAMAGES. OTHERWISE INSPECT AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL OF 0.5 INCHES OR MORE. REPAIR THE TEMPORARY MEASURE AND ANY OTHER ASSOCIATED MEASURES WITHIN 24 HOURS. | - PHYSICAL DAMAGE<br>- EXCESSIVE SCOURING/EROSION<br>- REPETITIVE FAILURE | TEMPORARY DIVERSIONS MAY BE REMOVED ONCE CONSTRUCTION HAS CEASED AND THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED. |
| CONSTRUCTION ENTRANCE (CE) | - REDUCE THE TRACKING OF SEDIMENT OFF-SITE ONTO PAVED SURFACES. | INSPECT AT THE END OF EACH WORK DAY AND IMMEDIATELY REPAIR DAMAGES. PERIODIC ADDITION OF STONE, OR LENGTHENING OF ENTRANCE MAY BE REQUIRED AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES AS A RESULT OF INEFFICIENCY OF CONSTRUCTION ENTRANCE SHALL BE IMMEDIATELY REMOVED. | - SEDIMENT IN ROADWAY ADJACENT TO SITE | CONSTRUCTION ENTRANCE MAY BE REMOVED ONCE THE SITE HAS BEEN PERMANENTLY STABILIZED, AND ALL OTHER SECTIONS OF ROADWAY HAVE BEEN PERMANENTLY PAVED. |
| CATCH BASIN INLET PROTECTION (IP) | - PROHIBIT SILT IN CONSTRUCTION-RELATED RUNOFF FROM ENTERING STORM DRAINAGE SYSTEM. | INSPECT AFTER ANY RAIN EVENT. IF FILTER BAG INSIDE CATCH BASIN CONTAINS MORE THAN 6" OF SEDIMENT, REMOVE SEDIMENT FROM BAG. CHECK SURROUNDING SILT FENCE AND HAY BALES PER NOTED ABOVE. | - RIPPED BAG<br>- FAILED HAY BALES / SILT FENCE<br>- SIGNIFICANT SILT PRESENCE IN STORM DRAINAGE SYSTEM OUTFLOW. | INLET PROTECTION MAY BE REMOVED ONCE THE SITE HAS BEEN PERMANENTLY STABILIZED, AND ALL SECTIONS OF ROADWAY HAVE BEEN PERMANENTLY PAVED. |
| STOCKPILE PROTECTION (STK) | - RETAIN SOIL STOCKPILE IN LOCATIONS SPECIFIED, AND REDUCE WATER-TRANSPORT. | INSPECT SILT FENCE AT THE END OF EACH WORK DAY AND IMMEDIATELY REPAIR DAMAGES. PERIODIC REINFORCEMENT OF SILT FENCE, OR ADDITION OF HAY BALES MAY BE NECESSARY. | - EVIDENCE OF STOCK PILE DIMINISHING DUE TO RAIN EVENTS<br>- FAILURE OF SILT FENCE | STOCKPILE PROTECTION MAY BE REMOVED ONCE THE STOCKPILE IS USED OR REMOVED. |

## LONG TERM INSPECTION/MAINTENANCE REQUIREMENTS

| PRACTICE ID | MONTHLY | AFTER MAJOR STORM EVENTS (GREATER THAN 0.5 INCHES IN 24 HOURS.) | BI-ANNUALLY | YEARLY |
|---|---|---|---|---|
| CISTERN (EQUIPPED WITH IRRIGATION PUMP) | — | — | INSPECT AND CLEAN DEBRIS/SEDIMENT FROM FILTERS AND SCREENS, REPLACING IF NECESSARY. INSPECT AND CLEAN DEBRIS/SEDIMENT FROM GUTTERS, DOWNSPOUTS, FIRST-FLUSH DEVICES, AND ROOFS DISCHARGING TO THE CISTERNS. INSPECT FOR AND REPAIR LEAKS. | INSPECT ALL COMPONENTS INCLUDING ANY BACKFLOW PREVENTION SYSTEMS. INSPECT AND CLEAR DEBRIS AND SEDIMENT FROM CISTERNS AND VERIFY OPERATION. FLUSH OR VACUUM CISTERNS TO REMOVE SEDIMENT AS NEEDED. INSPECT THE FILTERS AND CONNECTION POINTS TO CISTERN FOR LEAKS AND REPAIR AS NEEDED. SEE WINTERIZATION PROCEDURE. |
| CONCRETE DRAINAGE STRUCTURES | — | CLEAN ACCUMULATED SEDIMENT IN SUMPS AND REMOVE ANY BLOCKAGE. | INSPECT FOR DAMAGE TO FRAME, GRATE, PIPE INLETS AND OUTLETS, AND REPAIR ANY DAMAGE. REMOVE ACCUMULATED SEDIMENT IN SUMPS. THE SEDIMENT SHALL BE DISPOSED OF IN AN APPROVED OFFSITE LOCATION. | — |
| SUBSURFACE DRAINAGE PIPES | — | — | INSPECT AND CLEAN. | INSPECT AND CLEAN SEDIMENT. REPAIR AND/OR REPLACE STRUCTURES, IF REQUIRED. |
| PARKING LOTS AND DRIVEWAY | — | — | THE PARKING LOT SHALL BE SWEPT TWICE ANNUALLY. TYPICALLY, SWEEPING SHOULD OCCUR IN THE SPRING, AFTER WINTER SANDING, AND IN THE FALL, AFTER ALL THE LEAVES HAVE FALLEN. | — |
| LAWN AREAS/LANDSCAPING | — | — | — | A VEGETATIVE OR IMPROVED COVER SHALL BE MAINTAINED ON ALL EARTH SURFACES TO MINIMIZE SOIL EROSION. USE OF FERTILIZER SHOULD BE MINIMIZED AND APPLIED USING PRUDENT APPLICATION PROCEDURES. REPLACE OF MULCH COVER AND ANY DECEASED PLANTINGS PER NYSDEC STORMWATER MANAGEMENT DESIGN MANUAL. |
| CONTECH STORMFILTER | — | REFER TO THE CONTECH "STORMFILTER INSPECTION AND MAINTENANCE PROCEDURES" FOR RECOMMENDED INSPECTION AND MAINTENANCE AFTER MAJOR STORM EVENTS. | — | REFER TO THE CONTECH "STORMFILTER INSPECTION AND MAINTENANCE PROCEDUES" FOR RECOMMENDED ANNUAL INSPECTION AND MAINTENANCE. |

NOTES:

1. A PERMANENT LOG OF ALL INSPECTION AND CLEANING SHALL BE MAINTAINED BY THE OCCUPANT AND BE AVAILABLE FOR INSPECTION.
2. LONG TERM INSPECTION AND MAINTENANCE FOR STORMWATER MANAGEMENT PRACTICES SHALL BE PERFORMED IN ACCORDANCE WITH THE MOST CURRENT NYSDEC STORMWATER MANAGEMENT DESIGN MANUAL.

**Figure 5A.35**
**Stabilized Construction Entrance**

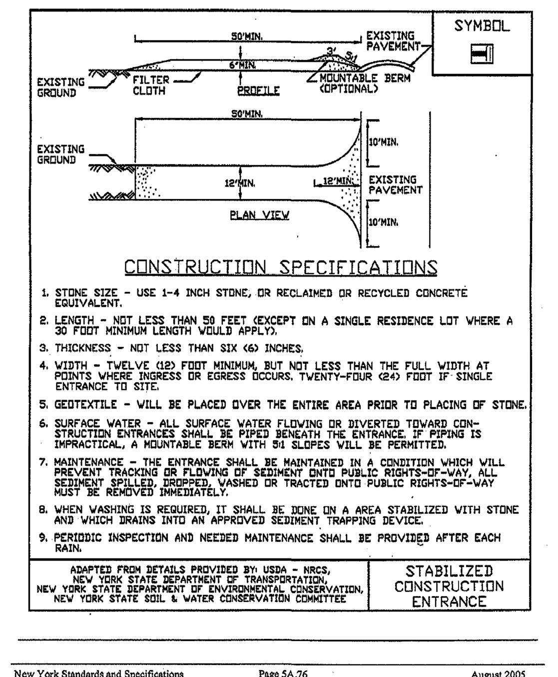


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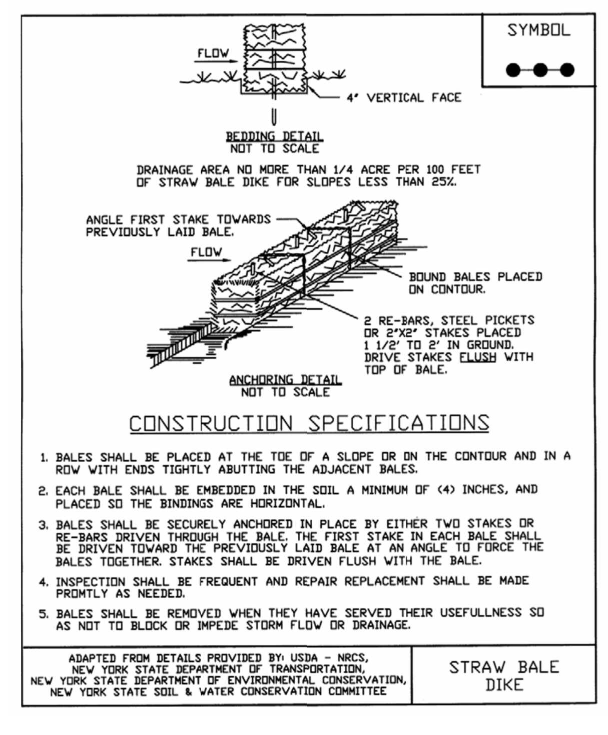
**Figure 5A.7**
**Straw Bale Dike**

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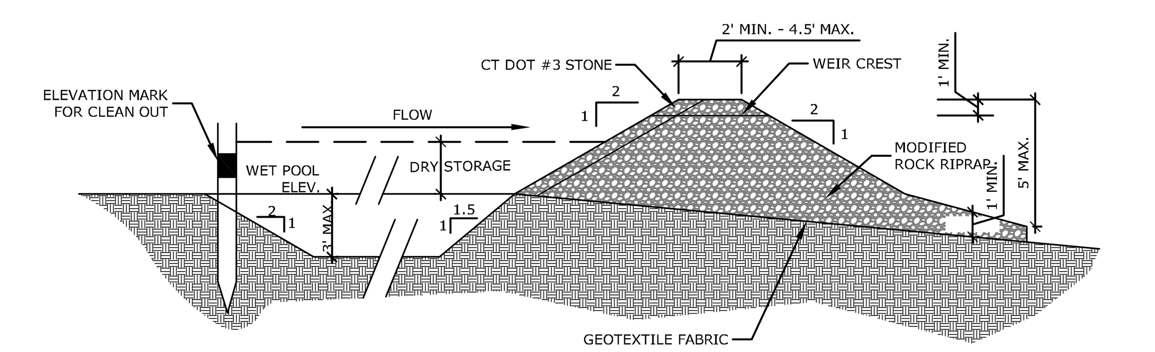
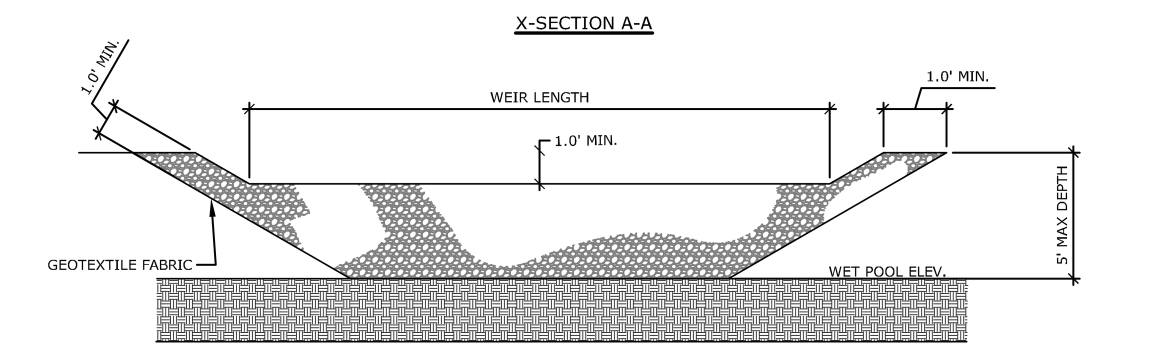
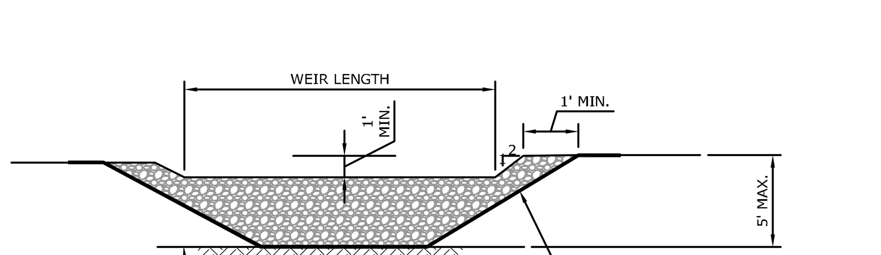



X-SECTION A-A




X-SECTION B-B

TEMPORARY SEDIMENT TRAP (TST)
N.T.S.




SECTION

SOURCE: NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROLS (AUGUST 2005)

SEDIMENET TRAP RIPRAP OVERFLOW SPILLWAY
N.T.S.

**Figure 5A.8**
**Silt Fence**

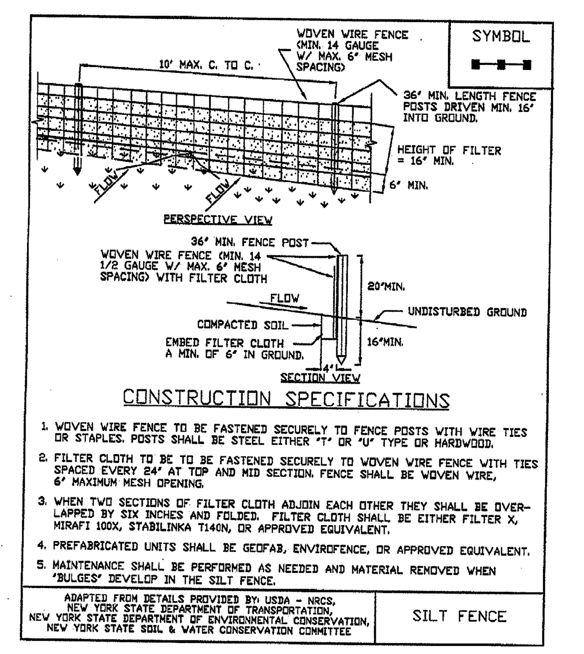



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**Figure 5A.13**
**Stone & Block Drop Inlet Protection**

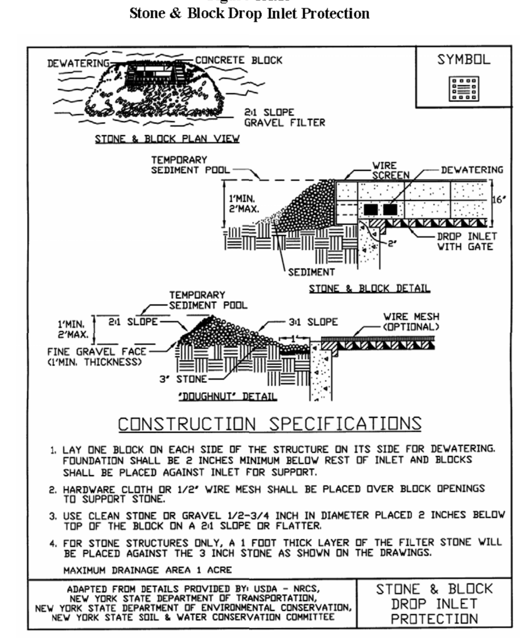


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**Figure 5A.2**
**Temporary Swale**

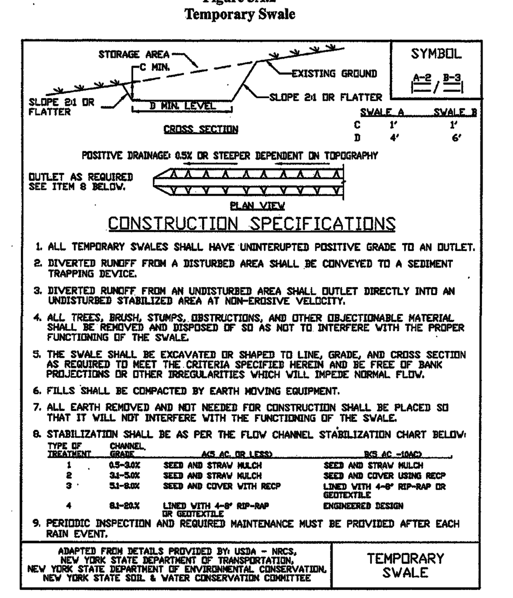


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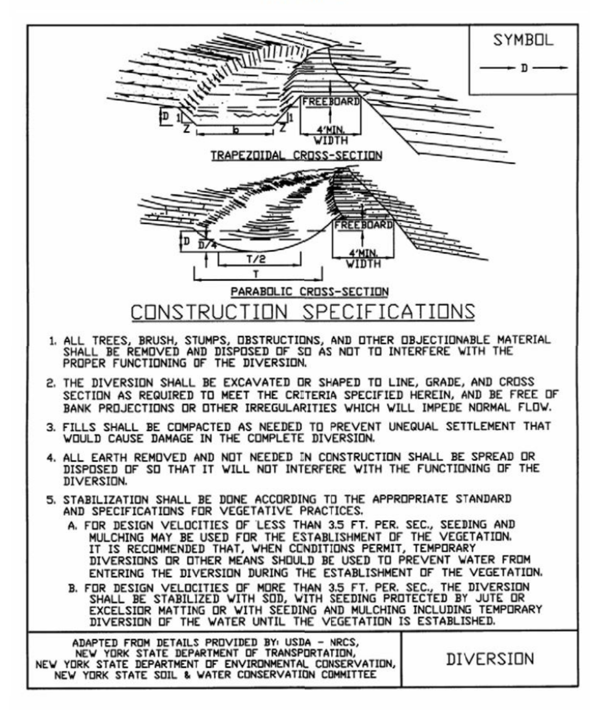
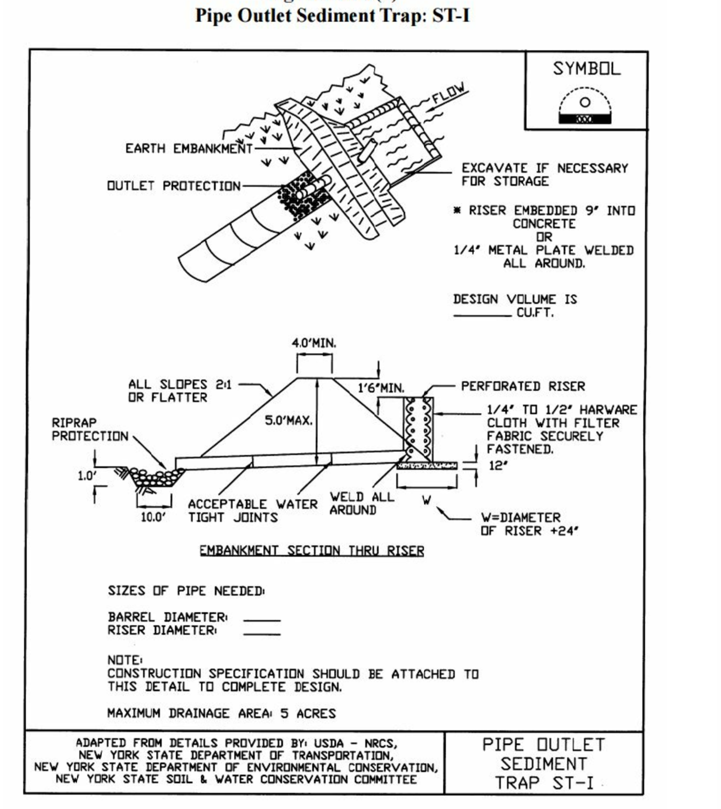
**Figure 5B.1**
**Diversion**



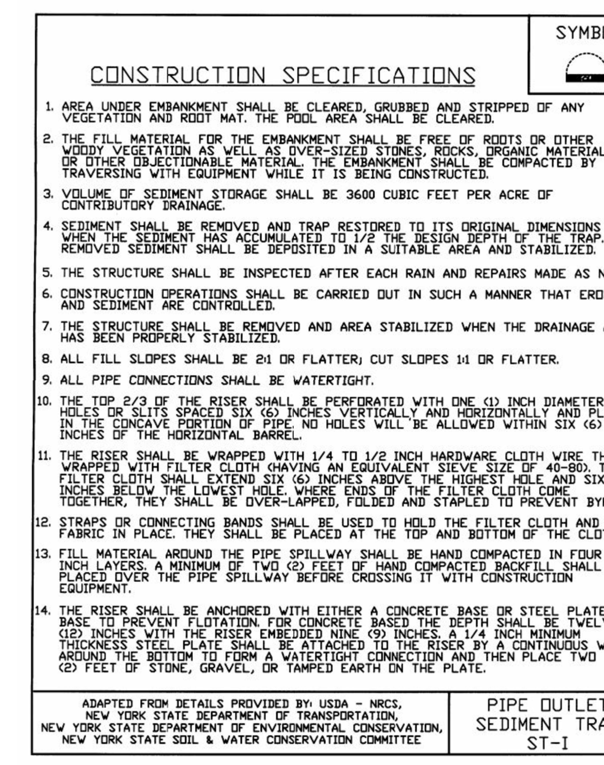

August 2005 — Page 5B.3 — New York Standards and Specifications For Erosion and Sediment Control

**Figure 5A.16(1)**
**Pipe Outlet Sediment Trap: ST-I**



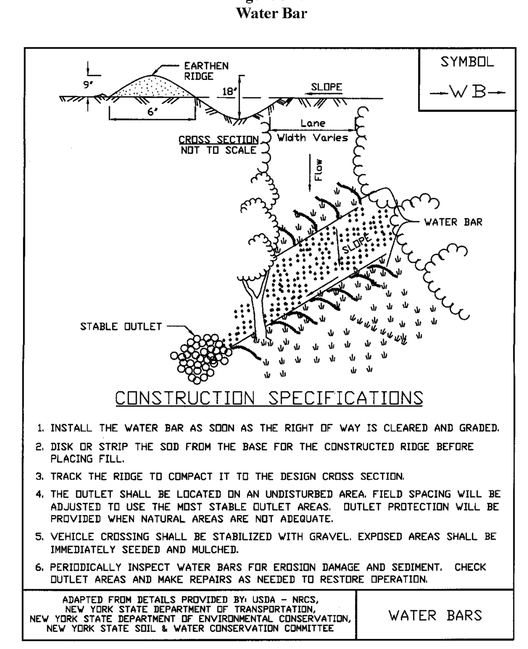

New York Standards and Specifications For Erosion and Sediment Control — Page 5A.38 — August 2005

**Figure 5A.16(2)**
**Pipe Outlet Sediment Trap: ST-I—Construction Specifications**



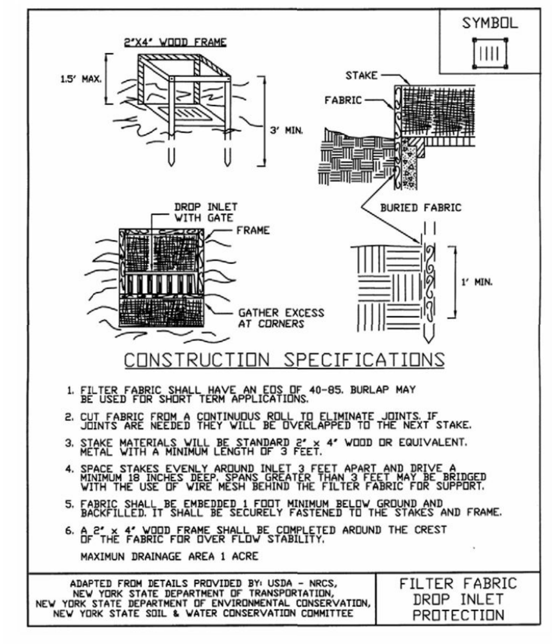

August 2005 — Page 5A.39 — New York Standards and Specifications For Erosion and Sediment Control

**Figure 5A.4**
**Water Bar**

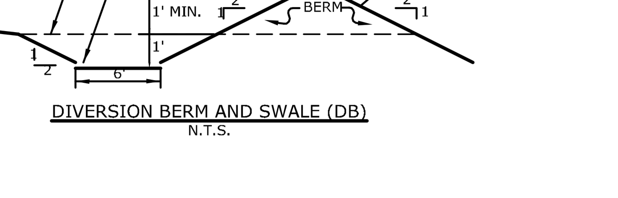



New York Standards and Specifications For Erosion and Sediment Control — Page 5A.12 — August 2005

**Figure 5A.12**
**Filter Fabric Drop Inlet Protection**




New York Standards and Specifications For Erosion and Sediment Control — Page 5A.30 — August 2005

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**HALSTEAD AVENUE**
**HARRISON, NEW YORK**

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PROJECT NO.: 1218-74

SHEET NO.: 12 OF 17

SHEET NAME: SED


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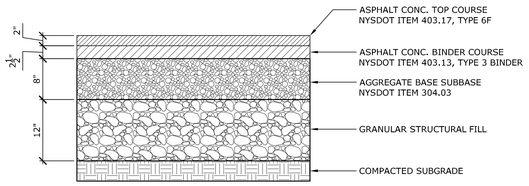
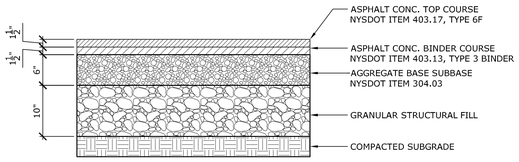



NOTE:
1. BOULDERS AND LEDGE ROCK TO BE REMOVED 6" BELOW GRADE

## 1 HEAVY DUTY BITUMINOUS CONCRETE

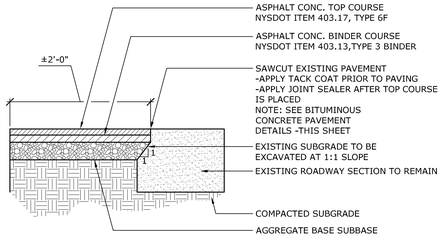
N.T.S. P-MU-1218.74-66




NOTE:
1. BOULDERS AND LEDGE ROCK TO BE REMOVED 6" BELOW SUBGRADE

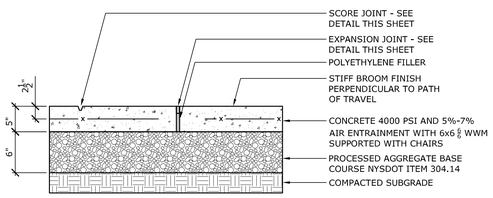
## 2 STANDARD DUTY BITUMINOUS CONCRETE

N.T.S. P-MU-1218.74-72




## 3 BITUMINOUS CONCRETE PAVEMENT REPAIR

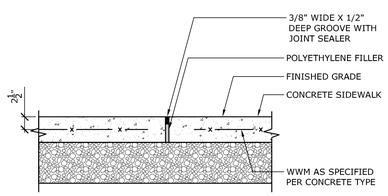
N.T.S. P-MU-1218.74-99




NOTE:
1. EXPANSION JOINTS 20' O.C. MAX.
2. SCORE JOINTS 5' O.C. TYP (OR AS SHOWN ON PLANS)
3. EXPANSION JOINTS SHALL BE PROVIDED AT INTERVALS THAT DO NOT EXCEED 144 SF.
4. SIDEWALK WIDTH VARIES.

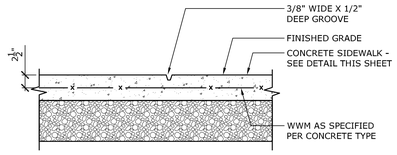
## 4 CONCRETE SIDEWALK

N.T.S. P-MU-1218.74-122



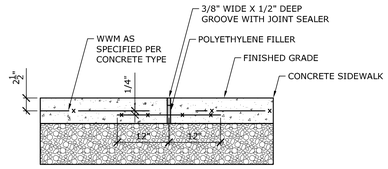

## 5 EXPANSION JOINT

N.T.S. P-MU-1218.74-110




## 6 SCORE JOINT

N.T.S. P-MU-1218.74-105




NOTES:

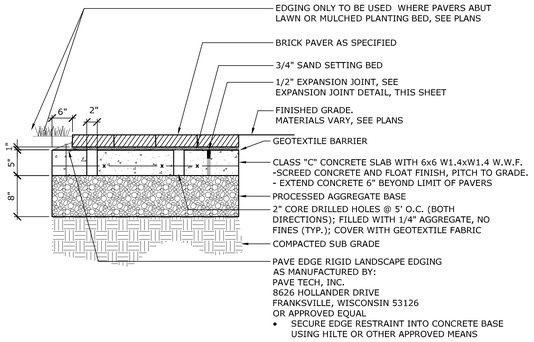
1. PROVIDE PREFORMED EXPANSION JOINT AT ALL CONSTRUCTION JOINT, SAWCUT, AND OTHER LOCATIONS WHERE CONCRETE ABUTS EXISTING CONCRETE.

## 7 CONSTRUCTION JOINT

N.T.S. P-MU-1218.74-129

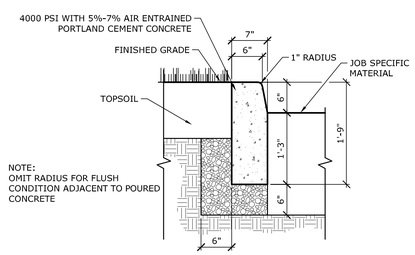
NOTES:

1. PAVERS SHALL BE CLAYBRICK PAVERS AS SPECIFIED ON PLANS.
2. EXPANSION JOINTS IN CONCRETE BASE SHALL BE 20' O.C. OR 144 S.F. MAX.
3. CONCRETE BASE SHALL BE SCREEDED WITH A FLOAT FINISH, TROWELED, AND PITCHED TO GRADE.
4. TO BE ACCEPTED, PAVERS SHALL BE INSTALLED IN SUCH A MANNER THAT:
   - 4.1. THE PAVER WALKING SURFACES ARE WITHIN $\frac{1}{8}$" OF EACH OTHER AND ADJACENT FINISHED SURFACES (I.E. CONCRETE WALK)
   - 4.2. THE PAVERS HAVE NO JOINTS GREATER THAN $\frac{1}{16}$" - NOTE "SQUARE EDGE" PAVERS MUST HAVE A "TROWEL'S WIDTH" SPACE PROVIDED BETWEEN PAVERS, TO ACCEPT THE POLYMERIC SAND
   - 4.3. POLYMERIC SAND SWEPT BETWEEN JOINTS IS VIBRATED AND WITHIN $\frac{3}{16}$" OF THE PAVER WALKING SURFACE
   - 4.4. NO PAVER IS CRACKED OR BROKEN
   - 4.5. PAVERS ARE VIBRATED IN PLACE
5. CONTRACTOR SHALL CONSTRUCT A PAVER SAMPLE PATTERN (MIN. 5'X5') FOR EACH PATTERN (AS SPECIFIED) AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO AUTHORIZATION TO INSTALL PAVERS.




## 8 BRICK PAVERS ON CONCRETE - PEDESTRIAN

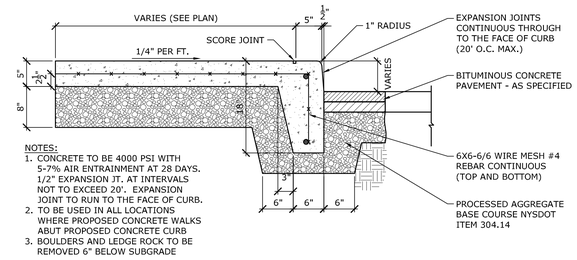
N.T.S. P-MU-1218.74-102




NOTE:
OMIT RADIUS FOR FLUSH
CONDITION ADJACENT TO POURED
CONCRETE

## 9 CAST-IN-PLACE CONCRETE CURB

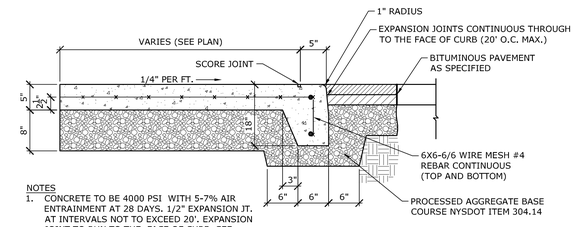
N.T.S. P-MU-1218.74-88




NOTES:
1. CONCRETE TO BE 4000 PSI WITH 5-7% AIR ENTRAINMENT AT 28 DAYS. 1/2" EXPANSION JT. AT INTERVALS NOT TO EXCEED 20'. EXPANSION JOINT TO RUN TO THE FACE OF CURB.
2. TO BE USED IN ALL LOCATIONS WHERE PROPOSED CONCRETE WALKS ABUT PROPOSED CONCRETE CURB
3. BOULDERS AND LEDGE ROCK TO BE REMOVED 6" BELOW SUBGRADE

## 10 INTEGRAL CONCRETE WALK & CURB WITH REVEAL

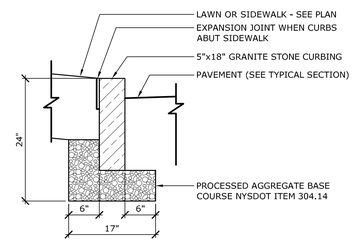
N.T.S. P-MU-1218.74-118




NOTES
1. CONCRETE TO BE 4000 PSI WITH 5-7% AIR ENTRAINMENT AT 28 DAYS. 1/2" EXPANSION JT. AT INTERVALS NOT TO EXCEED 20'. EXPANSION JOINT TO RUN TO THE FACE OF CURB. SEE PLANS FOR SPACING
2. BOULDERS AND LEDGE ROCK TO BE REMOVED 6" BELOW SUBGRADE

## 11 FLUSH INTEGRAL CONCRETE SIDEWALK & CURB

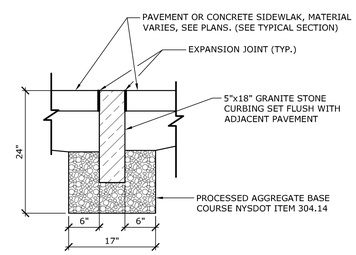
N.T.S. P-MU-1218.74-95




NOTES:
1. GRANITE STONE CURBING TO BE SAWN TOP AND SPLIT FACE UNLESS OTHERWISE NOTED

## 12 5" X 18" GRANITE STONE CURBING

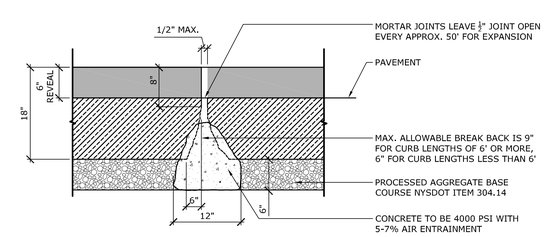
N.T.S. P-MU-1218.74-125




NOTES:
1. GRANITE STONE CURBING TO BE SAWN TOP AND SPLIT FACE UNLESS OTHERWISE NOTED

## 13 FLUSH GRANITE STONE CURBING

N.T.S. P-MU-1218.74-126




## 14 TYPICAL JOINT DETAIL FOR GRANITE CURBING

N.T.S. P-MU-1218.74-132

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SHEET NAME: **SD-1**

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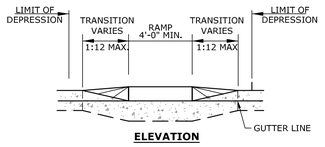
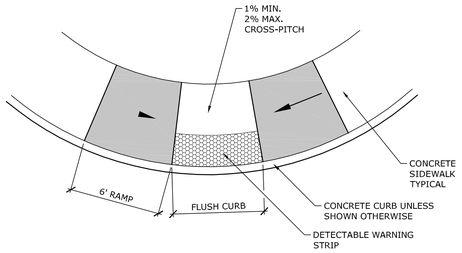


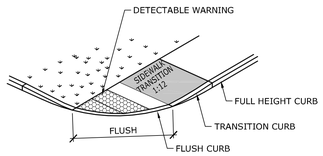

## 1 ACCESSIBLE DROP RAMP - TYPE A

N.T.S. P-MU-1218.74-106




## 2 ACCESSIBLE DROP RAMP - TYPE B

N.T.S. P-MU-1218.74-80




## 3 ACCESSIBLE DROP RAMP - TYPE C

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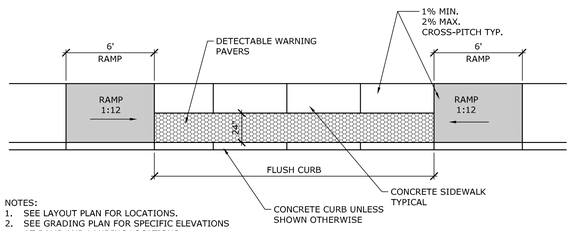
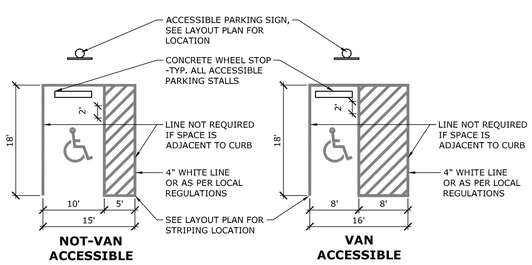



NOTES:
1. SEE LAYOUT PLAN FOR LOCATIONS.
2. SEE GRADING PLAN FOR SPECIFIC ELEVATIONS AT RAMP AND LANDING LOCATIONS
3. IN THE EVENT THAT A CURB ADJACENT TO A RAMP AS SHOWN IS LESS THAN OR GREATER THAN 6", THE RAMP SLOPE SHALL BE ADJUSTED IN THE FIELD TO MAINTAIN 1" VERTICAL RISE FOR EVERY 12" HORIZONTAL (8.33%)

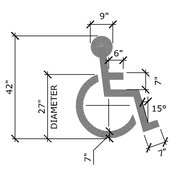
**PLAN**

## 4 ACCESSIBLE DROP RAMP - TYPE D

N.T.S. P-MU-1218.74-107



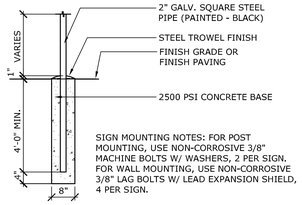

**NOT-VAN ACCESSIBLE** **VAN ACCESSIBLE**




**ACCESSIBLE PARKING SPACE MARKING**

## 5 ACCESSIBLE PARKING

N.T.S. P-MU-1218.74-79

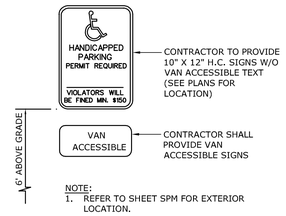



SIGN MOUNTING NOTES: FOR POST MOUNTING, USE NON-CORROSIVE 3/8" MACHINE BOLTS W/ WASHERS, 2 PER SIGN. FOR WALL MOUNTING, USE NON-CORROSIVE 3/8" LAG BOLTS W/ LEAD EXPANSION SHIELD, 4 PER SIGN.

NOTE:
1. BOTTOM OF FOOTING TO BE 1'-0" BELOW FROST LINE, EXISTING UNDISTURBED GRADE OR FINISHED GRADE, WHICHEVER IS GREATER.

## 6 TRAFFIC SIGN POST

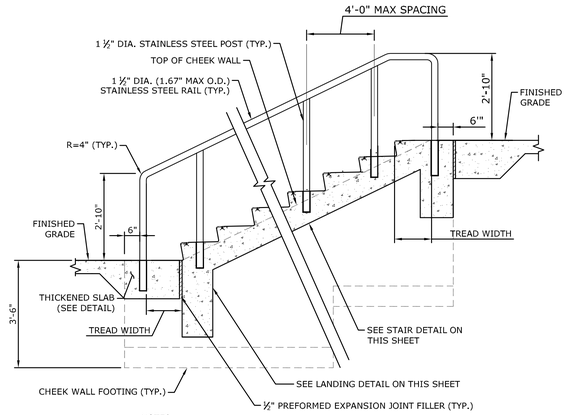
N.T.S. P-MU-1218.74-112




NOTE:
1. REFER TO SHEET SPM FOR EXTERIOR LOCATION.

## 7 ACCESSIBLE PARKING SIGN

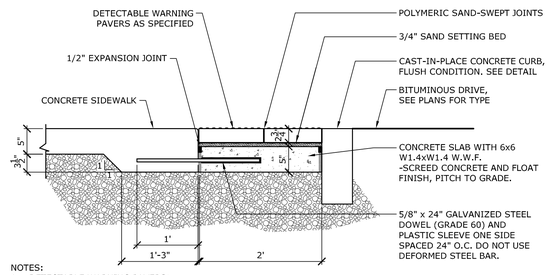
N.T.S. P-MU-1218.74-91




NOTES
1. CONTRACTOR SHALL SUBMIT RAILING SHOP DRAWINGS.
2. SEE TYPICAL CHEEK WALL SECTION ON THIS SHEET.

## 11 TYPICAL CONCRETE STAIR/HANDRAIL SECTION

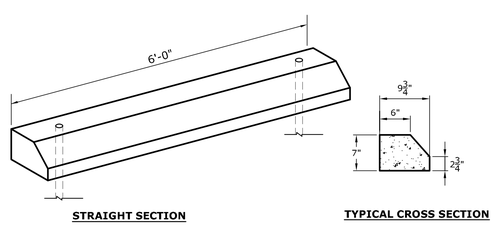
1/2" = 1'-0" P-MU-1218.74-98




NOTES:
1. DETECTABLE WARNING PAVERS:
   TYPE: ADA-2
   COLOR: A-30
   SIZE: 24"x24"x2-3/4" * MANUFACTURER: WAUSAU TILE. PO Box 1520 Wausau, WI 54402-1520 OR APPROVED EQUAL
2. PROVIDE SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL.
3. *NOTE: USE 12"x12" PAVERS ON CURVES
4. SEE SPECIFICATIONS

## 8 DETECTABLE WARNING PAVERS

N.T.S. P-MU-1218.74-108




**STRAIGHT SECTION** **TYPICAL CROSS SECTION**

NOTES:
1. CONCRETE: 4000 PSI, 28 DAYS
2. WEIGHT, 300 LBS.
3. REINFORCEMENT, (2) #4 BARS
4. (2) 3/4" HOLES CAST IN FOR ANCHORING
5. (2) PROVIDE 5/8" x 30" REBAR FOR ANCHORING

## 10 PRECAST CONCRETE WHEEL STOP

NOT TO SCALE P-MU-1218.74-113

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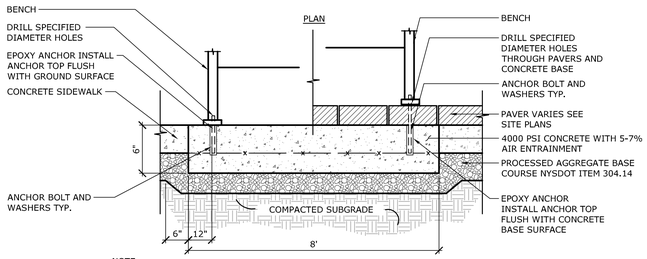
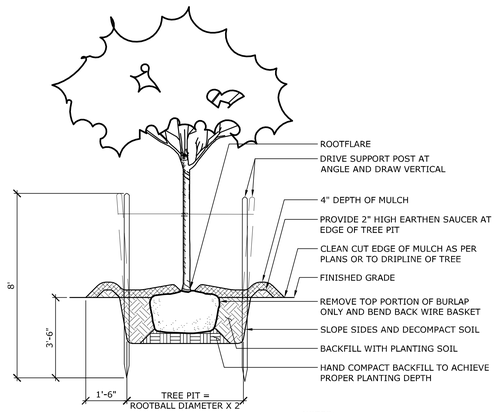



NOTE:
1. DETAIL SHOWS BENCH MOUNTING FOR CONCRETE, BRICK PAVER AND CONCRETE UNIT PAVER SURFACES.
2. CONTRACTOR TO INSTALL BENCHES PER MANUFACTURER'S INSTRUCTIONS.
3. PROVIDE SHOP DRAWINGS FOR APPROVAL.
4. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL MOUNTING HARDWARE.
5. CLEAN EACH ANCHOR HOLE IN ACCORDANCE WITH EPOXY INSTRUCTIONS.
6. USE EPOXY IN EPOXY GUN TO FILL EACH ANCHOR HOLES
7. INSERT ANCHOR INTO EACH ANCHOR HOLE SO ANCHOR TOP IS FLUSH AS DETAILED. ALLOW PROPER CURING TIME BEFORE INSTALLING BENCH.

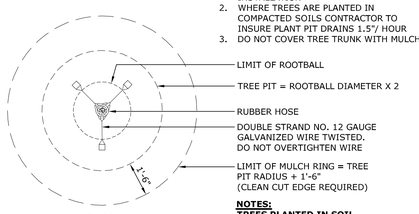
## 1 SURFACE MOUNTED BENCH

N.T.S. P-MU-1218.74-117




SECTION

NOTES:
1. SUPPORT POSTS SHALL BE REMOVED BY THE CONTRACTOR ONE YEAR AFTER INSTALLATION
2. WHERE TREES ARE PLANTED IN COMPACTED SOILS CONTRACTOR TO INSURE PLANT PIT DRAINS 1.5"/ HOUR
3. DO NOT COVER TREE TRUNK WITH MULCH

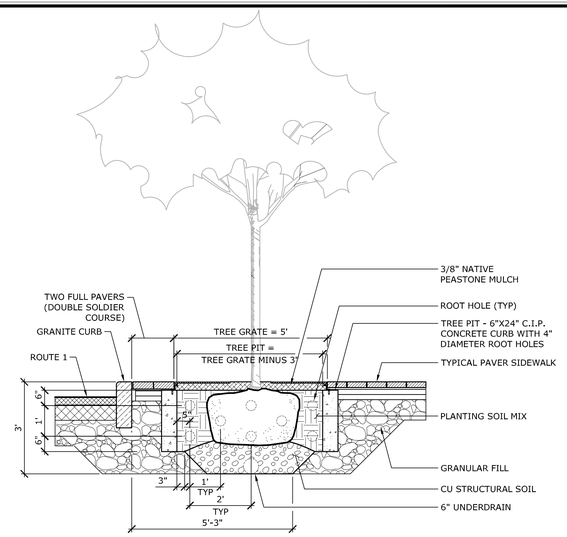



PLAN

**NOTES:**
**TREES PLANTED IN SOIL MANAGEMENT AREAS SHALL NOT HAVE ROOTBALLS GREATER THAN 18" IN DEPTH. SEE SHEETS LS-1 & LS-2 AND SOIL MANAGEMENT PLAN IN THE PROJECT MANUAL**

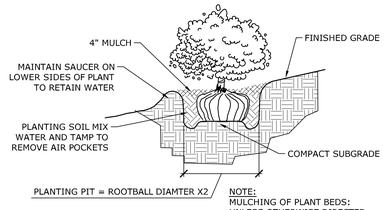
## 2 TREE PLANTING

NOT TO SCALE P-MU-1218.74-63




## 4 STREET TREE PLANTING

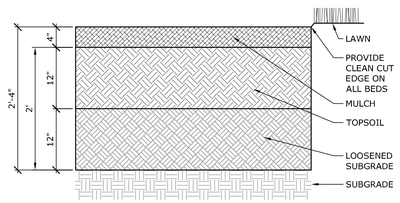
1/2" = 1'-0" P-MU-1218.74-123




NOTE:
MULCHING OF PLANT BEDS: UNLESS OTHERWISE DIRECTED SHREDDED MULCH SHALL BE PLACED TO A LIMIT OF TWO FEET BEYOND THE CENTER OF THE OUTERMOST SHRUBS IN SHRUB BED.

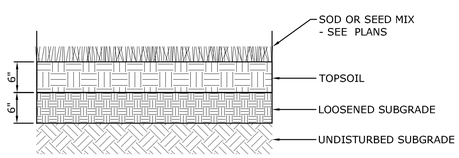
## 5 SHRUB PLANTING

N.T.S. P-MU-1218.74-81



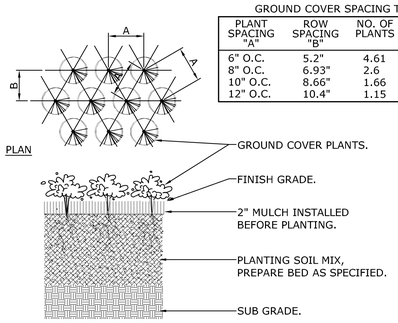

## 6 PLANTING BED

N.T.S. P-MU-1218.74-71




## 7 LAWN DETAIL

NOT TO SCALE P-MU-1218.74-75




PLAN

SECTION

GROUND COVER SPACING TABLE

| PLANT SPACING "A" | ROW SPACING "B" | NO. OF PLANTS | AREA UNIT |
|---|---|---|---|
| 6" O.C. | 5.2" | 4.61 | 1 SQ. FT. |
| 8" O.C. | 6.93" | 2.6 | 1 SQ. FT. |
| 10" O.C. | 8.66" | 1.66 | 1 SQ. FT. |
| 12" O.C. | 10.4" | 1.15 | 1 SQ. FT. |

NOTES:
1. ALL GROUND COVER TO BE PLANTED IN TRIANGULAR PATTERN. SEE DETAIL PLAN AND GROUND COVER SPACING TABLE.

## 3 GROUNDCOVER / PERENNIAL PLANTING

NOT TO SCALE P-MU-1218.74-127

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PRELIMINARY DESIGN

**SITE DETAILS**
**AVALONBAY HARRISON**
**HALSTEAD AVENUE**
**HARRISON, NEW YORK**

| TRS | BDK | TRS |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE: AS NOTED
DATE: JULY 29, 2016
PROJECT NO.: 1218-74
SHEET NO.: 15 OF 17
SHEET NAME: SD-3

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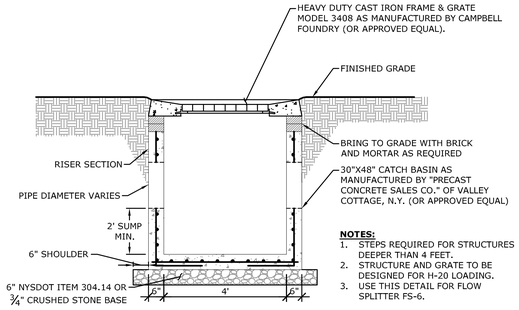
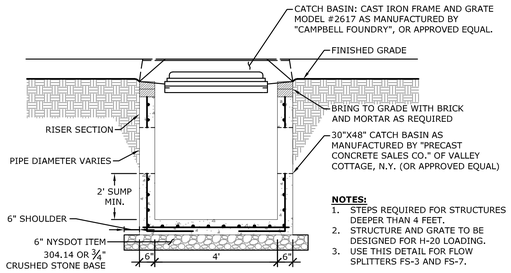



NOTES:
1. STEPS REQUIRED FOR STRUCTURES DEEPER THAN 4 FEET.
2. STRUCTURE AND GRATE TO BE DESIGNED FOR H-20 LOADING.
3. USE THIS DETAIL FOR FLOW SPLITTER FS-6.

## DRAIN INLET (CURBLESS CATCH BASIN-CLCB TYPE) DETAIL

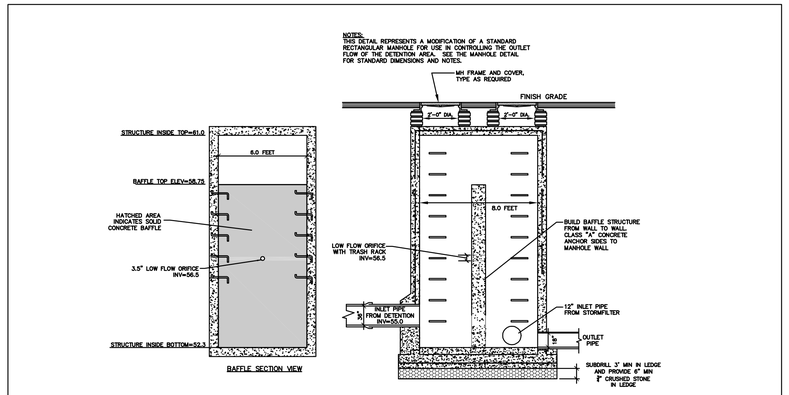
N.T.S.




NOTES:
1. STEPS REQUIRED FOR STRUCTURES DEEPER THAN 4 FEET.
2. STRUCTURE AND GRATE TO BE DESIGNED FOR H-20 LOADING.
3. USE THIS DETAIL FOR FLOW SPLITTERS FS-3 AND FS-7.

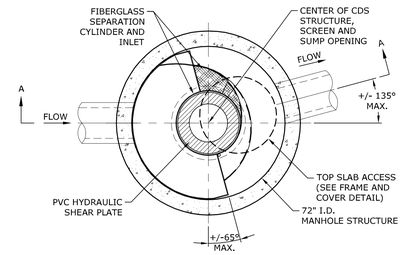
## CURBED CATCH BASIN (CCB TYPE) DETAIL

N.T.S.

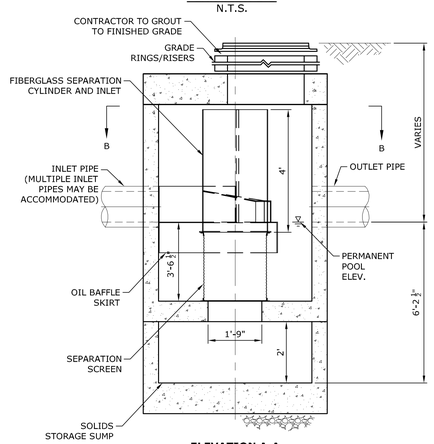



## UNDERGROUND DETENTION OUTLET CONTROL STRUCTURE (72" x 96" INSIDE DIAMETER)

N.T.S.



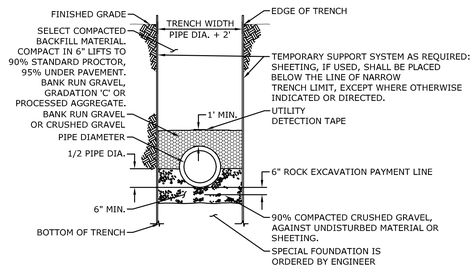

**PLAN VIEW B-B**
N.T.S.




**ELEVATION A-A**
N.T.S.

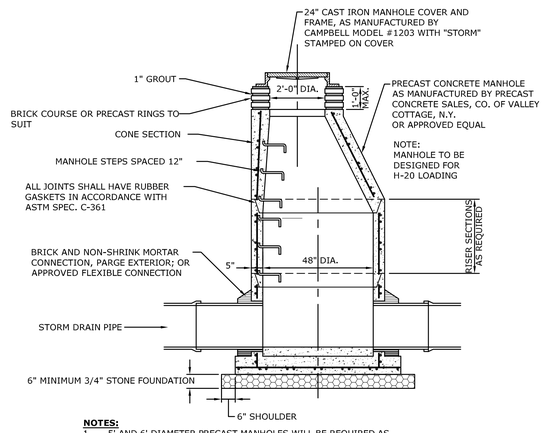
## 11 CONTECH CDS UNIT (CDS 3030-6-C)

NOT TO SCALE P-MU-1218.74-116




## SANITARY SEWER TRENCH

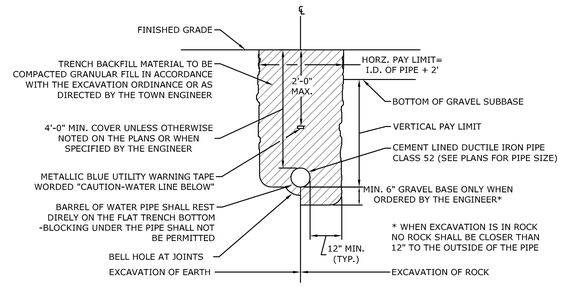
N.T.S.




NOTES:
1. 5' AND 6' DIAMETER PRECAST MANHOLES WILL BE REQUIRED AS SHOWN ON THE DESIGN PLANS. WALL THICKNESS OF RISER SECTION TO INCREASE BY 1" FOR EACH 12" INCREMENT OF INSIDE DIAMETER.
2. USE THIS DETAIL FOR FLOW SPLITTERS FS-1, FS-2, AND FS-4

## PRECAST CONCRETE STORM MANHOLE

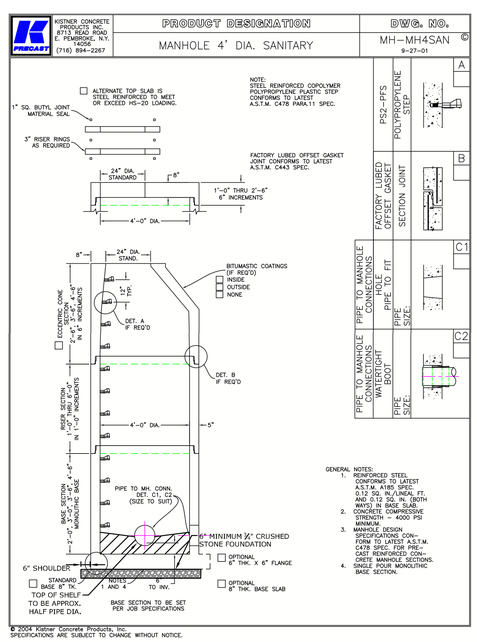
N.T.S.



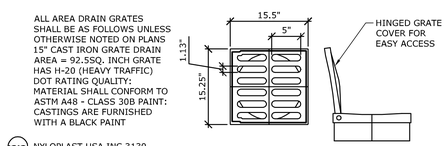

NOTE:
WHEN GRAVEL IS ORDERED BY THE ENGINEER, NO PAYMENT WILL BE MADE FOR ADDITIONAL TRENCH EXCAVATION. THE COST OF THIS WORK SHALL BE INCLUDED IN THE PRICE FOR THE GRAVEL BASE.

## WATER MAIN TRENCH DETAIL

N.T.S.




NOTES:
1. SEWER PIPE SHALL BE BURIED A MINIMUM OF 4' TO PIPE CROWN.
2. ALL ROCK TO BE REMOVED WITHIN 4" OF INSTALLED PIPE.
3. BEDDING CLASSES SHALL CONFORM TO THE TYPE AND STRENGTH OF PIPE TO SUPPORT THE ANTICIPATED LOAD.
4. DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER, OR OTHER UNSUITABLE MATERIALS SHALL BE ELIMINATED FROM USE AS BACKFILL WITHIN 2' OF TOP OF PIPE.
5. BACKFILL PLACED SO AS NOT TO DISTURB PIPE ALIGNMENT.
6. DEFLECTION TESTS SHALL BE IN ACCORDANCE WITH STANDARDS REQUIRED FOR ALL FLEXIBLE PIPE.
7. GROUND WATER ELEVATIONS TO BE DETERMINED PRIOR TO TESTING.

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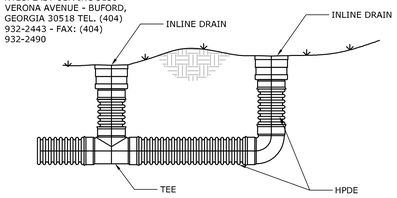
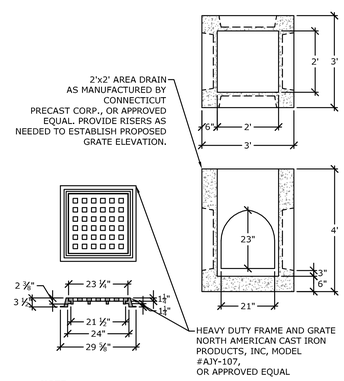



## 6 AREA DRAIN AND GRATE

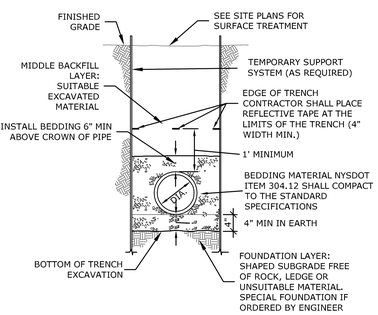
N.T.S. P-MU-1218.74-111




NOTE:
1. USE THIS DETAIL FOR FLOW SPLITTER FS-5.

## YARD DRAIN

N.T.S.




## 4 STORM DRAIN TRENCH

N.T.S. P-MU-1218.74-114

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PRELIMINARY DESIGN

**SITE DETAILS**
**AVALONBAY HARRISON**
**HALSTEAD AVENUE**
**HARRISON, NEW YORK**

| SJK | BDK | TRS |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE: AS NOTED
DATE: JULY 29, 2016
PROJECT NO.: 1218-74
SHEET NO.: 16 OF 17
SHEET NAME: **SD-4**

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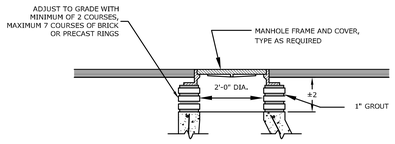
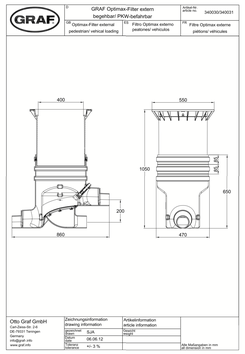
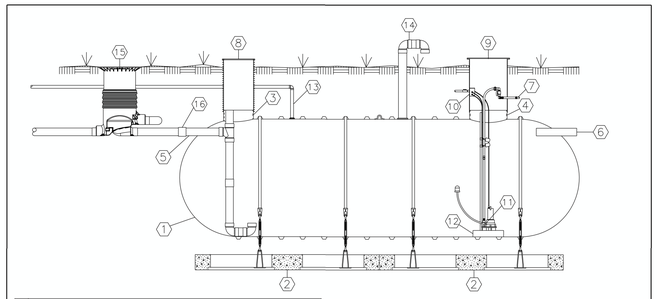



RESET FRAME/GRATE
N.T.S.



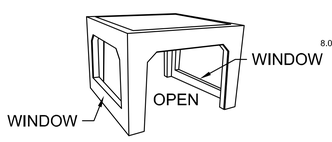

CISTERN FILTER
(GRAF OPTIMAX FILTER)
N.T.S.



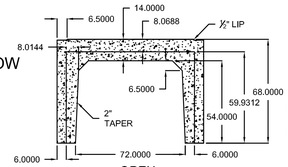
| NO. | DESCRIPTION |
|---|---|
| 1 | XERXES SINGLE WALL FRP TANK |
| 2 | XERXES PRECAST DEADMAN SYSTEM W/ HOLD DOWN STRAP AND TURNBUCKLE ASSEMBLY |
| 3 | 24" FRP OPENING |
| 4 | 30" FRP OPENING |
| 5 | 6" SCH. 40 PVC INLET PIPING W/ SMOOTHING INLET AND FLEX COUPLING |
| 6 | 6" SCH. 40 PVC STRAIGHT PIPE OVERFLOW |
| 7 | RAINWATER DISCHARGE |
| 8 | 24" RIBBED PVC RISER W/ FRP LID |
| 9 | 30" FRP RISER WITH TOP FLANGE AND FRP LID |
| 10 | PVC SPLICE BOX W/ CORD GRIPS |
| 11 | BASE MOUNTED EFFLUENT PUMP W/ LEVEL CONTROL FLOAT ASSEMBLY - FLOATING SUCTION |
| 12 | 24" x 24" FRP PUMP PLATFORM |
| 13 | 2" DOMESTIC WATER SUPPLY |
| 14 | 6" SCH 40 PVC SCREEN VENT |
| 15 | GRAF FILTER |
| 16 | FLEX COUPLING |

RAINWATER
This drawing is for illustrative purposes only. Consult with an engineer for specific applications.
XERXES® a ZCL company
TITLE COLLECTION TANK FLOATING FILTER PUMP OUT SINGLE COMPARTMENT
DATE 1-14 DR. NO. S20-309-04

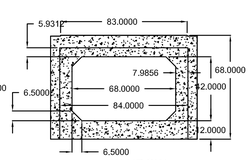
CISTERN
N.T.S.




MULTI ROW CENTER

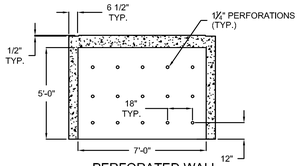



OPEN

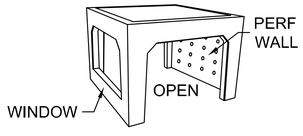



WINDOW

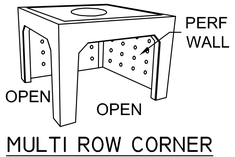
TYPICAL 5' UNIT DIMENSIONS



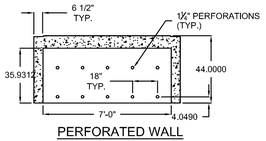

PERFORATED WALL



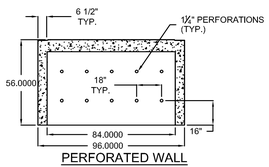

MULTI ROW PERIMETER



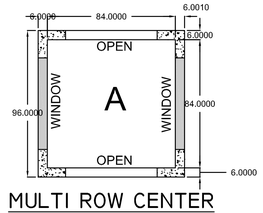

MULTI ROW CORNER



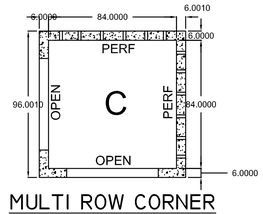

PERFORATED WALL



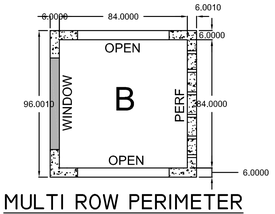

PERFORATED WALL



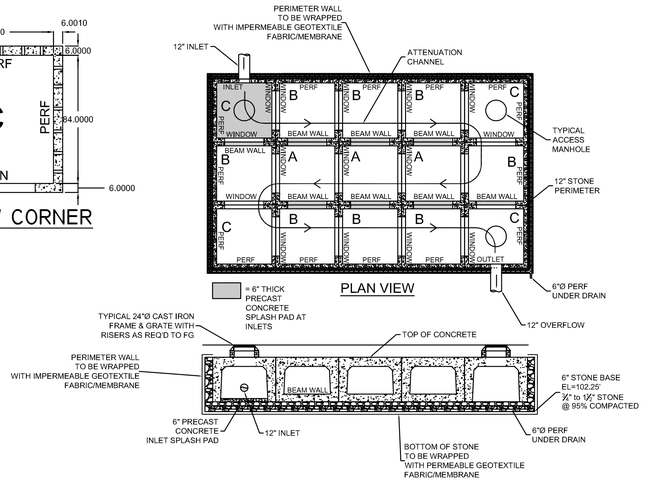

MULTI ROW CENTER




MULTI ROW CORNER




MULTI ROW PERIMETER




PLAN VIEW

ELEVATION

# 'RETAIN IT ' STORMWATER DETENTION/RETENTION AND INFILTRATION SINGLE SYSTEM
N.T.S.

NOTE:
BOTTOM OF SYSTEM TO BE CONCRETE SLAB WITH POND LINER.

NOTE:
THE STORMWATER CISTERNS, FILTERS, AND THEIR ASSEMBLY COMPONENTS NOTED ON THESE PLANS HAVE BEEN PROVIDED TO SHOW THE DESIGN INTENT FOR THE REUSE/RETENTION OF STORMWATER ON SITE. THESE DETAILS ARE NOT FINAL AND ALTERNATE STORAGE TANKS OR PRODUCTS ARE ACCEPTABLE IF THE SAME STORAGE VOLUME IS PROVIDED.

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| DESCRIPTION | DATE | BY |
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PRELIMINARY DESIGN

SITE DETAILS
AVALONBAY HARRISON
HALSTEAD AVENUE
HARRISON, NEW YORK

| SJK | BDK | TRS |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE: AS NOTED
DATE: JULY 29, 2016
PROJECT NO.: 1218-74
SHEET NO.: 17 OF 17
SHEET NAME: SD-5

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WELSH ENGINEERING & LAND SURVEYING, P.C.
343 MANVILLE ROAD
PLEASANTVILLE, N.Y. 10570 (914) 773-1701

## UTILITY NOTES

1. SANITARY SEWER INFORMATION PROVIDED BY THE TOWN/VILLAGE OF HARRISON. CONTACT: ROBERT G. WASP, P.E. (914)-670-3101

2. DRAINAGE SEWER INFORMATION PROVIDED BY THE TOWN/VILLAGE OF HARRISON. CONTACT: ROBERT G. WASP, P.E. (914)-670-3101

3. WATER LINE INFORMATION PROVIDED BY THE TOWN/VILLAGE OF HARRISON. CONTACT: ROBERT G. WASP, P.E. (914)-670-3101

4. GAS LINE INFORMATION PROVIDED BY CONSOLIDATED EDISON OF N.Y.. CONTACT: [SEE NOTE 5.]

5. ELECTRIC LINE INFORMATION PROVIDED BY CONSOLIDATED EDISON OF N.Y.. CONTACT: JOHN RIVAS, (718) 802-5475, OR R. MANCINI, (718) 904-4731/4659.

6. TELEPHONE LINE INFORMATION PROVIDED BY CONTACT: WILLIAM LENHART, VERIZON, (914) 741-8314.

7. RAILROAD UTILITY INFORMATION PROVIDED BY VAHAK KHAJEKIAN,RA (212)-340-2141

## MONITORING WELL NOTES

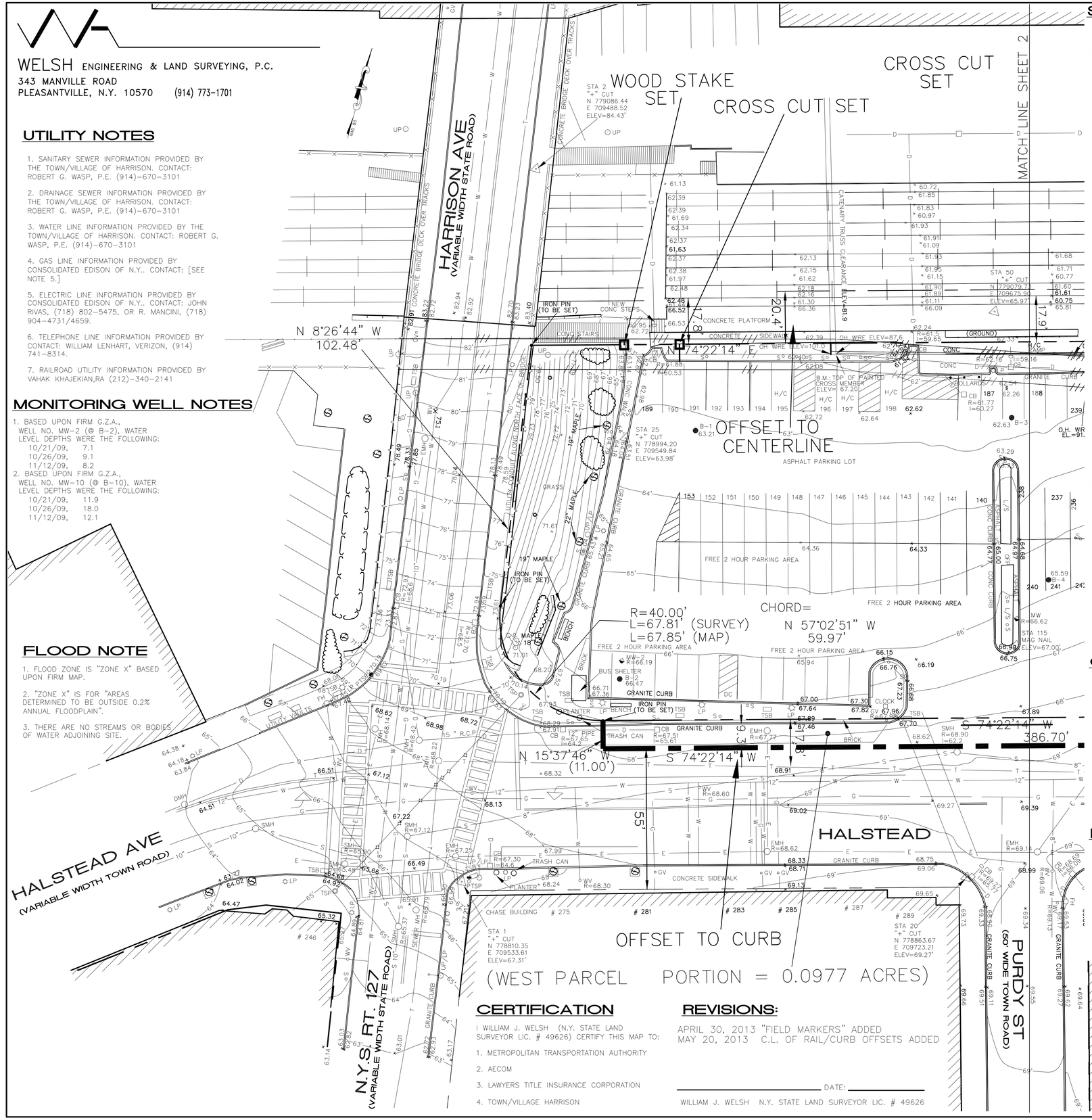
1. BASED UPON FIRM G.Z.A., WELL NO. MW-2 (@ B-2), WATER LEVEL DEPTHS WERE THE FOLLOWING:
   10/21/09, 7.1
   10/26/09, 9.1
   11/12/09, 8.2
2. BASED UPON FIRM G.Z.A., WELL NO. MW-10 (@ B-10), WATER LEVEL DEPTHS WERE THE FOLLOWING:
   10/21/09, 11.9
   10/26/09, 18.0
   11/12/09, 12.1

## FLOOD NOTE

1. FLOOD ZONE IS "ZONE X" BASED UPON FIRM MAP.

2. "ZONE X" IS FOR "AREAS DETERMINED TO BE OUTSIDE 0.2% ANNUAL FLOODPLAIN".

3. THERE ARE NO STREAMS OR BODIES OF WATER ADJOINING SITE.




## SURVEYOR'S DESCRIPTION

SECTION 18-BLOCK 182-LOT 12 [REVISED FOR LOT LINE CORRECTION]

COMMENCING AT THE INTERSECTION OF THE NORTHERLY SIDE OF HALSTEAD AVENUE WITH THE WESTERLY SIDE OF MACY STREET, THENCE RUNNING WESTERLY AND ALONG THE NORTHERLY SIDE OF HALSTEAD AVENUE THE FOLLOWING THREE (3) COURSES AND DISTANCES:

1. SOUTH 74 DEGREES 22 MINUTES 14 SECONDS WEST, 38.80 FEET;
2. SOUTH 80 DEGREES 37 MINUTES 3 SECONDS WEST, 146.95 FEET;
3. SOUTH 74 DEGREES 22 MINUTES 14 SECONDS WEST, 50.00;

THENCE RUNNING WESTERLY AND THROUGH THE EXISTING R.O.W. OF HALSTEAD AVENUE, SOUTH 15 DEGREES 37 MINUTES 46 SECONDS EAST, 11.00 FEET TO THE POINT OR PLACE OF BEGINNING;

THENCE FROM SAID POINT OR PLACE OF BEGINNING AND RUNNING WESTERLY ALONG THE NEWLY DIMENSIONED NORTHERLY SIDE OF HALSTEAD AVENUE, SOUTH 74 DEGREES 22 MINUTES 14 SECONDS WEST, 629.10 FEET TO THE SOUTHWESTERLY CORNER OF THE PARCEL HEREIN DESCRIBED, SAID POINT ALSO BEING THE NEWLY DIMENSIONED SOUTHEAST CORNER OF TAX LOT 15;

THENCE RUNNING NORTHERLY AND ALONG THE DIVISION LINE BETWEEN THE PARCEL HEREIN DESCRIBED AND NEWLY DIMENSIONED TAX LOT 15, NORTH 15 DEGREES 37 MINUTES 46 SECONDS WEST, 157.65 FEET TO A POINT ON THE EXISTING RIGHT OF WAY OF THE NEW YORK AND NEW HAVEN RAILROAD;

THENCE RUNNING EASTERLY AND ALONG THE EXISTING SOUTHERLY LIMIT OF THE NEW YORK AND NEW HAVEN RAILROAD, NORTH 74 DEGREES 22 MINUTES 14 SECONDS EAST, 629.10 FEET TO THE NORTHEASTERLY CORNER OF THE PARCEL HEREIN DESCRIBED, SAID POINT ALSO BEING ON THE EXTENDED DIVISION LINE OF TAX LOT 11 WITH THE PARCEL HEREIN DESCRIBED;

THENCE RUNNING SOUTHERLY AND ALONG THE AFOREMENTIONED DIVISION LINE, SOUTH 15 DEGREES 37 MINUTES 46 SECONDS EAST, 157.65 FEET TO THE POINT OR PLACE OF BEGINNING, CONTAINING 99,177.6 SQUARE FEET OR 2.2767 ACRES MORE OR LESS, AS CORRECTED HEREWITH. ALL BEARINGS REFER TO THE NEW YORK STATE PLANE COORDINATE SYSTEM (NAD 83).

SECTION 18-BLOCK 182-LOT 15 [REVISED FOR LOT LINE CORRECTION]

COMMENCING AT THE INTERSECTION OF THE NORTHERLY SIDE OF HALSTEAD AVENUE WITH THE WESTERLY SIDE OF MACY STREET, THENCE RUNNING WESTERLY AND ALONG THE NORTHERLY SIDE OF HALSTEAD AVENUE THE FOLLOWING THREE (3) COURSES AND DISTANCES:

1. SOUTH 74 DEGREES 22 MINUTES 14 SECONDS WEST, 38.80 FEET;
2. SOUTH 80 DEGREES 37 MINUTES 3 SECONDS WEST, 146.95 FEET;
3. SOUTH 74 DEGREES 22 MINUTES 14 SECONDS WEST, 50.00;

THENCE RUNNING WESTERLY AND THROUGH THE EXISTING R.O.W. OF HALSTEAD AVENUE THE FOLLOWING TWO (2) COURSES AND DISTANCES:

1. SOUTH 15 DEGREES 37 MINUTES 46 SECONDS EAST, 11.00 FEET;
2. SOUTH 74 DEGREES 22 MINUTES 14 SECONDS WEST, 629.10 FEET TO THE POINT OR PLACE OF BEGINNING;

THENCE FROM SAID POINT OR PLACE OF BEGINNING AND RUNNING WESTERLY ALONG THE NEWLY DIMENSIONED NORTHERLY SIDE OF HALSTEAD AVENUE THE FOLLOWING TWO (2) COURSES AND DISTANCES:
1. SOUTH 74 DEGREES 22 MINUTES 14 SECONDS WEST, 386.70 FEET;
2. NORTH 15 DEGREES 37 MINUTES 46 SECONDS WEST, 11.00 FEET TO THE BEGINNING OF A CURVE CONNECTING THE NORTHERLY SIDE OF HALSTEAD AVENUE WITH THE EASTERLY SIDE OF HARRISON AVENUE;

SAID CURVE BEARING TO THE RIGHT, HAVING A RADIUS OF 40.00 FEET, A LENGTH OF ARC OF 67.81 FEET (SURVEY)-67.85 FEET MAP NO. 8080, AND A CHORD BEARING AND DISTANCE OF NORTH 57 DEGREES 2 MINUTES 51 SECONDS WEST, 59.97 FEET TO A POINT ON THE EASTERLY SIDE OF HARRISON AVENUE;

THENCE RUNNING NORTHERLY AND ALONG THE EASTERLY SIDE OF HARRISON AVENUE NORTH 8 DEGREES 26 MINUTES 44 SECONDS WEST, 102.48 FEET TO THE NORTHWESTERLY CORNER OF THE PARCEL HEREIN DESCRIBED, SAID POINT ALSO BEING ON THE EXISTING SOUTHERLY LIMIT OF THE NEW YORK AND NEW HAVEN RAILROAD RIGHT OF WAY;

THENCE RUNNING EASTERLY AND ALONG THE EXISTING SOUTHERLY LIMIT OF THE NEW YORK AND NEW HAVEN RAILROAD RIGHT OF WAY NORTH 74 DEGREES 22 MINUTES 14 SECONDS EAST, 413.56 FEET TO THE NORTHEASTERLY CORNER OF THE NEWLY DIMENSIONED PARCEL HEREIN DESCRIBED, SAID POINT ALSO BEING THE NORTHWESTERLY CORNER OF NEWLY DIMENSIONED TAX LOT 12;

THENCE RUNNING SOUTHERLY AND ALONG THE DIVISION LINE BETWEEN THE PARCEL HEREIN DESCRIBED AND NEWLY DIMENSIONED TAX LOT 12, SOUTH 15 DEGREES 37 MINUTES 46 SECONDS EAST, 157.65 FEET TO THE POINT OR PLACE OF BEGINNING, CONTAINING 65,800.3 SQUARE FEET OR 1.5106 ACRES MORE OR LESS. ALL BEARINGS REFER TO THE NEW YORK STATE PLANE COORDINATE SYSTEM (NAD 83).

## GENERAL NOTES

1. FIELD WORK WAS CONDUCTED AUGUST-NOVEMBER, 2009 BY WELSH ENGINEERING & LAND SURVEYING, P.C. AND IN MARCH-APRIL, 2016 BY HURLEY AND WELSH LAND SURVEYING & ENGINEERING, PLLC.

2. BEARINGS, NORTH ARROW, AND HORIZONTAL COORDINATE SYSTEM REFER TO NAD 83, AS DETERMINED BY G.P.S. FIELD SURVEY METHODS MEASURED BY WELSH ENGINEERING & LAND SURVEYING, P.C. [2009].

3. ELEVATIONS ARE BASED UPON LEVEL RUN TO BENCHMARK DISK Q385, BY WELSH ENGINEERING & LAND SURVEYING, P.C. AND ARE SHOWN IN THE NAVD 88 DATUM.

4. THE TEMPERATURE WAS 70 DEGREES FAHRENHEIT AT THE TIME THE OVERHEAD WIRE MEASUREMENTS WERE TAKEN.

5. AT THE TIME OF THIS SURVEY WELSH ENGINEERING & LAND SURVEYING, P.C. WAS NOT AWARE OF, NOR WERE REPORTED TO US, ANY PLANNED STREET WIDENING PROJECTS.

6. LOT LINE CORRECTION HAS BEEN PERFORMED ON THIS SURVEY TO REFLECT THE EXTENDING AND WIDENING OF LOTS 12 & 15, TO CREATE A CONSISTENT BOUNDARY SEPARATING LOTS 12 & 15 FROM THE RAILROAD TRACK PARCEL. LOTS 12 & 15 HAVE BEEN INCREASED IN AREA BY A TOTAL OF 0.2475 ACRES.

7. ADDITIONAL LOT LINE CORRECTION HAS BEEN PERFORMED ON THIS SURVEY TO INCLUDE A PORTION OF THE EXISTING R.O.W. OF HALSTEAD AVENUE, WIDENING OF LOTS 12 & 15. LOTS 12 & 15 HAVE BEEN INCREASED IN AREA BY A TOTAL OF 0.2565 ACRES.

## NOTES CORRESPONDING TO SCHEDULE "B"

TITLE REPORT NO. LT090155
LAWYERS TITLE INSURANCE CORPORATION
EFFECTIVE DATE: AUGUST 1, 2009

5.a.-TERMS COVENANTS, CONDITIONS, PROVISIONS AND RESERVATIONS SET FORTH IN DEED MADE BY GEORGE P. BAKER, RICHARD C. BOND, JERVIS LANGDON, JR., AND W. WILLARD WIRTZ, JOINTLY AS THEY ARE TRUSTEES OF THE PROPERTY OF PENN CENTRAL TRANSPORTATION COMPANY, DEBTOR, DATED 1/1/1971 AND RECORDED ON 3/5/1971 IN LIBER 6976 OF DEEDS, PAGE 284.- AFFECTS THE GENERAL PARCEL LIMITS OF TAX LOTS 12 & 15.

5.b.-TEMPORARY EASEMENT ACQUIRED BY THE PEOPLE OF THE STATE OF NEW YORK BY APPROPRIATION PROCEEDING FOR PROJECT ENTITLED "S.H. 780, WHITE PLAINS TOWN LINE-HARRISON, WESTCHESTER COUNTY, TOWN OF HARRISON", AND SHOWN AS PARCEL NO. 9 ON MAP NO. 10 (COUNTY CLERK MAP NO. 21940), FOR WHICH A NOTICE OF APPROPRIATION DATED 5/24/1985 WAS RECORDED ON 5/24/1985 IN LIBER 8108 OF DEEDS, PAGE 289.-AFFECTS PART OF TAX LOT 15. EASEMENT IS NOT PLOTTED.

## REFERENCES

NEW YORK & NEW HAVEN TRACK AND RIGHT OF WAY MAP SHEET NO. 22 PROVIDED BY METROPOLITAN TRANSPORTATION AUTHORITY.

MAP ENTITLED "LAND IN HARRISON, N.Y. TO BE LEASED TO TOWN OF HARRISON", FILED WITH THE WESTCHESTER COUNTY CLERK AS MAP NO. 8080.

TITLE REPORT PREPARED BY LAWYERS TITLE INSURANCE CORPORATION
TITLE NO. LT090155
EFFECTIVE DATE: AUGUST 1, 2009

DEED FILED WITH THE WESTCHESTER COUNTY CLERK IN LIBER 6976 PAGE 284. (LOTS HAVE BEEN RECONFIGURED BASED UPON LOT LINE CORRECTION.)

## LEGEND

| | |
|---|---|
| MW-2 R=66.19 | MONITORING WELL & NUMBER LABEL |
| B-15 | BORING |
| S | SIGN |
| | SURVEY STATION |
| METAL STANCHION | HIGH VOLTAGE STANCHION |
| TSP | TRAFFIC SIGNAL POLE |
| GP | GUY POLE |
| UP/LP | UTILITY POLE/LIGHT |
| UP | UTILITY POLE |
| LP | LIGHT POLE CONC BASE |
| DMH | DRAIN MANHOLE |
| CB | CATCH BASIN |
| GV | GAS VALVE |
| GM | GAS METER |
| TMH | TELEPHONE MANHOLE |
| EMH | ELECTRIC MANHOLE |
| SMH | SEWER MANHOLE |
| WG | WATER GATE |
| FH | HYDRANT |
| WM | WATER METER |
| WV | WATER VALVE |
| TSB | TRAFFIC SIGNAL BOX |
| PTSP | PEDESTRIAN TRAFFIC SIGNAL POLE |
| TSP | TRAFFIC SIGNAL POLE |
| 200.15 | SPOT ELEVATION |
| TD | TRENCH DRAIN |
| STA | STATION |
| BM | BENCHMARK |
| WD | WOOD |
| CMP | CORRUGATED METAL PIPE |
| ELEV | ELEVATION |
| ELEC | ELECTRIC |
| CLF | CHAIN LINK FENCE |
| CONC | CONCRETE |
| L/S | LANDSCAPED |
| N.T.S. | NOT TO SCALE |
| N/F | NOW OR FORMERLY |
| R= | RIM ELEVATION |
| I= | INVERT ELEVATION |
| TP= | TOP OF PIPE |
| THW= | TOP OF HEADWALL |
| INTER | INTERMEDIATE |
| | TREE CONIFEROUS, (PINE, "PINUS") |
| | TREE DECIDUOUS (MAPLE, "ACER") |
| | TREE DECIDUOUS (ELM, "ULMUS") |
| | SHRUB |
| | "FIELD MARKERS" SET ALONG R.O.W. OR PROPOSED R.O.W. |
| | EXPOSED BEDROCK |
| | TREE LINE |
| | FENCE |
| | CURBING(TYPE) |
| | BUILDING LINE |
| | RETAINING WALL |
| | SIDEWALK |
| | BOUNDARY LINE |
| | RIGHT OF WAY LINE |
| | LOT LINE CORRECTION |
| 60' | MAJOR CONTOUR |
| 62' | MINOR CONTOUR |
| W | WATER LINE |
| S | SEWER LINE |
| T | TELEPHONE LINE |
| E | ELECTRIC LINE |
| D | DRAIN LINE |
| G | GAS LINE |

Unauthorized alteration or addition to this survey is a violation of section 7209, subdivision 2, of the New York State Education Law. Copies of this survey map not bearing the land surveyor's inked or embossed seal shall not be considered to be a valid copy.

## CERTIFICATION

I WILLIAM J. WELSH (N.Y. STATE LAND SURVEYOR LIC. # 49626) CERTIFY THIS MAP TO:

1. METROPOLITAN TRANSPORTATION AUTHORITY
2. AECOM
3. LAWYERS TITLE INSURANCE CORPORATION
4. TOWN/VILLAGE HARRISON

## REVISIONS:

APRIL 30, 2013 "FIELD MARKERS" ADDED
MAY 20, 2013 C.L. OF RAIL/CURB OFFSETS ADDED

_____ DATE: _____
WILLIAM J. WELSH N.Y. STATE LAND SURVEYOR LIC. # 49626

SURVEY PREPARED FOR:
*AVALONBAY COMMUNITIES*

DATE: APRIL 8, 2016
DRAWN BY: J.H./B.M.
CHK BY: W.J.W.
SCALE: 1"= 20'

# TOPOGRAPHIC & BOUNDARY SURVEY AND LOT LINE CORRECTION
## HARRISON STATION
VILLAGE/TOWN OF HARRISON
WESTCHESTER COUNTY, NEW YORK

PROJ. NO. T512.00
SHEET NO. 1 OF 4
JOB # 16-1002
CAD FILE: T51203_ws.DWG

WELSH ENGINEERING & LAND SURVEYING, P.C.
343 MANVILLE ROAD
PLEASANTVILLE, N.Y. 10570 (914) 773-1701

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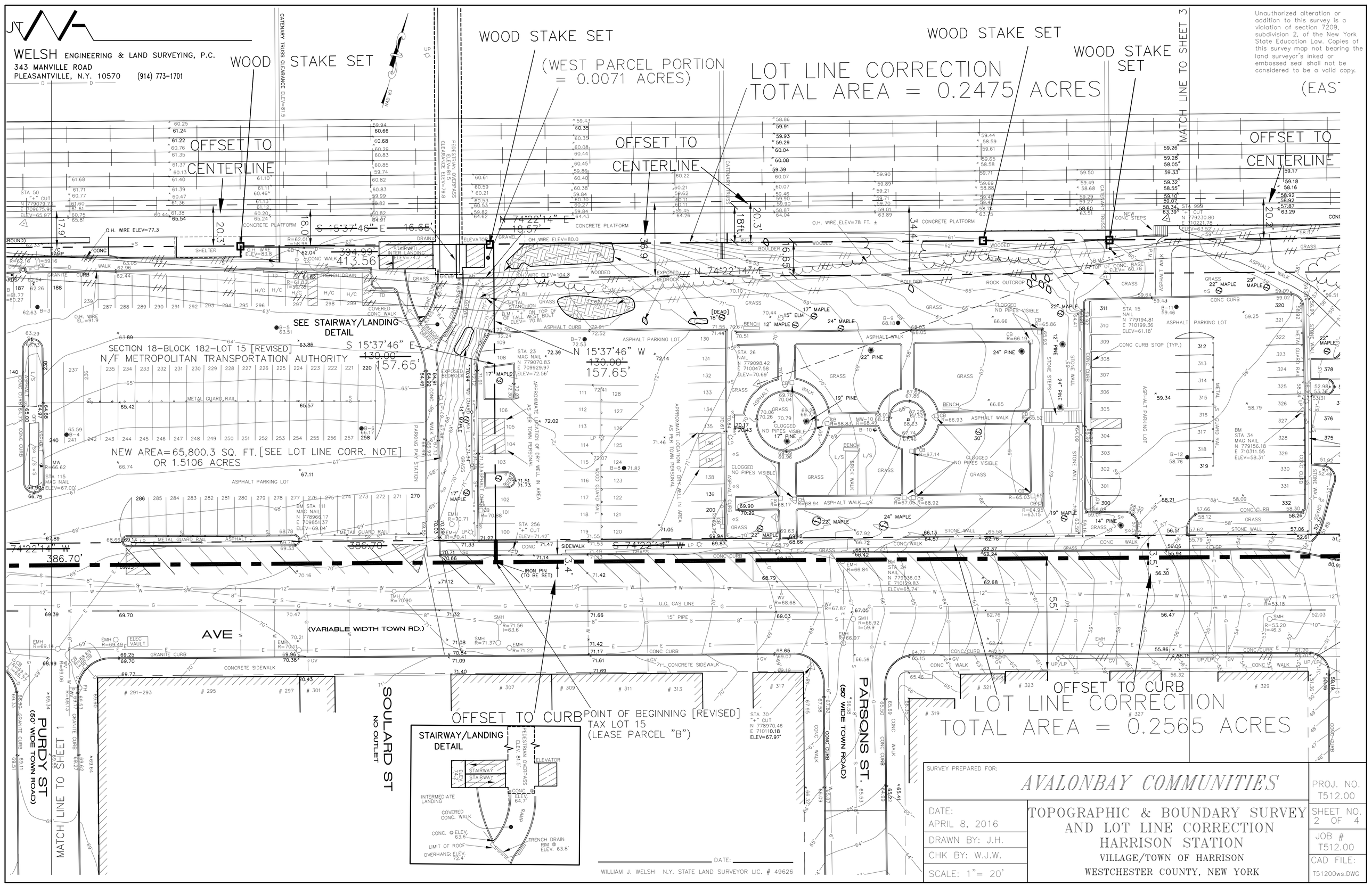



WILLIAM J. WELSH N.Y. STATE LAND SURVEYOR LIC. # 49626 DATE:

SURVEY PREPARED FOR:

*AVALONBAY COMMUNITIES*

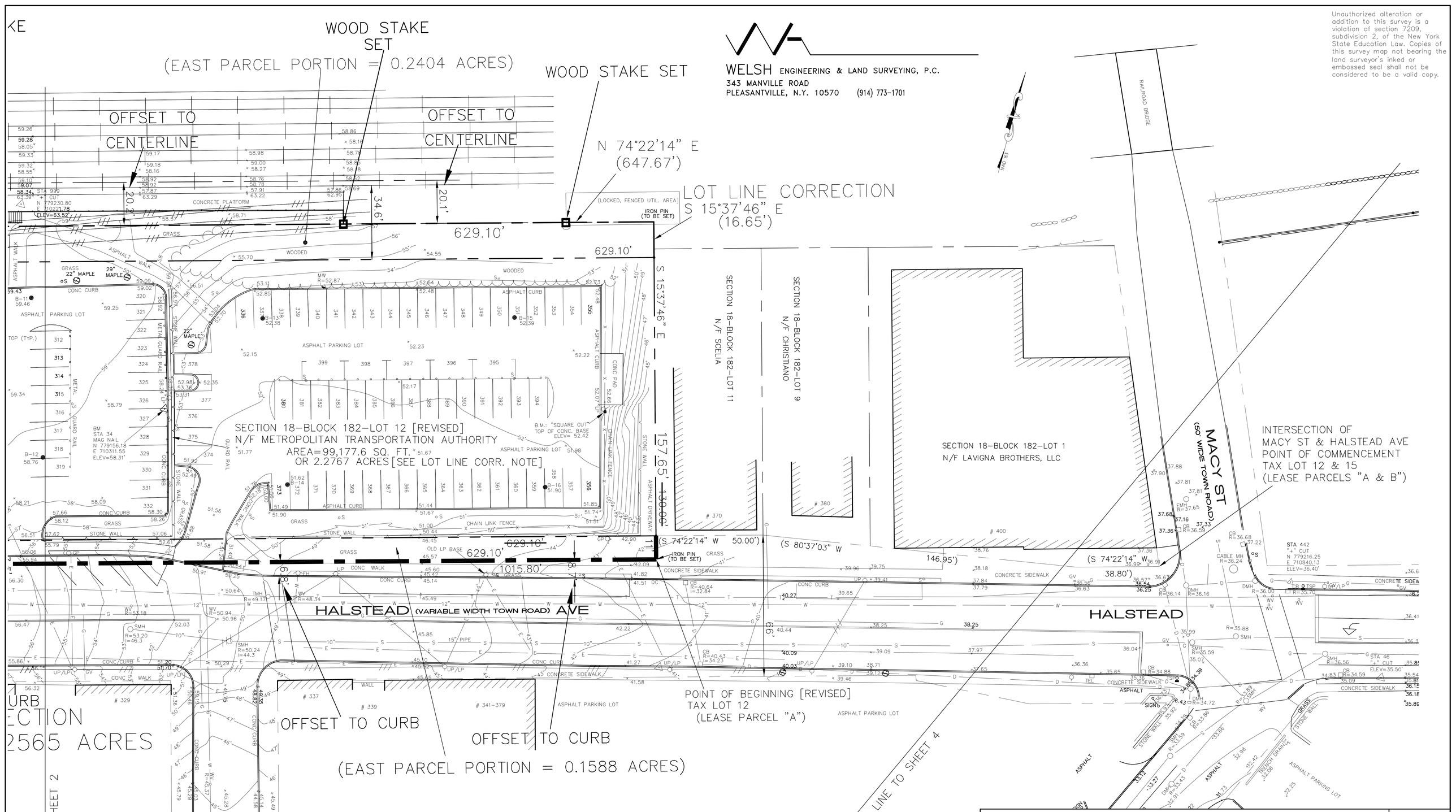
DATE: APRIL 8, 2016
DRAWN BY: J.H.
CHK BY: W.J.W.
SCALE: 1"= 20'

TOPOGRAPHIC & BOUNDARY SURVEY
AND LOT LINE CORRECTION
HARRISON STATION
VILLAGE/TOWN OF HARRISON
WESTCHESTER COUNTY, NEW YORK

PROJ. NO. T512.00
SHEET NO. 2 OF 4
JOB # T512.00
CAD FILE: T51200ws.DWG

Unauthorized alteration or addition to this survey is a violation of section 7209, subdivision 2, of the New York State Education Law. Copies of this survey map not bearing the land surveyor's inked or embossed seal shall not be considered to be a valid copy.

WELSH ENGINEERING & LAND SURVEYING, P.C.
343 MANVILLE ROAD
PLEASANTVILLE, N.Y. 10570 (914) 773-1701




SURVEY PREPARED FOR:

*AVALONBAY COMMUNITIES*

DATE: APRIL 8, 2016

DRAWN BY: B.M.

CHK BY: W.J.W.

SCALE: 1"= 20'

# TOPOGRAPHIC & BOUNDARY SURVEY AND LOT LINE CORRECTION HARRISON STATION

VILLAGE/TOWN OF HARRISON

WESTCHESTER COUNTY, NEW YORK

PROJ. NO. T512.00

SHEET NO. 3 OF 4

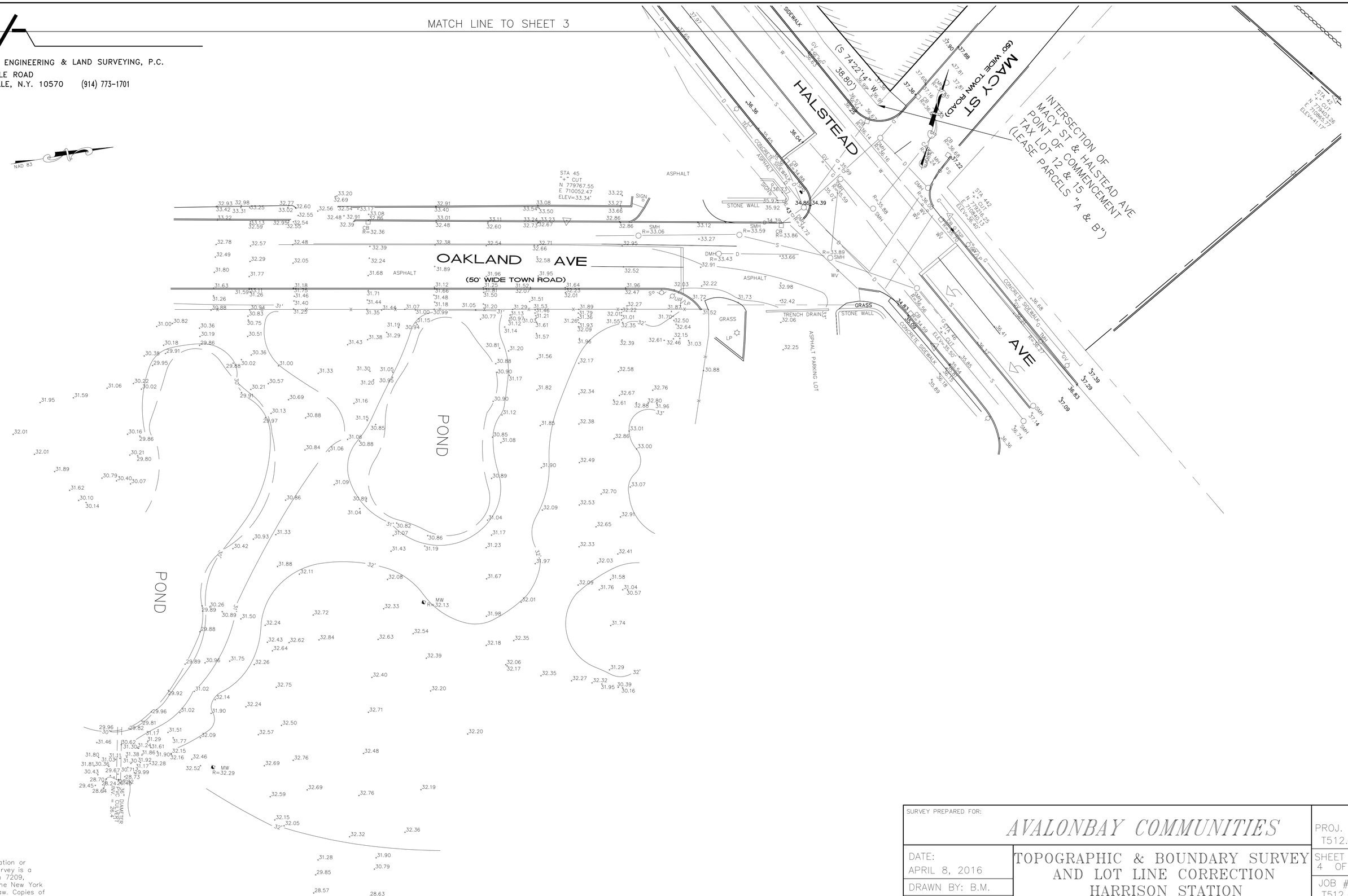
JOB # T512.03

CAD FILE: T51203ws.DWG

DATE: _____

WILLIAM J. WELSH N.Y. STATE LAND SURVEYOR LIC. # 49626

WELSH ENGINEERING & LAND SURVEYING, P.C.
343 MANVILLE ROAD
PLEASANTVILLE, N.Y. 10570 (914) 773-1701

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_____ DATE: _____

WILLIAM J. WELSH N.Y. STATE LAND SURVEYOR LIC. # 49626

SURVEY PREPARED FOR:

*AVALONBAY COMMUNITIES*

DATE: APRIL 8, 2016

DRAWN BY: B.M.

CHK BY: W.J.W.

SCALE: 1"= 20'

# TOPOGRAPHIC & BOUNDARY SURVEY AND LOT LINE CORRECTION HARRISON STATION

VILLAGE/TOWN OF HARRISON

WESTCHESTER COUNTY, NEW YORK

PROJ. NO. T512.00

SHEET NO. 4 OF 4

JOB # T512.03

CAD FILE: T51203ws.DWG

# B EAF Parts 1 and 2

*Full Environmental Assessment Form*
*Part 1 - Project and Setting*

## Instructions for Completing Part 1

**Part 1 is to be completed by the applicant or project sponsor.** Res□onses become □art o□the a□□lication □or a□□roval or □undin□, are sub□ect to □ublic review, and may be sub□ect to □urther veri□ication.

Com□lete □art 1 based on in□ormation currently available. □□additional research or investi□ation would be needed to □ully res□ond to any item, □lease answer as thorou□hly as □ossible based on current in□ormation□indicate whether missin□in□ormation does not exist, or is not reasonably available to the s□onsor□and, when □ossible, □enerally describe wor□or studies which would be necessary to u□date or □ully develo□that in□ormation.

□□licants□s□onsors must com□lete all items in □ections □ □ □. □n □ections C, D □ □, most items contain an initial □uestion that must be answered either □□es□or □□o□. □□the answer to the initial □uestion is □□es□, com□lete the sub-□uestions that □ollow. □□the answer to the initial □uestion is □□o□, □roceed to the next □uestion. □ection F allows the □ro□ect s□onsor to identi□y and attach any additional in□ormation. □ection □ re□uires the name and si□nature o□the □ro□ect s□onsor to veri□y that the in□ormation contained in □art 1is accurate and com□lete.

### A. Project and Sponsor Information.

| | | |
|---|---|---|
| □ame o□□ction or □ro□ect□<br>Avalon Harrison | | |
| □ro□ect □ocation (describe, and attach a □eneral location ma□)□<br>Halstead Avenue, Harrison, New York (Section 18, Block 182, Lots 12 and 15) | | |
| □rie□Descri□tion o□□ro□osed □ction (include □ur□ose or need)□<br>The proposed action is the development of a mixed-use facility with 136 market-rate rental apartments, 7 affordable "AFFH" apartments, 27,000 square feet of commercial space and the an on-site parking garage with 751 spaces, of which 475 shall be owned by Metropolitan Transportation Authority and used for Metro-North Commuter Railroad commuter parking, 186 spaces shall be for residents of the facility, and 90 spaces shall be designated for patrons of the commercial uses. | | |
| □ame o□□□licant□□□onsor□<br>AvalonBay Communities, Inc. | □ele□hone□ 203-319-4900<br>□-Mail□ | |
| □ddress□ 1499 Post Road, 2nd Floor | | |
| City□□□□ Fairfield | □tate□ CT | □i□Code□ 06824 |
| □ro□ect Contact (i□not same as s□onsor□□ive name and title□role)□<br>Grant Jaber | □ele□hone□<br>□-Mail□ Grant_Jaber@avalonbay.com | |
| □ddress□<br>(same as above) | | |
| City□□□□ | □tate□ | □i□Code□ |
| □ro□erty □wner (i□not same as s□onsor)□<br>Metropolitan Transportation Authority | □ele□hone□<br>□-Mail□ Sarch@mnr.org | |
| □ddress□<br>2 Broadway | | |
| City□□□□ New York | □tate□ NY | □i□Code□ 10004 |

**B. Government Approvals**

**B. Government Approvals, Funding, or Sponsorship.** ("Fundin" includes rants, loans, tax relie, and any other orms o inancial assistance.)

| Government Entity | If Yes: Identify Agency and Approval(s) Required | Application Date (Actual or projected) |
|---|---|---|
| a. City Council, own oard, or illa e oard o rustees ☑ es ☐ o | Harrison Town Board - Amendments to Zoning Code and Zoning Map, TOD Special Exception | |
| b. City, own or illa e lannin oard or Commission ☑ es ☐ o | Harrison Planning Board - Site Plan and TOD Special Exception Use approvals | |
| c. City Council, own or illa e onin oard o eals ☐ es ☑ o | | |
| d. ther local a encies ☑ es ☐ o | Architectural Review Board (ARB) approval | |
| e. County a encies ☑ es ☐ o | Westchester County Planning Board, Westchester County Health Department | |
| . Re ional a encies ☑ es ☐ o | MTA | |
| . tate a encies ☑ es ☐ o | NYSDEC - SWPPP, NYSDOT | |
| h. Federal a encies ☐ es ☑ o | | |

i. Coastal Resources.
*i.* s the ro ect site within a Coastal rea, or the water ront area o a Desi nated nland aterway? ☐ es ☑ o
*ii.* s the ro ect site located in a community with an a roved ocal ater ront Revitali ation ro ram? ☐ es ☑ o
*iii.* s the ro ect site within a Coastal rosion a ard rea? ☐ es ☑ o

**C. Planning and Zoning**

**C.1. Planning and zoning actions.**

ill administrative or le islative ado tion, or amendment o a lan, local law, ordinance, rule or re ulation be the only a roval(s) which must be ranted to enable the ro osed action to roceed? ☐ es ☑ o

- **If Yes,** com lete sections C, F and G.
- **If No,** roceed to uestion C.2 and com lete all remainin sections and uestions in art 1

**C.2. Adopted land use plans.**

a. Do any munici ally- ado ted (city, town, villa e or county) com rehensive land use lan(s) include the site where the ro osed action would be located? ☑ es ☐ o
If es, does the com rehensive lan include s eci ic recommendations or the site where the ro osed action would be located? ☑ es ☐ o

b. s the site o the ro osed action within any local or re ional s ecial lannin district (or exam le: reenway rownfield ortunity rea (BOA ); esi nated tate or Federal herita e area; watershed mana ement lan; or other) ☑ es ☐ o
If es, identi y the lan(s):
The site is discussed within the 2013 Town of Harrison Comprehensive Plan.

c. s the ro osed action located wholly or artially within an area listed in an ado ted munici al o en s ace lan, or an ado ted munici al armland rotection lan? ☐ es ☑ o
es, identi y the lan(s):

| C.3. Zoning | |
|---|---|
| a. □s the site o□the □ro□osed action located in a munici□ality with an ado□ted □onin□law or ordinance.<br>□□□es, what is the □onin□classi□ication(s) includin□any a□□licable overlay district□<br>PB - Professional Business. | ☑ □es ☐ □o |
| b. □s the use □ermitted or allowed by a s□ecial or conditional use □ermit□ | ☐ □es ☑ □o |
| c. □s a □onin□chan□e re□uested as □art o□the □ro□osed action□<br>□□□es,<br>*i.* □ hat is the □ro□osed new □onin□ □or the site□ Rezoning to a new "transit oriented development zoning district" is proposed. | ☑ □es ☐ □o |

| C.4. Existing community services. |
|---|
| a. □n what school district is the □ro□ect site located□ Harrison Central School District |
| b. □ hat □olice or other □ublic □rotection □orces serve the □ro□ect site□<br>Harrison Police Department |
| c. □ hich □ire □rotection and emer□ency medical services serve the □ro□ect site□<br>Harrison EMS and Harrison Fire Department |
| d. □ hat □ar□s serve the □ro□ect site□<br>Local Parks (Ma Riis Park, Sollazzo Recreation Center - Outdoor basketball courts) |

## D. Project Details

| D.1. Proposed and Potential Development | | |
|---|---|---|
| a. □ hat is the □eneral nature o□the □ro□osed action (e.□., residential, industrial, commercial, recreational□i□mixed, include all com□onents)□ Mixed-used facility (residential, commercial/retail, amenity space and parking facility) | | |
| b. a. □otal acrea□e o□the site o□the □ro□osed action□ | 3.79 acres | |
| b. □otal acrea□e to be □hysically disturbed□ | 3.79 acres | |
| c. □otal acrea□e (□ro□ect site and any conti□uous □ro□erties) owned or controlled by the a□□licant or □ro□ect s□onsor□ | 3.79 acres | |
| c. □s the □ro□osed action an ex□ansion o□an existin□ □ro□ect or use□<br>*i.* □□□es, what is the a□□roximate □ercenta□e o□the □ro□osed ex□ansion and identi□y the units (e.□., acres, miles, housin□units, s□uare □eet)□ □ □nits | | ☐ □es ☑ □o |
| d. □s the □ro□osed action a subdivision, or does it include a subdivision□<br>□□□es,<br>*i.* □ur□ose or ty□e o□subdivision□(e.□., residential, industrial, commercial□i□mixed, s□eci□y ty□es)<br>*ii.* □s a cluster□conservation layout □ro□osed□<br>*iii.* □umber o□lots □ro□osed□<br>*iv.* Minimum and maximum □ro□osed lot si□es□ Minimum Maximum | | ☐ □es ☑ □o<br><br><br>☐ □es ☐ □o |
| e. □ ill □ro□osed action be constructed in multi□le □hases□ | | ☐ □es ☑ □o |
| *i.* □□□o, antici□ated □eriod o□construction□ | TBD months | |
| *ii.* □□□es□ | | |
| • □otal number o□□hases antici□ated | | |
| • □ntici□ated commencement date o□ □hase 1 (includin□demolition) | month year | |
| • □ntici□ated com□letion date o□□inal □hase | month year | |
| • □enerally describe connections or relationshi□s amon□ □hases, includin□any contin□encies where □ro□ress o□one □hase may determine timin□or duration o□□uture □hases | | |

. Does the □ro□ect include new residential uses□ ☑ □es ☐ □o

□□□es, show numbers o□units □ro□osed.

| | □ne Family | □wo Family | □hree Family | Multi□le Family (□our or more) |
|---|---|---|---|---|
| □nitial □hase | | | | 143 rental apartments |
| □t com□letion o□all □hases | | | | 143 rental apartments |

□ Does the □ro□osed action include new non-residential construction (includin□ex□ansions)□ ☑ □es ☐ □o

□□□es,

*i.* □otal number o□structures 3□

*ii.* Dimensions (in □eet) o□lar□est □ro□osed structure hei□ht width□and len□th

*iii.* □□roximate extent o□buildin□s□ace to be heated or cooled□ 27,000 □s□uare □eet

h. Does the □ro□osed action include construction or other activities that will result in the im□oundment o□any li□uids, such as creation o□a water su□□ly, reservoir, □ond, la□e, waste la□oon or other stora□e□ ☐ □es ☑ □o

□□□es,

*i.* □ur□ose o□the im□oundment□

*ii.* □□a water im□oundment, the □rinci□al source o□the water□ ☐ □round water ☐ □ur□ace water streams ☐ □ther s□eci□y□

*iii.* □□other than water, identi□y the ty□e o□im□ounded□contained li□uids and their source.

*iv.* □□roximate si□e o□the □ro□osed im□oundment. □olume million □allons□sur□ace area acres

*v.* Dimensions o□the □ro□osed dam or im□oundin□structure□ hei□ht len□th

*vi.* Construction method□materials □or the □ro□osed dam or im□oundin□structure (e.□, earth □ill, roc□, wood, concrete)□

**D.2. Project Operations**

a. Does the □ro□osed action include any excavation, minin□, or dred□in□, durin□construction, o□erations, or both□ (□ot includin□□eneral site □re□aration, □radin□or installation o□utilities or □oundations where all excavated materials will remain onsite) ☑ □es ☐ □o

□□□es□

*i.* □hat is the □ur□ose o□the excavation or dred□in□□ Construction of parking spaces and basement level of buildings

*ii.* □ow much material (includin□roc□, earth, sediments, etc.) is □ro□osed to be removed □rom the site□

- □olume (s□eci□y tons or cubic yards) 35,000 CY for cut and disposal,
- □ver what duration o□time TBD

*iii.* Describe nature and characteristics o□materials to be excavated or dred□ed, and □lans to use, mana□e or dis□ose o□them.

*iv.* □ill there be onsite dewaterin□or □rocessin□o□excavated materials□ ☑ □es ☐ □o

□□yes, describe. Onsite dewatering for basement construction and onsite rock processing.

*v.* □hat is the total area to be dred□ed or excavated□ ~2.0 acres

*vi.* □hat is the maximum area to be wor□ed at any one time□ ~3.8 acres

*vii.* □hat would be the maximum de□th o□excavation or dred□in□□ ~13 □eet

*viii.* □ill the excavation re□uire blastin□□ ☐ □es ☑ □o

*ix.* □ummari□e site reclamation □oals and □lan□

b. □ould the □ro□osed action cause or result in alteration o□, increase or decrease in si□e o□, or encroachment into any existin□wetland, waterbody, shoreline, beach or ad□acent area□ ☐ □es ☑ □o

□□□es□

*i.* □denti□y the wetland or waterbody which would be a□□ected (by name, water index number, wetland ma□number or □eo□ra□hic descri□tion)□

*ii.* Describe how the □ro□osed action would a□□ect that waterbody or wetland, e.□ excavation, □ill, □lacement o□structures, or alteration o□channels, ban□s and shorelines. □ndicate extent o□activities, alterations and additions in s□uare □eet or acres□

*iii.* □ ill □ro□osed action cause or result in disturbance to bottom sediments□ ☐ □es ☐ □o

□□es, describe□

*iv.* □ ill □ro□osed action cause or result in the destruction or removal o□a□uatic ve□etation□ ☐ □es ☐ □o

□□es□

- acres o□aquatic ve□etation □ro□osed to be removed:
- expected acrea□e o□a□uatic ve□etation remainin□a□ter □ro□ect com□letion:
- □ur□ose o□□ro□osed removal (e.□ beach clearin□, invasive s□ecies control, boat access)□
- □ro□osed method o□□lant removal
- i□chemical □herbicide treatment will be used, s□eci□y □roduct(s)

*v.* Describe any □ro□osed reclamation□miti□ation □ollowin□disturbance

c. □ ill the □ro□osed action use, or create a new demand □or water□ ☑ □es ☐ □o

□□es□

*i.* □otal antici□ated water usa□e□demand □er day□ ~37,000 □allons□day

*ii.* □ ill the □ro□osed action obtain water □rom an existin□□ublic water su□□ly□ ☑ □es ☐ □o

□□es□

- □ame o□district or service area□ Westchester County Joint Water Works
- Does the existin□□ublic water su□□ly have ca□acity to serve the □ro□osal□ ☑ □es ☐ □o
- □s the □ro□ect site in the existin□district□ ☑ □es ☐ □o
- □s ex□ansion o□the district needed□ ☐ □es ☑ □o
- Do existin□lines serve the □ro□ect site□ ☑ □es ☐ □o

*iii.* □ ill line extension within an existin□district be necessary to su□□ly the □ro□ect□ ☐ □es ☑ □o

□□es□

- Describe extensions or ca□acity ex□ansions □ro□osed to serve this □ro□ect
- □ource(s) o□su□□ly □or the district

*iv.* □s a new water su□□ly district or service area □ro□osed to be □ormed to serve the □ro□ect site□ ☐ □es ☑ □o

□, □es□

- □□licant□s□onsor □or new district
- Date a□□lication submitted or antici□ated
- □ro□osed source(s) o□su□□ly □or new district

*v.* □□a □ublic water su□□ly will not be used, describe □lans to □rovide water su□□ly □or the □ro□ect

*vi.* □□water su□□ly will be □rom wells (□ublic or □rivate), maximum □um□in□ca□acity □□□□□□□ □allons□minute.

d. □ ill the □ro□osed action □enerate li□uid wastes□ ☑ □es ☐ □o

□□es□

*i.* □otal antici□ated li□uid waste □eneration □er day□ ~33,500 □allons□day

*ii.* □ature o□li□uid wastes to be □enerated (e.□, sanitary wastewater, industrial□i□combination, describe all com□onents and a□□roximate volumes or □ro□ortions o□each)□

Sanitary wastewater

*iii.* □ ill the □ro□osed action use any existin□□ublic wastewater treatment □acilities□ ☑ □es ☐ □o

□□es□

- □ame o□wastewater treatment □lant to be used Mamaroneck Wastewater Treatment Plant
- □ame o□district□ Mamaroneck Sewer District
- Does the existin□wastewater treatment □lant have ca□acity to serve the □ro□ect□ ☑ □es ☐ □o
- □s the □ro□ect site in the existin□district□ ☑ □es ☐ □o
- □s ex□ansion o□the district needed□ ☐ □es ☑ □o

- 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 ~0.8 acres (impervious surface)

_____ Square feet or ~3.79 acres (parcel size)

*ii.* Describe types of new point sources. Parking lots, rooftops, and sidewalks.

*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 controls

- 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 Hydrofluorocarbons (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 257 Proposed 769 Net increase/decrease +510

*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:
Site modifications may be necessary. Geometry and striping of Halstead Ave will be modified.

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

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

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

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

If Yes:

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

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

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

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

*i.* During Construction:

- Monday - Friday: 7:30am-8:00pm
- Saturday: 7:30am-8:00pm
- Sunday: 7:30am-8:00pm
- Holidays: 7:30am-8:00pm

*ii.* During Operations:

- Monday - Friday: TBD
- Saturday: TBD
- Sunday: TBD
- Holidays: TBD

m. □ ill the □ro□osed action □roduce noise that will exceed existin□ ambient noise levels durin□ construction, o□eration, or both□ ☑ □es ☐ □o

□ yes□

*i.* □rovide details includin□ sources, time o□ day and duration□

TBD

*ii.* □ ill □ro□osed action remove existin□ natural barriers that could act as a noise barrier or screen□ ☐ □es ☑ □o

Describe

---

n.. □ ill the □ro□osed action have outdoor li□htin□□ ☑ □es ☐ □o

□ yes□

*i.* Describe source(s), location(s), hei□ht o□ □ixture(s), direction□aim, and □roximity to nearest occu□ied structures□

TBD

*ii.* □ ill □ro□osed action remove existin□ natural barriers that could act as a li□ht barrier or screen□ ☐ □es ☑ □o

Describe

---

o. Does the □ro□osed action have the □otential to □roduce odors □or more than one hour □er day□ ☐ □es ☑ □o

□ □es, describe □ossible sources, □otential □re□uency and duration o□ odor emissions, and □roximity to nearest occu□ied structures□

---

□. □ ill the □ro□osed action include any bul□ stora□e o□ □etroleum (combined capacity of over 1,100 □allons) or chemical □roducts 185 gallons in above ground storage or any amount in underground storage□ ☐ □es ☑ □o

□ □es□

*i.* □roduct(s) to be stored

*ii.* □olume(s) □er unit time (e.□., month, year)

*iii.* □enerally describe □ro□osed stora□e □acilities:

---

□. □ ill the □ro□osed action (commercial, industrial and recreational □ro□ects only) use □esticides (i.e., herbicides, insecticides) durin□ construction or o□eration□ ☐ □es ☑ □o

□ □es□

*i.* Describe □ro□osed treatment(s)□

*ii.* □ ill the □ro□osed action use □nte□rated □est Mana□ement □ractices□ ☐ □es ☐ □o

---

r. □ ill the □ro□osed action (commercial or industrial □ro□ects only) involve or re□uire the mana□ement or dis□osal o□ solid waste (excludin□ ha□ardous materials)□ ☐ □es ☑ □o

□ □es□

*i.* Describe any solid waste(s) to be □enerated durin□ construction or o□eration o□ the □acility□

- Construction□ tons □er (unit o□ time)
- □□eration □ tons □er (unit o□ time)

*ii.* Describe any □ro□osals □or on-site minimi□ation, recyclin□ or reuse o□ materials to avoid dis□osal as solid waste□

- Construction□
- □□eration□

*iii.* □ro□osed dis□osal methods□□acilities □or solid waste □enerated on-site□

- Construction□
- □□eration□

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

If Yes:

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

*ii.* Anticipated rate of disposal/processing:

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

*iii.* If landfill, anticipated site life: ________ years

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

If Yes:

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

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

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

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

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

If Yes: provide name and location of facility:

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

## E. Site and Setting of Proposed Action

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

a. Existing land uses.

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

☑ Urban ☐ Industrial ☐ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): Parking lot

*ii.* If mix of uses, generally describe:

Surface parking lot serving the commuters of the adjacent Metro-North station. The site also includes a portion of the roadbed of Halstead Avenue.

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 | 2.50 | 3.30 | +0.8 |
| • Forested | 0.24 | 0 | -0.24 |
| • Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural) | - | - | - |
| • Agricultural (includes active orchards, field, greenhouse etc.) | - | - | - |
| • Surface water features (lakes, ponds, streams, rivers, etc.) | - | - | - |
| • Wetlands (freshwater or tidal) | - | - | - |
| • Non-vegetated (bare rock, earth or fill) | - | - | - |
| • Other Describe: Open space | 1.05 | 0.49 | -0.56 |

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 1000 feet of the project site? ☑ Yes ☐ No

If yes,

*i.* Identify Facilities:

Sallazzo Recreation Center, Harrison Public Library, Parsons Memorial School

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 DEC 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 DEC Environmental Site Remediation database? ☑ Yes ☐ No

If yes, provide DEC ID number(s): B00109

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

The Environmental Restoration Program for the Beaver Swamp Brook Site was completed as of 10/28/2014.

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

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

**E.2. Natural Resources On or Near Project Site**

a. What is the average depth to bedrock on the project site? >6.6 feet

b. Are there bedrock outcrops on the project site? ☑ Yes ☐ No
If yes, what proportion of the site is comprised of bedrock outcrops? 0.6

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

| | |
|---|---|
| Urban land (Uf) | 100.00 |

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

e. Drainage status of project site soils:

| | | |
|---|---|---|
| ☑ Well Drained | 100 | % of site |
| ☐ Moderately Well Drained | | % of site |
| ☐ Poorly Drained | | % of site |

f. Approximate proportion of proposed action site with slopes:

| | | |
|---|---|---|
| ☑ 0-10% | 83 | % of site |
| ☑ 10-15% | 3 | % of site |
| ☑ 15% or greater | 14 | % 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 Classification
- Lakes or ponds: Name Classification
- Wetlands: Name Approximate size
- Wetland No. (if regulated by DEC)

*v.* Are any of the above water bodies listed in the most recent compilation of impaired 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. Typical urban species (i.e. - white tailed deer, raccoons, squirrels, songbirds) parking lots, although the site consists of surface

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 State 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 State 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.* Yes: acreage(s) on project site?

*ii.* Source(s) of soil rating(s)?

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If yes:

*i.* Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

*ii.* Provide brief description of landmark, including values behind designation and approximate size/extent

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If yes:

*i.* CEA name

*ii.* Basis for designation

*iii.* Designating agency and date

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

If Yes:

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

*ii.* Name US Post Office-Harrison

*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 6 NYCRR 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.

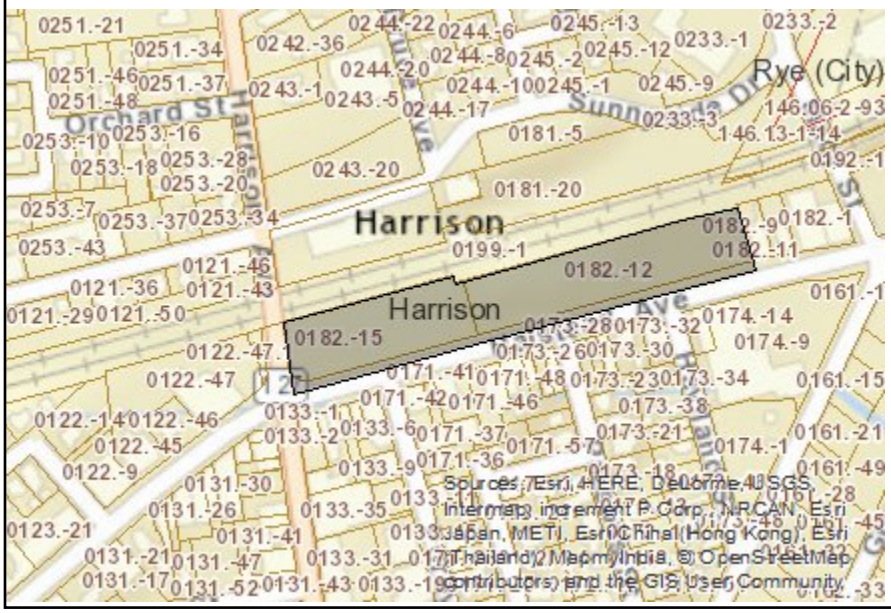
Applicant/Sponsor Name AvalonBay Communities, Inc. Date

Signature By: Title Senior Development Director

PRINT FORM

# EAF Mapper Summary Report

Wednesday, October 14, 2015 5:23 PM




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

| | |
|---|---|
| B.i.i [Coastal or Waterfront Area] | No |
| B.i.ii [Local Waterfront Revitalization Area] | No |
| C.2.b. [Special Planning District] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.1.h [DEC Spills or Remediation Site - Potential Contamination History] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.1.h.i [DEC Spills or Remediation Site - Listed] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.1.h.iii [Within 2,000' of DEC Remediation Site] | Yes |
| E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID] | B00109 |
| E.2.g [Unique Geologic Features] | No |
| E.2.h.i [Surface Water Features] | No |
| E.2.h.ii [Surface Water Features] | No |
| E.2.h.iii [Surface Water Features] | No |
| E.2.h.v [Impaired Water Bodies] | No |
| E.2.i. [Floodway] | No |
| E.2.j. [100 Year Floodplain] | No |
| E.2.k. [500 Year Floodplain] | No |
| E.2.l. [Aquifers] | No |
| E.2.n. [Natural Communities] | No |
| E.2.o. [Endangered or Threatened Species] | No |

| | |
|---|---|
| E.2.p. [Rare Plants or Animals] | No |
| E.3.a. [Agricultural District] | No |
| E.3.c. [National Natural Landmark] | No |
| E.3.d [Critical Environmental Area] | No |
| E.3.e. [National Register of Historic Places] | Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook. |
| E.3.e.ii [National Register of Historic Places - Name] | US Post Office--Harrison |
| E.3.f. [Archeological Sites] | Yes |
| E.3.i. [Designated River Corridor] | No |

Agency Use Only [If applicable]

Project :

Date :

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

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

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

**Tips for completing Part 2:**

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF or Book.
- Answer each of the 12 questions in Part 2.
- If you answer **"Yes"** to a numbered question, please complete all the questions that follow in that section.
- If you answer **"No"** to a numbered question, move on to the next numbered question.
- Check a appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

**1. Impact on Land** ☐ No ☑ Yes

Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1)

*If "Yes", answer questions a - j. If "No", move on to Section 2.*

| | Relevant Part I Question(s) | No, or small impact may occur | Moderate to large impact may occur |
|---|---|---|---|
| a. The proposed action may involve construction on land where depth to water table is less than 3 feet. | D2d | ☐ | ☐ |
| b. The proposed action may involve construction on slopes of 15% or greater. | D2b | ☑ | ☐ |
| c. The proposed action may involve construction on land where bedrock is exposed, or generally within 3 feet of existing ground surface. | D2a | ☐ | ☐ |
| d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material. | D2a | ☐ | ☐ |
| e. The proposed action may involve construction that continues for more than one year or in multiple phases. | D1e | ☐ | ☐ |
| f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides). | D2e, D2q | ☑ | ☐ |
| g. The proposed action is, or may be, located within a Coastal Erosion hazard area. | D1i | ☑ | ☐ |
| h. Other impacts: | | ☐ | ☐ |

**2. Impact on Geological Features**

The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g) ☑ ☐

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

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

**3. Impacts on Surface Water**

The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h) ☑ ☐

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

| | Relevant Part I Question(s) | No, or small impact may occur | Moderate to large impact may occur |
|---|---|---|---|
| a. The proposed action may create a new water body. | D2b, D1h | ☐ | ☐ |
| b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water. | D2b | ☐ | ☐ |
| c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body. | D2a | ☐ | ☐ |
| d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body. | E2h | ☐ | ☐ |
| e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments. | D2a, D2h | ☐ | ☐ |
| f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water. | D2c | ☐ | ☐ |
| g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s). | D2d | ☐ | ☐ |
| h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies. | D2e | ☐ | ☐ |
| i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action. | E2h | ☐ | ☐ |
| j. The proposed action may involve the application of pesticides or herbicides in or around any water body. | D2g, E2h | ☐ | ☐ |
| k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities. | D1a, D2d | ☐ | ☐ |

| | | | |
|---|---|---|---|
| l. Other impacts: ______________________________ | | ☐ | ☐ |

| **4. Impact on groundwater**<br>The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer.<br>(See Part 1. D.2.a, D.2.c, D.2.d, D.2.□, D.2.□, D.2.t)<br>*If "Yes", answer questions a - h. If "No", move on to Section 5.* | ☑ NO | ☐ YES | |
|---|---|---|---|
| | **Relevant Part I Question(s)** | **No, or small impact may occur** | **Moderate to large impact may occur** |
| a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells. | D2c | ☐ | ☐ |
| b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer.<br>Cite Source: ______________________________ | D2c | ☐ | ☐ |
| c. The proposed action may allow or result in residential uses in areas without water and sewer services. | D1a, D2c | ☐ | ☐ |
| d. The proposed action may include or require wastewater discharged to groundwater. | D2d, □2l | ☐ | ☐ |
| e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated. | D2c, □1□, □1□, □1h | ☐ | ☐ |
| f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer. | D2□, □2l | ☐ | ☐ |
| g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources. | □2h, D2□, □2l, D2c | ☐ | ☐ |
| h. Other impacts: ______________________________ | | ☐ | ☐ |

| **5. Impact on Flooding**<br>The proposed action may result in development on lands subject to flooding.<br>(See Part 1. □.2)<br>*If "Yes", answer questions a - g. If "No", move on to Section 6.* | ☑ NO | ☐ YES | |
|---|---|---|---|
| | **Relevant Part I Question(s)** | **No, or small impact may occur** | **Moderate to large impact may occur** |
| a. The proposed action may result in development in a designated floodway. | □2i | ☐ | ☐ |
| b. The proposed action may result in development within a 100 year floodplain. | □2□ | ☐ | ☐ |
| c. The proposed action may result in development within a □00 year floodplain. | □2□ | ☐ | ☐ |
| d. The proposed action may result in, or require, modification of existing drainage patterns. | D2b, D2e | ☐ | ☐ |
| e. The proposed action may change flood water flows that contribute to flooding. | D2b, □2i, □2□, □2□ | ☐ | ☐ |
| f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade? | □1e | ☐ | ☐ |

| | | | |
|---|---|---|---|
| f. Other impacts:______________________________________________<br>_______________________________________________________ | | ☐ | ☐ |

**6. Impacts on Air**

The proposed action may include a state regulated air emission source. ☑ NO ☐ YES
(See Part 1. D.2.f., D,2,h, D.2.g)
*If "Yes", answer questions a - f. If "No", move on to Section 7.*

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

**7. Impact on Plants and Animals**

The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) ☑ NO ☐ YES
*If "Yes", answer questions a - j. If "No", move on to Section 8.*

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

| | | | |
|---|---|---|---|
| e. The proposed action may diminish the capacity of a registered national natural landmark to support the biological community it was established to protect. | 3c | 9 | 9 |
| f The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community.<br>Source: _____ | 2n | 9 | 9 |
| g The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site. | 2m | 9 | 9 |
| h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat.<br>Habitat type & information source: _____ | 1b | 9 | 9 |
| i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides. | D2 | 9 | 9 |
| j Other impacts: _____ | | 9 | 9 |

**8. Impact on Agricultural Resources**

The proposed action may impact agricultural resources. (See Part 1. D.3.a. and b.) ☑ NO ☐ YES

*If "Yes", answer questions a - h. If "No", move on to Section 9.*

| | Relevant Part I Question(s) | No, or small impact may occur | Moderate to large impact may occur |
|---|---|---|---|
| a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System. | 2c, 3b | 9 | 9 |
| b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes crop land, hay fields, pasture, vineyard, orchard, etc). | 1a, 1b | 9 | 9 |
| c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land. | 3b | 9 | 9 |
| d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres located in an Agricultural District, or more than 10 acres if not within an Agricultural District. | 1b, 3a | 9 | 9 |
| e. The proposed action may disrupt or prevent installation of an agricultural land management system. | 1a, 1b | 9 | 9 |
| f The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland. | C2c, C3, D2c, D2d | 9 | 9 |
| g The proposed project is not consistent with the adopted municipal Farmland Protection Plan. | C2c | 9 | 9 |
| h. Other impacts: _____ | | 9 | 9 |

**9. Impact on Aesthetic Resources**

The land use or the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.)

☑ NO ☐ YES

*If "Yes", answer questions a - g. If "No", go to Section 10.*

| | Relevant Part I Question(s) | No, or small impact may occur | Moderate to large impact may occur |
|---|---|---|---|
| a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource. | E3h | 9 | 9 |
| b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views. | E3h, C2b | 9 | 9 |
| c. The proposed action may be visible from publicly accessible vantage points:<br>i. Seasonally (e.g., screened by summer foliage, but visible during other seasons)<br>ii. Year round | E3h | <br>9<br>9 | <br>9<br>9 |
| d. The situation or activity in which viewers are engaged while viewing the proposed action is:<br>i. Routine travel by residents, including travel to and from work<br>ii. Recreational or tourism based activities | E3h<br>E2g,<br>E1c | <br><br>9<br>9 | <br><br>9<br>9 |
| e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource. | E3h | 9 | 9 |
| f. Are there similar projects visible within the following distance of the proposed project:<br>0-1/4 mile<br>1/4-1/2 mile<br>1/2-3 mile<br>3-5 mile<br>5+ mile | D1a, E1a, D1g, D1q | 9 | 9 |
| g. Other impacts: _____<br>_____ | | 9 | 9 |

**10. Impact on Historic and Archeological Resources**

The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f and g)

☐ NO ☑ YES

*If "Yes", answer questions a - e. If "No", go to Section 11.*

| | Relevant Part I Question(s) | No, or small impact may occur | Moderate to large impact may occur |
|---|---|---|---|
| a. The proposed action may occur wholly or partially within, or substantially contiguous to, any 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. | E3e | ☑ | ☐ |
| b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory. | E3f | ☑ | ☐ |
| c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory.<br>Source: _____ | E3g | ☑ | ☐ |

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

**11. Impact on Open Space and Recreation**

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

☑ NO ☐ YES

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

**12. Impact on Critical Environmental Areas**

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

☑ NO ☐ YES

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

**13. Impact on Transportation**

The proposed action may result in a change to existing transportation systems. ☐ No ☑ Yes

(See Part 1. D.2.j)

*If "Yes", answer questions a - g. If "No", go to Section 14.*

| | Relevant Part I Question(s) | No, or small impact may occur | Moderate to large impact may occur |
|---|---|---|---|
| a. Projected traffic increase may exceed capacity of existing road network. | D2q | ☐ | ☑ |
| b. The proposed action may result in the construction of paved parking area for 500 or more vehicles. | D2q | ☑ | ☐ |
| c. The proposed action will degrade existing transit access. | D2q | ☑ | ☐ |
| d. The proposed action will degrade existing pedestrian or bicycle accommodations. | D2q | ☑ | ☐ |
| e. The proposed action may alter the present pattern of movement of people or goods. | D2q | ☐ | ☑ |
| f. Other impacts: | | ☐ | ☐ |

**14. Impact on Energy**

The proposed action may cause an increase in the use of any form of energy. ☐ No ☑ Yes

(See Part 1. D.2.q)

*If "Yes", answer questions a - e. If "No", go to Section 15.*

| | Relevant Part I Question(s) | No, or small impact may occur | Moderate to large impact may occur |
|---|---|---|---|
| a. The proposed action will require a new, or an upgrade to an existing, substation. | D2q | ☐ | ☑ |
| b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use. | D1g, D1q, D2q | ☐ | ☑ |
| c. The proposed action may utilize more than 2,500 MW hrs per year of electricity. | D2q | ☐ | ☐ |
| d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed. | D1q | ☐ | ☑ |
| e. Other impacts: | | ☐ | ☐ |

**15. Impact on Noise, Odor, and Light**

The proposed action may result in an increase in noise, odors, or outdoor lighting. ☐ No ☑ Yes

(See Part 1. D.2.m., n., and o.)

*If "Yes", answer questions a - f. If "No", go to Section 16.*

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

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

## 16. Impact on Human Health

The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q, E.1. d. f. g. and h.) ☐ NO ☑ YES

*If "Yes", answer questions a - m. If "No", go to Section 17.*

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

**17. Consistency with Community Plans**

The proposed action is not consistent with adopted land use plans. ☑ Yes ☐ No

(See Part 1. C.1, C.2. and C.3.)

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

| | Relevant Part I Question(s) | No, or small impact may occur | Moderate to large impact may occur |
|---|---|---|---|
| a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s). | C2, C3, D1a D1a, D1b | ☐ | ☐ |
| b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than %. | C2 | ☐ | ☐ |
| c. The proposed action is inconsistent with local land use plans or zoning regulations. | C2, C2, C3 | ☐ | ☐ |
| d. The proposed action is inconsistent with any County plans, or other regional land use plans. | C2, C2 | ☐ | ☐ |
| e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure. | C3, D1c, D1d, D1e, D1d, D1b | ☐ | ☐ |
| f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure. | C4, D2c, D2d D2e | ☐ | ☐ |
| g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action) | C2a | ☐ | ☐ |
| h. Other _____ | | ☐ | ☐ |

**18. Consistency with Community Character**

The proposed project is inconsistent with the existing community character. ☑ Yes ☐ No

(See Part 1. C.2, C.3, D.2, E.3)

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

| | Relevant Part I Question(s) | No, or small impact may occur | Moderate to large impact may occur |
|---|---|---|---|
| a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community. | E3e, E3f, E3g | ☐ | ☐ |
| b. The proposed action may create a demand for additional community services (e.g. schools, police and fire) | C4 | ☐ | ☐ |
| c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing. | C2, C3, D1e D1f, D1a | ☐ | ☐ |
| d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources. | C2, E3 | ☐ | ☐ |
| e. The proposed action is inconsistent with the predominant architectural scale and character. | C2, C3 | ☐ | ☐ |
| f. Proposed action is inconsistent with the character of the existing natural landscape. | C2, C3 E1a, E1b E2f, E2h | ☐ | ☐ |
| g. Other impacts _____ | | ☐ | ☐ |

PRINT FULL FORM

Avalon Bay Harrison
Town/Village of Harrison,
Westchester County, New York
Draft Environmental Impact Statement

# P Stormwater Pollution Prevention Program

# STORMWATER POLLUTION PREVENTION PLAN

## AVALON AT HARRISON
## HALSTEAD AVENUE
## TOWN/VILLAGE OF HARRISON
## WESTCHESTER COUNTY, NEW YORK

July 1, 2016

MM121-74-3

***Prepared for:***

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DRAFT

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## I. INTRODUCTION

□his □tormwater □ollution □revention □lan (□□ □□□) has been □re□ared □ursuant to the □hase □□ re□ulations under □eneral □ermit □□-0-10-001 as re□uired by the □ew □or□ □tate De□artment o□ □nvironmental Conservation (□□□D□C).

□he □ro□osed □ction consists o□the redevelo□ment o□a 3.□-acre site located in the □own□□illa□e o□□arrison, □ estchester County, □ew □or□with a mixed-use develo□ment havin□a□□roximately 143 residential units, 27,000 s□uare □eet o□retail s□ace, and associated amenities and leasin□o□□ice. □he □ro□erty is abutted by Metro-□orth rail □acilities and □lat□orm to the north, commercial □ro□erty to the east, □alstead □venue to the south, and □arrison □venue to the west. □he □ro□osed □ro□ect □rovides an o□□ortunity to im□rove the □uality o□the stormwater runo□□□enerated on site and reduce □otential □ollutant dischar□es into the receivin□ water bodies.

□tormwater □uantity and □uality controls have been analy□ed □ollowin□□rocedures set □orth in the □ew □or□ □tate *Stormwater Management Design Manual* (the □manual□) dated □anuary 201□ □re□ared □or the □ew □or□ □tate De□artment o□□nvironmental Conservation (□□□D□C). □he manual □rovides □uidelines □or stormwater site □lannin□as well as selection and desi□n o□ □tormwater Mana□ement □ractices (□M□s) and □reen □n□rastructure □echni□ues (□□□).

## II. EXISTING CONDITIONS

### *a. Site Conditions*

□he □ro□ect area is located on the north side o□□alstead □venue to the east o□its intersection with □arrison □venue. □he site is located in a Central □usiness District (C□D). □he land is associated with the existin□rail □acilities. □he overall site is com□rised o□two □arcels which are used as □ar□in□□acilities □or the □arrison train station. □he eastern and western □arcels o□land are 2.2□and 1.□1 acres, res□ectively. □he eastern □arcel contains a □ar□in□lot with access to □alstead □venue and abuts the

railroad □lat□orm. □he western □arcel contains two □ar□in□lots and also abuts the railroad □lat□orm. □his □arcel also contains access to the train station over□ass stairs and elevator.

□he to□o□ra□hy □or the site can be described as a □lattened hardsca□e sur□ace. □he western □arcel □enerally slo□es to the north towards the railroad □lat□orm and the eastern □arcel □enerally slo□es to the east and to the south towards the □alstead □venue ri□ht-o□-way. □oil in□ormation □or the site was determined □rom the GIS (□eo□ra□hic □n□ormation □ystem) database o□the USDA-NRCS soil survey □or □ estchester County, □ew □or□. □he site area is wholly located within an area classi□ied by □RC□as urban land (Uf). A co□y o□the □RC□ □ydrolo□ic □oil □rou□Re□ort is included in the □□endix o□this re□ort.

*b. Drainage Infrastructure*

□here are various existin□catch basins collectin□stormwater runo□□within the site. □he western □ar□in□lot on the site drains south-to-north toward the railroad □lat□orm where runo□□is collected by a series o□catch basins and dischar□ed under the trac□s to a receivin□draina□e system in the □ar□in□lot north o□the railroad trac□s. □tormwater runo□□□rom □alstead □venue in this area also drains onto the site and throu□h this □ar□in□lot. □he second □ar□in□lot □rom the west contains two catch basins that dischar□e stormwater runo□□to drywells. □he □rassed □ar□area contains a series o□catch basins that collect runo□□□rom this area and dischar□e it throu□h the on-site stone walls. □he eastern □ar□in□lot has no draina□e in□rastructure. Runo□□□rom this □ar□in□lot drains overland to the □alstead □venue □utter to the east.

□he stormwater runo□□dischar□in□under the trac□s □rom the site is conveyed throu□h an existin□draina□e system within the □ar□in□lot north o□the railroad trac□s. □ased u□on a review o□available ma□□in□su□□lemented with □ield investi□ation, this system drains easterly to Macy Road and south □rom there to the intersection o□□alstead □venue and □a□land □venue. Runo□□□rom the eastern □ortion o□the site □enerally drains to the

□utter o□□alstead □venue where it is ca□tured by catch basins and conveyed toward the intersection o□□alstead □venue and □a□land □venue. Runo□□□rom all □arts o□the site ultimately combine at this intersection and drain south down □a□land □venue and then to the east into a town-owned swam□area that □eaver □wam□□roo□meanders throu□h. □his section o□□eaver □wam□□roo□is a□□roximately 9,000 □eet north o□its con□luence with Mamaronec□□arbor and the site□s draina□e area re□resents a□□roximately 0.2□ □ercent o□the overall 1,□30 acres o□watershed area tributary to the □eaver □wam□□roo□ at this location. □ small □ortion o□the western site □ronta□e drains toward the intersection o□□alstead □venue with □arrison □venue.

Due to the relatively small si□e o□the tributary watershed area, land use □or the site was determined □rom □ield survey. □and use ty□es included □orested, □rassed or o□en s□ace, and im□ervious (□aved) cover. □ecause o□the site□s classi□ication as urban land by □RC□with no s□eci□ic hydrolo□ic soul □rou□desi□nation, a review o□the surroundin□ areas was □er□ormed to determine the ty□e o□hydrolo□ic soil that could be used in the calculations. □he review indicated the li□ely □resence o□underlyin□ty□e □D□ hydrolo□ic soil □rou□. □D□soils are characteri□ed as □oorly drained soils and considered to have a very slow in□iltration rate when thorou□hly wet. □his is consistent with the on-site soil testin□results which indicated the □resence o□heavily com□acted soils and shallow bedroc□throu□hout the site.

*c. Hydrologic Study*

□ detailed hydrolo□ic study was □re□ared to determine the existin□□ea□rates o□runo□□ □rom the □ro□ect site durin□the 1-, 2-, 10-, 2□-, □0-, and 100-year storm events. □he □redevelo□ment □ea□□low rates are the basis □or determinin□stormwater mana□ement re□uirements □or the □ro□osed develo□ment. □he results o□the hydrolo□ic analysis □or existin□conditions are included in this □tormwater □ollution □revention □lan alon□with the model in□ut com□utations.

## III. STORMWATER MANAGEMENT DESIGN

□he □ro□osed stormwater mana□ement system has been desi□ned utili□in□ □est Mana□ement □ractices (□M□s), □rovidin□a means to □ro□erly mana□e on-site runo□□and convey stormwater □rom the □ro□ect site. □he system incor□orates desi□n □eatures to attenuate □ea□runo□□rates and □rovide water □uality treatment desi□ned so that runo□□will □ass throu□h multi□le treatment devices that will serve to □ilter sediment and other □otential contaminants be□ore dischar□in□ □rom the site. More in□ormation re□ardin□water □uantity (hydrolo□ic analysis) can be □ound in □ection □□ while stormwater □uality mana□ement is discussed □urther in □ection □ o□this re□ort.

□tormwater runo□□will be mana□ed on site by a □ro□osed internal storm collection system that will convey runo□□to a □ro□osed under□round stormwater detention basin located ad□acent to □uildin□□. □t is □ro□osed to install new catch basins alon□the north □utter o□□alstead □venue, which will serve to hel□ca□ture runo□□in the street and also serve to dischar□e runo□□□rom the site to the intersection o□□alstead □venue with □a□land □venue. □he □ro□osed storm draina□e systems were desi□ned to ade□uately convey the 2□-year storm event.

Considerable e□□ort was □ut into the desi□n in order to com□ly with the stormwater mana□ement □uidelines included in the manual. □ □ull evaluation o□the □reen in□rastructure techni□ues that could □otentially be a□□lied to the □ro□ect was □er□ormed as □art o□the □ive-ste□□□rocess. □hese □reen techni□ues include □ractices that enable runo□□reduction by □romotin□stormwater in□iltration, eva□oration□eva□otrans□iration, reuse, or recycle, which in turn reduces the re□uired □ ater □uality □olume (□ □v) □or the site.

□he □ro□osed □ro□ect is characteri□ed as a □redevelo□ment □ro□ect□and the existin□im□ervious area on the site has little to no water □uality in□rastructure. □he site will be redevelo□ed with new sur□aces □rom which runo□□will be controlled and treated with new stormwater mana□ement systems. Due to the nature o□the □ro□ect, the ma□ority o□the site will need to be disturbed to com□lete construction.

□n order to meet the □oals □or stormwater □uality and □uantity, the desi□n □lans incor□orate □reen in□rastructure □ractices that will achieve Runo□□Reduction □olume (RRv) to some extent and a stormwater mana□ement □acility with ade□uate stora□e volume to meet re□uirements □or water □uality, channel □rotection, overban□□loodin□, and extreme □loodin□control. □n addition, a □ro□rietary manu□actured stormwater treatment device has been incor□orated into the desi□n and will be si□ed in accordance with the □ ater □uality □olume (□ □v) criterion. □he device will be si□ed to treat the volume o□runo□□□rom the □ □v desi□n storm, or 1.□inches o□rain□all.

□he □ollowin□is a discussion o□the □ive-ste□□rocess □er□ormed □or the □ro□osed □ro□ect.

- □te□1□□ite □lannin□

  □s recommended, □rior to desi□n, a detailed inventory o□existin□conditions and site constraints was conducted. □his analysis included a review o□stee□slo□es, □lood□lains, wetlands, erodible soils, and ve□etation. □he selected site is a redevelo□ment in downtown □arrison o□a commuter □ar□in□lot that currently serves the train station. □o wetlands or ri□arian bu□□ers exist on site, and it is antici□ated that the site has low environmental value.

- □te□2□Determine □ ater □uality □olume (□ □v)

  □he re□uired □ □v □or the site was determined usin□the □rocedures described in Cha□ter 4 o□the manual. □ □v is desi□ned to im□rove water □uality by ca□turin□and treatin□90□ o□ the avera□e annual stormwater runo□□volume. □he re□uired □ □v was com□uted □rom the □□□D□C e□uation □ □v □(□x Rv x □)□12. □he □rovided □ □v meets the re□uired treated rain□all amount o□1.□inches.

- □te□3□Runo□□Reduction by □□□lyin□□reen □n□rastruture and □tandard □M□s with RRv Ca□acity

□reen in□rastructure techni□ues as □resented in Cha□ters 3 and 5 o□the NYS DEC manual were analy□ed and incor□orated into the site desi□n where □easible. □ractices are introduced in the manual and are ty□ically □rou□ed into two cate□ories:

- □ractices that □rovide reduction in the calculated runo□□□rom the contributin□area such as □reservation o□conservation areas, o□en s□ace desi□n, and reduction o□ clearin□.
- □ractices that □rovide reduction o□the contributin□WQ v such as □orous □avement, in□iltration □ractices, rainwater cisterns, rain □ardens, and others.

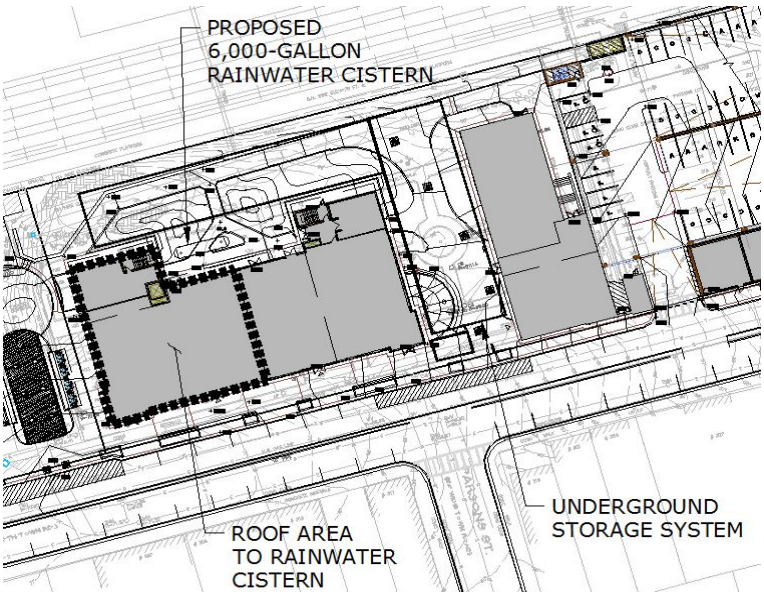
The desi□n □lans incor□orate a rainwater cistern that will achieve a volumetric runo□□reduction o□the re□uired □ ater □uality □olume (WQ v) □or the □ro□osed site.

Currently, the ±3.8-acre site is o□erated as a □ar□in□□acility servin□the ad□acent rail station. □□□roximately 2.6 acres o□existin□im□ervious sur□aces cover the □ro□erty (±68 □ercent o□the site), and a□□roximately 0.67 acres o□new im□ervious area will be added to the site a□ter the com□letion o□the redevelo□ment □ro□ect. □n-site soil testin□revealed the □resence o□shallow bedroc□throu□hout the site. Due to the nature o□the □ro□ect and the underlyin□soils, the use o□ in□iltration □ractices to achieve 100% o□the runo□□reduction re□uirement is un□easible. □here□ore, the minimum re□uired Runo□□Reduction □olume (RRv min) was determined □or the newly constructed im□ervious area usin□the □ollowin□e□uation:

RRv min = □(□)*(Rv)*(□i)] / 12, where:

□i = (□)*(□ic)
□i = im□ervious cover tar□eted □or runo□□reduction
S = □ydrolo□ic □oil □rou□(HSG) □□eci□ic Reduction Factor = 0.20 □or HSG D
□ic = □otal area o□new im□ervious cover
Rv = 0.05 + 0.009 (I), where I is 100% im□ervious
P = 90% Rain□all = 1.5 inches

□n order to meet the RRv minimum, which was calculated to be a□□roximately 700 cubic □eet, a rainwater cistern was selected □or storin□roo□runo□□□or a s□eci□ic buildin□area, as de□icted in the □i□ure below:




□he cistern is intended to use the harvested water □rom the roo□area □or lawn and landsca□in□ irri□ation, and the stora□e volume was estimated as a □unction o□the im□ervious area that drains to the unit. □t a minimum, the □ □v □rom the contributin□im□ervious area must be stored in the cistern, and the amount o□stora□e volume in the cistern dictates the volume o□water available □or reutili□ation. □he stormwater volume treated by the cistern exceeds the □ □v estimated □rom the contributin□roo□area. □here□ore, and the calculated RRv minimum can be a□□lied towards the total □ □v □or the site, thus reducin□the □ □v re□uirement □or the □ro□osed □ro□ect.

Com□utations are included in the □□endix, which includes the RRv com□utations, the re□uired and □rovided stora□e □or the cistern, and a water bud□et analysis that shows the lar□est irri□ation area that can □otentially be su□□lied by the water stored in the rainwater cistern, based on an estimated irri□ation demand □rom the □ea□month o□□uly.

- □te□4□ □□ly □tandard □tormwater Mana□ement □ractices to □ddress Remainin□□ □v

□he selection o□a stormwater mana□ement □ractice that would meet □ □v re□uirements □ollowed □uidelines described in Cha□ter 6 o□the manual. □his cha□ter outlines □er□ormance □ollutant removal and □ea□□low attenuation. □he □M□s include □onds, wetlands, in□iltration □ractices, □ilterin□systems, and o□en channels. □n initial screenin□o□the □M□s was □er□ormed to select the most a□□ro□riate □ractice □or the □ro□ect. □n□iltration □ractices will not be used because o□the □oorly drained soils and shallow de□th to bedroc□. □ur□ace

□ractices will not be used due to si□e constraints in the develo□ment. □here□ore, a □ro□rietary media □iltration chamber (Contech □tormFilter or a□□roved e□ual) is □ro□osed as the most a□□ro□riate □M□ □or the □ro□ect.

□he media □iltration chamber and accom□anyin□detention stora□e area will be si□ed to store 7□□ o□the re□uired □ □v and to □ilter runo□□at a rate that will meet the □0□ □otal □us□ended □olids removal re□uirement. □he re□uired □ □v was com□uted □rom the □□□D□C e□uation □ □v □ □x Rv x □□12. □he □rovided □ □v meets the re□uired treated rain□all amount o□1.□inches. □dditional re□uirements □or volume and □ea□rate control are described in □te□□.

- □te□□□□□ly □olume and □ea□Flow Rate Control □ractices i□□till □eeded to Meet Re□uirements

Cha□ter 4 o□the manual □rovides a uni□ied a□□roach □or si□in□□reen in□rastructure □or runo□□reduction and □M□s to meet □ollutant removal □oals, reduce channel erosion, □revent overban□□loodin□, and hel□control extreme □loods. □he □ew □or□□tormwater □i□in□ Criteria includes □ ater □uality □olume (□ □v), Runo□□Reduction □olume (RRv), Channel □rotection □olume (C□v), □verban□Flood (□□), and □xtreme □torm (□□).

□ □v and RRv re□uirements were □reviously discussed in this re□ort.

□he stream Channel □rotection □olume (C□v) is desi□ned to □rotect stream channels □rom erosion. □he C□□ re□uirement is met by □rovidin□24-hour extended detention o□the □ost-develo□ed one-year, 24-hour storm event in the stora□e volume o□the □ro□osed stormwater mana□ement area.

□he □verban□Flood (□□) control criterion is used to □revent an increase in the □re□uency and ma□nitude o□out-o□-ban□□loodin□□enerated by urban develo□ment. □he □□re□uires ade□uate stora□e to control the □ea□dischar□e □rom the □ostdevelo□ment 24-hour, 10-year

storm event to redevelopment rates. The storage volume for Qp will be been provided within the proposed stormwater management area.

The Extreme Flood Control Criteria (Qf) is intended to prevent flood damage from the large storm events such as the 100-year storm. The Qf requirement will be met by providing adequate storage in the detention area to attenuate the postdevelopment 100-year, 24-hour peak discharge rates to predevelopment rates and safely convey the 100-year flood.

The NYS DEC recommends the 10-year storm as a minimum sizing criterion for closed conveyance systems. The design of the proposed storm drainage systems meets and exceeds this requirement. The project would not result in adverse impacts or detrimental changes to the quality of stormwater runoff discharged from the site. No increases in peak rates of runoff would occur due to the proposed development.

Stormwater runoff will be managed on site by a proposed internal storm collection system. The system will convey runoff to a proposed stormwater management area located centrally on the site, which will be designed to control the peak flows from the proposed development to rates that are equal or less than the predevelopment peak flow rates for all studied storm events. In addition to proposed site drainage infrastructure, it is proposed to upgrade the existing storm system along Halstead Avenue from the site to its intersection with Garland Avenue.

Postconstruction water quality measures or Best Management Practices (BMPs) consist of deep sump catch basins, pretreatment water quality chambers, and detention storage. The proposed postconstruction BMPs and sediment and erosion control measures will provide quantity and quality control of the stormwater discharged into the town's drainage system. The BMPs will be strategically combined in series, thereby forming a stormwater treatment system that accomplishes multiple stormwater management objectives such as pollutant removal and peak flow attenuation.

In addition to the BMPs described above, a detailed Sediment and Erosion Control Plan (SESC Control Plan) will mitigate the short-term impacts of the development during construction. The SESC Control Plan will include descriptive specifications concerning land grading, topsoiling, temporary vegetative cover, permanent vegetative cover, vegetative cover selection and mulching, and erosion checks. All of the sediment and erosion controls provided will be designed in accordance with the *New York Standards and Specifications for Erosion and Sediment Control*, dated August 2005.

The proposed drainage system does not anticipate the significant reuse of any of the limited existing drainage systems on-site. The existing drainage facilities adjacent to the railroad tracks will remain but will have their tributary drainage areas significantly reduced.

Existing hydrologic conditions of the site will be maintained after construction. This will be achieved by maintaining the post-development peak flows at the same rates or below the predevelopment peak flows, thus providing zero net increase in peak flow rates from the proposed development. The ultimate discharge points from the site will be the same under existing and proposed conditions. Runoff generated from the proposed development will be handled on site, and the final discharge will be located within the site limits via a proposed stormwater management area to be located in the central portion of the site.

The computer program entitled *Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc., Version 8* was used for designing the proposed storm drainage collection system. Storm drainage computations performed include pipe capacity calculations, hydraulic grade line calculations, and gutter flow (inlet capacity) computations. The overall watershed was divided into subbasins to determine the drainage area and land coverage to each individual catch basin inlet. These values were used to determine the stormwater runoff to each inlet using the rational method. The rainfall intensities utilized in the storm drainage computations were obtained from the Highway Design Manual published by the New York State Department of Transportation.

□he □ro□osed storm draina□e systems were desi□ned accordin□ to the town's standards to □rovide ade□uate □i□e ca□acity to convey the 2□-year storm event. □n addition, the storm draina□e desi□n includes a com□lete hydraulic □rade line com□utation □or all storm draina□e systems desi□ned with ade□uate ca□acity to meet the 2□-year storm event. □ □utter □low analysis was □er□ormed on the storm draina□e systems in the □ro□osed roadway to ensure ade□uate s□acin□ and inlet ca□acity □or the 2□-year storm event. □n addition, the outlet □i□e □rom the □ro□osed outlet control structure o□ the stormwater mana□ement basin was si□ed with ade□uate ca□acity to convey the 100-year storm event. □ll storm draina□e com□utations are included in the □□endix o□ this re□ort.

□he □ro□osed stormwater mana□ement system □rovides suitable conveyance o□ stormwater runo□□ with the attenuation o□□ea□ rates o□ runo□□ while maintainin□ stormwater □uality □rom the □ro□ect site. □he desi□n o□ the stormwater mana□ement system minimi□es □otential im□acts to wetland areas, watercourses, storm draina□e systems, and develo□ed areas downstream o□ the site.

## IV. HYDROLOGIC ANALYSIS

□ detailed hydrolo□ic study has been □er□ormed to determine the existin□ and □ro□osed □ea□ rates o□ runo□□ □rom the □ro□ect site. □his study □rovided □uidance in desi□nin□ the □ro□osed stormwater mana□ement system □or the □ro□ect.

□n order to analy□e the □redevelo□ment and □ostdevelo□ment □ea□ □low rates □rom the site, two hydrolo□ic study areas consistin□ o□ three subwatersheds encom□assin□ the entire □ro□osed □ro□ect area were delineated based on the current site conditions. □hese hydrolo□ic study areas are the intersection o□□alstead □venue with □a□land □venue to the east o□ the site, desi□nated in this study as □nalysis □oint □, and the intersection o□□alstead □venue with □arrison □venue to the west o□ the site, desi□nated as □nalysis □oint □. □hese two areas were chosen based on the □act that all stormwater runo□□ □rom the site drains to one o□ these two locations. □he existin□ subwatersheds were divided □urther and modi□ied to re□ect the □ro□osed chan□es to the site and

to analyze the two study areas under proposed conditions. The total combined watershed area delineated is approximately 4.57 acres under both existing and proposed conditions. A watershed map for both existing and proposed conditions is included in the appendix of this report.

The principal method of predicting the surface water runoff rates utilized in this analysis is a computer program entitled *Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc, Version 8.* The *Hydrographs* program is a computer model that utilizes the methodologies set forth in the Technical Release No. 55 (TR-55) manual and Technical Release No. 20 (TR-20) computer model, originally developed by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), formerly known as the Soil Conservation Service (SCS). The *Hydrographs* computer modeling program is primarily used for conducting hydrology studies such as this.

The *Hydrographs* computer program forecasts the rate of surface water runoff and river flow rates based upon several factors. The input data includes information on land use, hydrologic soil type, vegetation, contributing watershed area, time of concentration, rainfall data, storage volumes, and the hydraulic capacity of structures. The computer model predicts the amount of runoff as a function of time with the ability to include the attenuation effect due to dams, lakes, large wetlands, floodplains, and stormwater management basins. Runoff rates during specific rainstorms may vary due to different assumptions concerning soil moisture, water levels in ponds, snowmelt, and rainfall patterns. The input data for rainfalls with statistical recurrence frequencies of 1, 2, 10, 25, 50, and 100 years were obtained from the U.S. Weather Bureau Technical Papers and checked with the database available on the State of New York Department of Transportation website. The National Weather Service developed four synthetic storms to simulate rainfall patterns around the country. For analysis in Westchester County, New York, the type III rainfall pattern with a 24-hour duration is appropriate.

Due to the relatively small size of the watersheds, land use for the site under existing and proposed conditions was determined from field survey. Land use types used in the analysis

included □orested, □rassed or o□en s□ace, buildin□, and im□ervious (□aved) cover. □oil ty□es in the watershed were determined □rom the □RC□database □or □ estchester County, □ew □or□. For this analysis, the overall study area was determined to contain hydrolo□ic soil ty□e "urban land" as classi□ied by the □RC□.

□he existin□conditions were modeled with the *Hydrographs* com□uter □ro□ram to determine the □low rates □or the various storm events at each analysis □oint. □ revised model was develo□ed incor□oratin□the □ro□osed site conditions, and □lows obtained with the revised model were then com□ared to the results o□the existin□conditions model. □he com□arison o□the □redevelo□ment and □ostdevelo□ment □low rates illustrated whether □low rates had or had not been increased above the existin□condition. □□□low rates had been increased, stormwater detention was incor□orated into the □ro□osed model to attenuate □ea□□lows and meet the existin□condition □low rates. □he □RC□reservoir routin□subroutine utili□ed within the *Hydrographs* com□uter □ro□ram was used to desi□n the detention basin stora□e and outlet control re□uirements. □ll *Hydrographs* in□ut com□utations and model results are included in the □□endix o□this re□ort.

□tormwater mana□ement □or the □ro□ect was achieved by routin□the stormwater runo□□□rom the □ro□osed develo□ed area to the □ro□osed stormwater mana□ement area desi□nated as □□ast D□□□on the □ro□osed conditions watershed ma□. □y virtue o□□rovidin□detention stora□e □or water □uality treatment and channel □rotection, □ea□□low rates □rom the □ro□osed develo□ment will be miti□ated to □re-develo□ment conditions without the need □or additional controls. □he □ollowin□□ea□□low rates to each o□the analysis □oints were obtained □rom the *Hydrographs* hydrolo□y results□

***<u>Analysis Point A:</u>*** ***(Halstead / Oakland)***

**Hydrographs Analysis**

| | **Peak Flow Rates (cfs*)** | | | | | |
|---|---|---|---|---|---|---|
| **Storm Frequency (years)** | **1** | **2** | **10** | **25** | **50** | **100** |
| □xistin□Conditions | 10.7 | 13.1 | 20.9 | 2□.□ | 31.0 | 37.0 |
| □ro□osed Conditions □ ith Detention | 2.7 | 3.□ | □6 | 10.6 | 19.□ | 2□1 |

***Analysis Point B:*** ***(Halstead / Harrison)***

**Hydrographs Analysis**

| | **Peak Flow Rates (cfs*)** | | | | | |
|---|---|---|---|---|---|---|
| **Storm Frequency (years)** | **1** | **2** | **10** | **25** | **50** | **100** |
| □xistin□Conditions | 0.4 | 0.□ | 0.7 | 0.□ | 1.0 | 1.2 |
| □ro□osed Conditions □ □□ut Detention | 0.4 | 0.□ | 0.7 | 0.□ | 1.0 | 1.2 |

□c□s □cubic □eet □er second

□he summary o□results above shows that no increases in □ea□rates o□runo□□occurred to either o□the two analysis □oints examined in the hydrolo□ic analysis. Rather, a decrease □or all o□the storm events modeled can be antici□ated due to the stormwater mana□ement system and the detention □rovided.

□he results o□the hydrolo□ic analysis show that the □verban□Flood (□□) and □xtreme Flood Control Criteria (□F) desi□n criterion, as indicated in Cha□ter 4 o□the □ew □or□□tate □tormwater Mana□ement Desi□n Manual, has been met by the □ro□osed stormwater mana□ement desi□n. □n addition, com□utations have been □rovided in the □□endix to show that the Channel □rotection □olume (C□□) desi□n criterion has been met and that the stormwater mana□ement system is in accordance with the □tormwater Mana□ement Desi□n Manual. □he stormwater mana□ement system achieves the □oal o□attenuatin□the □ea□rates o□runo□□□rom the □ro□osed site minimi□in□□otential im□acts to existin□wetland areas, watercourses, storm draina□e systems, and develo□ed areas downstream o□the site.

## V. WATER QUALITY MANAGEMENT

□everal water □uality □eatures or □M□s are incor□orated into the stormwater mana□ement system desi□n to maintain water □uality both durin□construction and a□terward. □ll o□the □est Mana□ement control measures described in this section will serve to maintain water □uality o□ the stormwater runo□□□rom the □ro□osed develo□ment.

□tormwater runo□□□rom the □ro□osed site will be collected and conveyed via a subsur□ace □i□e and catch basin draina□e system. □he draina□e system will include catch basins with two-□oot sum□s that tra□coarse sediment. □n addition, □ro□rietary water □uality chambers have been □ro□osed and will be utili□ed □rior to the dischar□e o□the draina□e system to the □ro□osed stormwater mana□ement basin. □hese systems will be used as a □retreatment o□the stormwater with the □oal to increase the removal o□sus□ended solids, debris, and □loatables □rior to the □inal dischar□e □rom the site. □hese units were si□ed to □rovide treatment □or the runo□□□rom the WQ v desi□n storm and will be a □ro□rietary □ractice that has been veri□ied and acce□ted by the NYS DEC. □i□in□com□utations and some literature in□ormation □or *Vortechs™* units are included in the □□□endix o□this re□ort.

□he □ro□rietary stormwater □ilterin□system has been desi□ned in accordance with the most current NYS DEC □tormwater Mana□ement Desi□n Manual and will enhance water □uality by □ilterin□the re□uired WQ v. □he □ro□osed treatment structure is the Contech □tormFilter system (or a□□roved e□ual), which is listed as a veri□ied □ro□rietary stormwater mana□ement □ractice by NYS DEC. □ased on the □er□ormance criteria outlined in Cha□ter 6 o□the manual, the □ilter system has been desi□ned as a volume-based a□□roach, where 75% o□the re□uired WQ v is stored within the □ro□osed subsur□ace detention system and dischar□ed throu□h the □ractice. □torm events above the 90% rain□all event will by□ass the □ractice throu□h an outlet control structure to the receivin□street draina□e networ□. A rainwater cistern will be incor□orated into the desi□n to assist in treatin□water □uality as well. □ ater □uality com□utations have been included in the □□□endix o□this re□ort.

□n addition to the water □uality measures described above, a detailed □ediment and □rosion (S&E ) Control □lan has been develo□ed to miti□ate the short-term im□acts o□the develo□ment durin□construction. □he S&E Control □lan will include descri□tive s□eci□ications concernin□ land □radin□, to□soilin□, tem□orary ve□etative cover, □ermanent ve□etative cover, ve□etative cover selection and mulchin□, and erosion chec□s. Details have been □rovided □or all erosion

controls with corres□ondin□labels on the □□□Control □lan. □ll o□the sediment and erosion controls □rovided have been desi□ned in accordance with the □ew □or□□tandards and □□eci□ications □or □rosion and □ediment Control dated □u□ust 200□.

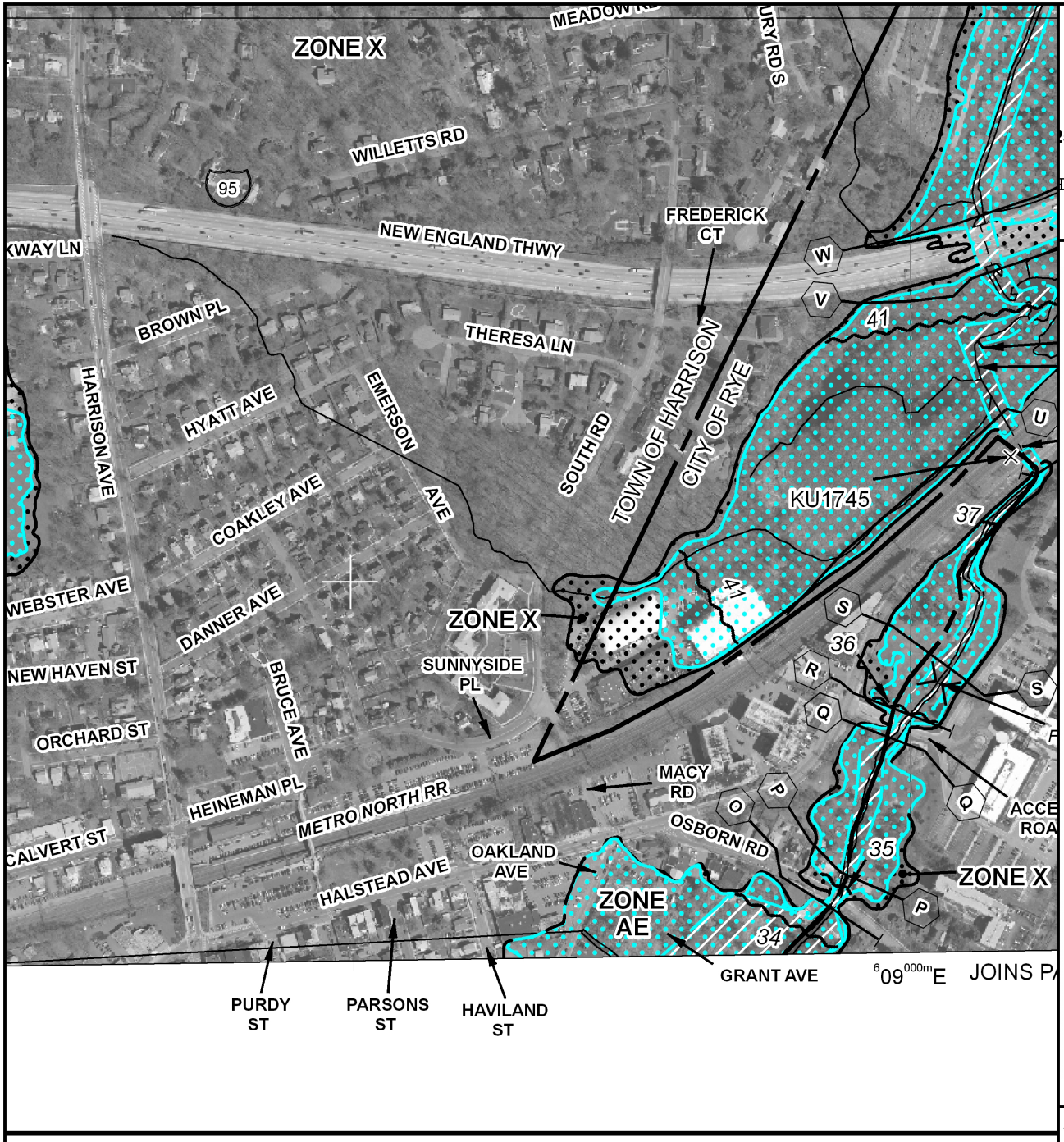
□he construction areas will be surrounded by □eotextile sediment □ilter □ence, which will be □orti□ied with sta□ed haybales u□□radient o□the wetland areas. □ construction entrance will be □rovided alon□with several tem□orary to□soil stoc□□ile areas encircled with sediment □ilter □encin□. □n addition, erosion control blan□ets will be □ro□osed on critical slo□es to □rotect the newly created slo□es until □ermanent ve□etation can be established. □nlet □rotection will be □rovided □or each catch basin and yard drain inlet to □revent sediment □rom enterin□the storm draina□e system durin□construction.

□em□orary diversion berms and swales will be □rovided to direct the stormwater runo□□□rom the site to the tem□orary sediment tra□s durin□construction. □he swales will include stone chec□ dams to slow □otential erosive velocities. □he □□□controls are to be modi□ied with the chan□in□□rades on site to ensure the □rotection o□the surroundin□areas. □he □□□Control □lan will □rovide □rotection o□the existin□wetlands and watercourses by □reventin□sediment trans□ort to areas down□radient o□the site durin□construction and □rior to establishment o□ □ermanent stable sur□ace treatments.

121□-66-4-□2412-r□t.doc

# STORM DRAINAGE COMPUTATIONS

# FEMA FLOOD MAP




MAP SCALE 1" = 500'

250 0 500 1000 FEET

METER

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0352F

# FIRM

FLOOD INSURANCE RATE MAP

for WESTCHESTER COUNTY, NEW YORK
ALL JURISDICTIONS

CONTAINS:

| COMMUNITY | NUMBER |
|---|---|
| HARRISON, TOWN OF | 360912 |
| RYE, CITY OF | 360931 |

PANEL 352 OF 426
MAP SUFFIX: F
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
36119C0352F

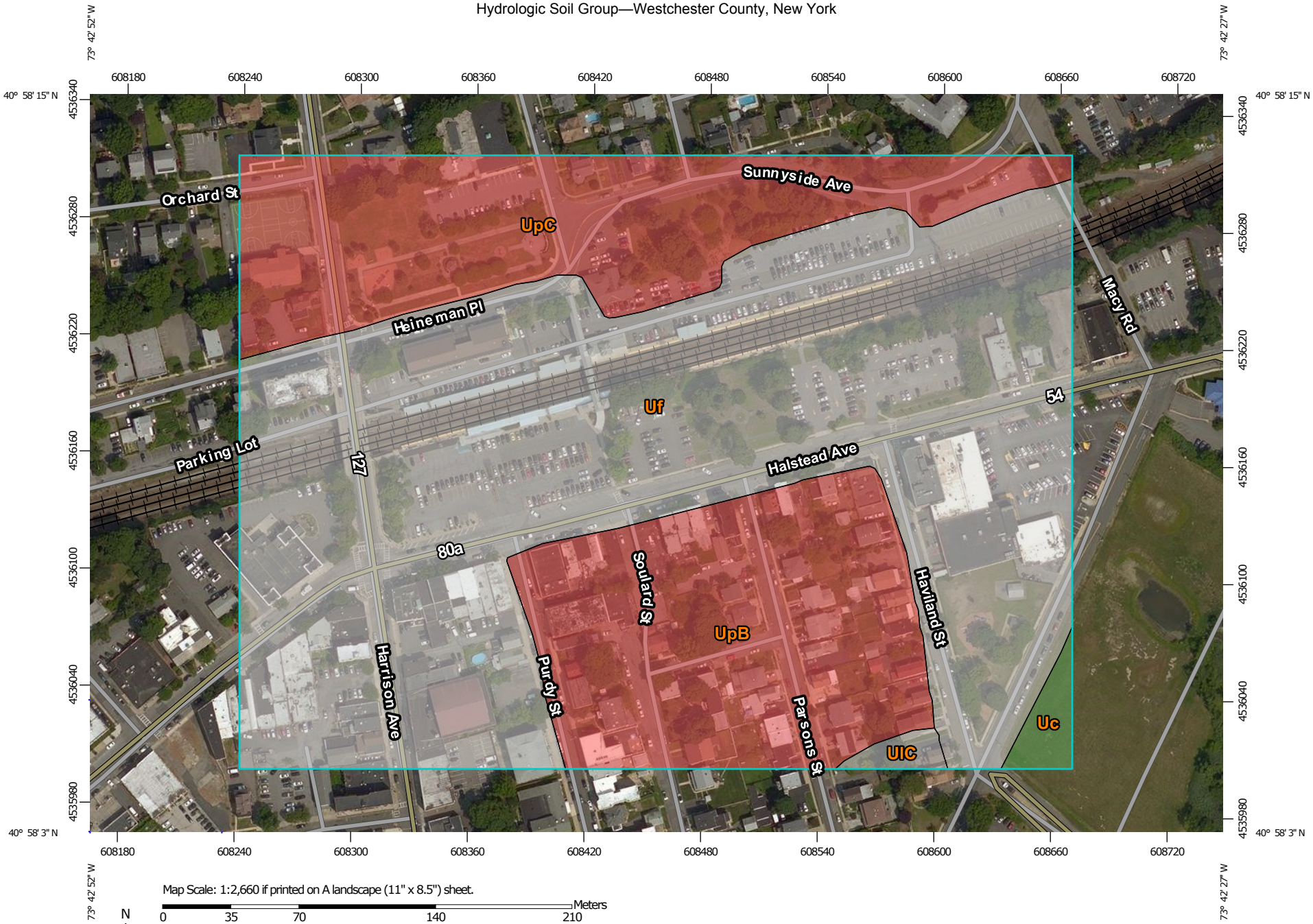
EFFECTIVE DATE
SEPTEMBER 28, 2007

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

# NRCS HYDROLOGIC SOIL GROUP REPORT

# Hydrologic Soil Group—Westchester County, New York




Map Scale: 1:2,660 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

## MAP LEGEND

**Area of Interest (AOI)**

Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

**Soil Rating Lines**

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

**Soil Rating Points**

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

**Water Features**

Streams and Canals

**Transportation**

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**

Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 11, Sep 25, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 21, 2014—Aug 27, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Hydrologic Soil Group

| Hydrologic Soil Group— Summary by Map Unit — Westchester County, New York (NY119) | | | | |
|---|---|---|---|---|
| **Map unit symbol** | **Map unit name** | **Rating** | **Acres in AOI** | **Percent of AOI** |
| Uc | Udorthents, wet substratum | A/D | 0.3 | 1.0% |
| Uf | Urban land | | 20.1 | 60.3% |
| UlC | Urban land-Charlton-Chatfield complex, rolling, very rocky | | 0.2 | 0.6% |
| UpB | Urban land-Paxton complex, 3 to 8 percent slopes | D | 6.4 | 19.3% |
| UpC | Urban land-Paxton complex, 8 to 15 percent slopes | D | 6.3 | 18.9% |
| **Totals for Area of Interest** | | | **33.4** | **100.0%** |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* *None Specified*

*Tie-break Rule:* Higher

# STORMWATER OPERATIONS & MAINTENANCE MANUAL

# STORMWATER OPERATIONS & MAINTENANCE MANUAL

**AVALON AT HARRISON**
**HALSTEAD AVENUE**
**TOWN/VILLAGE OF HARRISON**
**WESTCHESTER COUNTY, NEW YORK**

June 30, 2016

MM□□121□-74-3

***Prepared for:***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## 1.0 INTRODUCTION

□□ter construction is com□leted, there will be a need to □eriodically maintain stormwater systems on the □ro□erty. □he stormwater system consists o□□i□in□, catch basins, water □uality vaults, and detention structures.

□n order to ensure o□timal □er□ormance o□the system, the □ollowin□stormwater maintenance □ro□ram has been established. □his manual □rovides an outline o□the o□eration □rocedures but may be ad□usted based u□on s□eci□ic site conditions.

□ re□resentative o□□valon □ay Communities will be res□onsible □or the maintenance o□ stormwater control structures. □he name and contact in□ormation □or this re□resentative are to be determined.

## 2.0 STORMWATER SYSTEM ELEMENTS

### 2.1 Proprietary Water Quality Chambers

□e□ore bein□ dischar□ed to the under□round in□iltration chambers, stormwater □low □rom the roadway will be directed to water □uality chambers. □hese structures will remove □loatable constituents □rom the □low be□ore the water is dischar□ed to the in□iltration chambers. □il, scum, and sediment will eventually accumulate and can be removed throu□h a manhole located at the to□o□the se□arator. □hese chambers should be maintained in accordance with the manu□acturer□s □uidelines attached herewith. □ aste material will be □ro□erly dis□osed o□o□□the site in accordance with state and □ederal □uidelines.

### 2.2 Catch Basins

Catch basins are desi□ned with two-□oot minimum de□th sum□s □or the □ur□ose o□collectin□ coarse sediment. □ll catch basins should be ins□ected two times □er year, ty□ically when the site is swe□t in the s□rin□a□ter winter sandin□and in the □all a□ter all the leaves have □allen. □ite

swee□in□shall be □rovided between □□ril 1□and May 1□each s□rin□.

□ediment should be removed when it extends to within six inches o□the outlet □i□e invert or not less than once □er year. Cleanout with a vacuum truc□is □enerally the best and most convenient method. □he sediment shall be dis□osed o□in an a□□roved o□□-site location in accordance with town and state re□uirements.

## 2.3 Roadway and Parking Areas

□he □ar□in□area and roadway shall be swe□t annually. □wee□in□should occur in the s□rin□ a□ter winter sandin□, between □□ril 1□and May 1□. □alt alternatives shall be used durin□the winter months □or deicin□.

## 2.4 Lawn and Vegetated Areas

□e□etated cover shall be maintained on all earth sur□aces to minimi□e soil erosion. □se o□ □ertili□er should be minimi□ed and a□□lied usin□□rudent a□□lication □rocedures.

## 3.0 INSPECTION PROCEDURES

□se the attached inventory sheets to note any noncom□liance durin□each ins□ection. Fill out notes accordin□to the attached re□uirements o□each structure notin□shortcomin□s, □roblems, and re□uired maintenance on each.

□he inventory sheets shall include the □ollowin□□

1) □he date o□ins□ection
2) □ame o□ins□ector
3) □e□etation (invasive s□ecies)
4) Fences
□) □nlet and outlet channels

6) □nder□round draina□e structures□level s□readers

7) □ediment load

□) Ri□ra□□ilter □abric

9) □ny other item that could a□□ect the □ro□er □unction o□the □acility

CONTECH STORMWATER SOLUTIONS

# StormFilter Inspection and Maintenance Procedures

The Stormwater Management StormFilter®

## Maintenance Guidelines

The primary purpose of the Stormwater Management StormFilter® is to filter out and prevent pollutants from entering our waterways. Like any effective filtration system, periodically these pollutants must be removed to restore the StormFilter to its full efficiency and effectiveness.

Maintenance requirements and frequency are dependent on the pollutant load characteristics of each site. Maintenance activities may be required in the event of a chemical spill or due to excessive sediment loading from site erosion or extreme storms. It is a good practice to inspect the system after major storm events.

## Maintenance Procedures

Although there are likely many effective maintenance options, we believe the following procedure is efficient and can be implemented using common equipment and existing maintenance protocols. A two step procedure is recommended as follows:

1. Inspection

Inspection of the vault interior to determine the need for maintenance.

2. Maintenance

Cartridge replacement

Sediment removal

## Inspection and Maintenance Timing

At least one scheduled inspection should take place per year with maintenance following as warranted.

First, an inspection should be done before the winter season. During the inspection the need for maintenance should be determined and, if disposal during maintenance will be required, samples of the accumulated sediments and media should be obtained.

Second, if warranted, a maintenance (replacement of the filter cartridges and removal of accumulated sediments) should be performed during periods of dry weather.

In addition to these two activities, it is important to check the condition of the StormFilter unit after major storms for potential damage caused by high flows and for high sediment accumulation that may be caused by localized erosion in the drainage area. It may be necessary to adjust the inspection/maintenance schedule depending on the actual operating conditions encountered by the system. In general, inspection activities can be conducted at any time, and maintenance should occur, if warranted, in late summer to early fall when flows into the system are not likely to be present.

## Maintenance Frequency

The primary factor controlling timing of maintenance of the StormFilter is sediment loading.

A properly functioning system will remove solids from water by trapping particulates in the porous structure of the filter media inside the cartridges. The flow through the system will naturally decrease as more and more particulates are trapped. Eventually the flow through the cartridges will be low enough to require replacement. It may be possible to extend the usable span of the cartridges by removing sediment from upstream trapping devices on a routine as-needed basis in order to prevent material from being re-suspended and discharged to the StormFilter treatment system.

Site conditions greatly influence maintenance requirements. StormFilter units located in areas with erosion or active construction may need to be inspected and maintained more often than those with fully stabilized surface conditions.

The maintenance frequency may be adjusted as additional monitoring information becomes available during the inspection program. Areas that develop known problems should be inspected more frequently than areas that demonstrate no problems, particularly after major storms. Ultimately, inspection and maintenance activities should be scheduled based on the historic records and characteristics of an individual StormFilter system or site. It is recommended that the site owner develop a database to properly manage StormFilter inspection and maintenance programs.

Prior to the development of the maintenance database, the following maintenance frequencies should be followed:

**Inspection**

One time per year

After major storms

**Maintenance**

As needed, based on results of inspection (The average maintenance lifecycle is approximately 1-3 years)

Per Regulatory requirement

In the event of a chemical spill

Frequencies should be updated as required. The recommended initial frequency for inspection is one time per year. StormFilter units should be inspected after major storms.

Sediment removal and cartridge replacement on an as needed basis is recommended unless site conditions warrant.

Once an understanding of site characteristics has been established, maintenance may not be needed for one to three years, but inspection is warranted and recommended annually.

## Inspection Procedures

The primary goal of an inspection is to assess the condition of the cartridges relative to the level of visual sediment loading as it relates to decreased treatment capacity. It may be desirable to conduct this inspection during a storm to observe the relative flow through the filter cartridges. If the submerged cartridges are severely plugged, then typically large amounts of sediments will be present and very little flow will be discharged from the drainage pipes. If this is the case, then maintenance is warranted and the cartridges need to be replaced.

**Warning**: In the case of a spill, the worker should abort inspection activities until the proper guidance is obtained. Notify the local hazard control agency and CONTECH Stormwater Solutions immediately.

To conduct an inspection:

**Important:** Inspection should be performed by a person who is familiar with the operation and configuration of the StormFilter treatment unit.

1. If applicable, set up safety equipment to protect and notify surrounding vehicle and pedestrian traffic.
2. Visually inspect the external condition of the unit and take notes concerning defects/problems.

3. Open the access portals to the vault and allow the system vent.
4. Without entering the vault, visually inspect the inside of the unit, and note accumulations of liquids and solids.
5. Be sure to record the level of sediment build-up on the floor of the vault, in the forebay, and on top of the cartridges. If flow is occurring, note the flow of water per drainage pipe. Record all observations. Digital pictures are valuable for historical documentation.
6. Close and fasten the access portals.
7. Remove safety equipment.
8. If appropriate, make notes about the local drainage area relative to ongoing construction, erosion problems, or high loading of other materials to the system.
9. Discuss conditions that suggest maintenance and make decision as to weather or not maintenance is needed.

### Maintenance Decision Tree

The need for maintenance is typically based on results of the inspection. The following Maintenance Decision Tree should be used as a general guide. (Other factors, such as Regulatory Requirements, may need to be considered)

1. Sediment loading on the vault floor.
   a. If >4" of accumulated sediment, maintenance is required.
2. Sediment loading on top of the cartridge.
   a. If >1/4" of accumulation, maintenance is required.
3. Submerged cartridges.
   a. If >4" of static water in the cartridge bay for more that 24 hours after end of rain event, maintenance is required.
4. Plugged media.
   a. If pore space between media granules is absent, maintenance is required.
5. Bypass condition.
   a. If inspection is conducted during an average rain fall event and StormFilter remains in bypass condition (water over the internal outlet baffle wall or submerged cartridges), maintenance is required.
6. Hazardous material release.
   a. If hazardous material release (automotive fluids or other) is reported, maintenance is required.
7. Pronounced scum line.
   a. If pronounced scum line (say ≥ 1/4" thick) is present above top cap, maintenance is required.
8. Calendar Lifecycle.
   a. If system has not been maintained for 3 years maintenance is required.

**Assumptions**

- No rainfall for 24 hours or more
- No upstream detention (at least not draining into StormFilter)
- Structure is online
- Outlet pipe is clear of obstruction
- Construction bypass is plugged

## Maintenance

Depending on the configuration of the particular system, maintenance personnel will be required to enter the vault to perform the maintenance.

**Important**: If vault entry is required, OSHA rules for confined space entry must be followed.

Filter cartridge replacement should occur during dry weather. It may be necessary to plug the filter inlet pipe if base flows is occurring.

Replacement cartridges can be delivered to the site or customers facility. Information concerning how to obtain the replacement cartridges is available from CONTECH Stormwater Solutions.

**Warning**: In the case of a spill, the maintenance personnel should abort maintenance activities until the proper guidance is obtained. Notify the local hazard control agency and CONTECH Stormwater Solutions immediately.

To conduct cartridge replacement and sediment removal maintenance:

1. If applicable, set up safety equipment to protect maintenance personnel and pedestrians from site hazards.
2. Visually inspect the external condition of the unit and take notes concerning defects/problems.
3. Open the doors (access portals) to the vault and allow the system to vent.
4. Without entering the vault, give the inside of the unit, including components, a general condition inspection.
5. Make notes about the external and internal condition of the vault. Give particular attention to recording the level of sediment build-up on the floor of the vault, in the forebay, and on top of the internal components.
6. Using appropriate equipment offload the replacement cartridges (up to 150 lbs. each) and set aside.
7. Remove used cartridges from the vault using one of the following methods:

### Method 1:

A. This activity will require that maintenance personnel enter the vault to remove the cartridges from the under drain manifold and place them under the vault opening for lifting (removal). Unscrew (counterclockwise rotations) each filter cartridge from the underdrain connector. Roll the loose cartridge, on edge, to a convenient spot beneath the vault access.

Using appropriate hoisting equipment, attach a cable from the boom, crane, or tripod to the loose cartridge. Contact CONTECH Stormwater Solutions for suggested attachment devices.

**Important:** Note that cartridges containing leaf media (CSF) do not require unscrewing from their connectors. Take care not to damage the manifold connectors. This connector should remain installed in the manifold and could be capped during the maintenance activity to prevent sediments from entering the underdrain manifold.

B. Remove the used cartridges (up to 250 lbs. each) from the vault.

**Important:** Care must be used to avoid damaging the cartridges during removal and installation. The cost of repairing components damaged during maintenance will be the responsibility of the owner unless CONTECH Stormwater Solutions performs the maintenance activities and damage is not related to discharges to the system.

C. Set the used cartridge aside or load onto the hauling truck.

D. Continue steps a through c until all cartridges have been removed.

### Method 2:

A. Enter the vault using appropriate confined space protocols.

B. Unscrew the cartridge cap.

C. Remove the cartridge hood screws (3) hood and float.

D. At location under structure access, tip the cartridge on its side.

**Important**: Note that cartridges containing media other than the leaf media require unscrewing from their threaded connectors. Take care not to damage the manifold connectors. This connector should remain installed in the manifold and capped if necessary.

D. Empty the cartridge onto the vault floor. Reassemble the empty cartridge.

E. Set the empty, used cartridge aside or load onto the hauling truck.

F. Continue steps a through e until all cartridges have been removed.

8. Remove accumulated sediment from the floor of the vault and from the forebay. This can most effectively be accomplished by use of a vacuum truck.
9. Once the sediments are removed, assess the condition of the vault and the condition of the connectors. The connectors are short sections of 2-inch schedule 40 PVC, or threaded schedule 80 PVC that should protrude about 1" above the floor of the vault. Lightly wash down the vault interior.
   a. If desired, apply a light coating of FDA approved silicon lube to the outside of the exposed portion of the connectors. This ensures a watertight connection between the cartridge and the drainage pipe.
   b. Replace any damaged connectors.
10. Using the vacuum truck boom, crane, or tripod, lower and install the new cartridges. Once again, take care not to damage connections.
11. Close and fasten the door.
12. Remove safety equipment.
13. Finally, dispose of the accumulated materials in accordance with applicable regulations. Make arrangements to return the used empty cartridges to CONTECH Stormwater Solutions.

## Related Maintenance Activities -

**Performed on an as-needed basis**

StormFilter units are often just one of many structures in a more comprehensive stormwater drainage and treatment system.

In order for maintenance of the StormFilter to be successful, it is imperative that all other components be properly maintained. The maintenance/repair of upstream facilities should be carried out prior to StormFilter maintenance activities.

In addition to considering upstream facilities, it is also important to correct any problems identified in the drainage area. Drainage area concerns may include: erosion problems, heavy oil loading, and discharges of inappropriate materials.

## Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads.

Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.

RECYCLED PAPER

800.925.5240
contechstormwater.com

## Support

- Drawings and specifications are available at contechstormwater.com.
- Site-specific design support is available from our engineers.

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CONTECH Construction Products Inc. provides site solutions for the civil engineering industry. CONTECH's portfolio includes bridges, drainage, sanitary sewer, stormwater and earth stabilization products. For information on other CONTECH division offerings, visit contech-cpi.com or call 800.338.1122

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# Inspection Report

Date: _____ Personnel: _____

Location: _____ System Size: _____

System Type: Vault ☐ Cast-In-Place ☐ Linear Catch Basin ☐ Manhole ☐ Other ☐

Sediment Thickness in Forebay: _____ Date: _____

Sediment Depth on Vault Floor: _____

Structural Damage: _____

Estimated Flow from Drainage Pipes (if available): _____

Cartridges Submerged: Yes ☐ No ☐ Depth of Standing Water: _____

StormFilter Maintenance Activities (check off if done and give description)

☐ Trash and Debris Removal: _____

☐ Minor Structural Repairs: _____

☐ Drainage Area Report _____

Excessive Oil Loading: Yes ☐ No ☐ Source: _____

Sediment Accumulation on Pavement: Yes ☐ No ☐ Source: _____

Erosion of Landscaped Areas: Yes ☐ No ☐ Source: _____

Items Needing Further Work: _____

Owners should contact the local public works department and inquire about how the department disposes of their street waste residuals.

Other Comments:

_____

_____

_____

_____

_____

_____

_____

_____

Review the condition reports from the previous inspection visits.

# StormFilter Maintenance Report

Date: _____ Personnel: _____

Location: _____ System Size: _____

System Type: Vault ☐ Cast-In-Place ☐ Linear Catch Basin ☐ Manhole ☐ Other ☐

List Safety Procedures and Equipment Used: _____

_____

_____

## System Observations

Months in Service:

Oil in Forebay: Yes ☐ No ☐

Sediment Depth in Forebay: _____

Sediment Depth on Vault Floor: _____

Structural Damage: _____

## Drainage Area Report

Excessive Oil Loading: Yes ☐ No ☐ Source: _____

Sediment Accumulation on Pavement: Yes ☐ No ☐ Source: _____

Erosion of Landscaped Areas: Yes ☐ No ☐ Source: _____

## StormFilter Cartridge Replacement Maintenance Activities

Remove Trash and Debris: Yes ☐ No ☐ Details: _____

Replace Cartridges: Yes ☐ No ☐ Details: _____

Sediment Removed: Yes ☐ No ☐ Details: _____

Quantity of Sediment Removed (estimate?):

Minor Structural Repairs: Yes ☐ No ☐ Details: _____

Residuals (debris, sediment) Disposal Methods: _____

Notes:

_____

_____

_____

_____

_____

_____

_____

# WATER QUALITY VOLUME (WQv) COMPUTATIONS

# W□□□r □ □□□□□□ V□□□□ □ C□□□□□□□□□□□

Pro□ect□Harri□on TOD □□1218-74□ By□ S□□ Date□7/1/16
Location□Harri□on, NY Chec□ed□FAB Date□7/1/16

| B□□□□ N□□ □ | E□□r□ S□□□ | | | | |
|---|---|---|---|---|---|
| R□□□□□□□P | 1.5 in. | | | | a |
| Ar□□□A | 3.79 ac | | | | □ |
| I□ □□r□□□□ C□□□r Ar□□ | 3.26 ac | | | | c |
| □ I□ □□r□□□□□I | 86 □ | | | | |
| V□□□□ □□r□□ R□□□□C□□□□□R | 0.824 | | | | d |
| | | | | | |
| W□□□r □ □□□□□□ V□□□□ □□W□V | 0.390 ac-□t | | | | e |
| | 17007 c□ | | | | |

a 90□ Rain□all E□ent N□m□er□deri□ed □rom Fig□re 4.1 NYS Storm□ater Management De□ign Man□al 2015

□ Site area

c Site imper□io□□co□erage

d R=0.05□0.009□I□Section 4.2 NYS Storm□ater Management De□ign Man□al 2015

e □ □V=P□R□A/12□Section 4.2 NYS Storm□ater Management De□ign Man□al 2015

# RUNOFF REDUCTION VOLUME (RRv) COMPUTATIONS

# R□□□□□R□d□□□□□ V□□□□ □C□□□□□□□□□□

Pro□ect□Harri□on TOD □□1218-74□ By□ S□□ Date□7/1/16
Location□Harri□on, NY Chec□ed□FAB Date□7/1/16

| | | | | | |
|---|---|---|---|---|---|
| **B□□□□ N□□ □** | **E□□r□ S□□□** | | | | |
| **R□□□□□□□P** | 1.5 in. | | | | a |
| **S□□□□□□□ R□d□□□□□ F□□□□r□ S** | 0.20 | | | | □ |
| **N□□ I□ □□r□□□□□ C□□□r Ar□□□A□□** | 0.67 ac | | | | c |
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| | | | | | |
| **R□□□□□R□d□□□□□ V□□□□ □□RRV□ □□** | 0.016 ac-□t | | | | e |
| | 693 c□ | | | | |

[a] 90□ Rain□all E□ent N□m□er□□rom Fig□re 4.1 NYS Storm□ater Management De□ign Man□al □SMDM□2015

□ Ba□ed □pon Hydrologic Soil Gro□p□pre□ent at the □ite□Section 4.3 NYS SMDM 2015

[c] Ne□ imper□io□□co□erage □rom pre- to po□t-de□elopment

[d] R=0.05□0.009□I□Section 4.2 NYS SMDM 2015

[e] RRVmin=□Section 4.2 NYS SMDM 2015

Engineering, Planning,
Landscape Architecture
and Environmental Science

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JOB Harrison TOD (1218-74)
SHEET NO. 1 OF 2
CALCULATED BY FAB DATE 6/30/16
CHECKED BY DATE
SCALE Green Infrastructure Design

— Green Infrastructure :

Required $RR_{v_{min}} = 693\ ft^3 \approx 700\ ft^3$

- Cistern for approximately half of the proposed building roof located to the east of the central courtyard.

Contributing area ≈ 6,700 $ft^2$

$$WQV = \frac{(P)(R_v)(A)}{12}$$, where: P = 90% rainfall number = 1.5"
$R_v = 0.05 + 0.009(I)$
$= 0.05 + 0.009(100) = 0.95$
A = Drainage Area to practice ($ft^2$)

$$WQV = \frac{1.5'' \times 0.95 \times 6{,}700\ ft^2}{12} = 795\ ft^3 \text{ treated}$$ ◀

$Vol_{cistern} = WQV \times 7.5\ gal/ft^3$

$Vol_{cistern} = 795\ ft^3 \times 7.5\ gal/ft^3 = 5{,}962\ ft^3 \approx$ 6,000-gall cistern ◀

Approximate size (Xerxes fiberglass tank)

6' diameter ⇒ 6' - 3 1/2" diameter, 30' - 8 3/4"

- Irrigation Demand

— Trial 1 ⇒ ± 13,000 $ft^2$ of grass

Rule of thumb: 1,000 $ft^2$ of roof generates 625 gallons of water during a 1" storm event
$= 0.62\ gal/ft^2$

Engineering, Planning,
Landscape Architecture
and Environmental Science

MILONE & MACBROOM®
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733

JOB Harrison TOD (1218-74)
SHEET NO. 2 OF 2
CALCULATED BY FAB DATE 6/30/16
CHECKED BY DATE
SCALE Green Infrastructure Design

- Contributing roof area = 6,700 $ft^2$

$6{,}700\ ft^2 \times 0.62\ gal/ft^2$

$\Rightarrow \pm$ 4,154 gal of water can be harvested during a 1" storm event

- Estimated harvested water for peak month of July:

July 2010 = 3.27 in
July 2011 = 2.36 in
July 2012 = 1.51 in
July 2013 = 5.98 in
July 2014 = 6.41 in
July 2015 = 4.07 in

Average ≈ 3.93 in

1 inch = 4,154 gal $\Rightarrow$ $x$ = 16,235 gallons
3.93 inch = $x$

- At 1 inch/week of irrigation demand:

0.62 gal of water/$ft^2$ lawn

13,000 $ft^2$ of grass × 0.62 gal/$ft^2$ ≈ 8,060 gal/week

= 32,240 gal/month > 16,235 gal

NOT OK

- Trial 2 $\Rightarrow \pm$ 6,000 $ft^2$ of grass

6,000 $ft^2$ × 0.62 gal/$ft^2$ ≈ 3,720 gal/week

= 14,880 gal/month < 16,235 gal OK

# CHANNEL PROTECTION VOLUME (CPv) COMPUTATIONS

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| CN | 93 | | | | a |
| T□ | 0.10 hr. | | | | |
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| Fr□□□□□□□ | 1 year | | | | |
| R□□□□□□□P | 2.9 in. | | | | □ |
| I□□□□□ A□□r□□□□□□I□ | 0.151 in. | | | | c |
| I□P | 0.052 | | | | |
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| □□□□□ | 0.030 | | | | e |
| V□Vr | 0.64 | | | | □ |
| R□□□□□□□ | 2.16 in. | | | | g |
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d Deri□ed □rom E□hi□it 4-III □rom NRCS TR-55 Ur□an Hydrology □or Small □ ater□hed□

e Deri□ed □rom Fig□re 8.5 □rom NYS Storm□ater Management De□ign Man□al 2015

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Location□Harri□on, NY Chec□ed□FAB Date□7/1/16
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# HYDROLOGY INPUT COMPUTATIONS

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Location□Harri□on, NY Chec□ed□FAB Date□7/1/16
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| N/A | Imper□io□□ | 98 | | | 0.18 | 17.49 |
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CN □□eighted□= $\frac{\text{total prod□ct}}{\text{total area}}$ = $\frac{25.70}{0.28}$ U□e CN = **93**

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CN □□eighted□= $\frac{\text{total prod□ct}}{\text{total area}}$ = $\frac{61.93}{0.63}$ U□e CN = **98**

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| N/A | Imper□io□□ | 98 | | | 0.68 | 66.82 |
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CN □□eighted□= $\frac{\text{total prod□ct}}{\text{total area}}$ = $\frac{74.86}{0.78}$ U□e CN = **96**

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Pro□ect□Harri□on TOD □□1218-74□ By□ S□□ Date□7/1/16
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| N/A | Imper□io□□ | 98 | | | 0.02 | 1.57 |
| A□□□med D | Gra□□, □air condition | 84 | | | 0.21 | 18.03 |
| A□□□med D | □ ood□, □air condition | 79 | | | 0.07 | 5.84 |
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CN □□eighted□= $\frac{\text{total prod□ct}}{\text{total area}}$ = $\frac{25.45}{0.30}$ U□e CN = **84**

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Location□Harri□on, NY Chec□ed□FAB Date□7/1/16
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| A□□□med D | Gra□□, □air condition | 84 | | | 0.21 | 17.24 |
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| | | | | Total□= | 0.33 | 29.23 |
| | | | | | □ 0.00051 | □□mi□ |

CN □□eighted□= $\frac{\text{total prod□ct}}{\text{total area}}$ = $\frac{29.23}{0.33}$ U□e CN = **89**

# C□r□□ N□□ □□r C□□□□□□□□□□

Pro□ect□Harri□on TOD □□1218-74□ By□ S□□ Date□7/1/16
Location□Harri□on, NY Chec□ed□FAB Date□7/1/16
Circle one□ ***Present*** De□eloped □ ater□hed□Hal□tead A□e □Ea□t□

| S□□□N□□ □ □□d □□dr□□□□□ Gr□□□ □□□□□□d□□ A□ | C□□□r D□□□r□□□□□ □□□□□r □□□□□r□□□□ □□□□□□d □□dr□□□□□ □□□d□□□□□ □□r□□□□□□ □□r□□□□□ □□□□□□□□□□d□□□□□□□□□d □□ □□r□□□□□ □r□□ r□□□□ | CN V□□□□ □□ T□□□□□□ | F□□□r□□□□ | F□□□r□□□□ | Ar□□ A□r□□ S□. Ft. □ | Pr□d□□□ □□ CN □Ar□□ |
|---|---|---|---|---|---|---|
| N/A | Imper□io□□ | 98 | | | 1.23 | 120.81 |
| A□□□med D | Gra□□, □air condition | 84 | | | 0.39 | 33.12 |
| A□□□med D | □ ood□, □air condition | 79 | | | 0.17 | 13.50 |
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| | | | | Total□= | 1.80 | 167.44 |
| | | | | | □ 0.00281 | □□ mi□ |

CN □□eighted□= $\frac{\text{total prod□ct}}{\text{total area}}$ = $\frac{167.44}{1.80}$ U□e CN = **93**

# C□r□□ N□□ □□r C□□□□□□□□□□

Pro□ect□Harri□on TOD □□1218-74□ By□ S□□ Date□7/1/16
Location□Harri□on, NY Chec□ed□FAB Date□7/1/16
Circle one□ Pre□ent ***Developed*** □ ater□hed□Hal□tead □□ e□t□

| S□□□N□□ □ □□d □□dr□□□□□ Gr□□□ □□□□□□d□□ A□ | C□□□r D□□□r□□□□□ □□□□□r □□□□□r□□□□ □□□□□□d □□dr□□□□□ □□□d□□□□□ □□r□□□□□□ □□r□□□□□ □□□□□□□□□□d□□□□□□□□□d □□ □□r□□□□□ □r□□ r□□□□ | CN V□□□□ □□ T□□□ □□□ | F□□□r□ □□□ | F□□□r□ □□□ | Ar□□ A□r□□ S□. Ft. □ | Pr□d□□□ □□ CN □Ar□□ |
|---|---|---|---|---|---|---|
| N/A | Imper□io□□ | 98 | | | 0.14 | 13.39 |
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| | | | | Total□= | 0.14 | 13.39 |
| | | | | | □ 0.00021 | □□ mi□ |

CN □□eighted□= $\frac{\text{total prod□ct}}{\text{total area}}$ = $\frac{13.39}{0.14}$ U□e CN = **98**

# C□r□□ N□□ □□r C□□□□□□□□□□

Pro□ect□Harri□on TOD □□1218-74□ By□ S□□ Date□7/1/16
Location□Harri□on, NY Chec□ed□FAB Date□7/1/16
Circle one□ Pre□ent ***Developed*** □ ater□hed□Hal□tead □Ea□t Det□

| S□□□N□□ □ □□d □□dr□□□□□ Gr□□□ □□□□□□d□□ A□ | C□□□r D□□□r□□□□ □□□□□r □□□□□r□□□□ □□□□□□d □□dr□□□□□ □□□d□□□□□ □□r□□□□□□ □□r□□□□□ □□□□□□□□□□d□□□□□□□□□d □□ □□r□□□□ □r□□ r□□□□ | CN V□□□□ □□ T□□□□ □□ | F□□□r□ □□ | F□□□r□ □□ | Ar□□ A□r□□ S□. Ft. □ | Pr□d□□□ □□ CN □Ar□□ |
|---|---|---|---|---|---|---|
| N/A | Imper□io□□ | 98 | | | 3.02 | 296.07 |
| A□□□med D | Gra□□, □air condition | 84 | | | 0.31 | 26.22 |
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| | | | | Total□= | 3.33 | 322.29 |
| | | | | | □ 0.00521 | □□ mi□ |

CN □□eighted□= $\frac{\text{total prod□ct}}{\text{total area}}$ = $\frac{322.29}{3.33}$ U□e CN = **97**

# C□r□□ N□□ □□r C□□□□□□□□□□

Pro□ect□Harri□on TOD □□1218-74□ By□ S□□ Date□7/1/16
Location□Harri□on, NY Chec□ed□FAB Date□7/1/16
Circle one□ Pre□ent ***Developed*** □ ater□hed□Hal□tead □Ea□t Bypa□□□

| S□□□N□□ □ □□d □□dr□□□□□ Gr□□□ □□□□□□d□□ A□ | C□□□r D□□□r□□□□□ □□□□□r □□□□□r□□□□ □□□□□□d □□dr□□□□□ □□□d□□□□□ □□r□□□□□□ □□r□□□□□ □□□□□□□□□□d□□□□□□□□□d □□ □□r□□□□□ □r□□ r□□□□ | CN V□□□□ □□ T□□□ □□□ | F□□□r□ □□□ | F□□□r□ □□□ | Ar□□ A□r□□ S□. Ft. □ | Pr□d□□□ □□ CN □Ar□□ |
|---|---|---|---|---|---|---|
| N/A | Imper□io□□ | 98 | | | 0.78 | 76.02 |
| A□□□med D | Gra□□, □air condition | 84 | | | 0.32 | 27.12 |
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| | | | | Total□= | 1.10 | 103.14 |
| | | | | | □ 0.00172 | □□mi□ |

CN □□eighted□= $\frac{\text{total prod□ct}}{\text{total area}}$ = $\frac{103.14}{1.10}$ U□e CN = **94**

# HYDROLOGY COMPUTER MODEL RESULTS – SUMMARY TABLES

# Hydrographs Peak Flowrate and Total Volume Summary

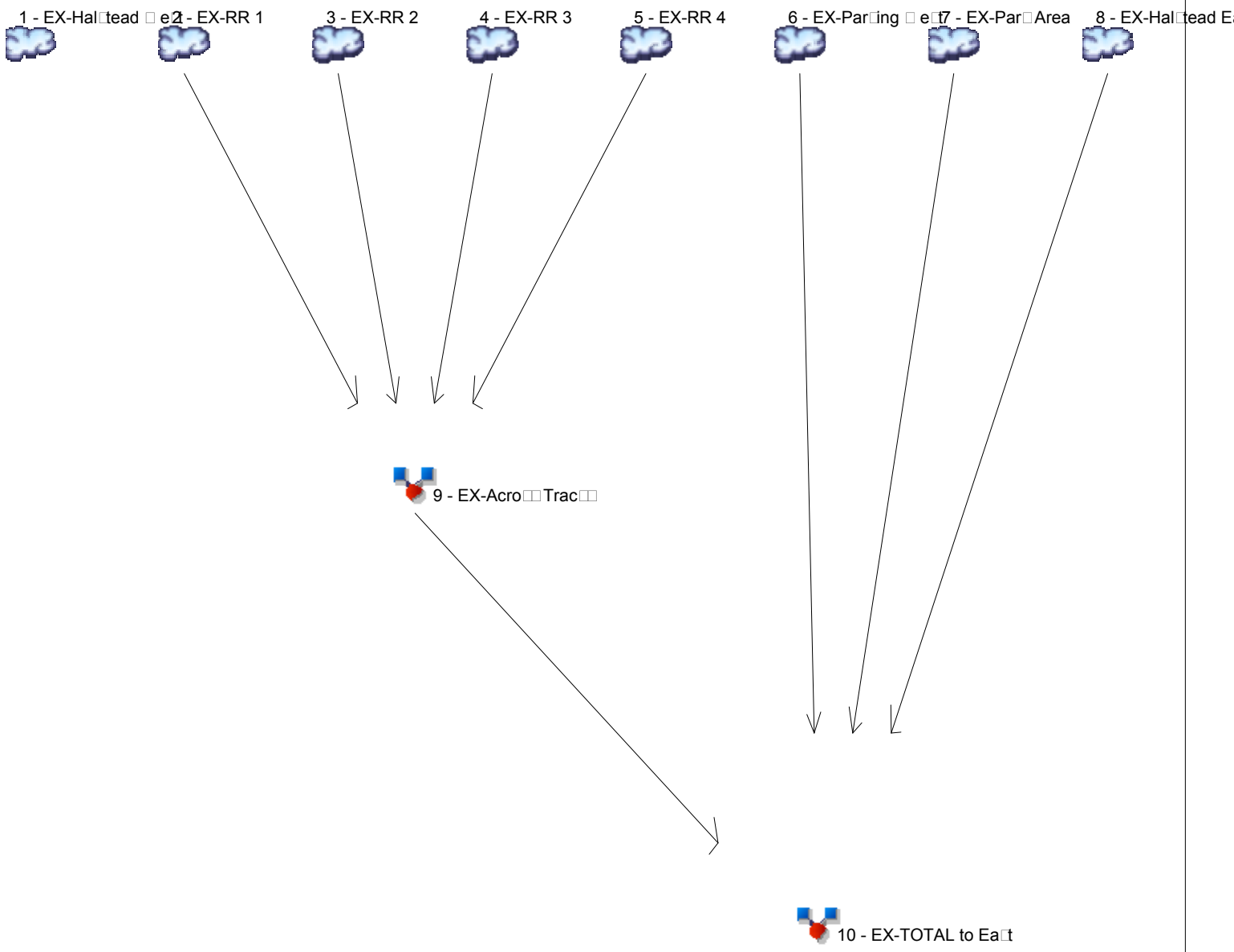
## Existing vs. Proposed

| *Storm Event* | 1yr | | 2yr | | 10yr | | 25yr | | 50yr | | 100yr | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Ex** | **Pr** | **Ex** | **Pr** | **Ex** | **Pr** | **Ex** | **Pr** | **Ex** | **Pr** | **Ex** | **Pr** |
| **Peak Flow Rate (cfs)** | | | | | | | | | | | | |
| **Analysis Point A** | 10.7 | 2.7 | 13.1 | 3.□ | 20.9 | □6 | 2□□ | 10.6 | 31.0 | 19.□ | 37.0 | 2□1 |
| □nt o□□alstead □ □a□land (□alstead □ast) | | | | | | | | | | | | |
| **Analysis Point B** | 0.4 | 0.4 | 0.□ | 0.□ | 0.7 | 0.7 | 0.□ | 0.□ | 1.0 | 1.0 | 1.2 | 1.2 |
| □nt o□□alstead □ □arrison (□alstead □ est) | | | | | | | | | | | | |

# HYDROLOGY COMPUTER MODEL RESULTS – EXISTING CONDITIONS

# W□□□r□□□d M□d□□S□□□□ □□□□

Hydra□lo□ Hydrograph□E□ten□ion □or A□toCAD□ Ci□il 3D□ 2016 □y A□tode□□, Inc. □10.5




## L□□□□d

| □□d□ | Or□□□□ | D□□□r□□□□□□ |
|---|---|---|
| 1 | SCS R□no□□ | EX-Hal□tead □ e□t |
| 2 | SCS R□no□□ | EX-RR 1 |
| 3 | SCS R□no□□ | EX-RR 2 |
| 4 | SCS R□no□□ | EX-RR 3 |
| 5 | SCS R□no□□ | EX-RR 4 |
| 6 | SCS R□no□□ | EX-Par□ing □ e□t |
| 7 | SCS R□no□□ | EX-Par□Area |
| 8 | SCS R□no□□ | EX-Hal□tead Ea□t |
| 9 | Com□ine | EX-Acro□□Trac□□ |
| 10 | Com□ine | EX-TOTAL to Ea□t |

# □□dr□□r□□□ R□□□r□ P□r□□d R□□□□



| □□d□ N□□ | □□dr□□r□□□ □□□□ □□r□□□□ | I□□□□ □□d□□□ | P□□□ O□□□□□ □□□□□ | | | | | | | | □□dr□□r□□□ D□□□r□□□□□ |
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| | | | □□□r | □□□r | □□□r | □□□r | □□□□r | □□□□r | □□□□r | □□□□□r | |
| 1 | SCS R□no□□ | ------ | 0.379 | 0.453 | ------- | ------- | 0.693 | 0.847 | 1.006 | 1.193 | EX-Hal□tead □ e□t |
| 2 | SCS R□no□□ | ------ | 0.667 | 0.821 | ------- | ------- | 1.319 | 1.634 | 1.960 | 2.338 | EX-RR 1 |
| 3 | SCS R□no□□ | ------ | 1.705 | 2.038 | ------- | ------- | 3.120 | 3.810 | 4.529 | 5.367 | EX-RR 2 |
| 4 | SCS R□no□□ | ------ | 2.029 | 2.449 | ------- | ------- | 3.807 | 4.669 | 5.566 | 6.609 | EX-RR 3 |
| 5 | SCS R□no□□ | ------ | 0.489 | 0.647 | ------- | ------- | 1.182 | 1.528 | 1.888 | 2.307 | EX-RR 4 |
| 6 | SCS R□no□□ | ------ | 0.825 | 0.990 | ------- | ------- | 1.526 | 1.867 | 2.222 | 2.635 | EX-Par□ing □ e□t |
| 7 | SCS R□no□□ | ------ | 0.676 | 0.858 | ------- | ------- | 1.453 | 1.830 | 2.222 | 2.675 | EX-Par□Area |
| 8 | SCS R□no□□ | ------ | 4.291 | 5.279 | ------- | ------- | 8.480 | 10.50 | 12.60 | 15.03 | EX-Hal□tead Ea□t |
| 9 | Com□ine | 2, 3, 4, 5, | 4.891 | 5.954 | ------- | ------- | 9.428 | 11.64 | 13.94 | 16.62 | EX-Acro□□ Trac□□ |
| 10 | Com□ine | 6, 7, 8, 9 | 10.68 | 13.08 | ------- | ------- | 20.89 | 25.84 | 30.98 | 36.97 | EX-TOTAL to Ea□t |

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| □□d□ N□□ | □□dr□□r□□□ □□□□ □□r□□□□ | P□□□ □□□□ □□□□□ | T□□ □ □□□□r□□□ □□ □□□ | T□□ □ □□ P□□□ □□ □□□ | □□d□ □□□□□ □ □□□□□□ | I□□□□ □□d□□□ | M□□□□ □□ □□□□□□□□□ □□□□ | T□□□□ □r□□ □□□d □□□□□ | □□dr□□r□□□ D□□□r□□□□□ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 0.379 | 2 | 724 | 1,271 | ------ | ------ | ------ | EX-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 0.667 | 2 | 724 | 2,057 | ------ | ------ | ------ | EX-RR 1 |
| 3 | SCS R□no□□ | 1.705 | 2 | 724 | 5,722 | ------ | ------ | ------ | EX-RR 2 |
| 4 | SCS R□no□□ | 2.029 | 2 | 724 | 6,513 | ------ | ------ | ------ | EX-RR 3 |
| 5 | SCS R□no□□ | 0.489 | 2 | 724 | 1,464 | ------ | ------ | ------ | EX-RR 4 |
| 6 | SCS R□no□□ | 0.825 | 2 | 724 | 2,700 | ------ | ------ | ------ | EX-Par□ing □ e□t |
| 7 | SCS R□no□□ | 0.676 | 2 | 724 | 2,032 | ------ | ------ | ------ | EX-Par□Area |
| 8 | SCS R□no□□ | 4.291 | 2 | 724 | 13,222 | ------ | ------ | ------ | EX-Hal□tead Ea□t |
| 9 | Com□ine | 4.891 | 2 | 724 | 15,756 | 2, 3, 4, 5, | ------ | ------ | EX-Acro□□ Trac□□ |
| 10 | Com□ine | 10.68 | 2 | 724 | 33,711 | 6, 7, 8, 9 | ------ | ------ | EX-TOTAL to Ea□t |

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|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 0.453 | 2 | 724 | 1,533 | ------ | ------ | ------ | EX-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 0.821 | 2 | 724 | 2,560 | ------ | ------ | ------ | EX-RR 1 |
| 3 | SCS R□no□□ | 2.038 | 2 | 724 | 6,896 | ------ | ------ | ------ | EX-RR 2 |
| 4 | SCS R□no□□ | 2.449 | 2 | 724 | 7,952 | ------ | ------ | ------ | EX-RR 3 |
| 5 | SCS R□no□□ | 0.647 | 2 | 724 | 1,933 | ------ | ------ | ------ | EX-RR 4 |
| 6 | SCS R□no□□ | 0.990 | 2 | 724 | 3,275 | ------ | ------ | ------ | EX-Par□ing □ e□t |
| 7 | SCS R□no□□ | 0.858 | 2 | 724 | 2,595 | ------ | ------ | ------ | EX-Par□Area |
| 8 | SCS R□no□□ | 5.279 | 2 | 724 | 16,457 | ------ | ------ | ------ | EX-Hal□tead Ea□t |
| 9 | Com□ine | 5.954 | 2 | 724 | 19,342 | 2, 3, 4, 5, | ------ | ------ | EX-Acro□□ Trac□□ |
| 10 | Com□ine | 13.08 | 2 | 724 | 41,670 | 6, 7, 8, 9 | ------ | ------ | EX-TOTAL to Ea□t |

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| □□d□ N□□ | □□dr□□r□□□ □□□□ □□r□□□□ | P□□□ □□□□ □□□□□□ | T□□ □ □□□□r□□□ □□ □□□ | T□□ □ □□ P□□□ □□ □□□ | □□d□ □□□□□ □ □□□□□□ | I□□□□□ □□d□□□ | M□□□□ □□ □□□□□□□□□ □□□□ | T□□□□ □r□□ □□□d □□□□□□ | □□dr□□r□□□ D□□□r□□□□□ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 0.693 | 2 | 724 | 2,388 | ------ | ------ | ------ | EX-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 1.319 | 2 | 724 | 4,234 | ------ | ------ | ------ | EX-RR 1 |
| 3 | SCS R□no□□ | 3.120 | 2 | 724 | 10,747 | ------ | ------ | ------ | EX-RR 2 |
| 4 | SCS R□no□□ | 3.807 | 2 | 724 | 12,691 | ------ | ------ | ------ | EX-RR 3 |
| 5 | SCS R□no□□ | 1.182 | 2 | 724 | 3,573 | ------ | ------ | ------ | EX-RR 4 |
| 6 | SCS R□no□□ | 1.526 | 2 | 724 | 5,165 | ------ | ------ | ------ | EX-Par□ing □ e□t |
| 7 | SCS R□no□□ | 1.453 | 2 | 724 | 4,505 | ------ | ------ | ------ | EX-Par□Area |
| 8 | SCS R□no□□ | 8.480 | 2 | 724 | 27,220 | ------ | ------ | ------ | EX-Hal□tead Ea□t |
| 9 | Com□ine | 9.428 | 2 | 724 | 31,246 | 2, 3, 4, 5, | ------ | ------ | EX-Acro□□ Trac□□ |
| 10 | Com□ine | 20.89 | 2 | 724 | 68,136 | 6, 7, 8, 9 | ------ | ------ | EX-TOTAL to Ea□t |

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| □□d□ N□□ | □□dr□□r□□□ □□□□ □□r□□□□ | P□□□ □□□□ □□□□□ | T□□ □ □□□□r□□□ □□ □□□ | T□□ □ □□ P□□□ □□ □□□ | □□d□ □□□□□ □ □□□□□□ | I□□□□ □□d□□□ | M□□□□ □□ □□□□□□□□□ □□□□ | T□□□□ □r□□ □□□d □□□□□ | □□dr□□r□□□ D□□□r□□□□□ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 0.847 | 2 | 724 | 2,936 | ------ | ------ | ------ | EX-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 1.634 | 2 | 724 | 5,315 | ------ | ------ | ------ | EX-RR 1 |
| 3 | SCS R□no□□ | 3.810 | 2 | 724 | 13,210 | ------ | ------ | ------ | EX-RR 2 |
| 4 | SCS R□no□□ | 4.669 | 2 | 724 | 15,730 | ------ | ------ | ------ | EX-RR 3 |
| 5 | SCS R□no□□ | 1.528 | 2 | 724 | 4,668 | ------ | ------ | ------ | EX-RR 4 |
| 6 | SCS R□no□□ | 1.867 | 2 | 724 | 6,375 | ------ | ------ | ------ | EX-Par□ing □ e□t |
| 7 | SCS R□no□□ | 1.830 | 2 | 724 | 5,754 | ------ | ------ | ------ | EX-Par□Area |
| 8 | SCS R□no□□ | 10.50 | 2 | 724 | 34,167 | ------ | ------ | ------ | EX-Hal□tead Ea□t |
| 9 | Com□ine | 11.64 | 2 | 724 | 38,922 | 2, 3, 4, 5, | ------ | ------ | EX-Acro□□ Trac□□ |
| 10 | Com□ine | 25.84 | 2 | 724 | 85,219 | 6, 7, 8, 9 | ------ | ------ | EX-TOTAL to Ea□t |

# □□dr□□r□□□ S□□ □ □r□ R□□□r□



| □□d□ N□□ | □□dr□□r□□□ □□□□ □□r□□□□ | P□□□ □□□□ □□□□□ | T□□ □ □□□□r□□□ □□ □□□ | T□□ □ □□ P□□□ □□ □□□ | □□d□ □□□□□ □ □□□□□□ | I□□□□ □□d□□□ | M□□□□ □□ □□□□□□□□□ □□□□ | T□□□□ □r□□ □□□d □□□□□ | □□dr□□r□□□ D□□□r□□□□□ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 1.006 | 2 | 724 | 3,507 | ------ | ------ | ------ | EX-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 1.960 | 2 | 724 | 6,447 | ------ | ------ | ------ | EX-RR 1 |
| 3 | SCS R□no□□ | 4.529 | 2 | 724 | 15,781 | ------ | ------ | ------ | EX-RR 2 |
| 4 | SCS R□no□□ | 5.566 | 2 | 724 | 18,905 | ------ | ------ | ------ | EX-RR 3 |
| 5 | SCS R□no□□ | 1.888 | 2 | 724 | 5,832 | ------ | ------ | ------ | EX-RR 4 |
| 6 | SCS R□no□□ | 2.222 | 2 | 724 | 7,639 | ------ | ------ | ------ | EX-Par□ing □ e□t |
| 7 | SCS R□no□□ | 2.222 | 2 | 724 | 7,069 | ------ | ------ | ------ | EX-Par□Area |
| 8 | SCS R□no□□ | 12.60 | 2 | 724 | 41,445 | ------ | ------ | ------ | EX-Hal□tead Ea□t |
| 9 | Com□ine | 13.94 | 2 | 724 | 46,964 | 2, 3, 4, 5, | ------ | ------ | EX-Acro□□ Trac□□ |
| 10 | Com□ine | 30.98 | 2 | 724 | 103,117 | 6, 7, 8, 9 | ------ | ------ | EX-TOTAL to Ea□t |

# □□dr□□r□□□ S□□ □ □r□ R□□□r□



| □□d□ N□□ | □□dr□□r□□□ □□□□ □□r□□□□□ | P□□□ □□□□ □□□□□□ | T□□ □ □□□□r□□□ □□ □□□ | T□□ □ □□ P□□□ □□ □□□ | □□d□ □□□□□ □ □□□□□□ | I□□□□□ □□d□□□ | M□□□□ □□ □□□□□□□□□ □□□□ | T□□□□ □r□□ □□□d □□□□□□ | □□dr□□r□□□ D□□□r□□□□□□ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 1.193 | 2 | 724 | 4,173 | ------ | ------ | ------ | EX-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 2.338 | 2 | 724 | 7,771 | ------ | ------ | ------ | EX-RR 1 |
| 3 | SCS R□no□□ | 5.367 | 2 | 724 | 18,780 | ------ | ------ | ------ | EX-RR 2 |
| 4 | SCS R□no□□ | 6.609 | 2 | 724 | 22,612 | ------ | ------ | ------ | EX-RR 3 |
| 5 | SCS R□no□□ | 2.307 | 2 | 724 | 7,207 | ------ | ------ | ------ | EX-RR 4 |
| 6 | SCS R□no□□ | 2.635 | 2 | 724 | 9,114 | ------ | ------ | ------ | EX-Par□ing □ e□t |
| 7 | SCS R□no□□ | 2.675 | 2 | 724 | 8,613 | ------ | ------ | ------ | EX-Par□Area |
| 8 | SCS R□no□□ | 15.03 | 2 | 724 | 49,959 | ------ | ------ | ------ | EX-Hal□tead Ea□t |
| 9 | Com□ine | 16.62 | 2 | 724 | 56,371 | 2, 3, 4, 5, | ------ | ------ | EX-Acro□□ Trac□□ |
| 10 | Com□ine | 36.97 | 2 | 724 | 124,057 | 6, 7, 8, 9 | ------ | ------ | EX-TOTAL to Ea□t |

| R□□□r□ P□r□□d □Yr□□ | I□□□□□□□□D□r□□□□□Fr□□□□□□□E□□□□□□□ C□□□□□□□□□□□□ □F□A□ | | | |
|---|---|---|---|---|
| | B | D | E | □N□A□ |
| 1 | 0.0000 | 0.0000 | 0.0000 | -------- |
| 2 | 69.8703 | 13.1000 | 0.8658 | -------- |
| 3 | 0.0000 | 0.0000 | 0.0000 | -------- |
| 5 | 79.2597 | 14.6000 | 0.8369 | -------- |
| 10 | 88.2351 | 15.5000 | 0.8279 | -------- |
| 25 | 102.6072 | 16.5000 | 0.8217 | -------- |
| 50 | 114.8193 | 17.2000 | 0.8199 | -------- |
| 100 | 127.1596 | 17.8000 | 0.8186 | -------- |

File name□SampleFHA.id□

## I□□□□□□□□ □B □□T□ □D□□E

| R□□□r□ P□r□□d □Yr□□ | I□□□□□□□□V□□□□□ □□□□□r□ | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | □ □ □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ |
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 5.69 | 4.61 | 3.89 | 3.38 | 2.99 | 2.69 | 2.44 | 2.24 | 2.07 | 1.93 | 1.81 | 1.70 |
| 3 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 6.57 | 5.43 | 4.65 | 4.08 | 3.65 | 3.30 | 3.02 | 2.79 | 2.59 | 2.42 | 2.27 | 2.15 |
| 10 | 7.24 | 6.04 | 5.21 | 4.59 | 4.12 | 3.74 | 3.43 | 3.17 | 2.95 | 2.77 | 2.60 | 2.46 |
| 25 | 8.25 | 6.95 | 6.03 | 5.34 | 4.80 | 4.38 | 4.02 | 3.73 | 3.48 | 3.26 | 3.07 | 2.91 |
| 50 | 9.04 | 7.65 | 6.66 | 5.92 | 5.34 | 4.87 | 4.49 | 4.16 | 3.88 | 3.65 | 3.44 | 3.25 |
| 100 | 9.83 | 8.36 | 7.30 | 6.50 | 5.87 | 5.36 | 4.94 | 4.59 | 4.29 | 4.03 | 3.80 | 3.60 |

Tc = time in min□te□. Val□e□may e□ceed 60.

Precip. □ile name□□ □□De□ign□1218-74-DE□Comp□Harri□on Rain□all.pcp

| S□□r□ D□□□r□□□□□□ | R□□□□□□□□Pr□□□□□□□□□□□□ T□□□□ □□□□ | | | | | | | |
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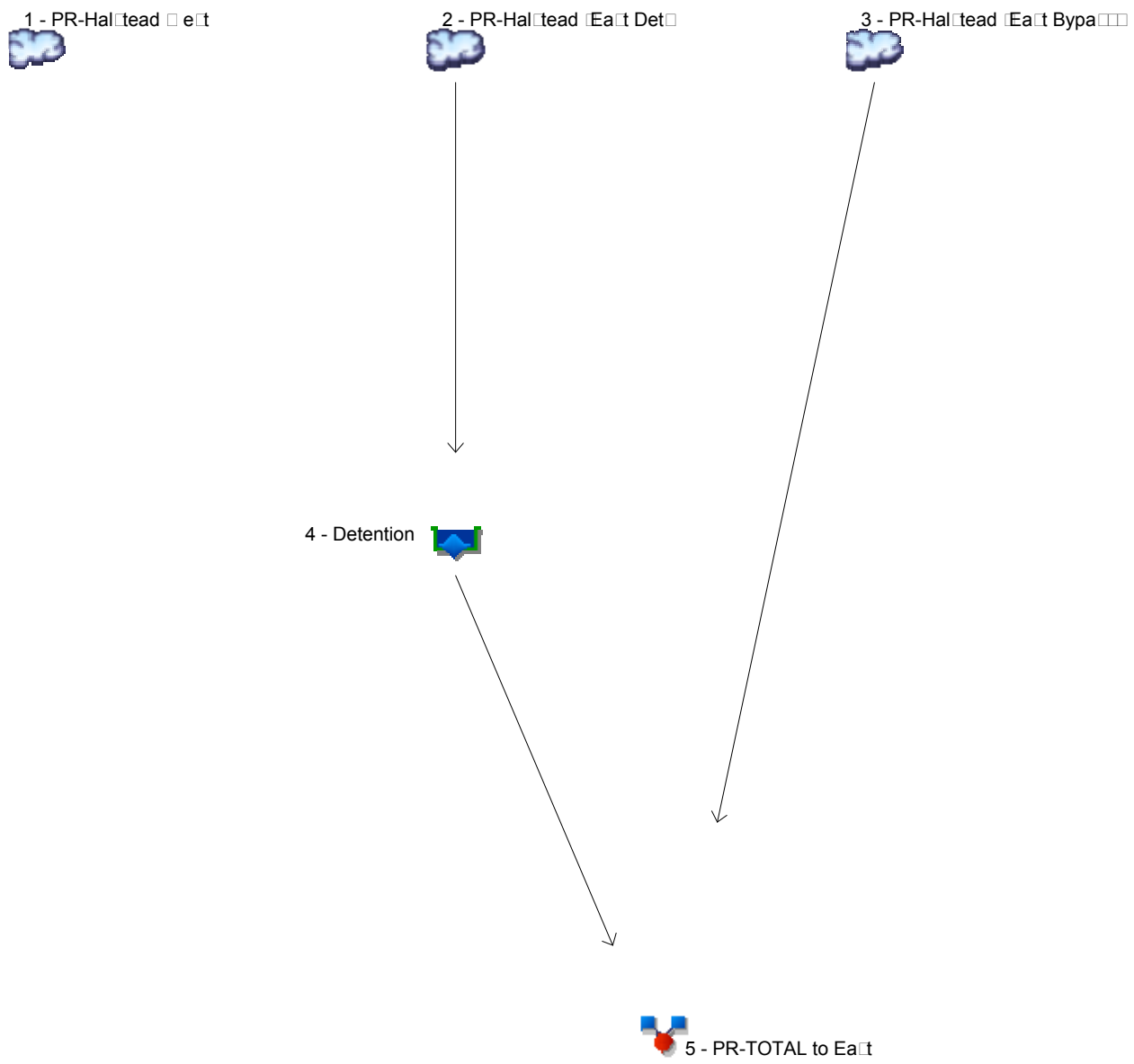
| | □□□r | □□□r | □□□r | □□□r | □□□□r | □□□□r | □□□□r | □□□□□r |
| SCS 24-ho□r | 2.90 | 3.45 | 0.00 | 4.30 | 5.25 | 6.40 | 7.60 | 9.00 |
| SCS 6-Hr | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| H□□□-1□t | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| H□□□-2nd | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| H□□□-3rd | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| H□□□-4th | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| H□□□-Indy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| C□□tom | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# HYDROLOGY COMPUTER MODEL RESULTS – PROPOSED CONDITIONS

# W□□□r□□□d M□d□□S□□□□ □□□□

Hydra□lo□ Hydrograph□E□ten□ion □or A□toCAD□ Ci□il 3D□ 2016 □y A□tode□□, Inc. □10.5




## L□□□□d

| □□d□ | Or□□□□ | D□□□r□□□□□□ |
|---|---|---|
| 1 | SCS R□no□□ | PR-Hal□tead □ e□t |
| 2 | SCS R□no□□ | PR-Hal□tead □Ea□t Det□ |
| 3 | SCS R□no□□ | PR-Hal□tead □Ea□t Bypa□□□ |
| 4 | Re□er□oir | Detention |
| 5 | Com□ine | PR-TOTAL to Ea□t |

# Hydrograph Summary Report



| Hydrograph Number | Hydrograph Name | Inflow Hydrograph | Peak Outflow (cfs) | | | | | | | | Hydrograph Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2-year | 5-year | 10-year | 25-year | 50-year | 100-year | 250-year | 500-year | |
| 1 | SCS Runoff | ------ | 0.379 | 0.453 | ------- | ------- | 0.693 | 0.847 | 1.006 | 1.193 | PR-Halstead West |
| 2 | SCS Runoff | ------ | 8.858 | 10.63 | ------- | ------- | 16.39 | 20.05 | 23.86 | 28.30 | PR-Halstead East Det |
| 3 | SCS Runoff | ------ | 2.708 | 3.309 | ------- | ------- | 5.252 | 6.481 | 7.757 | 9.238 | PR-Halstead East Bypass |
| 4 | Reservoir | 2 | 0.305 | 0.383 | ------- | ------- | 3.379 | 7.848 | 14.26 | 20.46 | Detention |
| 5 | Combine | 3, 4 | 2.716 | 3.477 | ------- | ------- | 5.638 | 10.55 | 19.49 | 28.08 | PR-TOTAL to East |

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| □□d□ N□□ | □□dr□□r□□□ □□□□ □□r□□□□ | P□□□ □□□□ □□□□□ | T□□ □ □□□□r□□□ □□ □□□ | T□□ □ □□ P□□□ □□ □□□ | □□d□ □□□□□ □ □□□□□□ | I□□□□□ □□d□□□ | M□□□□ □□ □□□□□□□□□ □□□□ | T□□□□ □r□□ □□□d □□□□□□ | □□dr□□r□□□ D□□□r□□□□□ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 0.379 | 2 | 724 | 1,271 | ------ | ------ | ------ | PR-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 8.858 | 2 | 724 | 29,003 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Det□ |
| 3 | SCS R□no□□ | 2.708 | 2 | 724 | 8,436 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Bypa□□□ |
| 4 | Re□er□oir | 0.305 | 2 | 922 | 16,367 | 2 | 60.55 | 21,331 | Detention |
| 5 | Com□ine | 2.716 | 2 | 724 | 24,803 | 3, 4 | ------ | ------ | PR-TOTAL to Ea□t |

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| □□d□ N□□ | □□dr□□r□□□ □□□□ □□r□□□□ | P□□□ □□□□ □□□□□□ | T□□ □ □□□□r□□□ □□ □□□ | T□□ □ □□ P□□□ □□ □□□ | □□d□ □□□□□ □ □□□□□□ | I□□□□□ □□d□□□ | M□□□□ □□ □□□□□□□□□ □□□□ | T□□□□ □r□□ □□□d □□□□□□ | □□dr□□r□□□ D□□□r□□□□□ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 0.453 | 2 | 724 | 1,533 | ------ | ------ | ------ | PR-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 10.63 | 2 | 724 | 35,184 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Det□ |
| 3 | SCS R□no□□ | 3.309 | 2 | 724 | 10,433 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Bypa□□□ |
| 4 | Re□er□oir | 0.383 | 2 | 914 | 22,549 | 2 | 61.06 | 25,654 | Detention |
| 5 | Com□ine | 3.477 | 2 | 724 | 32,981 | 3, 4 | ------ | ------ | PR-TOTAL to Ea□t |

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| □□d□ N□□ | □□dr□□r□□□ □□□□ □□r□□□□ | P□□□ □□□□ □□□□□ | T□□ □ □□□□r□□□ □□ □□□ | T□□ □ □□ P□□□ □□ □□□ | □□d□ □□□□□ □ □□□□□□ | I□□□□□ □□d□□□ | M□□□□ □□ □□□□□□□□□ □□□□ | T□□□□ □r□□ □□□d □□□□□□ | □□dr□□r□□□ D□□□r□□□□□ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 0.693 | 2 | 724 | 2,388 | ------ | ------ | ------ | PR-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 16.39 | 2 | 724 | 55,486 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Det□ |
| 3 | SCS R□no□□ | 5.252 | 2 | 724 | 17,050 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Bypa□□□ |
| 4 | Re□er□oir | 3.379 | 2 | 748 | 42,851 | 2 | 62.07 | 34,124 | Detention |
| 5 | Com□ine | 5.638 | 2 | 724 | 59,902 | 3, 4 | ------ | ------ | PR-TOTAL to Ea□t |

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| □□d□ N□□ | □□dr□□r□□□ □□□□ □□r□□□□ | P□□□ □□□□ □□□□□□ | T□□ □ □□□□r□□□ □□ □□□ | T□□ □ □□ P□□□ □□ □□□ | □□d□ □□□□□ □ □□□□□□ | I□□□□□ □□d□□□ | M□□□□ □□ □□□□□□□□□ □□□□ | T□□□□ □r□□ □□□d □□□□□□ | □□dr□□r□□□ D□□□r□□□□□ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 0.847 | 2 | 724 | 2,936 | ------ | ------ | ------ | PR-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 20.05 | 2 | 724 | 68,485 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Det□ |
| 3 | SCS R□no□□ | 6.481 | 2 | 724 | 21,311 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Bypa□□□ |
| 4 | Re□er□oir | 7.848 | 2 | 736 | 55,849 | 2 | 62.36 | 36,470 | Detention |
| 5 | Com□ine | 10.55 | 2 | 732 | 77,161 | 3, 4 | ------ | ------ | PR-TOTAL to Ea□t |

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| □□d□ N□□ | □□dr□□r□□□ □□□□ □□r□□□□ | P□□□ □□□□ □□□□□□ | T□□ □ □□□□r□□□ □□ □□□ | T□□ □ □□ P□□□ □□ □□□ | □□d□ □□□□□ □ □□□□□□ | I□□□□□ □□d□□□ | M□□□□ □□ □□□□□□□□□ □□□□ | T□□□□ □r□□ □□□d □□□□□□ | □□dr□□r□□□ D□□□r□□□□□ |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 1.006 | 2 | 724 | 3,507 | ------ | ------ | ------ | PR-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 23.86 | 2 | 724 | 82,058 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Det□ |
| 3 | SCS R□no□□ | 7.757 | 2 | 724 | 25,771 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Bypa□□□ |
| 4 | Re□er□oir | 14.26 | 2 | 730 | 69,423 | 2 | 62.68 | 39,093 | Detention |
| 5 | Com□ine | 19.49 | 2 | 728 | 95,194 | 3, 4 | ------ | ------ | PR-TOTAL to Ea□t |

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|---|---|---|---|---|---|---|---|---|---|
| 1 | SCS R□no□□ | 1.193 | 2 | 724 | 4,173 | ------ | ------ | ------ | PR-Hal□tead □ e□t |
| 2 | SCS R□no□□ | 28.30 | 2 | 724 | 97,903 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Det□ |
| 3 | SCS R□no□□ | 9.238 | 2 | 724 | 30,984 | ------ | ------ | ------ | PR-Hal□tead □Ea□t Bypa□□□ |
| 4 | Re□er□oir | 20.46 | 2 | 728 | 85,268 | 2 | 62.95 | 41,426 | Detention |
| 5 | Com□ine | 28.08 | 2 | 726 | 116,252 | 3, 4 | ------ | ------ | PR-TOTAL to Ea□t |

# P□□d R□□□r□

Hydra□lo□ Hydrograph□E□ten□ion □or A□toCAD□ Ci□il 3D□ 2016 □y A□tode□□, Inc. □10.5 Friday, 07 / 15 / 2016

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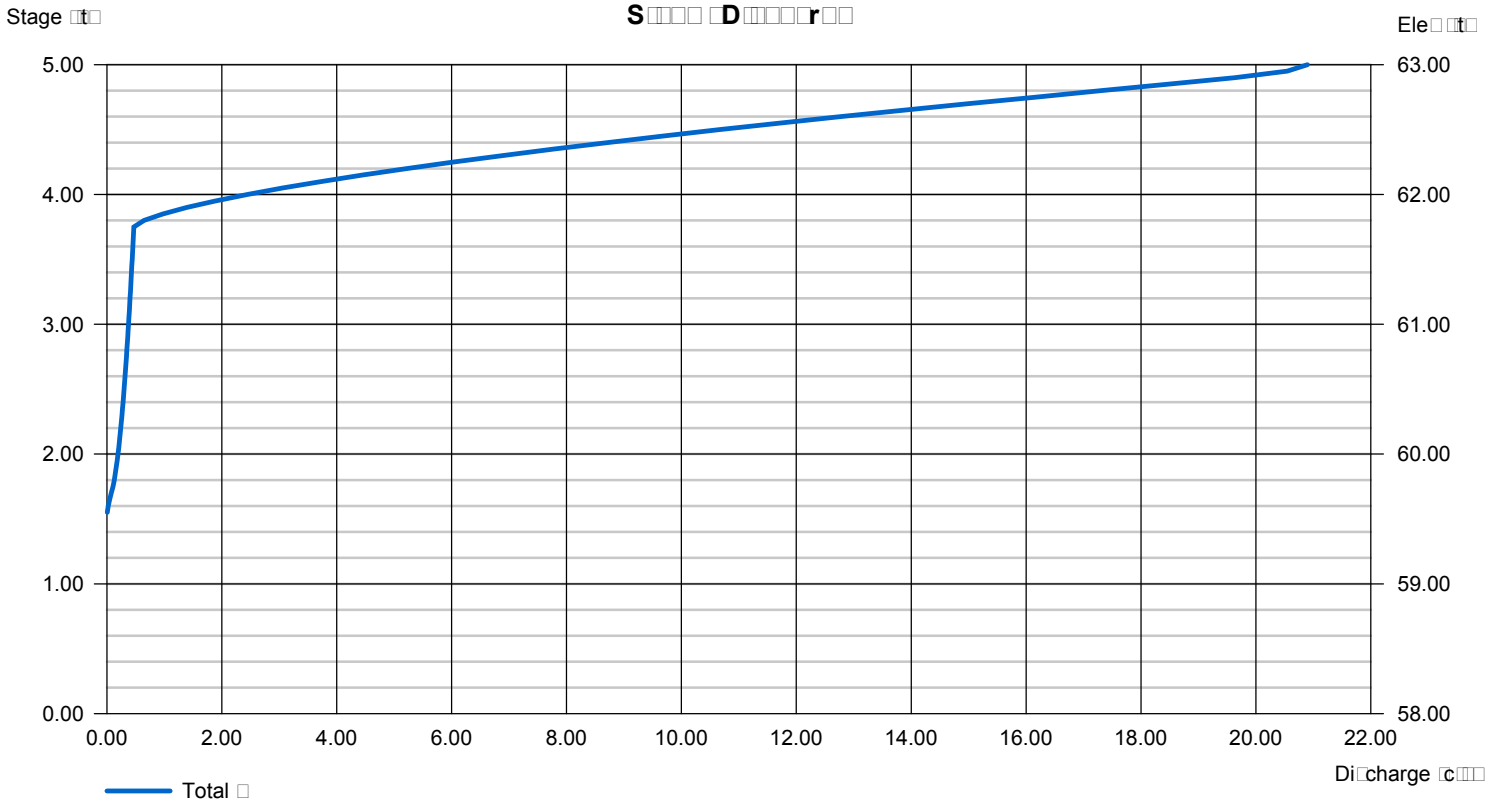

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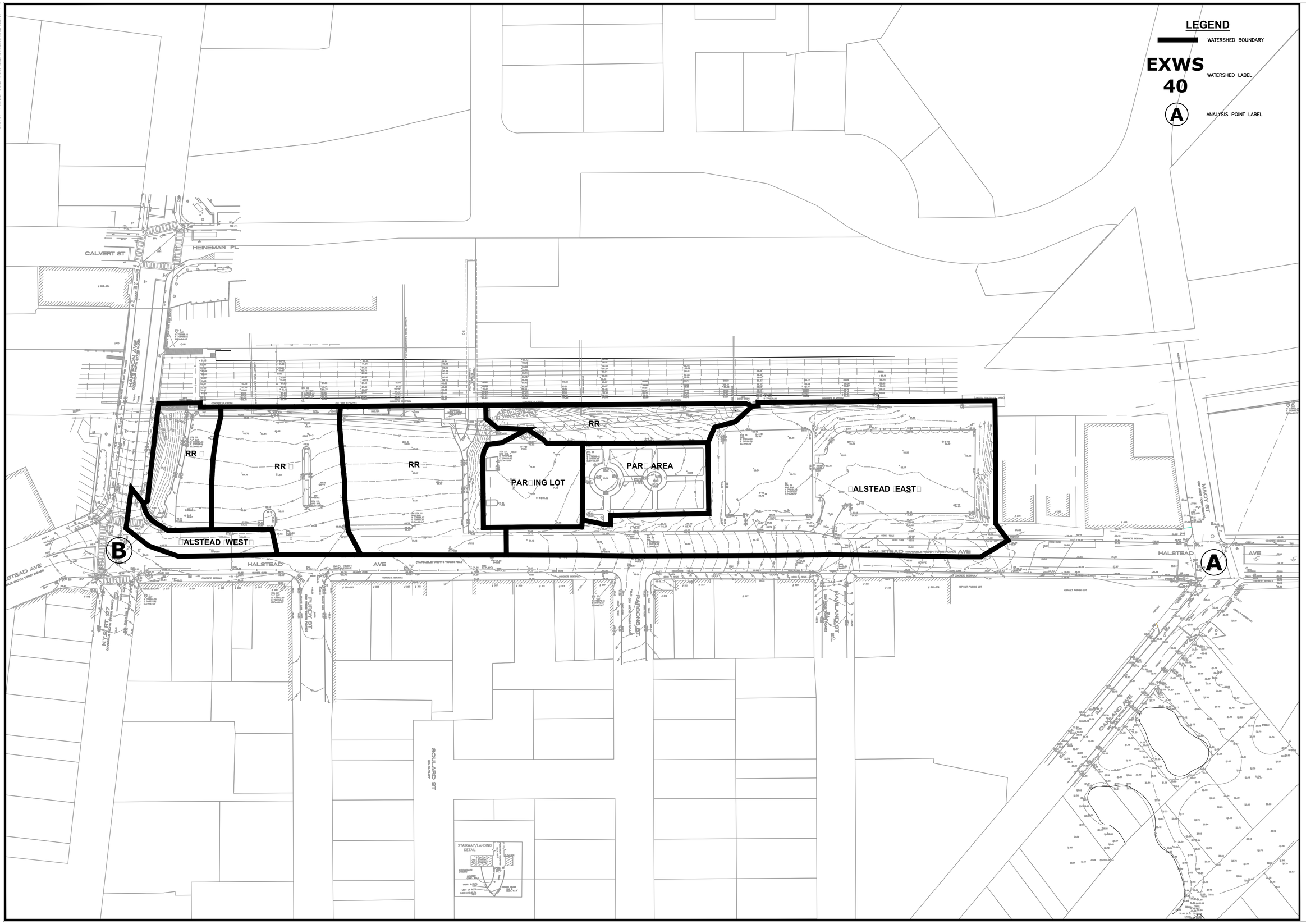
# WATERSHED MAPS

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E□ISTING CONDITIONS WATERS□ED MAP

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□ALSTEAD AVEN□ E
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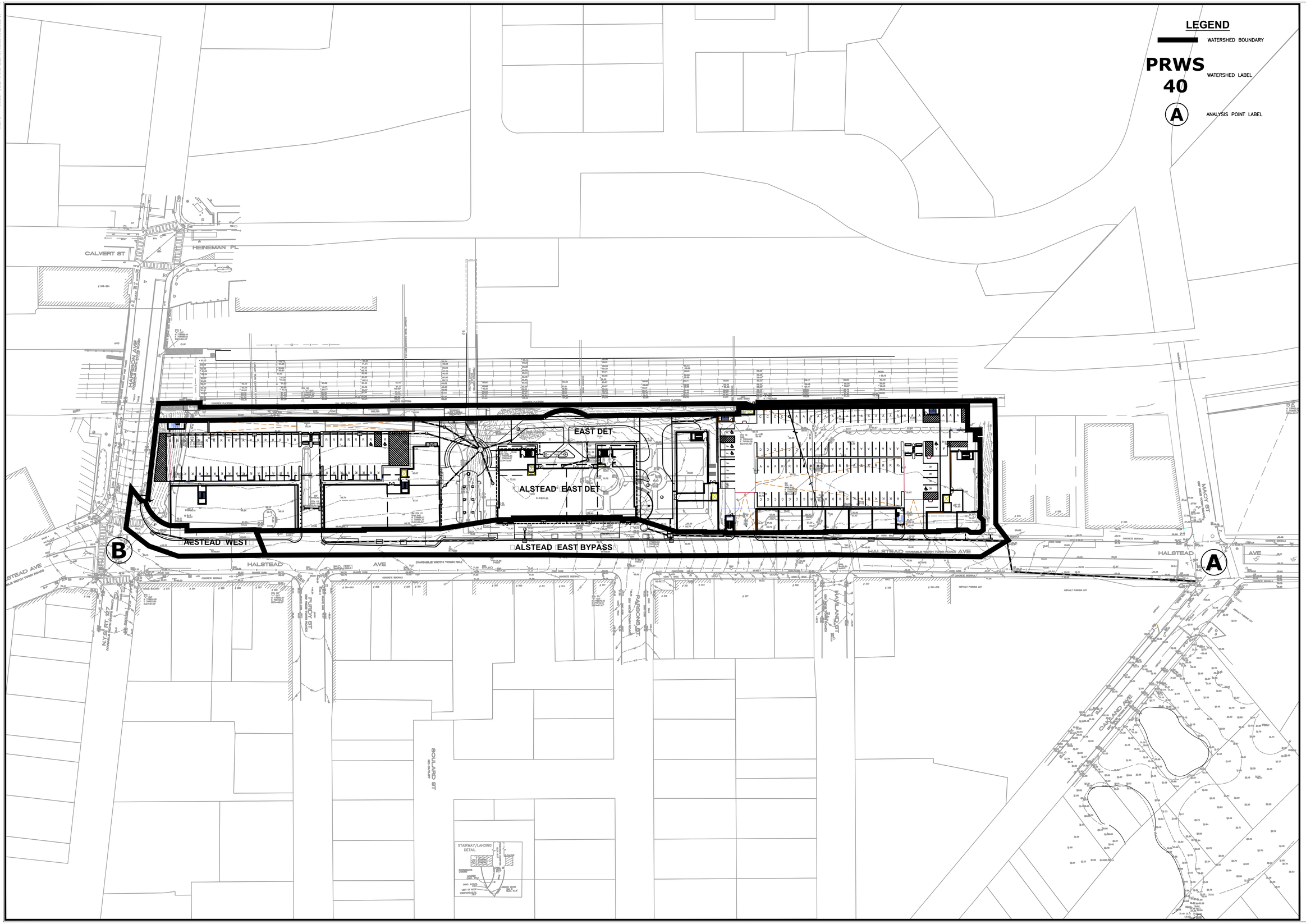


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# PROPOSED CONDITIONS WATERSHED MAP

AVALON HARRISON

ALSTEAD AVENUE
HARRISON, NEW YORK

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# O Traffic Impact Statement

Traffic Impact Study

# AvalonBay at Harrison

## Transit Oriented Development

Halstead Avenue
Town/Village of Harrison, NY

PREPARED FOR

AvalonBay Communities, Inc.
1499 Post Road, 2nd Floor
Fairfield, CT 06824

PREPARED BY

**Engineering, Surveying & Landscape Architecture, P.C.**
**White Plains**
50 Main Street, Suite 360
White Plains, NY 10606

October 2016

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# Executive Summary

## [illegible]

VHB Engineering, Surveying and Landscape Architecture, P.C. (VHB) has been retained by AvalonBay Communities, Inc. to conduct a traffic impact study documenting the potential traffic impacts associated with the proposed redevelopment of an approximately 3.79 acre site on Halstead Avenue in the Town/Village of Harrison, Westchester County, NY. The traffic impact study quantifies both the existing traffic conditions along area roadways surrounding the site and the projected future traffic conditions expected with and without the proposed redevelopment of the site.

This traffic study has been prepared as part of the Draft Environmental Impact Statement (DEIS) for the proposed action and is in accordance with the requirements of the New York State Environmental Quality Review Act (SEQRA) and the Scoping Document (adopted 1/25/2016) for the proposed action. This document provides a detailed description of the study methodology, analysis, and key findings.

## [illegible]

The Project site is located on the north side of Halstead Avenue, to the east of Harrison Avenue (NYS Route 127) and immediately adjacent to the Metro-North Railroad's (MNR) Harrison Station, which is part of the MNR New Haven Line. The site currently contains 260 parking surface spaces within four parking lots (Lots #1 to #4). AvalonBay Communities, Inc. is proposing to construct a mixed-use Transit Oriented Development (TOD) project adjacent to the Harrison Station which will have 143 residential units divided between three multi-story buildings, 27,000 square feet of commercial retail space on the ground floor of the three residential buildings, structured parking in two of the three buildings (Building A and Building C), including 475 parking spaces used for MNR commuter parking to replace the current 260 parking spaces in the existing surface lots. The Project will have two publicly accessible pedestrian plazas which will connect the Harrison Station entrances to Halstead Avenue. Taxi stands will be located along Halstead Avenue at the entrance to each of the plazas to facilitate access to the station.

The four driveways to the existing parking lots will be closed and three new driveways will be constructed to provide access to the two new parking structures. Access to the Building A parking garage will be via a driveway opposite Purdy Street (at the location of the existing Lot #1 driveway). The Commuter Parking Garage in Building C will have two driveways; one driveway located to the west of Haviland Street (near the current Lot #3 driveway location) and a second driveway to the east of Haviland Street. Each of the new driveways will have one entering lane and one exiting lane permitting all movements.

## [illegible]

Per the Scoping Document, the following 9 key intersections were identified as requiring analysis:

1) Halstead Avenue (CR 54) and Harrison Avenue (Route 127)
2) Halstead Avenue (CR 54) and Purdy Street/Surface Lot # 1
3) Halstead Avenue (CR 54) and Surface Lot # 2 (MTA)
4) Halstead Avenue (CR 54) and Surface Lot # 3
5) Halstead Avenue (CR 54) and Haviland Street/Surface Lot # 4
6) Halstead Avenue (CR 54) and Macy Road/Oakland Avenue
7) Halstead Avenue (CR 54) and Osborne Road
8) Halstead Avenue (CR 54) and Newport Towers Driveway
9) Harrison Avenue and Heineman Place/Calvert Street

## [illegible]

To assess existing traffic conditions in the vicinity of the site, peak hour manual turning movement traffic volumes were recorded in April 2016 at the 9 key intersections. The existing traffic volumes were grown to account for anticipated increases in background traffic by the time the project is completed, establishing the future traffic volume conditions without the proposed Project. The future traffic volumes include increases associated with three proposed vicinity developments anticipated to be contructed prior to the subject development.

## [illegible]

Traffic anticipated to be generated by the project was forecast based on published trip generation data and on driveway counts at the existing parking Lots #1 to #4. The trip generations include the trips associated with the residential and retail components as well as new commuter trips related to the additional commuter spaces. The Project is expected to generate 57 new vehicular trips during the typical weekday AM peak hour and 139 new trips during the typical weekday PM peak hour. In addition, there will be a net increase of 10 commuter trips during the AM peak hour and 21 commuter trips during the PM peak hour.

The site-generated traffic volumes were assigned to the area roadways based on the anticipated arrival and departure patterns which were determined based on a review of the existing roadway network, existing traffic patterns and proposed access to the Project.

## [illegible]

Capacity analyses were conducted at the study intersections to assess the quality of traffic flow in the study area under existing conditions and future conditions with and without the proposed action. Based on a review of the peak-hour traffic volumes, it was determined that all intersections currently experience acceptable (Level of Service D or better) operating conditons during the AM and PM peak hours. At the Halstead Avenue intersection with Harrison Avenue, the westbound through/right-turn lane currently operates at Level of Service E during both peak hours. In the future without the project but with forecast increases in traffic

volumes, longer peak-hour delays will be experienced on the Halstead Avenue westbound through/right-turn lane movement and this condition will worsen in the future with the Proposed Action. To reduce peak-hour delays, it is recommended that the traffic signal timing be modified by allocating more green time to the Halstead Avenue westbound signal phase. At the Halstead Avenue intersection with Oakland Avenue and Macy Road, a minor signal timing change is recommended to reduce delays on the eastbound approach.

## Parking Analysis

A total of 584 parking spaces will be provided, with 475 parking spaces for Metropolitan Transportation Authority (MTA) commuters, 179 spaces for residents and 97 spaces for retail patrons. The MTA commuter parking spaces will be available for use by non-commuters between the hours of 4:00 PM and 4:00 AM weekdays and 24 hours on weekends.

A parking analysis has been conducted to identify the peak parking demand for each component of the development (residential, retail and commuters) and a separate shared parking analysis was conducted for the shared use of the commuter spaces by the retail patrons and commuters. The maximum parking demand for the retail component occurs on a weekend afternoon with 54 vehicles parked. The residential peak demand occurs during the overnight hours with up to 179 vehicles parked while the commuter parking demand peaks during a weekday afternoon with 475 vehicles parked. A shared parking analysis of the retail and commuter parking indicates that the maximum demand occurs on a weekday at 4pm with 502 vehicles parked), allowing for 70 surplus spaces. The weekend demand is much lower than the weekday demand due to the lack of commuter parking activity. On weekends there is a minimum surplus of 481 parking spaces at all times.

## Conclusions

Based on the findings above, is concluded that, with the recommended signal timing modifications, the proposed AvalonBay at Harrison development will not have a significant adverse impact on area traffic operating conditions. Furthermore, the proposed driveways will operate at acceptable levels of service and sufficient parking will be provided to meet the anticipated peak demands.

# 1
# Introduction

VHB Engineering, Surveying and Landscape Architecture, P.C. (VHB) has been retained by AvalonBay Communities, Inc. to conduct a traffic impact study documenting the potential traffic impacts associated with the proposed redevelopment of an approximately 3.79 acre site on Halstead Avenue in the Town/Village of Harrison, Westchester County, NY. The traffic impact study quantifies both the existing traffic conditions along area roadways surrounding the site and the projected future traffic conditions expected with and without the proposed redevelopment of the site.

This traffic study has been prepared as part of the Draft Environmental Impact Statement (DEIS) for the proposed action and is in accordance with the requirements of the New York State Environmental Quality Review Act (SEQRA) and the Scoping Document (adopted 1/25/2016) for the proposed action. The purpose of this study is to determine whether any significant traffic impacts would result from the proposed development and to propose and evaluate mitigation measures, if required.

## Project Description

The Project site, as depicted on **Exhibit 1,** is located on the north side of Halstead Avenue, to the east of Harrison Avenue (NYS Route 127) and immediately adjacent to the Metro-North Railroad's (MNR) Harrison Station, which is part of the MNR New Haven Line. The site currently contains 260 parking surface spaces within four parking lots (Lots #1 to #4). AvalonBay Communities, Inc. is proposing to construct a mixed-use Transit Oriented Development (TOD) project adjacent to the Harrison Station which will have 143 residential units divided between three multi-story buildings, 27,000 square feet of commercial retail space on the ground floor of the three residential buildings, structured parking in two of the three buildings (Building A and Building C), including 475 parking spaces used for MNR commuter parking to replace the current 260 parking spaces in the existing surface lots. The Project will have two publicly accessible pedestrian plazas which will connect the Harrison Station entrances to Halstead Avenue. Taxi stands will be located along Halstead Avenue at the entrance to each of the plazas to facilitate access to the station.

The four driveways to the existing parking lots will be closed and three new driveways will be constructed to provide access to the two new parking structures. Access to the Building A parking garage will be via a driveway opposite Purdy Street (at the location of the existing Lot #1 driveway). The Commuter Parking Garage in Building C will have two driveways; one driveway located to the west of Haviland Street (near the current Lot #3 driveway location) and a second driveway to the east of Haviland Street. Each of the new driveways will have one entering lane and one exiting lane permitting all movements.

0 85 170 340 Feet

**Avalon Bay, Harrison** | Harrison, New York

**LEGEND**

Site Location

Study Locations

**Exhibit 1**
**Study Locations**

Source Town of Harrison ESRI

## Study Methodology

The focus of this study was to evaluate traffic flows and operating conditions on the roadways and intersections projected to be used by motorists traveling to and from the proposed development and to quantify the potential traffic impacts on these roadways and intersections.

As identified in the Scoping Document, the project study area consists of the 9 intersections listed below.

1) Halstead Avenue (CR 54) and Harrison Avenue (Route 127)
2) Halstead Avenue (CR 54) and Purdy Street/Surface Lot # 1
3) Halstead Avenue (CR 54) and Surface Lot # 2 (MTA)
4) Halstead Avenue (CR 54) and Surface Lot # 3
5) Halstead Avenue (CR 54) and Haviland Street/Surface Lot # 4
6) Halstead Avenue (CR 54) and Macy Road/Oakland Avenue
7) Halstead Avenue (CR 54) and Osborne Road
8) Halstead Avenue (CR 54) and Newport Towers Driveway
9) Harrison Avenue and Heineman Place/Calvert Street

The greatest cumulative impacts of project-related traffic are likely to occur during the weekday AM and PM peak hours. As such, traffic operating conditions at the study intersections were analyzed during these two peak periods.

# 2

# Existing Conditions

Evaluation of the traffic impacts associated with the proposed Project requires a thorough understanding of the existing roadway system in the vicinity of the site. The existing conditions observed in the study area include an inventory of roadway and intersection geometry, traffic control devices, traffic signal timings, and the collection of traffic volumes. This information is provided in the following section.

## Study Roadways and Intersections

***Halstead Avenue (County Route 54)*** is a Westchester County roadway (CR 54) that is classified as a minor arterial and connects NYS Route 120 (Purchase Street) in Rye to the east with Mamaroneck to the west. Within the study area, Halstead Avenue provides one travel lane in each direction with additional turning lanes provided at the intersections with Harrison Avenue (NYS Route 127), Oakland Avenue and Osborne Road. Halstead Avenue has a posted speed limit of 30 miles per hour (mph). Within the study area, sidewalks are provided on both sides of the road except for a 70-foot long section in front of the main Harrison Station parking lot. On-street parking is provided on both sides of the road west of Macy Road. There is a bus stop on the corner of Halstead Avenue with Harrison Avenue, Purdy Street and Macy Road. Traffic signals are provided at Harrison Avenue, Macy Road, Oakland Avenue and Osborne Road.

The pavement is in generally fair condition with clearly visible signs of surface distress in some areas. The County is proposing to repave a portion of Halstead Avenue (from the Harrison/Mamaroneck line to Haviland Street) that will replace substandard areas of asphalt paving. The repaving project is to include drainage improvements, installation of new curb cuts and replacement of pavement markings and traffic signal loops. The project is funded and bids were due on July 27. Construction is scheduled for the fall of 2016.

***Harrison Avenue***, designated as NYS Route 127, is a State minor arterial roadway that connects White Plains in the north to Boston Post Road in Mamaroneck in the south. Within the study area, Harrison Avenue provides one travel lane in each direction with additional turning lanes provided at its intersection with Halstead Avenue. The pavement is in generally good condition and Harrison Avenue has a posted speed limit of 30 mph. Within the study area, sidewalks are provided on both sides of the roadway. On-street parking is generally provided on the west side of the road. There are bus stops on the corners of Harrison Avenue with Heineman Place/Calvert Street and on Harrison Avenue southbound approaching Halstead Avenue. Traffic signals are provided at Halstead Avenue, and Heineman Place/Calvert Street.

***Osborne Road*** is a two-lane, minor arterial that extends from Halstead Avenue in a southeasterly direction to Boston Post Road (US Route 1) in Rye. South of Boston Post Road, the roadway continues as Oakland Beach Road to its terminus at Forest Avenue. The pavement is in generally fair to good condition and the posted speed limit is 30 mph. Within the study area, sidewalks are provided on both sides of the road. On-street parking is provided on the north side of the road. Traffic signals are provided at Halstead Avenue and Boston Post Road.

***Oakland Avenue*** is a local roadway that extends from Halstead Avenue in a southwesterly direction to its terminus in a residential area to the west of Park Avenue. One travel lane is provided in each direction with an additional turning lane provided at its signalized intersection with Halstead Avenue. The pavement is in generally fair to good condition. Within the study area, sidewalks are provided on the west side of the road. On-street parking is generally provided on the south side of the road. There is a bus stop on the corner of Oakland Avenue and Halstead Avenue. A traffic signal is provided at Halstead Avenue and a stop sign is provided at Park Avenue.

***Macy Road*** is a two-lane, north/south local roadway that is classified as a major collector. Macy Road connects Sunnyside Avenue to Halstead Avenue and crosses under the MNR tracks where the vertical clearance is 8′ 9″. The pavement is in generally fair condition and a sidewalk is provided on the west side of the roadway adjacent to the LaVigna Brothers Garage. A limited amount of on-street parking is provided on the west side of Macy Road by Halstead Avenue. A traffic signal is provided at Halstead Avenue and a stop sign is provided at Sunnyside Avenue/South Road.

***Heineman Place*** is a two-lane, east/west local roadway that is classified as a major collector. Heineman Place extends from its intersection with Sunnyside Drive and Bruce Avenue in the east to Harrison Avenue in the west. To the west of Harrison Avenue, the roadway continues as Calvert Street. The pavement is in generally good condition and sidewalks are provided along both sides of the roadway. On-street parking is provided on the south side of the road. A traffic signal is provided at Halstead Avenue, as are bus stops

Descriptions of the 9 study locations are provided below.

1) Halstead Avenue (CR 54) and Harrison Avenue (NYS 127)

   At this four-way signalized intersection, the Halstead Avenue approaches and the southbound Harrison Avenue approach each provide an exclusive left turn lane

and a shared through/right turn lane. The northbound Harrison Avenue approach has one shared left-turn/through/right-turn lane. The intersection is controlled by a four-phase traffic signal. Pedestrian crosswalks and pedestrian displays are provided on each leg of the intersection.

2) Halstead Avenue (CR 54) and Purdy Street/Surface Lot # 1

Halstead Avenue provides one lane in each direction at this unsignalized intersection with Purdy Street and the driveway to parking Lot #1. Purdy Street is a one-way southbound roadway with one receiving lane. The Lot #1 driveway has a wide, 40-foot approach to the intersection which is generally utilized as two lanes (a shared left-turn/through lane and an exclusive right-turn lane). A Stop sign is provided on the Lot #1 approach. A crosswalk is provided on the west leg of Halstead Avenue. In the future, with the Project, this driveway will be improved and provide access to a new parking structure.

3) Halstead Avenue (CR 54) and Surface Lot # 2 (MTA)

Halstead Avenue provides one lane in each direction at this unsignalized "T" intersection with the driveway to parking Lot #2. The Lot #2 driveway approach has one shared left-turn/right-turn lane. A crosswalk is provided on the west leg of Halstead Avenue. In the future, with the Project, this driveway will be closed.

4) Halstead Avenue (CR 54) and Surface Lot #3

Halstead Avenue provides one lane in each direction at this unsignalized "T" intersection with the driveway to parking Lot #3. The Lot #3 driveway approach has one shared left-turn/right-turn lane. Crosswalks are not provided at this intersection. In the future, with the Project, this driveway will be closed.

5) Halstead Avenue (CR 54) and Haviland Street/Surface Lot # 4

Halstead Avenue provides one lane in each direction at this unsignalized, four-legged intersection with Haviland Street and the driveway to parking Lot #4. Haviland Street is a one-way southbound roadway with one receiving lane. The Lot #4 driveway approach has one shared left-turn/through/right-turn lane. A Stop sign is provided on the Lot #4 approach. A crosswalk is provided on the east leg of Halstead Avenue. In the future, with the Project, this driveway will be closed.

6) Halstead Avenue (CR 54) and Macy Road/Oakland Avenue

At this four-way signalized intersection, the Halstead Avenue eastbound approach and the southbound Macy Road approach each provide one shared left-turn/through/right-turn lane. The northbound Oakland Avenue approach has a shared left-turn/through lane and an exclusive right-turn lane. The westbound Halstead Avenue approach has an exclusive left-turn lane and a shared through/right-turn lane. The intersection is controlled by a multi-phase traffic signal that operates as part of a coordinated system with the signals at the

adjacent Osborne Road and Newport Towers intersections. Pedestrian crosswalks are provided on the Macy Road and Oakland Avenue intersection legs.

7) Halstead Avenue (CR 54) and Osborne Road

The eastbound approach of Halstead Avenue at this signalized "T" intersection provides one through lane and a channelized right-turn lane. The westbound Halstead Avenue approach has one shared left-turn/through lane and a through lane. Osborne Road has one northbound shared left-turn/right-turn lane. The intersection is controlled by a multi-phase traffic signal coordinated with the adjacent intersections. Crosswalks are not provided at this intersection.

8) Halstead Avenue (CR 54) and Newport Towers Driveway

The Newport Towers Driveway has one southbound shared left-turn/right-turn lane at this signalized "T" intersection. Halstead Avenue has one eastbound through lane and two westbound through lanes. The traffic signal at this intersection is coordinated with the signals at the adjacent Osborne Road and Oakland Avenue/Macy Road intersections. Crosswalks are not provided at this intersection.

9) Harrison Avenue and Heineman Place/Calvert Street

At this four-way, signalized intersection, each approach provides one shared left-turn/through/right-turn lane. The intersection is controlled by a two-phase traffic signal. Pedestrian crosswalks and displays are provided on each leg.

## Existing Parking

The project site currently consists of four surface parking lots (Lots #1 to #4) owned and maintained by the MTA with a cumulative total of 260 parking spaces. All parking spaces are metered except for approximately 50 spaces in Lot #1 which provide free, two-hour parking for patrons of the commercial businesses along Halstead Avenue. Free parking is provided in all lots after 6 PM, on weekends and holidays.

The Town/Village of Harrison operates a parking lot on the northern side of the MNR railroad tracks, opposite of the Site. This parking area is restricted to permit holders and is accessed from Sunnyside Avenue and Calvert Street. This parking area also includes reserved spaces for employees of the Town/Village Municipal Building. A smaller (20-space) parking lot is located adjacent to Sunnyside Avenue to the east of the Town/Village Municipal Building. Free two-hour parking is permitted in this lot from 7am to 7pm.

A municipal lot with access from Harrison Avenue and Fremont Street and located to the south of Halstead Avenue provides free two-hour parking from 8am to 6pm.

Free on-street parking is generally permitted along both sides of Halstead Avenue between Oakland Avenue/Macy Road and Harrison Avenue. On the northern side of Halstead Avenue, there are 36 diagonal parking spaces between the Lot #1 driveway and the Lot #4 driveway. A parallel parking area is provided to the east of Lot #4, extending to approximately 130 feet to the west of the Macy Road/Oakland Avenue intersection. Parallel parking is also provided on the south side of Halstead Avenue. There are some portions along Halstead Avenue where parking is prohibited, such as in front of the funeral parlor at the southeastern corner of the intersection of Halstead Avenue and Haviland Street and at bus stop locations. Parking regulations for Halstead Avenue include one-hour parking permitted from 8am to 6pm, except on Saturday, Sunday, and holidays and no parking is allowed from 3am to 6am.

Along Harrison Avenue near its intersection with Halstead Avenue, restricted parking (one hour between 8am and 6pm; no parking from midnight to 6:00 am) is permitted on the west side of the street to the south of the intersection. Parking is not permitted along the east side of the street. To the north of the intersection, extending to Heineman Place/Calvert Street, parking is not permitted along either side of Harrison Avenue.

Free parking is available on the side streets in the vicinity of the Site. On both sides of Purdy Street near its intersection with Halstead Avenue, parking is limited to two hours from 7am to 7pm (on all days) except for an area on the west side near Halstead Avenue where parking is limited to 15 minutes. On both sides of Parsons Street, parking is limited to two hours from 8am to 6pm on all days. In some areas, generally in the residential area to the south of Archer Place, these restrictions exclude Saturday, Sunday, and holidays. On Haviland Street, parking is limited to two hours from 7am to 7pm on both sides of the street.

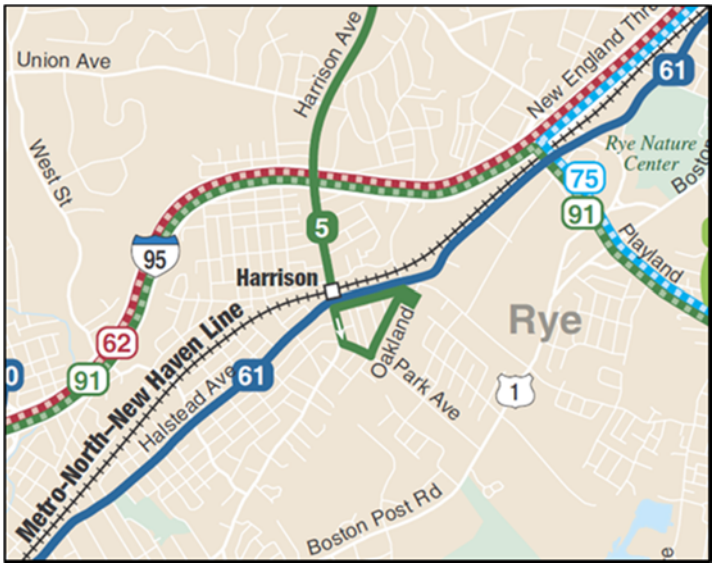
## Public Transit

The Project is afforded convenient access to public transit, including rail and bus service. The MNR Harrison Station is directly adjacent to the Site. MNR provides fast, frequent service between Grand Central Terminal in New York City and Stamford, CT on the New Haven Line. Connections to Amtrak service are also available along the New Haven line at the New Rochelle and Stamford, CT stations. There are 103 trains that stop at the Harrison Station each weekday (49 southbound trains that terminate at the Grand Central Terminal, and 54 northbound trains that terminate in Stamford CT). In addition, there are 75 daily trains on weekends and holidays, (37 southbound; 38 northbound). Peak express service between the MNR Harrison Station and Grand Central Terminal takes 40 minutes or less. It is a 30 minute train ride from Harrison, NY to Stamford, CT.

Westchester County runs the Bee-Line Bus system within the study area. Routes #5 and #61 each have stops located along Halstead Avenue. Bus stops are located adjacent to the Site on the north side of Halstead Avenue (between Harrison Avenue and the Lot#1 driveway) and on the south side of Halstead Avenue (to the east of Purdy Street).

Route #5 provides service between Harrison and Yonkers with 28 buses each weekday (13 southbound buses from Harrison to Yonkers; and 15 northbound buses). On Saturdays, there are a total of 23 buses (12 southbound and 11 northbound buses). Route #5 does not operate in Harrison on Sundays.

Route #61 provides service between the Bronx and Port Chester with 40 buses each weekday (20 northbound; 20 southbound) and 20 buses on Saturdays (10 northbound; 10 southbound). Route #61 does not operate on Sundays.



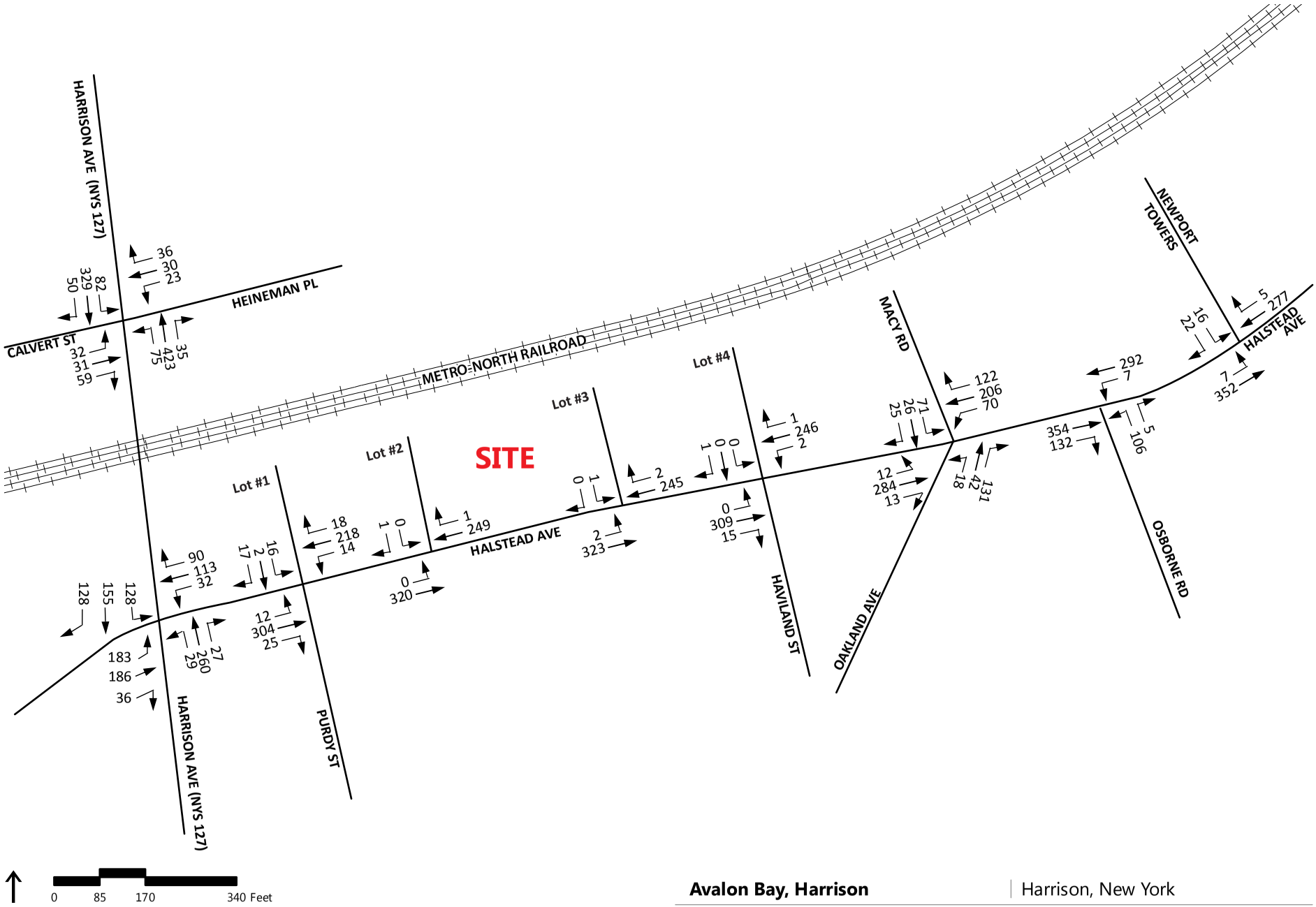

*Map of Westchester Bee-Line Bus system in the Harrison area*

## Existing Traffic Data

To assess existing traffic conditions in the vicinity of the site, peak hour manual turning movement traffic volume counts were recorded at the 9 study intersections in April 2016.

The counts included tallies of vehicles and pedestrians and were conducted on a typical weekday on Wednesday, April 13, 2016 during the morning peak period (6:45 to 9:00 AM) and the evening peak period (4:45 to 7:15 PM). The counts were tabulated and traffic passing through these intersections was determined to be greatest from 8:00 to 9:00 AM and 5:15 to 6:15 PM, the AM and PM Peak Hours. The AM and PM peak hour Existing traffic volumes are depicted on **Exhibits 2 and 3,** respectively. Overall, the PM Peak Hour volumes are approximately 10 percent higher than the AM Peak Hour volumes.

The traffic counts also included vehicles turning into and out of the four existing MTA lots. A review of this activity revealed that activity peaked at the MTA lots from 6:45 to 7:45 AM and from 6:15 to 7:15 PM. Activity during these hours at the MTA lots was almost twice MTA lot activity during the AM Peak Hour (8:00 to 9:00 AM) and more than twice MTA lot activity during the PM Peak Hour (5:15 to 6:15 PM).

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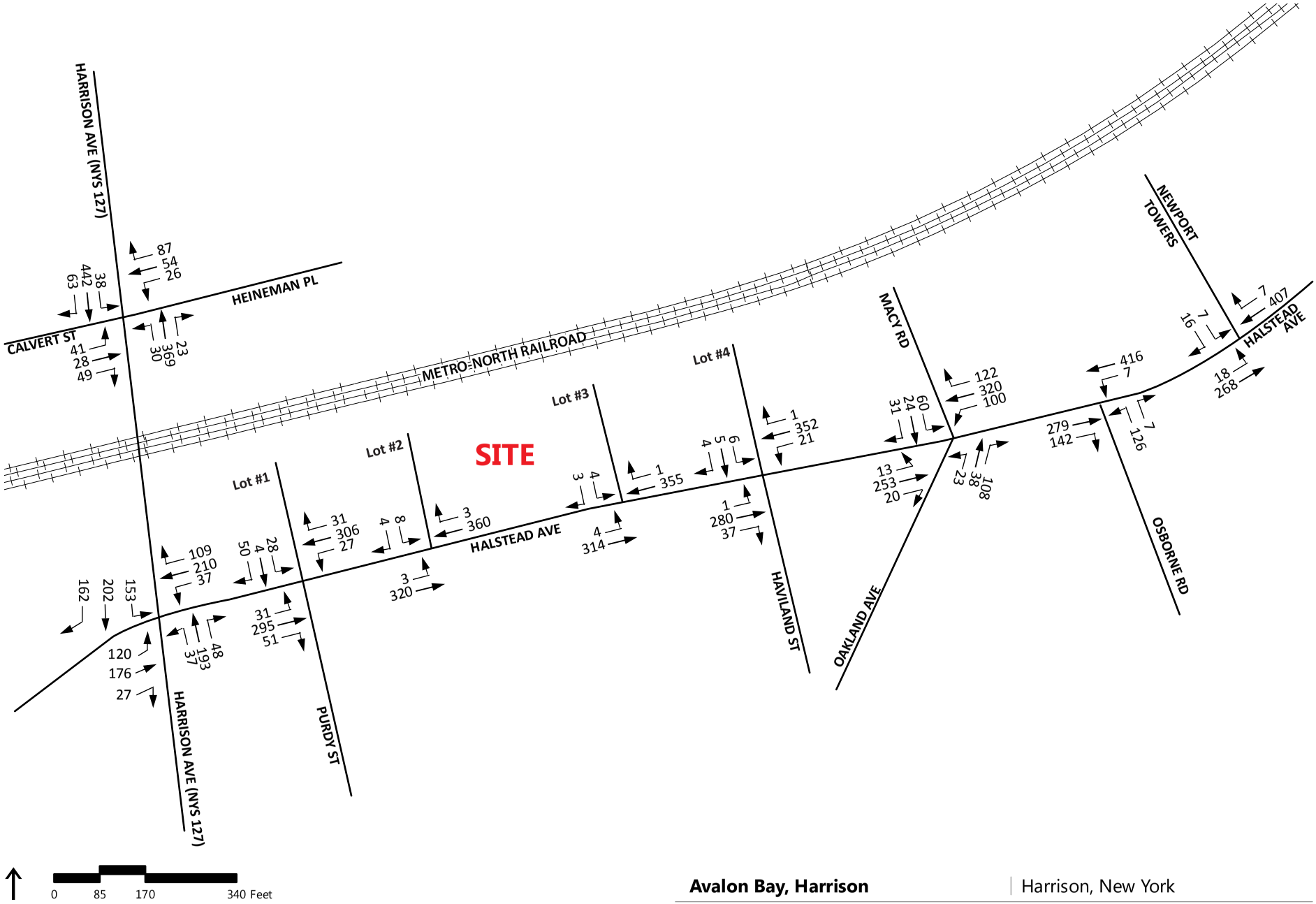
**Avalon Bay, Harrison** | Harrison, New York

**Exhibit 2**
**Existing Traffic Volumes**
**AM Peak Hour**

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**Avalon Bay, Harrison** | Harrison, New York

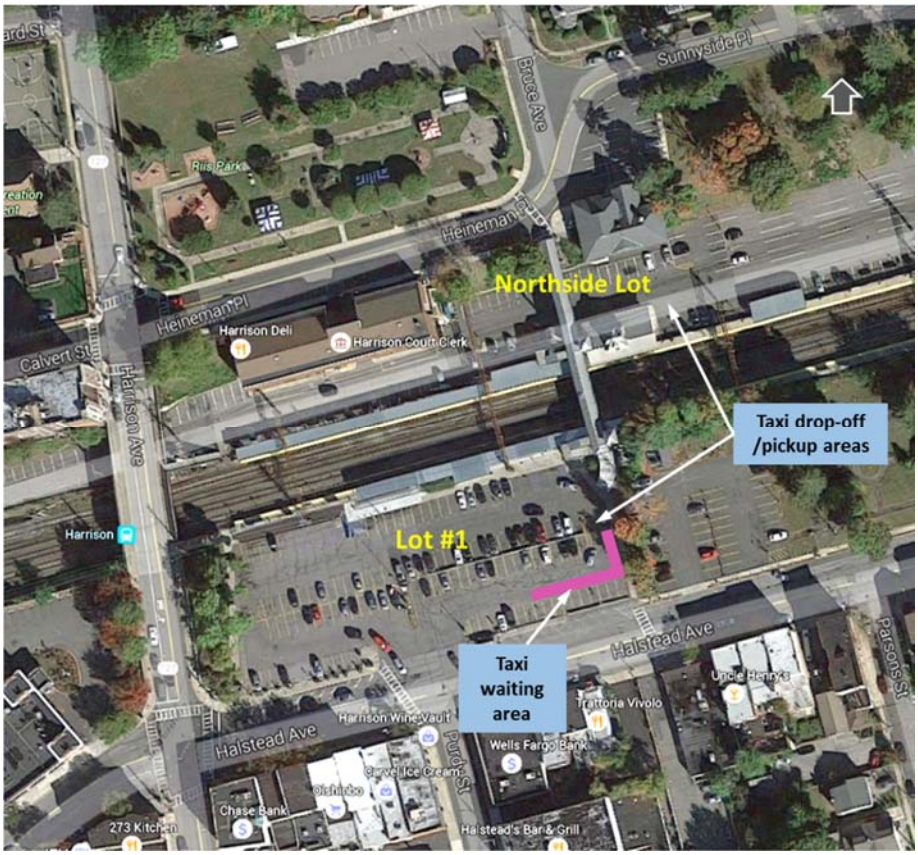
**Exhibit 3**
**Existing Traffic Volumes**
**PM Peak Hour**

## Taxi Cab Circulation

Traffic counts of the taxi activity at the Harrison station were conducted on Friday April 8, 2016. The surveys included counting the number of taxis that entered the station parking areas (Lot #1 and the northside lot) and observations of the taxi stand queues in Lot #1. The counts were conducted during the PM peak period (5:00 to 7:30 PM) which typically has more taxis waiting to pick-up fares than during the morning peak period where queuing is typically less as most of the morning trips are for dropping off passengers. The majority of the taxi trips were in Lot #1 with a total of 28 taxis during the 2 ½ hour survey period. During the PM Peak Hour (5:15 to 6:15 PM) there were a total of 10 taxi trips in Lot #1. In the northside lot, a total of 8 taxi trips occurred during the entire survey period with 4 of these trips occurring during the PM Peak Hour.

In Lot #1, the taxis wait for passengers in a designated area along the southeastern perimeter of the lot, as shown in **Exhibit 4**. The maximum observed queue of taxis during the PM Peak Hour in Lot #1 was 4 taxis.

Exhibit 4 - Taxi Waiting Area




The taxi operations will be modified with the redevelopment of the Site. The taxi pick-up/drop-off area in Lot #1 will be relocated to Halstead Avenue where two taxi stands are being

proposed. The taxi stands will be located adjacent to the pedestrian plaza connections to the train station and have been sized to provide sufficient storage during peak periods, based on the taxi queuing surveys (which indicate a maximum observed queue of 4 taxis). The new taxi stands will provide storage for 7 taxis.

## Crash History Analysis

Historical crash data for the study intersections was obtained from the New York State Department of Transportation (NYSDOT) for the latest available three-year period from January 1, 2013 to December 31, 2015. The data were reviewed and tabulated according to location, crash severity (fatalities or injuries), crash type (rear-end, right-angle, etc.) and contributing factors. During the three-year period, a total of 33 crashes occurred at the 9 study locations, as shown in **Table 1**. Of the 33 crashes, 10 incidents resulted in injuries and there were no fatalities. Three crashes involved pedestrians (each occurring at or near the intersection of Halstead Avenue with Harrison Avenue) and there were no crashes that involved bicyclists. A detailed breakdown of the crash data is provided in the Appendix.

### Table 1 - Summary of 3-year Crash History

| Intersection | 2013 | 2014 | 2015 | Total 2013 to 2015 |
|---|---|---|---|---|
| 1) Halstead Avenue and Harrison Avenue (Route 127) | 6 | 3 | 2 | **11** |
| 2) Halstead Avenue and Purdy Street/Surface Lot # 1 | 1 | 0 | 2 | **3** |
| 3) Halstead Avenue and Surface Lot # 2 | 0 | 0 | 0 | **0** |
| 4) Halstead Avenue and Surface Lot # 3 | 0 | 0 | 0 | **0** |
| 5) Halstead Avenue and Haviland Street/Surface Lot # 4 | 2 | 0 | 0 | **2** |
| 6) Halstead Avenue and Macy Road/Oakland Avenue | 1 | 3 | 4 | **8** |
| 7) Halstead Avenue and Osborne Road | 2 | 0 | 1 | **3** |
| 8) Halstead Avenue and Newport Towers Driveway | 1 | 1 | 1 | **3** |
| 9) Harrison Avenue and Heineman Place/Calvert Street | 1 | 0 | 2 | **3** |
| **Total** | **14** | **7** | **12** | **33** |

As shown in Table 1, 14 crashes occurred in 2013, 7 crashes in 2014 and 12 crashes in 2015. In the three-year period, the highest number of crashes occurred at the intersection of Halstead Avenue and Harrison Avenue with a total of 11 crashes. Three of the crashes at this location involved pedestrians (2 crashes in 2013, 1 in 2014). In two of the pedestrian crashes, the pedestrians were crossing at midblock locations and were not in a crosswalk.

Driver inattention was cited in 12 of the crashes and backing unsafely was a contributing factor in 8 crashes, which generally involved vehicles pulling into or out of parking spaces along Halstead Avenue.

None of the intersections or roadways in the study area appear to have a crash history that is higher than would be expected for similar facilities.

# 3

# Future Conditions

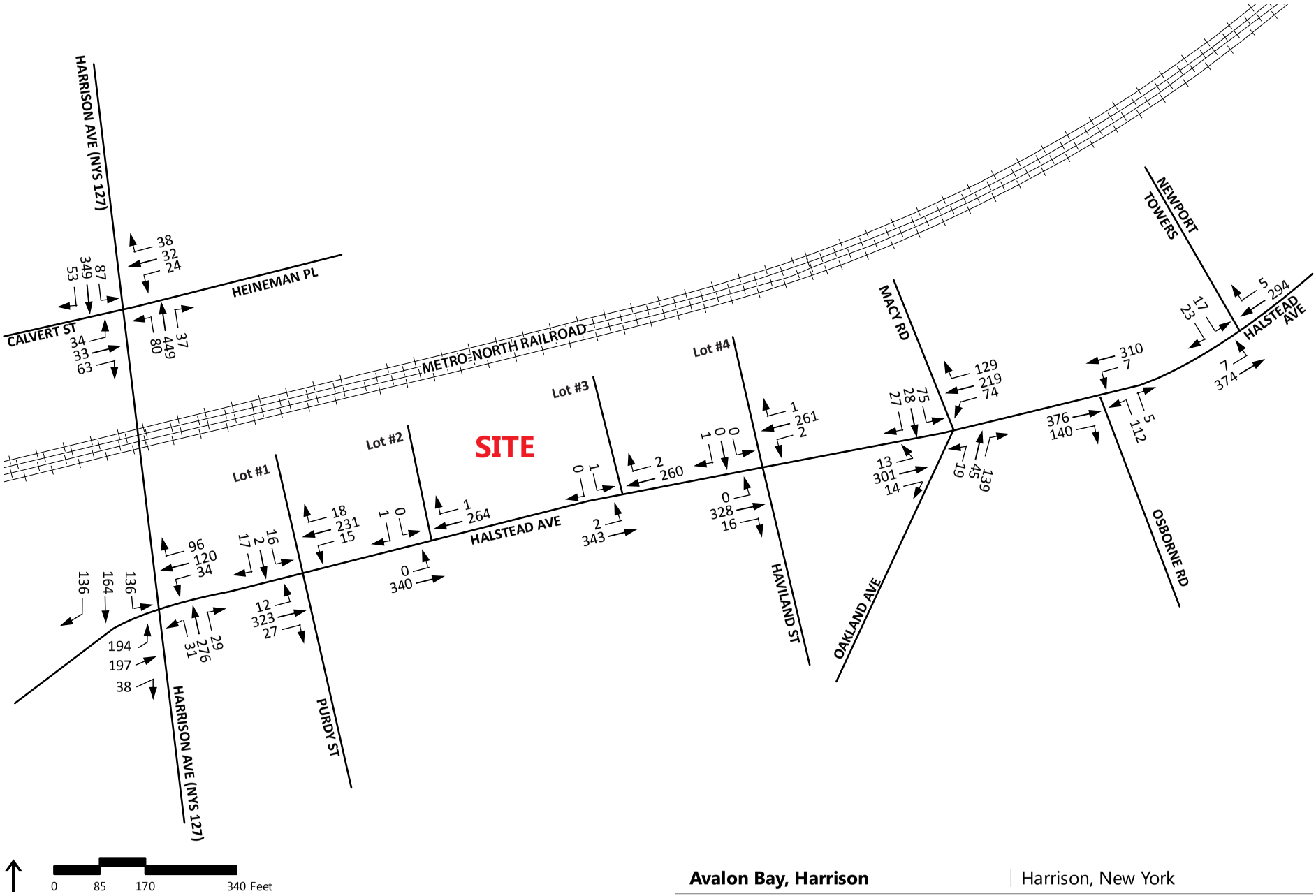
An analysis of future conditions, both with and without the proposed Avalon development ("Build" and "No-Build" conditions, respectively), was performed for each of the peak hours to evaluate the effect of the proposed action on future traffic in the area. The No-Build condition represents the future traffic conditions that can be expected to occur, if the proposed redevelopment does not materialize. The No-Build condition serves as a comparison to the Build condition, which represents expected future traffic conditions resulting from both project and non-project-generated traffic.

## No-Build Condition

Traffic growth is typically a function of the expected land development, economic activity and changes in demographics in the region. To estimate the rate at which traffic can be expected to grow during the study period, both historical growth and planned area developments are reviewed and considered, as described below.

**Background Traffic Growth**

A review of historical data provided by NYSDOT indicates that traffic activity has been relatively unchanged between 2005 and 2014. To provide a conservative analysis, an increase in background traffic of 2 percent per year was assumed. The existing traffic volumes were increased to the year 2019 (when the Project is anticipated to be completed) by a total of 6 percent to represent the grown volumes. The grown volumes during the AM and PM Peak Hours are shown on **Exhibits 5** and **6.**

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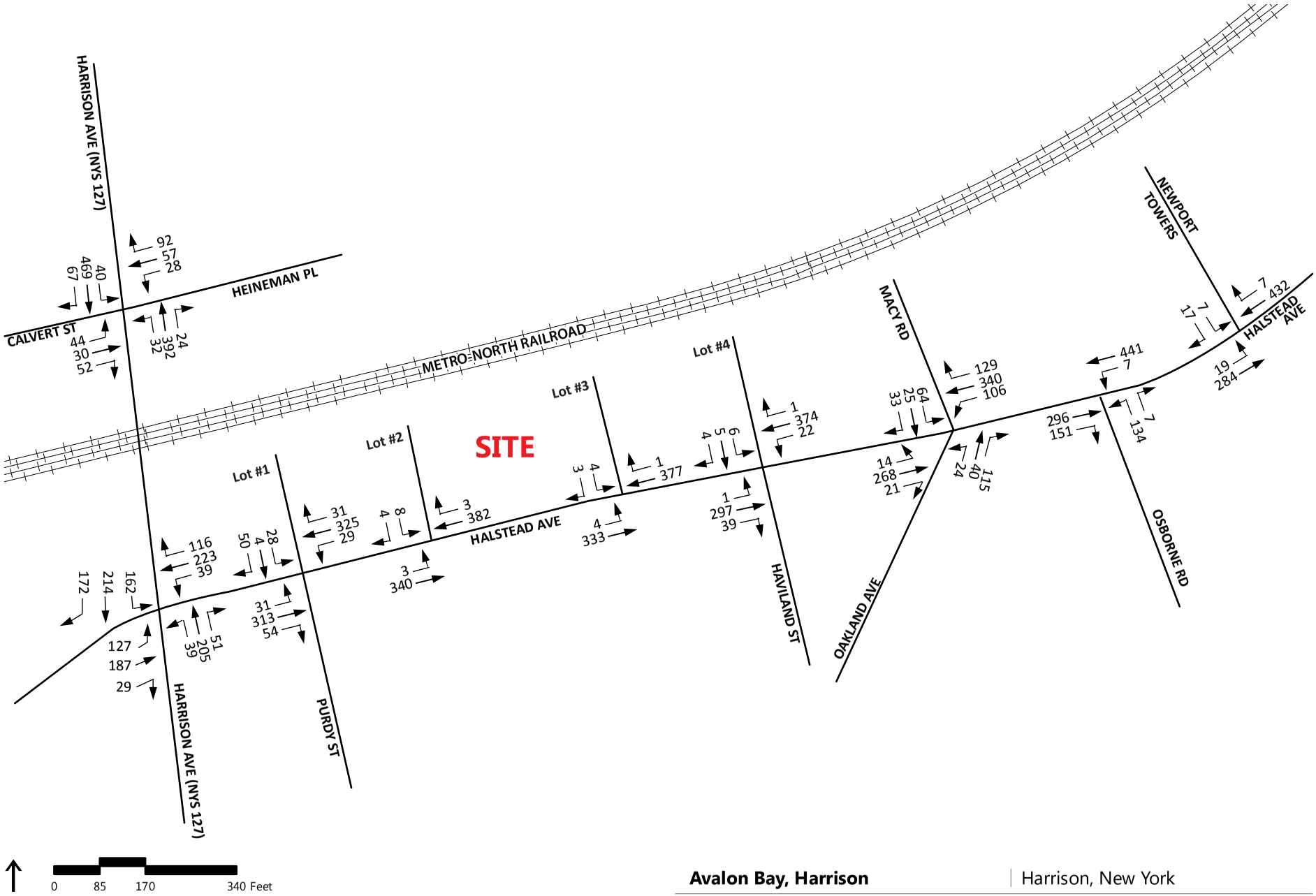
**Avalon Bay, Harrison** | Harrison, New York

**Exhibit 5**
**Grown Traffic Volumes**
**AM Peak Hour**

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**Avalon Bay, Harrison** | Harrison, New York

**Exhibit 6**
**Grown Traffic Volumes**
**PM Peak Hour**

**Planned Vicinity Developments**

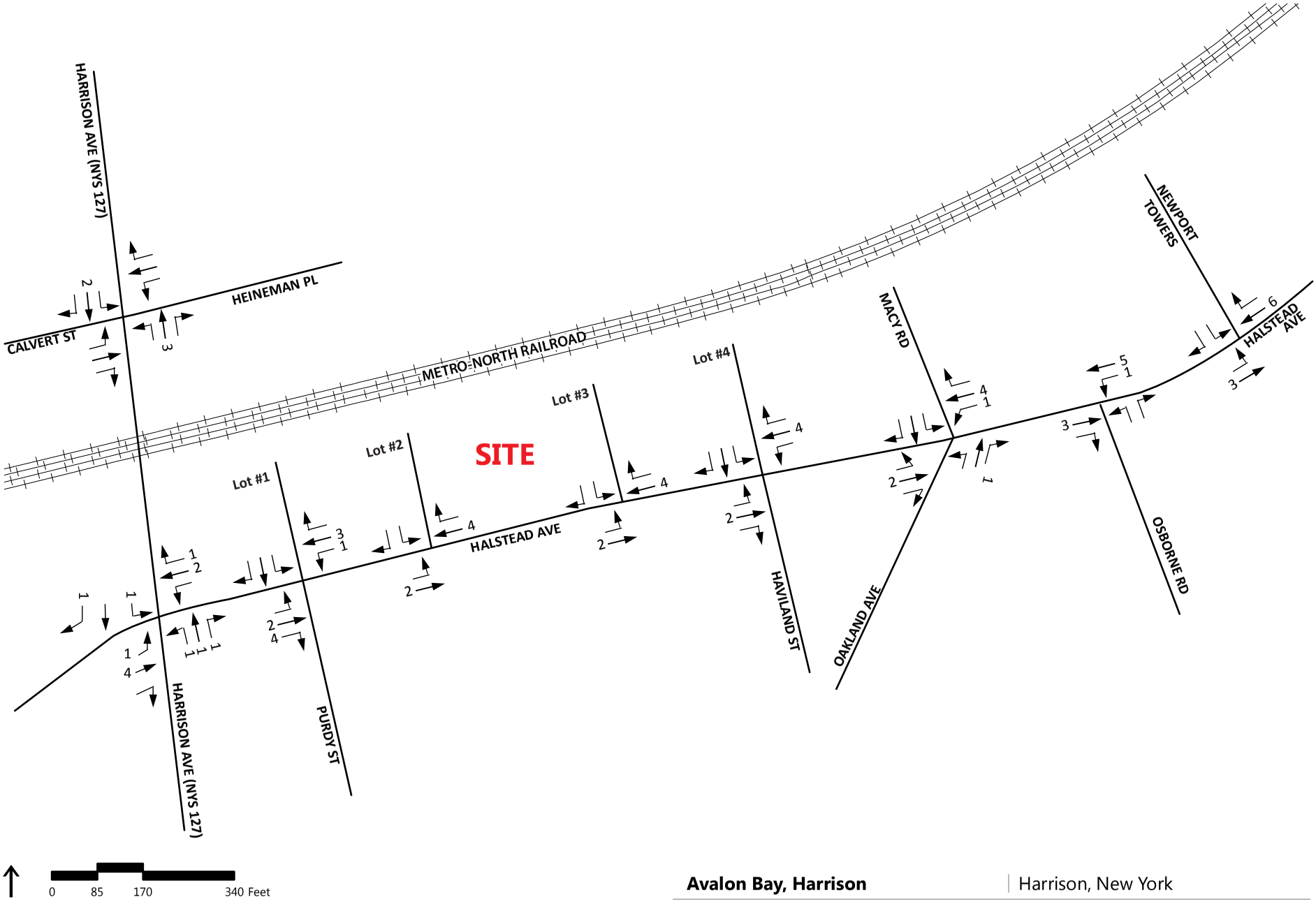
The Town/Village of Harrison Planning Board provided information on proposed vicinity developments in the area. A total of three developments were identified, as indicated below in **Table 2**.

Table 2 - Vicinity Developments

| Development | Type | Size | AM Peak Hour Trips | PM Peak Hour Trips |
|---|---|---|---|---|
| **241-247 Halstead Avenue** | Residential | 19 units | 4 | 5 |
| | Retail | 3,000 sf | 3 | 11 |
| **550 Halstead Avenue** | Residential | 36 units | 8 | 10 |
| **Harrison Playhouse Lofts** | Residential | 42 units | 9 | 12 |
| | Retail | 3,261 sf | 3 | 12 |

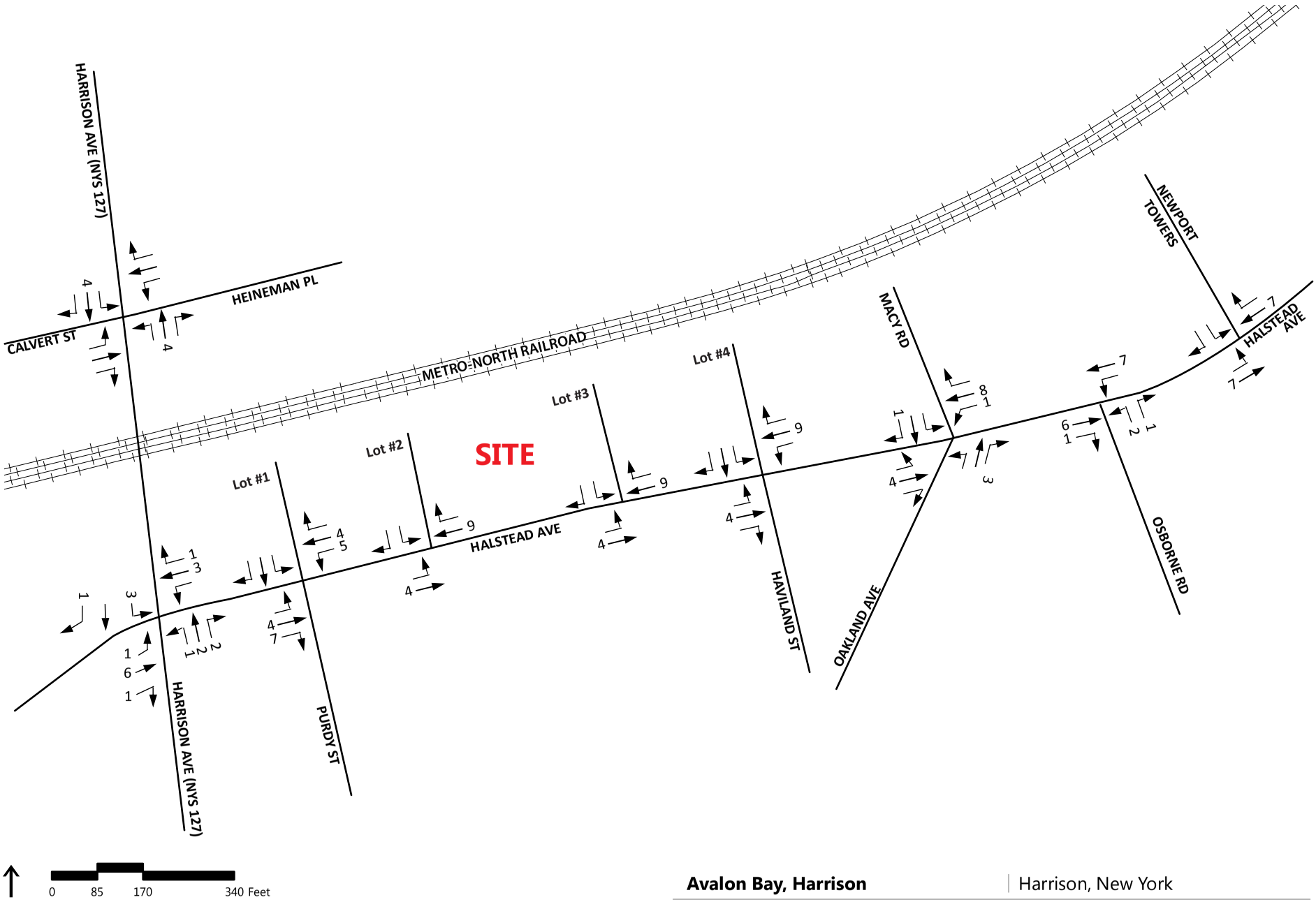
The traffic volumes associated with the above developments were estimated using standard trip generation methodology, as no traffic studies were readily available. Altogether, the 3 developments are projected to generate only a few trips during the peak hours as indicated in Table 3I-5 above. These developments will add only a handful of trips to the study area intersections, as shown graphically on **Exhibits 7** and **8**.

The vicinity development volumes were added to the grown volumes resulting in the future No-Build AM Peak Hour and PM Peak Hour traffic volumes shown on **Exhibits 9** and **10**.



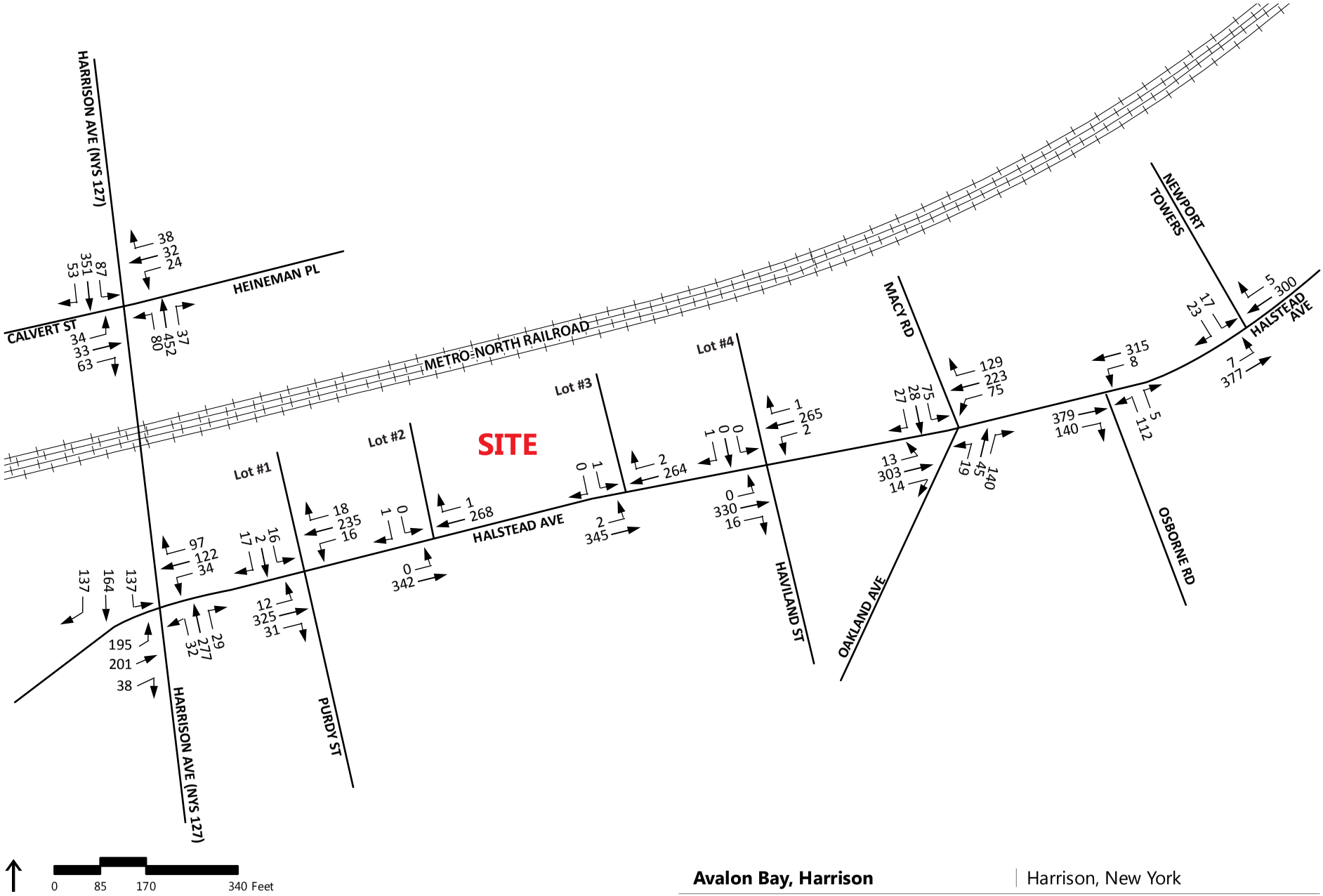

**Avalon Bay, Harrison** | Harrison, New York

**Exhibit 7**
**Vicinity Development Traffic Volumes**
**AM Peak Hour**




**Avalon Bay, Harrison** | Harrison, New York

**Exhibit 8**
**Vicinity Development Traffic Volumes**
**PM Peak Hour**

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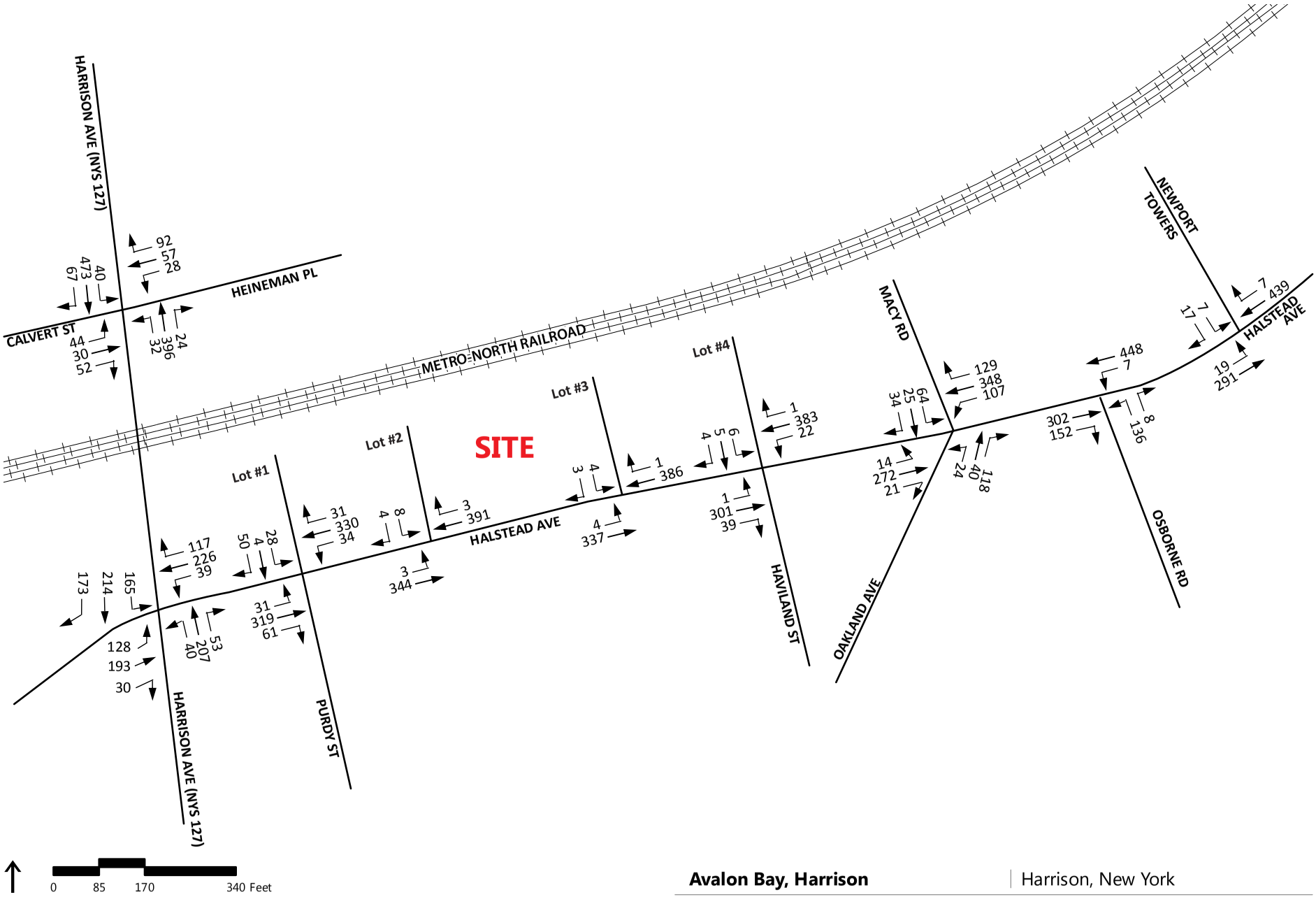
**Avalon Bay, Harrison** | Harrison, New York

**Exhibit 9**
**No-Build Traffic Volumes**
**AM Peak Hour**

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**Avalon Bay, Harrison** | Harrison, New York

**Exhibit 10**
**No-Build Traffic Volumes**
**PM Peak Hour**

## Site-Generated Traffic

The Project is a mixed-use TOD project adjacent to the Harrison Station and will have 143 residential units divided between three multi-story buildings, 27,000 square feet of commercial retail space on the ground floor of the three residential buildings, structured parking in two of the three buildings (Building A and Building C), including 475 parking spaces used for MNR commuter parking to replace the current 260 parking spaces in the existing surface lots. The Project will have two publicly accessible pedestrian plazas which will connect the Harrison Station entrances to Halstead Avenue. Taxi stands will be located along Halstead Avenue at the entrance to each of the plazas to facilitate access to the station.

The future traffic conditions with the Project (the "Build condition") were developed by estimating the trips associated with the residential and retail components as well as new commuter trips related to the additional commuter spaces. The trip generation projections are described below.

Residential and Retail Trip Generations

To evaluate the traffic impact of the Project, it is necessary to determine the traffic volumes expected to be generated by the residential and retail components. A review was undertaken of the available trip generation data sources, including the reference published by ITE, *Trip Generation Manual, Ninth Edition*. This widely utilized reference source contains trip generation rates for related uses: "Mid-Rise Apartment" (Land Use Code 223) and "Shopping Center" (Land Use Code 820).

Due to the Project's location adjacent to the Harrison Station and the Bee-Line bus stops along Halstead Avenue, a TOD credit was applied to the ITE residential trip generations. The ITE trip generations are typically based on studies of developments that are suburban in nature and are not located near mass transit facilities. Surveys of mass transit usage by residents of two similar residential developments located adjacent to train stations (Hudson Park in Yonkers and the former Avalon on the Sound development in New Rochelle) indicate that 55 to 60 percent of residents in these developments take mass transit to and from work. It is anticipated that the Project will have similar mass transit usage, however, to be conservative, a 33 percent TOD credit was applied to the residential trips. No reductions were taken for the retail trips, although it is anticipated that a good portion of the trips will be non-vehicular, that is, many of the retail trips will be pedestrian-based and/or will be internally generated from the residential component. A detailed explanation of the residential Project trip calculation is provided in the Appendix.

The resulting new trips from the Project are summarized in **Table 3**.

Table 3 - Project Trip Generations

| Project Component | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | Total Trips | Mass-Transit Credit | New Trips | Total Trips | Mass-Transit Credit | New Trips |
| Residential (143 units) | 46 | 15 | 31 | 58 | 19 | 39 |
| Retail (27,000 sf) | 26 | 0 | 26 | 100 | 0 | 100 |
| **Total Project Trips** | 72 | 15 | **57** | 158 | 19 | **139** |

Source: ITE Trip Generation Manual, Ninth Edition.

As noted in the table, the Project is conservatively expected to generate 57 new trips during the AM Peak Hour and 139 new trips during the PM Peak Hour.

MTA Commuter Parking Trip Generations

The existing Lots #1 to #4 provide parking for 260 vehicles. Approximately 50 of these parking spaces provide free, two-hour shopper parking; the remaining 210 spaces are metered commuter spaces. The new 584-space garage within Building C of the Project will have 475 spaces for commuters, a net increase of 265 commuter parking spaces over the existing commuter parking in Lots #1 to 4. It is expected that the greater number of spaces will attract new commuter parkers to the Site. As discussed hereafter, it is anticipated that some of these new parkers will be drawn from the existing private vehicle drop-off and pick-up trips at the Harrison Station, which is driven by the fact that there is currently not sufficient commuter parking available.

The new commuter trips were developed based on the existing trip rates at the parking lot driveways during the AM and PM Peak Hours. It is noted that in the morning, the commuter parking lots fill up prior to the AM Peak Hour and in the PM, the commuter exiting peak occurs after the PM Peak Hour. During the AM Peak Hour, the counted commuter volumes represent 53 percent of the earlier commuter lot peak hour volumes. During the PM Peak Hour, the counted volumes from the commuter lots represent only 40 percent of the later commuter peak hour volumes.

The new commuter trips drawn from the existing drop-off/pick-up activity were based on surveys conducted within the 4 commuter lots during the PM peak period which included tallies of the number of private vehicles picking up or dropping off passengers. The new commuter parking trips are shown in **Table 4.**

Table 4 - New Commuter Trips

| | AM Peak Hour | PM Peak Hour |
|---|---|---|
| New Commuter Parking *(net increase of 265 spaces)* | 16 | 37 |
| Trips drawn from existing drop-off/pick-up activity | 6 | 16 |
| Net Increase in Commuter Trips | 10 | 21 |

As shown in Table 4, during the AM Peak Hour, it is anticipated that there will be 16 new commuter trips, of which 6 will be drawn from the existing drop-off/pick-up activity, for a net increase of 10 commuter trips. During the PM Peak Hour, 16 of the 37 new commuter parkers will be drawn from existing drop-off pick-up traffic, resulting in a net increase of 21 trips.

## Trip Distribution and Assignment

Trip arrival and departure patterns, which show how the newly-generated trips identified in Tables 3 and 4 will travel to and from the Site, were determined based on a review of the existing roadway network, existing traffic patterns and proposed access to the Project. The trip origin and destination percentages for project-generated trips are shown in **Table 5.**

Table 5 - Trip Origins and Destinations

| Trip Origin/Destination | Percent of Site Traffic |
|---|---|
| Halstead Avenue from/to the east | 31 |
| Halstead Avenue from/to the west | 26 |
| Harrison Avenue (NYS Route 127) from/to the north | 18 |
| Harrison Avenue (NYS Route 127) from/to the south | 6 |
| Osborne Road from/to the south | 10 |
| Macy Road from/to the north | 4 |
| From/to Local streets | 5 |

The four driveways to the existing parking lots will be closed and three new driveways will be constructed to provide access to the two new parking structures. Access to the Building A parking garage will be via a driveway opposite Purdy Street (at the location of the existing Lot #1 driveway). The Commuter Parking Garage in Building C will have two driveways; one driveway located to the west of Haviland Street (near the current Lot #3 driveway location) and a second driveway to the east of Haviland Street. Each of the new driveways will have one entering lane and one exiting lane permitting all movements.

The residential, retail and commuter trip distribution assignments at the driveways were based proportionately on the number of parking spaces set aside for each use within the two parking structures. The residential and retail parking spaces are located in both the Building A parking garage and Building C Commuter Parking Garage while all of the commuter spaces are located

in the Commuter Parking Structure. The trip distributions were then applied to the Project trips shown in Tables 3 and 4 and the resulting volumes were assigned to the local roadway network.

Taxi waiting areas and a separate area for private motorists to drop passengers off will be provided curbside on the north side of Halstead Avenue between Purdy Street and Haviland Street. The level of this activity (taxi and drop-off/pick-up) was surveyed and evaluated and these areas were determined to be sufficient to accommodate the projected activity.

**Existing Trip Reassignments**

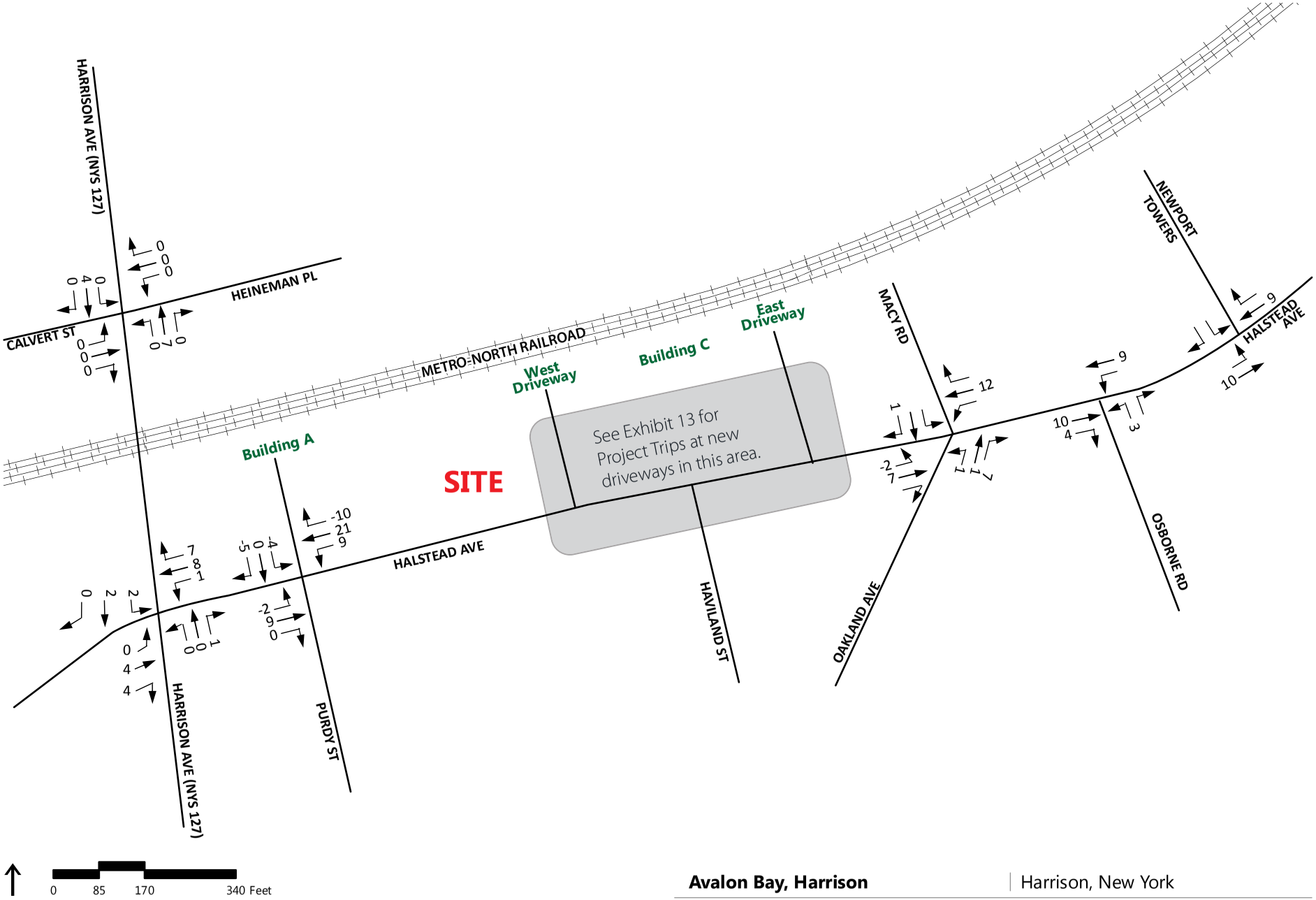
Commuter Trips - As previously discussed, because of the additional commuter parking spaces provided, 6 trips which in the AM Peak Hour are currently drop-off trips are expected to become commuter trips and, similarly, 16 trips which in the PM Peak Hour are currently pick-up trips are also expected to become commuter trips. These trips were reassigned to the adjacent street system to reflect the fact that they would be traveling to and from the Commuter Parking Garage in Building C instead of Lot #1.

Taxi Trips - Similarly, existing taxi trips documented to arrive and depart from Lot #1 that will be relocated curbside on Halstead Avenue were reassigned to the adjacent street system to reflect this change. Likewise, the existing commuters documented to arrive and depart from Lot #s 1 through 4 and who will be relocated to the Commuter Parking Garage were reassigned to the adjacent street system to reflect the fact that they would be traveling to and from the Commuter Parking Garage.

Shopper Trips - Finally, approximately half of the vehicles documented to currently arrive and depart the 50, free, two-hour parking spaces in Lot #1 were similarly reassigned to the Commuter Parking Garage while the remaining vehicles currently using the free spaces were assumed to continue to travel to and from the driveway opposite Purdy Street.

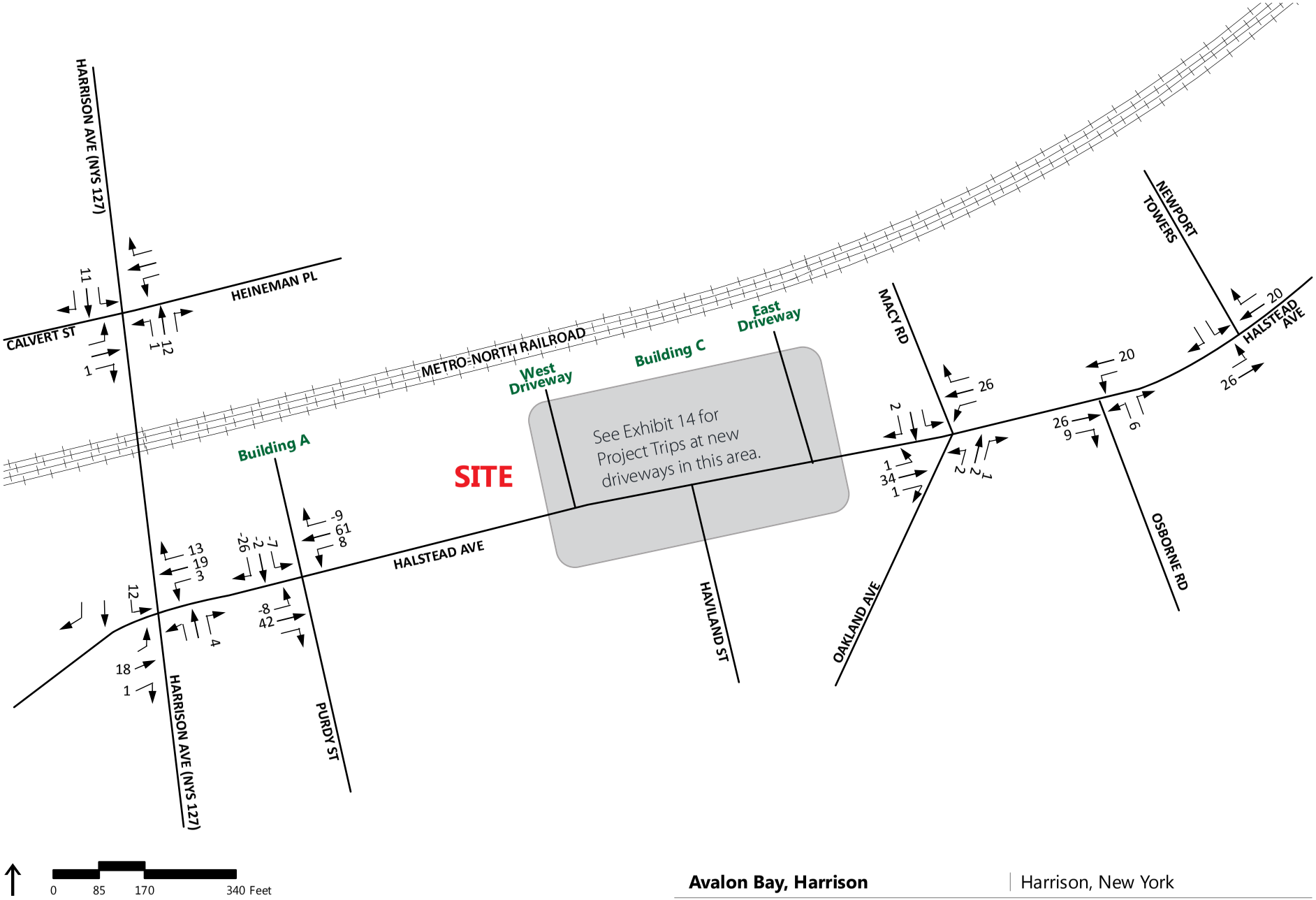
Combined, these reassigned trips were added to previously-discussed new retail, residential and commuter trips with the resulting net Project-generated volumes shown on **Exhibits 11** and **12**.

The project-generated volumes were added to the No-Build condition traffic volumes shown on Exhibits 9 and 10 resulting in the Build condition traffic volumes for the AM and PM Peak Hours shown on **Exhibits 13** and **14**.




**Avalon Bay, Harrison** | Harrison, New York

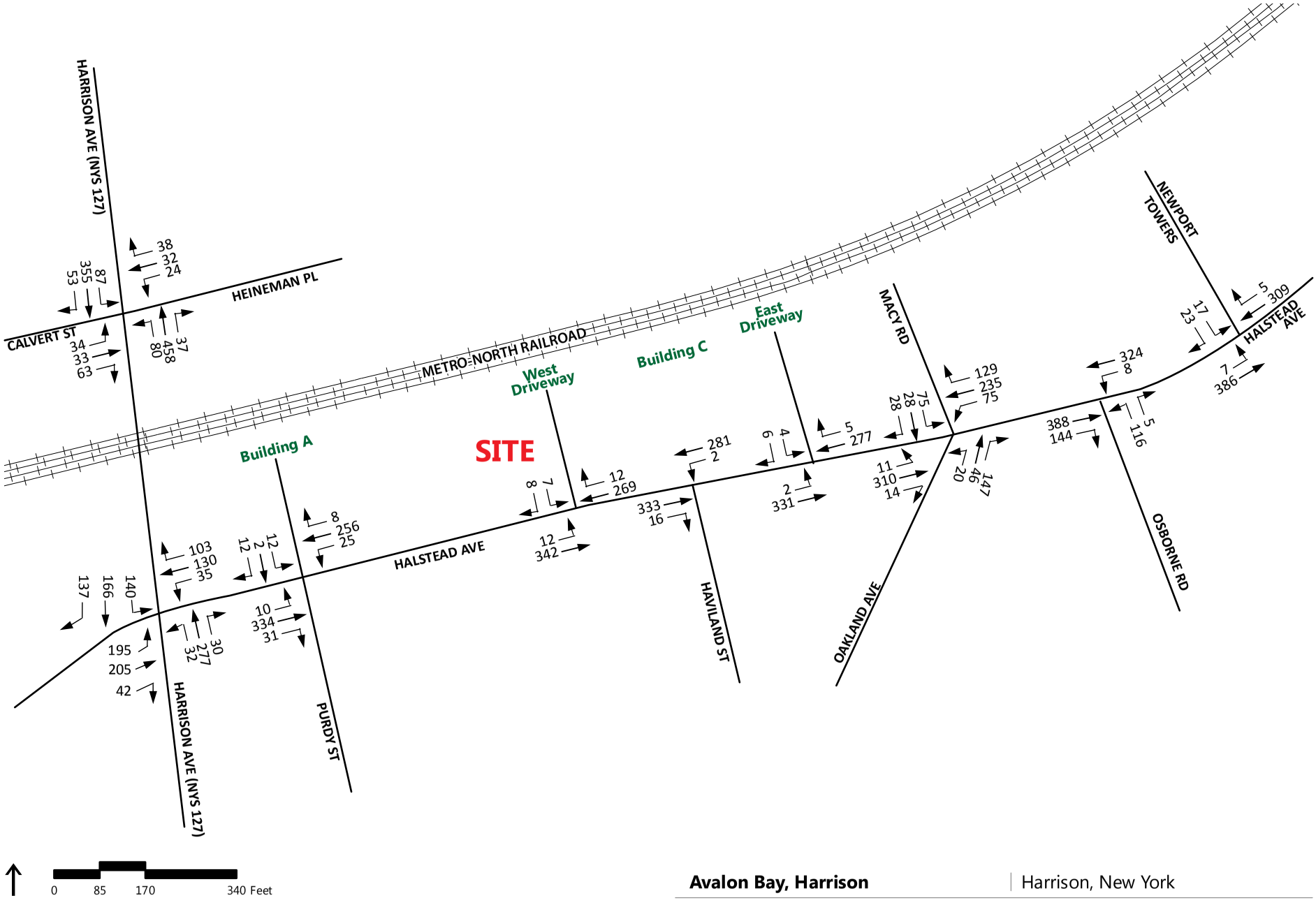
**Exhibit 11**
**Net Project Generated Volumes**
**AM Peak Hour**




0 85 170 340 Feet

**Avalon Bay, Harrison** | Harrison, New York

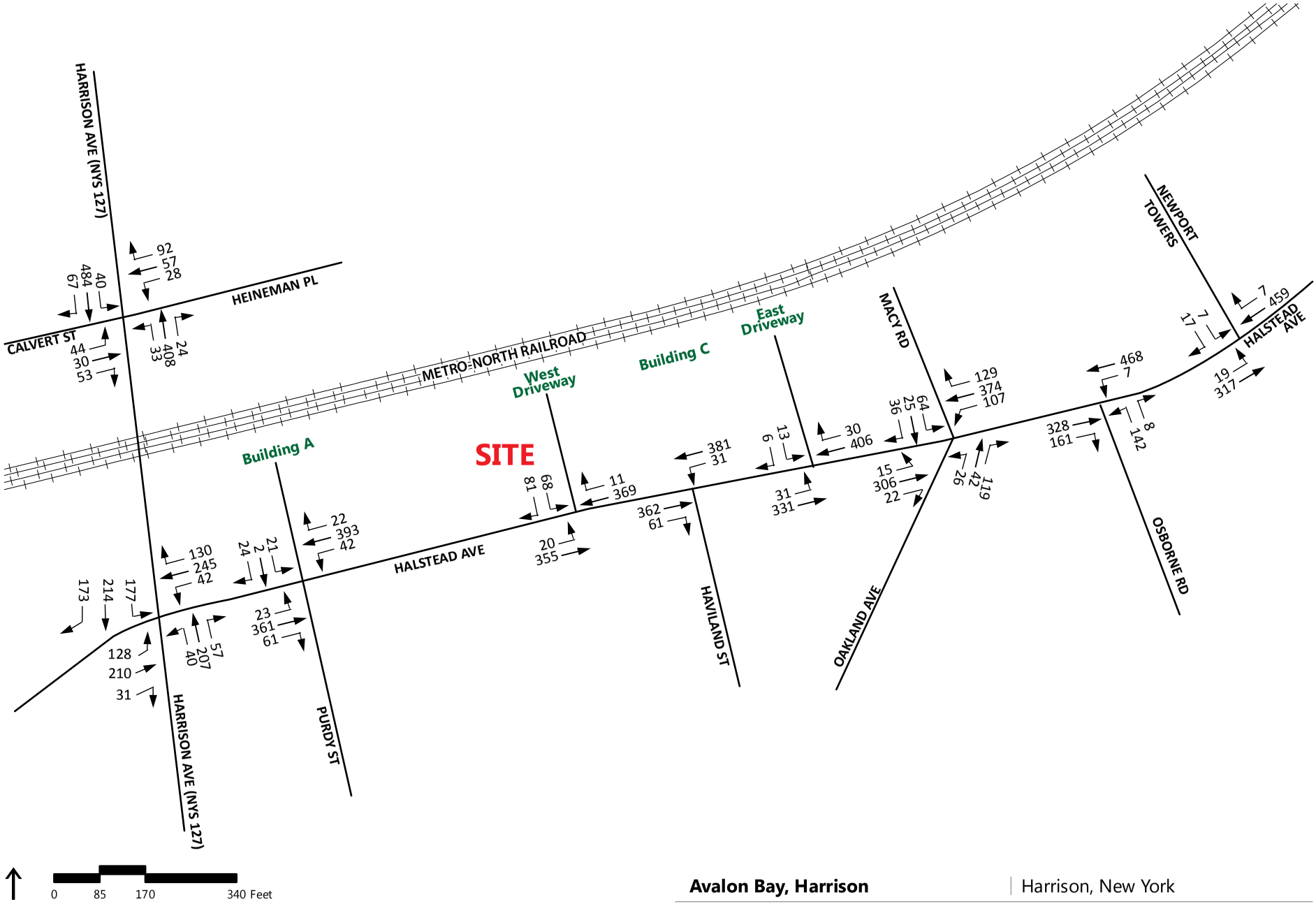
**Exhibit 12**
**Net Project Generated Volumes**
**PM Peak Hour**




0 85 170 340 Feet

**Avalon Bay, Harrison** | Harrison, New York

**Exhibit 13**
**Build Traffic Volumes**
**AM Peak Hour**




0 85 170 340 Feet

**Avalon Bay, Harrison** | Harrison, New York

**Exhibit 14**
**Build Traffic Volumes**
**PM Peak Hour**

# 4

# Traffic Operations

To assess the quality of traffic flow in the study area during the peak hours, intersection capacity analyses were conducted for Existing, No-Build, and Build (with the proposed Avalon development) traffic volume conditions. The following section summarizes the methods of capacity analyses used in this study and documents the results.

## Method of Capacity Analysis

The intersection capacity analyses were conducted based on the evaluation criteria contained in the 2010 Highway Capacity Manual[1] (HCM). As documented in the HCM, intersection performance is influenced by a number of factors, including: traffic demand; lane configurations; lane widths; turning restrictions; roadway grades; speeds; and signal phasing and timing settings for signalized intersections. The existing physical roadway characteristics and signal phasing and timing settings at the signalized study intersection were determined by collecting field measurements.

Synchro 9 software was used to model the study intersections based on the parameters mentioned above. Synchro 9 software is widely used by traffic engineering professionals, is approved for use by NYSDOT, and is consistent with the procedures in the HCM.

Capacity analyses results are reported using a variety of performance measures, including "Level of Service" (LOS). The level of service designation is an index based on the average control delay experienced by a vehicle traveling through the intersection. Similar to a report card, LOS designations are letter-based, ranging from A to F, with LOS A representing the best operating condition (lowest vehicle delays) and LOS F representing the worst operating condition (highest vehicle delays).

LOS is reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic entering the intersection, and the LOS can be reported for individual turning movements, approaches, or for the intersection as a whole. For unsignalized intersections, the most critical lane group delay on each approach is typically reported and the overall intersection LOS is not calculated. Thus the LOS designation is for the critical movement exiting the side street, which is generally the left turn out of the

[1] High□ay Capacity Man□al 2010□Tran□portation Re□earch Board, National Re□earch Co□ncil, □ a□hington, DC □2010□

side street or side driveway. As such, LOS is reported only for left-turns from the main street and for all movements from the side street.

## Intersection Capacity Analysis

Intersection capacity analyses were conducted for the Existing condition and future No-Build and Build conditions for each of the key intersections. The results of the capacity analyses for the AM and PM peak hours are summarized in **Table 6**. The detailed Synchro capacity analysis worksheets are contained in the Appendix.

## Table 6 - Capacity Analysis Summary – Weekday AM & PM Peak Hours

| Intersection | Approach | Lane Group | Existing | | | | No-Build | | | | Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | |
| | | | LOS | Delay | LOS | Delay | LOS | Delay | LOS | Delay | LOS | Delay | LOS | Delay |
| Halstead Avenue (CR 54) & Harrison Avenue (Rt. 127) | EB | L | D | 41.3 | D | 38.7 | D | 42.8 | D | 39.3 | D | 43.4 | D | 39.3 |
| | | TR | D | 45.3 | D | 43.8 | D | 48.2 | D | 45.9 | D | 50.2 | D | 47.9 |
| | WB | L | D | 35.1 | C | 34.7 | C | 35.0 | C | 34.7 | C | 34.8 | C | 34.8 |
| | | TR | E | 60.1 | E | 72.6 | E | 62.3 | E | 79.8 | E | 64.8 | F | 103.6 |
| | NB | LTR | D | 41.7 | D | 40.6 | D | 45.2 | D | 43.2 | D | 46.3 | D | 43.8 |
| | SB | L | C | 22.0 | C | 23.5 | C | 23.2 | C | 24.6 | C | 23.9 | C | 25.5 |
| | | TR | C | 25.6 | C | 31.7 | C | 27.1 | D | 35.3 | C | 27.8 | D | 35.5 |
| | **Intersection** | | **D** | **39.6** | **D** | **43.7** | **D** | **41.9** | **D** | **47.1** | **D** | **43.3** | **D** | **53.5** |
| Halstead Ave & Purdy Street/Surface Lot # 1 (Building A Drwy) (1) (unsignalized) | EB | LTR | A | 0.4 | A | 0.9 | A | 0.4 | A | 0.9 | A | 0.3 | A | 0.6 |
| | WB | LTR | A | 0.6 | A | 0.9 | A | 0.6 | A | 1.0 | A | 0.9 | A | 1.2 |
| | SB | LT | C | 15.1 | C | 19.3 | C | 16.0 | C | 21.6 | | | | |
| | | R | A | 9.9 | B | 10.9 | A | 10.0 | B | 11.1 | | | | |
| | | LTR | | | | | | | | | B | 13.9 | C | 18.8 |
| Halstead Ave & Surface Lot # 2 (MTA) (unsignalized) | EB | LT | A | 0.0 | A | 0.1 | A | 0.0 | A | 0.1 | | | | |
| | WB | TR | A | 0.0 | A | 0.0 | A | 0.0 | A | 0.0 | | | | |
| | SB | LR | B | 10.3 | B | 14.0 | B | 10.5 | B | 14.7 | | | | |
| Halstead Ave & Building C West Drwy (unsignalized) | EB | LT | | | | | | | | | A | 0.4 | A | 0.6 |
| | WB | TR | | | | | | | | | A | 0.0 | A | 0.0 |
| | SB | LR | | | | | | | | | B | 12.2 | C | 16.8 |
| Halstead Avenue & Surface Lot # 3 (unsignalized) | EB | LT | A | 0.1 | A | 0.1 | A | 0.1 | A | 0.1 | | | | |
| | WB | TR | A | 0.0 | A | 0.0 | A | 0.0 | A | 0.0 | | | | |
| | SB | LR | B | 13.2 | B | 12.6 | B | 13.7 | B | 13.1 | | | | |
| Halstead Avenue & Haviland St/Surface Lot # 4 (unsignalized) (2) | EB | LTR/TR | A | 0.0 | A | 0.0 | A | 0.0 | A | 0.0 | A | 0.0 | A | 0.0 |
| | WB | LTR/LT | A | 0.1 | A | 0.6 | A | 0.1 | A | 0.6 | A | 0.1 | A | 0.9 |
| | SB | LTR | A | 9.7 | C | 15.3 | A | 9.9 | C | 16.2 | | | | |
| Halstead Ave & Building C East Drwy (unsignalized) | EB | LTR | | | | | | | | | A | 0.1 | A | 1.0 |
| | WB | LTR | | | | | | | | | A | 0.0 | A | 0.0 |
| | SB | LTR | | | | | | | | | B | 11.3 | B | 14.9 |
| Halstead Ave & Macy Road/Oakland Avenue | EB | LTR | D | 36.6 | D | 35.4 | D | 37.9 | D | 36.8 | D | 38.2 | D | 39.4 |
| | WB | L | A | 0.3 | A | 0.6 | A | 0.3 | A | 0.7 | A | 0.3 | A | 0.8 |
| | | TR | A | 1.9 | A | 3.3 | A | 2.1 | A | 3.6 | A | 2.2 | A | 4.0 |
| | NB | LT | D | 45.8 | D | 46.4 | D | 46.2 | D | 46.8 | D | 46.4 | D | 47.4 |
| | | R | A | 5.7 | A | 3.4 | A | 7.1 | A | 4.5 | A | 8.3 | A | 4.6 |
| | SB | LTR | D | 51.3 | D | 48.2 | D | 53.2 | D | 49.6 | D | 53.6 | D | 49.6 |
| | **Intersection** | | **C** | **21.3** | **B** | **18.3** | **C** | **22.1** | **B** | **19.0** | **C** | **22.3** | **C** | **20.2** |

Notes: (1) Under Build conditions, the Lot #1 driveway is eliminated and is replaced with the entrance to the Building A garage.
(2) Under Build conditions, this location is a "T" intersection (the Lot #4 driveway is eliminated).

Table 6, cont'd. - Capacity Analysis Summary – Weekday AM & PM Peak Hours

| Intersection | Approach | Lane Group | Existing | | | | No-Build | | | | Build | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | | AM Peak Hour | | PM Peak Hour | |
| | | | LOS | Delay | LOS | Delay | LOS | Delay | LOS | Delay | LOS | Delay | LOS | Delay |
| **Halstead Ave & Osborne Road** | EB | T | A | 3.4 | A | 3.0 | A | 3.5 | A | 3.1 | A | 3.5 | A | 3.1 |
| | | R | A | 0.6 | A | 0.6 | A | 0.7 | A | 0.6 | A | 0.7 | A | 0.7 |
| | WB | LT | A | 6.6 | A | 7.9 | A | 6.6 | A | 8.0 | A | 6.6 | A | 8.1 |
| | NB | LR | D | 39.3 | D | 40.4 | D | 39.7 | D | 41.1 | D | 39.9 | D | 41.4 |
| | **Intersection** | | **A** | **8.5** | **A** | **9.9** | **A** | **8.5** | **B** | **10.1** | **A** | **8.6** | B | **10.0** |
| **Halstead Avenue & Newport Towers Driveway** | EB | LT | A | 1.5 | A | 1.1 | A | 1.6 | A | 1.2 | A | 1.6 | A | 1.3 |
| | WB | TR | C | 29.1 | C | 29.9 | C | 29.5 | C | 30.5 | C | 29.7 | C | 30.8 |
| | SB | LR | E | 66.8 | D | 44.5 | E | 68.7 | D | 44.6 | E | 68.7 | D | 44.6 |
| | **Intersection** | | **B** | **16.6** | **B** | **19.0** | **B** | **17.0** | **B** | **19.3** | **B** | **17.0** | **B** | **19.2** |
| **Harrison Ave and Heineman Place/Calvert Street** | EB | LTR | D | 38.6 | D | 38.9 | D | 39.4 | D | 40.4 | D | 39.4 | D | 40.5 |
| | WB | LTR | C | 33.8 | D | 38.6 | C | 34.1 | D | 39.5 | C | 34.1 | D | 39.5 |
| | NB | LTR | B | 13.6 | A | 9.7 | B | 15.3 | B | 10.3 | B | 15.6 | B | 10.6 |
| | SB | LTR | B | 10.5 | B | 10.1 | B | 11.4 | B | 10.8 | B | 11.5 | B | 11.0 |
| | **Intersection** | | **B** | **16.5** | **B** | **16.5** | **B** | **17.7** | **B** | **17.2** | **B** | **17.8** | **B** | **17.3** |

[illegible]

Existing Conditions - As indicated in Table 6, under existing conditions, the signalized intersection of Halstead Avenue and Harrison Avenue currently operates at an overall level of service (LOS) "D" during the AM and PM Peak Hours. LOS "E" is experienced on the westbound through/right-turn movement during both peak hours. The four other signalized intersections currently operate at an overall LOS "C" or better during the peak hours.

At the unsignalized intersections, the minor street turning movements operate at LOS "C" or better during each peak hour. The results of the capacity analyses for the future No-Build and Build conditions for each peak hour are described below.

Future No-Build Conditions - In the future, without the proposed Avalon TOD development (No-Build conditions), but with forecast increases in traffic volumes, there will be a slight increase in the overall delay at the five signalized intersections, generally on the order of 3.4 seconds or less. At the signalized intersection of Halstead Avenue and Harrison Avenue, delays on the westbound through/right-turn movement will continue to operate at existing levels of service (LOS "E"), however, during the PM Peak Hour the delays on this lane-group will increase by 7.2 seconds compared to existing conditions.

At the unsignalized intersections, the minor street turning movements will continue to operate at LOS "C" or better during each peak hour with only minor increases in delay of up to 2.3 seconds.

Future Build Conditions - In the future, under the Build condition with the added traffic from the Project and the increase in commuter parking trips, with one exception, there will be only a slight increase in overall delays, generally on the order of 1.4 seconds or less. The exception is during the PM Peak Hour at the Halstead Avenue and Harrison Avenue intersection where overall delays will increase by 6.4 seconds compared to the No-Build condition, mainly due to traffic added to the westbound through/right-turn movement and the elimination of the bus pull-off at that location, which is projected to precipitate a change in LOS to "F".

At the unsignalized intersections, including the new Project driveways, the minor street turning movements will operate at LOS "C" or better during the AM and PM Peak Hours. Vehicles on the major streets at unsignalized intersections will experience LOS "A" conditions, with delays on the order of 1 second or less.

## Proposed Mitigation

The analyses indicate that the Project will not have a significant impact during the AM Peak Hour as delays will increase by 2.5 seconds or less at the signalized intersections. During the PM Peak Hour, the added Project traffic at the Halstead Avenue and Harrison Avenue intersection will result in a significant increase in delay on the westbound through/right-turn movement. To mitigate the Project's impact, it is recommended that the signal timings be adjusted to provide additional green time to the westbound approach. With this modification, the increase in delay on the westbound approach will be mitigated and overall, the intersection delays will increase by only 1.1 seconds and operations will be similar to the No-Build condition. The other signalized intersections will operate at acceptable LOS "C" or better, however, it is noted that a minor signal timing adjustment would reduce the eastbound delays at the Halstead Avenue and Oakland Avenue/Macy Road intersection. The results of the analysis with the recommended PM peak hour signal timing modifications are shown in **Table 7**.

Table 7 – PM Peak Hour Capacity Analysis Comparison – with Signal Timing Modifications

| Intersection | Approach | Lane Group | PM Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | No-Build | | Build | | Build w/Mitigation | |
| | | | LOS | Delay | LOS | Delay | LOS | Delay |
| Halstead Avenue (CR 54) & Harrison Avenue (Rt. 127) | EB | L | D | 39.3 | D | 39.3 | D | 40.3 |
| | | TR | D | 45.9 | D | 47.9 | D | 49.8 |
| | WB | L | C | 34.7 | C | 34.8 | C | 32.3 |
| | | TR | E | 79.8 | F | 103.6 | E | 75.5 |
| | NB | LTR | D | 43.2 | D | 43.8 | D | 43.5 |
| | SB | L | C | 24.6 | C | 25.5 | C | 28.3 |
| | | TR | D | 35.3 | D | 35.5 | D | 38.0 |
| | **Intersection** | | **D** | **47.1** | **D** | **53.5** | **D** | **48.2** |
| Halstead Ave & Purdy Street/Surface Lot # 1 (Building A Drwy) (1) (unsignalized) | EB | LTR | A | 0.9 | A | 0.6 | A | 0.6 |
| | WB | LTR | A | 1.0 | A | 1.2 | A | 1.2 |
| | SB | LT | C | 21.6 | | | | |
| | | R | B | 11.1 | | | | |
| | | LTR | | | C | 18.8 | C | 18.8 |
| Halstead Ave & Surface Lot # 2 (MTA) (unsignalized) | EB | LT | A | 0.1 | | | | |
| | WB | TR | A | 0.0 | | | | |
| | SB | LR | B | 14.7 | | | | |
| Halstead Ave & Building C West Drwy (unsignalized) | EB | LT | | | A | 0.6 | A | 0.6 |
| | WB | TR | | | A | 0.0 | A | 0.0 |
| | SB | LR | | | C | 16.8 | C | 16.8 |
| Halstead Avenue & Surface Lot # 3 (unsignalized) | EB | LT | A | 0.1 | | | | |
| | WB | TR | A | 0.0 | | | | |
| | SB | LR | B | 13.1 | | | | |
| Halstead Avenue & Haviland St/Surface Lot # 4 (unsignalized) (2) | EB | LTR/TR | A | 0.0 | A | 0.0 | A | 0.0 |
| | WB | LTR/LT | A | 0.6 | A | 0.9 | A | 0.9 |
| | SB | LTR | C | 16.2 | | | | |
| Halstead Ave & Building C East Drwy (unsignalized) | EB | LTR | | | A | 1.0 | A | 1.0 |
| | WB | LTR | | | A | 0.0 | A | 0.0 |
| | SB | LTR | | | B | 14.9 | B | 14.9 |
| Halstead Ave & Macy Road/Oakland Avenue | EB | LTR | D | 36.8 | D | 39.4 | D | 38.0 |
| | WB | L | A | 0.7 | A | 0.8 | A | 0.8 |
| | | TR | A | 3.6 | A | 4.0 | A | 3.9 |
| | NB | LT | D | 46.8 | D | 47.4 | D | 47.4 |
| | | R | A | 4.5 | A | 4.6 | A | 4.6 |
| | SB | LTR | D | 49.6 | D | 49.6 | D | 49.6 |
| | **Intersection** | | **B** | **19.0** | **C** | **20.2** | **B** | **19.8** |

Notes: (1) Under Build conditions, the Lot #1 driveway is eliminated and is replaced with the entrance to the Building A garage.
(2) Under Build conditions, this location is a "T" intersection (the Lot #4 driveway is eliminated).

Table 7, cont'd. – PM Peak Hour Capacity Analysis Comparison – with Signal Timing Modifications

| Intersection | Approach | Lane Group | PM Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | No-Build | | Build | | Build w/Mitigation | |
| | | | LOS | Delay | LOS | Delay | LOS | Delay |
| Halstead Ave & Osborne Road | EB | T | A | 3.1 | A | 3.1 | A | 3.0 |
| | | R | A | 0.6 | A | 0.7 | A | 0.7 |
| | WB | LT | A | 8.0 | A | 8.1 | A | 7.9 |
| | NB | LR | D | 41.1 | D | 41.4 | D | 42.6 |
| | **Intersection** | | **B** | **10.1** | B | **10.0** | **B** | **10.1** |
| Halstead Avenue & Newport Towers Driveway | EB | LT | A | 1.2 | A | 1.3 | A | 1.2 |
| | WB | TR | C | 30.5 | C | 30.8 | C | 29.9 |
| | SB | LR | D | 44.6 | D | 44.6 | D | 44.6 |
| | **Intersection** | | **B** | **19.3** | **B** | **19.2** | **B** | **18.7** |
| Harrison Ave and Heineman Place/Calvert Street | EB | LTR | D | 40.4 | D | 40.5 | D | 40.5 |
| | WB | LTR | D | 39.5 | D | 39.5 | D | 39.5 |
| | NB | LTR | B | 10.3 | B | 10.6 | B | 10.6 |
| | SB | LTR | B | 10.8 | B | 11.0 | B | 11.0 |
| | **Intersection** | | **B** | **17.2** | **B** | **17.3** | **B** | **17.3** |

# 5

# Parking Analysis

The Project will have 143 residential units and 27,000 square feet of commercial/retail space. Structured parking will be provided in Building A and Building C, providing parking for the Project's residential and retail components as well as for MTA commuters, as noted in **Table 8.**

Table 8- Proposed Parking

| | **Parking Spaces Provided** | | |
|---|---|---|---|
| | Building A | Building C | Total |
| Resident | 115 | 64 | 179 |
| Retail | 52 | 45 | 97 |
| MTA Commuter | 0 | 475 | 475 |
| Total | 167 | 584 | 751 |

As shown in Table 8, the Building A garage will have 115 residential parking spaces and 52 spaces for retail patrons. The Building C Commuter Parking Garage will contain 475 commuter spaces, 64 residential spaces and 45 spaces for retail patrons. The MTA commuter parking spaces will be available for use by non-commuters between the hours of 4:00 PM and 4:00 AM weekdays and 24 hours on weekends.

A parking analysis has been conducted to identify the peak parking demand for each component of the development (residential, retail and commuters) and with shared parking of the commuter spaces by the retail patrons and commuters. The analysis is based on data and prepared using software provided in the Urban Land Institute's report, Shared Parking (Second Edition, 2005).

Shared parking is a concept that optimizes parking capacity by allowing complementary land uses to share spaces at different times, rather than having separate spaces for each land use. Shared parking is often a fundamental part of downtown areas with public parking (including areas with TOD districts) as the same parking facility can serve several different destinations within walking distance.

The MTA commuter parking spaces and retail/commercial parking spaces are considered complementary in that their peak periods do not occur at the same time. The peak demand for commuter parking occurs on weekdays, while the peak periods for retail and other commercial uses (such as restaurants) generally occur on weekday evenings or weekends. The 179 residential parking spaces are reserved for residents and would not be available for other users, therefore the residential parking demand was calculated separately.

The shared parking analysis for the Project involves applying appropriate monthly, daily and hourly adjustments to each component's parking ratio to determine the maximum parking

demand. The recommended parking ratios for retail and residential uses contained in the *Shared Parking* report were adjusted to reflect the proposed TOD zoning requirements. The commuter parking ratio was established to equal the 475 provided spaces, which conservatively assumes that at some point during each weekday, all 475 spaces will be fully occupied by commuters. Hourly variation rates were then applied to the parking rates to identify the temporal parking demand for the Project's retail and residential components. The hourly variations for the commuter parking demand were derived from 2016 parking surveys conducted in Greenwich, CT at a commuter parking garage located adjacent to the Greenwich Metro-North Railroad station. Each component's peak parking demand during the weekday midday, weekday evening and weekend midday periods is provided in **Table 9**. A detailed table with the hourly breakdown for each use is provided in the Appendix.

Table 9- Peak Parking Demand for Individual Project Components

| Project Component | Parking Spaces Provided | Parking Demand | | | | | |
|---|---|---|---|---|---|---|---|
| | | Weekday Midday 12 pm | | Weekday Evening 6 pm | | Weekend Midday 2 pm | |
| | | Demand | Surplus | Demand | Surplus | Demand | Surplus |
| Residential | 179 | 109 | 70 | **157** | 22 | 117 | 62 |
| Retail | 97 | 44 | 53 | 40 | 57 | **54** | 43 |
| Commuter | 475 | **470** | 5 | 399 | 76 | 29 | 446 |

Bold type indicates peak demand for each project component.

As shown in Table 9, for the three time periods shown, the commuter parking peak demand occurs around noon on a weekday (470 spaces parked) while the retail peak demand occurs on a weekend (54 spaces) when the commuter demand is low.

A shared parking analysis was conducted which combines the hourly parking demand for the retail and commuter parkers. The analysis evaluated the parking demand during the periods when the commuter parking lot is available for use by shoppers and other visitors to the area. On a weekday, the MTA commuter spaces are available for all users between 4 PM and 4 AM; on a weekend, the commuter lot is available at all times. The shared parking analysis evaluates the hourly demand from 4:00 PM to 12:00 AM on a weekday and from 10:00 AM to 10:00 PM on a weekend. The analysis showing the periods of peak demand on a weekday and a weekend is summarized in **Tables 10 and 11** and detailed parking analysis tables are provided in the Appendix.

Table 10 - Weekday Shared Parking Demand (4 pm to 12 am)

| | 4pm | 5pm | 6pm | 7pm | 8pm | 9pm | 10pm | 11pm | 12am |
|---|---|---|---|---|---|---|---|---|---|
| **Land Use** | | | | | | | | | |
| Retail/Commercial | 46 | 42 | 40 | 38 | 33 | 27 | 16 | 5 | 0 |
| MTA Commuter | 456 | 432 | 399 | 314 | 233 | 90 | 24 | 5 | 0 |
| Total Parking Demand | **502** | 474 | 439 | 352 | 266 | 117 | 40 | 10 | 0 |
| Parking Spaces Provided | 572 | 572 | 572 | 572 | 572 | 572 | 572 | 572 | 572 |
| ***Surplus Parking*** | ***70*** | ***98*** | ***133*** | ***220*** | ***306*** | ***455*** | ***532*** | ***562*** | ***572*** |

Table 11 - Weekend Shared Parking Demand (10 am to 10 pm)

| | 10am | 11am | 12pm | 1pm | 2pm | 3pm | 4pm | 5pm | 6pm | 7pm | 8pm | 9pm | 10pm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Land Use** | | | | | | | | | | | | | |
| Retail/Commercial | 35 | 40 | 48 | 52 | 54 | 54 | 52 | 49 | 43 | 41 | 36 | 29 | 20 |
| MTA Commuter | 43 | 48 | 43 | 38 | 29 | 19 | 10 | 5 | 2 | 0 | 0 | 0 | 0 |
| Total Parking Demand | 78 | 88 | **91** | 90 | 83 | 73 | 62 | 54 | 45 | 41 | 36 | 29 | 20 |
| Parking Spaces Provided | 572 | 572 | 572 | 572 | 572 | 572 | 572 | 572 | 572 | 572 | 572 | 572 | 572 |
| ***Surplus Parking*** | ***494*** | ***484*** | ***481*** | ***482*** | ***489*** | ***499*** | ***510*** | ***518*** | ***527*** | ***531*** | ***536*** | ***543*** | ***552*** |

As shown in Table 10, the weekday maximum demand for the shared use of the MTA commuter parking spaces occurs at 4:00 PM with a total of 502 parked vehicles between the retail and commuter parking areas. During this period, there is a surplus of 70 parking spaces. The parking demand decreases after 4 PM when the commuter parkers are exiting the garage. The weekend maximum demand, shown in Table 11, occurs at 12 PM with a total of 91 vehicles parked. The weekend demand is much lower than the weekday demand due to the lack of commuter parking activity. On weekends there is a minimum surplus of 481 parking spaces at all times.

It is anticipated that the Project will not have a significant impact on parking in the areas surrounding the Site. As indicated in the parking analysis, the Project will have more than sufficient parking for retail patrons so that any new retail patrons drawn to the area will be able to park in the new parking areas and will not impact the existing parking supply, whether it be on-street parking or off-street parking in municipal or private lots. The additional commuter parking spaces may draw from some existing on-street commuter parking nearby (where possible), which would improve the overall parking situation.

# 6

# Conclusions

Based on the results of the analyses conducted for the purpose of this report, VHB has arrived at the following conclusions:

- The Project site is located immediately adjacent to the MNR Harrison Station which provides fast, frequent service between Grand Central Terminal in New York City and New Haven, CT.
- Two pedestrian plazas will lead through the development from the train station to the sidewalk on the north side of Halstead Avenue. Taxi waiting areas will be located adjacent to the pedestrian plaza connections to the train station and have been sized to provide sufficient storage during peak periods.
- The proposed Project will add 57 new trips to the surrounding roadways during the typical weekday AM peak hour and 139 new trips during the typical weekday PM peak hour.
- The 475-parking space MTA commuter parking garage will attract new commuter parkers to the project Site, with some of these new parkers drawn from the existing private vehicle drop-off and pick-up trips at the Harrison Station, resulting in a net increase of 10 AM peak hour trips and 21 PM peak hour trips.
- In the future, under the Build condition with the added traffic from the Project and the increase in commuter parking trips, there will be only a slight increase in overall delays at all signalized locations during the peak hours except for the Halstead Avenue and Harrison Avenue intersection where the overall delays during the PM peak hour will increase by 6.4 seconds. The traffic added to the westbound through/right-turn movement and the elimination of the bus pull off at that location is projected to precipitate a change in LOS to "F".
- To reduce the PM peak hour delays, it is recommended that the signal timings be modified at the Halstead Avenue intersection with Harrison Avenue to provide additional green time to the westbound approach. With this modification, the increase in delay on the westbound approach will be mitigated and overall, the intersection delays will increase by only 1.1 seconds and operations will be similar to the No-Build condition.

- The other signalized intersections as well as the minor street turning movements at unsignalized intersections will operate at acceptable LOS "C" or better, however, it is noted that a minor signal timing adjustment would reduce the eastbound delays at the Halstead Avenue and Oakland Avenue/Macy Road intersection.
- In addition to the 475 parking spaces for MTA commuters, there will be 179 parking spaces for residents and 97 parking spaces for retail/commercial patrons. A shared parking analysis of the retail and commuter parking areas indicates that the Project will have ample parking with a minimum of 70 surplus parking spaces on a weekday and 481 surplus parking spaces on a weekend.

Based on these findings, it is concluded that, with the recommended signal timing modifications, the proposed action will not have a significant adverse impact on area traffic operating conditions. Furthermore, the proposed driveways will operate at acceptable levels of service and sufficient parking will be provided to meet the anticipated peak demands.

# Appendix

| Description |
| --- |
| Historical Crash Data |

| Crash History (Jan. 2013 to Dec. 2015) | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Study Intersection | Total Accidents | Accident Severity | | | | Manner of Collision | | | | | | | | | Apparent Contributing Factors | | | | | | | | | | | |
| | | Fatal | Inj | PDO | PDI | Rear End | Rt Angle | Left turn | Right turn | Over-taking | Side swipe | Ped | Bike | Other | Passing or Improper Lane Usage | Failure to Yield R.O.W. | Driver Inattention | Following Too Closely | Disregard Traffic Control | Backing Unsafely | Unsafe Speed | Ped /Bike Error confusion | Accelerator Defective | Glare | No Factor Given |
| Harrison Ave (NY 127) & Halstead Ave | **11** | | 7 | 4 | | 4 | | | 1 | | | 3 | | 3 | 1 | 1 | 4 | 1 | | 2 | | 1 | | 1 | 3 |
| Halstead Ave & Purdy St/Lot #1 | **3** | | | 2 | 1 | 1 | | | 1 | | | | | 1 | | 1 | 2 | | | | | | | | |
| Halstead Ave & Lot #2 | **0** | | | | | | | | | | | | | | | | | | | | | | | | |
| Halstead Ave & Lot #3 | **0** | | | | | | | | | | | | | | | | | | | | | | | | |
| Halstead Ave & Haviland St/Lot #4 | **2** | | | 1 | 1 | 1 | 1 | | | | | | | | | | 1 | | | 1 | 1 | | | | |
| Halstead Ave & Macy Rd/Oakland Ave | **8** | | 1 | 7 | | 1 | 2 | | 2 | | 1 | | | 2 | | 3 | 3 | 1 | | 4 | | | 1 | | |
| Halstead Ave & Osborne Rd | **3** | | | 3 | | 2 | | | | | | | | 1 | | | 1 | | 1 | | | | | | 2 |
| Halstead Ave & Newport Towers Driveway | **3** | | 2 | 1 | | 1 | 1 | 1 | | | | | | | | | 1 | 1 | | 1 | | | | | |
| Harrison Ave & Heineman Pl/ Calvert St | **3** | | | 3 | | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | | 1 | 1 | | | 1 | | | | | |
| **Total** | **33** | **0** | **10** | **21** | **2** | **12** | **4** | **1** | **5** | **0** | **1** | **3** | **0** | **7** | | | | | | | | | | | |

Note: **PDO** = Property Damage Only; **PDI** = Property Damage and Injury

# Appendix

| Description |
| --- |
| TOD Residential Project Trip Calculation |

Memorandum

To: File

Date: October 14, 2016

Project #: 29626.00

From: John Canning, P.E.

Re: Avalon Bay at Harrison
TOD Residential Credit

---

**Residential project trip breakdown:**

Expected Residential Transit Credit 50%. Sources: Hudson Park Parking Study, dated June 2009, Appendix D, prepared by BFJ, and Supplemental Draft Environmental Impact Statement for LeCount Square, dated September 14, 2007, page II-19, prepared by Saccardi & Schiff.

Analyzed (conservative) Residential Transit Credit 33%. Source: Center for Transit-Oriented Development, within 0.5 mile of Harrison Train Station.

**Projected Residential Trips**

Potential Based on ITE Rates

AM 46 PM 58

Auto Trips (with 33% credit)

AM 31 PM 39

TOD Trips (33%)

AM 15 PM 19

Train

AM 15 PM 15*

Pedestrians (walking to and from local businesses)**

AM 0 PM 4*

* Assumed that those who ride the train to work will also ride the train from work.

** Assumed that, other than businesses catering to train commuters headed to work, there are no businesses open in the morning peak hour which would generate pedestrian traffic. In the afternoon peak hour, it is assumed that TOD credit trips which are not train commuters will be residents frequenting local businesses.



50 Main Street
Suite 360
White Plains, NY 10606-1900
P 914.467.6600

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CTOD CENTER FOR TRANSIT-ORIENTED DEVELOPMENT

# New York

Data | Geographies | Close Report

Note: This region is not fully covered by all datasets.

# TOD Report

View as: Table | List Download as: Word | Excel | CSV

| Buffer | Agency | Line (s) | Station Name | Year Opened: (1) | Latitude (2) | Longitude (2) | Percent of Workers from Office Industries who Commute by Auto (3) | Percent of Workers from Office Industries who Commute by Transit (4) | Percent of Workers from Office Industries who Work at Home (5) | Percent of Workers from Shopping and Entertainment Industries who Commute by Auto (6) | Percent of Workers from Shopping and Entertainment Industries who Commute by Transit (7) | Percent of Workers from Shopping and Entertainment Industries who Work at Home (8) | Percent of Workers from non-Office Industries who Commute by Auto (9) | Percent of Workers from non-Office Industries who Commute by Transit (10) | Percent of Workers from non-Office Industries who Work at Home (11) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York Transit Region | | | | | | | 59.02 | 36.88 | 4.10 | 58.86 | 37.54 | 3.60 | 71.71 | 25.37 | 2.92 |
| Station .5 Mile Transit Zone | Metro-North Railroad | New Canaan, New Haven | Harrison | Pre-2000 | 40.969432 | -73.712964 | 63.43 | 32.84 | 3.72 | 81.38 | 14.34 | 4.27 | 76.58 | 23.28 | 0.14 |

[1] The year in which this station opened. This value is intended to inform the analysis of available statistics, and therefore all stations open prior to 2000 report as "Pre-2000", the year of the earliest available statistic.
[2] Station location, current as of October 1, 2016. Station locations are updated (as necessary) on a quarterly basis which may result in changes in aggregated data.
[3] American Community Survey 2005-2009 5-Year Estimates (b08126_023 + b08126_024 + b08126_025 + b08126_026 + b08126_029 + b08126_038 + b08126_039 + b08126_040 + b08126_041 + b08126_044) / (b08126_008 + b08126_009 + b08126_010 + b08126_011 + b08126_014) aggregated from Census 2009 Tracts
[4] American Community Survey 2005-2009 5-Year Estimates (b08126_053 + b08126_054 + b08126_055 + b08126_056 + b08126_059 + b08126_068 + b08126_069 + b08126_070 + b08126_071 + b08126_074 + b08126_083 + b08126_084 + b08126_085 + b08126_086 + b08126_089) / (b08126_008 + b08126_009 + b08126_010 + b08126_011 + b08126_014) aggregated from Census 2009 Tracts
[5] American Community Survey 2005-2009 5-Year Estimates (b08126_098 + b08126_099 + b08126_100 + b08126_101 + b08126_104) / (b08126_008 + b08126_009 + b08126_010 + b08126_011 + b08126_014) aggregated from Census 2009 Tracts
[6] American Community Survey 2005-2009 5-Year Estimates (b08126_020 + b08126_021 + b08126_027 + b08126_028 + b08126_035 + b08126_036 + b08126_042 + b08126_043) / (b08126_005 + b08126_006 + b08126_012 + b08126_013) aggregated from Census 2009 Tracts
[7] American Community Survey 2005-2009 5-Year Estimates (b08126_050 + b08126_051 + b08126_057 + b08126_058 + b08126_065 + b08126_066 + b08126_072 + b08126_073 + b08126_080 + b08126_081 + b08126_087 + b08126_088) / (b08126_005 + b08126_006 + b08126_012 + b08126_013) aggregated from Census 2009 Tracts
[8] American Community Survey 2005-2009 5-Year Estimates (b08126_095 + b08126_096 + b08126_102 + b08126_103) / (b08126_005 + b08126_006 + b08126_012 + b08126_013) aggregated from Census 2009 Tracts
[9] American Community Survey 2005-2009 5-Year Estimates (b08126_017 + b08126_018 + b08126_019 + b08126_022 + b08126_030 + b08126_032 + b08126_033 + b08126_034 + b08126_037 + b08126_045) / (b08126_002 + b08126_003 + b08126_004 + b08126_007 + b08126_015) aggregated from Census 2009 Tracts
[10] American Community Survey 2005-2009 5-Year Estimates (b08126_047 + b08126_048 + b08126_049 + b08126_052 + b08126_060 + b08126_062 + b08126_063 + b08126_064 + b08126_067 + b08126_075 + b08126_077 + b08126_078 + b08126_079 + b08126_082 + b08126_090) / (b08126_002 + b08126_003 + b08126_004 + b08126_007 + b08126_015) aggregated from Census 2009 Tracts
[11] American Community Survey 2005-2009 5-Year Estimates (b08126_092 + b08126_093 + b08126_094 + b08126_097 + b08126_105) / (b08126_002 + b08126_003 + b08126_004 + b08126_007 + b08126_015) aggregated from Census 2009 Tracts

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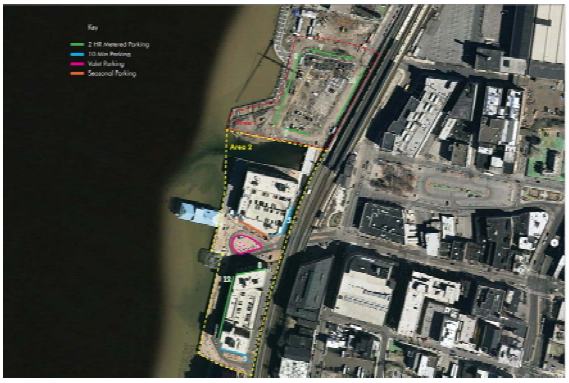


# Hudson Park Parking Study

Yonkers, New York

June 2009

# Hudson Park Parking Study
Final Report

Yonkers, NY

Prepared For:
Collins Enterprises, L.L.C.
2001 West Main Street, Suite 175
Stamford, CT 06902

Prepared by:
BFJ Planning
115 Fifth Avenue
New York, NY 10003
www.BFJplanning.com

June 2009

# Appendix D

## Traffic Generation for Garages E (The Clermont) and F (The Phoenix)

**Hudson Park Parking Study**

**Yonkers, NY**

Traffic Generation for Garages E (The Clermont) and F (The Phoenix)

| Time | | Garage E | | Garage F | | Total | | Hourly Totals | | Peak Hour Totals |
|---|---|---|---|---|---|---|---|---|---|---|
| | | In | Out | In | Out | In | Out | In | Out | |
| **AM** | | | | | | | | | | |
| 6:00 AM | 6:15 AM | 0 | 1 | 0 | 2 | 0 | 3 | - | - | - |
| 6:15 AM | 6:30 AM | 0 | 4 | 0 | 2 | 0 | 6 | - | - | - |
| 6:30 AM | 6:45 AM | 2 | 3 | 0 | 1 | 2 | 4 | - | - | - |
| 6:45 AM | 7:00 AM | 0 | 3 | 1 | 5 | 1 | 8 | 3 | 21 | **24** |
| 7:00 AM | 7:15 AM | 0 | 1 | 2 | 2 | 2 | 3 | 5 | 21 | **26** |
| 7:15 AM | 7:30 AM | 0 | 4 | 0 | 3 | 0 | 7 | 5 | 22 | **27** |
| 7:30 AM | 7:45 AM | 1 | 3 | 1 | 8 | 2 | 11 | 5 | 29 | **34** |
| 7:45 AM | 8:00 AM | 0 | 1 | 0 | 3 | 0 | 4 | 4 | 25 | **29** |
| 8:00 AM | 8:15 AM | 0 | 3 | 0 | 3 | 0 | 6 | 2 | 28 | **30** |
| 8:15 AM | 8:30 AM | 0 | 2 | 0 | 2 | 0 | 4 | 2 | 25 | **27** |
| 8:30 AM | 8:45 AM | 0 | 6 | 0 | 6 | 0 | 12 | 0 | 26 | **26** |
| 8:45 AM | 9:00 AM | 2 | 2 | 1 | 3 | 3 | 5 | 3 | 27 | **30** |
| 9:00 AM | 9:15 AM | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 22 | **25** |
| 9:15 AM | 9:30 AM | 0 | 2 | 0 | 1 | 0 | 3 | 3 | 21 | **24** |
| 9:30 AM | 9:45 AM | 0 | 1 | 0 | 0 | 0 | 1 | 3 | 10 | **13** |
| 9:45 AM | 10:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | **6** |
| **Total** | | **6** | **36** | **5** | **42** | **11** | **78** | **-** | **-** | - |
| **PM** | | | | | | | | | | |
| 4:00 PM | 4:15 PM | 4 | 1 | 1 | 1 | 5 | 2 | - | - | - |
| 4:15 PM | 4:30 PM | 4 | 0 | 5 | 0 | 9 | 0 | - | - | - |
| 4:30 PM | 4:45 PM | 3 | 1 | 2 | 1 | 5 | 2 | - | - | - |
| 4:45 PM | 5:00 PM | 2 | 1 | 4 | 1 | 6 | 2 | 25 | 6 | **31** |
| 5:00 PM | 5:15 PM | 1 | 1 | 2 | 1 | 3 | 2 | 23 | 6 | **29** |
| 5:15 PM | 5:30 PM | 3 | 0 | 3 | 0 | 6 | 0 | 20 | 6 | **26** |
| 5:30 PM | 5:45 PM | 3 | 2 | 1 | 2 | 4 | 4 | 19 | 8 | **27** |
| 5:45 PM | 6:00 PM | 3 | 1 | 0 | 1 | 3 | 2 | 16 | 8 | **24** |
| 6:00 PM | 6:15 PM | 3 | 0 | 3 | 0 | 6 | 0 | 19 | 6 | **25** |
| 6:15 PM | 6:30 PM | 1 | 2 | 5 | 2 | 6 | 4 | 19 | 10 | **29** |
| 6:30 PM | 6:45 PM | 5 | 1 | 4 | 1 | 9 | 2 | 24 | 8 | **32** |
| 6:45 PM | 7:00 PM | 4 | 2 | 3 | 2 | 7 | 4 | 28 | 10 | **38** |
| 7:00 PM | 7:15 PM | 2 | 0 | 3 | 0 | 5 | 0 | 27 | 10 | **37** |
| 7:15 PM | 7:30 PM | 4 | 0 | 2 | 0 | 6 | 0 | 27 | 6 | **33** |
| 7:30 PM | 7:45 PM | 3 | 3 | 4 | 3 | 7 | 6 | 25 | 10 | **35** |
| 7:45 PM | 8:00 PM | 0 | 1 | 1 | 1 | 1 | 2 | 19 | 8 | **27** |
| 8:00 PM | 8:15 PM | 2 | 0 | 2 | 0 | 4 | 0 | 18 | 8 | **26** |
| 8:15 PM | 8:30 PM | 2 | 0 | 4 | 0 | 6 | 0 | 18 | 8 | **26** |
| 8:30 PM | 8:45 PM | 2 | 0 | 1 | 0 | 3 | 0 | 14 | 2 | **16** |
| 8:45 PM | 9:00 PM | 2 | 1 | 2 | 1 | 4 | 2 | 17 | 2 | **19** |
| 9:00 PM | 9:15 PM | 3 | 1 | 0 | 1 | 3 | 2 | 16 | 4 | **20** |
| 9:15 PM | 9:30 PM | 2 | 1 | 2 | 1 | 4 | 2 | 14 | 6 | **20** |
| 9:30 PM | 9:45 PM | 1 | 0 | 3 | 0 | 4 | 0 | 15 | 6 | **21** |
| 9:45 PM | 10:00 PM | 1 | 0 | 2 | 0 | 3 | 0 | 14 | 4 | **18** |
| **Total** | | **60** | **19** | **59** | **19** | **119** | **38** | **-** | **-** | - |

| **Apartment/Garage Statistics** | |
|---|---|
| # of Allocated Parking Spaces | 273 |
| # of Cars that don't park in Garages E or F | 7 |
| Ratio of Total Cars/Allocated Spaces | 1.03 |
| # of Occupied Apartments | 250 |

| **Traffic Generation** | | | | **ITE Rate for High Rise Apartment** | | | |
|---|---|---|---|---|---|---|---|
| | **In** | **Out** | **Total** | **In** | **Out** | **Total** | **Difference w. ITE rates** |
| AM Adjusted Peak Hour Vehicles | 5 | 30 | 35 | | | | |
| AM Vehicles Per Occupied Apartment | 0.02 | 0.12 | 0.14 | 0.075 | 0.225 | 0.30 | **-54%** |
| PM Adjusted Peak Hour Vehicles | 29 | 10 | 39 | | | | |
| PM Vehicles Per Occupied Apartment | 0.11 | 0.04 | 0.16 | 0.214 | 0.137 | 0.35 | **-55%** |

= Peak Hour

F lannin

2-Dec-08

# SUPPLEMENTAL
# DRAFT ENVIRONMENTAL IMPACT STATEMENT

## *LeCount Square*

*New Rochelle, New York*

**Lead Agency:**
City Council
City of New Rochelle
515 North Avenue
New Rochelle, NY 10801
Contact: Craig King, Commissioner of Development
Telephone: 914-654-2182
Fax: 914-632-3626

**Applicant:**
New Rochelle Revitalization, LLC
115 Stevens Avenue
Valhalla, NY 10595
Contact: Joe Apicella
Telephone: 914-769-6500
Fax: 914-769-2179

**Preliminary Submittal:** June 18, 2007
**Revised:** September 14, 2007

**Date of Acceptance:**_____
**Date of Public Hearing:** _____
**Closing Date of Comment Period:** **10 days after close of public hearing**

## 2. Potential Impacts

*Site-Generated Traffic Volumes*

The Modified Project will include 212,000 sf of retail space including 12,000 sf of restaurant, approximately 380,000 sf of office space, a 209-room hotel and up to 258 residential condominiums. Trips anticipated to be generated by the proposed project were determined using trip generation information contained in the Seventh Edition of the ITE Trip Generation Manual. The trip generation information for the retail use is contained under Land Use Code 820 (Shopping Center). In analyzing Shopping Center use, it is the total square footage that provides the attraction, rather than the individual components. Therefore, the total square footage of the retail use at the Modified Project was analyzed to determine the number of trips that would be generated, rather than the individual components. The condominiums were analyzed under Land Use Code 232 (High-Rise Residential Condominium/Townhouse). The trip generation information for the hotel is contained in Land Use Code 310 (Hotel) while the trip generation information for the office use is contained in Land Use Code 710 (General Office Building).

Consistent with earlier studies in this area, the ITE trip-generation rates for the condominium units were reduced by 20 percent. This accounts for the urban location of the proposed project and its proximity to mass transportation at the Intermodal Transportation Center of New Rochelle. Further, the reduction is confirmed from information contained in the New Rochelle Downtown Study, which indicates that approximately 55 percent of the residents of the nearby Avalon on the Sound development work in New York City in the vicinity of Grand Central Terminal and, therefore, walk to the railroad station. For the office space, the trip generation rates were reduced by 20 percent to reflect the urban location of the site and the proximity to mass transportation opportunities at the Intermodal Transportation Center.

The ITE trip generation rates for the retail portion of the proposed project were reduced by 10 percent to reflect its location in the Central Business District and proximity to City parking facilities, as well as mass transit opportunities. Based on the information contained in the ITE Trip Generation Manual "diverted link/pass-by" trips for the retail space are expected to be approximately 30 percent. The "diverted link/pass-by" trips were assigned at the driveway entrances/exits.

The project site is currently occupied by a variety of uses, including a United States Post Office, the retail portion of which is anticipated to be retained in the Modified Project or relocated to the north side of Huguenot Street into the Parcel 1A development (Trump Plaza); a Planned Parenthood facility; a nightclub; a 38-unit apartment building; and, various other commercial uses such as offices and restaurants. The trips that are currently generated by these existing uses were determined using trip generation information contained in the ITE Trip

A map of the following real estate projects that are located in and around the designated Areas of Concern can be seen in Exhibit 9 at the end of this section.

**Avalon on the Sound**

*Profile of Renters*

According to Robert Paley, of Avalon on the Sound, about 20 percent of Avalon residents move from Manhattan and about 12 percent move from other boroughs of New York City, so the New York City component of residents is approximately one-third of the total. Originally, Avalon projected that 15 percent to 20 percent of the residents would come from New York City. About 25 percent of the residents come from southern Westchester County, 25 percent come from outside the Tri-State area and the remainder from the rest of the Tri-State area. The largest component of these last categories is New Rochelle, which represents about five percent of the total. Persons coming from outside the Tri-State area are corporate relocatees who Avalon believes are attracted by the Avalon brand name known in other parts of the country. It is not known whether the relocation component would be as strong for another first class development by a local development firm.

Workplaces of Avalon residents are clustered, with 55 percent working in New York City in jobs in close proximity to Grand Central Station. The remainder of the residents commute by automobile, with perhaps a dozen working in White Plains, a dozen in Stamford, 18 in New Rochelle, and others in Queens, Brooklyn and Mamaroneck. Some of those who work in New Rochelle are believed to be teachers.

The typical length of stay for renters is one to one and one-half years. Leases are typically one and two years.

Although Avalon does not keep any statistics on the race or ethnicity of its residents, population in the building is seemingly ethnically diverse. Median household income is about $100,000. This is significantly higher than the City's 1999 median income of $55,513, as reported in the 2000 Census. Claritas estimates the 2001 median income as $67,961.

As of October 2001, based on occupancy of 294 apartments, there were 13 resident students enrolled in New Rochelle public schools. This equates to 4.4 public school students per 100 apartments, lower than the 5.9 students per hundred apartments (59 students for a total of 1,000 units) projected in the environmental impact statement for Avalon on the Sound. The median age of residents is 35. There is a distribution of young couples, retired persons, middle aged persons, young families, singles, divorced persons and young married couples. The building and its location attract two income couples who travel in two different directions for their jobs, such as to Manhattan and to White Plains.

*Absorption*

The rent-up was stabilized in Fall 2002 and Avalon achieved 95 percent leasing. To do so, however, they had to offer some givebacks such as one month free rent because the market is now soft. Many properties in the region are at 90 percent occupancy or below, such as at the New Jersey waterfront and in Stamford, Connecticut which, Avalon, based on its own experience, considers to be overbuilt. This softness is reflected in rent reductions at the Summit at New Roc, as will be seen below. The softness in the market is due to the stock market decline and low interest rates contributing to many residents wanting to buy rather than rent, a reduction in job relocation activities and a significant reduction of new hires in New York City. In addition, apartment rents in New York City have been reduced since 9/11, affecting Westchester's competitive edge when Manhattan prices were at their peak.

There is no waiting list for the apartments, just rolling inquiries. Avalon indicates that this location does not generate a "build and they will come" scenario. Broker parties are held to sell the building to people from Manhattan to get them to come to New Rochelle. Avalon has spent more on marketing than originally anticipated. Advertisements are placed in the New York Times but not in the Westchester papers, which do not seem to generate tenants.

While the Avalon DEIS projected the long-run success of the project, Avalon has found the short-run, market is not as deep, and more competitive than originally projected. To succeed, projects need staying power for the long-term market.

Studio apartments -- only 105 of the total units -- rented quickly. Phase I has a significant number

# Appendix

| Description |
| --- |
| Parking Analysis |

## Parking Demand and Shared Parking Summary

| | Hour of Day | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6 AM | 7 AM | 8 AM | 9 AM | 10 AM | 11 AM | 12 PM | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM | 7 PM | 8 PM | 9 PM | 10 PM | 11 PM | 12 AM |
| **Weekday** | | | | | | | | | | | | | | | | | | | |
| **Residential Parking (6am to 12am)** | | | | | | | | | | | | | | | | | | | |
| Parking Demand | 163 | 149 | 142 | 133 | 125 | 117 | 109 | 117 | 117 | 117 | 125 | 145 | 157 | 174 | 176 | 177 | **179** | 176 | 171 |
| Parking Provided | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 |
| Available (surplus) spaces | 16 | 30 | 37 | 46 | 54 | 62 | 70 | 62 | 62 | 62 | 54 | 34 | 22 | 5 | 3 | 2 | 0 | 3 | 8 |
| **Retail Parking (6am to 4pm)** | | | | | | | | | | | | | | | | | | | |
| Parking Demand | 1 | 3 | 10 | 19 | 29 | 38 | 44 | **48** | **48** | **48** | 46 | 42 | 40 | 38 | 33 | 27 | 16 | 5 | 0 |
| Parking Provided | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Available (surplus) spaces | 96 | 94 | 87 | 78 | 68 | 59 | 53 | 49 | 49 | 49 | 51 | 55 | 57 | 59 | 64 | 70 | 81 | 92 | 97 |
| **MTA Commuter Parking (6am to 4pm)** | | | | | | | | | | | | | | | | | | | |
| Parking Demand | 95 | 238 | 371 | 432 | 456 | 461 | 470 | 470 | **475** | 466 | 456 | 432 | 399 | 314 | 233 | 90 | 24 | 5 | 0 |
| Parking Provided | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 | 475 |
| Available (surplus) spaces | 380 | 237 | 104 | 43 | 19 | 14 | 5 | 5 | 0 | 9 | 19 | 43 | 76 | 161 | 242 | 385 | 451 | 470 | 475 |
| **Retail & MTA Commuter Parking (4pm to 12am)** | | | | | | | | | | | **Shared Parking** | | | | | | | | |
| Parking Demand | | | | | | | | | | | **502** | 474 | 439 | 352 | 266 | 117 | 40 | 10 | 0 |
| Parking Provided | | | | | | | | | | | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 |
| Available (surplus) spaces | | | | | | | | | | | 63 | 91 | 126 | 213 | 299 | 448 | 525 | 555 | 565 |
| **Weekend** | | | | | | | | | | | | | | | | | | | |
| **Residential Parking (6am to 12am)** | | | | | | | | | | | | | | | | | | | |
| Parking Demand | 163 | 150 | 142 | 133 | 125 | 117 | 109 | 117 | 117 | 117 | 125 | 145 | 157 | 174 | 176 | 177 | **179** | 176 | 171 |
| Parking Provided | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 | 179 |
| Available (surplus) spaces | 16 | 29 | 37 | 46 | 54 | 62 | 70 | 62 | 62 | 62 | 54 | 34 | 22 | 5 | 3 | 2 | 0 | 3 | 8 |
| **Retail & MTA Commuter Parking (6am to 12am)** | **Shared Parking** | | | | | | | | | | | | | | | | | | |
| Parking Demand | 1 | 14 | 37 | 61 | 78 | 88 | **91** | 90 | 83 | 73 | 62 | 54 | 45 | 41 | 36 | 29 | 20 | 8 | 0 |
| Parking Provided | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 | 565 |
| Available (surplus) spaces | 564 | 551 | 528 | 504 | 487 | 477 | 474 | 475 | 482 | 492 | 503 | 511 | 520 | 524 | 529 | 536 | 545 | 557 | 565 |

Note: Based on Urban Land Institute's *Shared Parking* report (Second Edition)

Residential parkers use the 179 residential-only spaces in the Buildings A & C garages.

Retail patrons park in the retail parking spaces in the parking garages at all times; between 4pm and 4am on weekdays and all day on weekends, the MTA commuter parking areas are open to retail parkers, if needed.

# Appendix

| Description |
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| Synchro – Level of Service Analysis Worksheets |

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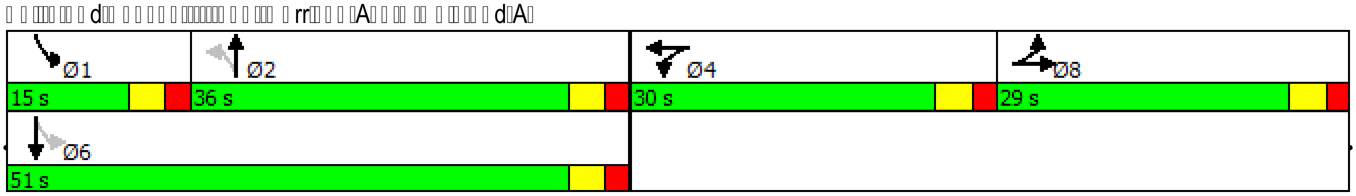

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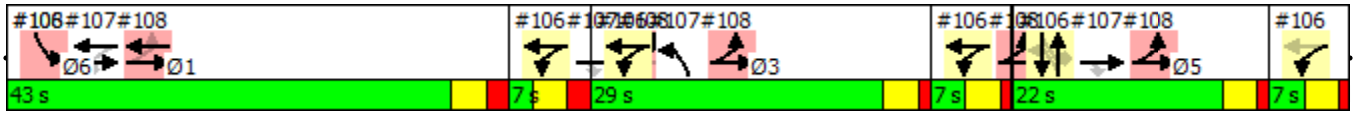


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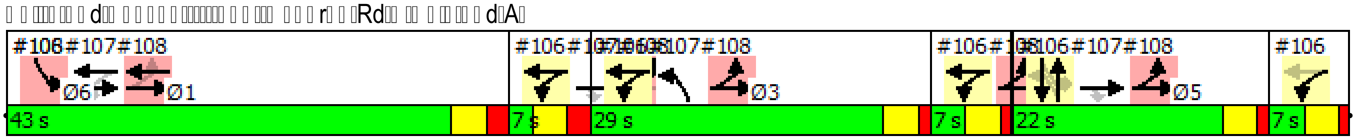

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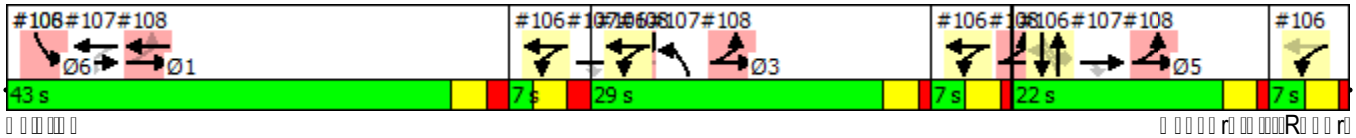


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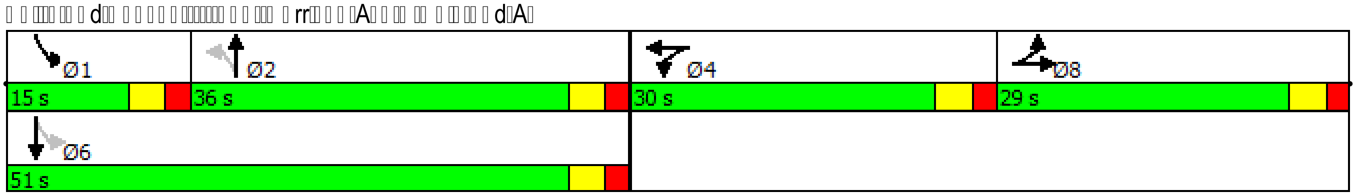

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| [illegible]C[illegible]r[illegible] | | | | | | |
| [illegible]r[illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| F[illegible]r[illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible]C[illegible]r[illegible] | | Fr[illegible] | Fr[illegible] | | [illegible] | |
| [illegible]r[illegible]d[illegible] | | [illegible] | [illegible] | | [illegible] | |
| [illegible]rF[illegible]r | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible]r[illegible]r[illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| [illegible]d[illegible]r[illegible] | | [illegible] | | | [illegible] | |
| [illegible]d[illegible] | | [illegible] | | | [illegible] | |
| [illegible]d[illegible] | | [illegible] | | | [illegible] | |
| [illegible]r[illegible] | | [illegible] | | | [illegible] | |
| R[illegible]r[illegible]r[illegible] | | | | | | |
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| M[illegible]d[illegible]r[illegible] | | | | | | |
| [illegible]r[illegible] | | [illegible] | [illegible] | | | |
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| [illegible]C[illegible] | | | | | | |
| [illegible]C[illegible]d[illegible] | [illegible] | | | | [illegible] | [illegible] |
| [illegible]C[illegible] | [illegible] | | | | [illegible] | [illegible] |
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| [illegible]F[illegible] | [illegible] | | | | [illegible] | [illegible] |
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| [illegible]M[illegible] | [illegible] | | | | [illegible] | [illegible] |

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| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Future Volume (Veh/h) | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Sign Control | | Free | | | Free | | | [illegible] | | | [illegible] | |
| Grade | | [illegible] | | | [illegible] | | | [illegible] | | | [illegible] | |
| Peak Hour Factor | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Hourly flow rate (vph) | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Pedestrians | | | | | [illegible] | | | [illegible] | | | [illegible] | |
| Lane Width (ft) | | | | | [illegible] | | | [illegible] | | | [illegible] | |
| Walking Speed (ft/s) | | | | | [illegible] | | | [illegible] | | | [illegible] | |
| Percent Blockage | | | | | [illegible] | | | [illegible] | | | [illegible] | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | [illegible] | | | [illegible] | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | [illegible] | | | [illegible] | | | | | | | |
| pX, platoon unblocked | [illegible] | | | | | | [illegible] | [illegible] | | [illegible] | [illegible] | [illegible] |
| vC, conflicting volume | [illegible] | | | [illegible] | | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | [illegible] | | | [illegible] | | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| tC, single (s) | [illegible] | | | [illegible] | | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | [illegible] | | | [illegible] | | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| p0 queue free % | [illegible] | | | [illegible] | | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| cM capacity (veh/h) | [illegible] | | | [illegible] | | | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

| Direction, Lane # | [illegible] | [illegible] | [illegible] |
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| Volume Total | [illegible] | [illegible] | [illegible] |
| Volume Left | [illegible] | [illegible] | [illegible] |
| Volume Right | [illegible] | [illegible] | [illegible] |
| cSH | [illegible] | [illegible] | [illegible] |
| Volume to Capacity | [illegible] | [illegible] | [illegible] |
| Queue Length 95th (ft) | [illegible] | [illegible] | [illegible] |
| Control Delay (s) | [illegible] | [illegible] | [illegible] |
| Lane LOS | A | A | C |
| Approach Delay (s) | [illegible] | [illegible] | [illegible] |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | | [illegible] | |
| Intersection Capacity Utilization | | [illegible] | ICU Level of Service A |
| Analysis Period (min) | | [illegible] | |

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| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
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| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
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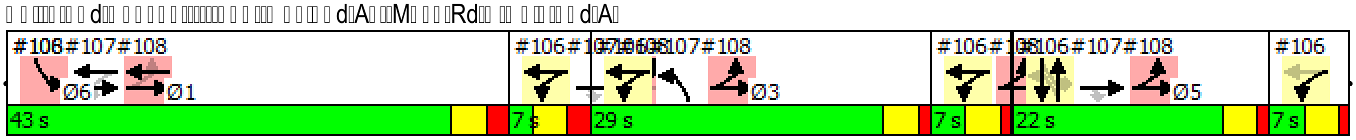

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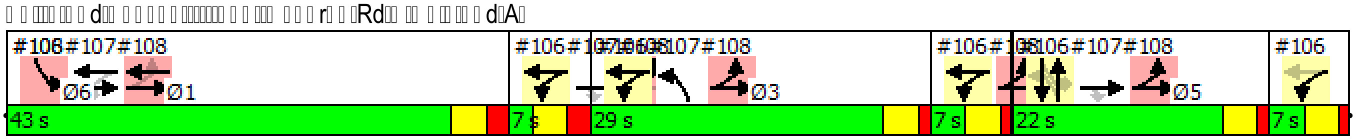
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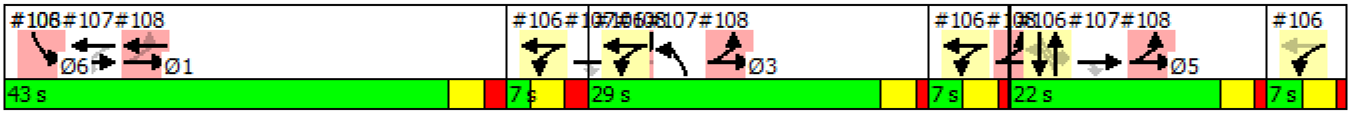

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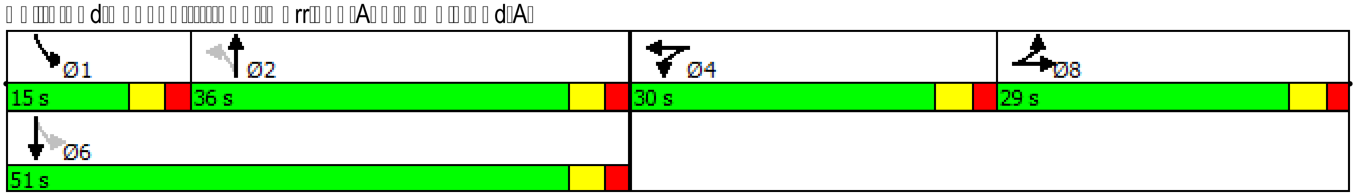

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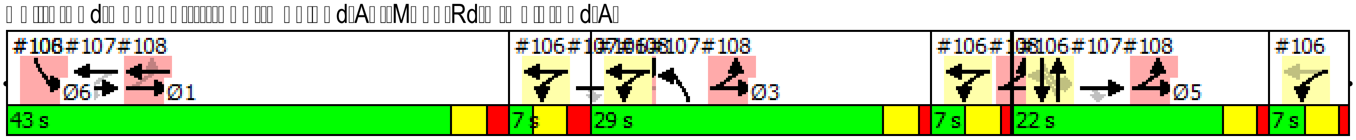

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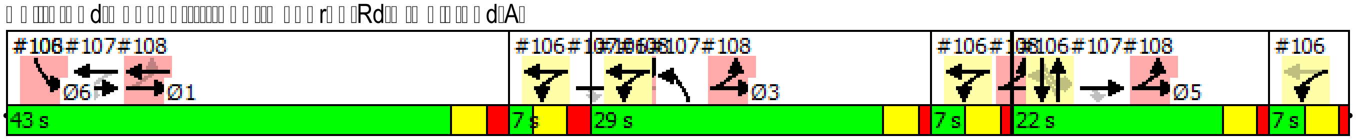

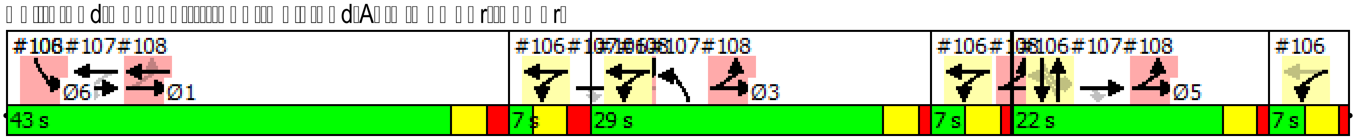
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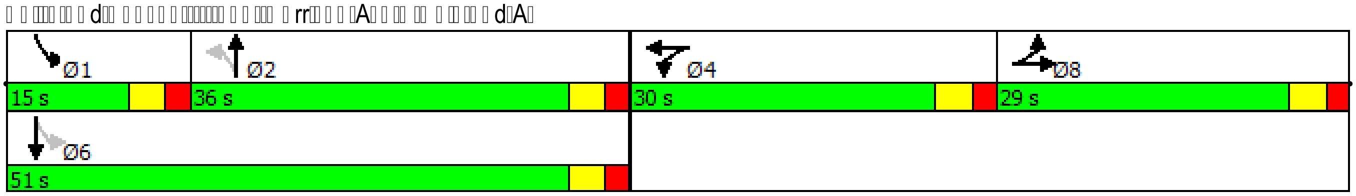

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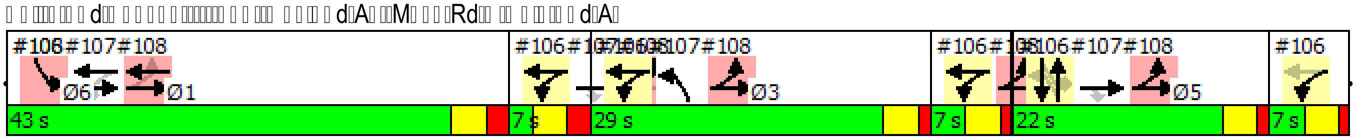

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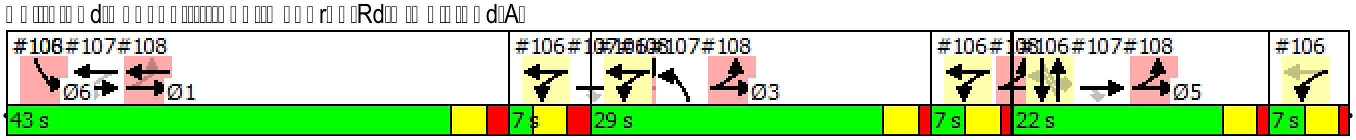
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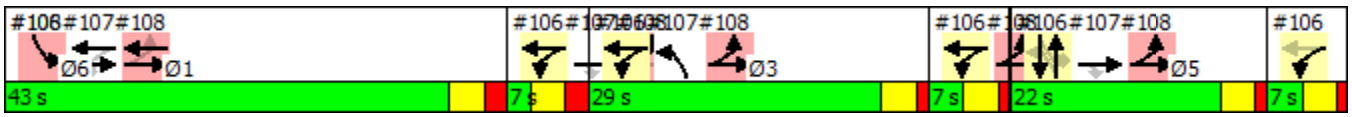

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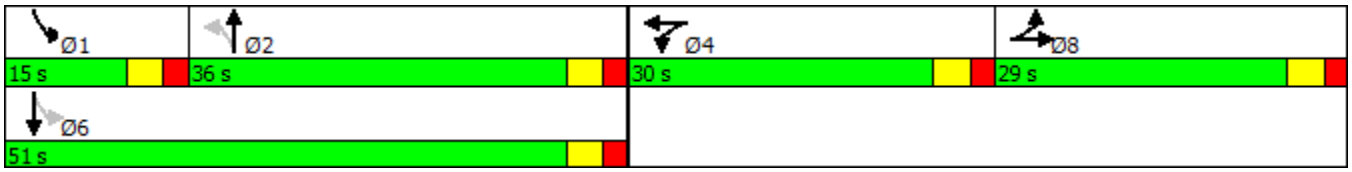
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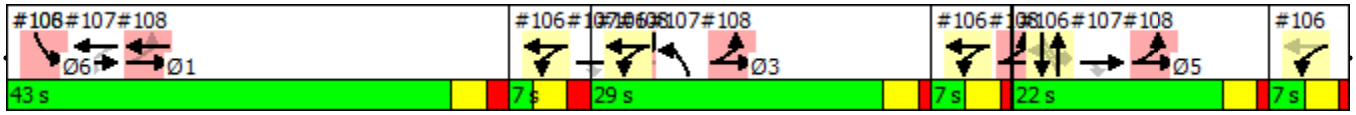


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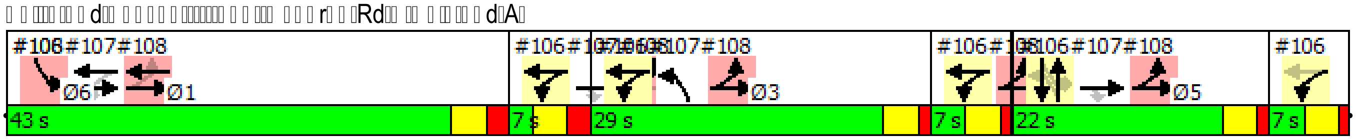

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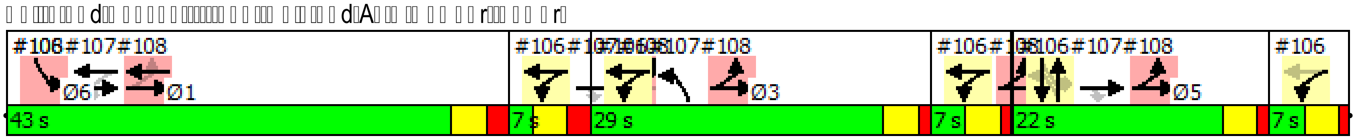

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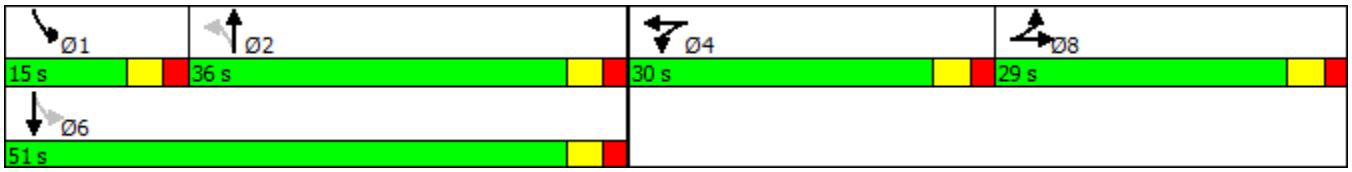

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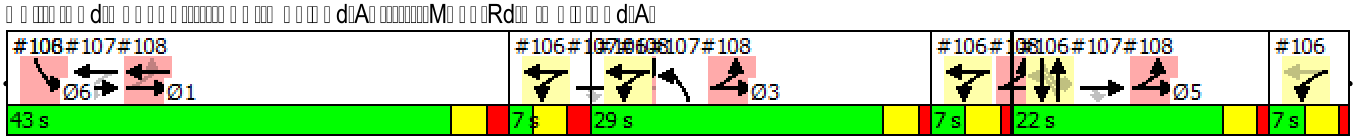

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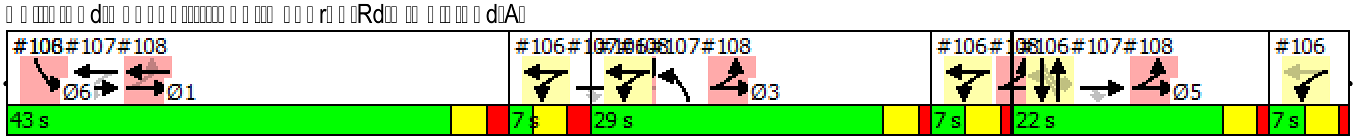

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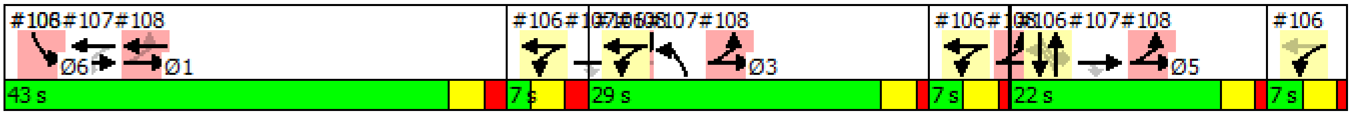

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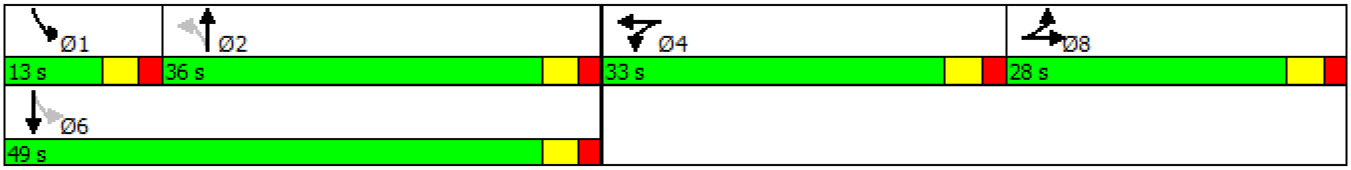

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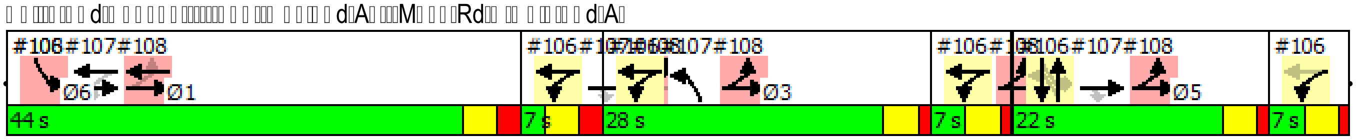

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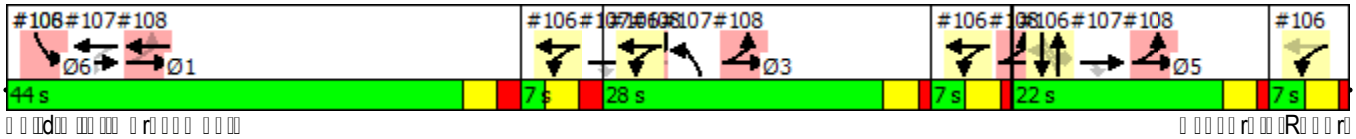


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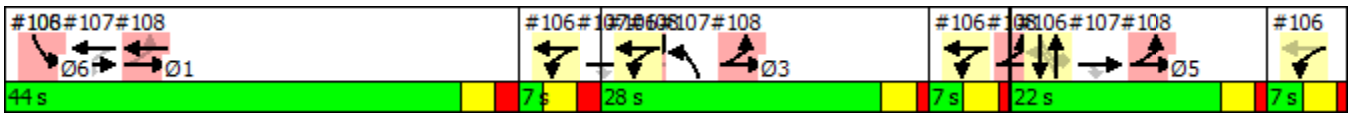

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# N Harrison EMS Response Letter

HARRISON EMERGENCY MEDICAL SERVICES
P.O. Box 68
2 Pleasant Ridge Road
Harrison, New York 10528
(914) 921-0100
(914) 921-0102 Fax
www.HarrisonEMS.org

May 27, 2016

Mr. Steve Martini, Planner
VHB
50 Main Street, Suite 360
White Plains, NY 10606

Mr. Martini,

In response to your request for EMS Services in the Town/Village of Harrison allow me to tell you about our service. Harrison EMS was founded on 1982 as a Volunteer organization handling around 1200 calls for service annually. In 1999, we became a career organization of 56 employees and we operate 4 ambulances and 2 fly cars, one being a supervisor vehicle and handled in 2015 over 3200 calls for service. We are a 501(c) 3 company that provides service to the community. We are not associated with the Town other than to provide care to the residents, we are a totally separate company who bears the name of Harrison EMS. I have been asked a few times now to answer similar questions about how this will affect the EMS response with the numerous projects planned to go on in the next few years. Harrison EMS welcomes the growth and sees the need to continue to grow as well as be on the cutting edge of pre-hospital medicine. So my response to your questions are as follows:

Existing Conditions:

1) We have 56 employees comprised of Paramedics and Emergency Medical Technicians, 2 Lieutenants and a Chief of Operations. We have a Board of Directors who oversees the finances of the organization.

2) We have 4 Type 1 Ambulances and 1 Type 3 Ambulance as well as to rapid response fly cars that are Advanced Life Support and all are stocked with the latest and best pre-hospital equipment around.

3) We averaged 3200 calls for 2015. Calls range from Traumas incidents with us covering I-95, I-287, Hutchison River Parkway and I-684. We are also primary response to the Westchester County Airport. We also have many doctors' offices and urgent care facilities in our response are so handle many medical calls. We also offer standby service for large events.

4) To respond to the downtown location referenced in this letter from our headquarters is 4 minutes. If we are responding from one of the hospitals it can be 8-10 mins.

5) We only have 1 location at this time and it is located on Pleasant Ridge Road and North Street.

Potential Impacts:

1) I believe with 143 residential units and the national average of occupants per household of 3, the potential just in residential would be 430 people added to the residents list. With the commercial space, Harrison's population already grows 3 fold during the daytime. We have extra units on since that is our busiest time. I think the potential for call volume increase is substantial.

2) EMS concerns would be access and egress points to residents if they are on the second floors. So if elevators will be present make sure they are wide enough to handle a stretcher. Also ensure the staircases are able to accommodate our equipment if the need to carry a patient downstairs due to no elevator. There aren't many concerns for EMS other than gaining access and for availability of Public Access Defibrillators on site.

3) Increase in call volume could produce adding additional unit to cover calls, so potential to increase in salaries and cost to operate another ambulance. The current services we provide are being stretched to the limits. There are a few other projects that have been approved and will

significantly increase our call volume which will lead to an increase in staffing and added expense. We do bill for service, so the increase will also increase our revenue to cover any additional calls in district.

I don't believe the impact to EMS will be huge but I do think there will be a moderate impact to call volume increase with the number of potential residents and customers going to the businesses that will be on site. As far as the parking, the current situation downtown has no impact on us at all.

If there is anything further you need from Harrison EMS, please feel free to call.

Joseph Bilotto, BS, NREMT-P, NS-CIC
Chief Operating Officer

# M Harrison Fire Department Response Letter

# HARRISON FIRE DEPARTMENT

206 HARRISON AVENUE
HARRISON, NEW YORK 10528
914-835-1106

*Chief John Masciola Jr.*

*Asst. Chief Nick Barreto* *Asst. Chief Vincent Straface*

**June 1, 2016**

**Steve Martini, Planner**
**Vhb**
**50 Main Street, Suite 360**
**White Plains, NY 10606**

**Re: Avalon at Harrison, Draft Environmental Impact Statement (DEIS)**

**Dear Mr. Martini,**

**In response to your request, the following submission is submitted. In addition to our answers to your questions, I have included charts showing our annual alarm responses from 2012- 2016 along with a breakdown of the type of incidents. Additionally, I have included a map indicating the location of the firehouse to the proposed Avalon project. As requested, the below are the responses to your questions:**

**Existing Conditions**

1. **Fire District staff size and organization**
   - **The Harrison Fire Department is a combination fire department with**
     - **12 Career Firefighters**
     - **40 Active Volunteer Firefighters**

   **The organization structure of the department is:**
   - **1-Chief of Department**
   - **2- Assistant Chiefs**
   - **Captain**
   - **Lieutenants**
   - **52 total Firefighters (Career/Volunteer)**

2. **District Apparatus**
   - **3- Engines 1500 GPM (500 Gallon tanks)**
   - **Tower Ladder (95 foot)**
   - **Light Rescue Truck**
   - **Chief Vehicles**
   - **1 Utility Vehicle**

3. Location of fire station
   - Station located at 206 Harrison Ave, Harrison NY 10528

4. Number of calls per year and type of call
   - Charts provided (2016- 309 total alarms in Fire District as of June 1, 2016)

5. Average response time to site
   - Two (2) minutes after dispatch

<u>Potential Impacts</u>

1. Increased demand for fire services by proposed use.
   - Increase of the amount of commercial alarm fire calls
   - Increase in Elevator related calls
   - Increase of training and equipment needs for complex
   - Increase on demand from neighboring Departments for Mutual Aid

2. Fire District concerns (If Any)
   - Access to parking structures
   - Water Supply in area
   - Access to elevators
   - Fire lanes in front of complex
   - Type of construction
   - Roof design and access
   - Truck access to rear parking structures
   - Access to train platform and rear of building

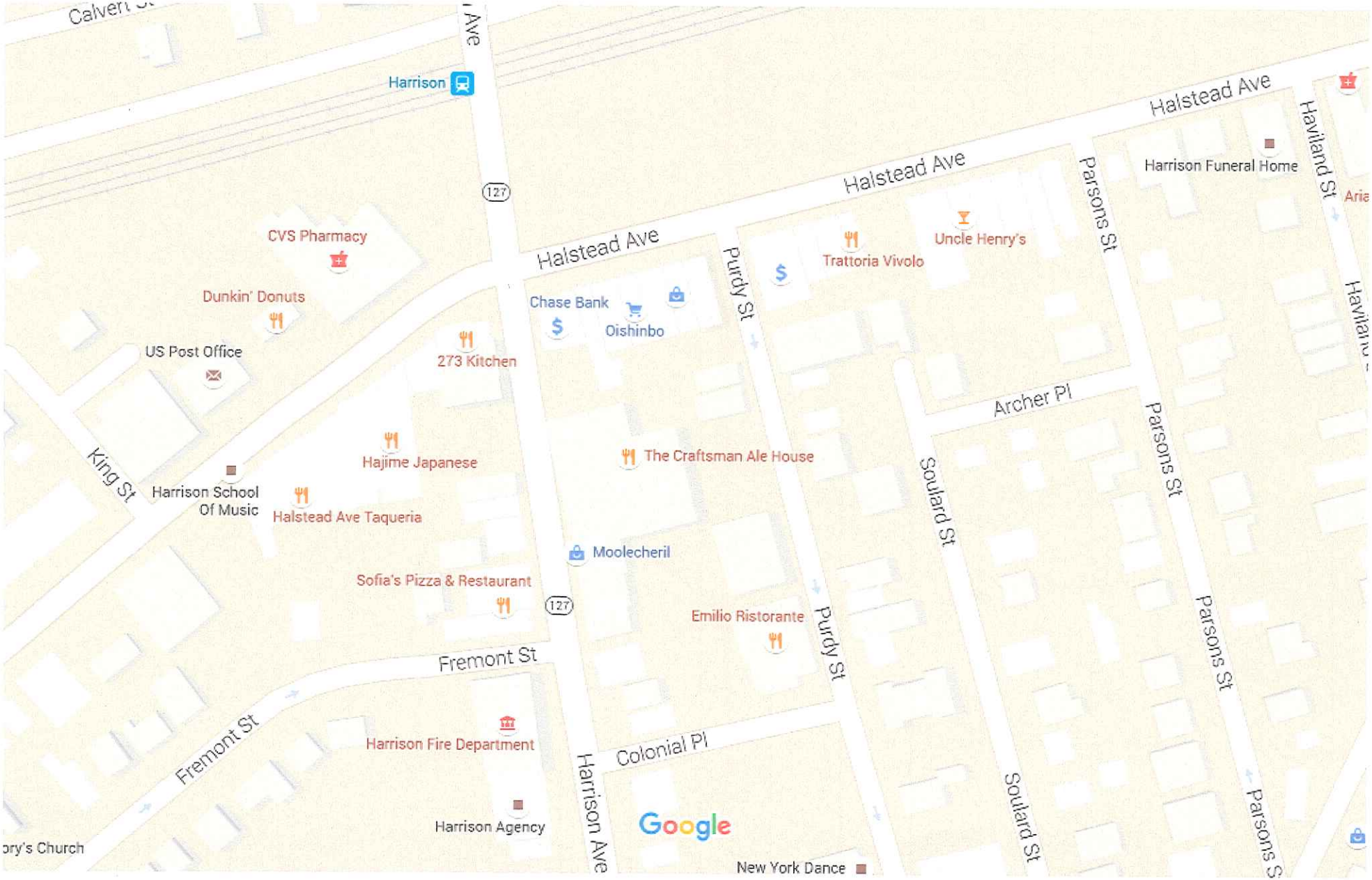
3. Adequacy of access to site and site components
   - Access to parking structures
   - Water Supply in area
   - Access to elevators
   - Fire lanes in front of complex
   - Type of construction
   - Roof design and access
   - Truck access to rear parking structures
   - Access to train platform and rear of building
   - Additional comments to be furnished upon review of plans

Upon review of the building and site plans, the Harrison Fire Department will submit additional comments, concerns and any specialized equipment needs which may impact the Fire District Operating Budget. If you have any questions regarding our submission, please feel free to contact me at (914) 356-3305.

Sincerely,

John Masciola Jr.
Chief of Department

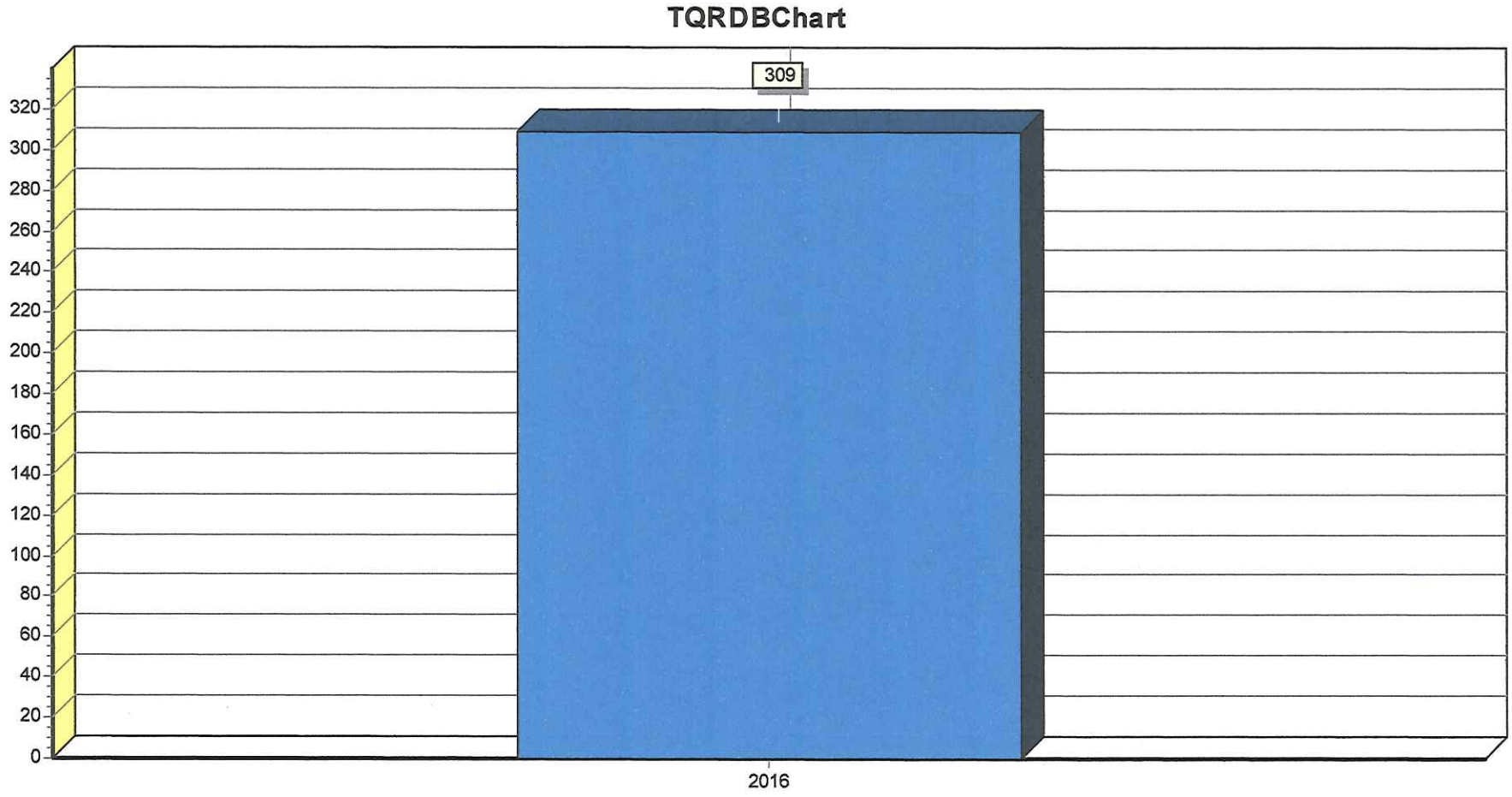
Google Maps




Map data ©2016 Google 100 ft

# Harrison Fire District #2

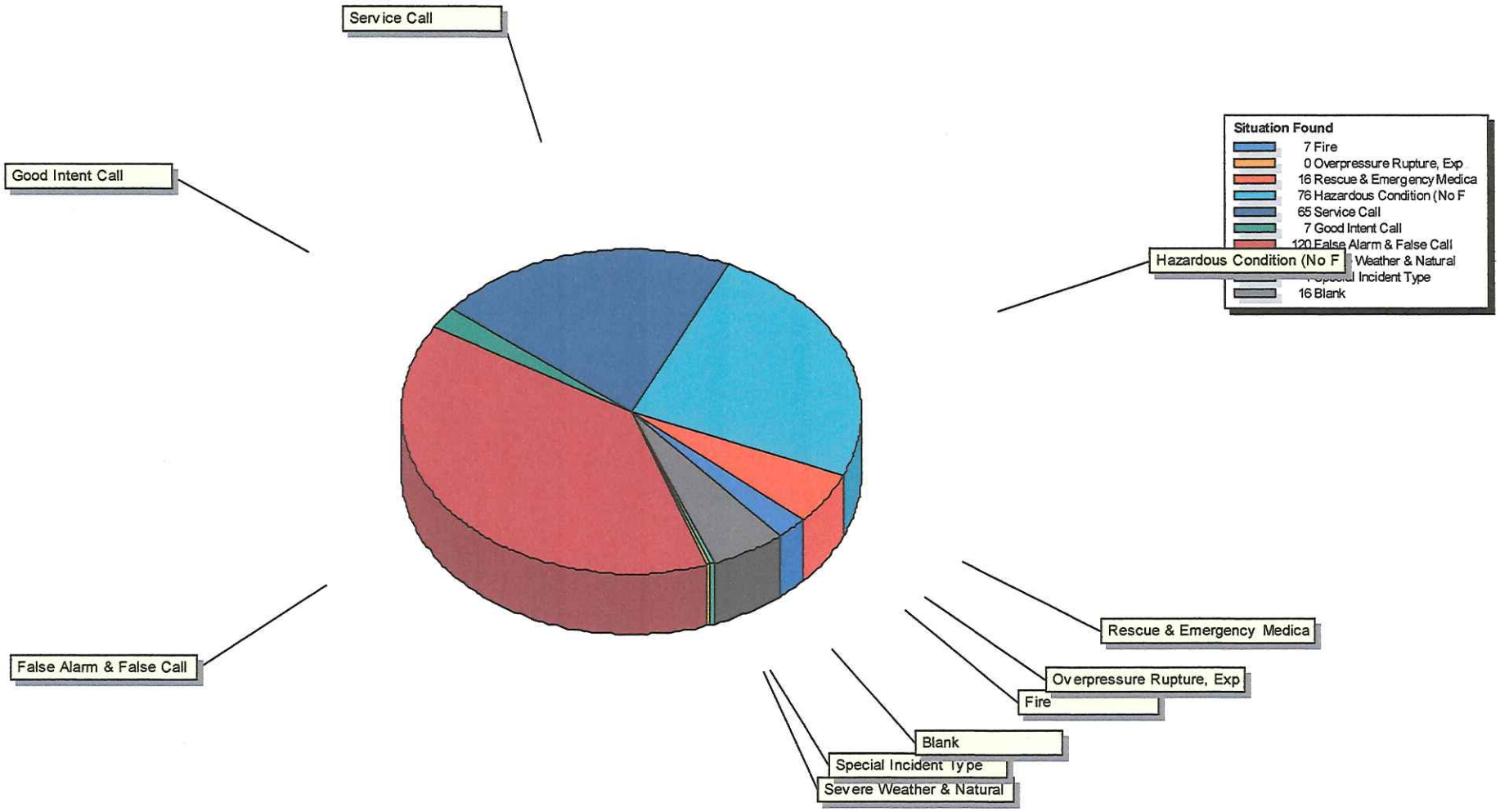
## Alarms by Year 2016 to 2016



# Incidents by Situation Found

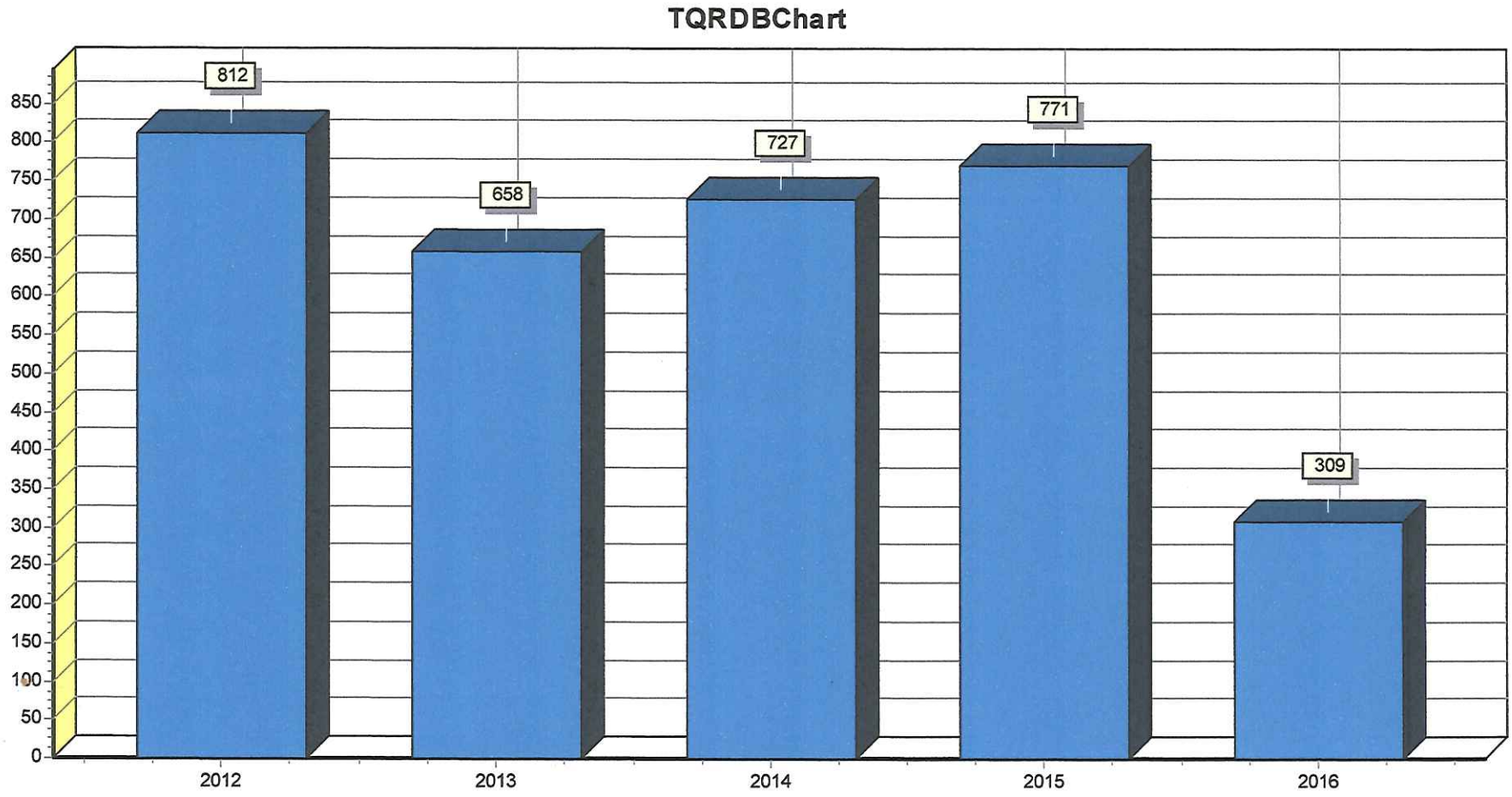
**Harrison Fire District #2**

**Date Range:** From 01/01/2016 to 06/01/2016
**Fixed Property:**



# Harrison Fire District #2

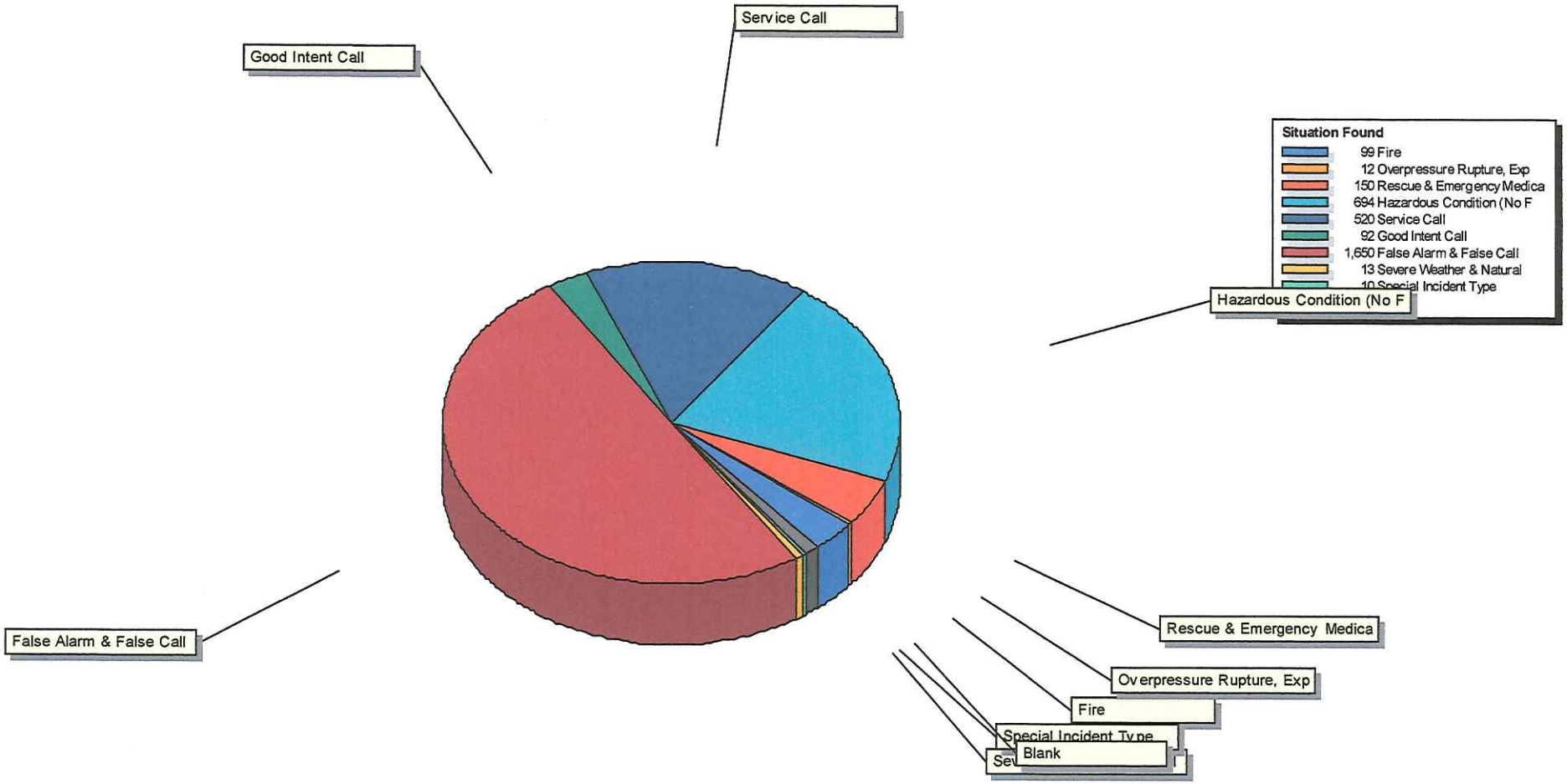
## Alarms by Year 2012 to 2016



# Incidents by Situation Found

**Harrison Fire District #2**

**Date Range:** From 01/01/2012 to 06/01/2016
**Fixed Property:**



# L Community Services Request Letters

May 17, 2016

Ref: 29626.00

Anthony Marraccini, Police Chief
Harrison Police Department
1 Heineman Place
Harrison, NY 10528

Re: Avalon at Harrison, Draft Environmental Impact Statement (DEIS)

Dear Mr. Marraccini,

We are planning consultants currently in the process of preparing a Draft Environmental Impact Statement (DEIS) for Avalon Bay Communities Inc. The proposed development will consist of 143 residential units (including a mix of studio, one and two-bedroom rental apartments) with approximately 27,000 square feet of commercial space. The mixed-use development will also consist of a parking garage with 751 spaces (475 will be owned by Metropolitan Transportation Authority for the use of Metro-North Train Commuter Parking, 186 spaces for residents of the facility and 90 spaces for patrons of the commercial uses).

The subject site (the "Site") is located along Halstead Avenue, immediately south of the Harrison Metro-North Train Station. Harrison Avenue also borders the project to the east (See *Figure 1*.) The Site is designated on the Tax Map of the Town/Village as Parcel 0182.-15 and 0182.-12, and consists of approximately 3.79 acres. (See *Figure 2*.) The proposal is to replace the existing surface parking lots with the mixed-use development

We have been asked by the Harrison Planning Board (the Lead Agency) to discuss the existing conditions and potential impacts of the proposed Project on police service in the area. In this context, we would appreciate your written responses to the following items, which we would include in the DEIS:

Existing Conditions:

(1) Staff size and organization;

(2) Department equipment;

(3) Location of stations;

(4) Average response time to the Site; and

(5) Any crime trends in the vicinity of the site.

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50 Main Street
Suite 360
White Plains, New York 10606
P 914.467.6600
F 914.761.3759

Potential Impacts:

(1) Increased demand for police services by the proposed action;

(2) Town/Village Police Department concerns (if any);

(3) Adequacy of access to site and site components.

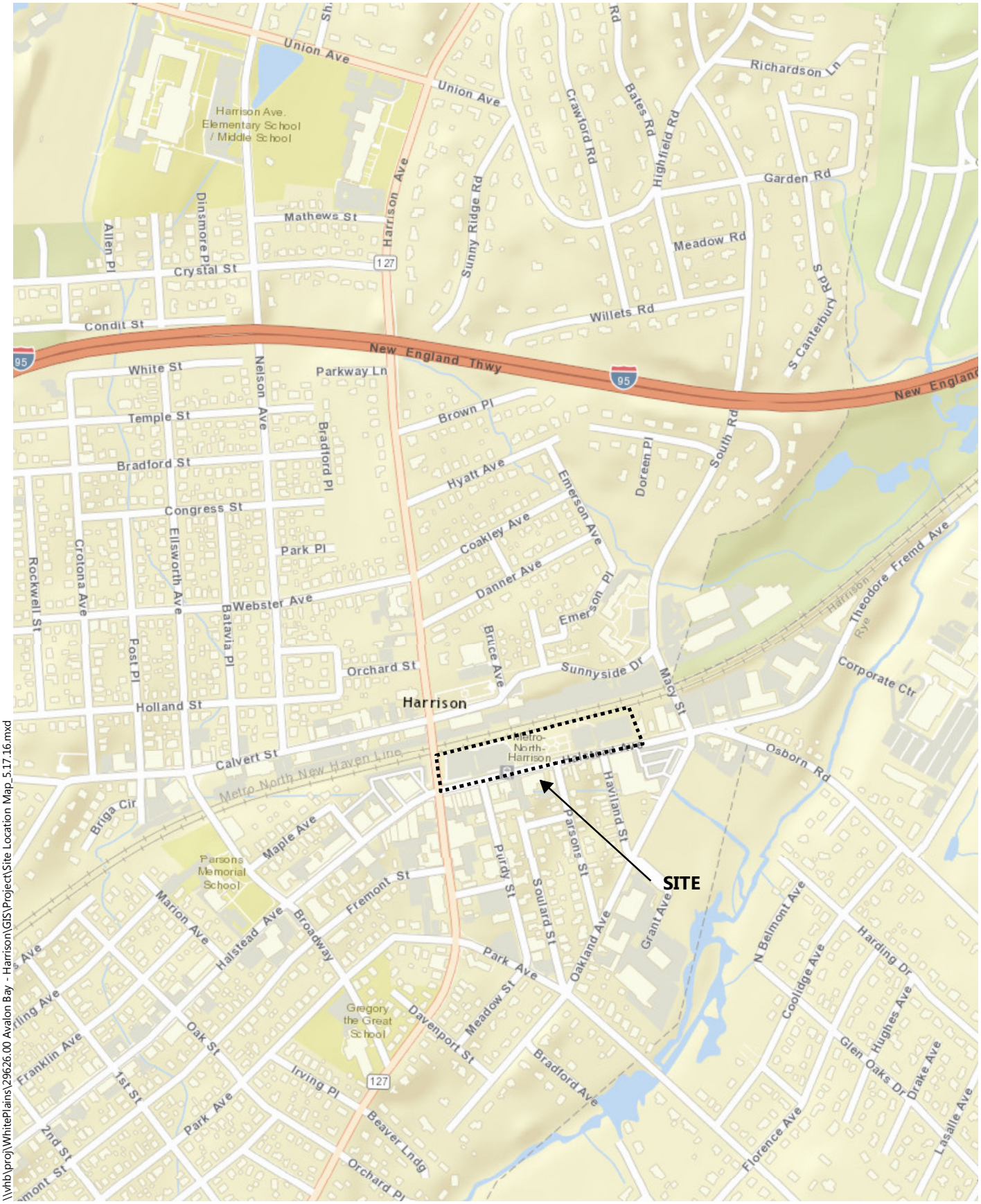
A detailed description of the impacts of the project will be provided in the DEIS. You will have an opportunity to review and comment on the DEIS once it is ready for distribution.

If you need further clarification for the project or the requested information please feel free to contact me at 914-467-6617 or smartini@vhb.com. Otherwise, I look forward to your written response. Please also provide a contact name and number in case we have additional questions.

Sincerely,

Steve Martini

Planner
smartini@vhb.com




\\vhb\proj\WhitePlains\29626.00 Avalon Bay - Harrison\GIS\Project\Site Location Map_5.17.16.mxd

0 237.5 475 950 Feet

**Regional Location** | Harrison, New York

**Avalon at Harrison**

Source: GIS Westchester County

SPACE LABEL DEFINITIONS

A = AVALONBAY
C = COMMUTER
R = RETAIL
F = FUTURE RESIDENT

**AVALON HARRISON TOD**
AVALONBAY COMMUNITIES

GROUND LEVEL FLOOR PLAN

MAY 2016

Perkins Eastman

www.vhb.com

May 17, 2016

Ref: 29626.00

John Masciola Jr, Fire Chief
Harrison Fire Department
206 Harrison Avenue
Harrison, NY 10528

Re: Avalon at Harrison, Draft Environmental Impact Statement (DEIS)

Dear Mr. Masciola,

We are planning consultants currently in the process of preparing a Draft Environmental Impact Statement (DEIS) for Avalon Bay Communities Inc. The proposed development will consist of 143 residential units (including a 136 market-rate rental apartments and 7 affordable apartments) with approximately 27,000 square feet of commercial space. The mixed-use development will also consist of a parking garage with 751 spaces (475 will be owned by Metropolitan Transportation Authority for the use of Metro-North Train Commuter Parking, 186 spaces for residents of the facility and 90 spaces for patrons of the commercial uses).

The subject site (the "Site") is located along Halstead Avenue, immediately south of the Harrison Metro-North Train Station. Harrison Avenue also borders the project to the east (See *Figure 1*.) The Site is designated on the Tax Map of the Town/Village as Parcel 0182.-15 and 0182.-12, and consists of approximately 3.79 acres. (See Figure *2*.) The proposal is to replace the existing surface parking lots with the mixed-use development

We have been asked by the Harrison Planning Board (the Lead Agency) to discuss the existing conditions and potential impacts of the proposed Project on fire service in the area. In this context, we would appreciate your written responses to the following items, which we would include in the DEIS:

Existing Conditions:

(1) Fire District staff size and organization;

(2) District apparatus;

(3) Location of fire stations

(4) Number of calls per year and type of call;

(5) Average response time to the Site;

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50 Main Street
Suite 360
White Plains, New York 10606
P 914.467.6600
F 914.761.3759

Potential Impacts:

(1) Increased demand for fire services by proposed use.

(2) Fire District concerns (if any).

(3) Adequacy of access to site and site components.

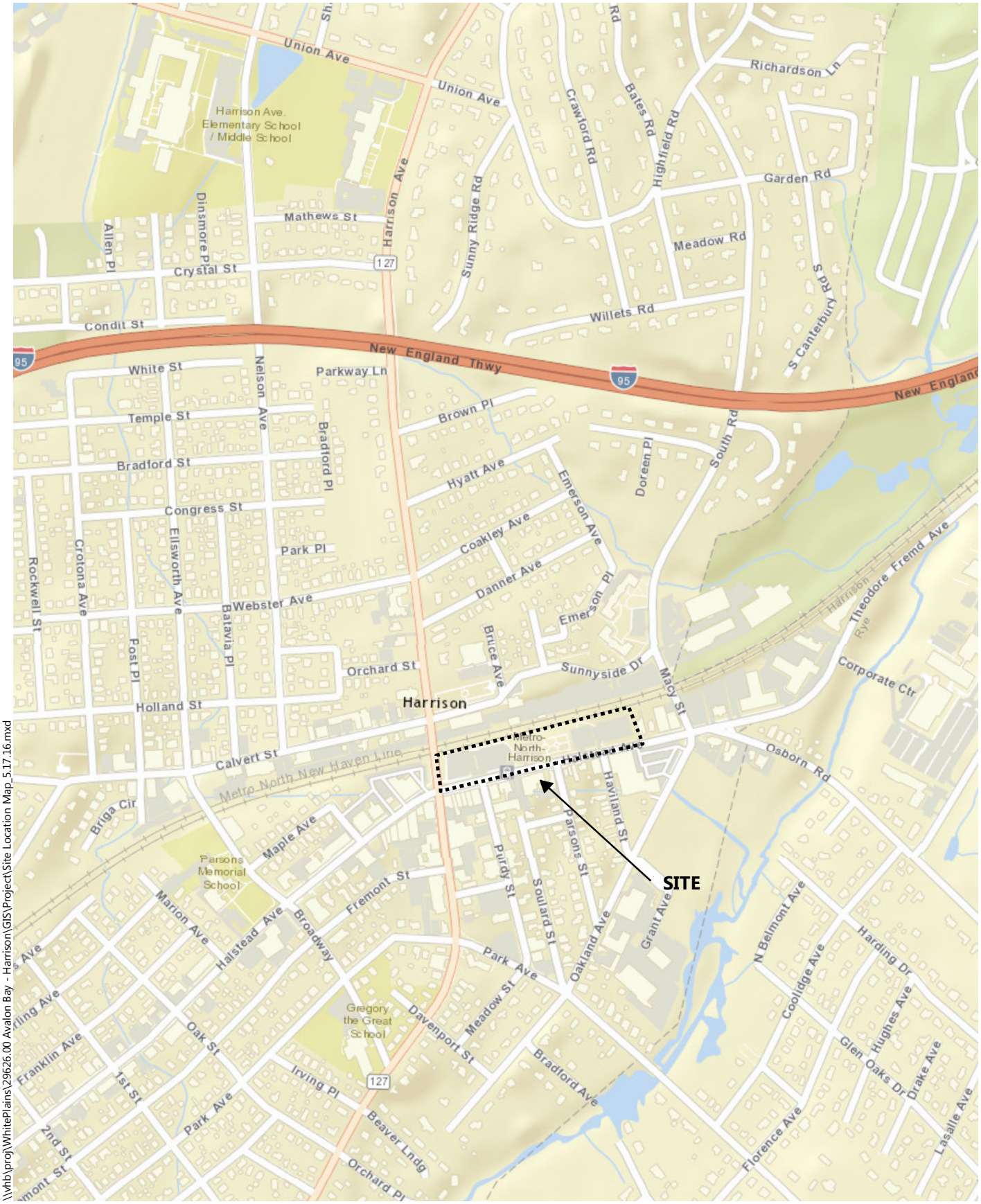
A detailed description of the impacts of the project will be provided in the DEIS. You will have an opportunity to review and comment on the DEIS once it is ready for distribution.

If you need further clarification for the project or the requested information please feel free to contact me at 914-467-6617 or smartini@vhb.com. Otherwise, I look forward to your written response. Please also provide a contact name and number in case we have additional questions.

Sincerely,

Steve Martini

Planner
smartini@vhb.com




\\vhb\proj\WhitePlains\29626.00 Avalon Bay - Harrison\GIS\Project\Site Location Map_5.17.16.mxd

0 237.5 475 950 Feet

**Regional Location** | Harrison, New York

**Avalon at Harrison**

Source: GIS Westchester County

SPACE LABEL DEFINITIONS

A = AVALONBAY
C = COMMUTER
R = RETAIL
F = FUTURE RESIDENT

**AVALON HARRISON TOD**
AVALONBAY COMMUNITIES

GROUND LEVEL FLOOR PLAN

MAY 2016

Perkins Eastman

www.vhb.com

May 17, 2016

Ref: 29626.00

Joseph Bilotto, Chief Operating Officer
Harrison Emergency Medical Services
P.O. Box 68
Harrison, NY 10528

Re: Avalon at Harrison, Draft Environmental Impact Statement (DEIS)

Dear Mr. Biotto,

We are planning consultants currently in the process of preparing a Draft Environmental Impact Statement (DEIS) for Avalon Bay Communities Inc. The proposed development will consist of 143 residential units (including a 136 market-rate rental apartments and 7 affordable apartments) with approximately 27,000 square feet of commercial space. The mixed-use development will also consist of a parking garage with 751 spaces (475 will be owned by Metropolitan Transportation Authority for the use of Metro-North Train Commuter Parking, 186 spaces for residents of the facility and 90 spaces for patrons of the commercial uses).

The subject site (the "Site") is located along Halstead Avenue, immediately south of the Harrison Metro-North Train Station. Harrison Avenue also borders the project to the east (See *Figure 1*.) The Site is designated on the Tax Map of the Town/Village as Parcel 0182.-15 and 0182.-12, and consists of approximately 3.79 acres. (See *Figure 2*.) The proposal is to replace the existing surface parking lots with the mixed-use development

We have been asked by the Harrison Planning Board (the Lead Agency) to discuss the existing conditions and potential impacts of the proposed Project on emergency medical service in the area. In this context, we would appreciate your written responses to the following items, which we would include in the DEIS:

Existing Conditions:

(1) EMS staff size and organization;

(2) EMS apparatus/equipment;

(3) Number of calls per year and type of call;

(4) Average response time to this Site;

(5) Location of EMS stations;

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50 Main Street
Suite 360
White Plains, New York 10606
P 914.467.6600
F 914.761.3759

Potential Impacts:

(1) Increased demand for emergency services with proposed project.

(2) Emergency service concerns (if any).

(3) Adequacy of access to site and site components as it relates to EMS service.

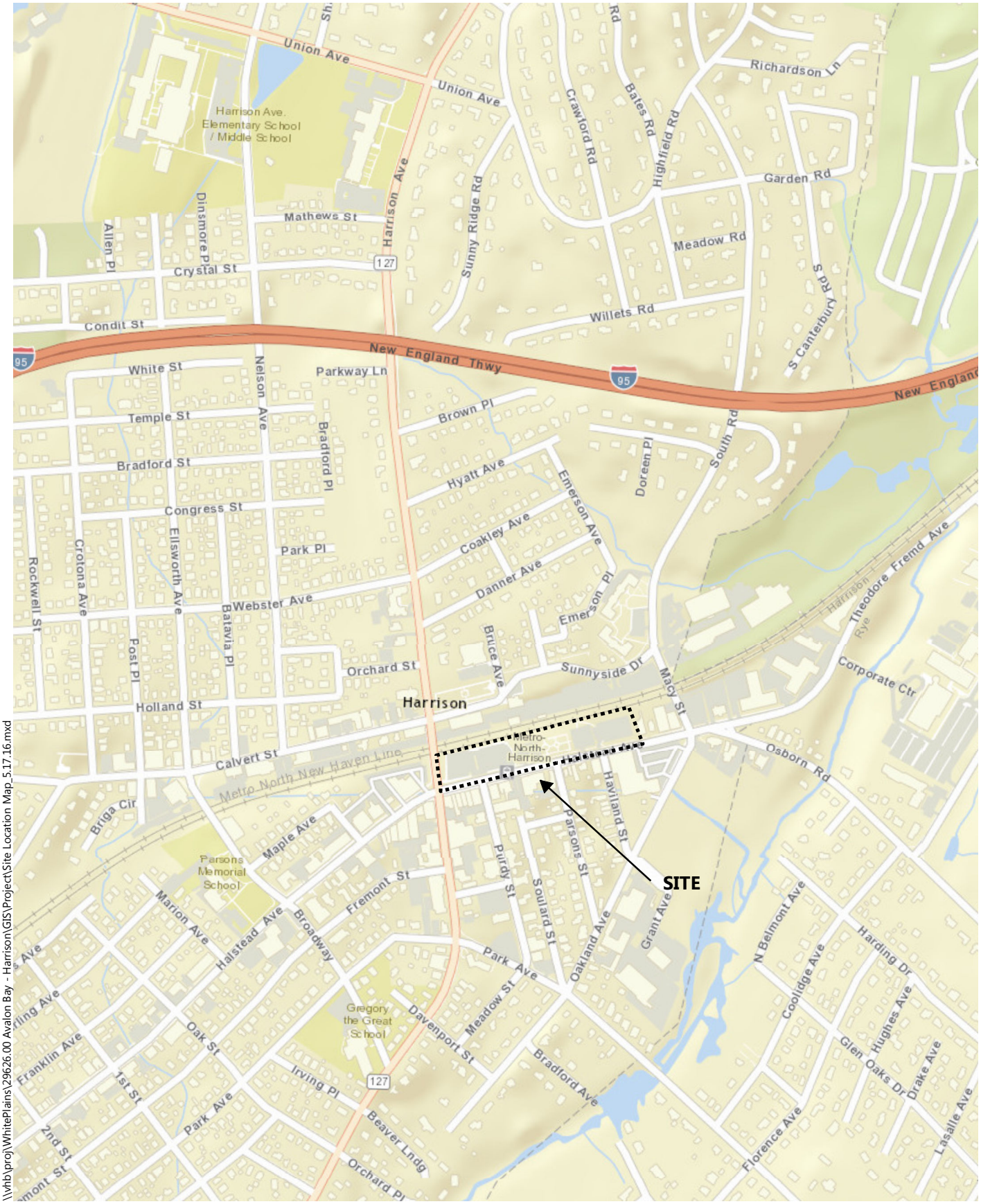
A detailed description of the impacts of the project will be provided in the DEIS. You will have an opportunity to review and comment on the DEIS once it is ready for distribution.

If you need further clarification for the project or the requested information please feel free to contact me at 914-467-6617 or smartini@vhb.com. Otherwise, I look forward to your written response. Please also provide a contact name and number in case we have additional questions.

Sincerely,

Steve Martini

Planner
smartini@vhb.com




\\vhb\proj\WhitePlains\29626.00 Avalon Bay - Harrison\GIS\Project\Site Location Map_5.17.16.mxd

0 237.5 475 950 Feet

**Regional Location** | Harrison, New York

**Avalon at Harrison**

Source: GIS Westchester County

SPACE LABEL DEFINITIONS

A = AVALONBAY
C = COMMUTER
R = RETAIL
F = FUTURE RESIDENT

**AVALON HARRISON TOD**
AVALONBAY COMMUNITIES

GROUND LEVEL FLOOR PLAN

MAY 2016

Perkins Eastman

www.vhb.com

May 17, 2016

Ref: 29626.00

Louis N. Wool, Ed. D., Superintendent of Schools
Harrison Central School District
50 Union Avenue
Harrison, NY 10528

Re: Avalon at Harrison, Draft Environmental Impact Statement (DEIS)

Dear Dr. Wool,

We are planning consultants currently in the process of preparing a Draft Environmental Impact Statement (DEIS) for Avalon Bay Communities Inc. The proposed development will consist of 143 residential units (including a 136 market-rate rental apartments and 7 affordable apartments) with approximately 27,000 square feet of commercial space. The mixed-use development will also consist of a parking garage with 751 spaces (475 will be owned by Metropolitan Transportation Authority for the use of Metro-North Train Commuter Parking, 186 spaces for residents of the facility and 90 spaces for patrons of the commercial uses).

The subject site (the "Site") is located along Halstead Avenue, immediately south of the Harrison Metro-North Train Station. Harrison Avenue also borders the project to the east (See *Figure 1*.) The Site is designated on the Tax Map of the Town/Village as Parcel 0182.-15 and 0182.-12, and consists of approximately 3.79 acres. (See *Figure 2*.) The proposal is to replace the existing surface parking lots with the mixed-use development

We have been asked by the Harrison Planning Board (the Lead Agency) to discuss the existing conditions and potential impacts of the proposed Project on schools in the area. In this context, we would appreciate your written responses to the following items, which we would include in the DEIS:

Existing Conditions:

(1) Location, capacity and enrollment of existing schools in the Harrison Central School District, by school and grade for the 2015-2016 school year;

(2) Any existing studies that project future enrollments and school capacities by building; and,

(3) Current School District per pupil school costs.

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50 Main Street
Suite 360
White Plains, New York 10606
P 914.467.6600
F 914.761.3759

Potential Impacts:

(1) School District concerns regarding the proposed Project, with capacity (if any); and

(2) School District concerns regarding programmatic impact as a result of the Project (if any).

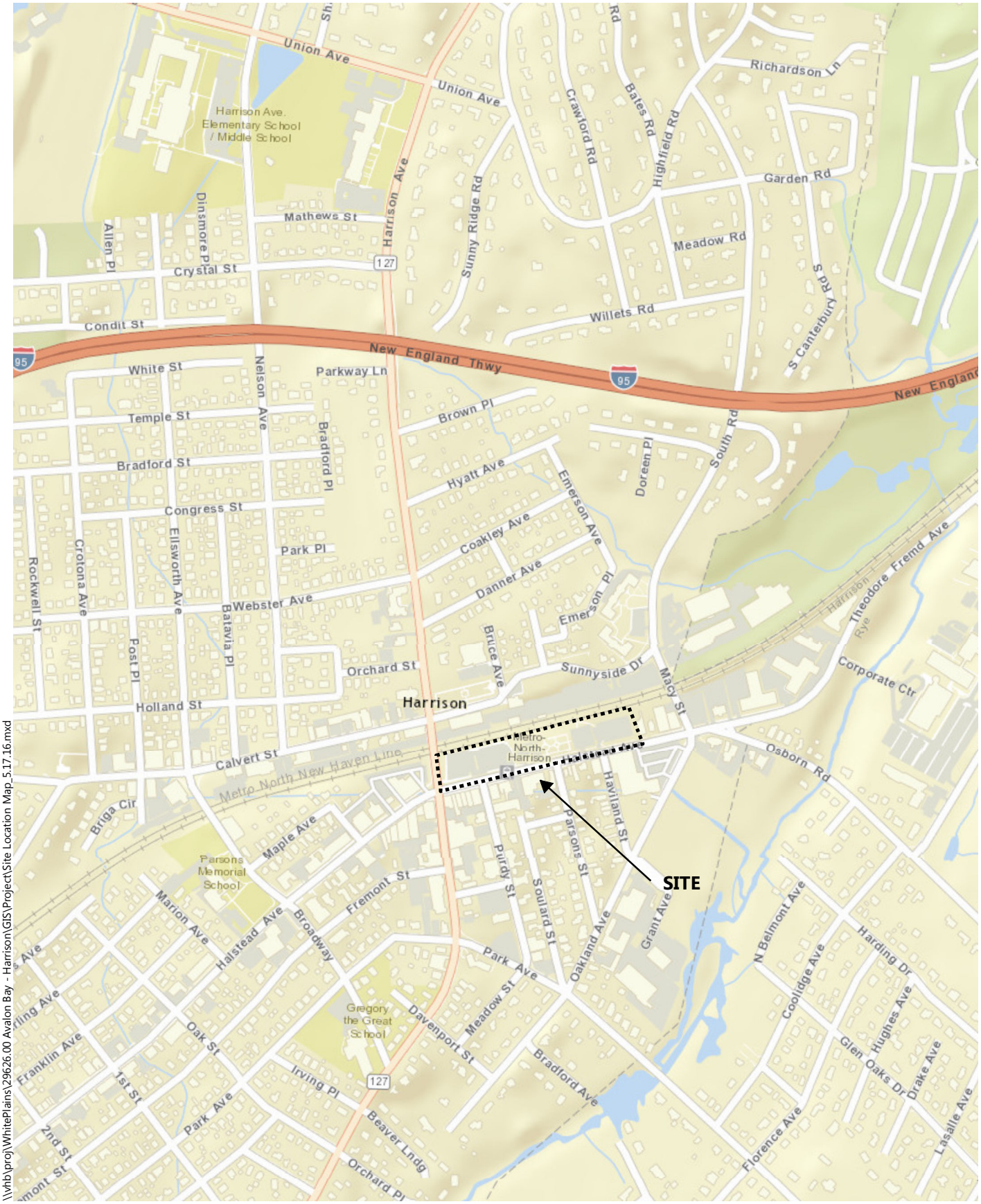
A detailed description of the impacts of the project will be provided in the DEIS. You will have an opportunity to review and comment on the DEIS once it is ready for distribution.

If you need further clarification for the project or the requested information please feel free to contact me at 914-467-6617 or smartini@vhb.com. Otherwise, I look forward to your written response. Please also provide a contact name and number in case we have additional questions.

Sincerely,

Steve Martini

Planner
smartini@vhb.com




\\vhb\proj\WhitePlains\29626.00 Avalon Bay - Harrison\GIS\Project\Site Location Map_5.17.16.mxd

0 237.5 475 950 Feet

**Regional Location** | Harrison, New York

**Avalon at Harrison**

Source: GIS Westchester County

SPACE LABEL DEFINITIONS

A = AVALONBAY
C = COMMUTER
R = RETAIL
F = FUTURE RESIDENT

**AVALON HARRISON TOD**
AVALONBAY COMMUNITIES

GROUND LEVEL FLOOR PLAN

MAY 2016

Perkins Eastman

Avalon Bay Harrison
Town/Village of Harrison,
Westchester County, New York
Draft Environmental Impact Statement

# K Cultural Resources Due Diligence

Memorandum

To: Valerie Monastra, Project Manager

Date: June 1, 2016

Project #: 29626.00

From: Carol S. Weed, MA (RPA)

Re: Avalon Bay Communities, Avalon Harrison TOD, Town of Harrison, Westchester County, New York

---

This memorandum summarizes the results of the New York Office of Parks, Recreation, and Historic Preservation (NY SHPO) site file check on February 8 and May 4, 2016 and on-line map research using the ESRI USGS Historic Map Collection, the Map Collection of the New York City Public Library, the Westchester County Archives and Westchester Historical Society web sites between May 4 and 19, 2016.

Avalon Bay Communities (the 'Applicant') proposes to redevelop a 3.79 acre located in Block 182, Lots 12 & 15 of the Town of Harrison (Figures 1-3; Photographs 1-12). The lots are north of Halstead Avenue and east of Harrison Avenue and they currently host four parking lots (2.50 acres), the Jilly Flowers Park (1.05 acres) and landscaped buffer strips surrounding the parking lots (0.24 acres). The existing impervious asphalt parking lots hold 260 parking spaces. The Applicant proposes to construct 143 multi-family residential units unevenly divided between three multi-story buildings, 27,000 square feet of commercial retail space on the ground floor of the three residential buildings with structured parking spaces in two of the three buildings. An additional 769 parking spaces will serve the on-site users as well as the adjacent Harrison Metro-North Railroad Station.

The proposed depth of disturbance below present grade will range from approximately 5 feet to 11 feet. Utilities and infrastructure will include stormwater management in addition to sanitary, water, gas, telecommunications, and electrical services. The utilities will interconnect with existing services.

The project requires the adoption of a new Transit Oriented Development (TOD) District, rezoning the project site to the new TOD District, TOD special exception permit, architectural review and the approval of a site plan. The Town of Harrison is completing the SEQRA review. Westchester County Department of Health permits will be required for sewer and water connections.

**Results of the Literature Review**

No previous cultural resources survey has been done of the project footprint or the project parcels in general. The project area's extreme southwest corner lies within an Area of Archaeological Sensitivity that is triggered by the presence of NY SHPO Unique Site Number (USN) 11949.000106, the Beaver Brook Prehistoric Site. According to CRIS, the site form for the property is missing and there does not appear to be an associated survey report. Within 1000 feet of the project site, Eugene Boesch completed a survey entitled "Phase IA Archaeological Investigation of the Beaver Swamp Brook Project Area, Town of Harrison, Westchester County, New York" (03SR53852). That report also is not within the CRIS electronic archive.

The project site has been previously disturbed in the historic period. The 1872 Beers atlas sheet (Figure 4) illustrates the original subdivision in the area and the presence of the then in-use Harrison Depot within the railroad right-of-way and the Harrison Hotel on Lot 32. The current project extends from the east side of Harrison Avenue to approximately Lot 44 in the subdivision plan. By 1881, Bromley and Bromley (Figure 5) show the railroad depot still on the south side of the tracks. They illustrate a 'store' in approximately the location of the original Harrison Hotel. There is no other development shown between the railroad right-of-way and Halstead Avenue in the project area. The 1901 Bromley (Figure 6) map still shows the station south (left) of the railroad right-of-way. For the first time, buildings are present at the east end of the project area north of Halstead. According to a Phase



50 Main Street, Suite 360
White Plains, NY 10606

Memorandum

2 Environmental Site Assessment (ESA)[1] by about 1911, the western end of the project site hosted the railroad depot and the central area had a church, a coal yard, and two one-story buildings. These centrally located buildings may be the ones shown on the 1901 Bromley map sheet. According to the ESA, a lumber and shingle store was present in the eastern one-third. At some point between 1911 and 1919, the coal yard and the church were razed.

The subsequent Hopkins sheet (Figure 7) dated 1929-1930 clearly shows the creation of parking spaces to service the railroad passengers and the original layout of Jilly Flowers park (just to the right of the large 'O' on Figure 7). The Harrison Station had been removed from the south side of the railroad tracks and a new station constructed north of the tracks, outside of the project area. According to Kennedy, the Harrison Station building was raised approximately 50 feet above its original elevation in 1926 with further modifications made in 1970.[2] By 1929-1930, the buildings north of Halstead at the east end of the project area shown on the 1901 map sheet are gone. Buildings were present, however, east of the project boundary.

Based on the walkover, it is apparent that much of the area has been recontoured (in particular see Photographs 2 and 12 for slope downward from Halstead Avenue). The USDA Web Soil Survey (WSS; Figure 8) indicates that the entirety of the project is Urban Land (Uf). Historic aerial coverage presented in GoogleEarth indicates the size of Jilly Flowers Park was reduced by half between 12/30/2004 and 11/24/2006 to accommodate a small parking lot on the park's west side . This parking lot lies at a higher elevation that the main commuter parking lot to its west. The new lot and Jilly Flowers Park are both at the same elevation while the parking lots to the east have been terraced lower. The ESA geotechnical investigations found that bedrock is present at depths ranging from 1-foot to 7-feet beneath existing grade across the project area.

**Recommendations**

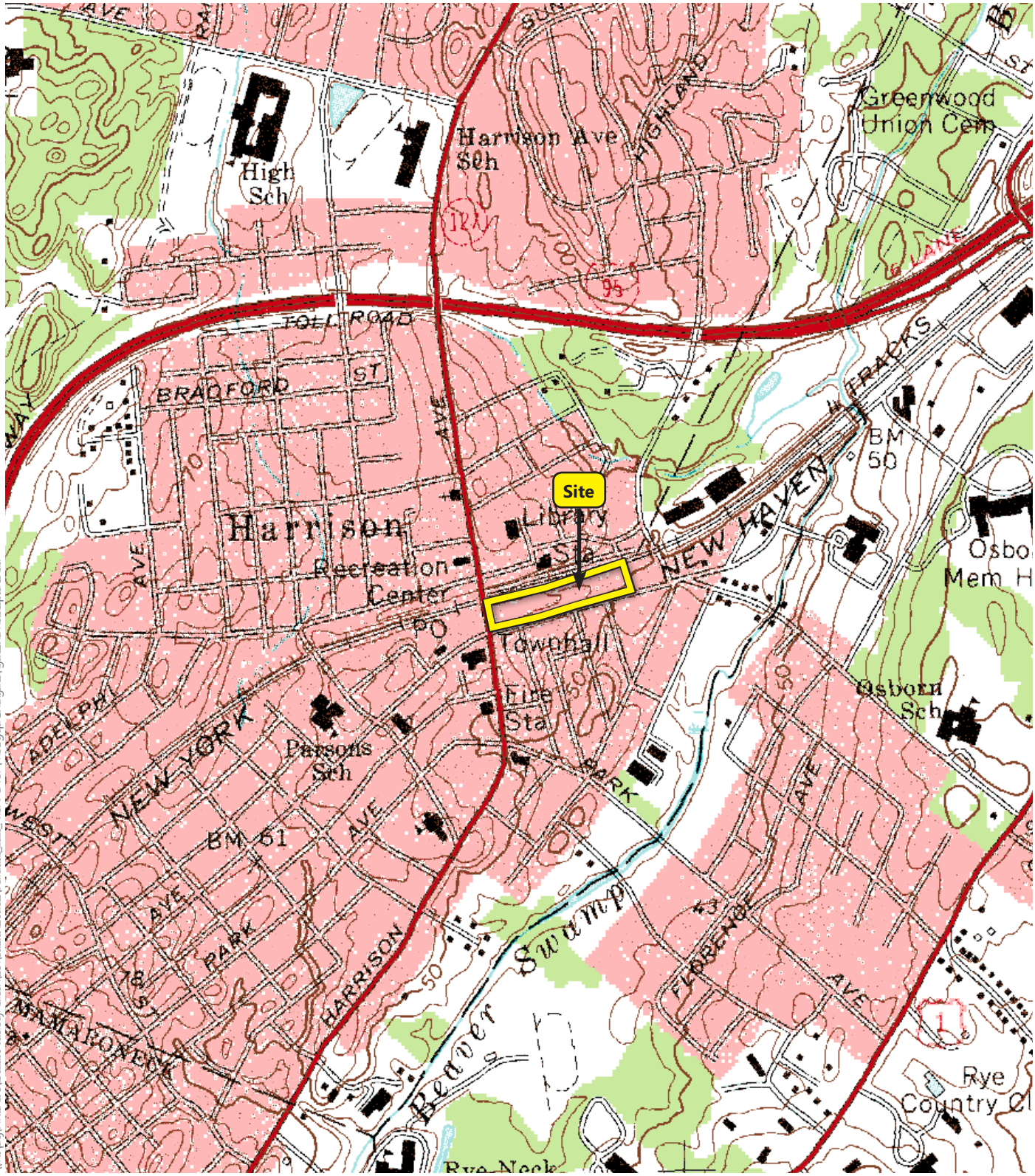
In sum, the subject property has experienced a high degree of disturbance during the 20th century. No further archaeological work is recommended for the project.

**Carol S. Weed (MA, RPA):** Carol S. Weed
Senior Project Manager/Cultural and Natural Resources
Senior Archaeologist, Principal Investigator

**VHB Engineering, Surveying and Landscape Architecture, P.C.**
Planning | Transportation | Land Development | Environmental Services

Phone: 212.695.5858 x7327 | Fax: 212.971.7239 | Direct: 212.857.7327 | Mobile: 646.276.2460
cweed@vhb.com

[1] Triton Environmental, Inc. 2014. Phase II Environmental Site Assessment Metro-North Lot Block 182, Lots 12 & 15 Harrison, NY. Triton Report Ref. No. 104226R02 prepared for AvalonBay Communities, Inc., Shelton, CT.
[2] Karen Morey Kennedy. 1980. NYOPRHP Building-Structure Inventory Form, Harrison RR Station – New Haven Line. Form downloaded from CRIS.




0 500 1000 Feet

**Avalon Bay Harrison** | Town of Harrison, New York

**USGS Mamaroneck, NY- CT**
**7.5-minute Quadrangle Sheet with**
**Project Location**

Source Info USGS Mamaroneck, New York

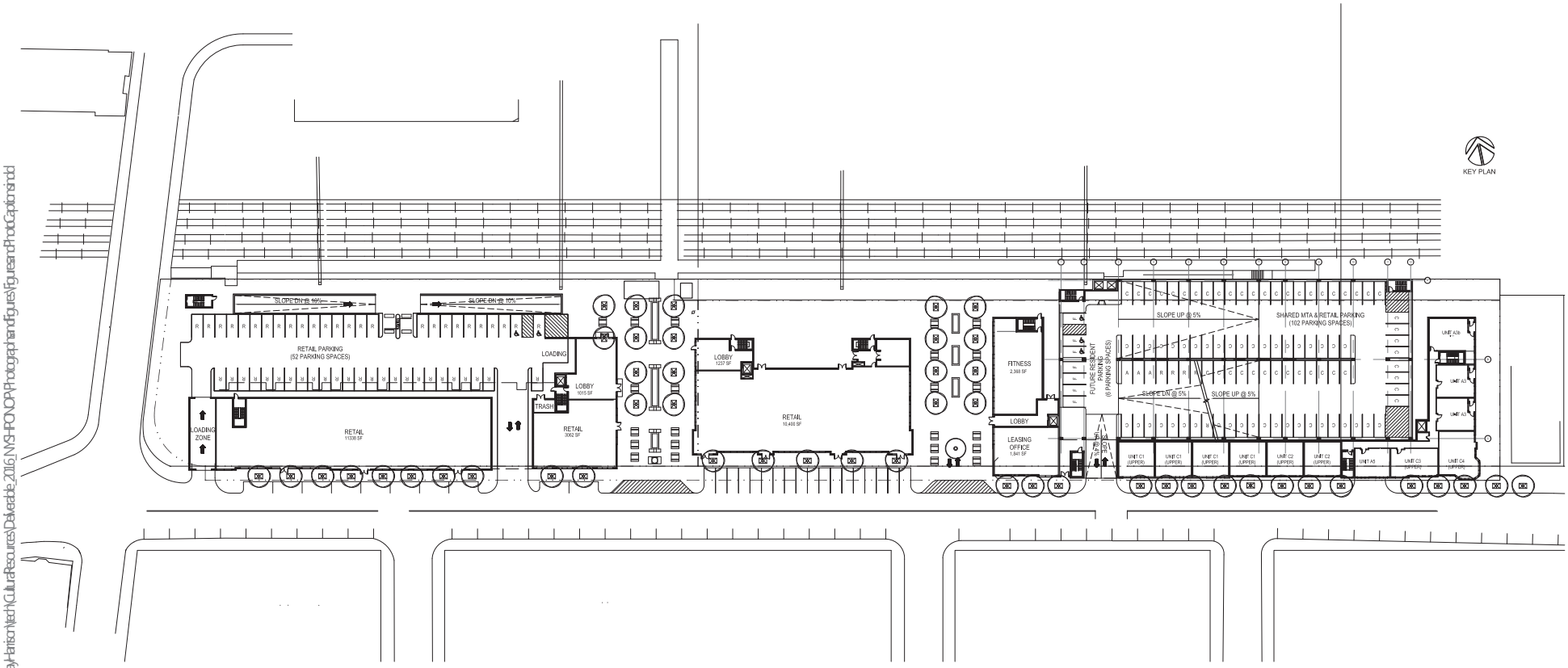
0 625 125 Feet

2 → Photo Site Location

**Avalon Bay Harrison** | Town of Harrison, New York

**Project Existing Conditions with Photograph Key**

Source Info GIS Harrison, New York



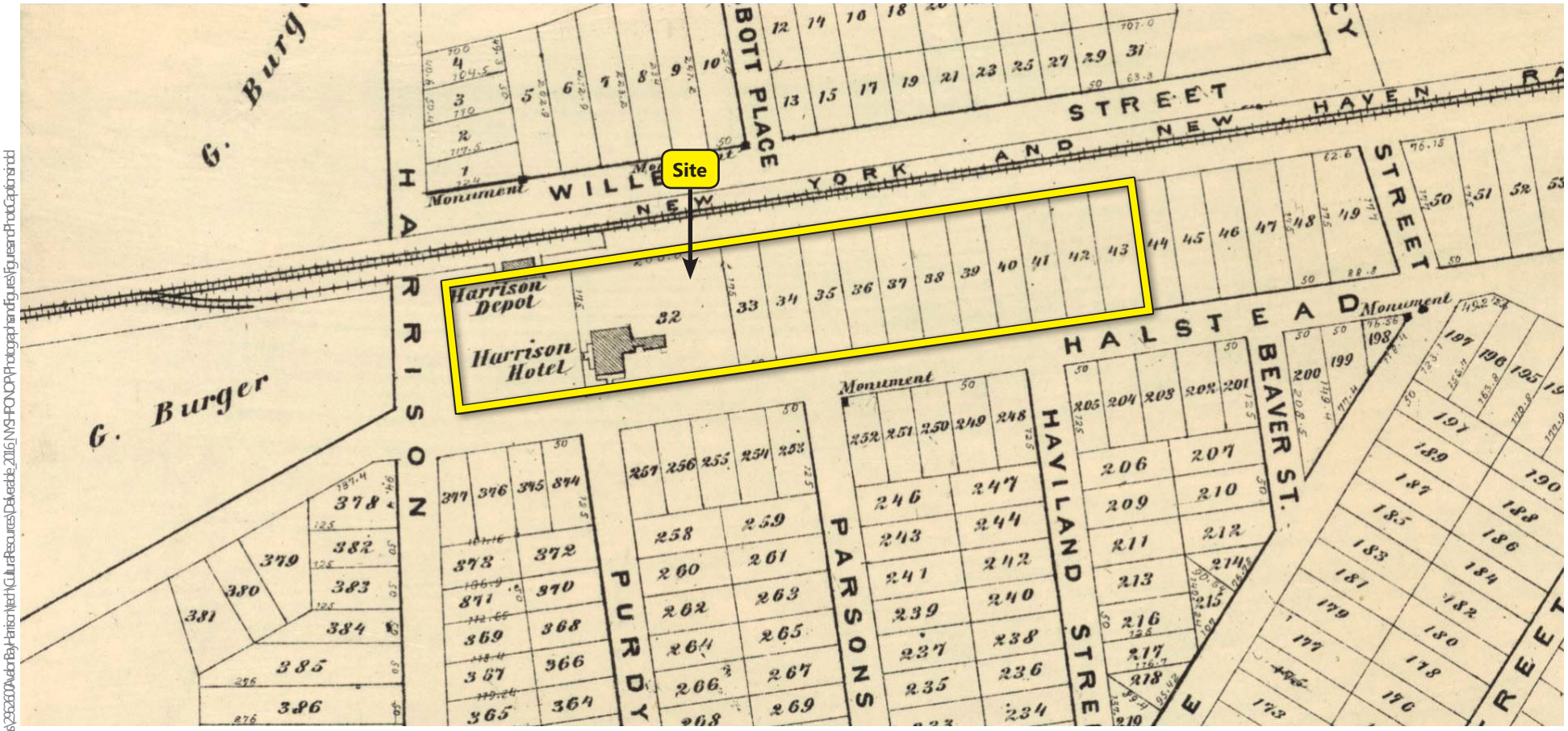

**1 SITE PLAN / GROUND FLOOR LEVEL**
SCALE: 1" = 40'-0"

0 1000 2000 Feet

**Avalon Bay Harrison** | Town of Harrison, New York

**Proposed Project**

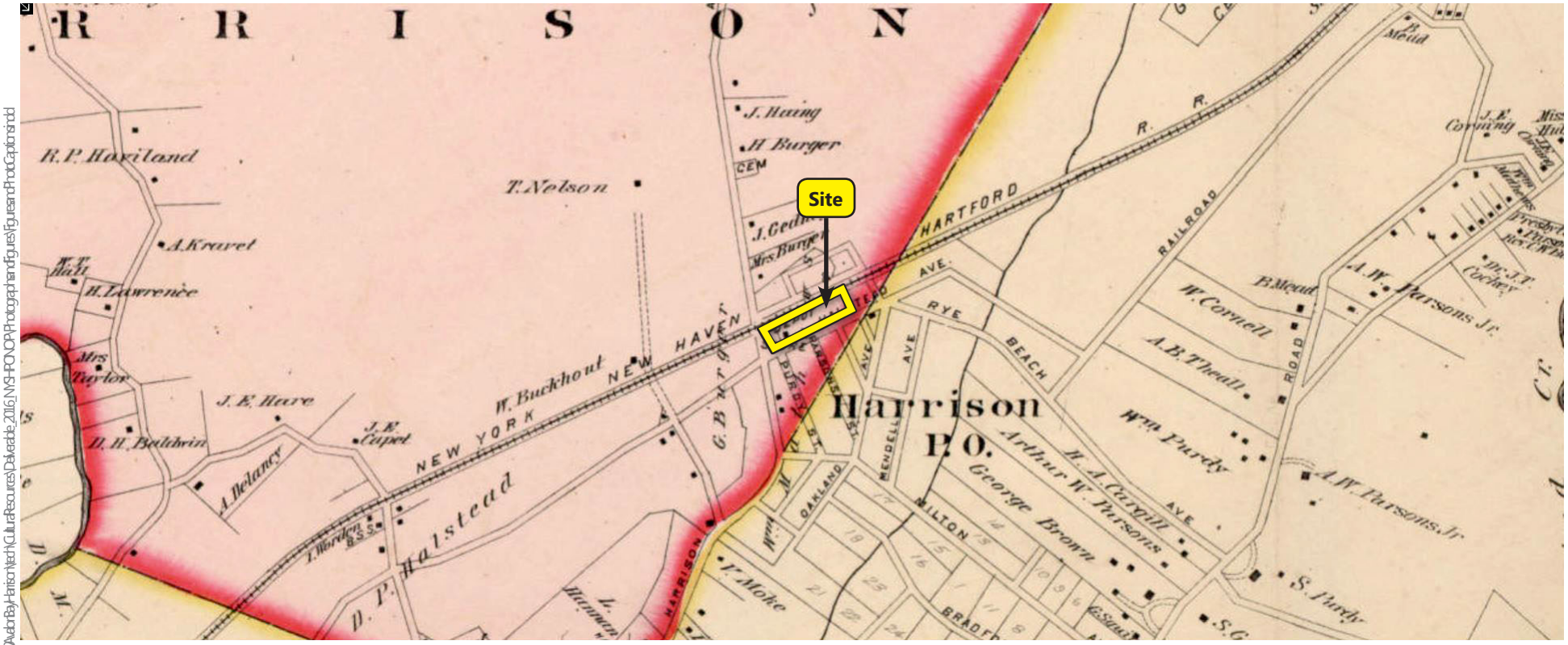
Source Info




**Avalon Bay Harrison** | Town of Harrison, New York

**1872 Beers Atlas sheet with Project Site**

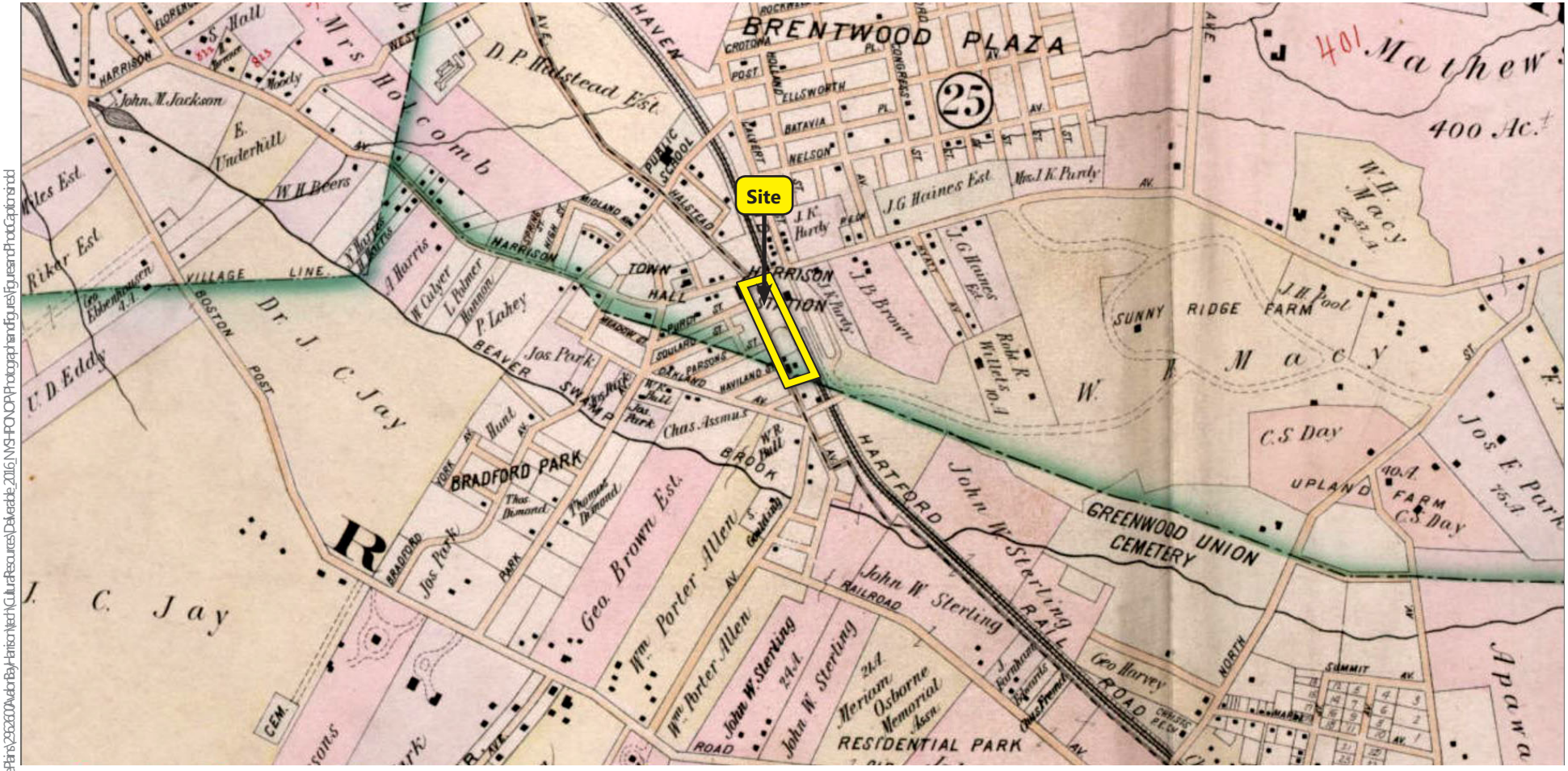
Source Lionel Pincus and Princess Firyal Division, The New York Public Library Digital Collections, Accessed May 19, 2016




**Avalon Bay Harrison** | Town of Harrison, New York

**1881 Bromley and Bromley Atlas sheet with Project Site**

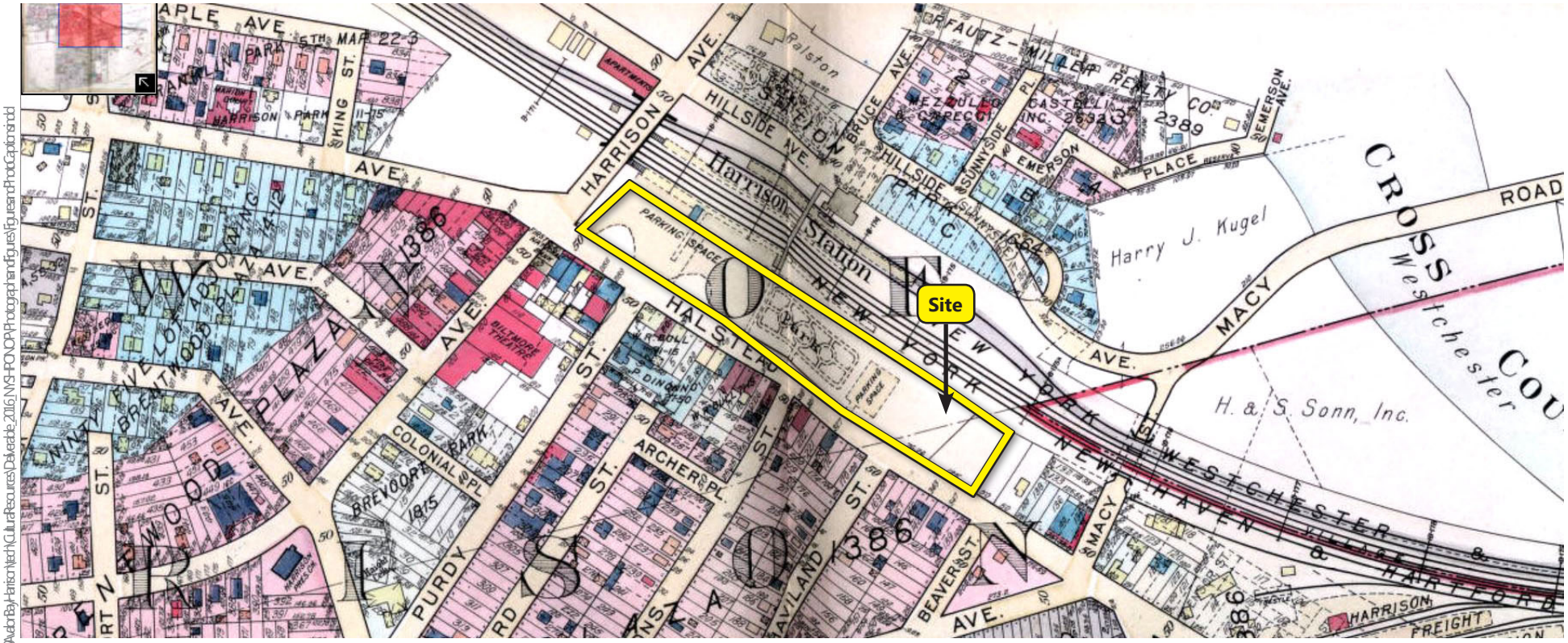
Source Westchester County Archives, Accessed May 19, 2016




**Avalon Bay Harrison** | Town of Harrison, New York

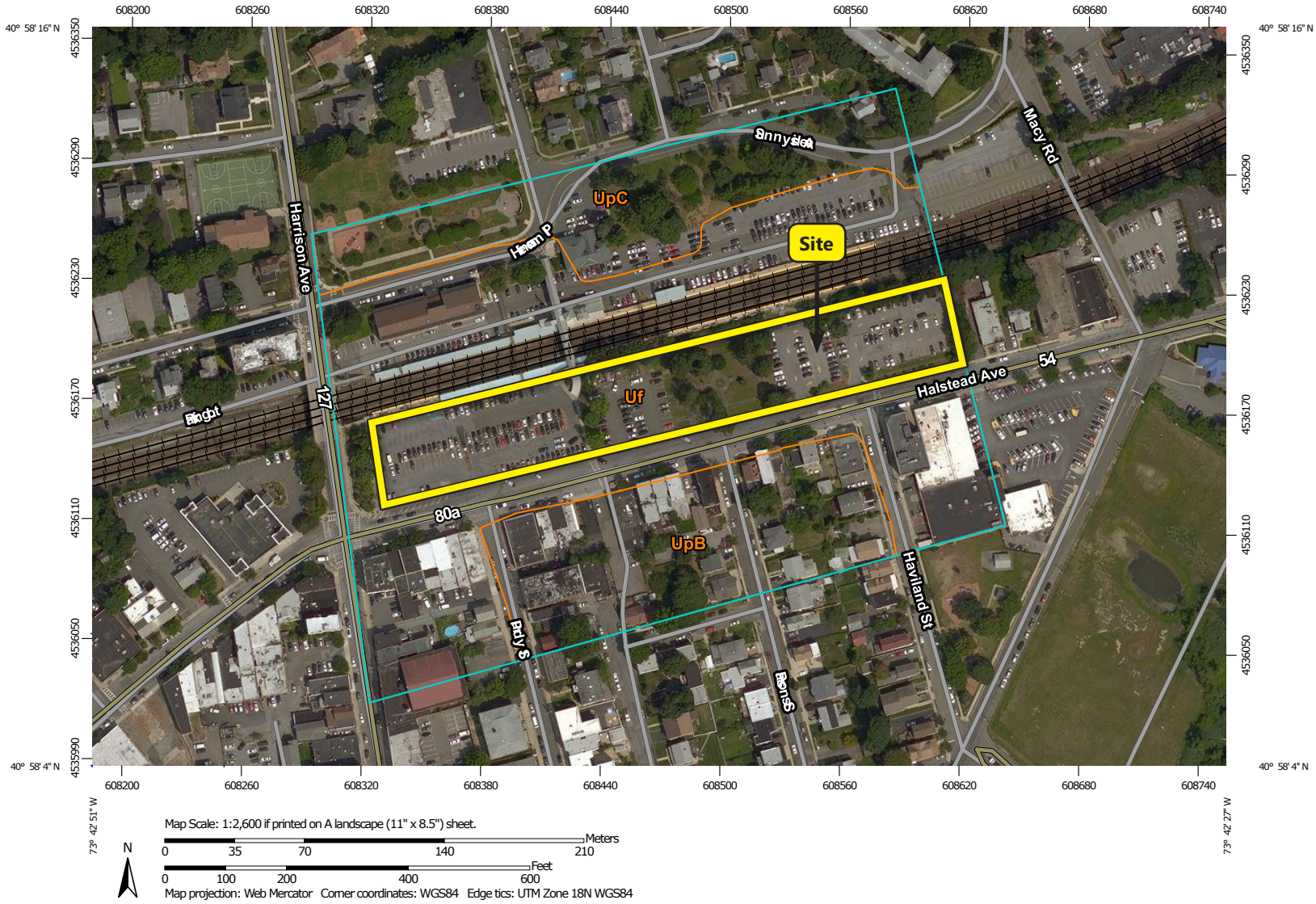
**1901 Bromley Atlas Sheet with Project Site**

Source Westchester County Archives, Accessed May 19, 2016




**Avalon Bay Harrison** | Town of Harrison, New York

**1929-1930 Hopkins Atlas Sheet with Project Site**




**Avalon Bay Harrison** | Town of Harrison, New York

## USDA WSS Soil Class Showing Project Location and Surrounding Area

Source USDA, accessed May 20, 2016

**Consultation Wizard - Step 4: Identify Built Resources VHB Project #29626**

List of Photographs

Photograph 1. Looking E from the Harrison Avenue overpass at the project site. Halstead Avenue is to picture right. Metro-North platform is to the left. (Andrea Connell [AC], DSCN2688, 4/8/16)

Photograph 2. Looking E from the existing Metro-North parking lot toward Jilly Flowers Park (marked by the trees) (Carol Weed [CW], P1010023, 5/5/16).

Photograph 3. Looking W from east end of Metro-North parking lot toward Harrison Avenue overpass. at existing building. (AC, DSCN2691, 4/8/16)

Photograph 4. Looking east at Jilly Flowers Park. Halstead Avenue to the right. The parking lot in the picture is outside of the project area. (CW, P1010001, 5/5/16).

Photograph 5. Looking at the SE corner of Halstead Avenue and Parsons Street from Jilly Flowers Park end of project area. (CW, P1010007, 5/5/16)

Photograph 6. Looking at the SW corner of Halstead Avenue and Parsons Street from the project area. (CW, P1010008, 5/5/16)

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Photograph 11. Looking E across Harrison Avenue with Halstead Avenue on the right and the project site on the left beyond the tree. (CW, P1010027, 5/5/16)

Photograph 12. Looking NE from the south side of Halstead Avenue at the multi-story apartment building in the background on the north side of the Metro-North Railroad tracks and the Harrison Avenue overpass. The apartment building is shown on the 1929-1930 Hopkins map. (CW, P1010022, 5/5/16)

Harrison

HARRISON SALON
Parsons
Halstead
ONE WAY
DO NOT ENTER
BYG-3728

ART NAILS
ART NAILS

ITALIAN CUISINE
TRATTORIA VIVOLO
LAUNDRY DELUXE
SPIRITS

OISHINBO
JAPANESE GOURMET GROCERY
Cleaners & Tailors
EXPERT TAILORING
HARRISON
CHASE

ONLY
CHASE
HARRISON
FLOWER MART
WELLS FARGO
Tailors
CHASE

RYE
PORT CHESTER
WHITE PLAINS
1
Harrison
HARRISON AVE
WELLS FARGO

# J NY SHPO No Effect Letter

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

**ANDREW M. CUOMO**
Governor

**ROSE HARVEY**
Commissioner

June 07, 2016

Ms. Carol Weed
Sr. Project Manager
VHB, Inc.
50 Main Street
Suite 360
White Plains, NY 10606

Re: MTA
Avalon Bay Communities Harrison TOD
Harrison Avenue at Halstead Avenue, Harrison, NY
16PR03773

Dear Ms. Weed:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the OPRHP and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

Based upon this review, it is the New York State Office of Parks, Recreation and Historic Preservation's opinion that your project will have no impact on archaeological and/or historic resources listed in or eligible for the New York State and National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont

Deputy Commissioner for Historic Preservation

Avalon Bay Harrison
Town/Village of Harrison,
Westchester County, New York
Draft Environmental Impact Statement

# Environmental Site Assessment Phase 1 and 2

# Appendix C: Phase I and Phase II Environmental Site Assessment

# METRO-NORTH RAILROAD
# Harrison Station Development Lot
## Contract No. 40375, Task 411

Phase I and Phase II
Environmental Site Assessment
Block 182, Lots 12 and 15
Village of Harrison,
Westchester County, New York

February 2010

*Prepared For:*

Metro-North Railroad

*Prepared By:*

AECOM

*605 Third Avenue*
*New York, New York 10158*

# EXECUTIVE SUMMARY

## Phase I and Phase II Environmental Site Assessment
## Metro-North Railroad Harrison Station Development Lot
## Contract No. 40375, Task 411
## Block 182, Lots 12 and 15
## Village of Harrison, Westchester County, New York

In accordance with Contract Number 40375, Task 411, AECOM completed a Phase I and Phase II Environmental Site Assessment (ESA) for the MNR Harrison Station Development Lot located at Block 182, Lots 12 and 15 in the Village of Harrison, Westchester County, New York. The Phase I ESA reviewed the current site conditions and environmental databases to determine what environmental liabilities may be associated with the Development Lot. The findings of the Phase I ESA indicated twelve (12) Recognized Environmental Condition (REC) sites were located within 150 feet of the Development Lot. The subject property itself was indentified via the Sanborn Fire Insurance Maps to have been a historic coal storage/distribution site during the early 20$^{th}$ century prior to its use as a parking lot. In addition, the easternmost portion of the parking lot was reportedly used as an oil/waste recycling center by the Village of Harrison during the mid- to late-1990's. Five of the surrounding REC sites were identified as being dry cleaners. Paul's (Moy) Dry Cleaners at 368 Halstead Avenue is located immediately east of the Development Lot and was reported to have used and/or spilled tetrachloroethene (PCE) during its operation.

Based upon this information and the long standing association and proximity of the site to the railroad, a Phase II ESA was completed at the Development Lot on November 5, 2009 by advancing six environmental soil borings labeled ENV-1 through ENV-6. No odors or indications of staining were observed during the advancement of the borings and, all photoionization (PID) readings ranged between non-detect and 0.3 ppm.

One soil sample was collected from each of the six soil borings. Three of the six soil samples slightly exceeded the New York Soil Cleanup – Unrestricted Use (6 NYCRR 375-6 12/06) standard: nickel in ENV-3 (4-5 ft bgs) at 32.9 mg/kg, and ENV-4 (1-2 ft bgs) at 38.0 mg/kg, and in ENV-6 (6-7 ft bgs) at 30.9 mg/kg; mercury in ENV-4 (1-2 ft bgs) at 0.24 mg/kg; and zinc in ENV-4 (1-2 ft bgs) at 163 mg/kg. The soil results were also compared to the New York State Residential and Restricted Residential criteria (6 NYCRR 375-6 12/06) and there were no exceedances.

Soil samples were further analyzed against the NY TAGM Recommended Soil Cleanup Objectives (RSCOs) criteria and the only exceedance was mercury, which was present at a concentration of 0.24 mg/kg in ENV-4 (1-2 ft bgs), slightly exceeding the criteria of 0.1 mg/kg.

No Total Petroleum Hydrocarbons (TPH), PCBs, Volatile Organic Compounds Semi-Volatile Organic Compounds, Herbicides or Pesticides results were detected above the New York Soil Cleanup Levels or the NY TAGM Recommended Soil Cleanup Objectives in any of the samples collected.

The soil sample results are indicative of potential site background concentrations, historic fill, and/or are typical of a long-standing urban environment and are not the result of any petroleum releases at or the surrounding REC sites. The environmental conditions and soil sample results detected at the site would not restrict the future use of the MNR Harrison Station Development Lot as a mixed-use commercial, residential or municipal property. As with any project, the development of the site should follow standard practices for handling soils on site and any soils destined for off-site disposal should be sampled and handled according to USEPA and NYSDEC requirements.

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# 1.0 INTRODUCTION

## 1.1 Purpose

A Phase I Environmental Site Assessment (Phase I ESA) and a Phase II Environmental Site Assessment (Phase II ESA) were completed at the Metro-North Harrison Station Development Lot located in the Village of Harrison, Westchester County, New York (Figure 1-1) to identify and analyze the potential environmental risks and liabilities that may be associated with the redevelopment of the site. The Metro-North Harrison Station Development Lot is being considered for use as a residential, commercial and, potentially, municipal use mixed-development, inclusive of a parking garage. The site consists of Block 182, Lots 12 and 15 at the intersection of Harrison Avenue (New York State Route 127) and Halstead Avenue in the Village of Harrison, Westchester County, New York. The Redevelopment Lot is approximately 3.3 acres and currently contains 4 parking lots with a recreational area centrally located (Figure 1-2).

## 1.2 Investigative Approach

A Phase I ESA is a mechanism to identify and analyze the potential environmental risks and liabilities associated with a real estate transaction. It has two basic components: 1) a site inspection, and 2) a historical records search and public agency file review. A Phase I ESA provides for a due diligence or appropriate inquiry into the previous ownership and uses of a property. A Phase I ESA addresses the potential contamination by hazardous substances, evaluates whether hazardous materials may be located on or under the property surface, and attempts to determine if existing conditions may exceed known, applicable environmental regulations. The Phase I ESA will indicate the presence of any recognized environmental conditions (RECs), the possible presence of contaminated substances, or the need for additional information which could require a Phase II ESA at the site.

A Phase II ESA typically involves the collection of soil, air, groundwater, and/or building material samples to further identify site conditions and to better quantify the potential contamination that may exist at a site, right-of-way, or area of concern based upon the findings of a Phase I ESA or other sources of suspected or known contamination.

This Phase I and Phase II ESA is intended to provide a developer of the Metro-North Harrison Station Development Site with a base line of the environmental conditions that exist at the subject site.

## 1.3 Scope

This investigation was completed in accordance with all applicable policies, rules, and regulations, including but not limited to:

- The American Society for Testing and Materials (ASTM) E1527-05 *Standard Practice for Environmental Site Assessments; Phase I Environmental Site Assessment Process and ASTM E1903 Phase II Site Assessment,*
- The Resource Conservation and Recovery Act (RCRA) – 42 USC 9601 *et seq.*,
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and
- New York State Department of Environmental Conservation (NYSDEC) Determination of Soil Cleanup Objectives and Cleanup Levels (TAGM 4046).

## 1.4 Organization of Document

This document describes the current environmental condition of the site as well as potential environmental hazards associated with surrounding properties which may impact the redevelopment of the site. Section 1.0 includes the introduction and methodology. The Phase I ESA and existing conditions are identified and described in Section 2.0. The Phase II ESA is included in Section 3.0, and the findings and summary are included in Section 4.0. The qualifications of preparers of this document are presented in Section 5.0 and a list of references is contained in Section 6.0.

## 1.5 Methodology

The methodology referenced and tasks accomplished in the preparation of this Phase I and Phase II ESA report included:

<u>Phase I Environmental Site Assessment</u>

- A request and review of historical documentation including aerial photographs, Sanborn Fire Insurance Maps, and historical topographic maps.
- A review of a chain-of-title search, to search for any environmental liens on the subject properties.
- A review of federal and state database records and publications for known contaminated sites and for sites containing or generating hazardous substances.
- A site reconnaissance of the overall study area focusing on known contaminated sites in the project area.

<u>Phase II Environmental Site Assessment</u>

- Advancement of six soil borings spatially positioned across the site and biased towards potential areas of concern identified during the Phase I ESA. Soil samples were analyzed for Priority Pollutant Compounds including 40 Tentatively Identified Compounds (PP+40) and Total Petroleum Hydrocarbons (TPH). These analyses are comprehensive and include the prominent potential contaminants of concern such as Volatile Organic Compounds (VOCs - e.g., gasoline-related byproducts), Semi-Volatile Organic Compounds (SVOCs - e.g., heavier fuel oil and dry cleaning byproducts), Poly-Chlorinated Biphenyls (PCBs), Herbicides/Pesticides, and total Metals.

### 1.5.1 Study Area History

Historical land modification information assists in determining the time and possibly the type of development of a particular area. Areas of concern, such as retail gasoline operations, underground storage tanks (USTs), dry cleaners, and locations that may have distributed or stored hazardous materials and potential former fill/dump/landfill sites may also be discerned.

Specifically, historical aerial photographs, historical Sanborn Fire Insurance Maps, historical city directories, and historical topographic maps were requested to review the historic site setting.

### 1.5.2 Regulatory Database Review

A database records search was requested from Environmental Data Resources, Inc. (EDR) to screen specified federal and state databases in the project area and adjacent properties located upwards of one-mile of the site to identify the presence of potential or existing liabilities. In general, any potential areas of environmental concern that could impact the location or proposed construction of the project were identified. The database searches, and subsequent report and findings were completed in accordance with Phase I Environmental Site Assessment Process, ASTM Standard E1527-05. Database sources screened by EDR included:

<u>Federal Databases</u>

- AIRS - Air Emissions Data
- CERCLIS - Comprehensive Environmental Response, Compensation, and Liability Information System
- CERC-NFRAP - CERCLIS No Further Remedial Action Planned
- CONSENT - Superfund (CERCLA) Consent Decrees
- CORRACTS - Corrective Action Report
- DEL SHWS - Delisted Registry Sites
- DEBRIS REGION 9 - Torres Martinez Reservation Illegal Dump Site Locations
- DOD - Department of Defense Sites
- DOT OPS - Incident and Accident Data
- DRYCLEANERS - Registered Dry Cleaners
- ERNS - Emergency Response Notification System
- FINDS - Facility Index System/Facility Registry System
- FTTS - FIFRA/ TSCA Tracking System – Current and Historical FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
- FUDS - Formerly Used Defense Sites
- HIST AST - Historical Petroleum Bulk Storage Database (Aboveground Storage Tanks)
- HIST UST - Historical Petroleum Bulk Storage Database (Underground Storage Tanks)
- HMIRS - Hazardous Materials Information Reporting System

- HSWDS - Hazardous Substance Waste Disposal Site Inventory
- ICIS - Integrated Compliance Information System
- INDIAN RESERV - Indian Reservations
- LUCIS - Land Use Control Information System
- MINES - Mines Master Index File
- MLTS - Material Licensing Tracking System
- NPDES - State Pollutant Discharge Elimination System
- NPL - National Priority List (Current, Proposed, and Delisted)
- NPL LIENS - Federal CERCLA and Superfund Liens
- ODI - Open Dump Inventory
- PADS - PCB Activity Database System
- RAATS - RCRA Administrative Action Tracking System
- RADINFO - Radiation Information Database
- RCRA-LQG, NonGen, SQG, and TSDF - Resource Conservation Recovery Act, Large, Non Generators, and Small Quantity Generators; and Transporters, Storage and Disposal Facilities.
- RES DECL - Restrictive Declarations Listing
- ROD - Records Of Decision
- SHWS - Inactive Hazardous Waste Disposal Sites in New York State
- SSTS - Section 7 Tracking Systems
- SWRCY - Registered Recycling Facility List
- SWTIRE - Registered Waste Tire Storage & Facility List
- TRIS - Toxic Chemical Release Inventory System
- TSCA - Toxic Substances Control Act
- UMTRA - Uranium Mill Tailings Sites
- US BROWNFIELDS - A Listing of Brownfields Sites
- US CDL - Clandestine Drug Labs
- US ENG CONTROLS - Engineering Controls Sites List
- US INST CONTROL - Sites with Institutional Controls
- VAPOR REOPENED - Vapor Intrusion Legacy Site List
- VCP - Voluntary Cleanup Agreements

State Databases

- LTANK - The NYSDEC's current and historical Leaking Underground Storage Tanks
- NY BROWNFIELDS - State of New York registered Brownfields sites
- NY MANIFEST - Facility and Manifest Data
- NY SPILLS - All current and historical known or spills of hazardous materials or unknown types of releases to the ground are reported to the New York State Spill Hotline
- SWF/LF - The Solid Waste Facilities/Landfill Sites
- UST - The NYSDEC's current and historical Underground Storage Tank database

Vendor-Exclusive Database

- Former Manufactured Gas (Coal Gas) Sites - The existence and location of Coal Gas sites is provided exclusively on behalf of the EDR database vendor.

### 1.5.3 Federal and State On-Line Database Reviews

Current federal and state on-line publications and databases were reviewed to confirm the information provided by EDR's search and to provide supplemental and updated data where applicable.

New York State on-line databases of the NYSDEC were reviewed at the following link http://www.dec.ny.gov/chemical/8437.html and include:

- The Bulk Storage Facilities Database,
- The Environmental Site Remediation Database,
- The Spill Incidents Database Search,
- The Toxic Release Inventory,
- The Public Record of Underground Storage Tanks, and
- The Solid Waste Management Program.

USEPA Federal databases of the USEPA were reviewed at the following link: http://www.epa.gov/region02/cleanup/sites/nytoc_sitename.htm. The databases include:

- The USEPA New York Superfund Sites on the National Priority List, and
- The USEPA Comprehensive Emergency Response Compensation and Liabilities Information System (CERCLIS), EPA Region II.

### 1.5.4 Site Reconnaissance

Site reconnaissance involved a general visual overview of the project area to locate any obvious areas of concerns related to contaminated materials. Such areas may include potential buried drum sites and/or illegal dumping activities, distressed vegetation, soil staining, drains, etc. Additionally, any commercial, industrial, warehouses, and other non-residential use properties located within or proximal to the field area were identified. Sites were also surveyed based upon the type of operation, potential historic use of a property (e.g., evidence of a former gasoline service station, dry cleaners, etc.), and any visual confirmation of storage tanks, drums, monitoring wells, waste piles, etc. Site reconnaissance also included verifying/identifying the sites of potential concern as indicated through the database and background searches.

### 1.5.5 Inquiries

A project kickoff meeting was conducted on July 24, 2009 and was attended by representatives of the Village of Harrison and the Metro-North Railroad. During the meeting, a brief site walk was completed of the subject property and surrounding area. The Village of Harrison representatives were queried to determine who, if anyone would have any site history regarding spills or releases. It was determined amongst the representatives that the most prudent source of information would be from the regulatory spill databases since there is no full-time presence on-site. Therefore, no inquiries other than those of the Village of Harrison completed during the site reconnaissance were conducted.

# 2.0 PHASE I ESA; EXISTING CONDITIONS

The following sections detail the current conditions that exist at and surrounding the Metro-North Harrison Station Development Lot.

## 2.1 Site Setting and Surrounding Land Use

The Metro-North Harrison Station Development Lot is located at Block 182, Lots 12 and 15 in the Village of Harrison, Westchester County, New York (Figure 1-2). The Development Lot currently contains four parking lots associated with the Metro-North Harrison Station and a centrally located recreational area. The Development Lot measures approximately 1,014 feet in length by 130 feet in width and contains approximately 3.3 acres.

The Metro-North Harrison Station Development Lot is centrally located in the Village of Harrison. Primary use south of the Development Lot is zoned by the Village of Harrison as Professional Business (PB) and contains various retail and commercial establishments including banks, restaurants, and dry cleaners.

The railroad tracks of the Metro-North Railroad are located immediately north of the Development Lot with additional parking lots and the Village of Harrison Municipal Building immediately north of the railroad tracks.

The Harrison Avenue (New York State Route 127) overpass is immediately west of the Development Lot, and Paul's (Moy) Dry Cleaners is located immediately east.

## 2.2 Site Geology and Site Soils

The site is situated between approximately 51 and 72 feet above mean sea level (MSL). Topography at the site is fairly irregular. The westernmost parking lot surface slopes to the north and towards the Metro-North Railroad tracks, while the central and easternmost lots appear to have been elevated and stabilized with fill over the near-surface bedrock. Overall, the topographic gradient of the surrounding area is towards the south and east.

The rocks which underlie the Westchester County area are chiefly gneiss and mica-schist, with layers of dolmitic marble and serpentine. Specifically, according to the New York Geology Map of 1986, the predominant formations at and surrounding the Village of Harrison include the early to middle Ordovician Hartland Schist and Harrison Gneiss.

According to the Soil Conservation Service Soil Survey Geographic Database program (SSURGO), the site and surrounding soils consistent of Urban Land complex.

Soil borings were completed at the site for both geotechnical and environmental investigation purposes. According to the logs completed for the environmental borings, bedrock was encountered between 2.1 feet below ground surface (bgs) and 14.5 feet bgs. The shallower depths to bedrock were encountered in the central portion of the site where

outcrops of rock are visible. The boring logs and results are further discussed in Section 3.0.

## 2.3 Surface Waters

The nearest surface waters are associated with Beaver Swamp Brook which is located approximately 560 feet to the southeast. The Long Island Sound is located approximately one mile south and east. No other surface waters are within one mile of the project site.

## 2.4 Project Site History

Historical aerial photographs, historical Sanborn Fire Insurance Maps, historical topographic maps, and property tax maps were reviewed to determine the historic site setting. In addition, the Village of Harrison procured a chain-of-title and a search of environmental liens was conducted to assess the ownership and potential historic liens on the property. The following details the findings of each of the reviews.

### 2.4.1 Chain-of-Title Search

A certificate chain-of-title search was completed by the Village of Harrison for the Development Lot located at Block 182, Lots 12 and 15. The chain-of-title report is included in Appendix A. The results of the search indicated the certificate of title is vested in the Metropolitan Transportation Authority. The source of title was by Deed made by George P. Baker, Richard C. Bond, Jervis Langdon, Jr., and W. Willard Wirtz, jointly as the Trustees of the property of Penn Central Transportation Company, Debtor, dated January 1, 1971 and recorded on March 5, 1971 in Liber 6976 of Deeds, Page 284.

### 2.4.2 Environmental Liens

A historical chain-of-title search was completed by the Village of Harrison for the project site. No environmental liens were associated with the subject properties of the site.

### 2.4.3 Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps of the Development Lot and surrounding area were obtained from Environmental Data Resources, Inc (EDR) and reviewed to determine the historic land uses of the study area and to document the areas modified over time.

Available maps reviewed included those dated 1911, 1919, 1934, 1942, 1950, 1990, 1992, 1993, 1994, 1995, 1996, and 2003. The information obtained from each map is detailed below. Copies of the maps are included in Appendix B.

1911 Sanborn Fire Insurance Map

The platform associated with the railroad station is located on the western portion of the property. A coal yard is shown to be situated on the central portion of the site, which is adjoined to the west by two 1-story buildings and a 1-story church. A lumber yard is located on the eastern portion of the site and consists of two 2-story lumber sheds and three 1-story shingle sheds.

1919 Sanborn Fire Insurance Map
The coal yard and 1-story church are no longer present. All other features appear consistent with the 1911 Map.

1934 Sanborn Fire Insurance Map
A 1-story building is located adjacent to the railroad station platform. The western portion and central portion of the site have been converted into a parking lot. The eastern portion of the site has been converted into a recreational area.

1942 Sanborn Fire Insurance Map
This map is consistent with the features described on the 1934 Map.

1950 Sanborn Fire Insurance Map
This map is consistent with the features described on the 1934 and 1942 Maps.

1990 Sanborn Fire Insurance Map
The 1-story building depicted on the 1950 map adjacent to the railroad station platform is no longer present. The parking area in the central portion of the site extends to the current eastern extent of the project site.

1992 Sanborn Fire Insurance Map
This map is consistent with the features described on the 1990 Map.

1993 Sanborn Fire Insurance Map
This map is consistent with the features described on the 1990 and 1992 Maps.

1994 Sanborn Fire Insurance Map
This map is consistent with the features described on the 1990, 1992, and 1993 Maps.

1995 Sanborn Fire Insurance Map
This map is consistent with the features described on the 1990, 1992, 1993, and 1994 Maps.

1996 Sanborn Fire Insurance Map
This map is consistent with the features described on the 1990, 1992, 1993, 1994, and 1995 Maps.

2003 Sanborn Fire Insurance Map
This map is consistent with the features described on the 1990, 1992, 1993, 1994, 1995, and 1996 Maps.

### 2.4.4 Aerial Photographs

Historical aerial photographs of the study area were obtained from EDR and reviewed to determine the historic land uses of the study area and to document the areas modified over time.

Available photographs reviewed included those dated 1954, 1964, 1966, 1974, 1979, 1984, 1989, 1994, and 2006. The information obtained from each aerial is detailed below. Copies of the photographs are included in Appendix C.

March 22, 1954 Flight Date, Panel #: 2440073-H6, Scale: 1 inch =750 feet
A parking lot is present on the western portion of the site associated with the railroad station. A recreational area is centrally located and appears to be present on the eastern portion of the site.

March 23, 1964 Flight Date, Panel #: 2440073-H6, Scale: 1 inch =750 feet
This aerial is consistent with the features described in the March 22, 1954 aerial photograph. However, it appears the easternmost recreational area is being used for parking.

January 12, 1966 Flight Date, Panel #: 2440073-H6, Scale: 1 inch =750 feet
This aerial is consistent with the features described in the March 23, 1964 aerial photograph. However, it appears more permanent parking facilities have been established at the easternmost portion of the site.

October 24, 1974 Flight Date, Panel #: 2440073-H6, Scale: 1 inch =750 feet
This aerial appears to be consistent with the features described in the January 12, 1966 aerial photograph. However, the resolution and quality of the photograph is poor.

June 14, 1979 Flight Date, Panel #: 2440073-H6, Scale: 1 inch =750 feet
This aerial is consistent with the features described in the October 24, 1974 aerial photograph. However, the resolution and quality of the photograph is poor.

March 26, 1984 Flight Date, Panel #: 2440073-H6, Scale: 1 inch =1000 feet
The resolution and quality of the photograph is too poor to discern any site features.

April 20, 1989 Flight Date, Panel #: 2440073-H6, Scale: 1 inch =750 feet
The features of the site appear to be consistent with the current site configuration.

April 4, 1994 Flight Date, Panel #: 2440073-H6, Scale: 1 inch =750 feet
The features of the site appear to be consistent with the current site configuration. However, the resolution and quality of the photograph poor.

2006 Flight Date, Panel #: (none given), Scale: 1inch =604 feet
The features of the site appear to be consistent with the current site configuration.

### 2.4.5 Historical Topographic Maps

Historical topographic maps were received from EDR for the years 1900, 1947, and 1967. The topographic maps can provide valuable information on the past land use and the types of structures, facilities, and ancillary features located on a specific property or within the project area. The following details the maps and potential findings. The topographic maps are included in Appendix D.

1900: Oyster Bay Quadrangle, Series 15', Scale 1:62,500
The railroad line is labeled as "New York, New Haven, and Hartford" and is consistent with its current location. The surrounding roads of Purdy Street, Parsons Street, Havland Street, Halstead Avenue, and Harrison Avenue all are consistent with their current alignments. Structures are apparent on the map, but the type and number cannot be discerned.

1947: Mamaroneck Quadrangle, Series 7.5', Scale 1:25,000
The railroad station is present in its current location. The eastern portion of the site is shown to contain two buildings.

1967: Mamaroneck Quadrangle, Series 7.5', Scale 1:25,000
The railroad station is present in its current location and appears consistent with current conditions.

## 2.5 Regulatory Database Review

The EDR regulatory records search was reviewed and 122 database listings were identified within a 1/4-mile radius of the site. Twenty-five (25) database reports were confirmed via the field reconnaissance to be located within 150 feet of the site. A summary of the environmental related databases that were detected are included in Table 2.1. Note that several sites appear on multiple databases. For example, a site listed on the UST database could also be on the LUST database, and/or a NY SPILLS listing may also be listed on the NY HIST SPILLS database. EDR database findings are included in Appendix E.

**Table 2.1: Federal and State Databases and Records**

| Database | Within 1/4-Mile Radius | Within 150-Feet Radius |
|---|---|---|
| AST | 6 | 0 |
| DRY CLEANERS | 8 | 0 |
| HIST LTANKS | 19 | 1 |
| LTANKS | 26 | 3 |
| MANIFEST | 6 | 3 |
| NY SPILLS | 25 | 7 |
| NY HIST SPILLS | 17 | 7 |
| RCRA-CESQG | 2 | 1 |
| RCRA-NonGen | 6 | 2 |
| RCRIS-SQG | 1 | 0 |
| SWF/LF | 1 | 1 |
| UST | 5 | 0 |

## 2.6 Federal and State On-Line Database Reviews

Current federal and state on-line publications and databases were reviewed to confirm the information provided by EDR's search and to provide supplemental and updated data where applicable.

According to the on-line search, the nearest site included on the databases to the Development Lot is the Beaver Swamp Brook Site. The site is associated with the wetlands of Beaver Swamp Brook and is located approximately 560 feet south and east of the Development Lot and was listed on the NYSDEC's Environmental Site Remediation Database. This site is currently in the NYS Environmental Restoration Program and was reported to be a Brownfields site by the Village of Harrison representatives during the July 24, 2009 site walk. The historical source of contamination includes past on-site operations and illegal dumping. The supplemental online database findings are included in Appendix F.

## 2.7 Site Reconnaissance

Site reconnaissance of the field area was completed during the initial project kick off on July 24, 2009 and also on November 20, 2009. The surveys reviewed information provided during the kickoff meeting, potential listings detailed in the databases and publications, and other areas of concern at and surrounding the site that may not have been included in the information provided.

During the site reconnaissance, no evidence of illegal dumping activities, waste piles, distressed vegetation, soil staining, spills, etc. were observed at or surrounding the Development Lot. Storm water management drains were observed along the northern boundary of the westernmost parking lot and appear to drain into the railroad right-of-way.

Several areas of concern or Recognized Environmental Condition (REC) sites were identified during the site reconnaissance, which were not identified by any of the databases. Village of Harrison representatives during the project kick off meeting on July 24, 2009 indicated that the easternmost portion of the Development Lot was used by the Village of Harrison as a temporary oil and waste recycling center during the mid- to late- 1990s. Village representatives further indicated that the Paul's (Moy) Dry Cleaners at 368 Halstead Avenue (located immediately east of the parking lot) had reported "perc" (i.e., tetrachloroethene – PCE) usage and spills throughout its time of operation. Site photographs are contained in Appendix G. Table 2.2 details the REC sites identified during the site reconnaissance.

**Table 2.2: Site Reconnaissance Findings - Recognized Environmental Condition (REC) Sites**

| SITE NAME | ADDRESS/LOCATION | COMMENTS |
|---|---|---|
| Metro-North Harrison Station Parking Lot | Metro-North Harrison Station Parking Lot | Reportedly used by the Village of Harrison as an oil/waste recycling center during the mid- to late- 1990s. |
| Station Cleaners and Tailors | 281 Halstead Avenue | Dry cleaners not identified on the databases. |
| Belle Cleaners | 285 Halstead Avenue | Dry cleaners not identified on the databases. |
| Paul's (Moy) Dry Cleaners | 368 Halstead Avenue | Reported "perc" (i.e., tetrachloroethene – PCE) usage and releases during its operation. |

## 2.8 Site Inventory Analysis and Data Reduction

The findings from the above-referenced database searches, report reviews, and site reconnaissance have been incorporated into Table 2.3 and Figure 2-1. As detailed in the table, this Phase I ESA has identified twelve (12) REC sites within 150 feet of the project site. Other REC sites of concern immediately outside the 150-feet search radius include the former Amoco Service Station (currently Sunoco) located at 500 Halstead Avenue and the Beaver Swamp Brook Site located on Oakland Avenue.

The former Amoco Service Station had reported multiple releases and environmental concerns including underground storage tanks and remediation of the soil and groundwater dating back to 1991. The Beaver Swamp Brook Site combines multiple different reports/sites and is inclusive of a local Brownfields site. However, both of these sites are located beyond 500 feet downgradient of the MNR Harrison Station Development Lot and therefore would not be anticipated to impact the project site.

Based upon the presence of the historic coal storage at the Development Lot during the early 20$^{th}$ century, the proximity to the former (and current) railroad operations, the reported use of the easternmost parking lot as an oil/waste recycling center in the mid- to late-1990s, and the proximity of several dry cleaners to the site, a Phase II ESA soil sampling program was completed at the site (see Section 3.0).

**Table 2.3: Recognized Environmental Condition (REC) Sites Located Within 150 Feet of the Development Lot**

| REC ID No. | EDR Reference No. | Site Name/Owner | Address/Location | Database(s) | Facility/Case ID No. | Comments/Area of Concern(s) |
|---|---|---|---|---|---|---|
| 1 | NA | METRO-NORTH PARKING LOT | WESTERNMOST METRO-NORTH PARKING LOT | SANBORN MAPS | NA | Early 20th century use as coal storage and distribution center. Long-standing station use and proximal to tracks and railroad operations. |
| 2 | NA | METRO-NORTH PARKING LOT | EASTERNMOST METRO-NORTH PARKING LOT | FIELD SURVEY | NA | Reported use of parking lot by the Village of Harrison as former oil/waste recycling center in the mid- to late- 1990s. Long-standing station use and proximal to tracks and railroad operations. |
| 3 | NA | STATION CLEANERS AND TAILORS | 281 HALSTEAD AVE | FIELD SURVEY | NA | Dry Cleaners. |
| 4 | NA | BELLE CLEANERS | 285 HALSTEAD AVE | FIELD SURVEY | NA | Dry Cleaners. |
| 5 | A2 | HALSTEAD AVE & PURDY ST | HALSTEAD AVE & PURDY ST | NY SPILLS | 205922 | Spill Date: 7/9/1991 - 6 gallons of petroleum from punctured oil pan. |
| | | | | NY HIST SPILLS | 9103818 | Spill Date: 7/9/1991 - 6 gallons of petroleum from punctured oil pan. |
| 6 | O52 | PAUL MOY CLEANERS | 368 HALSTEAD AVE | FIELD SURVEY | NA | Reported "perc" (tetrachloroethene-PCE) usage and spills. |
| | | | | MANIFEST | NYD981078108 | F002 - Halogenated Solvents. |
| | | | | RCRA-CESQG | NYD981078108 | Conditionally Exempt Small Quantity Generator. No violations found. |

| REC ID No. | EDR Reference No. | Site Name/Owner | Address/Location | Database(s) | Facility/Case ID No. | Comments/Area of Concern(s) |
|---|---|---|---|---|---|---|
| 7 | 10 | HARRISON DRY CLEANING | 271 HALSTEAD AVE | NY SPILLS | 238202 | Spill Date: 12/9/1988 - Caruso Dry Cleaning - Carbon Tetrtrachloride in sump water. |
| | | | | NY HIST SPILLS | 238202 | Spill Date: 12/9/1988 - Caruso Dry Cleaning - Carbon Tetrtrachloride in sump water. |
| 8 | C11 | TOWN OF HARRISON | 1 HEINEMAN PL | LTANKS | 407627 | Spill Date: 12/10/2008 - Tank test failure of 2,500-gallon fuel oil UST. Tank retested and passed. |
| | C13 | BEHIND TOWN HALL | | NY SPILLS | 311768 | Spill Date: 5/25/2001 - less than 1 gallon of gasoline was leaked from a parked vehicle. |
| | | | | NY HIST SPILLS | 0102135 | Spill Date: 5/25/2001 - less than 1 gallon of gasoline was leaked from a parked vehicle. |
| | C14 | HARRISON | | SWF/LF | S105912879* | Waste Type: Composting - yard waste. |
| 9 | C12 | MPA PARKING LOT | 1 HEINEMAN PL | NY SPILLS | 255019 | Spill Date: 4/23/2001 - Traffic accident, Car on curb leaking transmission fluid. |
| | | | | NY HIST SPILLS | 0100861 | Spill Date: 4/23/2001 - Traffic accident, Car on curb leaking transmission fluid. |

| REC ID No. | EDR Reference No. | Site Name/Owner | Address/Location | Database(s) | Facility/Case ID No. | Comments/Area of Concern(s) |
|---|---|---|---|---|---|---|
| 10 | K34 | LAVIGNA BROTHERS GARAGE | 400 HALSTEAD AVE | NY SPILLS | S102104164* | Facility ID: 8804823. Spill Date: 8/22/1988. 1,200 gals of fuel oil due to equipment failure. Oil observed in monitoring well. |
| | | | | NY HIST SPILLS | S102104164* | Facility ID: 8804823. Spill Date: 8/22/1988. 1,200 gals of fuel oil due to equipment failure. Oil observed in monitoring well. |
| | | CHEVRON LAVIGNA BROS | | LTANKS | 1533145 | Spill Date: 11/11/1987. Tank Test Failure. |
| | | | | HIST LTANKS | 8709276 | Spill Date: 11/11/1987. Tank Test Failure. |
| | | GULF | | NY SPILLS | S102104122* | Spill Date: 11/3/1987. Gas found in sump pump. |
| | | | | NY HIST SPILLS | S102104122* | Spill Date: 11/3/1987. Gas found in sump pump. |
| | | CHEVRON USA PRODUCTS CO #204574 | | MANIFEST | NYD982534141 | D001 - Non-Listed Ignitable Wastes. |
| | | | | RCRA-NonGen | NYD982534141 | Date form received: 01/01/2007. |
| 11 | O49 | QUICK AS A WINK CLEANERS | 379 HALSTEAD AVE | NY SPILLS | 9808702 | Spill Date: 10/8/1998. Caller stated that material possibly impacted drains onto nearby playground. Facility inspected, complaint appeared to be unfounded according to report. |
| | | | | MANIFEST | NYD981078124 | F002 - Halogenated Solvents. |
| | | | | NY HIST SPILLS | 9808702 | Spill Date: 10/8/1998. Caller stated that material possibly impacted drains onto nearby playground. Facility inspected, complaint appeared to be unfounded according to report. |

| REC ID No. | EDR Reference No. | Site Name/Owner | Address/Location | Database(s) | Facility/Case ID No. | Comments/Area of Concern(s) |
|---|---|---|---|---|---|---|
| 11 *(continued)* | O49 | QUICK AS A WINK CLEANERS | 379 HALSTEAD AVE | RCRA-NonGen | NYD981078124 | Facility Has Received Notices of Violations. |
| 12 | 63 | 311 HALSTEAD AVE | 311 HALSTEAD AVE | LTANKS | 0306497 | Spill Date: 9/19/2003. Private Dwelling. Tank is under crawl space. 02/02/2004 - Disposed of UST and 3 drums of contaminated soil. Sample results below TAGM limits. NFA. |

**Notes:**
***EDR report numbers were used when State or Federal case numbers were not provided.**

**Source:**
**The EDR Radius Map Report with GeoCheck, Inquiry Number 2546477.2s, dated July 20, 2009.**

# 3.0 PHASE II SITE INVESTIGATION

On November 5, 2009, a Phase II Environmental Site Assessment was completed to further define the conditions at the Development Lot based upon the historic coal storage at the site during the early 20th century, the proximity to the former (and current) railroad operations, the reported use of the easternmost parking lot as an oil/waste recycling center, and the proximity of several dry cleaners to the site. The following details the methods used and findings of the investigation.

## 3.1 Methodology

Six soil borings were advanced at the Development Lot and positioned spatially across the site and biased towards potential areas of concern identified during the Phase I ESA. Under the direction of an AECOM geologist, the six borings were advanced to the bedrock surface, encountered between 2 and 14.5 feet below ground surface (ft bgs), by direct-push technology using a Geoprobe® rig. Five-foot steel sampling tubes (macro-core sampler) equipped with a single-use two-inch diameter acetate liner were advanced to obtain soil samples and dedicated, new liners were used for each five-foot sample interval. Continuous soil samples were collected from ground surface to the base of each borehole. The soils were logged for composition and presence of visual and olfactory impacts and were field screened with a photoionization detector (PID) for the relative presence of volatile organic compounds (VOCs). The boring logs are available in Appendix H.

Environmental samples were collected to characterize and evaluate the extent of potential impacts, if any, at the site. In general, samples were collected at the overburden-bedrock interface or at the water table, whichever was encountered first. Soil samples were collected for Priority Pollutant Compounds including a Library Search of 40 Tentatively Identified Compounds (PP+40) and Total Petroleum Hydrocarbons (TPH) for both gasoline-range organics (GRO) and diesel-range organics (DRO). Priority Pollutant Compounds search includes a composite of all potential compounds including Volatile Organic Compounds (VOCs - e.g., gasoline-related byproducts), Semi-Volatile Organic Compounds (SVOCs - e.g., heavier fuel oil and dry cleaning byproducts), Poly-Chlorinated Biphenyls (PCBs), Herbicides/Pesticides, and total Metals.

Soil samples to be analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) were taken directly from the macro-core sleeve by using an EnCore® sampler to eliminate the need for field preservation using methanol or other chemicals. All samples were kept at four degrees (4°) Celsius and sent for analysis under chain-of-custody protocol by Federal Express (Fed Ex) to Accutest Laboratories in Dayton, New Jersey (a New York-certified laboratory). Preservation in methanol took place at the laboratory within 48 hours of sample collection.

Samples to be analyzed for TPH (GRO/DRO) and PP+40 compounds were taken directly from the acetate sleeve using a stainless steel spatula and jarred in clean, laboratory-supplied glassware. These samples were also kept at four degrees (4°) Celsius and sent

under chain-of-custody protocol via Fed Ex to Accutest Laboratories. The sampling equipment was decontaminated between each sample and the macro-core sleeves were disposed of following sampling.

Upon completion, excess soil was returned to each hole and the asphalt was repaired with cold patch.

## 3.2 Soil Sample Results

Six soil borings for environmental sampling purposes were advanced at the Development Lot and labeled ENV-1 through ENV-6. Soils throughout each of the borings were observed visually and screened with a PID. No odors or indications of staining were observed in any of the borings. All PID readings ranged between non-detect and 0.3 parts per million (ppm). No sources of petroleum impacts were observed during the advancement of the soil borings. The boring logs are included in Appendix H.

On November 5, 2009, a soil sample was collected from each of the six soil borings and analyzed for PP+40 (VOCs, SVOCs, PCBs, Herbicides/Pesticides and Total Metals) and TPH DRO and GRO. Three of the six samples contained exceedances slightly above the New York Soil Cleanup – Unrestricted Use (6 NYCRR 375-6 12/06) standards for the following compounds: nickel, mercury, and zinc. Nickel was detected above the Unrestricted Use standard in samples collected from ENV-3, ENV-4 and ENV-6. Sample ENV-4 (1-2 ft bgs) also slightly exceeded standard values for mercury (0.18 milligrams/kilogram - mg/kg) and zinc (109 mg/kg standard) with concentrations of 0.24 and 163 mg/kg, respectively. There were no other exceedances of NY Soil Cleanup – Unrestricted Use criteria. Table 3.1 details those samples and exceedances above the NY Soil Cleanup – Unrestricted Use standard.

**Table 3.1: November 5, 2009 Soil Sample Results Exceeding the New York Soil Cleanup Unrestricted Use Standards**

| Sample ID | Sample Interval (ft bgs) | Metal | NYS Unrestricted Use Standard (mg/kg) | Exceedance Result (mg/kg) |
|---|---|---|---|---|
| ENV-3 | 4-5 | Nickel | 30 | 32.9 |
| ENV-4 | 1-2 | Nickel | 30 | 38.0 |
| ENV-4 | 1-2 | Mercury | 0.18 | 0.24 |
| ENV-4 | 1-2 | Zinc | 109 | 163 |
| ENV-6 | 6-7 | Nickel | 30 | 30.9 |

The soil results were also compared to the New York State Residential and Restricted Residential criteria (6 NYCRR 375-6 12/06) and there were no exceedances.

Soil samples were also analyzed against the NY TAGM Recommended Soil Cleanup Objectives (RSCOs) criteria. The RSCOs for beryllium, chromium, copper, nickel, and zinc

are considered to be 0.16 mg/kg, 10 mg/kg, 25 mg/kg, 13 mg/kg, and 20 mg/kg, respectively, or Site Background (SB) concentrations. At the Development Lot, standard values should be considered SB concentrations and therefore, these metals are not present in concentrations exceeding the RSCO criteria. The only exceedance of NYSDEC RSCO criteria was mercury, which was present at a concentration of 0.24 mg/kg in ENV-4 (1-2 ft bgs), slightly exceeding the criteria of 0.1 mg/kg (Table 3.2).

**Table 3.2: November 5, 2009 Soil Sample Results Exceeding the NY TAGM Recommended Soil Cleanup Objectives (RSCOs) Criteria**

| Sample ID | Sample Interval (ft bgs) | Metal | NY TAGM RSCO (mg/kg) | Exceedance Result (mg/kg) |
|---|---|---|---|---|
| ENV-4 | 1-2 | Mercury | 0.1 | 0.24 |

No TPH, PCBs, Volatile Organic Compounds Semi-Volatile Organic Compounds, Herbicides or Pesticides results were detected above the New York Soil Cleanup Levels or the NY TAGM Recommended Soil Cleanup Objectives in any of the samples collected. The laboratory analytical results are included in Appendix I. The soil sample analytical results were validated and the data usability report (DUSR) is available as Appendix J.

# 4.0 FINDINGS and SUMMARY

A Phase I ESA was completed for the MNR Harrison Station Development Lot in the Village of Harrison, Westchester County, New York. According to the findings, twelve (12) REC sites were identified within 150 feet of the Development Lot. The subject property itself was indentified via the Sanborn Fire Insurance Maps to have been a historic coal storage/distribution site during the early 20th century prior to its use as a parking lot. In addition, the easternmost portion of the parking lot was reportedly used as an oil/waste recycling center by the Village of Harrison during the mid- to late-1990s. Five of the surrounding REC sites were identified as being dry cleaners. The nearest of these is Paul's (Moy) Dry Cleaners at 368 Halstead Avenue (immediately east of the Development Lot) which was reported to have used and/or spilled tetrachloroethene (PCE) during its operation.

Based upon this information and the long standing association and proximity of the site to the railroad, a Phase II ESA was completed at the Development Lot on November 5, 2009 by advancing six environmental soil borings labeled ENV-1 through ENV-6. No odors or indications of staining were observed during the advancement of the borings and, all PID readings ranged between non-detect and 0.3 ppm. No sources of petroleum impacts were observed during the advancement of the soil borings.

One soil sample was collected from each of the six soil borings at the overburden-bedrock interface or at the groundwater interface, which ever occurred first. Three of the six samples slightly exceeded the New York Soil Cleanup – Unrestricted Use (6 NYCRR 375-6 12/06) standards for nickel, mercury, and zinc as follows:

- Sample ENV-3 (4-5 ft bgs) 32.9 mg/kg - nickel
- Sample ENV-4 (1-2 ft bgs) 38.0 mg/kg - nickel
- Sample ENV-6 (6-7 ft bgs) 30.9 mg/kg - nickel
- Sample ENV-4 (1-2 ft bgs) 0.24 mg/kg - mercury
- Sample ENV-4 (1-2 ft bgs) 163 mg/kg - zinc

Nickel
Zinc
mercury

The soil results were also compared to the New York State Residential and Restricted Residential criteria (6 NYCRR 375-6 12/06) and there were no exceedances.

Soil samples were compared with the NY TAGM Recommended Soil Cleanup Objectives (RSCOs) criteria. At the Development Lot, standard values should be considered Site Background concentrations and therefore, the only exceedance of NYSDEC RSCO criteria was mercury, which was present at a concentration of 0.24 mg/kg in ENV-4 (1-2 ft bgs), slightly exceeding the criteria of 0.1 mg/kg.

No TPH, PCBs, Volatile Organic Compounds Semi-Volatile Organic Compounds, Herbicides or Pesticides results were detected above the New York Soil Cleanup Levels or the NY TAGM Recommended Soil Cleanup Objectives in any of the samples collected.

The soil sample results are indicative of potential site background concentrations, historic fill, and/or are typical of a long-standing urban environment and are not the result of any petroleum releases at or the surrounding REC sites.

The environmental conditions and soil sample results detected at the site would not restrict the future use of the MNR Harrison Station Development Lot as a mixed-use commercial, residential or municipal property.

As with any project, best management practices, industry standards, and regulatory-approved methods should be used upon handling and disposal of any materials. Such practices could include approved sediment and erosion control features, prevention of dust generation, and staging all appropriate materials on and under plastic sheeting. If encountered, any soils destined for off-site placement should be sampled and handled according to NYSDEC and/or USEPA requirements to ensure they meet the standards for off-site reuse and/or require disposal at an approved facility.

# 5.0 QUALIFICATIONS OF PREPARERS

The following individuals had the primary responsibility for the preparation and review of this Phase I and Phase II Environmental Assessment.

***Timothy M. Hand, AICP, Planning Department Manager, AECOM, Inc.***

MS - Environmental Science - Rutgers University, 1995
BS - Biology - College of Mount Saint Vincent, 1986

Twenty-three (23) years experience on transportation and site development projects involving the preparation of environmental assessments and impact statements; performing wetland delineations; conducting natural resources surveys; preparing and filing of environmental permit applications at the federal, state, and local level; and providing sound and practical mitigation alternatives including creation and restoration of wetlands.

***Deborah Howes, AICP, Director of Community Planning, AECOM, Inc.***

MS - Urban and Regional Planning - Portland State University, MS, 2000
BA - Political Philosophy and Media Communications-Sarah Lawrence College, 1975

Ms. Howes has more than twenty (20) years of experience in community based land use and transportation planning, organizing, and project management. Her ability to synthesize complex technical documents, and make them accessible to audiences with a wide range of interests and expertise, makes her a valuable team leader in projects with a multi-disciplinary team. She has extensive experience working with community entities and elected officials at the local, state, and Federal level in New York, Connecticut, and Oregon.

***Lance E. Comas – Senior Environmental Scientist, AECOM, Inc.***

BS – Geology – Richard Stockton College, 1989

Twenty (20) years experience in environmental assessment and analysis, environmental impact statement preparation in accordance with federal and state NEPA requirements for highways and rail, as well as technical studies, and Phase I and Phase II Environmental Assessments for contaminated and hazardous materials in all regions of the United States. In addition, Mr. Comas has managed multiple soil and groundwater remediation projects for clients within the transportation, petrochemical, retail petroleum, pharmaceutical, energy generation, and governmental sectors throughout the Mid-Atlantic and the Northeastern United States, California, and Illinois.

***Elvis Tull – Landscape Architect, AECOM, Inc.***

BA - Landscape Architecture - SUNY College of Environmental Sciences/ Forestry, Syracuse, NY, 1997
AAS - Liberal Arts and Science - Canton College of Technology, NY, 1993

Mr. Tull has over twelve (12) years of professional experience in the New York area and is well-versed in many aspects of the design process related to landscape architecture, urban design, and site planning. His involvement in a design capacity includes work on master plans for urban retail centers, transportation facilities, streetscapes, public institutions, urban open spaces and parks, and waterfront residential developments. Mr. Tull also has advanced ability in AutoCAD and Micro Station and extensive construction document experience.

***Matthew Nilsen, Environmental Planner, AECOM, Inc.***

MS - Environmental Science - Rutgers University/NJIT, 2004
BS – Environmental Science – Saint John's University, 2001

Five (5) years experience in environmental and ecological assessments including conducting and assisting on Phase I Environmental Site Assessments, natural resource surveys; conducting qualitative ecological field evaluations; conducting threatened and endangered species investigations; preparing and filing of environmental permit applications at the federal, state, and local level; sampling of various environmental media in accordance with applicable state and federal regulations, as well as interpreting and evaluating the resulting analytical data; and preparing and submitting environmental reports for sites at various stages of the remedial process for submission to the NJDEP.

***Julia K. Shackford – Senior Staff Specialist, AECOM, Inc.***

MS – Geology – Georgia State University, 2005
AB – Environmental Geology – Colgate University, 2003

Four (4) years experience as a geologist with AECOM, specifically with environmental investigations and pre-design investigations of former manufactured gas plants, and Phase I and Phase II environmental investigations and assessments for contaminated and hazardous materials in the Northeast, Southeast, and Western United States. Her experience also includes monitoring and injection well installation, borehole logging, surface and groundwater monitoring, air monitoring, as well as running groundwater and tidal influence tests and sediment investigations. Ms. Shackford has been involved in data reduction and reporting on multiple soil and groundwater remediation projects for clients within the utility sector in the Northeast and Mid-Atlantic regions of the United States.

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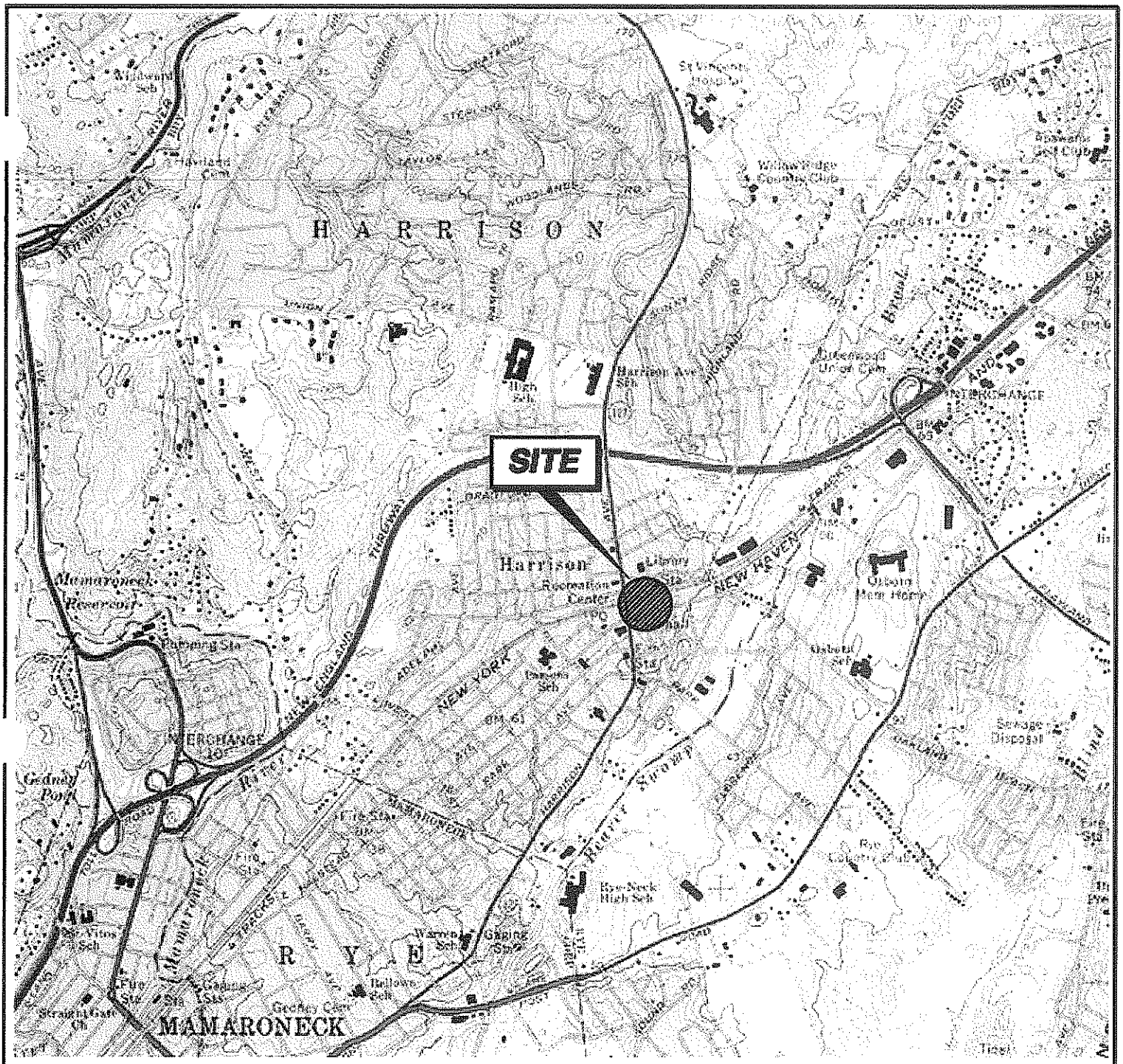
# FIGURES



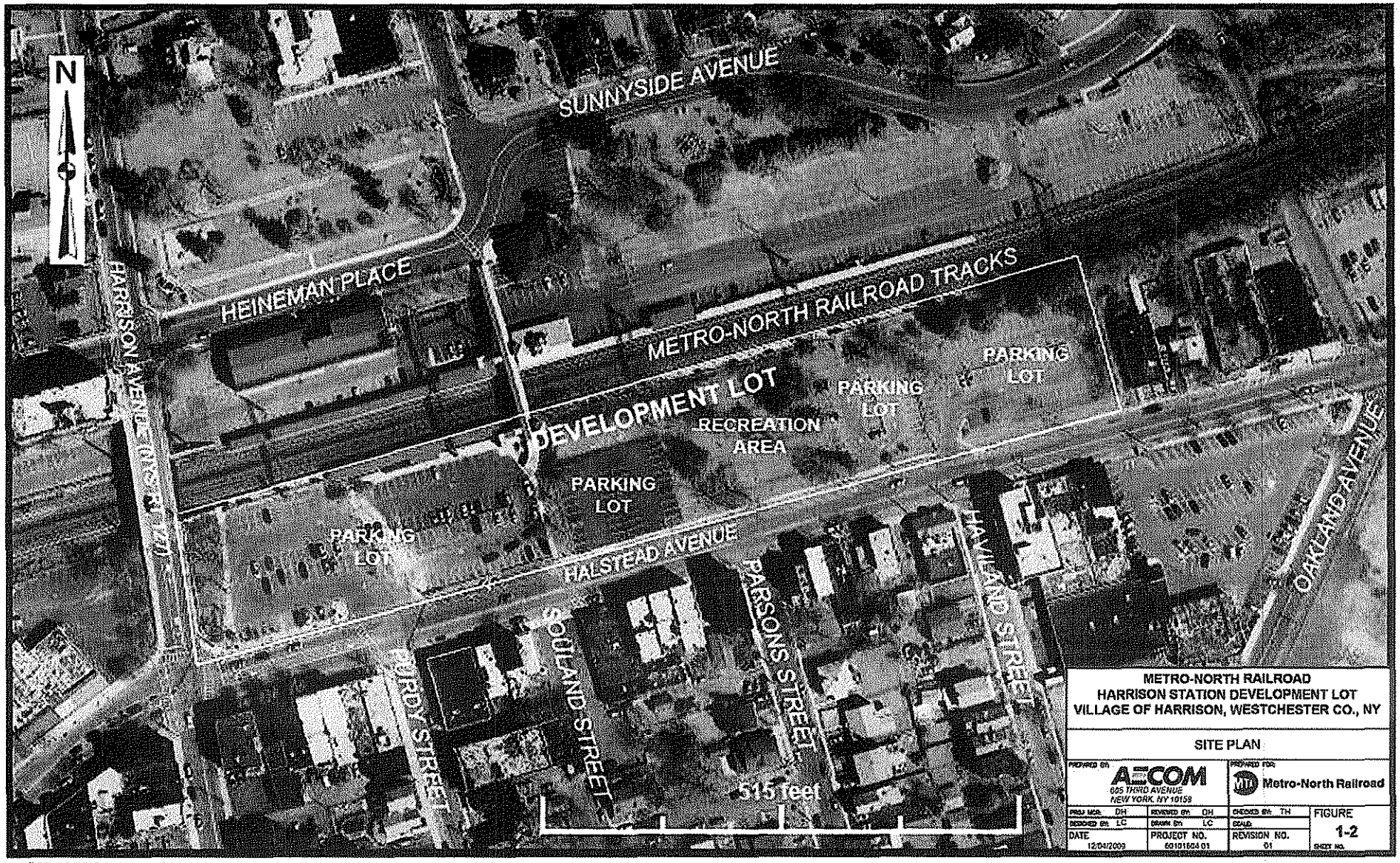

Source: USGS Topographic Map Mamaroneck, N.Y. (1975).
Contour Interval 20 ft., Original Scale 1:24,000 (1"=2,000 ft.).

N
W E
S

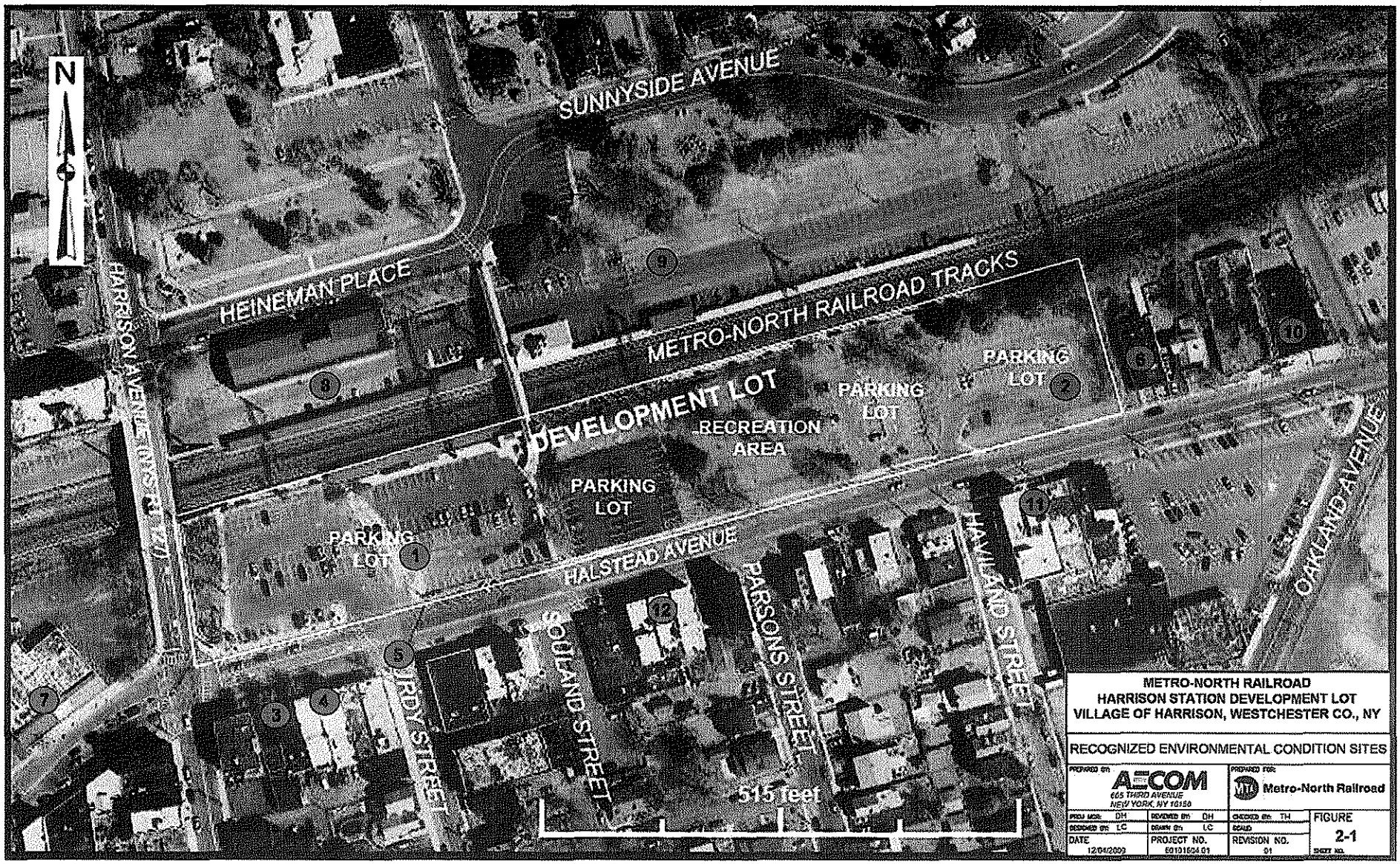
NEW YORK
QUADRANGLE LOCATION

0 1000' 2000' 4000'
SCALE IN FEET

| | | | | | | |
|---|---|---|---|---|---|---|
| PREPARED BY: AECOM 605 THIRD AVENUE NEW YORK, NY 10158 | METRO-NORTH RAILROAD HARRISON DEVELOPMENT LOT VILLAGE OF HARRISON, WESTCHESTER CO., NY | | | | | FIGURE |
| PREPARED FOR: Metro-North Railroad | SITE LOCATION PLAN | | | | | 1-1 |
| PROJ MGR: DH | REVIEWED BY: DH | CHECKED BY: TH | DATE | PROJECT NO. | REVISION NO. | SHEET NO. |
| DESIGNED BY: LC | DRAWN BY: LC | SCALE: 1" = 2000' | 12/04/2009 | 60101604.01 | 01 | |




SOURCE: GOOGLE EARTH, 2009.

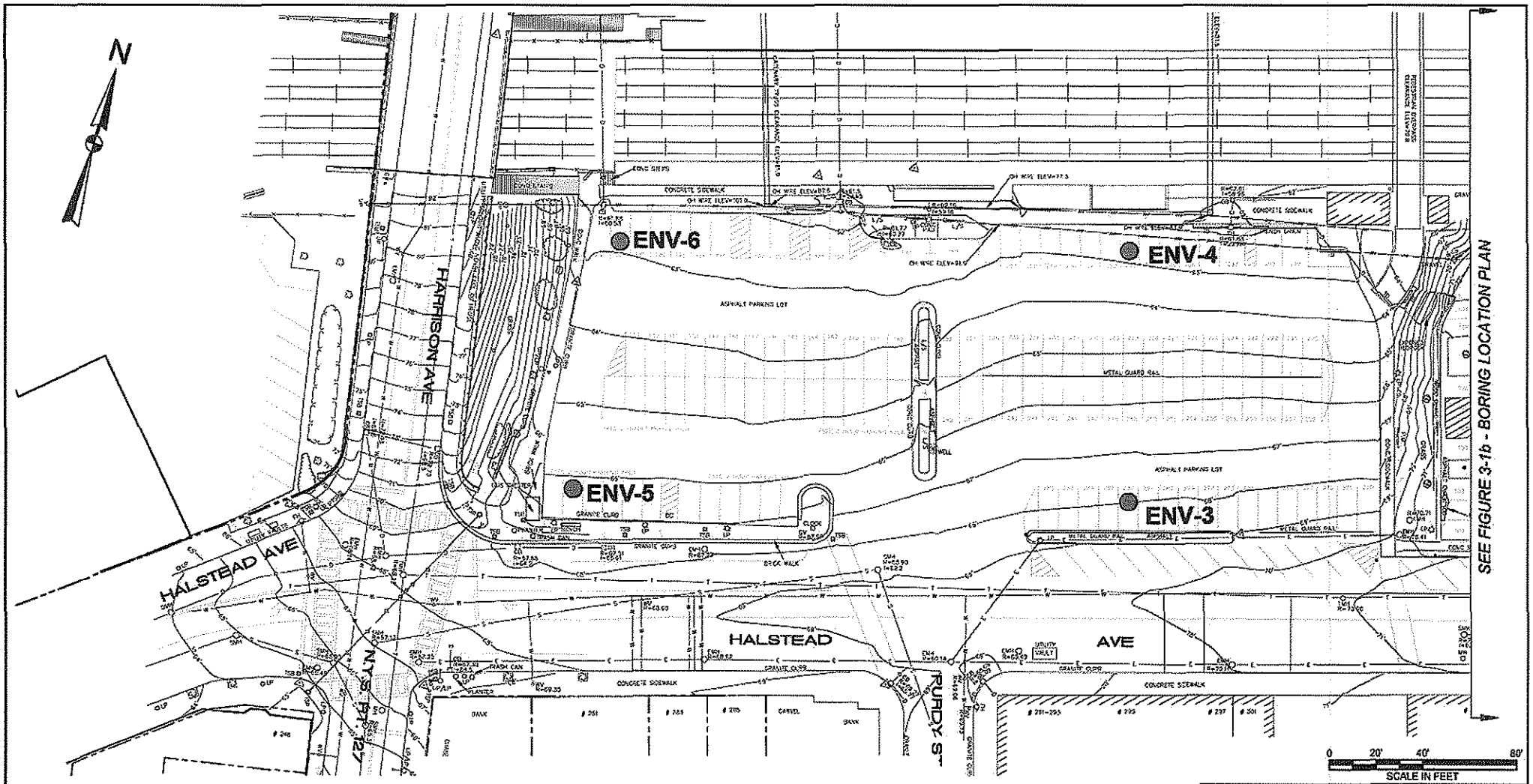



METRO-NORTH RAILROAD
HARRISON STATION DEVELOPMENT LOT
VILLAGE OF HARRISON, WESTCHESTER CO., NY

RECOGNIZED ENVIRONMENTAL CONDITION SITES

| | | | |
|---|---|---|---|
| PREPARED BY: AECOM, 605 THIRD AVENUE, NEW YORK, NY 10158 | | PREPARED FOR: Metro-North Railroad | |
| PROJ MGR: DH | REVIEWED BY: DH | CHECKED BY: TH | FIGURE 2-1 |
| DESIGNED BY: LC | DRAWN BY: LC | SCALE: | |
| DATE: 12/04/2009 | PROJECT NO. 60101604.01 | REVISION NO. 01 | SHEET NO. |

SOURCE: GOOGLE EARTH, 2009. RECOGNIZED ENVIRONMENTAL CONDITION (REC) SITES CORRESPOND TO TABLE 2.3 IN THE PHASE I AND II ENVIRONMENTAL ASSESSMENT REPORT.




ENVIRONMENTAL BORING LOCATION

NOTES:

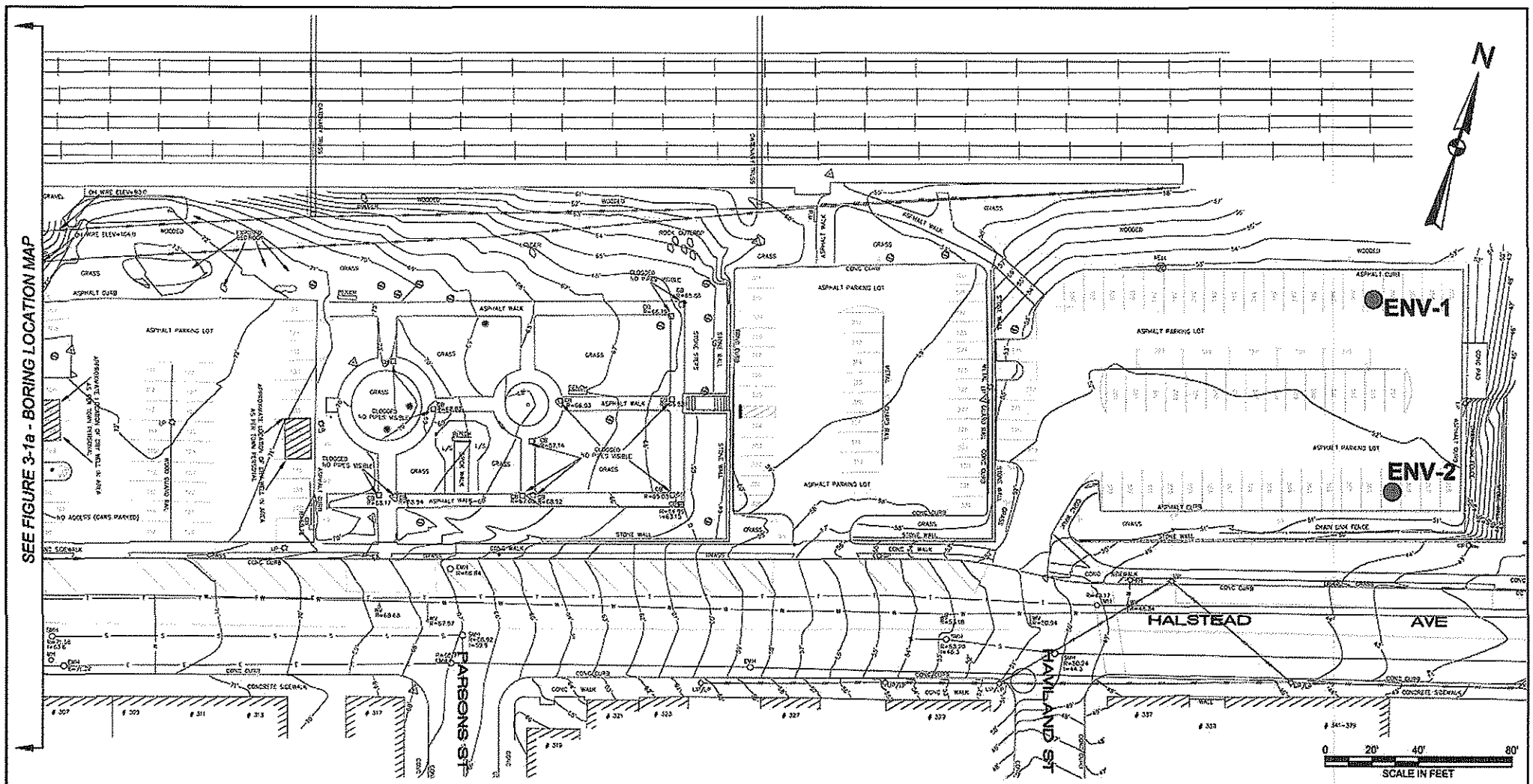
1) BASE MAP DEVELOPED FROM PLAN PROVIDED BY WELSH ENGINEERING & LAND SURVEYING, P.C., ENTITLED "TOPOGRAPHIC & BOUNDARY SURVEY HARRISON STATION," DATED SEPT. 18, 2009, ORIGINAL SCALE 1" = 20', SHEETS 1 OF 2 AND 2 OF 2.

2) THE LOCATION OF THE EXPLORATIONS, WERE APPROXIMATELY DETERMINED BY LINE OF SIGHT FROM EXISTING TOPOGRAPHIC FEATURES. THESE DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

**METRO-NORTH RAILROAD**
**HARRISON STATION DEVELOPMENT LOT**
**VILLAGE OF HARRISON, WESTCHESTER CO., NY**

BORING LOCATION PLAN

| | | | |
|---|---|---|---|
| PREPARED BY: AECOM, 605 THIRD AVENUE, NEW YORK, NY 10158 | | PREPARED FOR: Metro-North Railroad | |
| PROJ MGR: DH | REVIEWED BY: DH | CHECKED BY: TH | FIGURE 3-1a |
| DESIGNED BY: LC | DRAWN BY: LC | SCALE: 1" = 40' | |
| DATE: 12/04/2009 | PROJECT NO. 60101004.01 | REVISION NO. 01 | SHEET NO. |




ENVIRONMENTAL BORING LOCATION

NOTES:

1) BASE MAP DEVELOPED FROM PLAN PROVIDED BY WELSH ENGINEERING & LAND SURVEYING, P.C., ENTITLED "TOPOGRAPHIC & BOUNDARY SURVEY HARRISON STATION," DATED SEPT. 18, 2009, ORIGINAL SCALE 1" = 20', SHEETS 1 OF 2 AND 2 OF 2.

2) THE LOCATION OF THE EXPLORATIONS WERE APPROXIMATELY DETERMINED BY LINE OF SIGHT FROM EXISTING TOPOGRAPHIC FEATURES. THESE DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

**METRO-NORTH RAILROAD**
**HARRISON STATION DEVELOPMENT LOT**
**VILLAGE OF HARRISON, WESTCHESTER CO., NY**

BORING LOCATION PLAN

PREPARED BY: AECOM, 605 THIRD AVENUE, NEW YORK, NY 10158

PREPARED FOR: Metro-North Railroad

| | | | |
|---|---|---|---|
| PROJ MGR: DH | REVIEWED BY: DH | CHECKED BY: TH | FIGURE 3-1b |
| DESIGNED BY: LC | DRAWN BY: LC | SCALE: 1" = 40' | |
| DATE: 12/04/2009 | PROJECT NO. 60101604.01 | REVISION NO. 01 | SHEET NO. |

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# PHASE II ENVIRONMENTAL SITE ASSESSMENT

**Metro-North Lot**
**Block 182, Lots 12 & 15**
**Harrison, NY**

**DRAFT - June 2014**

Ref. No. 104226R02

Prepared for:

AvalonBay Communities, Inc.
1000 Bridgeport Avenue, Suite 258
Shelton, CT 06484-4677

Prepared by:

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*Environmental Consulting & Engineering*

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# 1.0 - INTRODUCTION

This Phase II Environmental Site Assessment (ESA) report has been prepared by Triton Environmental, Inc. (Triton) on behalf of AvalonBay Communities, Inc. (AvalonBay) for the property located at the intersection of Harrison Avenue and Halstead Avenue, identified as Block 182, Lots 12 and 15, in Harrison, New York (the site).

Triton completed a Phase I ESA in April 2013 which identified a total of five areas of concern (AOCs) at the subject site. This Phase II ESA has been performed to address identified AOCs and to assist AvalonBay with the potential purchase of the site.

## 1.1 - Site Description

The site is located northeast of the intersection of Harrison Avenue and Halstead Avenue in Harrison, New York (Figure 1). The site consists of two contiguous parcels totaling approximately 3.3 acres. The site consists of four separate asphalt paved parking lots and a small park centrally located on the property.

The site is situated on a hill that slopes east to west. The parking lots and park are each located on a terrace (tier) cut into the sides of the hill. The park is located on the highest tier of the site and each parking lot is established on separate levels on either side of the park. The parking lots located east of the park are separated from each other by stone retaining walls. Elevation typically decreases in steps from one parking area to another and the overall slope is moderately upward toward the centrally located park (to the west) and steeply downward to the east. Bedrock outcrops were observed throughout and influence the overall topography.

## 1.2 - Site History

Based on a review of available historical information, the first developed use of the site could not be determined. By 1911, the site was developed with a platform associated with the railroad station on the western portion of the site, a coal yard, two one-story buildings and a one-story church located on the central portion of the site, and a lumber and shingle storage yard located on the eastern portion of the site. Records regarding the land use of the site prior to 1911 were not available. Sometime prior to 1919, the coal yard and one-story church were

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razed. Sometime prior to 1934 the western and central portions of the site had been converted to parking lots with a one-story building constructed adjacent to the railroad station platform; the eastern portion of the site was converted to a recreational park area. The site appears to have remained unchanged until sometime between 1954 and 1964 when the parking area in the central portion of the site expanded towards the current eastern extent of the site. Sometime prior to 1990 the one-story building located adjacent to the railroad station platform was removed. Sometime between 2003 and 2006 a parking lot was developed in the western portion of the remaining recreational park area. Additional historical information can be found in Triton's April 2008 Phase I ESA Report.

### 1.3 - Purpose

The results of Triton's Phase I ESA identified five AOCs for the subject site (summarized in Section 10.0) and are as follows:

AOC 1 - Former Coal Yard;
AOC 2 - Reported Oil / Waste Recycling Center;
AOC 3 - Former Lumber Yard;
AOC 4 - Potential Impacts from Historical Building Materials;
AOC 5 - Potential Impacts from Off-Site Sources including Railroad Operations.

During the Phase II ESA, each of these AOCs was investigated. The location of each AOC is illustrated on Figure 2.

The purpose of the testing was to evaluate the presence or absence of impacts to soil and groundwater, and whether detected concentrations comply with the New York State Department of Environmental Conservation (NYSDEC) Soil Cleanup Objects (SCOs) and the Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (TOGS).

### 1.4 - Scope of Work

During the course of this Phase II ESA performed by Triton, the following tasks were performed:

- Advancement of seven soil borings;

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- Collection of nine surface samples by manual methods (hand auger/hand slam);
- Installation of three groundwater monitoring wells;
- Collection and field screening of over 18, and laboratory analysis of 16 soil samples; and
- Collection and analysis of three groundwater samples.

### 1.5 - Data Quality Objectives

The data quality objectives for this Phase II ESA were to collect data of sufficient quality in order to delineate impacts exceeding RSR criteria in each identified release area. In order to achieve data quality objectives, standard operating procedures were followed including low flow groundwater sampling procedures. Laboratory analytical methods with detection limits below the SCOs and TOGS were selected.

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## 2.0 - NEW YORK REGULATORY CRITERIA

### 2.1 - Soil Criteria

The NYSDEC has established Soil Cleanup Objectives (SCOs) for certain compounds under various site usage scenarios in accordance with Subpart 375-6 of its regulations. Sites that can be used without restriction including farming livestock and production of animal products for human consumption must meet the Unrestricted Use SCOs. All other sites in which contamination has been identified are subject to the Restricted Use SCO, which are subdivided into three general categories established for 1) protection of public health, 2) protection of ecological resources, and 3) protection of groundwater. The Protection of Public Health criteria are further subdivided into four categories based on site use, including residential, restricted-residential, commercial, and industrial uses. Based on the planned use of the site as a residential apartment building and parking garage, the Residential Use SCO was used as the applicable criteria for the site.

### 2.2 - Groundwater Criteria

Groundwater and surface water in the State of New York is classified based on best usage (fishing, source of drinking water, etc.). The best use categories are then subdivided into fresh and saline surface water and groundwater categories with specific criteria for contaminants set forth in the TOGS which establish standards for maximum contaminant levels in water within those categories. The site is located in an area classified as having GA groundwater quality. Therefore the groundwater analytical data has been compared to the TOGS GA groundwater criteria. The best usage definition for GA classified groundwater is as a potential source of potable water.

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## 3.0 - PREVIOUS INVESTIGATIONS

Previous environmental assessments were performed at the site in 2010 and again by Triton in April 2013. A brief discussion of these investigations is provided below. Additional information can be found in Tritons February 2014 Phase I ESA.

### 3.1 - Phase I and Phase II Environmental Site Assessment, Block 182, Lots 12 and 15, by AECOM – February 2010

Triton reviewed a copy of a Phase I and Phase II Environmental Site Assessment Report for the site, prepared by AECOM, dated February 2010. According to the Phase I ESA portion of the report, the following recognized environmental conditions (RECs) were identified:

Metro-North Parking Lot (site):

REC 1 Early 20th century coal storage and distribution center within westernmost parking lot. Long-standing station use and proximity to tracks and railroad operations.

REC 2 Reported use of easternmost parking lot by the Town of Harrison as a former oil/waste recycling center during the mid to late 1990s. Long-standing station use and proximity to tracks and railroad operations.

Potential Off-Site Sources:

REC 3 Station Cleaners and Tailors – 281 Halstead Avenue

- Drycleaners

REC 4 Belle Cleaners – 285 Halstead Avenue

- Drycleaners

REC 5 Halstead Avenue & Purdy Street

- Spill reported on July 9, 1991 for 6 gallons of petroleum from a punctured oil pan.

REC 6 Paul Moy Cleaners – 368 Halstead Avenue

- Reported “perc” (tetrachloroethene-PCE) usage and spills.
- Manifest for halogenated solvents
- Listed as a Resource Conservation and Recovery Act (RCRA) Conditionally Exempt Small Quantity Generator

REC 7 Harrison Dry Cleaning – 271 Halstead Avenue

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- Spill reported on December 9, 1988 for carbon tetrachloride that was found in sump water

REC 8 Town of Harrison/Harrison – 1 Heineman Place

- A report of a tank test failure on December 10, 2008. The tank was retested and passed.
- Spill reported on May 25, 2001 for less than one gallon of gasoline that leaked from a parked vehicle.
- Composting yard waste.

REC 9 MPA Parking Lot – 1 Heineman Place

- Spill reported on April 23, 2001 from a car leaking transmission fluid.

REC 10 Lavigna Brothers Garage/Chevron Lavigna Bros/Gulf/Chevron USA Products Co #204574 – 400 Halstead Ave

- Spill reported on November 3, 1987 for gasoline found in sump pump.
- Spill reported of November 11, 1987 for a tank test failure.
- Spill reported on August 22, 1988 for 1,200 gallons of fuel oil from an equipment failure. Oil was observed in the monitoring well.
- Manifests for non-listed ignitable wastes.
- Listed as a RCRA non-generator.

REC 11 Quick as a Wink Cleaners – 379 Halstead Avenue

- Spill reported on October 8, 1998 from a caller that stated that material possibly impacted drains on a nearby playground. The spill was investigated and the complaint appeared to be unfounded.
- Manifests for halogenated solvents.
- Listed as a RCRA non-generator.

REC 12 311 Halstead Avenue

- Spill reported on September 19, 2003 from a leaking tank located under a crawl space. The tank and three drums of contaminated soil were removed and disposed on February 2, 2004. Soil sample results are below Technical and Administrative Guidance Memorandum (TAGM) limits.

According to the Phase II ESA portion of the report, six soil borings were advanced at the site on November 5, 2009. Samples were collected from each boring and analyzed for total petroleum hydrocarbons (TPH) for gasoline range organics (GRO) and diesel range organics (DRO); and priority pollutant compounds plus 40, which includes volatile organic

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compounds (VOCs), semi VOCs, polychlorinated biphenyls (PCBs), herbicides/pesticides, and total metals. Three of the six samples exhibited concentrations slightly above the New York soil cleanup (unrestricted use) standards for nickel, mercury, and zinc. When the results were compared to the New York State residential and restricted residential criteria, there were no exceedances. The following is a table that summarizes the data presented in the Phase II ESA report:

| Sample ID | Depth (feet) | Metal | New York Soil Cleanup Unrestricted Use (mg/kg) | New York Soil Cleanup Residential Use (mg/kg) | Result (mg/kg) |
|---|---|---|---|---|---|
| ENV-3 | 4-5 | Nickel | 30 | 140 | 32.9 |
| ENV-4 | 1-2 | Nickel | 30 | 140 | 38.0 |
| | | Mercury | 0.18 | 0.81 | 0.24 |
| | | Zinc | 109 | 2,200 | 163 |
| ENV-6 | 6-7 | Nickel | 30 | 140 | 30.9 |

According to the report, TPH, PCBs, VOCs, semi VOCs, and herbicides/pesticides were not detected above the New York soil unrestricted or residential cleanup levels. The report states that the detected soil sample results are indicative of potential site background concentrations, historic fill, and/or are typical of a long-standing urban environment and are not the result of any petroleum releases at or surrounding the site.

Triton has additionally compared the AECOM data to the applicable Protection of Groundwater Criteria for soil and has noted exceedances of the Protection of Groundwater criteria for chromium, mercury, nickel and zinc in select samples.

### 3.2 - Phase I ESA, Triton, dated April 2013

In April 2013, Triton completed a Phase I ESA. The Phase I ESA included a review of available historical records, an inspection of all areas of the site, a review of available municipal, County, State, and Federal records pertaining to the site, and interviews with persons familiar with the site. The Phase I identified a total of five AOCs at the site, including:

AOC 1 - Former Coal Yard;
AOC 2 - Reported Oil / Waste Recycling Center;

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AOC 3 - Former Lumber Yard;
AOC 4 - Potential Impacts from Historical Building Materials;
AOC 5 - Potential Impacts from Off-Site Sources including Railroad Operations.

Additional information can be found in Triton's Phase I ESA.

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# 4.0 - PHYSICAL SETTING

## 4.1 - Site Geology and Hydrogeology

According to the soil conservation service soil survey database, the subject site's surficial geology is predominately urban land complex consisting of miscellaneous components. Soil of this classification has typically been altered by cutting and filling.

Soil encountered during sampling activities consisted of brown to dark brown fine- to coarse-grained sand with varying amounts of gravel.

Triton reviewed a geologic map data acquired from the United States Geological Survey. The bedrock is identified as Hartland Formation, Ordovician unit age, consisting of amphibolite and politic schist. Bedrock outcrops were observed throughout the site. Refusal, presumably due to bedrock was encountered between one to 10 feet below grade.

Groundwater at the site has been classified by the NYSDEC as "GA," based on the New York State Regulations, Title 6, Chapter X, Part 701.18(a). "GA" groundwater classifications indicate fresh groundwater suitable for public water supply. Groundwater was not encountered in any of the borings advanced into the subsurface (TB-1 through TB-7), but was observed at approximately 11 feet below ground surface of the soil zone at the TW-1 location (see Boring Logs in Appendix A). Based on gauging data, summarized in Table 1, groundwater is between approximately 4 to 11 feet below ground surface. Onsite groundwater flow may be divergent to the east and west from the elevated central part of the site. Given the topography of the site and the proximity of Beaver Swamp Brook located east of the site, it is likely that the groundwater at the site flows towards the east/southeast. However, groundwater flow direction can differ from the topography of the site given the presence of bedrock.

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## 5.0 - PHASE II ESA SITE ACTIVITIES

The following sections present a summary of the Phase II ESA tasks completed at the site by Triton in February and April 2014.

### 5.1 - Pre-drilling Activities

Pre-drilling activities for the project included marking proposed drilling locations and contacting Dig Safely New York to request mark-outs of publicly owned utilities. Triton also reviewed the drilling locations with the representatives of the current site owner, Metro North Railroad, for potential conflict with sub-surface utilities. Triton prepared a site specific Health and Safety Plan and conducted daily health and safety meetings.

### 5.2 - Soil Borings and Soil Sampling

A total of seven soil borings were advanced throughout the site using a GeoProbe direct push drill rig with an additional three shallow soil samples collected by manual methods on February 25, 2014. An additional six shallow samples were collected by manual methods on April 30, 2014. Apparent bedrock was encountered in all of the seven borings at depths between 1 and 10 feet below grade. Soil boring logs for soil samples collected with the GeoProbe and hand auger/hand slam soil sample descriptions are provided in Appendix A. Figure 2 depicts the approximate Phase II sampling locations.

Soil sampling was completed at each boring location for purposes of: (1) identifying the geology, (2) visually inspecting and field screening soil samples for evidence of impacts (i.e. staining, odors, fill material), and (3) obtaining representative soil samples for laboratory analyses.

Each soil sample was visually inspected and logged according to the Unified Soil Classification System, then screened with a photoionization detector (PID) equipped with a 10.2 eV lamp capable of detecting the potential presence of VOCs. The PID was calibrated to a standard of isobutylene. After screening and visual observation, the selected soil samples were placed within glass jars for laboratory submittal.

Soils encountered during sampling activities consisted of fine to coarse grained sand with varying amounts of gravel. Visual evidence of impact was not observed in any of the soil samples.

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Soil samples were submitted to a New York certified laboratory and analyzed for VOCs by Environmental Protection Agency (EPA) Method 8260 (7 samples), polynuclear aromatic hydrocarbons (PAHS) by EPA Method 8270 (10 samples), PCBs by EPA Method 8082 (8 samples), GRO (7 samples), DRO (10 samples), and hexavalent chromium (6 samples).

**5.3 - Monitoring Well Installation**

Three monitoring wells were installed using a hollow stem auger drill rig equipped with air rotary drilling capabilities to advance through bedrock conditions (TW-1 through TW-3). These monitoring wells were completed as 2-inch diameter PVC monitoring wells. Monitoring well TW-1 was installed to a bottom depth of 16 feet within the soil zone, monitoring well TW-2 was installed to a bottom depth of 12 feet (bedrock), and monitoring well TW-3was installed to a bottom depth of 17.5 feet (bedrock). Each well was installed approximately five feet into the apparent water table, based on field observations. Ten feet of screen were installed across the presumed water table topped by solid PVC riser.

A sand pack was installed surrounding the screened section of the monitoring well and a bentonite seal (approximately one (1) foot thick) was placed on top of the sand pack to limit potential vertical migration of water down the borehole. Native material was used to backfill the monitoring well to grade. The well was completed with protective, flush-mounted manhole cover that was cemented in place in order to secure the monitoring wells. The monitoring well construction log is provided in Appendix A.

**5.4 - Groundwater Sampling**

Groundwater samples were collected from three newly installed groundwater monitoring wells on March 5, 2014 to evaluate current groundwater conditions at the site and potential offsite sources of contamination.

Prior to sampling, the depth to the static water table within each well was measured. Well elevation data is summarized in Table 1.

Each well was sampled using a low-flow sampling methodology until the prescribed parameters stabilized over three readings. Groundwater samples were collected into pre-preserved sample containers and immediately placed on ice pending delivery to a State of

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Connecticut certified laboratory. The analytical testing completed on the groundwater samples is discussed in Section 7.0.

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## 6.0 - SOIL ANALYTICAL TESTING RESULTS

The following sections summarize the results of the investigations completed during this investigation, including the sampling rationale.

### 6.1 - Sampling Plan

Prior to initiating this investigation, the information collected during previous phases of work was compiled to create a preliminary Conceptual Site Model (CSM). This information was used to develop a sampling plan for each AOC identified at the site. During the field work described in Section 5.0, additional information (visual observations, field screening) was also collected to refine the sampling plan. The soil samples which were selected for laboratory analytical testing were collected from those intervals believed to represent the most likely areas to be impacted by a release taking into account the likely release mechanisms, or (in the case of delineation sampling) were selected in order to provide horizontal or vertical delineation of previously identified impact.

A total of 16 soil samples were selected for analytical testing as part of this investigation. The table below summarizes the soil samples which were selected and the rationale for each.

AOC 1 - Former Coal Yard;
AOC 2 - Reported Oil / Waste Recycling Center;
AOC 3 - Former Lumber Yard;
AOC 4 – Potential Releases from former Building Materials
AOC 5 - Potential Impacts from Off-Site Sources including Railroad Operations.

**Phase II Sampling Plan**
*Metro North Lot – Harrison, NY*

| AOC | Boring ID | Sample Depths | COCs | Rationale |
|---|---|---|---|---|
| 1 | TB-1<br>TB-2<br>TB-3 | 2-4'<br>1-3'<br>0-2' | VOC, PAHs, DRO, GRO | Vicinity of former coal yard |
| 2 | TB-6<br>TB-7 | 0-1'<br>2-4' | VOC, PAHs, DRO, GRO, PCBs | Vicinity of reported oil / waste recycling center |

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| AOC | Boring ID | Sample Depths | COCs | Rationale |
|---|---|---|---|---|
| 3/4 | TB-5<br>TB-6<br>TB-7 | 1-3'<br>0-1'<br>2-4' | VOC, PAHs, DRO, GRO, PCBs | Vicinity of lumber yard |
| 5 | HS-1<br>HS-2<br>HS-3<br>HS-3A<br>HS-3B | 0-2'<br>0-2'<br>0-2'<br>0-2'<br>0-2' | PAH, DRO, PCBs | Onsite and adjacent to railroad tracks |
| NA | TB-4 | 2-4' | VOC, PAHs, DRO, GRO | Potential fill layer associated with a retaining wall on the central portion of the site |
| NA | ENV-2A<br>ENV-3A<br>ENV-4A<br>ENV-5A<br>HS-3A<br>HS-3B | 2-4'<br>2-4'<br>0-2'<br>2-4'<br>0-2'<br>0-2' | Hexavalent Chromium | Evaluate detections of chromium |

Soil analytical results are summarized in Table 2. Laboratory analytical reports are included as Appendix B. Sample locations are depicted on Figure 2. Analytical results are discussed below by AOC.

### 6.2 - Former Coal Yard (AOC 1)

As indicated above, three samples (TB-1 (2-4'), TB-2 (1-3'), and TB-3 (0-2') were collected from AOC 1 and analyzed for the established COCs. DRO were detected at a concentration of 407 milligrams per kilogram (mg/kg) in sample TB-2 (1-3'). New York does not currently have established criteria for DRO. GRO, VOCs, and PAHs were not detected above the laboratory reporting limits in these samples.

### 6.3 - Reported Oil / Waste Recycling Center (AOC 2)

As indicated above, two samples (TB-6 (0-1') and TB-7 (2-4') were collected from AOC 2 and analyzed for the established COCs. The VOC compound 2-butanone was detected above the laboratory reporting limit at a concentration of 0.0066 mg/kg in sample TB-7 (2-4'), which is below SCO criteria. GRO, DRO, PAHs, and PCBs were not detected above the laboratory reporting limits in these samples.

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### 6.4 - Former Lumber Yard (AOC 3) and Lumber Yard Buildings (AOC 4)

AOCs 3 and 4 also incorporate the entirety of AOC 2; as such, samples collected from AOC 2 were also used to evaluate AOC 3. As indicated above, three samples (TB-5 (1-3'), TB-6 (0-1'), and TB-7 (2-4') were collected from AOC 3 and analyzed for the established COCs. The VOC compound 2-butanone was detected in samples TB-5 (1-3') and TB-7 (2-4') at concentrations of 0.0088 mg/kg and 0.0066 mg/kg, respectively. In addition, acetone was detected in sample TB-5 (1-3') at a concentration of 0.0128 mg/kg. These concentrations were below SCO criteria. GRO, DRO, PAHs, and PCBs were not detected above the laboratory reporting limits in these samples.

### 6.5 - Potential Impacts from Off-Site Sources including Railroad Operations (AOC 5)

As indicated above, five samples (HS-1 (0-2'), HS-2 (0-2'), HS-3 (0-2'), HS-3A (0-2'), and HS-3B (0-2') were collected from AOC 5 and analyzed for the established COCs. PCBs were detected in samples HS-3 (0-2'), HS-3A (0-2'), and HS-3B (0-2') at concentrations of 0.0754 mg/kg, 0.127 mg/kg, and 0.0871 mg/kg, respectively, which are below the residential SCO criteria.

PAH compounds benzo(a)pyrene, chrysene, fluoranthene, and pyrene were detected in sample HS-1 (0-2') at concentrations below SCO criteria. Chrysene was also detected in sample HS-3 (0-2') at a concentration below SCO criteria.

DRO were not detected above the laboratory reporting limit in these samples.

### 6.6 - Potential Fill Layer

During the completion of Phase II testing, Triton advanced boring TB-4 within an area upgradient of a retaining wall to evaluate suspect fill material in this area. Sample TB-4 (2-4') was collected from this boring and analyzed for the established COCs. GRO, DRO, VOCs, and PAHs were not detected above the laboratory reporting limits in this sample.

### 6.7 - Detections of Chromium

Previous environmental sampling was completed by others in 2009 that identified the presence of non-specific forms of chromium in all six samples tested at concentrations between 20.4 and 46.8 mg/kg. The SCOs for chromium are specified for the hexavalent and

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trivalent forms of chromium. As such, Triton completed an evaluation of site soil for hexavalent chromium as it has the most stringent criteria. As indicated above, six samples: ENV-2A (2-4'), ENV-3A (2-4'), ENV-4A (0-2'), ENV-5A (2-4'), HS-3A (0-2'), and HS-3B (0-2') were analyzed for hexavalent chromium. Hexavalent chromium was detected in two of the six samples ENV-3A (2-4') and ENV-5A (2-4') at concentrations of 1.4 mg/kg and 0.7 mg/kg, respectively. The concentration of hexavalent chromium in sample ENV-3A (2-4') was above the unrestricted use SCO of 1.0 mg/kg, but was below the residential and restricted residential SCOs.

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## 7.0 - GROUNDWATER ANALYTICAL TESTING RESULTS

Three groundwater samples were analyzed as part of Triton's Phase II ESA testing activities on the subject site. These samples were collected from wells positioned near the property line and cross gradient from high risk properties (dry cleaners) to evaluate potential impacts migrating onto the site (AOC 5). Based on suspected compounds of concern (COCs), the groundwater samples were analyzed for VOCs, PAHs, GRO, and DRO, as summarized in the table below.

**Phase II Groundwater Sampling Plan**
*Metro North Lot – Harrison, NY*

| AOC | Description | Wells | Proposed Analysis |
|---|---|---|---|
| 5 Potential Impacts from Off-Site Sources | At site boundary and crossgradient to apparent drycleaners | TW-1 | VOCs, PAHs, GRO, DRO |
| | Crossgradient to apparent drycleaners and within former coal yard (AOC 1) | TW-2 | VOCs, PAHs, GRO, DRO |
| | At site boundary and upgradient to an apparent drycleaner | TW-3 | VOCs, PAHs, GRO, DRO |

Groundwater analytical results are summarized in Table 3. Laboratory analytical reports are included as Appendix B. Monitoring well locations are depicted on Figure 2. Analytical results are discussed below by AOC.

### 7.1 - Potential Impacts from Off-Site Sources including Railroad Operations (AOC 5)

Groundwater samples were collected from across the site to primarily provide an evaluation of potential impacts from off-site sources (AOC 5). A total of three groundwater samples (TW-1, TW-2, and TW-3) were collected and analyzed for established COCs. DRO was detected in the sample collected from monitoring well TW-2 at a concentration of 212 ug/L. New York does not currently have established criteria for DRO. Concentrations of DRO in this sample may be attributed to the former site use as a coal yard (AOC 1).

The VOC compounds cis-1,2-dichloroethene, tetrachloroethene, and trichloroethene were detected in the sample collected from monitoring well TW-3 at concentrations of 25.9 ug/L, 29.1 ug/L, and 1.1 ug/L, respectively. The concentrations of cis-1,2-dichloroethene and tetrachloroethene were above the TOGS ambient groundwater criteria of 5.0 ug/L .

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GRO and PAHs were not detected above the laboratory reporting limits in these samples.

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## 8.0 - CONCLUSIONS AND RECOMMEDATIONS

Triton has completed Phase II testing at the Metro-North property (Block 182, Lots 12 and 15), which built upon earlier testing conducted by others. Based on a review of historical site activities and environmental investigations, a total of five AOCs have been identified at the site. Based on the collective information obtained during previous phases of work, a sampling plan was developed and refined. Multiple lines of evidence were used during the evaluation of these releases areas and AOCs.

Based on the information obtained during this investigation, relatively low level impacts to soil have been identified at the site as follows:

- Diesel Range Organics (DRO) – Diesel range organics have been detected at the site at concentrations ranging from 23.7 to 407 mg/kg. There are no established NYSDEC Soil Cleanup Objectives (SCOs) for DRO.
- Volatile Organic Compounds – Trace concentrations of VOCs were detected in five of the 16 soil samples which have been collected at the site (including 2-butanone, acetone, benzene, and xylenes). The concentrations of VOCs were below the most stringent (Unrestricted Use) SCOs.
- Polynuclear Aromatic Hydrocarbons (PAHs) – Low concentrations of PAHs have been detected in five of the 16 soil samples collected. The concentrations of PAHs were below the most stringent (Unrestricted Use) SCOs.
- Metals – Low concentrations of several metals have been detected in site soils. The concentrations of total chromium exceeded the Unrestricted Use and Residential Use SCOs when compared against the SCO for trivalent chromium. To further evaluate these elevated detections of chromium, six samples were collected throughout the site and analyzed specifically for hexavalent chromium. Hexavalent chromium was detected in two of the six samples (ENV-3A and ENV-5A), both located on the west side of the site and potentially being associated with the reported historic coal yard use on the site. Hexavalent chromium was detected in one sample at a concentration which exceeded the Unrestricted Use, but not the Residential or Restricted Residential SCOs. Mercury and zinc were also detected in at least one sample at concentrations which exceeded the Unrestricted Use, but not the Residential or Restricted Residential SCOs.
- Pesticides – The pesticide 4-4-DDE was detected in one sample at a concentration below the most stringent (Unrestricted Use) SCO.
- PCBs – PCBs were detected in three samples at concentrations ranging from 0.0754 and 0.127 mg/kg in the northeast vicinity of the site adjacent to the Metro North Railroad (HS-3, HS-3A, and HS-3B). Concentrations of PCBs exceeded the Unrestricted Use SCO of 0.1 mg/kg in one sample (HS-3A); however, concentrations were below the Residential and Restricted Residential SCOs.

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As indicated above, one of the detected concentrations in soil at the site exceeded the Residential or Restricted Residential SCOs. Residential use as defined in 6NYCRR 375-1.8(g)(2)(i) *"the land use category which allows a site to be used for any use other than raising live stock or producing animal products for human consumption. Restrictions on the use of groundwater are allowed, but no other institutional or engineering controls are allowed relative to the residential use soil cleanup objectives. This is the land use category which will be considered for single family housing."* Restricted Residential use as defined by 6NYCRR 375-1.8(g)(2)(ii) "*the land use category which shall only be considered when there is common ownership or a single owner/managing entity of the site. Restricted-residential use shall, at a minimum, include restrictions which prohibit: (1) any vegetable gardens on a site, although community vegetable gardens may be considered with Department approval; and (2) single family housing; and includes active recreational uses, which are public uses with a reasonable potential for soil contact."*

The groundwater sampling conducted at the site indicated a detection of DRO in the sample collected from monitoring well TW-2. There are no established NYSDEC groundwater criteria for DRO; however, the presence of petroleum impact in groundwater at the site triggers a requirement to report the condition to the NYSDEC.

Halogenated VOCs (and derivatives of dry cleaning solvents) were also detected in the groundwater sample collected from TW-3. The concentrations of cis-1,2-dichloroethylene and tetrachloroethylene (PCE) exceeded the NYSDEC TOGs criteria for a GA area. The apparent source of the solvents is an off-site drycleaner.

Based on the data collected, Triton recommends the following:

1. Further evaluation of the PCBs detected at the location of HS-3 (0-2'), including HS-3A (0-2') and HS-3B (0-2'), in order to confirm that concentrations comply with NYSDEC and USEPA cleanup objectives;

2. The presence of petroleum impact to the site soil and groundwater should be reported to the NYSDEC.

3. The presence of the solvents in the groundwater appears to be the result of an off-site source. However, given the presence of these compounds in groundwater, a sub-slab venting system is recommended for any future structures constructed at the site.

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A Soil Management Plan should also be developed to describe soil management procedures during future site development.

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## 9.0 - LIMITATIONS

This assessment did not include inspections and/or sampling of potential building toxins such as lead based paint, asbestos, PCBs, radon and mold, or an evaluation of wetlands at the site. Scopes of work and estimated costs for such surveys can be provided upon request.

Where visual observations have been included in this report, they represent conditions at the time of the site inspection, and may not be indicative of past or future site conditions.

In completing this Phase II ESA, Triton has relied upon information provided by subcontractors (i.e. laboratories) and information contained in previously prepared environmental reports. Triton has reviewed this information carefully; however, Triton provides no warranty regarding the accuracy and completeness of the information provided. Analyses of chemical constituents selected by Triton in formulating the Phase II scope of work have been performed during the course of this assessment, however, it is understood that additional chemical constituents not searched for during this study may be present in soil, groundwater, and/or soil vapor at this site.

The Phase II ESA has specifically addressed on-site environmental conditions. The conclusions and recommendations contained in this report are based in part upon the data obtained from a limited number of soil and groundwater samples. The nature and extent of variations between these sample locations may not be evident from the data obtained. Due to difficulties achieving desired sampling depths at some locations, the data required to fully assess those areas may have been limited. Bedrock groundwater quality and potential impacts to the site from off-site sources has not been fully evaluated at this time. Off-site conditions were only preliminarily evaluated as a part of this investigation.

This Phase II ESA Report was prepared specifically for AvalonBay Communities, Inc. No person or other body shall be entitled to rely upon or use information presented in this report without written consent of AvalonBay Communities, Inc. and Triton Environmental, Inc.

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## 10.0 - REFERENCES


1. Technical Guidance for Site Investigation and Remediation (DER-10), dated May 3, 2010.
2. NYSDEC Soil Cleanup Objectives (6 NYCRR 375-6), dated December 14, 2006.
3. Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, dated June 1998.
4. Phase I and Phase II Environmental Site Assessment, by AECOM, dated February 2010.
5. Phase I Environmental Site Assessment, by Triton, dated April 2013.

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## 11.0 - SIGNATURES OF REPORT AUTHORS

This report has been prepared by Triton Environmental, Inc. The names listed below are the principal authors of this report. Requests for information regarding the content of this report should be directed to those individuals.

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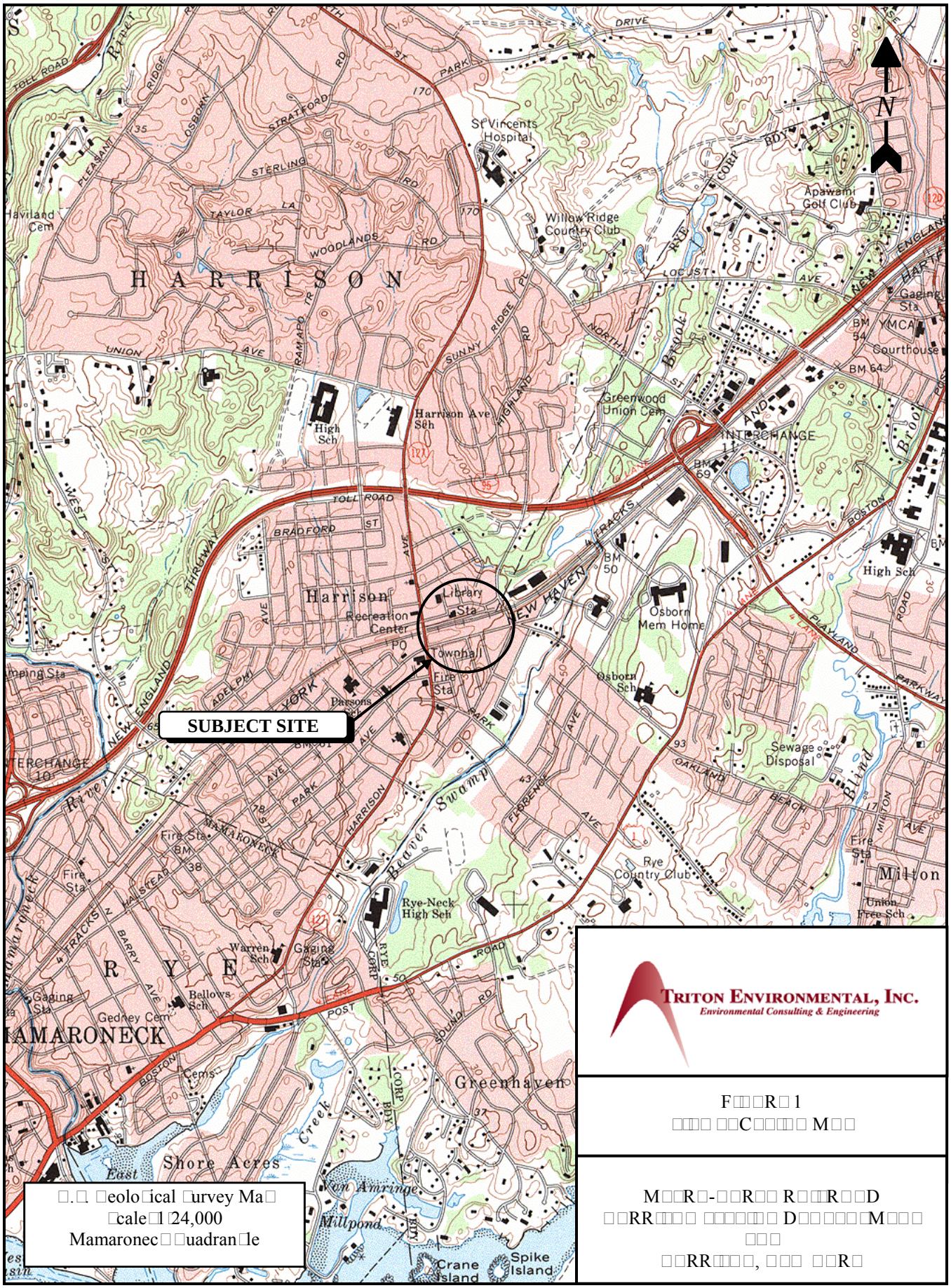
# FIGURES

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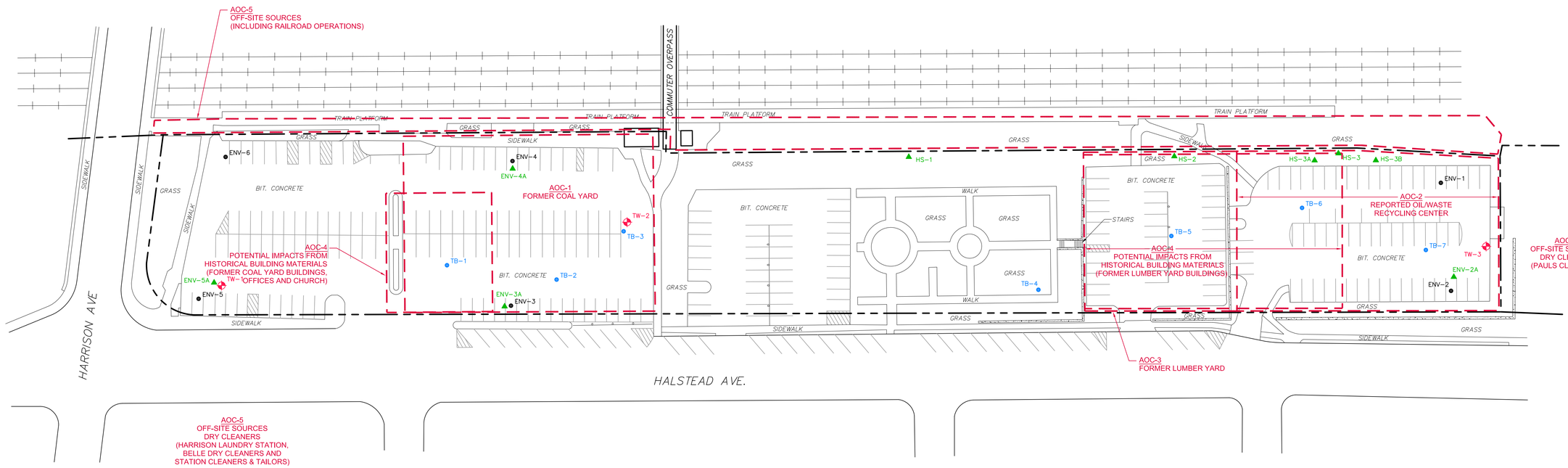


NOTES:

1. THE LOCATION OF ALL STRUCTURES, EQUIPMENT, DELINEATIONS AND OTHER FEATURES PRESENTED ON THIS DRAWING SHOULD BE CONSIDERED APPROXIMATE. THIS DRAWING SHOULD ONLY BE USED FOR GENERAL PRESENTATION PURPOSES AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES. TRITON MAKES NO WARRANTY AS TO THE CORRECTNESS OR THE COMPLETENESS OF THE INFORMATION CONTAINED IN THIS DRAWING, AND THE USER ASSUMES ALL RISK OF LOSS TO PERSONS AND PROPERTY FROM RELIANCE THEREON.

2. BASE MAP IS BASED OFF OF A BORING LOCATION PLAN PREFORMED BY AECOM FOR METRO-NORTH RAILROAD; DATE: DECEMBER 4, 2009; SCALE: 1"=40' AND INFORMATION OFF OF THE WESTCHESTER COUNTY GIS SYSTEM.

**LEGEND**

- PROPERTY LINE
- RETAINING WALL
- GUARDRAIL
- RAILROAD TRACKS
- ENV-1 — SOIL BORING BY OTHERS
- SOIL BORING
- BEDROCK MONITORING WELL
- SURFACE SOIL SAMPLING LOCATION

APPROXIMATE SCALE

40 0 20 40 80

( IN FEET )
1 inch = 40 ft.

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FIGURE 2
SITE PLAN SHOWING
IDENTIFIED AREAS OF CONCERN AND SAMPLING LOCATIONS

PHASE II ESA

METRO-NORTH RAILROAD
HARRISON STATION DEVELOPMENT LOT
VILLAGE OF HARRISON, WESTCHESTER CO., NEW YORK

| | | |
|---|---|---|
| DRAWN BY: FSM | | APPROVED BY: MEP |
| DATE: 5/20/14 | SCALE: 1"=40' | FILE No.: 104226P2-05 |

P:\CAD\DRAWINGS\104000\104226\FIGURES\PHASE II\104226P2-05.DWG
Layout: AOCs

# TABLES

# Table 1
## Groundwater Elevation Table
*Metro North Parking Lot - Harrison, NY*

| Well ID | Depth to Bottom (feet) | Screen Length (feet) | Geology at Screen | Inner (PVC) Casing Elevation (feet) | Depth to Product (feet) 2/4/2014 | Depth to Water[1] (feet) 2/4/2014 | Elevation (feet) 2/4/2014 |
|---|---|---|---|---|---|---|---|
| □□ -1 | 1□63 | 10 | □ery coarse □ravel, some sand and silt. | □□ | □□ | 6.34 | □□ |
| □□ -2 | 12.00 | 10 | □edroc□ | □□ | □□ | 4.36 | □□ |
| □□ -3 | 16.11 | 10 | □edroc□ | □□ | □□ | 10.94 | □□ |

□otes□
1. De□th measurements were ta□en □rom the hi□hest □oint o□the inner □□C casin□

**Table 2**
**Summary of Analytes Detected in Soil Samples**
*Metro North Parking Lot - Harrison, NY*

| Compound | Unrestricted Use | Restricted Use SCOs – Protection of Public Health: Residential | Restricted Use SCOs – Protection of Public Health: Restricted Residential | Restricted Use SCOs – Protection of Groundwater | AECOM ENV-1 8-10' 11/5/2009 | AECOM ENV-2 10-11' 11/5/2009 | Triton ENV-2A 1-4' 4/30/2014 | AECOM ENV-3 4-5' 11/5/2009 | Triton ENV-3A 1-4' 4/30/2014 | AECOM ENV-4 1-2' 11/5/2009 | Triton ENV-4A 1-4' 4/302014 | AECOM ENV-5 12-14' 11/5/2009 | Triton ENV-5A 1-4' 4/30/2014 | AECOM ENV-6 6-7' 11/5/2009 | Triton TB-1 2-4' 2/25/2014 | Triton TB-2 1-3' 2/25/2014 | Triton TB-3 0-2' 2/25/2014 | Triton TB-4 2-4' 2/25/2014 | Triton TB-5 1-3' 2/25/2014 | Triton TB-6 0-1' 2/25/2014 | Triton TB-7 2-4' 2/25/2014 | Triton HS-1 0-2' 2/25/2014 | Triton HS-2 0-2' 2/25/2014 | Triton HS-3 0-2' 2/25/2014 | Triton HS-3A 0-2' 4/30/2014 | Triton HS-3B 0-2' 4/30/2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TPH (mg/kg)** | | | | | | | □□ | | □□ | | □□ | | □□ | | | | | | | | | | | | □□ | □□ |
| □R□ | □□ | □□ | □□ | □□ | □D□12 | □D□14 | | □D□11 | | □D□11 | | □D□13 | | □D□13 | □D□1.49 | □D□1.04 | □D□0.9□□ | □D□1.16 | □D□1.07 | □D□1.03 | □D□1.1□ | □□ | □□ | □□ | | |
| DR□ | □□ | □□ | □□ | □□ | □D□6.6 | 23.7 | | □2.9 | | □D□6.2 | | □D□6.□ | | □D□6.9 | □D□1.1 | 407 | □D□44.□ | □D□46.2 | □D□44.7 | □D□43.7 | □D□4□4 | □D□4□2 | □D□4□□ | □D□□1.1 | | |
| **VOCs (mg/kg)** | | | | | | | □□ | | □□ | | □□ | | □□ | | | | | | | | | □□ | □□ | □□ | □□ | □□ |
| 2-□utanone | 0.12 | 100 | 100 | 0.12 | □□ | □□ | | □□ | | □□ | | □□ | | □□ | □D□0.00□□ | □D□0.0076 | □D□0.0069 | □D□0.0076 | 0.00□□ | □D□0.0067 | 0.0066 | | | | | |
| □cetone | 0.0□ | 100 | 100 | 0.0□ | □□ | □□ | | □□ | | □□ | | □□ | | □□ | □D□0.00□□ | □D□0.0076 | □D□0.0069 | □D□0.0076 | 0.012□ | □D□0.0067 | □D□0.0064 | | | | | |
| □en□ene | 0.06 | 2.9 | 4.□ | 0.06 | □D□0.0024 | □D□0.0011 | | □D□0.0012 | | 0.0003□ | | □D□0.001□ | | □D□0.0017 | □D□0.0044 | □D□0.003□ | □D□0.0034 | □D□0.003□ | □D□0.0034 | □D□0.0033 | □D□0.0032 | | | | | |
| □otal □ylenes | 0.26 | 100 | 100 | 1.6 | □D□0.0049 | □D□0.0021 | | 0.0013 | | □D□0.0019 | | □D□0.0029 | | 0.0011 | □D□0.00□□ | □D□0.0076 | □D□0.0069 | □D□0.0076 | □D□0.0069 | □D□0.0067 | □D□0.0064 | | | | | |
| **PAHs (mg/kg)** | | | | | | | □□ | | □□ | | □□ | | □□ | | | | | | | | | | | | □□ | □□ |
| □nthracene | 100 | 100 | 100 | 1000 | □D□0.032 | 0.0127 | | □D□0.03 | | □D□0.03 | | □D□0.033 | | □D□0.034 | □D□0.4□□ | □D□0.364 | □D□0.3□9 | □D□0.40□ | □D□0.40□ | □D□0.371 | □D□0.399 | □D□0.429 | □D□0.40□ | □D□0.442 | | |
| □en□o(a)anthracene | 1 | 1 | 1 | 1 | 0.013 | 0.0□36 | | 0.0323 | | 0.01□3 | | □D□0.033 | | □D□0.034 | □D□0.4□□ | □D□0.364 | □D□0.3□9 | □D□0.40□ | □D□0.40□ | □D□0.371 | □D□0.399 | □D□0.429 | □D□0.40□ | □D□0.442 | | |
| □en□o(a)□yrene | 1 | 1 | 1 | 22 | 0.0123 | 0.0□0□ | | 0.0346 | | 0.02 | | □D□0.033 | | □D□0.034 | □D□0.22□ | □D□0.1□2 | □D□0.19□ | □D□0.203 | □D□0.204 | □D□0.1□6 | □D□0.2 | 0.23□ | □D□0.203 | □D□0.222 | | |
| □en□o(b)□luoranthene | 1 | 1 | 1 | 1.7 | 0.0124 | 0.0□04 | | 0.030□ | | 0.0196 | | □D□0.033 | | □D□0.034 | □D□0.4□□ | □D□0.364 | □D□0.3□9 | □D□0.40□ | □D□0.40□ | □D□0.371 | □D□0.399 | □D□0.429 | □D□0.40□ | □D□0.442 | | |
| □en□o(□,h,i)□erylene | 100 | 100 | 100 | 1000 | □D□0.032 | 0.0396 | | 0.0311 | | 0.01□ | | □D□0.033 | | □D□0.034 | □D□0.4□□ | □D□0.364 | □D□0.3□9 | □D□0.40□ | □D□0.40□ | □D□0.371 | □D□0.399 | □D□0.429 | □D□0.40□ | □D□0.442 | | |
| □en□o(□)□luoranthene | 0.□ | 1 | 3.9 | 1.7 | 0.01□ | 0.0434 | | 0.0276 | | 0.033□ | | □D□0.033 | | □D□0.034 | □D□0.4□□ | □D□0.364 | □D□0.3□9 | □D□0.40□ | □D□0.40□ | □D□0.371 | □D□0.399 | □D□0.429 | □D□0.40□ | □D□0.442 | | |
| bis(2-□thylhexyl)□hthalate | □□ | □□ | □□ | □□ | □D□0.064 | □D□0.067 | | 0.0□07 | | □D□0.06 | | □D□0.06□ | | □D□0.06□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | | |
| Chrysene | 1 | 1 | 3.9 | 1 | □D□0.032 | 0.0632 | | 0.0419 | | 0.0323 | | □D□0.033 | | □D□0.034 | □D□0.22□ | □D□0.1□2 | □D□0.19□ | □D□0.203 | □D□0.204 | □D□0.1□6 | □D□0.2 | 0.273 | □D□0.203 | 0.230 | | |
| Fluoranthene | 100 | 100 | 100 | 1000 | □D□0.032 | 0.0949 | | 0.0472 | | 0.0394 | | □D□0.033 | | □D□0.034 | □D□0.4□□ | □D□0.364 | □D□0.3□9 | □D□0.40□ | □D□0.40□ | □D□0.371 | □D□0.399 | 0.□46 | □D□0.40□ | □D□0.442 | | |
| □ndeno(1,2,3-cd)□yrene | 0.□ | 0.□ | 0.□ | □2 | □D□0.032 | 0.0346 | | 0.0219 | | 0.016□ | | □D□0.033 | | □D□0.034 | □D□0.4□□ | □D□0.364 | □D□0.3□9 | □D□0.40□ | □D□0.40□ | □D□0.371 | □D□0.399 | □D□0.429 | □D□0.40□ | □D□0.442 | | |
| □a□hthalene | 12 | 100 | 100 | 12 | □D□0.032 | □D□0.033 | | 0.263 | | □D□0.03 | | □D□0.033 | | □D□0.034 | □D□0.4□□ | □D□0.364 | □D□0.3□9 | □D□0.40□ | □D□0.40□ | □D□0.371 | □D□0.399 | □D□0.429 | □D□0.40□ | □D□0.442 | | |
| □henanthrene | 100 | 100 | 100 | 1000 | □D□0.032 | 0.0394 | | 0.03□4 | | □D□0.03 | | □D□0.033 | | □D□0.034 | □D□0.4□□ | □D□0.364 | □D□0.3□9 | □D□0.40□ | □D□0.40□ | □D□0.371 | □D□0.399 | □D□0.429 | □D□0.40□ | □D□0.442 | | |
| □yrene | 100 | 100 | 100 | 1000 | □D□0.032 | 0.09□ | | 0.0□12 | | 0.0402 | | □D□0.033 | | □D□0.034 | □D□0.4□□ | □D□0.364 | □D□0.3□9 | □D□0.40□ | □D□0.40□ | □D□0.371 | □D□0.399 | 0.□2□ | □D□0.40□ | □D□0.442 | | |
| **Metals (mg/kg)** | | | | | | | | | | | | | | | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | | |
| □rsenic | 13 | 16 | 16 | 16 | □D□2.3 | 4.2 | □□ | 2.7 | □□ | 2.6 | □□ | 3.4 | □□ | □D□2.3 | | | | | | | | | | | □□ | □□ |
| □eryllium | 7.2 | 14 | 72 | 47 | 0.7□ | 0.□3 | □□ | 0.79 | □□ | 1.1 | □□ | 0.□2 | □□ | □D□0.□7 | | | | | | | | | | | □□ | □□ |
| Cadmium | 2.□ | 2.□ | 4.3 | 7.□ | □D□0.□□ | □D□0.6 | □□ | □D□0.□4 | □□ | 0.□6 | □□ | □D□0.□9 | □□ | □D□0.□7 | | | | | | | | | | | □□ | □□ |
| □otal Chromium□ | 30 | 36 | 1□0 | □□ | 20.4 | **31.9** | □□ | **37.1** | □□ | **46.8** | □□ | **33.1** | □□ | **18.8** | | | | | | | | | | | □D□0.6 [1] | □D□0.6 [1] |
| □exavalent Chromium | 1 | 22 | 110 | 19 | □□ | □□ | □D□0.□ | □□ | **1.4** | □□ | □D□0.6 | □□ | 0.7 | □□ | | | | | | | | | | | | |
| Co□□er | □0 | 270 | 270 | 1720 | 2□9 | 19.□ | □□ | 2□9 | □□ | 42.□ | □□ | 12.1 | □□ | 20 | | | | | | | | | | | □□ | □□ |
| □ead | 63 | 400 | 400 | 4□0 | 4.7 | 12.1 | □□ | 60.3 | □□ | 19.2 | □□ | 2.4 | □□ | 3.3 | | | | | | | | | | | □□ | □□ |
| Mercury | 0.1□ | 0.□1 | 0.□1 | 0.73 | □D□0.036 | □D□0.034 | □□ | 0.037 | □□ | **0.24** | □□ | □D□0.03□ | □□ | □D□0.036 | | | | | | | | | | | □□ | □□ |
| □ic□el | 30 | 140 | 310 | 130 | 20.3 | 19.2 | □□ | **32.9** | □□ | **38** | □□ | 26.□ | □□ | **30.9** | | | | | | | | | | | □□ | □□ |
| □inc | 109 | 2200 | 10000 | 24□0 | 36.□ | 44.□ | □□ | □7.2 | □□ | **163** | □□ | □4.9 | □□ | 33.7 | | | | | | | | | | | □□ | □□ |
| **Additional Metals (mg/kg)** | | | | | | | □□ | | □□ | | □□ | | □□ | | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ |
| Cyanide | 27 | 27 | 27 | 40 | □D□0.27 | □D□0.26 | | □D□0.23 | | □D□0.23 | | □D□0.24 | | □D□0.2□ | | | | | | | | | | | | |
| **Pesticides (mg/kg)** | | | | | | | □□ | | □□ | | □□ | | □□ | | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ | □□ |
| 4,4 □DD□ | 0.0033 | 1.□ | □9 | 17 | □D□0.0013 | 0.0022 | | □D□0.0012 | | □D□0.0012 | | □D□0.0013 | | □D□0.0014 | | | | | | | | | | | | |
| **PCBs (mg/kg)** | | | | | | | □□ | | □□ | | □□ | | □□ | | □□ | □□ | □□ | □□ | | | | | | | | |
| □otal □C□s | 0.1 | 1 | 1 | 3.2 | □D□0.033 | □D□0.03□ | | □D□0.031 | | □D□0.031 | | □D□0.033 | | □D□0.03□ | | | | | □D□0.0463 | □D□0.04□1 | □D□0.047□ | □D□0.04□□ | □D□0.047 | 0.07□4 | **0.127** | 0.0□71 |
| □ □olids | □□ | □□ | □□ | □□ | □□□ | □4.6 | □9 | 93.6 | 92 | 94.2 | □6 | □7.1 | 90 | □4.2 | 76 | 93 | □7 | □3 | □6 | □□ | □3 | □0 | □4 | 7□ | □1 | □9 |

□otes□
□nly □arameters detected are shown
□□C□s □or total chromium are those □romul□ated □or trivalent chromium.
□old and shaded concentrations exceed one or more o□the □C□ criteria
□D □ □ot Detected at the indicated detection limit
□□ □ □one □stablished
□□ □ □ot □naly□ed
□C□ □ □oil Clean-□□□b□ective
1 □□naly□ed □or □exavalent Chromium

# Table 3
## Summary of Analytes Detected in Groundwater
*Metro North Parking Lot - Harrison, NY*

| Laboratory Sample Designation | GA Criteria | TW-1 3/5/2014 | TW-2 3/5/2014 | TW-3 3/5/2014 |
|---|---|---|---|---|
| **TPH (ug/L)** | | | | |
| GRO | NE | ND<5 ) | ND<5 ) | ND<5 ) |
| DR | NE | ND<200 | 212 | ND<187 |
| | | | | |
| **VOCs (ug/l)** | | | | |
| 1,2-Dibromo-3-Chloro ro ane | 0.04 | ND<5 | ND<5 | ND<5 |
| 1,2-Dibromoethane | 0.0006 | ND<1 | ND<1 | ND<1 |
| 1,2-Dichloroethane | 0.6 | ND<1 | ND l | ND<1 |
| cis-1,2-Dichloroethene | 5 | ND<1 | ND l | **25.9** |
| etrachloroethene | 5 | ND<1 | ND<1 | **29.1** |
| richloroethene | 5 | ND<1 | ND<1 | 1.1 |
| | | | | |
| **PAHs (ug/l)** | | | | |
| en o(a)anthracene | 0.002 | ND<0.05 | ND<0.05 | ND<0.0 |
| en o(b) luoranthene | 0.002 | ND<0.05 | ND<0.05 | ND<0.0 |
| en o( ) luoranthene | 0.002 | ND<0.05 | ND<0.05 | ND<0.0 |
| Chrysene | 0.002 | ND<0.05 | ND<0.05 | ND<0.05 |
| ndeno(1,2,3-cd) yrene | 0.002 | ND<0.05 | ND<0.05 | ND<0.05 |

**Notes:**

nly arameters detected are shown

TOG s = echnical and erational uidance eries

old and shaded concentrations exceed one or more o the TOG s criteria

D = ot Detected at the indicated detection limit

NE = one stablished

NA = ot naly ed

ll roundwater in NY is classi ied as GA unless a onin chan e has been a roved by the NYS DEC and are resh roundwaters with a best use as source o otable su ly (TOGS 1.1.1

# Appendix A

# Soil Boring and Monitoring Well Logs

TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING TB-1



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 2/25/2014 | Driller | : ADT |
| Date Completed | : 2/25/2014 | Northing Coord. | : 40 58.152 |
| Hole Diameter | : 2 inches | Easting Coord. | : 73 42.751 |
| Drilling Method | : Geoprobe | Survey By | : |
| Sampling Method | : Direct push | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Asphalt. | | | | | |
| 1 | | Fill | | Dark gray to dark brown fine to coarse SAND, some coarse gravel. | | | | | |
| 2–4 | | Native | | Dark brown fine clayey SAND. | 1 | | 0.0 | 36 | |
| 5–6 | | Native | | Bedrock. | 2 | | 0.0 | 8 | |

Refusal at 6 feet.



LOG OF BORING TB-1

(Page 1 of 1)

TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING TB-2



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 2/25/2014 | Driller | : ADT |
| Date Completed | : 2/25/2014 | Northing Coord. | : 40 58.155 |
| Hole Diameter | : 2 inches | Easting Coord. | : 73 42.716 |
| Drilling Method | : Geoprobe | Survey By | : |
| Sampling Method | : Direct push | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Asphalt. | | | | | |
| | | | | Coarse angular boulder. | | | | | |
| 1 | | | | Brown coarse SAND, some coarse gravel. | 1 | | 0.0 | 24 | |
| 2 | | | | | | | | | |
| 3 | | | | Refusal at 3 feet. | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |



LOG OF BORING TB-2

(Page 1 of 1)

TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING TB-3



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 2/25/2014 | Driller | : ADT |
| Date Completed | : 2/25/2014 | Northing Coord. | : 40 58.174 |
| Hole Diameter | : 2 inches | Easting Coord. | : 73 42.684 |
| Drilling Method | : Geoprobe | Survey By | : |
| Sampling Method | : Direct push | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Asphalt. | | | | | |
| | | | | Brown coarse SAND, trace coarse gravel. | 1 | | 0.0 | 12 | |
| 1 | | Native | | Bedrock. | | | | | |
| 2 | | | | Refusal at 2 feet. | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |



LOG OF BORING TB-3

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TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING TB-4



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 2/25/2014 | Driller | : ADT |
| Date Completed | : 2/25/2014 | Northing Coord. | : 40 58.174 |
| Hole Diameter | : 2 inches | Easting Coord. | : 73 42.618 |
| Drilling Method | : Geoprobe | Survey By | : |
| Sampling Method | : Direct push | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Brown to dark brown fine to coarse SAND, trace fine to medium gravel. | 1 | | 0.0 | 48 | |
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | 2 | | 0.0 | 18 | |
| 7 | | | | Refusal at 7 feet. | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |

LOG OF BORING TB-4

(Page 1 of 1)

TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING TB-5



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 2/25/2014 | Driller | : ADT |
| Date Completed | : 2/25/2014 | Northing Coord. | : 40 58.194 |
| Hole Diameter | : 2 inches | Easting Coord. | : 73 42.598 |
| Drilling Method | : Geoprobe | Survey By | : |
| Sampling Method | : Direct push | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Asphalt. | | | | | |
| | | | | Angular coarse boulder. | | | | | |
| 1 | | | | Dark gray to brown fine to coarse SAND, some medium gravel. | 1 | | 0.0 | 24 | |
| 2 | | | | | | | | | |
| 3 | | | | Refusal at 3 feet. | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |



LOG OF BORING TB-5

(Page 1 of 1)

TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING TB-6



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 2/25/2014 | Driller | : ADT |
| Date Completed | : 2/25/2014 | Northing Coord. | : 40 58.190 |
| Hole Diameter | : 2 inches | Easting Coord. | : 73 42.579 |
| Drilling Method | : Geoprobe | Survey By | : |
| Sampling Method | : Direct push | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Asphalt. | 1 | | 0.0 | 12 | |
| | | | | Brown fine to coarse SAND, trace fine gravel. | | | | | |
| 1 | | | | Refusal at 1 feet. | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |



LOG OF BORING TB-6

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TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING TB-7



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 2/25/2014 | Driller | : ADT |
| Date Completed | : 2/25/2014 | Northing Coord. | : 40 58.188 |
| Hole Diameter | : 2 inches | Easting Coord. | : 73 42.558 |
| Drilling Method | : Geoprobe | Survey By | : |
| Sampling Method | : Direct push | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | Asphalt. | | | | | |
| 1 | | Fill | | Dark brown to brown coarse SAND, some fine gravel. | | | | | |
| 2 | | | | | 1 | | 0.0 | 36 | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | 2 | | 0.0 | 48 | |
| 8 | | | | | | | | | |
| 9 | | Native | | Dark brown to brown coarse SAND, some fine gravel, trace bedrock. | | | | | |
| 10 | | | | Refusal at 10 feet. | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |

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LOG OF BORING TB-7

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TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING HS-1



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 2/25/2014 | Driller | : ADT |
| Date Completed | : 2/25/2014 | Northing Coord. | : 40 58.183 |
| Hole Diameter | : 2 inches | Easting Coord. | : 73 42.630 |
| Drilling Method | : Manual | Survey By | : |
| Sampling Method | : Hand Auger | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Brown fine to coarse SAND, trace fine gravel. | 1 | | 0.0 | 48 | |
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | Bottom of boring at 5 feet. | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |



LOG OF BORING HS-1

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TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING HS-2



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 2/25/2014 | Driller | : ADT |
| Date Completed | : 2/25/2014 | Northing Coord. | : 40 58.188 |
| Hole Diameter | : 2 inches | Easting Coord. | : 73 42.605 |
| Drilling Method | : Manual | Survey By | : |
| Sampling Method | : Hand Auger | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0–5 | | Fill | | Brown fine to coarse SAND, trace fine gravel. | 1 | | 0.0 | 36 | |

Bottom of boring at 5 feet.

LOG OF BORING HS-2

(Page 1 of 1)

TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING HS-3



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 2/25/2014 | Driller | : ADT |
| Date Completed | : 2/25/2014 | Northing Coord. | : 40 58.195 |
| Hole Diameter | : 2 inches | Easting Coord. | : 73 42.583 |
| Drilling Method | : Manual | Survey By | : |
| Sampling Method | : Hand Auger | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Brown fine to coarse SAND, some organics, trace fine gravel. | 1 | | 0.0 | 36 | |
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | Bottom of boring at 3 feet. | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |



LOG OF BORING HS-3

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TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING ENV-2A



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 4/30/14 | Driller | : CK |
| Date Completed | : 4/30/14 | Northing Coord. | : |
| Hole Diameter | : 1 inches | Easting Coord. | : |
| Drilling Method | : Manual | Survey By | : |
| Sampling Method | : Hand Slam | Logged By | : ZWH |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | grayish/brown coarse SAND, some coarse gravel. | | | | | |
| 1 | | | | | 1 | | 0.0 | 20 | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | Bottom of boring. | | | | | |
| 5 | | | | | | | | | |



LOG OF BORING ENV-2A

**TRITON ENVIRONMENTAL, INC.**
*Environmental Consulting & Engineering*

# LOG OF BORING ENV-3A



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 4/30/14 | Driller | : CK |
| Date Completed | : 4/30/14 | Northing Coord. | : |
| Hole Diameter | : 1 inches | Easting Coord. | : |
| Drilling Method | : Manual | Survey By | : |
| Sampling Method | : Hand Slam | Logged By | : ZWH |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Dark brown gravely SAND, some coarse gravel, some red brick mixed in, may be hardened clay. | 1 | | 0.0 | 12 | |
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | Bottom of boring. | | | | | |
| 5 | | | | | | | | | |

LOG OF BORING ENV-3A

(Page 1 of 1)

**TRITON ENVIRONMENTAL, INC.**
*Environmental Consulting & Engineering*

# LOG OF BORING ENV-4A



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 4/30/14 | Driller | : CK |
| Date Completed | : 4/30/14 | Northing Coord. | : |
| Hole Diameter | : 1 inches | Easting Coord. | : |
| Drilling Method | : Manual | Survey By | : |
| Sampling Method | : Hand Slam | Logged By | : ZWH |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Light to dark brown SAND, some coarse to very coarse gravel. | 1 | | 0.0 | 12 | |
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | Bottom of boring. | | | | | |
| 5 | | | | | | | | | |

LOG OF BORING ENV-4A

(Page 1 of 1)

TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING ENV-5A



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 4/30/14 | Driller | : CK |
| Date Completed | : 4/30/14 | Northing Coord. | : |
| Hole Diameter | : 1 inches | Easting Coord. | : |
| Drilling Method | : Manual | Survey By | : |
| Sampling Method | : Hand Slam | Logged By | : ZWH |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Dark brown gravely SAND, some coarse gravel. | 1 | | 0.0 | 18 | |
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | Bottom of boring. | | | | | |
| 5 | | | | | | | | | |

LOG OF BORING ENV-5A

(Page 1 of 1)

TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING HS-3A



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 4/30/14 | Driller | : CK |
| Date Completed | : 4/30/14 | Northing Coord. | : |
| Hole Diameter | : 1 inches | Easting Coord. | : |
| Drilling Method | : Manual | Survey By | : |
| Sampling Method | : Hand Slam | Logged By | : ZWH |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Dark brown SAND, some trace organics (roots). | 1 | | 0.0 | 20 | |
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | Bottom of boring. | | | | | |
| 5 | | | | | | | | | |

LOG OF BORING HS-3A

(Page 1 of 1)

TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

# LOG OF BORING HS-3B



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 4/30/14 | Driller | : CK |
| Date Completed | : 4/30/14 | Northing Coord. | : |
| Hole Diameter | : 1 inches | Easting Coord. | : |
| Drilling Method | : Manual | Survey By | : |
| Sampling Method | : Hand Slam | Logged By | : ZWH |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Dark brown SAND, some trace organics (roots). | 1 | | 0.0 | 20 | |
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | Bottom of boring. | | | | | |
| 5 | | | | | | | | | |

LOG OF BORING HS-3B

(Page 1 of 1)

TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

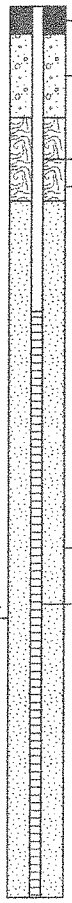
# LOG OF BORING TW-1



Metro North Station
Harrison, NY
Triton Poject # 104226

| | | | |
|---|---|---|---|
| Date Started | : 2/26/2014 | Driller | : ADT |
| Date Completed | : 2/26/2014 | Northing Coord. | : 40 58.146 |
| Hole Diameter | : 6 inches | Easting Coord. | : 73 42.749 |
| Drilling Method | : Hollow Stem Auger | Survey By | : |
| Sampling Method | : N/A | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Asphalt. | | | | | |
| 1 | | | | Brown very coarse rounded to angular GRAVEL, some sand and silt. | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | Native | | Very coarse GRAVEL, some coarse sand. | 1 | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | | | | | | | | |
| 16 | | | | Bottom of well at 16 feet. | | | | | |
| 17 | | | | | | | | | |
| 18 | | | | | | | | | |
| 19 | | | | | | | | | |
| 20 | | | | | | | | | |




LOG OF BORING TW-1

(Page 1 of 1)

TRITON ENVIRONMENTAL, INC.
*Environmental Consulting & Engineering*

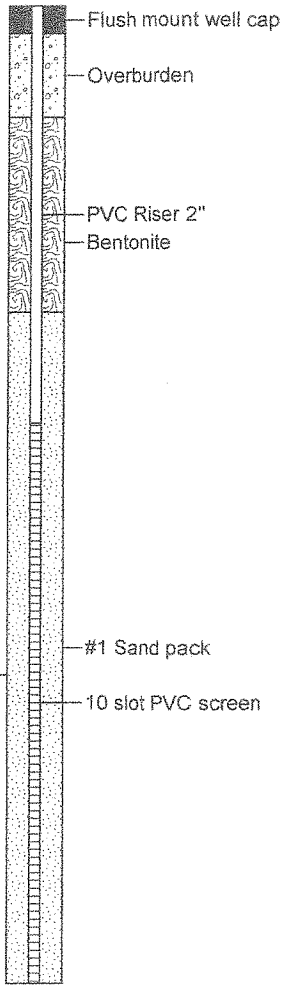
# LOG OF BORING TW-3



Metro North Station
Harrison, NY
Triton Project #104226

| | | | |
|---|---|---|---|
| Date Started | : 2/26/2014 | Driller | : ADT |
| Date Completed | : 2/26/2014 | Northing Coord. | : 40 58.189 |
| Hole Diameter | : 6 inches | Easting Coord. | : 73 42.550 |
| Drilling Method | : Hollow Stem Auger | Survey By | : |
| Sampling Method | : N/A | Logged By | : CK |

| Depth in Feet | Surf. Elev. 100 | Formation | GRAPHIC | DESCRIPTION | Samples | Blow count | PID (ppm) | Recovery (inches) | Water Level |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | Fill | | Asphalt. | | | | | |
| 1 | | | | Brown very coarse rounded to angular GRAVEL, some sand and silt. | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | 1 | | | | |
| 10 | | | | | | | | | |
| 11 | | | | | | | | | |
| 12 | | | | | | | | | ▼ |
| 13 | | | | | | | | | |
| 14 | | | | | | | | | |
| 15 | | Native | | Bedrock. | | | | | |
| 16 | | | | | | | | | |
| 17 | | | | | | | | | |
| 18 | | | | Bottom of boring at 17.5 feet. | | | | | |
| 19 | | | | | | | | | |
| 20 | | | | | | | | | |




LOG OF BORING TW-3

(Page 1 of 1)

# Appendix B

# Laboratory Analytical Reports

*CERTIFICATE OF ANALYSIS*

Mark Paulsson
Triton Environmental, Inc.
385 Church Street, Suite 201
Guilford, CT 06437

**RE: Metro North Harrison NY (104226)**
**ESS Laboratory Work Order Number: 1402374**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 5:21 pm, Mar 05, 2014**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

## SAMPLE RECEIPT

The following samples were received on February 26, 2014 for the analyses specified on the enclosed Chain of Custody Record.

Low level vials were frozen upon receipt of samples on February 26, 2014.

**Revision 1, March 5, 2014: This report has been revised to include 7 additional VOA compounds.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1402374-01 | TB-1 2-4ft | Soil | 8015C, 8015M, 8260B Low, 8270C |
| 1402374-02 | TB-2 1-3ft | Soil | 8015C, 8015M, 8260B Low, 8270C |
| 1402374-03 | TB-3 0-2ft | Soil | 8015C, 8015M, 8260B Low, 8270C |
| 1402374-04 | TB-4 2-4ft | Soil | 8015C, 8015M, 8260B Low, 8270C |
| 1402374-05 | TB-5 1-3ft | Soil | 8015C, 8015M, 8082A, 8260B Low, 8270C |
| 1402374-06 | TB-6 0-1ft | Soil | 8015C, 8015M, 8082A, 8260B Low, 8270C |
| 1402374-07 | TB-7 2-4ft | Soil | 8015C, 8015M, 8082A, 8260B Low, 8270C |
| 1402374-08 | HS-1 0-2ft | Soil | 8015M, 8082A, 8270C |
| 1402374-09 | HS-2 0-2ft | Soil | 8015M, 8082A, 8270C |
| 1402374-10 | HS-3 0-2ft | Soil | 8015M, 8082A, 8270C |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

## PROJECT NARRATIVE

**5035/8260B Volatile Organic Compounds / Low Level**
CXB0264-CCV1 **Continuing Calibration %Diff is outside of control limit.**
Bromoform (121% @ 70-130%)

**8270C Polynuclear Aromatic Hydrocarbons**
CXB0261-CCV1 **Calibration required quadratic regression (Q).**
Benzo(b)fluoranthene (106% @ 70-130%), Benzo(g,h,i)perylene (100% @ 70-130%), Dibenzo(a,h)Anthracene (104% @ 70-130%), Indeno(1,2,3-cd)Pyrene (103% @ 70-130%)

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015D - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-1 2-4ft
Date Sampled: 02/25/14 09:15
Percent Solids: 76
Initial Volume: 7.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,1,2-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,1-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,1-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,2,3-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,2,4-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,2,4-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,2-Dibromoethane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,2-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,2-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,2-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,3,5-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,3-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,4-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 1,4-Dioxane | ND (0.0881) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 2-Butanone | ND (0.0088) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 2-Hexanone | ND (0.0088) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 4-Isopropyltoluene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| 4-Methyl-2-Pentanone | ND (0.0088) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Acetone | ND (0.0088) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Benzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Bromochloromethane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Bromodichloromethane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Bromoform | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Bromomethane | ND (0.0088) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Carbon Disulfide | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Carbon Tetrachloride | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Chlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Chloroethane | ND (0.0088) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-1 2-4ft
Date Sampled: 02/25/14 09:15
Percent Solids: 76
Initial Volume: 7.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Chloroform | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Chloromethane | ND (0.0088) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| cis-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| cis-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Cyclohexane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Dichlorodifluoromethane | ND (0.0088) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Ethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Isopropylbenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Methyl acetate | ND (0.0088) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Methyl tert-Butyl Ether | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Methylcyclohexane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Methylene Chloride | ND (0.0220) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| n-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| n-Propylbenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| sec-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Styrene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| tert-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Tetrachloroethene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Toluene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| trans-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| trans-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Trichloroethene | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Trichlorofluoromethane | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Vinyl Chloride | ND (0.0088) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Xylene O | ND (0.0044) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |
| Xylene P,M | ND (0.0088) | | 8260B Low | | 1 | 02/27/14 12:46 | CXB0264 | CB42711 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *94 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *94 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *86 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: Toluene-d8* | | *98 %* | | *70-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-1 2-4ft
Date Sampled: 02/25/14 09:15
Percent Solids: 76
Initial Volume: 19.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 2/27/14 12:46

## 8015M Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND (51.1) | | 8015M | | 1 | 02/28/14 19:46 | CXB0282 | CB42607 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *90 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-1 2-4ft
Date Sampled: 02/25/14 09:15
Percent Solids: 76
Initial Volume: 22.8
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NMS
Prepared: 3/4/14 8:00

## 8015C Gasoline Range Organics / Methanol

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND (1.49) | | 8015C | | 1 | 03/04/14 17:02 | CXB0279 | CB42824 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 2,5-Dibromotoluene - FID* | *124 %* | | *70-130* |
| *Surrogate: Trifluorotoluene - FID* | *105 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-1 2-4ft
Date Sampled: 02/25/14 09:15
Percent Solids: 76
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 2/27/14 12:46

## 8270C Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Acenaphthene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Acenaphthylene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Anthracene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Benzo(a)anthracene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Benzo(a)pyrene | ND (0.228) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Benzo(b)fluoranthene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Benzo(g,h,i)perylene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Benzo(k)fluoranthene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Chrysene | ND (0.228) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Dibenzo(a,h)Anthracene | ND (0.228) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Fluoranthene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Fluorene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Indeno(1,2,3-cd)Pyrene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Naphthalene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Phenanthrene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |
| Pyrene | ND (0.455) | | 8270C | | 1 | 03/05/14 8:02 | CXC0011 | CB42620 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *78 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *92 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *89 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-2 1-3ft
Date Sampled: 02/25/14 09:30
Percent Solids: 93
Initial Volume: 7.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,1,2,2-Tetrachloroethane | ND (0.0015) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,1,2-Trichloroethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,1-Dichloroethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,1-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,2,3-Trichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,2,4-Trichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,2,4-Trimethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,2-Dibromoethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,2-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,2-Dichloroethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,2-Dichloropropane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,3,5-Trimethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,3-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,4-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 1,4-Dioxane | ND (0.0759) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 2-Butanone | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 2-Hexanone | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 4-Isopropyltoluene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| 4-Methyl-2-Pentanone | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Acetone | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Benzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Bromochloromethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Bromodichloromethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Bromoform | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Bromomethane | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Carbon Disulfide | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Carbon Tetrachloride | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Chlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Chloroethane | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-2 1-3ft
Date Sampled: 02/25/14 09:30
Percent Solids: 93
Initial Volume: 7.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Chloroform | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Chloromethane | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| cis-1,2-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| cis-1,3-Dichloropropene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Cyclohexane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Dibromochloromethane | ND (0.0015) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Dichlorodifluoromethane | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Ethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Isopropylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Methyl acetate | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Methyl tert-Butyl Ether | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Methylcyclohexane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Methylene Chloride | ND (0.0190) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| n-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| n-Propylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| sec-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Styrene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| tert-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Tetrachloroethene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Toluene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| trans-1,2-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| trans-1,3-Dichloropropene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Trichloroethene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Trichlorofluoromethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Vinyl Chloride | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Xylene O | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |
| Xylene P,M | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 13:14 | CXB0264 | CB42711 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *94 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *90 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *87 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: Toluene-d8* | | *99 %* | | *70-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-2 1-3ft
Date Sampled: 02/25/14 09:30
Percent Solids: 93
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 2/27/14 12:46

## 8015M Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics** | **407** (42.1) | | 8015M | | 1 | 02/28/14 20:25 | CXB0282 | CB42607 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *85 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-2 1-3ft
Date Sampled: 02/25/14 09:30
Percent Solids: 93
Initial Volume: 21.4
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NMS
Prepared: 3/4/14 8:00

## 8015C Gasoline Range Organics / Methanol

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND (1.04) | | 8015C | | 1 | 03/04/14 17:34 | CXB0279 | CB42824 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 2,5-Dibromotoluene - FID* | *74 %* | | *70-130* |
| *Surrogate: Trifluorotoluene - FID* | *104 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-2 1-3ft
Date Sampled: 02/25/14 09:30
Percent Solids: 93
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 2/27/14 12:46

## 8270C Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Acenaphthene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Acenaphthylene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Anthracene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Benzo(a)anthracene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Benzo(a)pyrene | ND (0.182) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Benzo(b)fluoranthene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Benzo(g,h,i)perylene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Benzo(k)fluoranthene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Chrysene | ND (0.182) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Dibenzo(a,h)Anthracene | ND (0.182) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Fluoranthene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Fluorene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Indeno(1,2,3-cd)Pyrene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Naphthalene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Phenanthrene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |
| Pyrene | ND (0.364) | | 8270C | | 1 | 03/05/14 13:06 | CXC0011 | CB42620 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *64 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *70 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *72 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *69 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-3 0-2ft
Date Sampled: 02/25/14 09:45
Percent Solids: 87
Initial Volume: 8.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,1,2,2-Tetrachloroethane | ND (0.0014) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,1,2-Trichloroethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,1-Dichloroethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,1-Dichloroethene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,2,3-Trichlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,2,4-Trichlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,2,4-Trimethylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,2-Dibromoethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,2-Dichlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,2-Dichloroethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,2-Dichloropropane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,3,5-Trimethylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,3-Dichlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,4-Dichlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 1,4-Dioxane | ND (0.0690) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 2-Butanone | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 2-Hexanone | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 4-Isopropyltoluene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| 4-Methyl-2-Pentanone | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Acetone | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Benzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Bromochloromethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Bromodichloromethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Bromoform | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Bromomethane | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Carbon Disulfide | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Carbon Tetrachloride | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Chlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Chloroethane | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-3 0-2ft
Date Sampled: 02/25/14 09:45
Percent Solids: 87
Initial Volume: 8.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Chloroform | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Chloromethane | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| cis-1,2-Dichloroethene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| cis-1,3-Dichloropropene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Cyclohexane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Dibromochloromethane | ND (0.0014) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Dichlorodifluoromethane | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Ethylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Isopropylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Methyl acetate | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Methyl tert-Butyl Ether | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Methylcyclohexane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Methylene Chloride | ND (0.0172) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| n-Butylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| n-Propylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| sec-Butylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Styrene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| tert-Butylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Tetrachloroethene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Toluene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| trans-1,2-Dichloroethene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| trans-1,3-Dichloropropene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Trichloroethene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Trichlorofluoromethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Vinyl Chloride | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Xylene O | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |
| Xylene P,M | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 13:43 | CXB0264 | CB42711 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *94 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *86 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: Toluene-d8* | | *94 %* | | *70-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-3 0-2ft
Date Sampled: 02/25/14 09:45
Percent Solids: 87
Initial Volume: 19.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 2/27/14 12:46

## 8015M Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND (44.5) | | 8015M | | 1 | 02/28/14 21:03 | CXB0282 | CB42607 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *92 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-3 0-2ft
Date Sampled: 02/25/14 09:45
Percent Solids: 87
Initial Volume: 26.7
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NMS
Prepared: 3/4/14 8:00

## 8015C Gasoline Range Organics / Methanol

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND (0.985) | | 8015C | | 1 | 03/04/14 19:10 | CXB0279 | CB42824 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 2,5-Dibromotoluene - FID* | *77 %* | | *70-130* |
| *Surrogate: Trifluorotoluene - FID* | *111 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-3 0-2ft
Date Sampled: 02/25/14 09:45
Percent Solids: 87
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 2/27/14 12:46

## 8270C Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Acenaphthene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Acenaphthylene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Anthracene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Benzo(a)anthracene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Benzo(a)pyrene | ND (0.195) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Benzo(b)fluoranthene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Benzo(g,h,i)perylene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Benzo(k)fluoranthene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Chrysene | ND (0.195) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Dibenzo(a,h)Anthracene | ND (0.195) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Fluoranthene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Fluorene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Indeno(1,2,3-cd)Pyrene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Naphthalene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Phenanthrene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |
| Pyrene | ND (0.389) | | 8270C | | 1 | 03/05/14 8:36 | CXC0011 | CB42620 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *72 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *83 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *83 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *103 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-4 2-4ft
Date Sampled: 02/25/14 10:15
Percent Solids: 83
Initial Volume: 7.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,1,2,2-Tetrachloroethane | ND (0.0015) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,1,2-Trichloroethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,1-Dichloroethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,1-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,2,3-Trichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,2,4-Trichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,2,4-Trimethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,2-Dibromoethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,2-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,2-Dichloroethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,2-Dichloropropane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,3,5-Trimethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,3-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,4-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 1,4-Dioxane | ND (0.0765) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 2-Butanone | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 2-Hexanone | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 4-Isopropyltoluene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| 4-Methyl-2-Pentanone | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Acetone | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Benzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Bromochloromethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Bromodichloromethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Bromoform | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Bromomethane | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Carbon Disulfide | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Carbon Tetrachloride | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Chlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Chloroethane | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-4 2-4ft
Date Sampled: 02/25/14 10:15
Percent Solids: 83
Initial Volume: 7.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Chloroform | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Chloromethane | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| cis-1,2-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| cis-1,3-Dichloropropene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Cyclohexane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Dibromochloromethane | ND (0.0015) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Dichlorodifluoromethane | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Ethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Isopropylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Methyl acetate | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Methyl tert-Butyl Ether | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Methylcyclohexane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Methylene Chloride | ND (0.0191) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| n-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| n-Propylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| sec-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Styrene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| tert-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Tetrachloroethene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Toluene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| trans-1,2-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| trans-1,3-Dichloropropene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Trichloroethene | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Trichlorofluoromethane | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Vinyl Chloride | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Xylene O | ND (0.0038) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |
| Xylene P,M | ND (0.0076) | | 8260B Low | | 1 | 02/27/14 14:11 | CXB0264 | CB42711 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *96 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *86 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: Toluene-d8* | | *95 %* | | *70-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-4 2-4ft
Date Sampled: 02/25/14 10:15
Percent Solids: 83
Initial Volume: 19.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 2/27/14 12:46

## 8015M Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND (46.2) | | 8015M | | 1 | 02/28/14 21:42 | CXB0282 | CB42607 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *92 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-4 2-4ft
Date Sampled: 02/25/14 10:15
Percent Solids: 83
Initial Volume: 25.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NMS
Prepared: 3/4/14 8:00

## 8015C Gasoline Range Organics / Methanol

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND (1.16) | | 8015C | | 1 | 03/04/14 19:43 | CXB0279 | CB42824 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 2,5-Dibromotoluene - FID* | *83 %* | | *70-130* |
| *Surrogate: Trifluorotoluene - FID* | *109 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-4 2-4ft
Date Sampled: 02/25/14 10:15
Percent Solids: 83
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 2/27/14 12:46

## 8270C Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Acenaphthene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Acenaphthylene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Anthracene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Benzo(a)anthracene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Benzo(a)pyrene | ND (0.203) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Benzo(b)fluoranthene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Benzo(g,h,i)perylene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Benzo(k)fluoranthene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Chrysene | ND (0.203) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Dibenzo(a,h)Anthracene | ND (0.203) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Fluoranthene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Fluorene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Indeno(1,2,3-cd)Pyrene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Naphthalene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Phenanthrene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |
| Pyrene | ND (0.405) | | 8270C | | 1 | 03/05/14 9:10 | CXC0011 | CB42620 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *84 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *89 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *97 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *101 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-5 1-3ft
Date Sampled: 02/25/14 10:30
Percent Solids: 86
Initial Volume: 8.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,1,2,2-Tetrachloroethane | ND (0.0014) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,1,2-Trichloroethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,1-Dichloroethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,1-Dichloroethene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,2,3-Trichlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,2,4-Trichlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,2,4-Trimethylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,2-Dibromoethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,2-Dichlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,2-Dichloroethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,2-Dichloropropane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,3,5-Trimethylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,3-Dichlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,4-Dichlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 1,4-Dioxane | ND (0.0687) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| **2-Butanone** | **0.0088** (0.0069) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 2-Hexanone | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 4-Isopropyltoluene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| 4-Methyl-2-Pentanone | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| **Acetone** | **0.0128** (0.0069) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Benzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Bromochloromethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Bromodichloromethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Bromoform | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Bromomethane | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Carbon Disulfide | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Carbon Tetrachloride | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Chlorobenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Chloroethane | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-5 1-3ft
Date Sampled: 02/25/14 10:30
Percent Solids: 86
Initial Volume: 8.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Chloroform | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Chloromethane | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| cis-1,2-Dichloroethene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| cis-1,3-Dichloropropene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Cyclohexane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Dibromochloromethane | ND (0.0014) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Dichlorodifluoromethane | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Ethylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Isopropylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Methyl acetate | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Methyl tert-Butyl Ether | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Methylcyclohexane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Methylene Chloride | ND (0.0172) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| n-Butylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| n-Propylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| sec-Butylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Styrene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| tert-Butylbenzene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Tetrachloroethene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Toluene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| trans-1,2-Dichloroethene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| trans-1,3-Dichloropropene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Trichloroethene | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Trichlorofluoromethane | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Vinyl Chloride | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Xylene O | ND (0.0034) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |
| Xylene P,M | ND (0.0069) | | 8260B Low | | 1 | 02/27/14 14:39 | CXB0264 | CB42711 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *94 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *91 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *86 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: Toluene-d8* | | *98 %* | | *70-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-5 1-3ft
Date Sampled: 02/25/14 10:30
Percent Solids: 86
Initial Volume: 19.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 2/27/14 12:46

## 8015M Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND (44.7) | | 8015M | | 1 | 02/28/14 22:20 | CXB0282 | CB42607 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *89 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-5 1-3ft
Date Sampled: 02/25/14 10:30
Percent Solids: 86
Initial Volume: 25.3
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NMS
Prepared: 3/4/14 8:00

## 8015C Gasoline Range Organics / Methanol

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND (1.07) | | 8015C | | 1 | 03/04/14 20:15 | CXB0279 | CB42824 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 2,5-Dibromotoluene - FID* | *89 %* | | *70-130* |
| *Surrogate: Trifluorotoluene - FID* | *108 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-5 1-3ft
Date Sampled: 02/25/14 10:30
Percent Solids: 86
Initial Volume: 25.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TAJ
Prepared: 2/27/14 15:32
Cleanup Method: 3665A

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.0463) | | 8082A | | 1 | 03/03/14 15:31 | | CB42609 |
| Aroclor 1221 | ND (0.0463) | | 8082A | | 1 | 03/03/14 15:31 | | CB42609 |
| Aroclor 1232 | ND (0.0463) | | 8082A | | 1 | 03/03/14 15:31 | | CB42609 |
| Aroclor 1242 | ND (0.0463) | | 8082A | | 1 | 03/03/14 15:31 | | CB42609 |
| Aroclor 1248 | ND (0.0463) | | 8082A | | 1 | 03/03/14 15:31 | | CB42609 |
| Aroclor 1254 | ND (0.0463) | | 8082A | | 1 | 03/03/14 15:31 | | CB42609 |
| Aroclor 1260 | ND (0.0463) | | 8082A | | 1 | 03/03/14 15:31 | | CB42609 |
| Aroclor 1262 | ND (0.0463) | | 8082A | | 1 | 03/03/14 15:31 | | CB42609 |
| Aroclor 1268 | ND (0.0463) | | 8082A | | 1 | 03/03/14 15:31 | | CB42609 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *72 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *75 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *96 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-5 1-3ft
Date Sampled: 02/25/14 10:30
Percent Solids: 86
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 2/27/14 12:46

## 8270C Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Acenaphthene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Acenaphthylene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Anthracene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Benzo(a)anthracene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Benzo(a)pyrene | ND (0.204) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Benzo(b)fluoranthene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Benzo(g,h,i)perylene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Benzo(k)fluoranthene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Chrysene | ND (0.204) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Dibenzo(a,h)Anthracene | ND (0.204) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Fluoranthene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Fluorene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Indeno(1,2,3-cd)Pyrene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Naphthalene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Phenanthrene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |
| Pyrene | ND (0.408) | | 8270C | | 1 | 03/05/14 9:44 | CXC0011 | CB42620 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *82 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *87 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *93 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *92 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-6 0-1ft
Date Sampled: 02/25/14 11:00
Percent Solids: 88
Initial Volume: 8.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,1,2,2-Tetrachloroethane | ND (0.0013) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,1,2-Trichloroethane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,1-Dichloroethane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,1-Dichloroethene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,2,3-Trichlorobenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,2,4-Trichlorobenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,2,4-Trimethylbenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,2-Dibromoethane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,2-Dichlorobenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,2-Dichloroethane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,2-Dichloropropane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,3,5-Trimethylbenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,3-Dichlorobenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,4-Dichlorobenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 1,4-Dioxane | ND (0.0668) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 2-Butanone | ND (0.0067) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 2-Hexanone | ND (0.0067) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 4-Isopropyltoluene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| 4-Methyl-2-Pentanone | ND (0.0067) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Acetone | ND (0.0067) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Benzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Bromochloromethane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Bromodichloromethane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Bromoform | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Bromomethane | ND (0.0067) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Carbon Disulfide | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Carbon Tetrachloride | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Chlorobenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Chloroethane | ND (0.0067) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-6 0-1ft
Date Sampled: 02/25/14 11:00
Percent Solids: 88
Initial Volume: 8.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Chloroform | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Chloromethane | ND (0.0067) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| cis-1,2-Dichloroethene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| cis-1,3-Dichloropropene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Cyclohexane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Dibromochloromethane | ND (0.0013) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Dichlorodifluoromethane | ND (0.0067) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Ethylbenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Isopropylbenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Methyl acetate | ND (0.0067) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Methyl tert-Butyl Ether | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Methylcyclohexane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Methylene Chloride | ND (0.0167) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| n-Butylbenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| n-Propylbenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| sec-Butylbenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Styrene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| tert-Butylbenzene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Tetrachloroethene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Toluene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| trans-1,2-Dichloroethene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| trans-1,3-Dichloropropene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Trichloroethene | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Trichlorofluoromethane | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Vinyl Chloride | ND (0.0067) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Xylene O | ND (0.0033) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |
| Xylene P,M | ND (0.0067) | | 8260B Low | | 1 | 02/27/14 15:08 | CXB0264 | CB42711 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *98 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *86 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: Toluene-d8* | | *94 %* | | *70-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-6 0-1ft
Date Sampled: 02/25/14 11:00
Percent Solids: 88
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 2/27/14 12:46

## 8015M Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND (43.7) | | 8015M | | 1 | 02/28/14 22:59 | CXB0282 | CB42607 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *90 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-6 0-1ft
Date Sampled: 02/25/14 11:00
Percent Solids: 88
Initial Volume: 24.8
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NMS
Prepared: 3/4/14 8:00

## 8015C Gasoline Range Organics / Methanol

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND (1.03) | | 8015C | | 1 | 03/04/14 20:47 | CXB0279 | CB42824 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 2,5-Dibromotoluene - FID* | *88 %* | | *70-130* |
| *Surrogate: Trifluorotoluene - FID* | *121 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-6 0-1ft
Date Sampled: 02/25/14 11:00
Percent Solids: 88
Initial Volume: 25.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TAJ
Prepared: 2/27/14 15:32
Cleanup Method: 3665A

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.0451) | | 8082A | | 1 | 03/03/14 15:50 | | CB42609 |
| Aroclor 1221 | ND (0.0451) | | 8082A | | 1 | 03/03/14 15:50 | | CB42609 |
| Aroclor 1232 | ND (0.0451) | | 8082A | | 1 | 03/03/14 15:50 | | CB42609 |
| Aroclor 1242 | ND (0.0451) | | 8082A | | 1 | 03/03/14 15:50 | | CB42609 |
| Aroclor 1248 | ND (0.0451) | | 8082A | | 1 | 03/03/14 15:50 | | CB42609 |
| Aroclor 1254 | ND (0.0451) | | 8082A | | 1 | 03/03/14 15:50 | | CB42609 |
| Aroclor 1260 | ND (0.0451) | | 8082A | | 1 | 03/03/14 15:50 | | CB42609 |
| Aroclor 1262 | ND (0.0451) | | 8082A | | 1 | 03/03/14 15:50 | | CB42609 |
| Aroclor 1268 | ND (0.0451) | | 8082A | | 1 | 03/03/14 15:50 | | CB42609 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *76 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *101 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-6 0-1ft
Date Sampled: 02/25/14 11:00
Percent Solids: 88
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 2/27/14 12:46

## 8270C Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Acenaphthene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Acenaphthylene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Anthracene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Benzo(a)anthracene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Benzo(a)pyrene | ND (0.186) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Benzo(b)fluoranthene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Benzo(g,h,i)perylene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Benzo(k)fluoranthene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Chrysene | ND (0.186) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Dibenzo(a,h)Anthracene | ND (0.186) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Fluoranthene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Fluorene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Indeno(1,2,3-cd)Pyrene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Naphthalene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Phenanthrene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |
| Pyrene | ND (0.371) | | 8270C | | 1 | 03/05/14 10:18 | CXC0011 | CB42620 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *84 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *89 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *92 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *90 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-7 2-4ft
Date Sampled: 02/25/14 11:30
Percent Solids: 83
Initial Volume: 9.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,1,2,2-Tetrachloroethane | ND (0.0013) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,1,2-Trichloroethane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,1-Dichloroethane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,1-Dichloroethene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,2,3-Trichlorobenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,2,4-Trichlorobenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,2,4-Trimethylbenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,2-Dibromoethane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,2-Dichlorobenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,2-Dichloroethane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,2-Dichloropropane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,3,5-Trimethylbenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,3-Dichlorobenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,4-Dichlorobenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 1,4-Dioxane | ND (0.0644) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| **2-Butanone** | **0.0066** (0.0064) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 2-Hexanone | ND (0.0064) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 4-Isopropyltoluene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| 4-Methyl-2-Pentanone | ND (0.0064) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Acetone | ND (0.0064) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Benzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Bromochloromethane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Bromodichloromethane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Bromoform | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Bromomethane | ND (0.0064) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Carbon Disulfide | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Carbon Tetrachloride | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Chlorobenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Chloroethane | ND (0.0064) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-7 2-4ft
Date Sampled: 02/25/14 11:30
Percent Solids: 83
Initial Volume: 9.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Chloroform | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Chloromethane | ND (0.0064) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| cis-1,2-Dichloroethene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| cis-1,3-Dichloropropene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Cyclohexane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Dibromochloromethane | ND (0.0013) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Dichlorodifluoromethane | ND (0.0064) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Ethylbenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Isopropylbenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Methyl acetate | ND (0.0064) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Methyl tert-Butyl Ether | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Methylcyclohexane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Methylene Chloride | ND (0.0161) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| n-Butylbenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| n-Propylbenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| sec-Butylbenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Styrene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| tert-Butylbenzene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Tetrachloroethene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Toluene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| trans-1,2-Dichloroethene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| trans-1,3-Dichloropropene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Trichloroethene | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Trichlorofluoromethane | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Vinyl Chloride | ND (0.0064) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Xylene O | ND (0.0032) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |
| Xylene P,M | ND (0.0064) | | 8260B Low | | 1 | 02/27/14 15:36 | CXB0264 | CB42711 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *75 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *92 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *79 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: Toluene-d8* | | *97 %* | | *70-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-7 2-4ft
Date Sampled: 02/25/14 11:30
Percent Solids: 83
Initial Volume: 19.8
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 2/27/14 12:46

## 8015M Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND (45.4) | | 8015M | | 1 | 02/28/14 23:37 | CXB0282 | CB42607 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *93 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-7 2-4ft
Date Sampled: 02/25/14 11:30
Percent Solids: 83
Initial Volume: 24.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NMS
Prepared: 3/4/14 8:00

## 8015C Gasoline Range Organics / Methanol

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND (1.15) | | 8015C | | 1 | 03/04/14 21:19 | CXB0279 | CB42824 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 2,5-Dibromotoluene - FID* | *86 %* | | *70-130* |
| *Surrogate: Trifluorotoluene - FID* | *117 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-7 2-4ft
Date Sampled: 02/25/14 11:30
Percent Solids: 83
Initial Volume: 25.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TAJ
Prepared: 2/27/14 15:32
Cleanup Method: 3665A

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.0478) | | 8082A | | 1 | 02/28/14 18:59 | | CB42609 |
| Aroclor 1221 | ND (0.0478) | | 8082A | | 1 | 02/28/14 18:59 | | CB42609 |
| Aroclor 1232 | ND (0.0478) | | 8082A | | 1 | 02/28/14 18:59 | | CB42609 |
| Aroclor 1242 | ND (0.0478) | | 8082A | | 1 | 02/28/14 18:59 | | CB42609 |
| Aroclor 1248 | ND (0.0478) | | 8082A | | 1 | 02/28/14 18:59 | | CB42609 |
| Aroclor 1254 | ND (0.0478) | | 8082A | | 1 | 02/28/14 18:59 | | CB42609 |
| Aroclor 1260 | ND (0.0478) | | 8082A | | 1 | 02/28/14 18:59 | | CB42609 |
| Aroclor 1262 | ND (0.0478) | | 8082A | | 1 | 02/28/14 18:59 | | CB42609 |
| Aroclor 1268 | ND (0.0478) | | 8082A | | 1 | 02/28/14 18:59 | | CB42609 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *73 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *82 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *66 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *94 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TB-7 2-4ft
Date Sampled: 02/25/14 11:30
Percent Solids: 83
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 2/27/14 12:46

## 8270C Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Acenaphthene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Acenaphthylene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Anthracene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Benzo(a)anthracene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Benzo(a)pyrene | ND (0.200) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Benzo(b)fluoranthene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Benzo(g,h,i)perylene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Benzo(k)fluoranthene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Chrysene | ND (0.200) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Dibenzo(a,h)Anthracene | ND (0.200) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Fluoranthene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Fluorene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Indeno(1,2,3-cd)Pyrene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Naphthalene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Phenanthrene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |
| Pyrene | ND (0.399) | | 8270C | | 1 | 03/05/14 10:52 | CXC0011 | CB42620 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *80 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *89 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *90 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *91 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-1 0-2ft
Date Sampled: 02/25/14 12:00
Percent Solids: 80
Initial Volume: 19.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 2/27/14 12:46

## 8015M Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND (48.2) | | 8015M | | 1 | 03/01/14 0:16 | CXB0282 | CB42607 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *90 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-1 0-2ft
Date Sampled: 02/25/14 12:00
Percent Solids: 80
Initial Volume: 25.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TAJ
Prepared: 2/27/14 15:32
Cleanup Method: 3665A

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.0485) | | 8082A | | 1 | 02/28/14 19:18 | | CB42609 |
| Aroclor 1221 | ND (0.0485) | | 8082A | | 1 | 02/28/14 19:18 | | CB42609 |
| Aroclor 1232 | ND (0.0485) | | 8082A | | 1 | 02/28/14 19:18 | | CB42609 |
| Aroclor 1242 | ND (0.0485) | | 8082A | | 1 | 02/28/14 19:18 | | CB42609 |
| Aroclor 1248 | ND (0.0485) | | 8082A | | 1 | 02/28/14 19:18 | | CB42609 |
| Aroclor 1254 | ND (0.0485) | | 8082A | | 1 | 02/28/14 19:18 | | CB42609 |
| Aroclor 1260 | ND (0.0485) | | 8082A | | 1 | 02/28/14 19:18 | | CB42609 |
| Aroclor 1262 | ND (0.0485) | | 8082A | | 1 | 02/28/14 19:18 | | CB42609 |
| Aroclor 1268 | ND (0.0485) | | 8082A | | 1 | 02/28/14 19:18 | | CB42609 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *78 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *86 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *79 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *97 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-1 0-2ft
Date Sampled: 02/25/14 12:00
Percent Solids: 80
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 2/27/14 12:46

## 8270C Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Acenaphthene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Acenaphthylene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Anthracene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Benzo(a)anthracene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| **Benzo(a)pyrene** | **0.235** (0.215) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Benzo(b)fluoranthene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Benzo(g,h,i)perylene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Benzo(k)fluoranthene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| **Chrysene** | **0.273** (0.215) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Dibenzo(a,h)Anthracene | ND (0.215) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| **Fluoranthene** | **0.546** (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Fluorene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Indeno(1,2,3-cd)Pyrene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Naphthalene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| Phenanthrene | ND (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |
| **Pyrene** | **0.525** (0.429) | | 8270C | | 1 | 03/05/14 11:25 | CXC0011 | CB42620 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *84 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *89 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *94 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *91 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-2 0-2ft
Date Sampled: 02/25/14 11:45
Percent Solids: 84
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 2/27/14 12:46

## 8015M Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND (45.5) | | 8015M | | 1 | 03/01/14 0:55 | CXB0282 | CB42607 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *94 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-2 0-2ft
Date Sampled: 02/25/14 11:45
Percent Solids: 84
Initial Volume: 25.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TAJ
Prepared: 2/27/14 15:32
Cleanup Method: 3665A

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.0470) | | 8082A | | 1 | 02/28/14 19:37 | | CB42609 |
| Aroclor 1221 | ND (0.0470) | | 8082A | | 1 | 02/28/14 19:37 | | CB42609 |
| Aroclor 1232 | ND (0.0470) | | 8082A | | 1 | 02/28/14 19:37 | | CB42609 |
| Aroclor 1242 | ND (0.0470) | | 8082A | | 1 | 02/28/14 19:37 | | CB42609 |
| Aroclor 1248 | ND (0.0470) | | 8082A | | 1 | 02/28/14 19:37 | | CB42609 |
| Aroclor 1254 | ND (0.0470) | | 8082A | | 1 | 02/28/14 19:37 | | CB42609 |
| Aroclor 1260 | ND (0.0470) | | 8082A | | 1 | 02/28/14 19:37 | | CB42609 |
| Aroclor 1262 | ND (0.0470) | | 8082A | | 1 | 02/28/14 19:37 | | CB42609 |
| Aroclor 1268 | ND (0.0470) | | 8082A | | 1 | 02/28/14 19:37 | | CB42609 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *80 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *85 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *79 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *97 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-2 0-2ft
Date Sampled: 02/25/14 11:45
Percent Solids: 84
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 2/27/14 12:46

## 8270C Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Acenaphthene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Acenaphthylene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Anthracene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Benzo(a)anthracene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Benzo(a)pyrene | ND (0.203) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Benzo(b)fluoranthene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Benzo(g,h,i)perylene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Benzo(k)fluoranthene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Chrysene | ND (0.203) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Dibenzo(a,h)Anthracene | ND (0.203) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Fluoranthene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Fluorene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Indeno(1,2,3-cd)Pyrene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Naphthalene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Phenanthrene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |
| Pyrene | ND (0.405) | | 8270C | | 1 | 03/05/14 11:59 | CXC0011 | CB42620 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *81 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *87 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *93 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *100 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-3 0-2ft
Date Sampled: 02/25/14 12:30
Percent Solids: 75
Initial Volume: 19.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 2/27/14 12:46

## 8015M Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND (51.1) | | 8015M | | 1 | 03/01/14 1:34 | CXB0282 | CB42607 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *91 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-3 0-2ft
Date Sampled: 02/25/14 12:30
Percent Solids: 75
Initial Volume: 25.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TAJ
Prepared: 2/27/14 15:32
Cleanup Method: 3665A

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.0524) | | 8082A | | 1 | 02/28/14 19:55 | | CB42609 |
| Aroclor 1221 | ND (0.0524) | | 8082A | | 1 | 02/28/14 19:55 | | CB42609 |
| Aroclor 1232 | ND (0.0524) | | 8082A | | 1 | 02/28/14 19:55 | | CB42609 |
| Aroclor 1242 | ND (0.0524) | | 8082A | | 1 | 02/28/14 19:55 | | CB42609 |
| Aroclor 1248 | ND (0.0524) | | 8082A | | 1 | 02/28/14 19:55 | | CB42609 |
| Aroclor 1254 | ND (0.0524) | | 8082A | | 1 | 02/28/14 19:55 | | CB42609 |
| **Aroclor 1260** | **0.0754** (0.0524) | | 8082A | | 1 | 02/28/14 19:55 | | CB42609 |
| Aroclor 1262 | ND (0.0524) | | 8082A | | 1 | 02/28/14 19:55 | | CB42609 |
| Aroclor 1268 | ND (0.0524) | | 8082A | | 1 | 02/28/14 19:55 | | CB42609 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *82 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *90 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *96 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-3 0-2ft
Date Sampled: 02/25/14 12:30
Percent Solids: 75
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1402374
ESS Laboratory Sample ID: 1402374-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 2/27/14 12:46

## 8270C Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Acenaphthene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Acenaphthylene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Anthracene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Benzo(a)anthracene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Benzo(a)pyrene | ND (0.222) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Benzo(b)fluoranthene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Benzo(g,h,i)perylene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Benzo(k)fluoranthene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| **Chrysene** | **0.230** (0.222) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Dibenzo(a,h)Anthracene | ND (0.222) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Fluoranthene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Fluorene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Indeno(1,2,3-cd)Pyrene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Naphthalene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Phenanthrene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |
| Pyrene | ND (0.442) | | 8270C | | 1 | 03/05/14 12:33 | CXC0011 | CB42620 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *85 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *90 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *97 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *92 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CB42711 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Cyclohexane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl acetate | ND | 0.0100 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylcyclohexane | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CB42711 - 5035** | | | | | | | | | | |
| Methylene Chloride | ND | 0.0250 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0434* | | mg/kg wet | *0.05000* | | *87* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0481* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0417* | | mg/kg wet | *0.05000* | | *83* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0484* | | mg/kg wet | *0.05000* | | *97* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0475 | 0.0020 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.0410 | 0.0050 | mg/kg wet | 0.05000 | | 82 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0535 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0484 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0555 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| 1,4-Dioxane | 0.915 | 0.100 | mg/kg wet | 1.000 | | 92 | 70-130 | | | |
| 2-Butanone | 0.232 | 0.0100 | mg/kg wet | 0.2500 | | 93 | 70-130 | | | |
| 2-Hexanone | 0.242 | 0.0100 | mg/kg wet | 0.2500 | | 97 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.236 | 0.0100 | mg/kg wet | 0.2500 | | 94 | 70-130 | | | |
| Acetone | 0.216 | 0.0100 | mg/kg wet | 0.2500 | | 86 | 70-130 | | | |
| Benzene | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Bromochloromethane | 0.0483 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CB42711 - 5035** | | | | | | | | | | |
| Bromodichloromethane | 0.0463 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| Bromoform | 0.0622 | 0.0050 | mg/kg wet | 0.05000 | | 124 | 70-130 | | | |
| Bromomethane | 0.0431 | 0.0100 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| Carbon Disulfide | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Carbon Tetrachloride | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| Chlorobenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Chloroethane | 0.0439 | 0.0100 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Chloroform | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Chloromethane | 0.0452 | 0.0100 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Cyclohexane | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Dibromochloromethane | 0.0574 | 0.0020 | mg/kg wet | 0.05000 | | 115 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0382 | 0.0100 | mg/kg wet | 0.05000 | | 76 | 70-130 | | | |
| Ethylbenzene | 0.0535 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Isopropylbenzene | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Methyl acetate | 0.0446 | 0.0100 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Methylcyclohexane | 0.0485 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Methylene Chloride | 0.0465 | 0.0250 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| n-Butylbenzene | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| n-Propylbenzene | 0.0529 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| sec-Butylbenzene | 0.0535 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Styrene | 0.0547 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| tert-Butylbenzene | 0.0543 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| Tetrachloroethene | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Toluene | 0.0507 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0485 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Trichloroethene | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| Trichlorofluoromethane | 0.0403 | 0.0050 | mg/kg wet | 0.05000 | | 81 | 70-130 | | | |
| Vinyl Chloride | 0.0516 | 0.0100 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Xylene O | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Xylene P,M | 0.107 | 0.0100 | mg/kg wet | 0.1000 | | 107 | 70-130 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0392* | | mg/kg wet | *0.05000* | | *78* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0432* | | mg/kg wet | *0.05000* | | *86* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0390* | | mg/kg wet | *0.05000* | | *78* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0432* | | mg/kg wet | *0.05000* | | *86* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 2 | 25 | |
| 1,1,2,2-Tetrachloroethane | 0.0479 | 0.0020 | mg/kg wet | 0.05000 | | 96 | 70-130 | 0.8 | 25 | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 0.0399 | 0.0050 | mg/kg wet | 0.05000 | | 80 | 70-130 | 3 | 25 | |
| 1,1,2-Trichloroethane | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 0.3 | 25 | |
| 1,1-Dichloroethane | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 1 | 25 | |
| 1,1-Dichloroethene | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 2 | 25 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CB42711 - 5035** | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 2 | 25 | |
| 1,2,4-Trichlorobenzene | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 2 | 25 | |
| 1,2,4-Trimethylbenzene | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 3 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 4 | 25 | |
| 1,2-Dibromoethane | 0.0507 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 1 | 25 | |
| 1,2-Dichlorobenzene | 0.0504 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 3 | 25 | |
| 1,2-Dichloroethane | 0.0433 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | 1 | 25 | |
| 1,2-Dichloropropane | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 1 | 25 | |
| 1,3,5-Trimethylbenzene | 0.0535 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 4 | 20 | |
| 1,3-Dichlorobenzene | 0.0501 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 3 | 25 | |
| 1,4-Dichlorobenzene | 0.0482 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 2 | 25 | |
| 1,4-Dioxane | 0.934 | 0.100 | mg/kg wet | 1.000 | | 93 | 70-130 | 2 | 20 | |
| 2-Butanone | 0.219 | 0.0100 | mg/kg wet | 0.2500 | | 87 | 70-130 | 6 | 25 | |
| 2-Hexanone | 0.247 | 0.0100 | mg/kg wet | 0.2500 | | 99 | 70-130 | 2 | 25 | |
| 4-Isopropyltoluene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 3 | 20 | |
| 4-Methyl-2-Pentanone | 0.241 | 0.0100 | mg/kg wet | 0.2500 | | 96 | 70-130 | 2 | 25 | |
| Acetone | 0.210 | 0.0100 | mg/kg wet | 0.2500 | | 84 | 70-130 | 3 | 25 | |
| Benzene | 0.0489 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 2 | 25 | |
| Bromochloromethane | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 2 | 25 | |
| Bromodichloromethane | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 25 | |
| Bromoform | 0.0604 | 0.0050 | mg/kg wet | 0.05000 | | 121 | 70-130 | 3 | 25 | |
| Bromomethane | 0.0482 | 0.0100 | mg/kg wet | 0.05000 | | 96 | 70-130 | 11 | 25 | |
| Carbon Disulfide | 0.0488 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 2 | 25 | |
| Carbon Tetrachloride | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 2 | 25 | |
| Chlorobenzene | 0.0506 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 2 | 25 | |
| Chloroethane | 0.0431 | 0.0100 | mg/kg wet | 0.05000 | | 86 | 70-130 | 2 | 25 | |
| Chloroform | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 2 | 25 | |
| Chloromethane | 0.0432 | 0.0100 | mg/kg wet | 0.05000 | | 86 | 70-130 | 4 | 25 | |
| cis-1,2-Dichloroethene | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 0.7 | 25 | |
| cis-1,3-Dichloropropene | 0.0535 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 1 | 25 | |
| Cyclohexane | 0.0463 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 2 | 25 | |
| Dibromochloromethane | 0.0569 | 0.0020 | mg/kg wet | 0.05000 | | 114 | 70-130 | 0.9 | 25 | |
| Dichlorodifluoromethane | 0.0363 | 0.0100 | mg/kg wet | 0.05000 | | 73 | 70-130 | 5 | 25 | |
| Ethylbenzene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 25 | |
| Isopropylbenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 3 | 25 | |
| Methyl acetate | 0.0456 | 0.0100 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 25 | |
| Methyl tert-Butyl Ether | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 0.1 | 25 | |
| Methylcyclohexane | 0.0474 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 2 | 25 | |
| Methylene Chloride | 0.0456 | 0.0250 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 25 | |
| n-Butylbenzene | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| n-Propylbenzene | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 3 | 20 | |
| sec-Butylbenzene | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 3 | 20 | |
| Styrene | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 3 | 25 | |
| tert-Butylbenzene | 0.0527 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 3 | 20 | |
| Tetrachloroethene | 0.0441 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 4 | 25 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CB42711 - 5035** | | | | | | | | | | |
| Toluene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 2 | 25 | |
| trans-1,2-Dichloroethene | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 1 | 25 | |
| trans-1,3-Dichloropropene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 1 | 25 | |
| Trichloroethene | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 0.7 | 25 | |
| Trichlorofluoromethane | 0.0396 | 0.0050 | mg/kg wet | 0.05000 | | 79 | 70-130 | 2 | 25 | |
| Vinyl Chloride | 0.0491 | 0.0100 | mg/kg wet | 0.05000 | | 98 | 70-130 | 5 | 25 | |
| Xylene O | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 3 | 25 | |
| Xylene P,M | 0.104 | 0.0100 | mg/kg wet | 0.1000 | | 104 | 70-130 | 3 | 25 | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0403* | | mg/kg wet | *0.05000* | | *81* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0433* | | mg/kg wet | *0.05000* | | *87* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0395* | | mg/kg wet | *0.05000* | | *79* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0429* | | mg/kg wet | *0.05000* | | *86* | *70-130* | | | |
| **8015M Diesel Range Organics** | | | | | | | | | | |
| **Batch CB42607 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Decane (C10) | ND | 0.2 | mg/kg wet | | | | | | | |
| Diesel Range Organics | ND | 37.5 | mg/kg wet | | | | | | | |
| Docosane (C22) | ND | 0.2 | mg/kg wet | | | | | | | |
| Dodecane (C12) | ND | 0.2 | mg/kg wet | | | | | | | |
| Eicosane (C20) | ND | 0.2 | mg/kg wet | | | | | | | |
| Hexacosane (C26) | ND | 0.2 | mg/kg wet | | | | | | | |
| Hexadecane (C16) | ND | 0.2 | mg/kg wet | | | | | | | |
| Nonadecane (C19) | ND | 0.2 | mg/kg wet | | | | | | | |
| Octacosane (C28) | ND | 0.2 | mg/kg wet | | | | | | | |
| Octadecane (C18) | ND | 0.2 | mg/kg wet | | | | | | | |
| Tetracosane (C24) | ND | 0.2 | mg/kg wet | | | | | | | |
| Tetradecane (C14) | ND | 0.2 | mg/kg wet | | | | | | | |
| *Surrogate: O-Terphenyl* | *4.53* | | mg/kg wet | *5.000* | | *91* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| Decane (C10) | 2.1 | 0.2 | mg/kg wet | 2.500 | | 85 | 40-140 | | | |
| Diesel Range Organics | 29.0 | 37.5 | mg/kg wet | 27.50 | | 106 | 40-140 | | | |
| Docosane (C22) | 2.4 | 0.2 | mg/kg wet | 2.500 | | 96 | 40-140 | | | |
| Dodecane (C12) | 2.3 | 0.2 | mg/kg wet | 2.500 | | 92 | 40-140 | | | |
| Eicosane (C20) | 2.4 | 0.2 | mg/kg wet | 2.500 | | 95 | 40-140 | | | |
| Hexacosane (C26) | 2.4 | 0.2 | mg/kg wet | 2.500 | | 95 | 40-140 | | | |
| Hexadecane (C16) | 2.3 | 0.2 | mg/kg wet | 2.500 | | 92 | 40-140 | | | |
| Nonadecane (C19) | 2.4 | 0.2 | mg/kg wet | 2.500 | | 96 | 40-140 | | | |
| Octacosane (C28) | 2.4 | 0.2 | mg/kg wet | 2.500 | | 95 | 40-140 | | | |
| Octadecane (C18) | 2.3 | 0.2 | mg/kg wet | 2.500 | | 94 | 40-140 | | | |
| Tetracosane (C24) | 2.4 | 0.2 | mg/kg wet | 2.500 | | 97 | 40-140 | | | |
| Tetradecane (C14) | 2.3 | 0.2 | mg/kg wet | 2.500 | | 92 | 40-140 | | | |
| *Surrogate: O-Terphenyl* | *4.55* | | mg/kg wet | *5.000* | | *91* | *40-140* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8015M Diesel Range Organics** | | | | | | | | | | |
| **Batch CB42607 - 3546** | | | | | | | | | | |
| **LCS Dup** | | | | | | | | | | |
| Decane (C10) | 2.2 | 0.2 | mg/kg wet | 2.500 | | 89 | 40-140 | 5 | 50 | |
| Diesel Range Organics | 30.5 | 37.5 | mg/kg wet | 27.50 | | 111 | 40-140 | 5 | 50 | |
| Docosane (C22) | 2.5 | 0.2 | mg/kg wet | 2.500 | | 100 | 40-140 | 4 | 50 | |
| Dodecane (C12) | 2.4 | 0.2 | mg/kg wet | 2.500 | | 96 | 40-140 | 4 | 50 | |
| Eicosane (C20) | 2.5 | 0.2 | mg/kg wet | 2.500 | | 100 | 40-140 | 5 | 50 | |
| Hexacosane (C26) | 2.5 | 0.2 | mg/kg wet | 2.500 | | 99 | 40-140 | 4 | 50 | |
| Hexadecane (C16) | 2.4 | 0.2 | mg/kg wet | 2.500 | | 96 | 40-140 | 5 | 50 | |
| Nonadecane (C19) | 2.5 | 0.2 | mg/kg wet | 2.500 | | 100 | 40-140 | 4 | 50 | |
| Octacosane (C28) | 2.5 | 0.2 | mg/kg wet | 2.500 | | 100 | 40-140 | 4 | 50 | |
| Octadecane (C18) | 2.5 | 0.2 | mg/kg wet | 2.500 | | 98 | 40-140 | 5 | 50 | |
| Tetracosane (C24) | 2.5 | 0.2 | mg/kg wet | 2.500 | | 101 | 40-140 | 4 | 50 | |
| Tetradecane (C14) | 2.4 | 0.2 | mg/kg wet | 2.500 | | 96 | 40-140 | 5 | 50 | |
| *Surrogate: O-Terphenyl* | *4.65* | | mg/kg wet | *5.000* | | *93* | *40-140* | | | |
| **8015C Gasoline Range Organics / Methanol** | | | | | | | | | | |
| **Batch CB42824 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Gasoline Range Organics | ND | 1.25 | mg/kg wet | | | | | | | |
| *Surrogate: 2,5-Dibromotoluene - FID* | *1.19* | | mg/kg wet | *1.250* | | *95* | *70-130* | | | |
| *Surrogate: Trifluorotoluene - FID* | *1.18* | | mg/kg wet | *1.333* | | *89* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| Gasoline Range Organics | 11.2 | 1.25 | mg/kg wet | 12.50 | | 89 | 60-140 | | | |
| *Surrogate: 2,5-Dibromotoluene - FID* | *1.27* | | mg/kg wet | *1.250* | | *101* | *70-130* | | | |
| *Surrogate: Trifluorotoluene - FID* | *1.22* | | mg/kg wet | *1.333* | | *92* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| Gasoline Range Organics | 11.6 | 1.25 | mg/kg wet | 12.50 | | 93 | 60-140 | 4 | 20 | |
| *Surrogate: 2,5-Dibromotoluene - FID* | *1.25* | | mg/kg wet | *1.250* | | *100* | *70-130* | | | |
| *Surrogate: Trifluorotoluene - FID* | *1.27* | | mg/kg wet | *1.333* | | *95* | *70-130* | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CB42609 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082A Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| **Batch CB42609 - 3540C** | | | | | | | | | | |
| Aroclor 1016 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082A Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| **Batch CB42609 - 3540C** | | | | | | | | | | |
| Aroclor 1248 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CB42609 - 3540C** | | | | | | | | | | |
| Aroclor 1268 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0218* | | mg/kg wet | *0.02500* | | *87* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0257* | | mg/kg wet | *0.02500* | | *103* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0162* | | mg/kg wet | *0.02500* | | *65* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0216* | | mg/kg wet | *0.02500* | | *87* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.468 | 0.0500 | mg/kg wet | 0.5000 | | 94 | 50-120 | | | |
| Aroclor 1260 | 0.450 | 0.0500 | mg/kg wet | 0.5000 | | 90 | 50-150 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0242* | | mg/kg wet | *0.02500* | | *97* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0267* | | mg/kg wet | *0.02500* | | *107* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0180* | | mg/kg wet | *0.02500* | | *72* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0224* | | mg/kg wet | *0.02500* | | *89* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.473 | 0.0500 | mg/kg wet | 0.5000 | | 95 | 50-120 | 1 | 15 | |
| Aroclor 1260 | 0.449 | 0.0500 | mg/kg wet | 0.5000 | | 90 | 50-150 | 0.2 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *0.0239* | | mg/kg wet | *0.02500* | | *96* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0270* | | mg/kg wet | *0.02500* | | *108* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0184* | | mg/kg wet | *0.02500* | | *74* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0224* | | mg/kg wet | *0.02500* | | *90* | *30-150* | | | |
| **8270C Polynuclear Aromatic Hydrocarbons** | | | | | | | | | | |
| **Batch CB42620 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *1.93* | | mg/kg wet | *3.333* | | *58* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *1.96* | | mg/kg wet | *3.333* | | *59* | *30-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270C Polynuclear Aromatic Hydrocarbons** | | | | | | | | | | |
| **Batch CB42620 - 3546** | | | | | | | | | | |
| *Surrogate: Nitrobenzene-d5* | *1.99* | | mg/kg wet | *3.333* | | *60* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.18* | | mg/kg wet | *3.333* | | *65* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene | 1.77 | 0.333 | mg/kg wet | 3.333 | | 53 | 40-140 | | | |
| Acenaphthene | 1.93 | 0.333 | mg/kg wet | 3.333 | | 58 | 40-140 | | | |
| Acenaphthylene | 2.06 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | | | |
| Anthracene | 2.10 | 0.333 | mg/kg wet | 3.333 | | 63 | 40-140 | | | |
| Benzo(a)anthracene | 2.07 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | | | |
| Benzo(a)pyrene | 1.89 | 0.167 | mg/kg wet | 3.333 | | 57 | 40-140 | | | |
| Benzo(b)fluoranthene | 2.02 | 0.333 | mg/kg wet | 3.333 | | 60 | 40-140 | | | |
| Benzo(g,h,i)perylene | 2.04 | 0.333 | mg/kg wet | 3.333 | | 61 | 40-140 | | | |
| Benzo(k)fluoranthene | 2.05 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | | | |
| Chrysene | 2.15 | 0.167 | mg/kg wet | 3.333 | | 65 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 2.08 | 0.167 | mg/kg wet | 3.333 | | 62 | 40-140 | | | |
| Fluoranthene | 1.93 | 0.333 | mg/kg wet | 3.333 | | 58 | 40-140 | | | |
| Fluorene | 1.93 | 0.333 | mg/kg wet | 3.333 | | 58 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 2.05 | 0.333 | mg/kg wet | 3.333 | | 61 | 40-140 | | | |
| Naphthalene | 1.85 | 0.333 | mg/kg wet | 3.333 | | 56 | 40-140 | | | |
| Phenanthrene | 2.12 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | | | |
| Pyrene | 2.05 | 0.333 | mg/kg wet | 3.333 | | 61 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *1.78* | | mg/kg wet | *3.333* | | *53* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *1.90* | | mg/kg wet | *3.333* | | *57* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *1.94* | | mg/kg wet | *3.333* | | *58* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.17* | | mg/kg wet | *3.333* | | *65* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene | 2.15 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | 19 | 30 | |
| Acenaphthene | 2.01 | 0.333 | mg/kg wet | 3.333 | | 60 | 40-140 | 4 | 30 | |
| Acenaphthylene | 2.35 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 13 | 30 | |
| Anthracene | 2.30 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 9 | 30 | |
| Benzo(a)anthracene | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | 6 | 30 | |
| Benzo(a)pyrene | 2.08 | 0.167 | mg/kg wet | 3.333 | | 62 | 40-140 | 9 | 30 | |
| Benzo(b)fluoranthene | 2.32 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 14 | 30 | |
| Benzo(g,h,i)perylene | 1.99 | 0.333 | mg/kg wet | 3.333 | | 60 | 40-140 | 2 | 30 | |
| Benzo(k)fluoranthene | 2.14 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | 4 | 30 | |
| Chrysene | 2.19 | 0.167 | mg/kg wet | 3.333 | | 66 | 40-140 | 2 | 30 | |
| Dibenzo(a,h)Anthracene | 2.24 | 0.167 | mg/kg wet | 3.333 | | 67 | 40-140 | 7 | 30 | |
| Fluoranthene | 2.14 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | 10 | 30 | |
| Fluorene | 2.15 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | 11 | 30 | |
| Indeno(1,2,3-cd)Pyrene | 2.22 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | 8 | 30 | |
| Naphthalene | 2.22 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | 18 | 30 | |
| Phenanthrene | 2.32 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 9 | 30 | |
| Pyrene | 2.20 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | 7 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *1.97* | | mg/kg wet | *3.333* | | *59* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.17* | | mg/kg wet | *3.333* | | *65* | *30-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270C Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| **Batch CB42620 - 3546** | | | | | | | | | | |
| *Surrogate: Nitrobenzene-d5* | *2.21* | | mg/kg wet | *3.333* | | *66* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.26* | | mg/kg wet | *3.333* | | *68* | *30-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

**Notes and Definitions**

| | |
|---|---|
| U | Analyte included in the analysis, but not detected |
| Q | Calibration required quadratic regression (Q). |
| CD | Continuing Calibration %Diff is outside of control limit. |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1402374

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002
http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

**CHEMISTRY**

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

**Sample and Cooler Receipt Checklist**

Client: Triton Enviromental Inc.
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 14020374
Date Project Due: 3/5/14
Days For Project: 5 Day

**Items to be checked upon receipt:**

1. Air Bill Manifest Present? *** No**
   Air No.:
2. Were Custody Seals Present? **No**
3. Were Custody Seals Intact? **N/A**
4. Is Radiation count < 100 CPM? **Yes**
5. Is a cooler present? **Yes**
   Cooler Temp: **2.0**
   Iced With: **Ice**
6. Was COC included with samples? **Yes**
7. Was COC signed and dated by client? **Yes**
8. Does the COC match the sample **Yes**
9. Is COC complete and correct? **Yes**
10. Are the samples properly preserved? **Yes**
11. Proper sample containers used? **Yes**
12. Any air bubbles in the VOA vials? **N/A**
13. Holding times exceeded? **No**
14. Sufficient sample volumes? **Yes**
15. Any Subcontracting needed? **No**
16. Are ESS labels on correct containers? **Yes|No**
17. Were samples received intact? **Yes|No**

ESS Sample IDs: _____
Sub Lab: _____
Analysis: _____
TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?: _____ By whom? _____

| Sample Number | Properly Preserved | Container Type | # of Containers | Preservative |
|---|---|---|---|---|
| 1 | Yes | 4 oz Soil Jar | 1 | NP |
| 1 | Yes | 40 ml - VOA | 2 | MeOH |
| 1 | Yes | 40 ml - VOA | 2 | other |
| 2 | Yes | 4 oz Soil Jar | 1 | NP |
| 2 | Yes | 40 ml - VOA | 2 | MeOH |
| 2 | Yes | 40 ml - VOA | 2 | other |
| 3 | Yes | 4 oz Soil Jar | 1 | NP |
| 3 | Yes | 40 ml - VOA | 2 | MeOH |
| 3 | Yes | 40 ml - VOA | 2 | other |
| 4 | Yes | 4 oz Soil Jar | 1 | NP |
| 4 | Yes | 40 ml - VOA | 2 | MeOH |
| 4 | Yes | 40 ml - VOA | 2 | other |
| 5 | Yes | 4 oz Soil Jar | 1 | NP |
| 5 | Yes | 40 ml - VOA | 2 | MeOH |
| 5 | Yes | 40 ml - VOA | 2 | other |
| 6 | Yes | 4 oz Soil Jar | 1 | NP |
| 6 | Yes | 40 ml - VOA | 2 | MeOH |
| 6 | Yes | 40 ml - VOA | 2 | other |
| 7 | Yes | 4 oz Soil Jar | 1 | NP |
| 7 | Yes | 40 ml - VOA | 2 | MeOH |
| 7 | Yes | 40 ml - VOA | 2 | other |
| 8 | Yes | 4 oz Soil Jar | 1 | NP |
| 9 | Yes | 4 oz Soil Jar | 1 | NP |
| 10 | Yes | 4 oz Soil Jar | 1 | NP |

**Sample and Cooler Receipt Checklist**

Client: Triton Enviromental Inc.

ESS Project ID: 14020374

Completed By: M. Mich

Date/Time: 2/26/14 1753

Reviewed By: [signature]

Date/Time: 2/26/14 1824

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY



Turn Time X Standard Other ____
If faster than 5 days, prior approval by laboratory is required # ____

State where samples were collected from:
MA RI CT NH NJ (NY) ME Other ____

Is this project for any of the following:
MA-MCP Navy USACE Other ____

Reporting Limits: SCO (Unrestricted)

ESS LAB PROJECT ID: 1402374

Electronic Deliverable Yes X No ____

Format: Excel X Access ____ PDF X Other ____

Co. Name: Tetra Environmental
Project #: 104226
Project Name (20 Char. or less): Metro North Harrison NY
Contact Person: Mark Paulsson
Address: 385 Church St
City: Guilford State: CT Zip: 06437
PO#:
Telephone #: 203 458 7200
Fax #: 203 458 7201
Email Address: mpaulsson@tetraenvironmental.com

Circle and/or Write Required Analysis

| ESS LAB Sample # | Date | Collection Time | COMP | GRAB | MATRIX | Sample Identification (20 Char. or less) | Pres Code | Number of Containers | Type of Containers | 8260 VOA / 624 / 524.2 | 8021 MTBE/BTEX / 8015 GRO / VPH w/ranges | 8100 TPH / 8015 DRO | EPH w/o PAHs / EPH w/PAHs / EPH 4 Diesel | 8081 Pesticides / 8082 PCB | 608 Pesticides / 608 PCB | 8270 SVOA / 625 | RCRA8 / RCRA5 | PP13 / TAL23 | TCLP-RCRA8 / NBC7 | MCP-METALS (13) / MCP-METALS (13) w/Hg | GRO | DRO | VOC & 8260 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2/25/14 | 9:15 | | X | S | TB-1 (0-4') | 1,6,9 | 5 | G | | | | | | | X | | | | | X | X | X | | |
| 2 | | 9:30 | | | | TB-2 (1-3') | | | | | | | | | | X | | | | | X | X | X | | |
| 3 | | 9:45 | | | | TB-3 (0-2') | | | | | | | | | | X | | | | | X | X | X | | |
| 4 | | 10:15 | | | | TB-4 (0-4') | | | | | | | | | | X | | | | | X | X | X | | |
| 5 | | 10:30 | | | | TB-5 (1-3') | | | | | | | | X | | X | | | | | X | X | X | | |
| 6 | | 11:00 | | | | TB-6 (0-1') | | | | | | | | X | | X | | | | | X | X | X | | |
| 7 | | 11:30 | | | | TB-7 (0-4') | | | | | | | | X | | X | | | | | X | X | X | | |
| 8 | | 12:00 | | | | HS-1 (0-2') | 1 | 1 | | | | | | X | | X | | | | | | X | | | |
| 9 | | 11:45 | | | | HS-2 (0-2') | 1 | 1 | | | | | | X | | X | | | | | | X | | | |
| 10 | | 12:30 | | | | HS-3 (0-2') | 1 | 1 | | | | | | X | | X | | | | | | X | | | |

Container Type: P-Poly G-Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ✓ Yes ___ No
Seals Intact ___ Yes ___ No NA: —
Cooler Temp: 2.0°C
Bag Dec
BB 2/26/14 1545

Internal Use Only
[✓] Pickup
[ ] Technicians ____

Preservation Code 1- NP, 2- HCl, 3- $H_2SO_4$, 4- $HNO_3$, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- DI

Sampled by: CK

Comments: LL vials frozen on receipt 2/26/14

| Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|---|
| [signature] | 2/26/14 1050 | [signature] | 2/26/14 1050 | [signature] | 2/26/14 1545 | [signature] | 2/26/14 1750 |
| Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
| | | | | | | | |

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 B

*CERTIFICATE OF ANALYSIS*

Mark Paulsson
Triton Environmental, Inc.
385 Church Street, Suite 201
Guilford, CT 06437

**RE: Metro North Harrison NY (104226)**
**ESS Laboratory Work Order Number: 1403068**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 1:14 pm, Mar 13, 2014**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

## SAMPLE RECEIPT

The following samples were received on March 06, 2014 for the analyses specified on the enclosed Chain of Custody Record.

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1403068-01 | TW-3 | Aqueous | 8015C, 8260B, 8270C SIM |
| 1403068-02 | TW-2 | Aqueous | 8015C, 8260B, 8270C SIM |
| 1403068-03 | TW-1 | Aqueous | 8015C, 8260B, 8270C SIM |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

## PROJECT NARRATIVE

**8260B Volatile Organic Compounds**

CXC0060-CCV1 **Continuing Calibration %Diff is outside of control limit.**
Tetrachloroethene (72% @ 80-120%)

CXC0060-CCV1 **Continuing Calibration recovery is below lower control limit (C-).**
1,4-Dioxane - Screen (75% @ 80-120%), Tetrachloroethene (72% @ 80-120%)

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015D - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-3
Date Sampled: 03/05/14 08:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: DPS
Prepared: 3/7/14 12:15

## 8015C Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND (187) | | 8015C | | 1 | 03/07/14 17:02 | CXC0066 | CC40703 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *101 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-3
Date Sampled: 03/05/14 08:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: NMS
Prepared: 3/12/14 8:00

## 8015C Gasoline Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND (50) | | 8015C | | 1 | 03/12/14 17:40 | CXC0109 | CC41229 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 2,5-Dibromotoluene - FID* | *92 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-3
Date Sampled: 03/05/14 08:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,1,2,2-Tetrachloroethane | ND (0.5) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,1,2-Trichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,1-Dichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,1-Dichloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,2,3-Trichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,2,4-Trichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,2-Dibromo-3-Chloropropane | ND (5.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,2-Dibromoethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,2-Dichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,2-Dichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,2-Dichloropropane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,3-Dichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,4-Dichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 1,4-Dioxane - Screen | ND (500) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 2-Butanone | ND (10.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 2-Hexanone | ND (10.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| 4-Methyl-2-Pentanone | ND (25.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Acetone | ND (10.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Benzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Bromochloromethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Bromodichloromethane | ND (0.6) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Bromoform | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Bromomethane | ND (2.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Carbon Disulfide | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Carbon Tetrachloride | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Chlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Chloroethane | ND (2.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Chloroform | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Chloromethane | ND (2.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| **cis-1,2-Dichloroethene** | **25.9** (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-3
Date Sampled: 03/05/14 08:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | ND (0.4) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Cyclohexane | ND (5.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Dibromochloromethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Dichlorodifluoromethane | ND (2.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Ethylbenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Isopropylbenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Methyl acetate | ND (5.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Methyl tert-Butyl Ether | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Methylcyclohexane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Methylene Chloride | ND (2.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Styrene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| **Tetrachloroethene** | **29.1** (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Toluene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| trans-1,2-Dichloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| trans-1,3-Dichloropropene | ND (0.4) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| **Trichloroethene** | **1.1** (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Trichlorofluoromethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Vinyl Chloride | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Xylene O | ND (1.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |
| Xylene P,M | ND (2.0) | | 8260B | | 1 | 03/07/14 16:13 | CXC0060 | CC40724 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *97 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *92 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *95 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-3
Date Sampled: 03/05/14 08:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: IBM
Prepared: 3/7/14 12:15

## 8270C(SIM) Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.19) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Acenaphthene | ND (0.19) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Acenaphthylene | ND (0.19) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Anthracene | ND (0.19) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Benzo(a)anthracene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Benzo(a)pyrene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Benzo(b)fluoranthene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Benzo(g,h,i)perylene | ND (0.19) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Benzo(k)fluoranthene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Chrysene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Dibenzo(a,h)Anthracene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Fluoranthene | ND (0.19) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Fluorene | ND (0.19) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Indeno(1,2,3-cd)Pyrene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Naphthalene | ND (0.19) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Phenanthrene | ND (0.19) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |
| Pyrene | ND (0.19) | | 8270C SIM | | 1 | 03/07/14 20:05 | CXC0062 | CC40702 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *85 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *97 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *104 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-2
Date Sampled: 03/05/14 10:15
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: DPS
Prepared: 3/7/14 12:15

## 8015C Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| **Diesel Range Organics** | **212** (200) | | 8015C | | 1 | 03/07/14 17:41 | CXC0066 | CC40703 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *107 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-2
Date Sampled: 03/05/14 10:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: NMS
Prepared: 3/12/14 8:00

## 8015C Gasoline Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND (50) | | 8015C | | 1 | 03/12/14 18:13 | CXC0109 | CC41229 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 2,5-Dibromotoluene - FID* | *93 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-2
Date Sampled: 03/05/14 10:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,1,2,2-Tetrachloroethane | ND (0.5) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,1,2-Trichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,1-Dichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,1-Dichloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,2,3-Trichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,2,4-Trichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,2-Dibromo-3-Chloropropane | ND (5.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,2-Dibromoethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,2-Dichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,2-Dichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,2-Dichloropropane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,3-Dichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,4-Dichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 1,4-Dioxane - Screen | ND (500) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 2-Butanone | ND (10.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 2-Hexanone | ND (10.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| 4-Methyl-2-Pentanone | ND (25.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Acetone | ND (10.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Benzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Bromochloromethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Bromodichloromethane | ND (0.6) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Bromoform | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Bromomethane | ND (2.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Carbon Disulfide | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Carbon Tetrachloride | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Chlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Chloroethane | ND (2.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Chloroform | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Chloromethane | ND (2.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| cis-1,2-Dichloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-2
Date Sampled: 03/05/14 10:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | ND (0.4) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Cyclohexane | ND (5.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Dibromochloromethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Dichlorodifluoromethane | ND (2.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Ethylbenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Isopropylbenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Methyl acetate | ND (5.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Methyl tert-Butyl Ether | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Methylcyclohexane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Methylene Chloride | ND (2.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Styrene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Tetrachloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Toluene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| trans-1,2-Dichloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| trans-1,3-Dichloropropene | ND (0.4) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Trichloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Trichlorofluoromethane | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Vinyl Chloride | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Xylene O | ND (1.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |
| Xylene P,M | ND (2.0) | | 8260B | | 1 | 03/07/14 16:49 | CXC0060 | CC40724 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *93 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *91 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *98 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-2
Date Sampled: 03/05/14 10:15
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: IBM
Prepared: 3/7/14 12:15

## 8270C(SIM) Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Acenaphthene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Acenaphthylene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Anthracene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Benzo(a)anthracene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Benzo(a)pyrene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Benzo(b)fluoranthene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Benzo(g,h,i)perylene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Benzo(k)fluoranthene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Chrysene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Dibenzo(a,h)Anthracene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Fluoranthene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Fluorene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Indeno(1,2,3-cd)Pyrene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Naphthalene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Phenanthrene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |
| Pyrene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 20:55 | CXC0062 | CC40702 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *90 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *92 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *99 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *109 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-1
Date Sampled: 03/05/14 11:15
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: DPS
Prepared: 3/7/14 12:15

## 8015C Diesel Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | ND (200) | | 8015C | | 1 | 03/07/14 18:20 | CXC0066 | CC40703 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: O-Terphenyl* | *98 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-1
Date Sampled: 03/05/14 11:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: NMS
Prepared: 3/12/14 8:00

## 8015C Gasoline Range Organics

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics | ND (50) | | 8015C | | 1 | 03/12/14 15:31 | CXC0109 | CC41229 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 2,5-Dibromotoluene - FID* | *95 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-1
Date Sampled: 03/05/14 11:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,1,2,2-Tetrachloroethane | ND (0.5) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,1,2-Trichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,1-Dichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,1-Dichloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,2,3-Trichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,2,4-Trichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,2-Dibromo-3-Chloropropane | ND (5.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,2-Dibromoethane | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,2-Dichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,2-Dichloroethane | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,2-Dichloropropane | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,3-Dichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,4-Dichlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 1,4-Dioxane - Screen | ND (500) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 2-Butanone | ND (10.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 2-Hexanone | ND (10.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| 4-Methyl-2-Pentanone | ND (25.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Acetone | ND (10.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Benzene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Bromochloromethane | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Bromodichloromethane | ND (0.6) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Bromoform | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Bromomethane | ND (2.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Carbon Disulfide | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Carbon Tetrachloride | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Chlorobenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Chloroethane | ND (2.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Chloroform | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Chloromethane | ND (2.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| cis-1,2-Dichloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-1
Date Sampled: 03/05/14 11:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: MD

## 8260B Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | ND (0.4) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Cyclohexane | ND (5.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Dibromochloromethane | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Dichlorodifluoromethane | ND (2.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Ethylbenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Isopropylbenzene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Methyl acetate | ND (5.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Methyl tert-Butyl Ether | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Methylcyclohexane | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Methylene Chloride | ND (2.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Styrene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Tetrachloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Toluene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| trans-1,2-Dichloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| trans-1,3-Dichloropropene | ND (0.4) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Trichloroethene | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Trichlorofluoromethane | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Vinyl Chloride | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Xylene O | ND (1.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |
| Xylene P,M | ND (2.0) | | 8260B | | 1 | 03/07/14 17:25 | CXC0060 | CC40724 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *98 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *94 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *99 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: TW-1
Date Sampled: 03/05/14 11:15
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1403068
ESS Laboratory Sample ID: 1403068-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: IBM
Prepared: 3/7/14 12:15

## 8270C(SIM) Polynuclear Aromatic Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2-Methylnaphthalene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Acenaphthene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Acenaphthylene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Anthracene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Benzo(a)anthracene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Benzo(a)pyrene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Benzo(b)fluoranthene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Benzo(g,h,i)perylene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Benzo(k)fluoranthene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Chrysene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Dibenzo(a,h)Anthracene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Fluoranthene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Fluorene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Indeno(1,2,3-cd)Pyrene | ND (0.05) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Naphthalene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Phenanthrene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |
| Pyrene | ND (0.20) | | 8270C SIM | | 1 | 03/07/14 21:45 | CXC0062 | CC40702 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *81 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *87 %* | | *30-130* |
| *Surrogate: Nitrobenzene-d5* | *90 %* | | *30-130* |
| *Surrogate: p-Terphenyl-d14* | *109 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 8015C Diesel Range Organics | | | | | | |
| **Batch CC40703 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Decane (C10) | ND | 5.00 | ug/L | | | | | | | |
| Diesel Range Organics | ND | 200 | ug/L | | | | | | | |
| Docosane (C22) | ND | 5.00 | ug/L | | | | | | | |
| Dodecane (C12) | ND | 5.00 | ug/L | | | | | | | |
| Eicosane (C20) | ND | 5.00 | ug/L | | | | | | | |
| Hexacosane (C26) | ND | 5.00 | ug/L | | | | | | | |
| Hexadecane (C16) | ND | 5.00 | ug/L | | | | | | | |
| Nonadecane (C19) | ND | 5.00 | ug/L | | | | | | | |
| Octacosane (C28) | ND | 5.00 | ug/L | | | | | | | |
| Octadecane (C18) | ND | 5.00 | ug/L | | | | | | | |
| Tetracosane (C24) | ND | 5.00 | ug/L | | | | | | | |
| Tetradecane (C14) | ND | 5.00 | ug/L | | | | | | | |
| *Surrogate: O-Terphenyl* | *91.1* | | ug/L | *100.0* | | *91* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| Decane (C10) | 41.9 | 5.00 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Diesel Range Organics | 579 | 200 | ug/L | 550.0 | | 105 | 40-140 | | | |
| Docosane (C22) | 50.5 | 5.00 | ug/L | 50.00 | | 101 | 40-140 | | | |
| Dodecane (C12) | 47.3 | 5.00 | ug/L | 50.00 | | 95 | 40-140 | | | |
| Eicosane (C20) | 49.7 | 5.00 | ug/L | 50.00 | | 99 | 40-140 | | | |
| Hexacosane (C26) | 50.6 | 5.00 | ug/L | 50.00 | | 101 | 40-140 | | | |
| Hexadecane (C16) | 46.8 | 5.00 | ug/L | 50.00 | | 94 | 40-140 | | | |
| Nonadecane (C19) | 49.0 | 5.00 | ug/L | 50.00 | | 98 | 40-140 | | | |
| Octacosane (C28) | 50.8 | 5.00 | ug/L | 50.00 | | 102 | 40-140 | | | |
| Octadecane (C18) | 48.6 | 5.00 | ug/L | 50.00 | | 97 | 40-140 | | | |
| Tetracosane (C24) | 51.0 | 5.00 | ug/L | 50.00 | | 102 | 40-140 | | | |
| Tetradecane (C14) | 47.7 | 5.00 | ug/L | 50.00 | | 95 | 40-140 | | | |
| *Surrogate: O-Terphenyl* | *103* | | ug/L | *100.0* | | *103* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| Decane (C10) | 41.2 | 5.00 | ug/L | 50.00 | | 82 | 40-140 | 2 | 20 | |
| Diesel Range Organics | 571 | 200 | ug/L | 550.0 | | 104 | 40-140 | 1 | 20 | |
| Docosane (C22) | 50.0 | 5.00 | ug/L | 50.00 | | 100 | 40-140 | 1 | 20 | |
| Dodecane (C12) | 45.9 | 5.00 | ug/L | 50.00 | | 92 | 40-140 | 3 | 20 | |
| Eicosane (C20) | 48.7 | 5.00 | ug/L | 50.00 | | 97 | 40-140 | 2 | 20 | |
| Hexacosane (C26) | 50.1 | 5.00 | ug/L | 50.00 | | 100 | 40-140 | 0.8 | 20 | |
| Hexadecane (C16) | 46.6 | 5.00 | ug/L | 50.00 | | 93 | 40-140 | 0.6 | 20 | |
| Nonadecane (C19) | 49.9 | 5.00 | ug/L | 50.00 | | 100 | 40-140 | 2 | 20 | |
| Octacosane (C28) | 49.6 | 5.00 | ug/L | 50.00 | | 99 | 40-140 | 2 | 20 | |
| Octadecane (C18) | 47.4 | 5.00 | ug/L | 50.00 | | 95 | 40-140 | 2 | 20 | |
| Tetracosane (C24) | 51.0 | 5.00 | ug/L | 50.00 | | 102 | 40-140 | 0.1 | 20 | |
| Tetradecane (C14) | 46.4 | 5.00 | ug/L | 50.00 | | 93 | 40-140 | 3 | 20 | |
| *Surrogate: O-Terphenyl* | *99.1* | | ug/L | *100.0* | | *99* | *40-140* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8015C Gasoline Range Organics / Methanol** | | | | | | | | | | |
| **8015C Gasoline Range Organics** | | | | | | | | | | |
| **Batch CC41229 - 5030B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Gasoline Range Organics | ND | 50 | ug/L | | | | | | | |
| *Surrogate: 2,5-Dibromotoluene - FID* | *47.9* | | ug/L | *50.00* | | *96* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| Gasoline Range Organics | 442 | 50 | ug/L | 500.0 | | 88 | 60-140 | | | |
| *Surrogate: 2,5-Dibromotoluene - FID* | *47.7* | | ug/L | *50.00* | | *95* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| Gasoline Range Organics | 455 | 50 | ug/L | 500.0 | | 91 | 60-140 | 3 | 20 | |
| *Surrogate: 2,5-Dibromotoluene - FID* | *46.8* | | ug/L | *50.00* | | *94* | *70-130* | | | |
| **8260B Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CC40724 - 5030B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1-Trichloroethane | ND | 1.0 | ug/L | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.5 | ug/L | | | | | | | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | ND | 1.0 | ug/L | | | | | | | |
| 1,1,2-Trichloroethane | ND | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethane | ND | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethene | ND | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 5.0 | ug/L | | | | | | | |
| 1,2-Dibromoethane | ND | 1.0 | ug/L | | | | | | | |
| 1,2-Dichlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloroethane | ND | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloropropane | ND | 1.0 | ug/L | | | | | | | |
| 1,3-Dichlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| 1,4-Dichlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| 1,4-Dioxane - Screen | ND | 500 | ug/L | | | | | | | |
| 2-Butanone | ND | 10.0 | ug/L | | | | | | | |
| 2-Hexanone | ND | 10.0 | ug/L | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 25.0 | ug/L | | | | | | | |
| Acetone | ND | 10.0 | ug/L | | | | | | | |
| Benzene | ND | 1.0 | ug/L | | | | | | | |
| Bromochloromethane | ND | 1.0 | ug/L | | | | | | | |
| Bromodichloromethane | ND | 0.6 | ug/L | | | | | | | |
| Bromoform | ND | 1.0 | ug/L | | | | | | | |
| Bromomethane | ND | 2.0 | ug/L | | | | | | | |
| Carbon Disulfide | ND | 1.0 | ug/L | | | | | | | |
| Carbon Tetrachloride | ND | 1.0 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8260B Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CC40724 - 5030B** | | | | | | | | | | |
| Chlorobenzene | ND | 1.0 | ug/L | | | | | | | |
| Chloroethane | ND | 2.0 | ug/L | | | | | | | |
| Chloroform | ND | 1.0 | ug/L | | | | | | | |
| Chloromethane | ND | 2.0 | ug/L | | | | | | | |
| cis-1,2-Dichloroethene | ND | 1.0 | ug/L | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.4 | ug/L | | | | | | | |
| Cyclohexane | ND | 5.0 | ug/L | | | | | | | |
| Dibromochloromethane | ND | 1.0 | ug/L | | | | | | | |
| Dichlorodifluoromethane | ND | 2.0 | ug/L | | | | | | | |
| Ethylbenzene | ND | 1.0 | ug/L | | | | | | | |
| Isopropylbenzene | ND | 1.0 | ug/L | | | | | | | |
| Methyl acetate | ND | 5.0 | ug/L | | | | | | | |
| Methyl tert-Butyl Ether | ND | 1.0 | ug/L | | | | | | | |
| Methylcyclohexane | ND | 1.0 | ug/L | | | | | | | |
| Methylene Chloride | ND | 2.0 | ug/L | | | | | | | |
| Styrene | ND | 1.0 | ug/L | | | | | | | |
| Tetrachloroethene | ND | 1.0 | ug/L | | | | | | | |
| Toluene | ND | 1.0 | ug/L | | | | | | | |
| trans-1,2-Dichloroethene | ND | 1.0 | ug/L | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.4 | ug/L | | | | | | | |
| Trichloroethene | ND | 1.0 | ug/L | | | | | | | |
| Trichlorofluoromethane | ND | 1.0 | ug/L | | | | | | | |
| Vinyl Chloride | ND | 1.0 | ug/L | | | | | | | |
| Xylene O | ND | 1.0 | ug/L | | | | | | | |
| Xylene P,M | ND | 2.0 | ug/L | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *23.2* | | ug/L | *25.00* | | *93* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *24.4* | | ug/L | *25.00* | | *97* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *22.6* | | ug/L | *25.00* | | *91* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *25.2* | | ug/L | *25.00* | | *101* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 10.8 | | ug/L | 10.00 | | 108 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 10.0 | | ug/L | 10.00 | | 100 | 70-130 | | | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 9.5 | | ug/L | 10.00 | | 95 | 70-130 | | | |
| 1,1,2-Trichloroethane | 10.3 | | ug/L | 10.00 | | 103 | 70-130 | | | |
| 1,1-Dichloroethane | 10.1 | | ug/L | 10.00 | | 101 | 70-130 | | | |
| 1,1-Dichloroethene | 10.6 | | ug/L | 10.00 | | 106 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 11.1 | | ug/L | 10.00 | | 111 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 10.6 | | ug/L | 10.00 | | 106 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 10.7 | | ug/L | 10.00 | | 107 | 70-130 | | | |
| 1,2-Dibromoethane | 10.6 | | ug/L | 10.00 | | 106 | 70-130 | | | |
| 1,2-Dichlorobenzene | 10.7 | | ug/L | 10.00 | | 107 | 70-130 | | | |
| 1,2-Dichloroethane | 9.7 | | ug/L | 10.00 | | 97 | 70-130 | | | |
| 1,2-Dichloropropane | 10.1 | | ug/L | 10.00 | | 101 | 70-130 | | | |
| 1,3-Dichlorobenzene | 10.4 | | ug/L | 10.00 | | 104 | 70-130 | | | |
| 1,4-Dichlorobenzene | 9.9 | | ug/L | 10.00 | | 99 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8260B Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CC40724 - 5030B** | | | | | | | | | | |
| 1,4-Dioxane - Screen | 319 | | ug/L | 200.0 | | 160 | 0-332 | | | |
| 2-Butanone | 45.3 | | ug/L | 50.00 | | 91 | 70-130 | | | |
| 2-Hexanone | 50.5 | | ug/L | 50.00 | | 101 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 53.9 | | ug/L | 50.00 | | 108 | 70-130 | | | |
| Acetone | 52.1 | | ug/L | 50.00 | | 104 | 70-130 | | | |
| Benzene | 11.1 | | ug/L | 10.00 | | 111 | 70-130 | | | |
| Bromochloromethane | 10.6 | | ug/L | 10.00 | | 106 | 70-130 | | | |
| Bromodichloromethane | 9.7 | | ug/L | 10.00 | | 97 | 70-130 | | | |
| Bromoform | 10.7 | | ug/L | 10.00 | | 107 | 70-130 | | | |
| Bromomethane | 12.9 | | ug/L | 10.00 | | 129 | 70-130 | | | |
| Carbon Disulfide | 10.2 | | ug/L | 10.00 | | 102 | 70-130 | | | |
| Carbon Tetrachloride | 10.3 | | ug/L | 10.00 | | 103 | 70-130 | | | |
| Chlorobenzene | 11.0 | | ug/L | 10.00 | | 110 | 70-130 | | | |
| Chloroethane | 12.2 | | ug/L | 10.00 | | 122 | 70-130 | | | |
| Chloroform | 10.0 | | ug/L | 10.00 | | 100 | 70-130 | | | |
| Chloromethane | 10.1 | | ug/L | 10.00 | | 101 | 70-130 | | | |
| cis-1,2-Dichloroethene | 11.0 | | ug/L | 10.00 | | 110 | 70-130 | | | |
| cis-1,3-Dichloropropene | 10.6 | | ug/L | 10.00 | | 106 | 70-130 | | | |
| Cyclohexane | 9.9 | | ug/L | 10.00 | | 99 | 70-130 | | | |
| Dibromochloromethane | 10.5 | | ug/L | 10.00 | | 105 | 70-130 | | | |
| Dichlorodifluoromethane | 10.6 | | ug/L | 10.00 | | 106 | 70-130 | | | |
| Ethylbenzene | 10.9 | | ug/L | 10.00 | | 109 | 70-130 | | | |
| Isopropylbenzene | 10.6 | | ug/L | 10.00 | | 106 | 70-130 | | | |
| Methyl acetate | 10.0 | | ug/L | 10.00 | | 100 | 70-130 | | | |
| Methyl tert-Butyl Ether | 10.2 | | ug/L | 10.00 | | 102 | 70-130 | | | |
| Methylcyclohexane | 9.6 | | ug/L | 10.00 | | 96 | 70-130 | | | |
| Methylene Chloride | 10.5 | | ug/L | 10.00 | | 105 | 70-130 | | | |
| Styrene | 10.6 | | ug/L | 10.00 | | 106 | 70-130 | | | |
| Tetrachloroethene | 7.8 | | ug/L | 10.00 | | 78 | 70-130 | | | |
| Toluene | 11.6 | | ug/L | 10.00 | | 116 | 70-130 | | | |
| trans-1,2-Dichloroethene | 10.3 | | ug/L | 10.00 | | 103 | 70-130 | | | |
| trans-1,3-Dichloropropene | 9.9 | | ug/L | 10.00 | | 99 | 70-130 | | | |
| Trichloroethene | 10.2 | | ug/L | 10.00 | | 102 | 70-130 | | | |
| Trichlorofluoromethane | 10.3 | | ug/L | 10.00 | | 103 | 70-130 | | | |
| Vinyl Chloride | 11.1 | | ug/L | 10.00 | | 111 | 70-130 | | | |
| Xylene O | 11.6 | | ug/L | 10.00 | | 116 | 70-130 | | | |
| Xylene P,M | 21.9 | | ug/L | 20.00 | | 109 | 70-130 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *24.8* | | ug/L | *25.00* | | *99* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *26.7* | | ug/L | *25.00* | | *107* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *25.4* | | ug/L | *25.00* | | *101* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *26.0* | | ug/L | *25.00* | | *104* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 10.1 | | ug/L | 10.00 | | 101 | 70-130 | 7 | 25 | |
| 1,1,2,2-Tetrachloroethane | 10.3 | | ug/L | 10.00 | | 103 | 70-130 | 3 | 25 | |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 9.4 | | ug/L | 10.00 | | 94 | 70-130 | 0.2 | 25 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8260B Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CC40724 - 5030B** | | | | | | | | | | |
| 1,1,2-Trichloroethane | 10.5 | | ug/L | 10.00 | | 105 | 70-130 | 2 | 25 | |
| 1,1-Dichloroethane | 9.9 | | ug/L | 10.00 | | 99 | 70-130 | 2 | 25 | |
| 1,1-Dichloroethene | 10.2 | | ug/L | 10.00 | | 102 | 70-130 | 4 | 25 | |
| 1,2,3-Trichlorobenzene | 11.4 | | ug/L | 10.00 | | 114 | 70-130 | 2 | 25 | |
| 1,2,4-Trichlorobenzene | 11.0 | | ug/L | 10.00 | | 110 | 70-130 | 4 | 25 | |
| 1,2-Dibromo-3-Chloropropane | 11.4 | | ug/L | 10.00 | | 114 | 70-130 | 7 | 25 | |
| 1,2-Dibromoethane | 10.3 | | ug/L | 10.00 | | 103 | 70-130 | 2 | 25 | |
| 1,2-Dichlorobenzene | 10.5 | | ug/L | 10.00 | | 105 | 70-130 | 2 | 25 | |
| 1,2-Dichloroethane | 10.0 | | ug/L | 10.00 | | 100 | 70-130 | 3 | 25 | |
| 1,2-Dichloropropane | 9.5 | | ug/L | 10.00 | | 95 | 70-130 | 6 | 25 | |
| 1,3-Dichlorobenzene | 10.7 | | ug/L | 10.00 | | 107 | 70-130 | 2 | 25 | |
| 1,4-Dichlorobenzene | 10.1 | | ug/L | 10.00 | | 101 | 70-130 | 2 | 25 | |
| 1,4-Dioxane - Screen | 252 | | ug/L | 200.0 | | 126 | 0-332 | 24 | 200 | |
| 2-Butanone | 53.1 | | ug/L | 50.00 | | 106 | 70-130 | 16 | 25 | |
| 2-Hexanone | 50.9 | | ug/L | 50.00 | | 102 | 70-130 | 0.9 | 25 | |
| 4-Methyl-2-Pentanone | 55.3 | | ug/L | 50.00 | | 111 | 70-130 | 3 | 25 | |
| Acetone | 59.4 | | ug/L | 50.00 | | 119 | 70-130 | 13 | 25 | |
| Benzene | 10.6 | | ug/L | 10.00 | | 106 | 70-130 | 5 | 25 | |
| Bromochloromethane | 10.5 | | ug/L | 10.00 | | 105 | 70-130 | 0.9 | 25 | |
| Bromodichloromethane | 10.0 | | ug/L | 10.00 | | 100 | 70-130 | 3 | 25 | |
| Bromoform | 10.6 | | ug/L | 10.00 | | 106 | 70-130 | 0.6 | 25 | |
| Bromomethane | 12.4 | | ug/L | 10.00 | | 124 | 70-130 | 4 | 25 | |
| Carbon Disulfide | 9.8 | | ug/L | 10.00 | | 98 | 70-130 | 4 | 25 | |
| Carbon Tetrachloride | 10.2 | | ug/L | 10.00 | | 102 | 70-130 | 1 | 25 | |
| Chlorobenzene | 10.9 | | ug/L | 10.00 | | 109 | 70-130 | 1 | 25 | |
| Chloroethane | 11.4 | | ug/L | 10.00 | | 114 | 70-130 | 7 | 25 | |
| Chloroform | 9.6 | | ug/L | 10.00 | | 96 | 70-130 | 3 | 25 | |
| Chloromethane | 9.7 | | ug/L | 10.00 | | 97 | 70-130 | 4 | 25 | |
| cis-1,2-Dichloroethene | 10.4 | | ug/L | 10.00 | | 104 | 70-130 | 5 | 25 | |
| cis-1,3-Dichloropropene | 10.7 | | ug/L | 10.00 | | 107 | 70-130 | 1 | 25 | |
| Cyclohexane | 9.8 | | ug/L | 10.00 | | 98 | 70-130 | 0.6 | 25 | |
| Dibromochloromethane | 10.2 | | ug/L | 10.00 | | 102 | 70-130 | 3 | 25 | |
| Dichlorodifluoromethane | 10.0 | | ug/L | 10.00 | | 100 | 70-130 | 6 | 25 | |
| Ethylbenzene | 10.7 | | ug/L | 10.00 | | 107 | 70-130 | 2 | 25 | |
| Isopropylbenzene | 11.1 | | ug/L | 10.00 | | 111 | 70-130 | 5 | 25 | |
| Methyl acetate | 10.0 | | ug/L | 10.00 | | 100 | 70-130 | 0.5 | 25 | |
| Methyl tert-Butyl Ether | 9.9 | | ug/L | 10.00 | | 99 | 70-130 | 3 | 25 | |
| Methylcyclohexane | 10.3 | | ug/L | 10.00 | | 103 | 70-130 | 7 | 25 | |
| Methylene Chloride | 11.0 | | ug/L | 10.00 | | 110 | 70-130 | 5 | 25 | |
| Styrene | 10.5 | | ug/L | 10.00 | | 105 | 70-130 | 0.9 | 25 | |
| Tetrachloroethene | 7.7 | | ug/L | 10.00 | | 77 | 70-130 | 0.8 | 25 | |
| Toluene | 11.1 | | ug/L | 10.00 | | 111 | 70-130 | 5 | 25 | |
| trans-1,2-Dichloroethene | 10.4 | | ug/L | 10.00 | | 104 | 70-130 | 1 | 25 | |
| trans-1,3-Dichloropropene | 9.6 | | ug/L | 10.00 | | 96 | 70-130 | 3 | 25 | |
| Trichloroethene | 10.5 | | ug/L | 10.00 | | 105 | 70-130 | 4 | 25 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8260B Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CC40724 - 5030B** | | | | | | | | | | |
| Trichlorofluoromethane | 10.1 | | ug/L | 10.00 | | 101 | 70-130 | 2 | 25 | |
| Vinyl Chloride | 11.6 | | ug/L | 10.00 | | 116 | 70-130 | 4 | 25 | |
| Xylene O | 11.4 | | ug/L | 10.00 | | 114 | 70-130 | 2 | 25 | |
| Xylene P,M | 21.8 | | ug/L | 20.00 | | 109 | 70-130 | 0.2 | 25 | |
| *Surrogate: 1,2-Dichloroethane-d4* | *25.4* | | ug/L | *25.00* | | *102* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *25.8* | | ug/L | *25.00* | | *103* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *25.1* | | ug/L | *25.00* | | *100* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *25.2* | | ug/L | *25.00* | | *101* | *70-130* | | | |
| **8270C(SIM) Polynuclear Aromatic Hydrocarbons** | | | | | | | | | | |
| **Batch CC40702 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 2-Methylnaphthalene | ND | 0.20 | ug/L | | | | | | | |
| Acenaphthene | ND | 0.20 | ug/L | | | | | | | |
| Acenaphthylene | ND | 0.20 | ug/L | | | | | | | |
| Anthracene | ND | 0.20 | ug/L | | | | | | | |
| Benzo(a)anthracene | ND | 0.05 | ug/L | | | | | | | |
| Benzo(a)pyrene | ND | 0.05 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.05 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.20 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.05 | ug/L | | | | | | | |
| Chrysene | ND | 0.05 | ug/L | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.05 | ug/L | | | | | | | |
| Fluoranthene | ND | 0.20 | ug/L | | | | | | | |
| Fluorene | ND | 0.20 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.05 | ug/L | | | | | | | |
| Naphthalene | ND | 0.20 | ug/L | | | | | | | |
| Phenanthrene | ND | 0.20 | ug/L | | | | | | | |
| Pyrene | ND | 0.20 | ug/L | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *1.68* | | ug/L | *2.500* | | *67* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.11* | | ug/L | *2.500* | | *84* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.30* | | ug/L | *2.500* | | *92* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.41* | | ug/L | *2.500* | | *96* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene | 2.53 | 0.20 | ug/L | 4.000 | | 63 | 40-140 | | | |
| Acenaphthene | 2.79 | 0.20 | ug/L | 4.000 | | 70 | 40-140 | | | |
| Acenaphthylene | 2.94 | 0.20 | ug/L | 4.000 | | 74 | 40-140 | | | |
| Anthracene | 2.92 | 0.20 | ug/L | 4.000 | | 73 | 40-140 | | | |
| Benzo(a)anthracene | 2.96 | 0.05 | ug/L | 4.000 | | 74 | 40-140 | | | |
| Benzo(a)pyrene | 3.19 | 0.05 | ug/L | 4.000 | | 80 | 40-140 | | | |
| Benzo(b)fluoranthene | 3.37 | 0.05 | ug/L | 4.000 | | 84 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.44 | 0.20 | ug/L | 4.000 | | 86 | 40-140 | | | |
| Benzo(k)fluoranthene | 3.39 | 0.05 | ug/L | 4.000 | | 85 | 40-140 | | | |
| Chrysene | 3.05 | 0.05 | ug/L | 4.000 | | 76 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.54 | 0.05 | ug/L | 4.000 | | 88 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270C(SIM) Polynuclear Aromatic Hydrocarbons | | | | | | | | | | |
| **Batch CC40702 - 3510C** | | | | | | | | | | |
| Fluoranthene | 3.16 | 0.20 | ug/L | 4.000 | | 79 | 40-140 | | | |
| Fluorene | 3.01 | 0.20 | ug/L | 4.000 | | 75 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.62 | 0.05 | ug/L | 4.000 | | 90 | 40-140 | | | |
| Naphthalene | 2.50 | 0.20 | ug/L | 4.000 | | 62 | 40-140 | | | |
| Phenanthrene | 2.94 | 0.20 | ug/L | 4.000 | | 74 | 40-140 | | | |
| Pyrene | 3.00 | 0.20 | ug/L | 4.000 | | 75 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *1.59* | | ug/L | *2.500* | | *64* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.03* | | ug/L | *2.500* | | *81* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.08* | | ug/L | *2.500* | | *83* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.45* | | ug/L | *2.500* | | *98* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene | 2.56 | 0.20 | ug/L | 4.000 | | 64 | 40-140 | 1 | 20 | |
| Acenaphthene | 2.95 | 0.20 | ug/L | 4.000 | | 74 | 40-140 | 6 | 20 | |
| Acenaphthylene | 3.13 | 0.20 | ug/L | 4.000 | | 78 | 40-140 | 6 | 20 | |
| Anthracene | 3.17 | 0.20 | ug/L | 4.000 | | 79 | 40-140 | 8 | 20 | |
| Benzo(a)anthracene | 3.07 | 0.05 | ug/L | 4.000 | | 77 | 40-140 | 4 | 20 | |
| Benzo(a)pyrene | 3.26 | 0.05 | ug/L | 4.000 | | 82 | 40-140 | 2 | 20 | |
| Benzo(b)fluoranthene | 3.52 | 0.05 | ug/L | 4.000 | | 88 | 40-140 | 5 | 20 | |
| Benzo(g,h,i)perylene | 3.58 | 0.20 | ug/L | 4.000 | | 90 | 40-140 | 4 | 20 | |
| Benzo(k)fluoranthene | 3.40 | 0.05 | ug/L | 4.000 | | 85 | 40-140 | 0.2 | 20 | |
| Chrysene | 3.16 | 0.05 | ug/L | 4.000 | | 79 | 40-140 | 4 | 20 | |
| Dibenzo(a,h)Anthracene | 3.67 | 0.05 | ug/L | 4.000 | | 92 | 40-140 | 4 | 20 | |
| Fluoranthene | 3.45 | 0.20 | ug/L | 4.000 | | 86 | 40-140 | 9 | 20 | |
| Fluorene | 3.25 | 0.20 | ug/L | 4.000 | | 81 | 40-140 | 7 | 20 | |
| Indeno(1,2,3-cd)Pyrene | 3.62 | 0.05 | ug/L | 4.000 | | 91 | 40-140 | 0.1 | 20 | |
| Naphthalene | 2.56 | 0.20 | ug/L | 4.000 | | 64 | 40-140 | 2 | 20 | |
| Phenanthrene | 3.23 | 0.20 | ug/L | 4.000 | | 81 | 40-140 | 9 | 20 | |
| Pyrene | 3.16 | 0.20 | ug/L | 4.000 | | 79 | 40-140 | 5 | 20 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *1.28* | | ug/L | *2.500* | | *51* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *1.80* | | ug/L | *2.500* | | *72* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.10* | | ug/L | *2.500* | | *84* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.16* | | ug/L | *2.500* | | *86* | *30-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

**Notes and Definitions**

| | |
|---|---|
| U | Analyte included in the analysis, but not detected |
| CD | Continuing Calibration %Diff is outside of control limit. |
| C- | Continuing Calibration recovery is below lower control limit (C-). |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1403068

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002
http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

**CHEMISTRY**

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

**Sample and Cooler Receipt Checklist**

Client: Triton Enviromental Inc.
Client Project ID: _____
Shipped/Delivered Via: Client

ESS Project ID: 14030068
Date Project Due: 3/13/14
Days For Project: 5 Day

**Items to be checked upon receipt:**

1. Air Bill Manifest Present? * No
   Air No.:
2. Were Custody Seals Present? No
3. Were Custody Seals Intact? N/A
4. Is Radiation count < 100 CPM? Yes
5. Is a cooler present? Yes
   Cooler Temp: **4.1**
   Iced With: **Ice**
6. Was COC included with samples? Yes
7. Was COC signed and dated by client? Yes
8. Does the COC match the sample Yes
9. Is COC complete and correct? Yes
10. Are the samples properly preserved? Yes
11. Proper sample containers used? Yes
12. Any air bubbles in the VOA vials? No
13. Holding times exceeded? No
14. Sufficient sample volumes? Yes
15. Any Subcontracting needed? No
16. Are ESS labels on correct containers? Yes|No
17. Were samples received intact? Yes|No
    ESS Sample IDs: _____
    Sub Lab: _____
    Analysis: _____
    TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?: _____ By whom? _____

| Sample Number | Properly Preserved | Container Type | # of Containers | Preservative |
|---|---|---|---|---|
| 1 | Yes | 1 L Glass | 4 | NP |
| 1 | Yes | 40 ml - VOA | 6 | HCL |
| 2 | Yes | 1 L Glass | 4 | NP |
| 2 | Yes | 40 ml - VOA | 6 | HCL |
| 3 | Yes | 1 L Glass | 4 | NP |
| 3 | Yes | 40 ml - VOA | 6 | HCL |

Completed By: [signature] Date/Time: 3/6/14 1650
Reviewed By: [signature] Date/Time: 3/6/14 1700

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

Page 1 of 1

Turn Time: X Standard Other _____
If faster than 5 days, prior approval by laboratory is required # _____

State where samples were collected from: MA RI CT NH NJ (NY) ME Other _____

Is this project for any of the following: MA-MCP Navy USACE Other _____

Reporting Limits: GA

ESS LAB PROJECT ID: 1403068

Electronic Deliverable: Yes X No ____

Format: Excel X Access ___ PDF X Other _____

| | |
|---|---|
| Co. Name | Triton Environmental |
| Project # | 104226 |
| Project Name (20 Char. or less) | Metro North |
| Contact Person | Mark Parlson |
| Address | 385 Church St |
| City | Guilford |
| State | CT |
| Zip | 06437 |
| PO# | |
| Telephone # | 203 458 7200 |
| Fax # | 203 458 7201 |
| Email Address | mparlson@tritonenvironmental.com |

Circle and/or Write Required Analysis

| ESS LAB Sample # | Date | Collection Time | COMP | GRAB | MATRIX | Sample Identification (20 Char. or less) | Pres Code | Number of Containers | Type of Containers | 624 / 524.2 / 8260 VOA | 8015 GRO / VPH w/targets / 8021 MTBE/BTEX | 8100 TPH / 8015 DRO | EPH w/o PAHs / EPH w/PAHs / EPH 4 Diesel | 8081 Pesticides / 8082 PCB / 608 Pesticides / 608 PCB | 8270 SVOA / 625 / PAH 8270 | RCRA5 / RCRA8 / PP13 / TAL23 | TCLP-RCRA8 / NBC7 | MCP-METALS (13) / MCP-METALS (13) w/Hg | DRO | GRO | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3/5/14 | 8:45 | | X | AQ | TW-3 | 1,2 | 10 | | X | | | | | X | | | | X | X | | | |
| 2 | 3/5/14 | 10:15 | | X | ↓ | TW-2 | 1,2 | 10 | | X | | | | | X | | | | X | X | | | |
| 3 | 3/5/14 | 11:15 | | X | ↓ | TW-1 | 1,2 | 10 | | X | | | | | X | | | | X | X | | | |
| | | | | | 3/6/14 | | | | | | | | | | | | | | | | | | |

Container Type: P-Poly G-Glass S-Sterile V-VOA | Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present: ✓ Yes ___ No
Seals Intact: ___ Yes ___ No NA: ✓
Cooler Temp: 4.0 ice 3/6/14

Internal Use Only: [ ] Pickup [ ] Technicians _____

Preservation Code: 1- NP, 2- HC1, 3- $H_2SO_4$, 4- $HNO_3$, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: CK

Comments:

| Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|---|
| [signature] | 3/6/14 11:31 | [signature] | 3/6/14 11:31 | [signature] | | | |
| Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
| | | | | | | | |

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 B

*CERTIFICATE OF ANALYSIS*

Gerald Gigiliotti
Triton Environmental, Inc.
385 Church Street, Suite 201
Guilford, CT 06437

**RE: Metro North Harrison NY (104226)**
**ESS Laboratory Work Order Number: 1404733**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 4:41 pm, May 07, 2014**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1404733

## SAMPLE RECEIPT

The following samples were received on April 30, 2014 for the analyses specified on the enclosed Chain of Custody Record.

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1404733-01 | ENV-2A | Soil | 7196A |
| 1404733-02 | ENV-3A | Soil | 7196A |
| 1404733-03 | ENV-4A | Soil | 7196A |
| 1404733-04 | ENV-5A | Soil | 7196A |
| 1404733-05 | HS-3A | Soil | 7196A, 8082A |
| 1404733-06 | HS-3B | Soil | 7196A, 8082A |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1404733

## PROJECT NARRATIVE

**No unusual observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1404733

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015D - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: ENV-2A
Date Sampled: 04/30/14 12:15
Percent Solids: 89

ESS Laboratory Work Order: 1404733
ESS Laboratory Sample ID: 1404733-01
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Hexavalent Chromium | ND (0.5) | | 7196A | | 1 | JLK | 05/02/14 15:30 | mg/kg dry | CE40225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: ENV-3A
Date Sampled: 04/30/14 11:00
Percent Solids: 92

ESS Laboratory Work Order: 1404733
ESS Laboratory Sample ID: 1404733-02
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Hexavalent Chromium** | **1.4** (0.5) | | 7196A | | 1 | JLK | 05/02/14 15:30 | mg/kg dry | CE40225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: ENV-4A
Date Sampled: 04/30/14 11:30
Percent Solids: 86

ESS Laboratory Work Order: 1404733
ESS Laboratory Sample ID: 1404733-03
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Hexavalent Chromium | ND (0.6) | | 7196A | | 1 | JLK | 05/02/14 15:30 | mg/kg dry | CE40225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: ENV-5A
Date Sampled: 04/30/14 10:15
Percent Solids: 90

ESS Laboratory Work Order: 1404733
ESS Laboratory Sample ID: 1404733-04
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Hexavalent Chromium** | **0.7** (0.5) | | 7196A | | 1 | JLK | 05/02/14 15:30 | mg/kg dry | CE40225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-3A
Date Sampled: 04/30/14 12:45
Percent Solids: 81
Initial Volume: 30.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1404733
ESS Laboratory Sample ID: 1404733-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 5/1/14 17:46
Cleanup Method: 3665A

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.0412) | | 8082A | | 1 | 05/04/14 0:54 | | CD43002 |
| Aroclor 1221 | ND (0.0412) | | 8082A | | 1 | 05/04/14 0:54 | | CD43002 |
| Aroclor 1232 | ND (0.0412) | | 8082A | | 1 | 05/04/14 0:54 | | CD43002 |
| Aroclor 1242 | ND (0.0412) | | 8082A | | 1 | 05/04/14 0:54 | | CD43002 |
| Aroclor 1248 | ND (0.0412) | | 8082A | | 1 | 05/04/14 0:54 | | CD43002 |
| Aroclor 1254 | ND (0.0412) | | 8082A | | 1 | 05/04/14 0:54 | | CD43002 |
| **Aroclor 1260** | **0.127** (0.0412) | | 8082A | | 1 | 05/04/14 0:54 | | CD43002 |
| Aroclor 1262 | ND (0.0412) | | 8082A | | 1 | 05/04/14 0:54 | | CD43002 |
| Aroclor 1268 | ND (0.0412) | | 8082A | | 1 | 05/04/14 0:54 | | CD43002 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *89 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *95 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *94 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-3A
Date Sampled: 04/30/14 12:45
Percent Solids: 81

ESS Laboratory Work Order: 1404733
ESS Laboratory Sample ID: 1404733-05
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Hexavalent Chromium | ND (0.6) | | 7196A | | 1 | JLK | 05/02/14 15:30 | mg/kg dry | CE40225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-3B
Date Sampled: 04/30/14 13:00
Percent Solids: 89
Initial Volume: 30.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1404733
ESS Laboratory Sample ID: 1404733-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 5/1/14 17:46
Cleanup Method: 3665A

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.0372) | | 8082A | | 1 | 05/04/14 1:13 | | CD43002 |
| Aroclor 1221 | ND (0.0372) | | 8082A | | 1 | 05/04/14 1:13 | | CD43002 |
| Aroclor 1232 | ND (0.0372) | | 8082A | | 1 | 05/04/14 1:13 | | CD43002 |
| Aroclor 1242 | ND (0.0372) | | 8082A | | 1 | 05/04/14 1:13 | | CD43002 |
| Aroclor 1248 | ND (0.0372) | | 8082A | | 1 | 05/04/14 1:13 | | CD43002 |
| Aroclor 1254 | ND (0.0372) | | 8082A | | 1 | 05/04/14 1:13 | | CD43002 |
| **Aroclor 1260** | **0.0871** (0.0372) | | 8082A | | 1 | 05/04/14 1:13 | | CD43002 |
| Aroclor 1262 | ND (0.0372) | | 8082A | | 1 | 05/04/14 1:13 | | CD43002 |
| Aroclor 1268 | ND (0.0372) | | 8082A | | 1 | 05/04/14 1:13 | | CD43002 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *96 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *79 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *94 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY
Client Sample ID: HS-3B
Date Sampled: 04/30/14 13:00
Percent Solids: 89

ESS Laboratory Work Order: 1404733
ESS Laboratory Sample ID: 1404733-06
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Hexavalent Chromium | ND (0.6) | | 7196A | | 1 | JLK | 05/02/14 15:30 | mg/kg dry | CE40225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1404733

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082A Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| **Batch CD43002 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1016 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1221 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1232 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1242 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1404733

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082A Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| **Batch CD43002 - 3540C** | | | | | | | | | | |
| Aroclor 1248 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1248 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1254 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1260 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1262 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.0500 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1404733

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CD43002 - 3540C** | | | | | | | | | | |
| Aroclor 1268 (1) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (1) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (2) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (2) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (3) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (3) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (4) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (4) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (5) | ND | 0.0500 | mg/kg wet | | | | | | | |
| Aroclor 1268 (5) [2C] | ND | 0.0500 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0160* | | mg/kg wet | *0.02500* | | *64* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0178* | | mg/kg wet | *0.02500* | | *71* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0200* | | mg/kg wet | *0.02500* | | *80* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0239* | | mg/kg wet | *0.02500* | | *96* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.488 | 0.0500 | mg/kg wet | 0.5000 | | 98 | 50-120 | | | |
| Aroclor 1260 | 0.416 | 0.0500 | mg/kg wet | 0.5000 | | 83 | 50-150 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0156* | | mg/kg wet | *0.02500* | | *63* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0171* | | mg/kg wet | *0.02500* | | *68* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0226* | | mg/kg wet | *0.02500* | | *91* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0249* | | mg/kg wet | *0.02500* | | *99* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.484 | 0.0500 | mg/kg wet | 0.5000 | | 97 | 50-120 | 0.9 | 15 | |
| Aroclor 1260 | 0.426 | 0.0500 | mg/kg wet | 0.5000 | | 85 | 50-150 | 2 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *0.0157* | | mg/kg wet | *0.02500* | | *63* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0170* | | mg/kg wet | *0.02500* | | *68* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0230* | | mg/kg wet | *0.02500* | | *92* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0252* | | mg/kg wet | *0.02500* | | *101* | *30-150* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CE40225 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Hexavalent Chromium | ND | 0.7 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Hexavalent Chromium | 32.6 | 0.7 | mg/kg wet | 33.32 | | 98 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Hexavalent Chromium | 32.4 | 0.7 | mg/kg wet | 33.32 | | 97 | 80-120 | 0.4 | 20 | |
| **Reference** | | | | | | | | | | |
| Hexavalent Chromium | 262 | 9.9 | mg/kg wet | 261.0 | | 100 | 70.9-129.85 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1404733

**Notes and Definitions**

| | |
|---|---|
| U | Analyte included in the analysis, but not detected |
| D | Diluted. |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |

*CERTIFICATE OF ANALYSIS*

Client Name: Triton Environmental, Inc.
Client Project ID: Metro North Harrison NY

ESS Laboratory Work Order: 1404733

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002
http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

**CHEMISTRY**

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Attachment B
SOP 10_0001

**Sample and Cooler Receipt Checklist**

Client: Triton Enviromental Inc.
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 14040733
Date Project Due: 5/7/14
Days For Project: 5 Day

**Items to be checked upon receipt:**

1. Air Bill Manifest Present? *** No**
   Air No.:
2. Were Custody Seals Present? **No**
3. Were Custody Seals Intact? **N/A**
4. Is Radiation count < 100 CPM? **Yes**
5. Is a cooler present? **Yes**
   Cooler Temp: ~~2.7~~ 2.8 4/30/14
   Iced With: **Ice**
6. Was COC included with samples? **Yes**
7. Was COC signed and dated by client? **Yes**
8. Does the COC match the sample **Yes**
9. Is COC complete and correct? **Yes**
10. Are the samples properly preserved? **Yes**
11. Proper sample containers used? **Yes**
12. Any air bubbles in the VOA vials? **N/A**
13. Holding times exceeded? **No**
14. Sufficient sample volumes? **Yes**
15. Any Subcontracting needed? **No**
16. Are ESS labels on correct containers? **Yes | No**
17. Were samples received intact? **Yes | No**
    ESS Sample IDs: _____
    Sub Lab: _____
    Analysis: _____
    TAT: _____
18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?: _____ By whom? _____

| Sample Number | Properly Preserved | Container Type | # of Containers | Preservative |
|---|---|---|---|---|
| 1 | Yes | 2 oz Soil Jar | 2 | NP |
| 2 | Yes | 2 oz Soil Jar | 2 | NP |
| 3 | Yes | 2 oz Soil Jar | 2 | NP |
| 4 | Yes | 2 oz Soil Jar | 2 | NP |
| 5 | Yes | 2 oz Soil Jar | 2 | NP |
| 5 | Yes | 8 oz Soil Jar | 1 | NP |
| 6 | Yes | 2 oz Soil Jar | 2 | NP |
| 6 | Yes | 8 oz Soil Jar | 1 | NP |

Completed By: [signature] Date/Time: 4/30/14 1657
Reviewed By: [signature] Date/Time: 4/30/14 1703

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

Page 1 of 1

Turn Time: X Standard Other _____
If faster than 5 days, prior approval by laboratory is required # _____

State where samples were collected from: MA RI CT NH NJ (NY) ME Other _____

Is this project for any of the following: MA-MCP Navy USACE Other _____

Reporting Limits: Hex Chrom → SCO 1mg/kg; PCB Sox → 0.1mg/kg

ESS LAB PROJECT ID: 1404733

Electronic Deliverable: Yes X No ___
Format: Excel X Access ___ PDF X Other _____

Co. Name: Triton Environmental
Project #: 104226
Project Name (20 Char. or less): Metro North Harrison NY
Contact Person: Gerald Cigliotti
Address: 385 Church St
City: Guilford State: CT Zip: 06437
PO#:
Telephone #: 203 458 7200
Fax #: 203 458 7201
Email Address: gcigliotti@tritonenvironmental.com

Write Required Analysis

| ESS LAB Sample # | Date | Collection Time | COMP | GRAB | MATRIX | Sample Identification (20 Char. or less) | Pres Code | Number of Containers | Type of Containers | Hexavalent Chromium | PCB Sox Soxt |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 4/30/14 | 12:15 | | X | S | ENV-2A | 1 | 2 | G | X | |
| 02 | | 11:00 | | | | ENV-3A | | 2 | | X | |
| 03 | | 11:30 | | | | ENV-4A | | 2 | | X | |
| 04 | | 10:15 | | | | ENV-5A | | 2 | | X | |
| 05 | | 12:45 | | | | HS-3A | | 3 | | X | X |
| 06 | | 13:00 | | | | HS-3B | | 3 | | X | X |

Container Type: P-Poly G-Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present: ✓ Yes ___ No
Seals Intact: ___ Yes ___ No NA: ___
Cooler Temp: 2.8°C
BB 4/30/14 1630

Internal Use Only
[✓] Pickup
[ ] Technicians ____

Preservation Code: 1- NP, 2- HCl, 3- $H_2SO_4$, 4- $HNO_3$, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: CK

Comments: Reporting Limits NY DEC Soil Cleanup Objectives (SCO's)

| Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|---|---|
| [signature] | 4/30/14 14:55 | [signature] | 4/30/14 1455 | [signature] | 4/30/14 1630 | [signature] | 4/30/14 1652 |
| Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
| | | | | | | | |

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

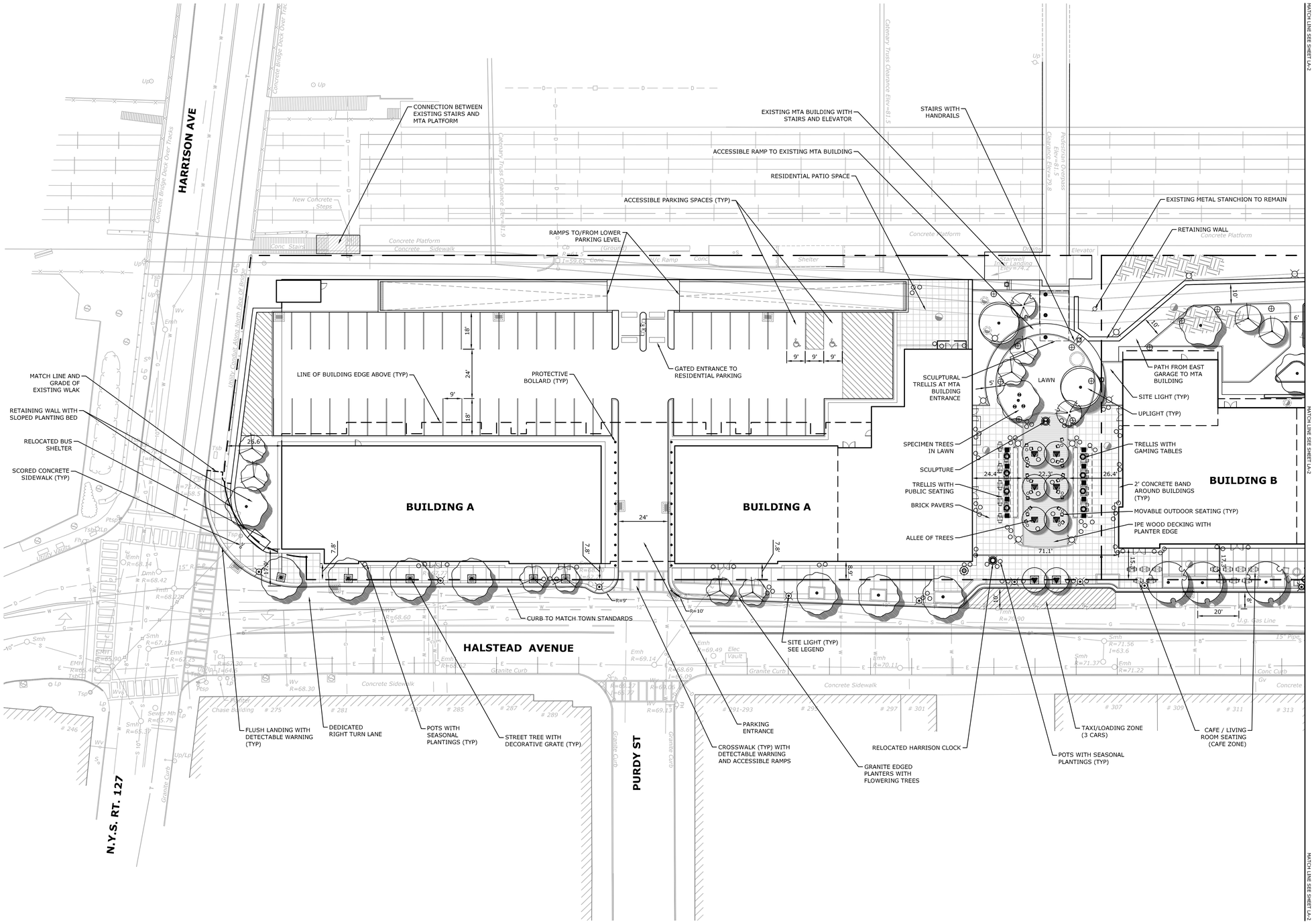
Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A

Avalon Bay Harrison
Town/Village of Harrison,
Westchester County, New York
Draft Environmental Impact Statement

# H Landscaping Plan




## MATERIALS LEGEND

- BRICK PAVERS
- SCORED CONCRETE SIDEWALK - TINTED WITH FLY ASH, TREATED WITH MICA, BROOM FINISHED. SAW CUT JOINTS, JOINT SEALANT TO MATCH COLOR CONCRETE
- CURB - MATERIAL PER TOWN STANDARDS
- SAWCUT LIMITS

## LIGHTING SCHEDULE

| SYMBOL | DESCRIPTION | QTY |
|---|---|---|
| | HIGH-HEIGHT SITE LIGHT | 16 |
| | MID-HEIGHT SITE LIGHT | 14 |
| | LOW-HEIGHT BOLLARD LIGHT | 22 |
| | WALL LIGHT/STEP LIGHT | 6 |
| | UP-LIGHT CANS FOR FEATURE TREES | 9 |
| | PENDANT LIGHT | 8 |
| | ILLUMINATED HARRISON CLOCK (EXISTING) | 1 |
| | PLACE-MAKING SCULPTURE LIGHT | 1 |
| | TWINKLE TREE LIGHTS | 11 |

1. LIGHTING ASSOCIATED WITH NEW TRELLIS AT MTA STATION ENTRANCE NOT SHOWN (TBD)

UNAUTHORIZED ALTERATION TO A MAP BEARING A LICENSED PROFESSIONAL ENGINEER'S SEAL IS IN VIOLATION OF SECTION 7209, SUB-DIVISION 2, OF THE NEW YORK STATE EDUCATION LAW. THE CERTIFICATION IS NOT AN EXPRESS OR IMPLIED WARRANTY OR GUARANTEE, IT IS PURELY A STATEMENT OF PROFESSIONAL OPINION BASED ON KNOWLEDGE, INFORMATION AND BELIEF, BASED ON EXISTING FIELD EVIDENCE AND DOCUMENTARY EVIDENCE AVAILABLE. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS. COPIES OF NOT HAVING THE EMBOSSED SEAL OF THE ENGINEER SHALL NOT BE VALID.

ANY ALTERATION OR REVISIONS OF THESE PLANS, UNLESS DONE BY OR UNDER THE DIRECTION OF THE NYS LICENSED AND REGISTERED ENGINEER THAT PREPARED THEM, IS A VIOLATION OF THE NYS EDUCATION LAW.

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Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.milone&macbroom.com

| DESCRIPTION | DATE | BY |
|---|---|---|

PRELIMINARY DESIGN

# SITE PLAN - LAYOUT & LANDSCAPING

## AVALONBAY HARRISON

HALSTEAD AVENUE
HARRISON, NEW YORK

| TRS | BDK | TRS |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE: 1"=20'

DATE: JULY 29, 2016

PROJECT NO.: 1218-74

SHEET NO.: 05 OF 17

SHEET NAME: LA-1

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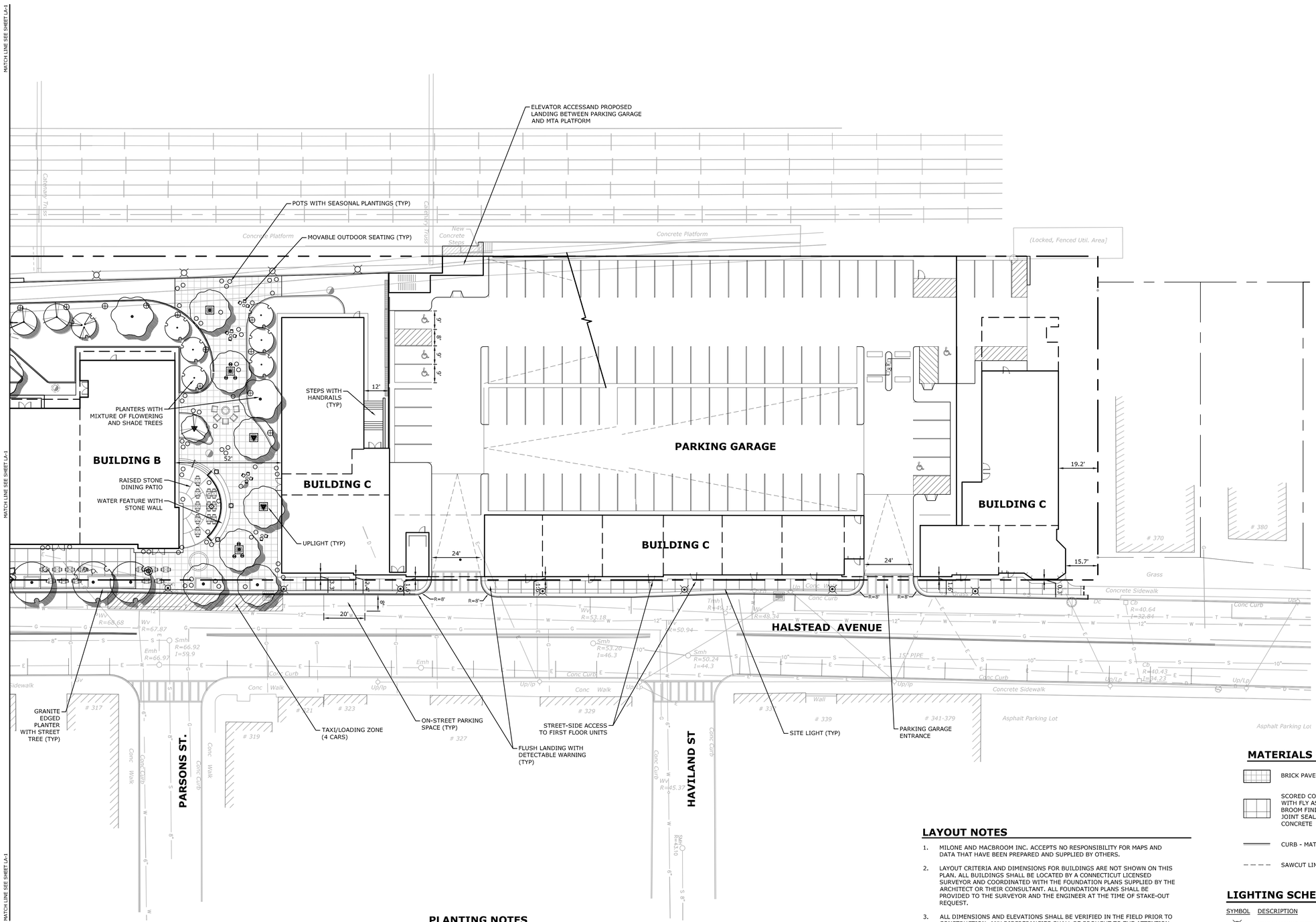


## PLANT SCHEDULE

| TREES | QTY | BOTANICAL NAME | COMMON NAME | SIZE | CONT. | COMMENTS |
|---|---|---|---|---|---|---|
| AR | 6 | Acer rubrum `Red Sunset` | Red Sunset Maple | 3.5" Cal. | B&B | 6` MIN. BRANCHING HT. |
| AF | 6 | Acer x freemanii `Armstrong` | Armstrong Freeman Maple | 3.5" Cal. | B&B | 6` MIN. BRANCHING HT. |
| AG | 3 | Amelanchier x grandiflora `Autumn Brilliance` | `Autumn Brilliance` Serviceberry | 2.5" Cal. | B&B | MULTI-STEM |
| CB | 8 | Carpinus betulus `Columnaris` | Columnar European Hornbeam | 3.5" Cal. | B&B | 5` MIN. BRANCHING HT. |
| CF | 4 | Cornus florida `Cherokee Brave` | Cherokee Brave Dogwood | 3.0" Cal. | B&B | FULL & DENSE |
| CR | 4 | Cornus x rutgersensis `Constellation` | White Stellar Series Dogwood | 3.0" Cal. | B&B | FULL & DENSE |
| CS | 6 | Cornus x rutgersensis `Stellar Pink` | Pink Flowering Stellar Dogwood | 3.0" Cal. | B&B | FULL & DENSE |
| FG | 2 | Fagus grandifolia | American Beech | 4.0" Cal. | B&B | FULL & DENSE |
| GS | 12 | Gleditsia triacanthos inermis `Shademaster` TM | Shademaster Locust | 4.0" Cal. | B&B | 6` MIN. BRANCHING HT. |
| PB | 6 | Platanus x acerifolia `Bloodgood` | London Plane Tree | 4.0" Cal. | B&B | 6` MIN. BRANCHING HT. |

## PLANTING NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATING PLANT PITS.
2. SEED ALL DISTURBED AREAS TO LAWN UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL PROVIDE A 6" MINIMUM DEPTH OF SCREENED TOPSOIL, AS SPECIFIED, FOR ALL LAWN AREAS.
3. ALL PLANTING BEDS SHALL HAVE 12" MINIMUM DEPTH OF TOPSOIL.
4. THE CONTRACTOR SHALL PROVIDE A 4" MIN. DEPTH OF SHREDDED BARK MULCH OVER ALL PLANTING BEDS AND TREE PLANTINGS. MULCHED PLANT BEDS SHALL EXTEND 12" FURTHER THAN THE ADJACENT PLANTINGS. NO DYED MULCH.
5. ALL PLANT MATERIAL IS SUBJECT TO INSPECTION AND APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO AND AFTER PLANTING.
6. PLANT SPECIES MAY BE ADJUSTED BASED ON AVAILABILITY AT TIME OF PLANTING. ALL PLANT MATERIAL SUBSTITUTIONS ARE SUBJECT TO REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT.
7. ALL PLANT MATERIALS SHALL CARRY A FULL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE, TO INCLUDE PROMPT TREATMENT OR REMOVAL AND REPLACEMENT OF ANY PLANTS FOUND TO BE IN AN UNHEALTHY CONDITION BY THE LANDSCAPE ARCHITECT. ALL REPLACEMENTS SHALL BE OF THE SAME KIND AND SIZE OF PLANTS SPECIFIED IN THE PLANT LIST.
8. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND SHALL CONTINUE UNTIL ACCEPTANCE BY THE LANDSCAPE ARCHITECT AT THE END OF THE WARRANTY PERIOD. MAINTENANCE SHALL INCLUDE WATERING, MULCHING, TIGHTENING & REPLACING OF GUYS, REPLACEMENT OF SICK OR DEAD PLANTS, RESETTING PLANTS TO PROPER GRADE OR UPRIGHT (PLUMB) POSITION, RESTORATION OF SAUCERS, AND ALL OTHER CARE NEEDED FOR PROPER GROWTH OF THE PLANTS.
9. WHERE A SIZE RANGE IS SPECIFIED AT LEAST 50% OF PLANTS PROVIDED SHALL BE OF THE LARGER SIZE.
10. CONTRACTOR TO REMOVE TREE STAKES AFTER ONE GROWING SEASON.

## LAYOUT NOTES

1. MILONE AND MACBROOM INC. ACCEPTS NO RESPONSIBILITY FOR MAPS AND DATA THAT HAVE BEEN PREPARED AND SUPPLIED BY OTHERS.
2. LAYOUT CRITERIA AND DIMENSIONS FOR BUILDINGS ARE NOT SHOWN ON THIS PLAN. ALL BUILDINGS SHALL BE LOCATED BY A CONNECTICUT LICENSED SURVEYOR AND COORDINATED WITH THE FOUNDATION PLANS SUPPLIED BY THE ARCHITECT OR THEIR CONSULTANT. ALL FOUNDATION PLANS SHALL BE PROVIDED TO THE SURVEYOR AND THE ENGINEER AT THE TIME OF STAKE-OUT REQUEST.
3. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
4. FOR DETAILED INFORMATION PERTAINING TO PROPOSED BUILDINGS REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS.
5. SEE EXISTING CONDITIONS PLAN FOR VERTICAL AND HORIZONTAL BENCH MARK INFORMATION.

## MATERIALS NOTES

1. CONCRETE SIDEWALKS, ENTRY AREAS, AND TERRACES SHALL INCORPORATE EXPANSION JOINTS, SCORE JOINTS, AND CONSTRUCTION JOINTS PER THE SPECIFICATIONS AND DETAILS, TYPICALLY NO MORE THAN 144 SQUARE FEET SHALL BE A CONTIGUOUS SLAB. SEE ARCHITECTURAL AND STRUCTURAL PLANS FOR JOINTING PERTAINING TO THESE DISCIPLINES.
2. IN ALL CASES WHERE CONCRETE SIDEWALKS ABUT CONCRETE CURBS THE CONTRACTOR IS TO UTILIZE THE INTEGRAL CONCRETE CURB AND WALK DETAIL. ALL PROPOSED CURBING SHALL BE CONCRETE, UNLESS SPECIFIED OTHERWISE.
3. SITE LIGHTS DEPICTED WITHIN LAWN/LANDSCAPE AREAS SHALL MAINTAIN A 4'-6" FOUNDATION REVEAL MAXIMUM. SEE ELECTRICAL PLAN FOR MORE INFORMATION.
4. WHERE WALK AND PAVED DRIVE ARE SPECIFIED TO BE FLUSH, A FLUSH (FULL DEPTH) CONCRETE CURB SHALL ALSO BE INSTALLED. SEE DETAIL.

## MATERIALS LEGEND

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- SCORED CONCRETE SIDEWALK - TINTED WITH FLY ASH, TREATED WITH MICA, BROOM FINISHED. SAW CUT JOINTS, JOINT SEALANT TO MATCH COLOR CONCRETE
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| DESCRIPTION | DATE | BY |
|---|---|---|

PRELIMINARY DESIGN

# SITE PLAN - LAYOUT & LANDSCAPING

AVALONBAY HARRISON

HALSTEAD AVENUE
HARRISON, NEW YORK

| TRS | BDK | TRS |
|---|---|---|
| DESIGNED | DRAWN | CHECKED |

SCALE 1"=20'

DATE JULY 29, 2016

PROJECT NO. 1218-74

SHEET NO. 06 OF 17

SHEET NAME LA-2

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Avalon Bay Harrison
Town/Village of Harrison,
Westchester County, New York
Draft Environmental Impact Statement

# G UFWS Trust Resources

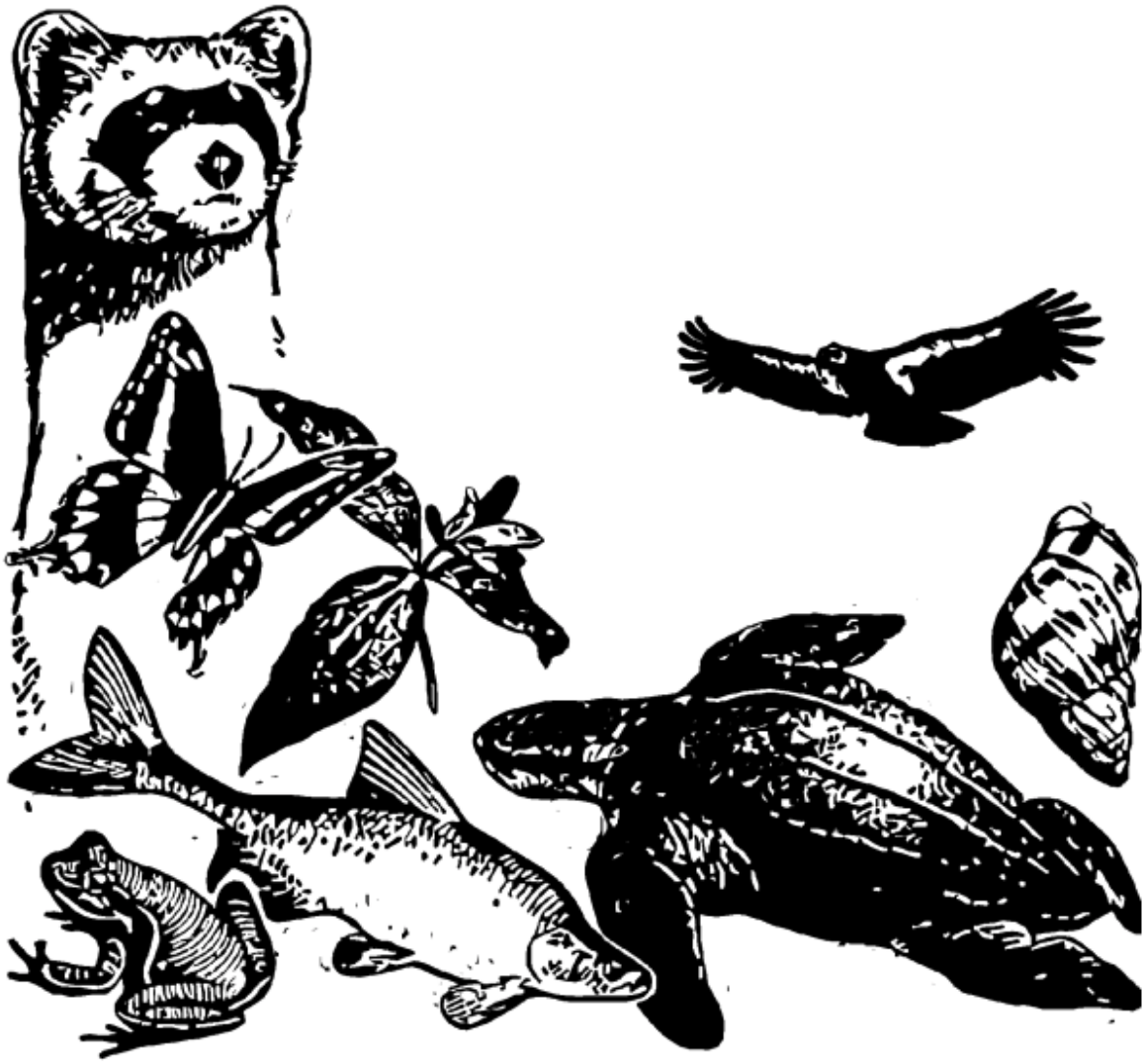
U.S. Fish & Wildlife Service

# Proposed Transit-Oriented Development

## *IPaC Trust Resources Report*

Generated April 04, 2016 11:49 AM MDT, IPaC v3.0.0

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



IPaC - Information for Planning and Conservation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

# Table of Contents

IPaC Trust Resources Report . . . . . 1
Project Description . . . . . 1
Endangered Species . . . . . 2
Migratory Birds . . . . . 3
Refuges & Hatcheries . . . . . 6
Wetlands . . . . . 7

U.S. Fish & Wildlife Service

# IPaC Trust Resources Report

NAME

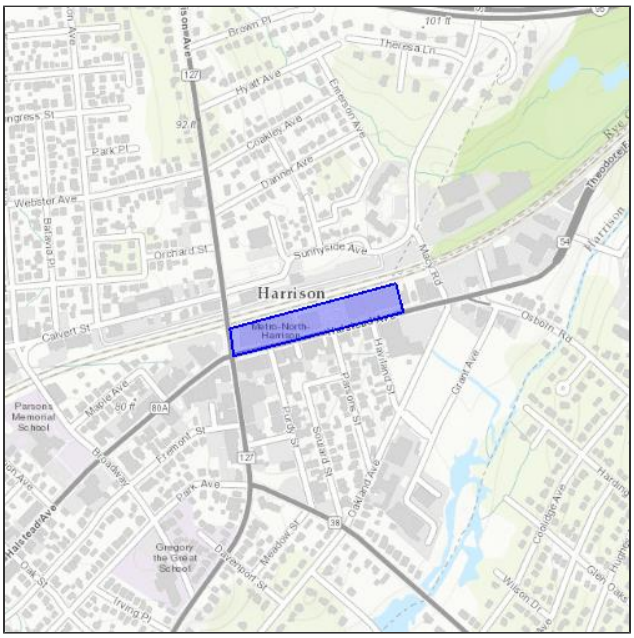
Proposed Transit-Oriented Development

LOCATION

Westchester County, New York

DESCRIPTION

The project is located in the Central Business District of the Town of Harrison. The proposed project area is 3.5 acres. The development will include 143 residential apartments, approximately 27,000 square feet of commercial space, and 769 parking spaces.




IPAC LINK

https://ecos.fws.gov/ipac/project/RYHNA-DQ64V-BJPPL-TVVCH-HKLVSQ

# U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

**Long Island Ecological Services Field Office**
340 Smith Road
Shirley, NY 11967
(631) 286-0485

**New York Ecological Services Field Office**
3817 Luker Road
Cortland, NY 13045-9349
(607) 753-9334

# Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

**This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.**

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

**A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.**

**There are no endangered species in this location**

## Critical Habitats

**There are no critical habitats in this location**

# Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

---

1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/akn-histogram-tools.php

The following species of migratory birds could potentially be affected by activities in this location:

**American Oystercatcher** Haematopus palliatus — Bird of conservation concern
Year-round
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0G8

**American Bittern** Botaurus lentiginosus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F3

**Bald Eagle** Haliaeetus leucocephalus — Bird of conservation concern
Year-round
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

**Black Skimmer** Rynchops niger — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EO

**Black-billed Cuckoo** Coccyzus erythropthalmus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HI

**Blue-winged Warbler** Vermivora pinus — Bird of conservation concern
Season: Breeding

**Canada Warbler** Wilsonia canadensis — Bird of conservation concern
Season: Breeding

**Cerulean Warbler** Dendroica cerulea — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B09I

**Fox Sparrow** Passerella iliaca — Bird of conservation concern
Season: Wintering

**Golden-winged Warbler** Vermivora chrysoptera — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0G4

**Gull-billed Tern** Gelochelidon nilotica — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JV

**Hudsonian Godwit** Limosa haemastica — Bird of conservation concern
Season: Migrating

**Kentucky Warbler** Oporornis formosus — Bird of conservation concern
Season: Breeding

**Least Bittern** Ixobrychus exilis
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B092

**Least Tern** Sterna antillarum — Bird of conservation concern
Season: Breeding

**Peregrine Falcon** Falco peregrinus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU

**Pied-billed Grebe** Podilymbus podiceps — Bird of conservation concern
Year-round

**Prairie Warbler** Dendroica discolor — Bird of conservation concern
Season: Breeding

**Purple Sandpiper** Calidris maritima — Bird of conservation concern
Season: Wintering

**Rusty Blackbird** Euphagus carolinus — Bird of conservation concern
Season: Wintering

**Saltmarsh Sparrow** Ammodramus caudacutus — Bird of conservation concern
Season: Breeding

**Seaside Sparrow** Ammodramus maritimus — Bird of conservation concern
Year-round

**Short-eared Owl** Asio flammeus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD

**Snowy Egret** Egretta thula — Bird of conservation concern
Season: Breeding

**Upland Sandpiper** Bartramia longicauda — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HC

**Willow Flycatcher** Empidonax traillii — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F6

**Wood Thrush** Hylocichla mustelina — Bird of conservation concern
Season: Breeding

**Worm Eating Warbler** Helmitheros vermivorum — Bird of conservation concern
Season: Breeding

# Wildlife refuges and fish hatcheries

**There are no refuges or fish hatcheries in this location**

# Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

## There are no wetlands in this location

Avalon Bay Harrison
Town/Village of Harrison,
Westchester County, New York
Draft Environmental Impact Statement

# F NYS DEC Natural Heritage Program Report

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**
**Division of Fish, Wildlife & Marine Resources**
**New York Natural Heritage Program**
625 Broadway, 5th Floor, Albany, New York 12233-4757
**Phone:** (518) 402-8935 • **Fax:** (518) 402-8925
**Website:** www.dec.ny.gov

April 27, 2016

Steven Martini
VHB Engineering, Surveying and Landscape Architecture, P.C.
50 Main Street, Suite 360
White Plains, NY 10606

Re: Avalon Bay Communities, Inc. Planned Transit-Oriented Development, Halstead Avenue
Town/City: Harrison. County: Westchester.

Dear Steven Martini:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

We have no records of rare or state-listed animals or plants, or significant natural communities at your site or in its immediate vicinity.

The absence of data does not necessarily mean that rare or state-listed species, significant natural communities, or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information that indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other resources may be required to fully assess impacts on biological resources.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities, and other significant habitats maintained in the Natural Heritage Database. Your project may require additional review or permits; for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 3 Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Sincerely,

Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program

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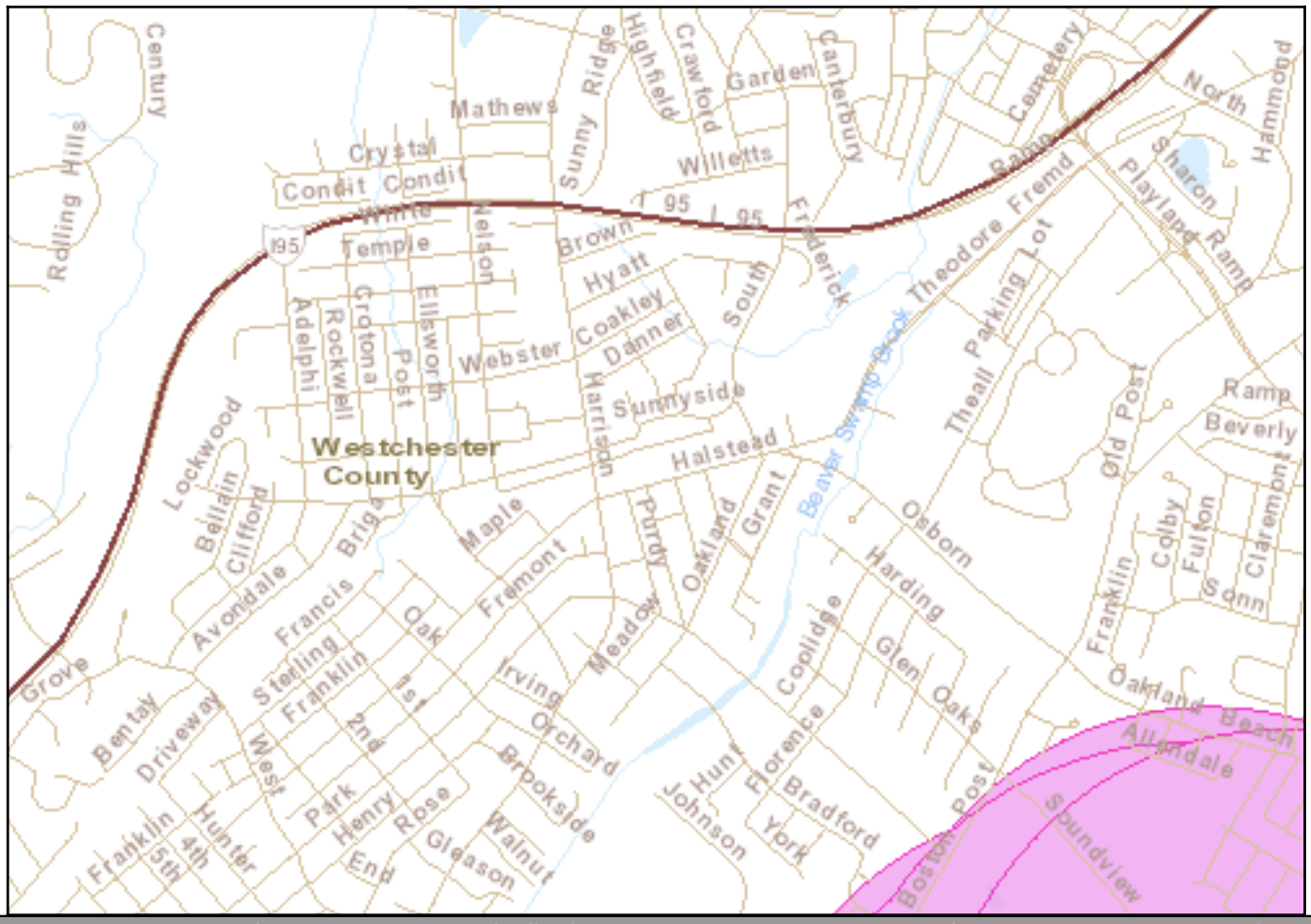
# E NYS DEC Report

# New York Nature Explorer
# User Defined Results Report

Criteria: Selected Map Area




| Common Name | Subgroup | Distribution Status | Year Last Documente | Protection Status | | Conservation Rank | |
|---|---|---|---|---|---|---|---|
| | | | | State | Federal | State | Global |
| **Plant: Flowering Plants** | | | | | | | |
| Yellow Flatsedge<br>*Cyperus flavescens* | Sedges | Possible but not Confirmed | 1936 | Endangered | | S1 | G5 |

Note: Restricted plants and animals may also have also been documented in one or more of the Towns or Cities in which your user-defined area is located, but are not listed in these results. This application does not provide information at the level of Town or City on state-listed animals and on other sensitive animals and plants. A list of the restricted animals and plants documented at the corresponding county level can be obtained via the County link(s) on the original User Defined Search Results page. Any individual plant or animal on this county's restricted list may or may not occur in this particular user-defined area.

This list only includes records of rare species and significant natural communities from the databases of the NY Natural Heritage Program. This list is not a definitive statement about the presence or absence of all plants and animals, including rare or state-listed species, or of all significant natural communities. For most areas, comprehensive field surveys have not been conducted, and this list should not be considered a substitute for on-site surveys.