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Principal Emeritus:
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**TOWN OF NEWBURGH
PLANNING BOARD
TECHNICAL REVIEW COMMENTS**

PROJECT: HUSON PLACE SENIOR HOUSING
PROJECT NO.: 19-23
PROJECT LOCATION: SECTION 9, BLOCK 1, LOT 10, 11, 12, 56.21, 56.22
REVIEW DATE: 15 JANUARY 2021
MEETING DATE: 21 JANUARY 2021
PROJECT REPRESENTATIVE: JMC ENGINEERING

1. The project site may have been utilized as an apple orchard in the past. Issues with pesticide residue should be addressed with the Health Department.
2. The project contains a 100 Year Flood Plain. Information pertaining to the Flood Plain must be provided along with designs for the mitigation measures.
3. A Stormwater Pollution Prevention Plan will be required to be submitted.
4. The project is located along NYS Route 9W, NYSDOT input is required.
5. The Planning Board may wish to consider circulation a Notice of Intent for Lead Agency.
6. The project proposes connection to the Town’s potable water system. The Applicant should work with the Town Engineers Office and Water Department regarding pressure reducing regulators in the system in the vicinity of the project.
7. The project proposes an on-site sanitary sewage treatment facility. This facility will require review and approval by the NYS Department of Environmental Conservation.
8. The plans depict emergency access off of North Drive with connections to each of the grading tiers.
9. The Initial Notice must be submitted to adjoining property owners at this point now that the definitive plans for the project have been submitted to the Planning Board.
10. The Planning Board may wish to request visual sight profiles from Route 9W onto the site. The site is fairly visible and extensive re-grading of the site is proposed.

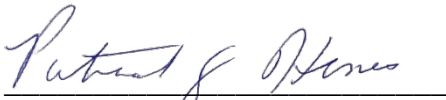
• Regional Office • 111 Wheatfield Drive • Suite 1 • Milford, Pennsylvania 18337 • 570-296-2765 •



11. The Applicants are requested to evaluate the distance to a trash enclosure from Building #10. People would have to cross the access roadway to dispose of trash.
12. The Applicants are requested to clarify that all lot lines are proposed to be removed and one lot will be resulting.
13. Further studies should be provided including sewage treatment design report, water system analysis and SWPPP.
14. The project is located in Orange County AG District #1 and will therefore be a Type I Action under SEQRA.
15. The EAF filled out on the NYSDEC website identifies potential habitat for Indiana Bats, however it has been revised to note the specific site evaluation by Ecological Solutions, LLC. Copies of this report must be submitted to the Planning Board for circulation with the Notice of Intent for Lead Agency.
16. The project has been reduced in scale to 203 units from a previous proposal of 214 based on an evaluation of the environmental constraints on the project site.
17. Further review of the project will be undertaken once detailed plans for water/sewer drainage and other infrastructure are provided as well as environmental reports identified above.

Respectfully submitted,

**McGoey, Hauser and Edsall
Consulting Engineers, D.P.C.**



Patrick J. Hines
Principal

PJH/kbw

KALA

Karen Arent Landscape Architect

Memorandum

To: Chairman John Ewasutyn and the Town of Newburgh Planning Board

From: Karen Arent, Landscape Architect

Date: January 15, 2021

Subject: Hudson Place

Town Project Number: 2019-06

Consultant: JMC Consulting Engineers, Landscape Architects

Cc: Anthony Guccione, Jr with JMC, Pat Hines, Dominick Cordisco, Esq, Gerald Canfield

COMMENTS:

In accordance with our previous memo, the consultant made aesthetically pleasing, ecologically beneficial, and functional revisions. These revisions include but are not limited to the following:

- Sidewalks were consolidated in front of buildings to allow larger landscape areas and more aesthetically pleasing and well-placed seating areas.
- Flat spaces between buildings were shown for passive recreation uses such as gardening.
- Stormwater management areas were reshaped and re-graded to appear more natural.
- Steep slopes were eliminated immediately adjacent to the existing pond to allow a walkway and create a more aesthetically pleasing pond that appears “full to the brim” (and not a puddle in a huge hole).
- The existing stream was daylighted rather than putting it in a box culvert.
- Planting islands, approximately 10’ wide for shade trees, were included in the commercial parking lot.
- The green space between the parking areas and Route 9W was increased by 15’

The following comments are considerations for moving forward with a landscape plan in efforts to create a landscape that thrives. Do the work and/or include notes on the drawings to require work to be performed as needed to satisfy comments below. Please note the first comment refers to a requested site plan amendment.

1. Please re-design the stepped walkway at the rear of building 4 so that it is incorporated with the landscape. The groups of steps down to the main walkway

Comments for Hudson Place
Dated January 15, 2021 Continued

will be more aesthetically pleasing if moved further away from the road, allowing for lower walls and planting on both sides of the stairs so people can walk in the landscape down to the parking lot. This will also eliminate the large concrete structure, with no space for screen planting, near the road.

- 2.
3. Show native shade trees suitable for a steeply sloped river/stream bank on both sides of the steeply sloped stream banks and along the edges of the ponds. Trees should be planted a minimum of 40' on center along the road side of the project in accordance with street tree requirements. At least one tree per 40' is needed on the project side. Additional trees could be planted in this area, close to the parking area, to provide the required minimum of 8 trees per parking space. Native shrubs and groundcovers that grow deep roots and are suitable for a riparian buffer should be densely planted in on the steeply sloped banks.
4. Add trees as necessary so shade trees are shown a minimum of 40' along roadways inside the site.
5. Specify native seed mixes in all areas requiring a seed mix cover.
6. Specify native trees and shrubs wherever appropriate, being sure to use tough urban tolerant trees and shrubs where needed.
7. Include a fencing detail for fences proposed around storm water management areas. Ideally the fence will blend with the surrounding landscape. For example, ranch style fencing with black coated PVC chain link fabric blends well with the existing site and proposed vegetation.
8. The consultant must submit a landscape bond estimate when proposed landscape plans are accepted. Unit prices that include the cost of the plant, labor to install the plant and a two- year warranty must be included on the cost estimate. A bond will be held for the landscape in accordance with this estimate.
9. Include soil specifications on landscape plans and show approximate size of soil stockpiles so they can be referenced during landscape inspections. Contractors usually do not review or receive a copy of written specifications, therefore they should be included on the Landscape (L-100) and Grading/Erosion Control Plans (C-200). Specifications should include the following:
 - a. Consultant to analyze test pit holes and measure the approximate depth of topsoil so that approximate amount of existing topsoil can be calculated and planting soil amendments define and possibly quantified. Include these quantifications and soil amendments and percentages on drawings.

Comments for Hudson Place
Dated January 15, 2021 Continued

- b. Consultant to test topsoil for information such as particle size, pH, nutrient levels, and minerals, and provide test results. Include specifications for soil particle size amendments (e.g. compost, sand, clay) required to create ideal planting soil. Also calculate and include approximate amounts of these items. Include results and recommendations on drawings.
- c. Approximate amount of topsoil needed to remain on project site should be quantified in accordance with comments below and listed on the plan with the soil stockpile locations so rough calculations can be made during site inspections to make sure the contractor reserved adequate amounts of topsoil for proposed plantings.
- d. Include specifications and amounts for other soil amendments such as lime or acid for pH adjustment and fertilizers for nutrient deficiencies.
- e. Soil shall be inspected before planting. Contractor/applicant is responsible for contacting town landscape architect to inspect soils (professional soil analysis may be required) at the beginning of soil work to ensure soil meets specifications on the approved plan.
- f. Plants shall be inspected before planting to make sure plants meet size and species specifications.
- g. Landscaping is inspected prior to issuance of certificate of occupancy. Soil quality determines if plants live, die, languish, or thrive. Installation of soil as defined on the drawings is important for certificate of occupancy and phased releases of the landscape bond.
- h. A partial release of the landscape bond can be requested after one year, and will be recommended for approval, if more than ninety percent of plants, including ground covers, are in good health at the time of inspection. A full release of the bond after two years will be recommended for approval if ninety percent of plants are in good health at the time of inspection. If more than 10 percent of plants are not in good health, recommendation for release of the bond cannot be made. Plants will need to be replaced and must live for another year before the bond can be recommended for release. The contractor must install soil as defined on the drawings (and plants must be appropriately watered) for the landscape to meet requirements for release of the landscape bond to be recommended.

Below are general soil specifications and suggestions assuming soils are not contaminated. Please note these are general notes and the applicant can modify according to their experience. Please inform us of modifications and reasons (for our

Comments for Hudson Place
Dated January 15, 2021 Continued

own education). The goal is a beautiful landscape that thrives, providing ecological benefits and habitat for native flora, fauna and fungi.

10. Topsoil-compost mix shall consist of 85%-90% stockpiled topsoil (if available) and 10%-15% well-rotted compost. Topsoil shall be natural, friable, fertile soil, characteristic of productive soil in the vicinity, reasonably free from stones, clay lumps, roots and other foreign matter, with an acidity level between 5.5 and 7 pH. Amend topsoil in accordance with soil specifications to create ideal soils for proposed planting and seed mixtures. If there is not enough stockpiled topsoil available, use purchased topsoil in sufficient quantity to complete the requirements as specified. Purchased soil shall meet the following particle size distributions: less than or equal to 15% of gravel (particle size greater than 2.00 mm), 40%-60% of sand (0.05-2 mm), 30%-40% of silt (0.002-0.05 mm), and 10%-20% clay (<0.002mm) and 10-15% well-rotted compost with an acidity level between 5.5 and 7.0 pH. Percentages are by weight. Topsoil and purchased soil shall be subject to approval by Landscape Architect.
11. Specify a minimum of 30" of planting soil (as defined in soil specifications) in all tree and shrub planting beds, not just tree holes. Thirty inches of planting soil should be installed in all areas where shrub and trees are proposed, including but not limited to parking islands, around buildings, in bands within and along slope. During the design phase, the landscape architect should consider soil installation when showing plantings and group trees and shrubs wherever possible and create wide planting areas (a minimum of 10') with 30" of planting soil, so trees and shrubs thrive. On steep slopes, consider creating bands of planting separated by bands of seeded areas that follow the contours, similar to contour plowing. Alternating planting and seeded areas and following contours can help prevent soil erosion, and will help create an aesthetically pleasing landscape.
12. Install 6" topsoil compost mix on areas where seeding is proposed. Scarify or dig proposed seeding areas to a depth of 6" or so.
13. Prepare a soil movement plan so the excavator is aware of where various depths of soil are needed. The soil movement plan must be coordinated with the landscape plan.



Site Planning
 Civil Engineering
 Landscape Architecture
 Land Surveying
 Transportation Engineering

Environmental Studies
 Entitlements
 Construction Services
 3D Visualization
 Laser Scanning

January 5, 2021

Chairman John Ewasutyn
 Town of Newburgh Planning Board
 21 Hudson Valley Professional Plaza
 Newburgh, NY 12550

RE: JMC Project 17088
 Hudson Place
 5417 Route 9W
 Town of Newburgh, NY

Site Plan/ Lot Consolidation Submission

Dear Chairman Ewasutyn and Members of the Board:

On behalf of Farrell Building Company, the Applicant for the above referenced project, we are pleased to enclose 13 sets of the below listed documents in support of an application for Site Plan and Lot Consolidation Approval.

1. JMC Drawings, last revised 12/09/2020:

<u>Dwg. No.</u>	<u>Title</u>
C-000	“Cover Sheet”
C-010	“Existing Conditions Plan”
C-011	“Lot Consolidation & Subdivision Plan”
C-020	“Environmental Constraints Plan”
C-100	“Layout Plan”
C-200	“Grading Plan”

2. Peter F. Gaito & Associates (PFGA) Drawings, last revised 12/09/2020:

<u>Dwg. No.</u>	<u>Title</u>
A-100	“Building Type 1 – Lower Level Floor Plan”
A-101	“Building Type 1 – First Floor Plan”
A-102	“Building Type 1 – Second Floor Plan”
A-103	“Building Type 1 – Roof Plan”
A-104	“Building Type 1 – Building Elevations”
A-200	“Building Type 2 – Lower Level Floor Plan”
A-201	“Building Type 2 – First Floor Plan”

Peter F. Gaito & Associates (PFGA) Drawings, last revised 12/09/2020 (Cont'd):

A-202	“Building Type 2 – Second Floor Plan”
A-203	“Building Type 2 – Roof Plan”
A-204	“Building Type 2 – Building Elevations”
A-300	“Clubhouse – Roof Plan”
A-301	“Clubhouse – Floor Plan”
A-302	“Clubhouse – Building Elevations”
A-400	“Retail Building – Roof Plan”
A-401	“Retail Building – Floor Plan”
A-402	“Retail Building – Building Elevations”
A-500	“Streetscape & Street Façade”

3. JMC Figure SD-I “Sight Distance Analysis”, dated 12/09/2020.
4. Full Environmental Assessment Form, revised 12/09/2020.
5. Traffic Study, dated 12/09/2020.

The proposed project includes the merger of five existing lots into a single proposed lot located generally at the intersection of Route 9W and Morris Drive. The planned construction includes a total of 203 market rate residential apartment housing units, of which 23 are being designated for senior market rate housing in accordance with the requirements of Town of Newburgh Code Section 185-48. It also proposes to construct a 25,000 square foot retail building and a sewage treatment plant to serve the development.

Since our last Planning Board meeting attendance in December 2019, the plans have been revised in response to comments received from your Board and its consultants. As such, the applicant has provided the following modifications which are further detailed in the below responses:

- The density calculation has been adjusted by removing the area of the existing pond closest to Route 9W from the usable lot area. With this change, the total unit count has been reduced to 203 total units in 15 buildings versus the previously proposed 214 units in 17 buildings.
- The proposed internal lot lines have been eliminated as the entire property is now proposed to be consolidated into a single lot.
- The internal roadway layout has been modified to include the addition of emergency access drives which connect the internal site roadways and provide a second mean of access to the upper roadways.
- The Retail development along Route 9W has been reconfigured so the parking is no longer in front of the building and additional landscape areas have been added.
- A dedicated pick-up/ drop-off area for school children with a shelter has been added adjacent to the school bus pick-up location along Route 9W.
- A proposed sidewalk has been added along the development’s Route 9W frontage.

We are in receipt of the following comment letters from your Consultants and are pleased to provide responses below:

1. Letter from Creighton Manning, dated 11/7/2019.
2. Memorandum from KALA, dated 11/18/2019.
3. Memorandum from MH&E, DPC, dated 11/25/2019.

Karen Arent Landscape Architect Memorandum, dated November 18, 2019

Residential Site Plan

Comment No. 1

Architectural drawings show two sidewalks in the fronts of Buildings Type One, separated by only 3' of green space. One sidewalk connects the parking area to the entrances to the building, the other the entrance to the sitting area. It would be great if the sidewalks closest to the building are eliminated, keeping the sidewalk by the parking area. The sidewalks and sitting area should be shown on the grading plan to determine if it is possible to eliminate one of the sidewalks by positioning the sitting area at an elevation between both entrances to the buildings. The sidewalk width by the parking area could be increased from 5' or 6' to account for car overhangs. This will enable more green space and eliminate a potentially awkward looking plan with two parallel sidewalks only 3' apart.

Response No. 1

The two sidewalks previously shown in front of the three Type I buildings have been consolidated into one sidewalk adjacent to the parking spaces with a central seating area behind the sidewalk in the landscaped area. This layout is shown on “Building Type I – First Floor Plan” and the JMC “Layout Plan”.

Comment No. 2

Garden spaces are shown outside of Building Unit 2. This space is flat between many of the buildings and not flat between others. It could easily be transformed into flat spaces between all buildings by revising retaining walls and/or adding short walls. This should be discussed to determine if it makes sense to provide flat spaces for private/individual recreation opportunities such as gardening, sitting and relaxing, spur of the moment ball playing, running games, dog walking, etc.

Response No. 2

As suggested, the plans have been revised to flatten the grade between the Type 2 buildings to provide a useable space for passive and active recreation for the residents.

Comment No. 3

The sitting areas in front of Building Unit Type 2's are shown accessed by both stepping stones and a formal walkway on the architectural drawings. Will there be an option to select which path the developer or contractor prefers?

Response No. 3

The plans now reflect a central seating area behind the sidewalk in the grassy area and there is also a bench located along the entrance pathway for each building entrance.

Comment No. 4

Sitting areas in the rear of all building are shown on the architectural drawings. These sitting areas should be included on the site and grading plans to make sure there is enough flat space for them. It doesn't appear to be enough space for the sitting areas outside of several units.

Response No. 4

At the lower level of both Type 1 and Type 2 Buildings, a modest sized patio is proposed at approximately the same level as the adjacent interior space. The patios will be screened with landscaping from the exterior and will be sized to accommodate a table and chairs. The site plans and architectural plans reflect this design.

Comment No. 5

The water level of the pond is currently very low with unsightly side slopes. The grading plan proposes more steep slopes near the pond. This will make it appear even lower. Something should be proposed to create a more aesthetically pleasing pond. Please note that ponds in nature usually have shallow slope sides and appear full to brim, not at the bottom of steep slopes without vegetation on the sides.

Response No. 5

The grading around the pond has been revised to minimize the steep areas adjacent to the pond to the maximum extent practicable. The perimeter of the pond will be attractively landscaped to soften the pond edges and provide an aesthetically pleasing amenity for the project. A Landscaping Plan and Stormwater Pollution Prevention Plan will be prepared as the project progresses.

Comment No. 6

Does the pond need to be fenced?

Response No. 6

The JMC site plans have been revised to eliminate the fencing along the perimeter of the existing pond.

Comment No. 7

Can the proposed storm water ponds be shapes that are more natural in appearance with sides that are not as steeply sloped? Do the proposed storm water basins need to be fenced? Steeply sloped ponds are more difficult to get out of as compared to natural ponds with shallow sloped sides. Shallow sloped sides allow ponds to appear "full to the brim" as opposed to a puddle in the bottom of a hole.

Response No. 7

The ponds have been redesigned to be shaped more naturally. The slope steepness is necessary to achieve the required volume for stormwater attenuation. We will endeavor to continue to improve the shape of the ponds as the stormwater design is advanced. The need for fencing will be determined as the type of stormwater practices are determined for each stormwater management area. Some practices may require fencing, while others may not.

Commercial Site Plan

Comment No. 8

The relocated water course is proposed with steep slopes and will appear very unnatural. How can this water course appear more natural or be aesthetically pleasing? Will it need to be fenced?

Response No. 8

The relocated watercourse has been designed to provide the required 100-year floodplain volume while accommodating the development objectives of the applicant. The land alongside the watercourse will be substantially landscaped to enhance the natural aesthetic. The need for fencing will be determined as the plans are finalized based on best practices and safety considerations.

Comment No. 9

How is the proposed watercourse fed? It appears that the water course will be piped under the proposed parking area. The newer idea for storm water quality is not to pipe streams and keep them open. Can the project be designed to connect the pond with the proposed new water course above ground?

Response No. 9

The relocated watercourse has been redesigned and routed along the perimeter of the retail development as an open watercourse. The land alongside the open watercourse will be substantially landscaped to enhance the natural aesthetic.

Comment No. 10

A stone wall is proposed between the parking area and the future water course.

Response No. 10

A stone wall is proposed along the Route 9W side of the parking lot as required by the Town of Newburgh Design Guidelines.

Comment No. 11

There is minimal space for shade tree planting in the 130' between the proposed retail space and Route 9W and minimal green space in the parking area to the west of the building. There is limited space to grow trees that provide environmental benefits to the parking area and surrounding environment.

Response No. 11

The parking area has been redesigned to include larger landscaped islands within the retail parking area, generally 10 feet in width. In addition, the green space associated with the relocated water course along Route 9W has been increased in width by some 15 feet, resulting in a green space of 75 to 85 feet in width.

Comment No. 12

Should a sidewalk be shown along Route 9W to connect this project and other residential projects to nearby commercial developments?

Response No. 12

The plans have been revised to include a proposed sidewalk along the entire 9W frontage of the property.

Creighton Manning Letter, dated November 7, 2019

Comment No. 1

The site backs up to the previously proposed Wildflower and Greiner subdivisions off Lattintown Road (Town project #'s 2003-33 and 2004-42), neither of which were started.

Response No. 1

So noted.

Comment No. 2

The applicant proposes 25,000 SF of retail and a sewer plant along Route 9W, replacing the existing +/- 8,000 SF farm market, several storage and greenhouses, and two dwellings. Uphill from the retail, 216 apartment units are proposed. Access is proposed via a driveway to Morris Drive and a driveway directly to Route 9W approximately 500 feet south of the signal at Morris Drive and Cortland Drive.

Response No. 2

So noted.

Comment No. 3

The site currently has three curb cuts to Route 9W and three to Morris Drive. The proposed project will consolidate the Route 9W curb cuts to one, with a single full-access driveway to Morris Road approximately 250 feet from the signal, and an emergency access at the existing access point serving #31 Morris Drive.

Response No. 3

So noted.

Comment No. 4

A traffic study is recommended for the project as the initial estimate of total trips generated ranges from 250 to 320 peak hour trips. We suggest studying the following intersections:

- a. Route 9W/Old Post Road*
- b. Route 9W/Morris Road/Cortland Drive*
- c. Route 9W/Lattintown Road*
- d. Route 9W/Carter Avenue*

Weekday AM (7-9 am), PM (4-6 pm), and Saturday mid-day (12 to 2 pm) peak periods are recommended. Since the applicant hasn't appeared before the Planning Board yet, the Board members and NYSDOT may have additional comments on the scope of the study, which may expand the scope.

Response No. 4

A Traffic Study has been included with this submission which studies the intersections during the peak periods mentioned above.

Comment No. 5

Other developments in the area to consider include:

- a. Cortland Commons (NE corner of Rt 9W/Cortland Dr - JMC project)*
- b. Gasland Petroleum (5198 Rt 9W, Town #2019-16)*
- c. Danskammer Power Plant modernization (River Road)*

Response No. 5

Traffic volumes and improvements associated with the developments mentioned in Comment #5 above have been incorporated in the Traffic Study.

Comment No. 6

The applicant should identify potential retail tenants and whether the existing farm market will occupy some of the space.

Response No. 6

The retail tenants have not been determined at this time. The farm market is not proposed to occupy any of the retail space.

Comment No. 7

Provide sight distances at the main site driveways. It may also be necessary to evaluate the sight distances at some internal intersections, specifically those that have sight lines through curves and along grades.

Response No. 7

Provided with this submission is a Sight Distance Analysis for the main site driveway where it connects to Route 9W.

Comment No. 8

The sidewalk from the apartments to the clubhouse should extend down to Route 9W. A sidewalk along Morris Drive from the retail driveway to the signal should be considered, and the pedestrian crossing controls on the southwest corner brought up to current standards. There is an existing sidewalk from Morris Drive south to the first market driveway. The board should discuss extending this south to the property limits.

Response No. 8

The JMC site plans have been revised to provide a sidewalk along the site's entire Route 9W frontage. Sidewalks have also been shown along the internal site roadways, including a sidewalk to the clubhouse. The applicant agrees to improve the pedestrian crossing controls at the southwest corner of Route 9W and Morris Drive.

Comment No. 9

Truck access to dumpster enclosures should be identified. Will front fork trucks be used? Can they access the enclosure or will the dumpster need to be pulled out of the enclosure?

Response No. 9

The JMC site plans have been updated to show the dumpster enclosures. The dumpsters will be rolled out and a front fork truck will be used.

Comment No. 10

Will Morris Drive residents be allowed to use any of the recreational amenities of the site? If so, a trail connection from near the tennis courts to Morris Drive should be considered.

Response No. 10

The on-site recreational amenities are intended to be used for residents living in the subject development.

Comment No. 11

The site plan depicts the likely widening of Route 9W to provide a left turn lane into the main site driveway, which will expand the box culvert under Route 9W. NYSDOT review and permits will be necessary.

Response No. 11

The comment is so noted. We will coordinate with NYSDOT regarding the proposed development and the associated off-site improvements during the Highway Work Permit process.

McGoey, Hauser and Edsall Consulting Engineers, D.P.C. Letter, dated December 5, 2019

Comment No. 1

The Bulk Table land use tables do not identify lot 10 in any of the three Bulk Tables.

Response No. 1

The Table of Land Use on JMC drawing C-000 has been revised to include Lot 10.

Comment No. 2

The project proposes to construct 214 residential units, 24 of which must be senior housing units. The project also proposes a 25,000 square foot retail facility and separate lot containing a sewage treatment facility.

Response No. 2

The updated submission proposes to construct 203 residential units with 23 senior housing units, a 5,085 sf Clubhouse, a 25,000 sf Retail Building and Sewage Treatment Plant. The proposal has been modified to merge the existing 5 lots into a single lot to include all buildings.

Comment No. 3

Flood plain development permit will be required as portions of the project lie within the 100 year flood plain.

Response No. 3

The applicant acknowledges that a flood plain development permit will be required and will submit to the Town for approval of same.

Comment No. 4

The Applicants have prepared a long form EAF for the project. The project is a Type I action as the property is located in an Agricultural District and proposes greater than 2.5 acres of disturbance.

Response No. 4

It is noted that the project is a Type I action.

Comment No. 5

The project contains two existing ponds. A review of the Town's definition of Usable Area "this site shall not include all or a percentage of those portions of the site that are covered by DEC- regulated bodies, protected wetlands, steep slopes, 100 year flood plain, areas subject to tidal inundation, rights of way of existing public or private roads and utilities that would prevent that use development of the underlying land in any manner". The Code Enforcement Office's interpretation of the existing water bodies should be received to confirm that they are or are not to be subtracted from usable areas.

Response No. 5

The applicant has revised the total useable site area by removing the existing water bodies from the available usable areas. As a result, a total of 203 residential units are now proposed, of which 23 units will be for senior housing.

Comment No. 6

Future discussions regarding operation and ownership of proposed sewage treatment facility should undertaken.

Response No. 6

So noted.

Comment No. 7

The EAF identifies potential habitat for threatened or endangered bats species.

Response No. 7

The EAF has been revised to remove the reference to Indiana Bats. Although the EAF Mapper automatically indicates that the site contains potential habitat for Indiana Bats, a site specific assessment by Ecological Solutions, LLC has determined that the site does not contain Indiana Bat habitat since it is primarily an apple orchard.

Comment No. 8

A map identifying the environmentally constrained areas identified including steep slopes, wetlands, and flood plains should be provided.

Response No. 8

The JMC Site Plans have been updated to include an Environmental Constraints Plan which identifies the steep slopes, wetlands and floodplain on the site.

Comment No. 9

A single access point will exist beyond the intersection of proposed road A and C.

Response No. 9

The JMC Site Plans have been revised to provide emergency access drive connections from Roads C, D and F to Morris Drive.

Comment No. 10

The Planning Board should address whether a school bus stop facility will be provided along the project access drive.

Response No. 10

The Site Plans have been revised to include a drop-off area and gazebo off the main site driveway where children can wait for the school bus which will stop along Route 9W.

Comment No. 11

The EAF page 5 identified wetland impacts which is blank.

Response No. 11

The EAF has been revised to include the total of 0.3 acres of wetland disturbance.

Comment No. 12

It is recommended the Town declare its intent for Lead Agency and circulate to all interested or involved agencies including the:

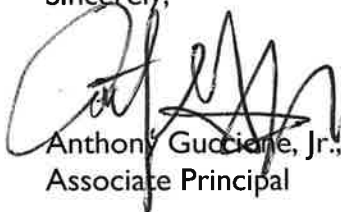
- NYS Department of Environmental Conservation
- NYS Department of Transportation
- Town of Newburgh Code Enforcement Office- Flood Plain Permit
- Orange County Planning Department- 239 Revision
- Town of Newburgh Town Board-Senior Density
- NYS AG & Markets-Construction in an AG District

Response No. 12

So noted.

We understand this matter will be placed on the agenda for the January 21, 2021 Planning Board meeting. In the interim, please let us know if you have any questions or require additional information.

Sincerely,



Anthony Guccione, Jr., RLA
Associate Principal

cc: Mr. Patrick Hines, w/enc.
Mr. Ken Wersted, PE, w/enc.
Ms. Karen Arent, w/enc.
Mr. Dominic Cordisco, w/enc.
Mr. Stephen Zagoren (via email)
Mr. Will Minnear (via email)
Mr. Peter Gaito, Jr. (via email)
Stan Schutzman, Esq. (via email)

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TRAFFIC STUDY

HUDSON PLACE

ROUTE 9W TOWN OF NEWBURGH, NEW YORK

Prepared for: **Farrell Building Company**
2317 Montauk Highway
Bridgehampton, NY 11932

Prepared by:



JMC Project 17088

Date: December 9, 2020

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I. INTRODUCTION

This Traffic Study has been prepared to assess existing conditions as well as future traffic operations in association with the proposed Hudson Place development located in the southwest corner of the US 9W & Morris Drive intersection in the Town of Newburgh, NY. The location of the site is illustrated on the figures included in Appendix B.

The 32.7 acre site includes the Overlook Farm Market property and three adjacent residential parcels. The applicant proposes to raze the existing buildings and construct 216 market-rate residential apartments. Out of the 216 total apartments, 23 units are proposed to be designated for senior market-rate housing. The applicant also proposes to construct a 25,000 square foot retail building and a sewage treatment facility to serve the development.

The subject property provides a single two-way driveway along Morris Drive for the Overlook Farm Market adjacent to the US 9W and Morris Drive with Cortland Drive intersection as well as two additional driveways connecting to Morris Drive in other locations along the roadway. The subject property currently has three driveway connections along US 9W with two of them for the Overlook Farm Market.

As part of the proposed development, the Applicant proposes to reduce the number of site accesses significantly from 6 under existing conditions to 2 under proposed conditions. The development proposes a primary driveway along US 9W between its intersections Oak Street and Morris Drive / Cortland Drive. The development also proposes a secondary driveway along Morris Drive located further west along Morris Drive which provides greater separation from the existing signalized intersection of US 9W and Morris Drive with Cortland Drive. Additionally, the development proposes an emergency access driveway along Morris Drive.

II. EXISTING CONDITIONS

A. Existing Roadway Network

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

US 9W is an north/south highway which is under the jurisdiction of the New York State Department of Transportation (NYSDOT). US 9W extend north to Albany and south to Fort Montgomery. Within the study area, US 9W generally provides one travel lane in each direction and widens in the vicinity of the Carter Avenue and Morris Drive and Cortland Drive intersection to provide additional turning lanes. The roadway has a posted speed limit of 55 mph north of Lattintown Road which is reduced to 40 mph south of this location within the study area. On-street parking is generally prohibited within the study area.

Carter Avenue is a north/south roadway which connects to Lattintown Road in the north and US 9W in the south. The road is under the jurisdiction of the Town of Newburgh and provides one travel lane in each direction. The road has a posted speed limit of 35 mph.

Lattintown Road is generally a north/south roadway which traverses east/west near its southern terminus. Lattintown Road connects to US 9W in the south and Milton Turnpike in the north. Within the study area, the roadway is under the jurisdiction of the Town of Newburgh and provides one travel lane in each direction. The road has a posted speed limit of 30 mph within the study area.

Oak Street is a Town roadway which traverses in an east/west direction between US 9W in the west and River Road in the east. Oak Street provides one travel lane in each direction and has a posted speed limit of 30 mph.

Morris Drive is a Town roadway which traverses in an east/west direction connecting to US 9W in the east and terminating in the west. Morris Drive provides one travel lane in each direction and has a posted speed limit of 30 mph.

Cortland Drive is a private roadway which traverses in an east/west direction. The roadway provides one travel lane in each direction.

Old Post Road is a north/south roadway which is under the jurisdiction of the Town of Newburgh within the study area. It provides one travel lane in each direction. The roadway has a posted speed limit of 40 mph and parking is generally prohibited on both sides of the street.

In order to evaluate the changes in traffic associated with the proposed development, the following intersections have been analyzed:

1. US 9W & Carter Avenue
2. US 9W & Lattintown Road
3. US 9W & Oak Street
4. US 9W & Site Driveway A
5. US 9W & Morris Drive with Cortland Drive
6. US 9W & Old Post Road
7. Morris Drive & Site Driveway B

The intersection of US 9W and Carter Avenue is a three-legged signalized intersection. US 9W northbound provides a separate left turn lane and a single thru lane. US 9W southbound provides a single thru lane with shared right turns. Carter Avenue provides a single approach lane with shared left and right turns onto US 9W.

At the intersection of US 9W and Lattintown Road, US 9W provides a single travel lane in each direction with shared turning movements. Lattintown Road provides a single approach lane with shared left and right turning movements onto US 9W. The intersection

is an unsignalized 'T'-type intersection and the Lattintown Road approach is controlled by a stop sign.

Oak Street intersects US 9W at a three-legged unsignalized intersection. US 9W provides a single travel lane in both directions with shared turning movements. Oak Street provides a single lane approach with shared turning movements onto US 9W. Oak Street is stop sign controlled.

Site Driveway A is proposed to intersect US 9W as the fourth leg of this intersection. US 9W currently provides one travel lane in each direction. The proposed other development located at 5430 US 9W proposes a site driveway connecting to US 9W which is aligned opposite the proposed Hudson Place Site Driveway A. The 5430 US 9W development proposes to widen US 9W provide a US 9W southbound left turn lane for access into its development. The 5430 US 9W development proposes a two-way driveway at this intersection. The Hudson Place development proposes to widen US 9W to construct a US 9W southbound right turn lane as well as US 9W northbound left turn lane. The Hudson Place Site Driveway A proposes a separate left turn lane and a shared thru/right turn lane. As part of the Hudson Place development, the Applicant proposes to install a traffic signal at this intersection.

Morris Drive and Cortland Drive intersect US 9W at a four-way signalized intersection. US 9W southbound provides a separate left turn lane and a shared thru/right turn lane. US 9W northbound provides a separate left turn lane, a single thru lane and a channelized right turn lane. Cortland Drive provides a separate left turn lane and a single thru lane with shared turning movements. Morris Drive currently provides a single approach lane with shared turning movements. As part of the Hudson Place development, the Applicant proposes to widen Morris Drive to provide a separate left turn lane and a single thru lane with shared right turns.

The intersection of US 9W and Old Post Road is a three-legged unsignalized intersection. US 9W provides a single travel lane with shared turning movements in each direction. Old

Post Road provides a single approach lane with shared turning movements. Old Post Road is controlled by a stop sign.

Site Driveway B is proposed to intersect Morris Drive at an unsignalized three-way intersection. Morris Drive provides one travel lane with shared turning movements in each direction. Site Driveway B is proposed to provide a single egress lane with shared turning movements. Site Driveway B is controlled by a stop sign.

B. Existing Volumes

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

Traffic counts were conducted from 7:00 – 9:00 AM and 4:00 – 6:00 PM on Thursday, January 30, 2020 for all the studied intersections except for the proposed site driveways. Traffic counts were also conducted on Saturday, February 1, 2020 from 12:00 – 2:00 PM for all the studied intersections except for the proposed site driveways. The peak hour volumes occurred between 7:00-8:00 AM during the weekday morning, 4:30-5:30 PM during the weekday PM, and 12:15-1:15 PM during the Saturday midday. The intersection traffic count data is included in Appendix C. The peak hour volumes from the traffic counts at the intersections were increased and balanced conservatively where applicable. The peak hour volumes are shown on Figures 1 thru 3 "2020 Existing Volumes". All figures are included in Appendix B.

C. Intersection Analysis Methodology

The intersections have been analyzed based on the methodologies of the Highway Capacity Manual, 6th Edition. Information derived from the manual relative to the level of service criteria is provided below.

I. Level-of-Service Criteria for Signalized Intersections

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

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

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

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

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

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

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

The LOS criteria for signalized intersections are presented below.

Signalized Level of Service Criteria		
Control Delay (Seconds/Vehicle)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
≤10	A	F
>10 and ≤20	B	F
>20 and ≤35	C	F
>35 and ≤55	D	F
>55 and ≤80	E	F
>80	F	F

For approach-based and intersection wide assessments, LOS is defined solely by control delay.

If the volume-to-capacity (v/c) is greater than 1.0, the LOS is considered an F, even if the delays are lower than 80 seconds.

2. Level of Service for Unsignalized Intersections

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

Unsignalized Level of Service Criteria		
Control Delay (Seconds/Vehicle)	LOS by Volume-to-Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
≤10	A	F
>10 and ≤15	B	F
>15 and ≤25	C	F
>25 and ≤35	D	F
>35 and ≤50	E	F
>50	F	F

If the volume-to-capacity (v/c) is greater than 1.0, the LOS is considered an F, even if the delays are lower than 50 seconds.

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

The LOS criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. A number of driver behavior considerations combine to make delays at signalized intersections less onerous than delays at unsignalized intersections. For example,

drivers at signalized intersections are able to relax during the red interval, whereas drivers on the minor approaches to unsignalized intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at an unsignalized intersections versus that at signalized intersections. For these reasons, it is considered that the control delay threshold for any given LOS would be less for an unsignalized intersection than it would be for a signalized intersection.

D. Existing Operations

The intersection capacity analyses based on existing volumes and conditions are shown on Tables 2, 3, and 4. The specific volume/capacity ratios, delay for average vehicle in seconds and the associated levels of service are summarized for each lane group, the approach as well as the overall intersection as applicable on Tables 2, 3, and 4. All tables are included in Appendix A.

During the peak weekday morning hour, the Lattintown Road approach to its intersection with US 9W operates at a level of service D. The Oak Street approach to its intersection with US 9W operates at a level of service D. At the intersection of US 9W and Morris Drive with Cortland Drive, the Morris Drive and Cortland Drive approaches and lanes operate at a level of service D. The Old Post Road approach to its intersection with US 9W operates at a level of service D. All other movements at the studied intersections operate at a level of service C or better during the peak weekday AM hour.

During the peak weekday afternoon hour, the Oak Street approach operates at a level of service F. At the intersection of US 9W and Morris Drive with Cortland Drive, the Morris Drive and Cortland Drive approaches and lanes operate at a level of service D. At the intersection of US 9W and Old Post Road, the Old Post Road approach operates at a level of service D. All other movements at the studied intersections operate at a level of service C or better during the peak weekday PM hour.

During the Saturday midday hour, the Oak Street approach operates at a level of service D. At the intersection of US 9W and Morris Drive with Cortland Drive, the Morris Drive and Cortland Drive approaches and lanes operate at a level of service D. All other movements at the studied intersections operate at a level of service C or better during the peak Saturday midday hour.

III. PROJECTED CONDITIONS

A. No-Build Volumes

In order to project future traffic increases to the 2025 design year, the existing volumes were increased by a general growth rate of 1% per year compounded annually. The traffic volumes associated with the proposed Gas Land Petroleum Gas Station and Convenience Store located at 5200 US 9W, the proposed 5430 US 9W development, as well as the proposed Cortland Commons located at 5452 US 9W have been included in this study. The traffic volumes associated with the Danskammer Power Plant modernization are not anticipated to result in a significant amount of traffic within the study area so the traffic volumes associated with this development are considered within the general growth volumes of this study. The resulting 2025 no-build volumes represent traffic operations in 2025 without the development of the site.

As part of the Cortland Commons development, proposed pedestrian improvements are to be implemented at the intersection of US 9W and Cortland Drive which include a new pedestrian crossing across Cortland Drive with associated pedestrian signal timing. Additionally, the 5430 US 9W development proposes to widen US 9W to accommodate a US 9W southbound left turn lane at site driveway location which is located opposite the Hudson Place site driveway. These improvements by other developments have been included in our no-build conditions.

During the peak weekday AM hour, the overall intersection of US 9W & Carter Avenue is projected to increase in delay to operate at a level of service C under no-build conditions.

Additionally, the US 9W northbound left turn at Carter Avenue is projected to increase in delay to operate at a level of service D while the northbound approach and thru movements are projected to increase in delay to operate at a level of service B. The US 9W southbound approach at Carter Avenue is projected to increase in delay to operate at a level of service C. The Lattintown Road approach to US 9W is projected to increase in delay to operate at a level of service E. The Oak Street approach is projected to increase in delay to operate at a level of service F. The 5430 US 9W site driveway is projected to operate at a level of service F while the US 9W left turn lane at its site driveway is projected to operate at a level of service B. At the intersection of US 9W and Cortland Drive, the US 9W westbound left turn lane and approach are projected to increase in delay to operate at a level of service B. The Old Post Road approach to US 9W is projected to increase in delay to operate at a level of service E. All other movements at the studied intersections under no-build conditions are projected to operate at the same levels of service as experienced under existing conditions during the peak weekday AM hour.

During the peak weekday PM hour, the US 9W northbound approach and thru lane at its intersection with Carter Avenue is projected to increase in delay to operate at a level of service B no-build conditions. The Lattintown Road approach is projected to increase in delay to operate at a level of service F. The 5430 US 9W site driveway is projected to operate at a level of service F while the US 9W left turn lane at its site driveway is projected to operate at a level of service B. At the intersection of US 9W and Cortland Drive, the US 9W westbound left turn is projected to operate at a level of service B and the Cortland Drive thru/right lane is projected to operate at a level of service E. The Old Post Road approach is projected to increase in delay to operate at a level of service E. All other movements at the studied intersections under no-build conditions are projected to operate at the same levels of service as experienced under existing conditions during the peak weekday PM hour.

During the peak Saturday midday hour, the Lattintown Road approach is projected to increase in delay to operate at a level of E while the US 9W northbound approach is projected to increase in delay to operate at a level of B under no-build conditions. The

Oak Street approach is projected to increase in delay to operate at a level of F while the US 9W westbound approach is projected to operate at a level of service B. The 5430 US 9W site driveway is projected to operate at a level of service F while the US 9W left turn lane at its site driveway is projected to operate at a level of service B. At the intersection US 9W and Cortland Drive, the US 9W eastbound approach and thru lane are projected to increase in delay to operate at a level of service B. The Old Post Road approach to US 9W is projected to increase in delay to operate at a level of D. All other movements at the studied intersections under no-build conditions are projected to operate at the same levels of service as experienced under existing conditions during the peak Saturday midday hour.

B. Build Volumes

The projected traffic associated with the proposed development is based on information published by the ITE in its publication “Trip Generation Manual, 10th Edition.” For the purposes of this study, the 25,000 square foot retail building is assumed to be a supermarket use. Table I shows the traffic volumes associated with the proposed development. Table I incorporates internal trip capture which are traffic volumes that travel between the different proposed uses on the property without traveling outside the property. Additionally, Table I incorporates pass-by trips for the commercial uses which are trips that typically drive past or near the subject property and will patronize the development when it is completed. It should be noted that based on ITE data, a significant portion of the peak hour trips generated for the supermarket use are attracted as pass-by or diverted link trips. ITE data shows that a supermarket use can anticipate 36% of its peak weekday PM to be pass-by or diverted link trips. To provide a conservative analysis, the pass-by percentage was capped at 25% for the proposed uses. The proposed development will result in approximately 127, 242, and 260 primary trips during the peak weekday AM, PM, and Saturday midday hours, respectively. This study provides a conservative analysis since a credit of the traffic volumes related to existing uses to be removed on the property as part of the proposed development have not been considered. The pass-by and primary volumes for the proposed development have been shown in the figures in Appendix B.

As discussed above, the development proposes to reduce the number of site accesses. The development proposes a primary driveway along US 9W between its intersections Oak Street and Morris Drive / Cortland Drive which is aligned opposite the proposed driveway for the 5430 US 9W development. The development also proposes a secondary driveway along Morris Drive located further west along Morris Drive which provides greater separation from the existing signalized intersection of US 9W and Morris Drive with Cortland Drive. Additionally, the development proposes an emergency access driveway along Morris Drive.

The primary volumes were routed through the studied intersections based on existing traffic volumes as well as consideration of the arrival & departure patterns of the site traffic. The pass-by volumes were routed through the studied intersections based on existing traffic volumes. Adding the proposed development related traffic to the 2025 no-build traffic volumes results in 2025 Build Volumes which reflect projected volumes after the completion and occupancy of the development.

IV. FINDINGS & CONCLUSION

As previously mentioned, the Applicant proposes several traffic improvements as part of the proposed development. These improvements include:

1. The widening of US 9W to construct a US 9W southbound right turn lane into the proposed development
2. Installation of a US 9W northbound left turn lane for access into the proposed development
3. Installation of a new fully actuated traffic signal at the intersection of US 9W and the proposed Site Driveway A with the proposed 5430 US 9W development's site driveway
4. Widening of Morris Drive to provide separate left turn lane and a single thru lane with shared right turns at the intersection of US 9W and Morris Drive with Cortland Drive

5. Modification of the existing traffic signal at the intersection of US 9W and Morris Drive with Cortland Drive to a fully actuated traffic signal
6. Time-based coordination between the traffic signals along US 9W at Morris Drive and the proposed Site Driveway A as well as traffic signal timing improvements at the two traffic signals.

Intersection capacity analysis computed based on the Build volumes with the proposed improvements indicate that the studied intersection will operate at similar levels of service as projected for the No-Build volumes. Projected operations with the proposed development are shown on Tables 2, 3, and 4.

During the peak weekday AM hour, the Carter Avenue approach to its intersection with US 9W is projected increase in delay by 2.0 seconds to operate at a level of service D under build conditions. The Lattintown approach to US 9W is projected to increase in delay to operate at a level of service F. The overall intersection of US 9W and Site Driveway A is projected to operate at a level of service C while the US 9W approaches and lanes are projected to operate at a level of service C or better. The 5430 site driveway is projected to improve in delay from a level of service F under no-build conditions to a level of service E under build conditions. Site Driveway A is projected to operate at a level of service D. The overall intersection of US 9W and Morris Drive as well as the US 9W eastbound approach and thru lane are projected to increase in delay to operate at a level of service C. The Old Post Road approach to US 9W is projected to increase in delay by 4.7 seconds to operate at a level of service F under build conditions. The proposed site driveway along Morris Drive is projected to operate at a level of service A. All other movements at the studied intersections under build conditions with the proposed improvements are projected to operate at the same levels of service as projected under no-build conditions during the peak weekday AM hour.

During the peak weekday PM hour, the US 9W northbound left turn lane and Carter Avenue approach at their intersection are projected to increase in delay to operate at a level of service D while the overall intersection and US 9W southbound approach are projected to increase in delay to operate at a level of service C. The overall intersection of US 9W and Site Driveway A

is projected to operate at a level of service C while the US 9W approaches and lanes are projected to operate at a level of service D or better. The 5430 site driveway is projected to improve in delay from a level of service F under no-build conditions to a level of service E under build conditions. Site Driveway A is projected to operate at a level of service D. At the intersection of US 9W and Morris Drive, the US 9W eastbound left turn lane is projected to increase in delay to operate at a level of service B while the Cortland Drive left turn lane is projected to increase in delay to operate at a level of service E. The Cortland Drive thru/right turn lane is projected to improve in delay from a level of service E under no-build conditions to a level of service D under build conditions. The Old Post Road approach to US 9W is projected to increase in delay to operate at a level of service F under build conditions. The proposed site driveway along Morris Drive is projected to operate at a level of service A. All other movements at the studied intersections under build conditions with the proposed improvements are projected to operate at the same levels of service as projected under no-build conditions during the peak weekday PM hour.

During the peak Saturday midday hour, the US 9W southbound approach to its intersection with Carter Avenue is projected to increase in delay to operate at a level of service C. The Lattintown Road approach to US 9W is projected to increase in delay to operate at a level of service F. The overall intersection of US 9W and Site Driveway A is projected to operate at a level of service C while the US 9W approaches and lanes are projected to operate at a level of service C or better. The 5430 site driveway is projected to improve in delay from a level of service F under no-build conditions to a level of service E under build conditions. Site Driveway A is projected to operate at a level of service D. At the intersection of US 9W and Morris Drive, the US 9W westbound approach and thru/right lane are projected to increase in delay to operate at a level of service B. The Old Post Road approach to US 9W is projected to increase in delay to operate at a level of service E. The proposed site driveway along Morris Drive is projected to operate at a level of service A. All other movements at the studied intersections under build conditions with the proposed improvements are projected to operate at the same levels of service as projected under no-build conditions during the peak Saturday midday hour.

It is the professional opinion of JMC that the proposed development of the site containing 216 residential apartments and a 25,000 square foot retail building (assumed to be a supermarket in this study) will not have a significant impact on traffic operations along US 9W with the proposed improvements.

Respectfully submitted,

JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC

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APPENDIX A

TABLES

TABLE 1**PROPOSED DEVELOPMENT VOLUMES⁽¹⁾**

DESCRIPTION	PEAK WEEKDAY AM HOUR			PEAK WEEKDAY PM HOUR			PEAK SATURDAY MIDDAY HOUR		
	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
a. Proposed 180 Unit Multifamily Housing Driveway Volumes (ITE Code 221) ⁽²⁾	16	45	61	48	30	78	40	42	82
b. Proposed 23 Unit Independent Living Driveway Volumes (ITE Code 252) ⁽³⁾	2	3	5	4	4	8	5	3	8
c. Proposed 25,000 SF Supermarket Driveway Volumes (ITE Code 850) ⁽⁴⁾	58	38	96	118	113	231	132	127	259
d. Total Development Driveway Volumes (Row d = Row a + Row b + Row c)	76	86	162	170	147	317	177	172	349
e. Proposed Residential Internal Capture Volumes ⁽⁵⁾ (AM=15%, PM=15%, Sat=15%)	3	3	6	5	5	10	7	7	14
f. Proposed Supermarket Pass-By Volumes (AM=25%, PM=25%, Sat=25%)	14	9	23	28	27	55	31	30	61
g. Proposed Residential Primary Volumes (Row g = Row a + Row b - Row e)	15	45	60	47	29	76	38	38	76
h. Proposed Supermarket Primary Volumes (Row h = Row c - Row e - Row f)	41	26	67	85	81	166	94	90	184
i. Total Primary Volumes (Row i = Row g + Row h)	56	71	127	132	110	242	132	128	260

Notes:

(1) Trip generation is based on Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition.

(2) Multifamily Housing (Mid-Rise) (ITE Code 221) is defined by ITE as multifamily housing including apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors).

(3) Senior Adult Housing-Attached (ITE Code 252) is defined by ITE as consisting of attached independent living developments which may include limited social or recreational services.

(4) Supermarket (ITE Code 850) is defined by ITE as a retail store selling a complete assortment of food, food preparation and wrapping materials, and household cleaning items.

(5) Residential internal volumes reflect trips traveling between the proposed residential and supermarket uses on the subject property.

TABLE 2

INTERSECTION OPERATIONS-PEAK WEEKDAY AM HOUR

INTERSECTION	APPROACH	LANE GROUP	2020 EXISTING			2025 NO BUILD			2025 BUILD		
			V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎
1. US 9W & Carter Avenue (Signalized)	EASTBOUND (Carter Ave)	LEFT/RIGHT	0.82	28.2	C	0.85	35.0	C	0.86	37.0	D
	NORTHBOUND (US 9W)	LEFT	0.18	28.0	C	0.25	35.5	D	0.27	37.8	D
		THRU	0.73	8.4	A	0.81	10.7	B	0.81	11.3	B
		COMPOSITE	-	9.4	A	-	12.0	B	-	12.7	B
	SOUTHBOUND (US 9W)	THRU/RIGHT	0.92	17.9	B	0.94	26.9	C	0.95	29.8	C
INTERSECTION	COMPOSITE	-	15.3	B	-	20.8	C	-	22.6	C	
2. US 9W & Lattintown Road (Unsignalized)	EASTBOUND (Lattintown Rd)	LEFT/RIGHT	0.30	26.2	D	0.49	44.6	E	0.56	55.4	F
	NORTHBOUND (US 9W)	THRU/LEFT	0.03	10.2	B	0.03	11.0	B	0.03	11.3	B
	SOUTHBOUND (US 9W)	THRU/RIGHT	-	-	-	-	-	-	-	-	-
3. US 9W & Oak Street (Unsignalized)	EASTBOUND (US 9W)	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	WESTBOUND (US 9W)	THRU/LEFT	0.00	10.7	B	0.00	11.6	B	0.00	11.8	B
	NORTHBOUND (Oak St)	LEFT/RIGHT	0.06	25.4	D	0.20	61.0	F	0.23	70.0	F
4. US 9W & Site Driveway A / 5430 US 9W Driveway (Unsignalized With Improvements by Others)	EASTBOUND (US 9W)	THRU/RIGHT				-	-	-			
	WESTBOUND (US 9W)	LEFT		N/A		0.04	10.8	B		N/A	
		THRU				-	-	-			
NORTHBOUND (5430 Driveway)	LEFT/RIGHT				1.25	316.9	F				
4a. US 9W & Site Driveway A / 5430 US 9W Driveway (Unsignalized With Improvements by Hudson Place)	EASTBOUND (US 9W)	LEFT							0.07	10.8	B
		THRU/RIGHT							-	-	-
	WESTBOUND (US 9W)	LEFT							0.04	10.7	B
		THRU							-	-	-
		RIGHT		N/A			N/A		-	-	-
	NORTHBOUND (5430 Driveway)	LEFT/THRU/RIGHT							2.96	1,210.0	F
SOUTHBOUND (Site DWY A)	LEFT							0.53	173.7	F	
	RIGHT							0.18	19.2	C	
4b. US 9W & Site Driveway A / 5430 US 9W Driveway (Signalized With Improvements by Hudson Place)	EASTBOUND (US 9W)	LEFT							0.17	15.7	B
		THRU/RIGHT							0.88	23.0	C
		COMPOSITE							-	22.6	C
	WESTBOUND (US 9W)	LEFT							0.11	19.0	B
		THRU		N/A			N/A		0.82	19.1	B
		RIGHT							0.01	5.6	A
		COMPOSITE							-	18.9	B
	NORTHBOUND (5430 Driveway)	LEFT/THRU/RIGHT							0.85	57.1	E
	SOUTHBOUND (Site DWY A)	LEFT							0.10	49.8	D
		THRU/RIGHT							0.34	51.9	D
COMPOSITE								-	51.3	D	
INTERSECTION	COMPOSITE							-	23.0	C	
5. US 9W & Morris Drive / Cortland Drive (Signalized)	EASTBOUND (US 9W)	LEFT	0.02	6.9	A						
		THRU	0.71	13.1	B						
		RIGHT	-	-	-						
		COMPOSITE	-	13.0	B						
	WESTBOUND (US 9W)	LEFT	0.04	9.3	A						
		THRU/RIGHT	0.60	10.0	B						
		COMPOSITE	-	10.0	A		N/A			N/A	
	NORTHBOUND (Cortland Dr)	LEFT	0.52	50.7	D						
		THRU/RIGHT	0.30	48.5	D						
		COMPOSITE	-	50.0	D						
SOUTHBOUND (Morris Dr)	LEFT/THRU/RIGHT	0.25	48.4	D							
INTERSECTION	COMPOSITE	-	15.6	B							

TABLE 2

INTERSECTION OPERATIONS-PEAK WEEKDAY AM HOUR

INTERSECTION	APPROACH	LANE GROUP	2020 EXISTING			2025 NO BUILD			2025 BUILD		
			V/C ⁽¹⁾	DELAY ⁽²⁾	LOS ⁽³⁾	V/C ⁽¹⁾	DELAY ⁽²⁾	LOS ⁽³⁾	V/C ⁽¹⁾	DELAY ⁽²⁾	LOS ⁽³⁾
5a. US 9W & Morris Drive / Cortland Drive (Signalized With Improvements by Others)	EASTBOUND (US 9W)	LEFT				0.02	8.6	A			
		THRU				0.81	18.2	B			
		RIGHT				-	-	-			
		COMPOSITE				-	18.2	B			
	WESTBOUND (US 9W)	LEFT				0.10	14.1	B			
		THRU/RIGHT				0.67	11.9	B			
		COMPOSITE		N/A		-	11.9	B		N/A	
	NORTHBOUND (Cortland Dr)	LEFT				0.59	51.6	D			
		THRU/RIGHT				0.32	48.8	D			
		COMPOSITE				-	50.7	D			
SOUTHBOUND (Morris Dr)	LEFT/THRU/RIGHT				0.24	48.5	D				
INTERSECTION	COMPOSITE				-	19.1	B				
5b. US 9W & Morris Drive / Cortland Drive (Signalized With Improvements by Hudson Place)	EASTBOUND (US 9W)	LEFT							0.02	10.9	B
		THRU							0.85	23.4	C
		RIGHT							-	-	-
		COMPOSITE							-	23.3	C
	WESTBOUND (US 9W)	LEFT							0.12	18.0	B
		THRU/RIGHT							0.70	14.8	B
		COMPOSITE		N/A			N/A		-	14.9	B
	NORTHBOUND (Cortland Dr)	LEFT							0.60	53.5	D
		THRU/RIGHT							0.26	47.0	D
		COMPOSITE							-	51.5	D
	SOUTHBOUND (Morris Dr)	LEFT							0.07	48.9	D
		THRU/RIGHT							0.22	46.2	D
		COMPOSITE							-	47.2	D
INTERSECTION	COMPOSITE							-	22.8	C	
5c. US 9W & Morris Drive / Cortland Drive (Signalized With Traffic Signal Timing Improvements)	EASTBOUND (US 9W)	LEFT							0.02	10.8	B
		THRU							0.85	23.1	C
		RIGHT							-	-	-
		COMPOSITE							-	23.0	C
	WESTBOUND (US 9W)	LEFT							0.12	17.8	B
		THRU/RIGHT							0.70	14.6	B
		COMPOSITE		N/A			N/A		-	14.7	B
	NORTHBOUND (Cortland Dr)	LEFT							0.61	54.6	D
		THRU/RIGHT							0.26	47.3	D
		COMPOSITE							-	52.3	D
	SOUTHBOUND (Morris Dr)	LEFT							0.07	49.3	D
		THRU/RIGHT							0.22	47.0	D
		COMPOSITE							-	47.5	D
INTERSECTION	COMPOSITE							-	22.7	C	
6. US 9W & Old Post Road (Unsignalized)	WESTBOUND (Old Post Rd)	LEFT/RIGHT	0.12	30.6	D	0.21	46.0	E	0.25	50.7	F
	NORTHBOUND (US 9W)	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND (US 9W)	THRU/LEFT	0.03	10.6	B	0.04	11.0	B	0.04	11.2	B
7. Morris Drive & Site Driveway B (Unsignalized)	EASTBOUND (Site DWY B)	LEFT/RIGHT							0.01	8.6	A
	NORTHBOUND (Morris Dr)	THRU/LEFT		N/A			N/A		0.01	7.3	A
	SOUTHBOUND (Morris Dr)	THRU/RIGHT							-	-	-

Notes:

- (1) V/C represents volume/capacity ratio
- (2) Delay is average seconds delay per vehicle
- (3) LOS represents level of service

TABLE 3

INTERSECTION OPERATIONS-PEAK WEEKDAY PM HOUR

INTERSECTION	APPROACH	LANE GROUP	2020 EXISTING			2025 NO BUILD			2025 BUILD		
			V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎
1. US 9W & Carter Avenue (Signalized)	EASTBOUND (Carter Ave)	LEFT/RIGHT	0.78	26.9	C	0.80	32.7	C	0.81	36.4	D
	NORTHBOUND (US 9W)	LEFT	0.60	23.6	C	0.79	32.3	C	0.81	35.9	D
		THRU	0.81	7.1	A	0.89	10.1	B	0.92	13.7	B
		COMPOSITE	-	9.8	A	-	13.5	B	-	16.9	B
	SOUTHBOUND (US 9W)	THRU/RIGHT	0.90	14.9	B	0.93	19.5	B	0.94	24.3	C
INTERSECTION	COMPOSITE	-	12.8	B	-	16.9	B	-	20.9	C	
2. US 9W & Lattintown Road (Unsignalized)	EASTBOUND (Lattintown Rd)	LEFT/RIGHT	0.16	23.0	C	0.42	58.6	F	0.70	127.8	F
	NORTHBOUND (US 9W)	THRU/LEFT	0.10	10.2	B	0.12	11.3	B	0.13	11.8	B
	SOUTHBOUND (US 9W)	THRU/RIGHT	-	-	-	-	-	-	-	-	-
3. US 9W & Oak Street (Unsignalized)	EASTBOUND (US 9W)	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	WESTBOUND (US 9W)	THRU/LEFT	0.01	10.3	B	0.01	11.3	B	0.01	11.8	B
	NORTHBOUND (Oak St)	LEFT/RIGHT	0.03	55.1	F	0.23	117.1	F	0.29	158.8	F
4. US 9W & Site Driveway A / 5430 US 9W Driveway (Unsignalized With Improvements by Others)	EASTBOUND (US 9W)	THRU/RIGHT				-	-	-			
	WESTBOUND (US 9W)	LEFT		N/A		0.06	12.1	B		N/A	
		THRU				-	-	-			
NORTHBOUND (5430 Driveway)	LEFT/RIGHT				2.56	913.7	F				
4a. US 9W & Site Driveway A / 5430 US 9W Driveway (Unsignalized With Improvements by Hudson Place)	EASTBOUND (US 9W)	LEFT							0.17	11.7	B
		THRU/RIGHT							-	-	-
	WESTBOUND (US 9W)	LEFT							0.06	11.9	B
		THRU							-	-	-
		RIGHT		N/A			N/A		-	-	-
	NORTHBOUND (5430 Driveway)	LEFT/THRU/RIGHT							8.97	4,201.1	F
SOUTHBOUND (Site DWY A)	LEFT							1.45	626.8	F	
	RIGHT							0.29	21.4	C	
4b. US 9W & Site Driveway A / 5430 US 9W Driveway (Signalized With Improvements by Hudson Place)	EASTBOUND (US 9W)	LEFT							0.39	18.5	B
		THRU/RIGHT							1.00	43.0	D
		COMPOSITE							-	41.1	D
	WESTBOUND (US 9W)	LEFT							0.28	34.1	C
		THRU		N/A			N/A		0.82	20.3	C
		RIGHT							0.04	6.5	A
		COMPOSITE							-	20.2	C
	NORTHBOUND (5430 Driveway)	LEFT/THRU/RIGHT							0.77	79.1	E
	SOUTHBOUND (Site DWY A)	LEFT							0.12	48.8	D
		THRU/RIGHT							0.48	52.3	D
		COMPOSITE							-	51.4	D
INTERSECTION	COMPOSITE							-	34.5	C	
5. US 9W & Morris Drive / Cortland Drive (Signalized)	EASTBOUND (US 9W)	LEFT	0.08	7.3	A						
		THRU	0.66	11.6	B						
		RIGHT	-	-	-						
		COMPOSITE	-	11.4	B						
	WESTBOUND (US 9W)	LEFT	0.05	8.0	A						
		THRU/RIGHT	0.62	11.0	B						
		COMPOSITE	-	10.9	B		N/A			N/A	
	NORTHBOUND (Cortland Dr)	LEFT	0.24	49.4	D						
		THRU/RIGHT	0.52	54.1	D						
		COMPOSITE	-	50.8	D						
SOUTHBOUND (Morris Dr)	LEFT/THRU/RIGHT	0.17	48.8	D							
INTERSECTION	COMPOSITE	-	13.2	B							

TABLE 3

INTERSECTION OPERATIONS-PEAK WEEKDAY PM HOUR

INTERSECTION	APPROACH	LANE GROUP	2020 EXISTING			2025 NO BUILD			2025 BUILD		
			V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎
5a. US 9W & Morris Drive / Cortland Drive (Signalized With Improvements by Others)	EASTBOUND (US 9W)	LEFT				0.09	9.2	A			
		THRU				0.78	16.6	B			
		RIGHT				-	-	-			
		COMPOSITE				-	16.4	B			
	WESTBOUND (US 9W)	LEFT				0.14	12.7	B			
		THRU/RIGHT				0.69	13.1	B			
		COMPOSITE		N/A		-	13.1	B		N/A	
	NORTHBOUND (Cortland Dr)	LEFT				0.51	52.5	D			
		THRU/RIGHT				0.70	58.8	E			
		COMPOSITE				-	54.0	D			
SOUTHBOUND (Morris Dr)	LEFT/THRU/RIGHT				0.20	48.7	D				
INTERSECTION	COMPOSITE				-	17.5	B				
5b. US 9W & Morris Drive / Cortland Drive (Signalized With Improvements by Hudson Place)	EASTBOUND (US 9W)	LEFT							0.10	10.5	B
		THRU							0.80	17.7	B
		RIGHT							-	-	-
		COMPOSITE							-	17.5	B
	WESTBOUND (US 9W)	LEFT							0.14	13.7	B
		THRU/RIGHT							0.72	14.5	B
		COMPOSITE		N/A			N/A		-	14.5	B
	NORTHBOUND (Cortland Dr)	LEFT							0.51	53.4	D
		THRU/RIGHT							0.21	48.5	D
		COMPOSITE							-	52.0	D
	SOUTHBOUND (Morris Dr)	LEFT							0.15	50.3	D
		THRU/RIGHT							0.21	48.5	D
COMPOSITE								-	49.3	D	
INTERSECTION	COMPOSITE							-	18.9	B	
5c. US 9W & Morris Drive / Cortland Drive (Signalized With Traffic Signal Timing Improvements)	EASTBOUND (US 9W)	LEFT							0.10	10.4	B
		THRU							0.79	17.2	B
		RIGHT							-	-	-
		COMPOSITE							-	17.0	B
	WESTBOUND (US 9W)	LEFT							0.14	13.5	B
		THRU/RIGHT							0.72	14.2	B
		COMPOSITE		N/A			N/A		-	14.2	B
	NORTHBOUND (Cortland Dr)	LEFT							0.53	55.3	E
		THRU/RIGHT							0.21	50.2	D
		COMPOSITE							-	53.9	D
	SOUTHBOUND (Morris Dr)	LEFT							0.15	52.1	D
		THRU/RIGHT							0.21	50.3	D
COMPOSITE								-	51.0	D	
INTERSECTION	COMPOSITE							-	18.7	B	
6. US 9W & Old Post Road (Unsignalized)	WESTBOUND (Old Post Rd)	LEFT/RIGHT	0.17	26.3	D	0.34	45.8	E	0.43	59.6	F
	NORTHBOUND (US 9W)	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND (US 9W)	THRU/LEFT	0.02	10.6	B	0.03	11.2	B	0.03	11.4	B
7. Morris Drive & Site Driveway B (Unsignalized)	EASTBOUND (Site DWY B)	LEFT/RIGHT							0.03	8.6	A
	NORTHBOUND (Morris Dr)	THRU/LEFT		N/A			N/A		0.01	7.3	A
	SOUTHBOUND (Morris Dr)	THRU/RIGHT							-	-	-

Notes:

- (1) V/C represents volume/capacity ratio
- (2) Delay is average seconds delay per vehicle
- (3) LOS represents level of service

TABLE 4

INTERSECTION OPERATIONS-PEAK SATURDAY MIDDAY HOUR

INTERSECTION	APPROACH	LANE GROUP	2020 EXISTING			2025 NO BUILD			2025 BUILD		
			V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎
1. US 9W & Carter Avenue (Signalized)	EASTBOUND (Carter Ave)	LEFT/RIGHT	0.76	24.0	C	0.78	29.9	C	0.79	32.6	C
	NORTHBOUND (US 9W)	LEFT	0.37	20.8	C	0.51	28.1	C	0.55	31.1	C
		THRU	0.58	5.4	A	0.70	6.5	A	0.73	6.8	A
		COMPOSITE	-	7.8	A	-	9.4	A	-	10.0	A
	SOUTHBOUND (US 9W)	THRU/RIGHT	0.88	14.7	B	0.92	16.7	B	0.93	20.2	C
INTERSECTION	COMPOSITE	-	12.1	B	-	14.2	B	-	16.0	B	
2. US 9W & Lattintown Road (Unsignalized)	EASTBOUND (Lattintown Rd)	LEFT/RIGHT	0.19	18.9	C	0.47	44.6	E	0.66	77.6	F
	NORTHBOUND (US 9W)	THRU/LEFT	0.05	9.5	A	0.07	10.7	B	0.07	11.3	B
	SOUTHBOUND (US 9W)	THRU/RIGHT	-	-	-	-	-	-	-	-	-
3. US 9W & Oak Street (Unsignalized)	EASTBOUND (US 9W)	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	WESTBOUND (US 9W)	THRU/LEFT	0.00	9.2	A	0.00	10.2	B	0.00	10.6	B
	NORTHBOUND (Oak St)	LEFT/RIGHT	0.04	26.4	D	0.24	67.5	F	0.32	94.9	F
4. US 9W & Site Driveway A / 5430 US 9W Driveway (Unsignalized With Improvements by Others)	EASTBOUND (US 9W)	THRU/RIGHT				-	-	-			
	WESTBOUND (US 9W)	LEFT		N/A		0.06	10.3	B		N/A	
		THRU				-	-	-			
NORTHBOUND (5430 Driveway)	LEFT/RIGHT				1.69	436.0	F				
4a. US 9W & Site Driveway A / 5430 US 9W Driveway (Signalized With Improvements by Hudson Place)	EASTBOUND (US 9W)	LEFT							0.14	10.3	B
		THRU/RIGHT							-	-	-
	WESTBOUND (US 9W)	LEFT							0.06	10.3	B
		THRU							-	-	-
		RIGHT		N/A			N/A		-	-	-
	NORTHBOUND (5430 Driveway)	LEFT/THRU/RIGHT							5.24	2,189.4	F
SOUTHBOUND (Site DWY A)	LEFT							0.74	193.2	F	
	RIGHT							0.25	16.9	C	
4b. US 9W & Site Driveway A / 5430 US 9W Driveway (Signalized With Improvements by Hudson Place)	EASTBOUND (US 9W)	LEFT							0.30	12.6	B
		THRU/RIGHT							0.80	21.4	C
		COMPOSITE							-	20.4	C
	WESTBOUND (US 9W)	LEFT							0.15	15.8	B
		THRU		N/A			N/A		0.67	17.0	B
		RIGHT							0.04	8.3	A
		COMPOSITE							-	16.6	B
	NORTHBOUND (5430 Driveway)	LEFT/THRU/RIGHT							0.80	75.9	E
	SOUTHBOUND (Site DWY A)	LEFT							0.11	44.4	D
		THRU/RIGHT							0.40	47.2	D
COMPOSITE								-	46.5	D	
INTERSECTION	COMPOSITE							-	24.1	C	
5. US 9W & Morris Drive / Cortland Drive (Signalized)	EASTBOUND (US 9W)	LEFT	0.03	5.4	A						
		THRU	0.47	7.8	A						
		RIGHT	-	-	-						
		COMPOSITE	-	7.7	A						
	WESTBOUND (US 9W)	LEFT	0.01	5.5	A						
		THRU/RIGHT	0.47	8.3	A						
		COMPOSITE	-	8.3	A		N/A			N/A	
	NORTHBOUND (Cortland Dr)	LEFT	0.31	49.2	D						
		THRU/RIGHT	0.10	47.7	D						
		COMPOSITE	-	49.0	D						
SOUTHBOUND (Morris Dr)	LEFT/THRU/RIGHT	0.13	48.0	D							
INTERSECTION	COMPOSITE	-	10.8	B							

TABLE 4

INTERSECTION OPERATIONS-PEAK SATURDAY MIDDAY HOUR

INTERSECTION	APPROACH	LANE GROUP	2020 EXISTING			2025 NO BUILD			2025 BUILD		
			V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎	V/C ₍₁₎	DELAY ₍₂₎	LOS ₍₃₎
5a. US 9W & Morris Drive / Cortland Drive (Signalized With Improvements by Others)	EASTBOUND (US 9W)	LEFT				0.04	6.3	A			
		THRU				0.59	10.7	B			
		RIGHT				-	-	-			
		COMPOSITE				-	10.6	B			
	WESTBOUND (US 9W)	LEFT				0.07	7.0	A			
		THRU/RIGHT				0.54	9.4	A			
		COMPOSITE		N/A		-	9.3	A		N/A	
	NORTHBOUND (Cortland Dr)	LEFT				0.55	51.9	D			
		THRU/RIGHT				0.17	48.6	D			
		COMPOSITE				-	51.3	D			
SOUTHBOUND (Morris Dr)	LEFT/THRU/RIGHT				0.14	48.5	D				
INTERSECTION	COMPOSITE				-	13.8	B				
5b. US 9W & Morris Drive / Cortland Drive (Signalized With Improvements by Hudson Place)	EASTBOUND (US 9W)	LEFT							0.05	7.8	A
		THRU							0.62	12.6	B
		RIGHT							-	-	-
		COMPOSITE							-	12.4	B
	WESTBOUND (US 9W)	LEFT							0.08	8.4	A
		THRU/RIGHT							0.59	11.4	B
		COMPOSITE		N/A			N/A		-	11.3	B
	NORTHBOUND (Cortland Dr)	LEFT							0.56	53.2	D
		THRU/RIGHT							0.18	47.6	D
		COMPOSITE							-	51.8	D
	SOUTHBOUND (Morris Dr)	LEFT							0.14	49.4	D
		THRU/RIGHT							0.17	47.5	D
		COMPOSITE							-	48.4	D
INTERSECTION	COMPOSITE							-	16.2	B	
5c. US 9W & Morris Drive / Cortland Drive (Signalized With Traffic Signal Timing Improvements)	EASTBOUND (US 9W)	LEFT							0.05	7.7	A
		THRU							0.62	12.4	B
		RIGHT							-	-	-
		COMPOSITE							-	12.2	B
	WESTBOUND (US 9W)	LEFT							0.08	8.3	A
		THRU/RIGHT							0.59	11.3	B
		COMPOSITE		N/A			N/A		-	11.1	B
	NORTHBOUND (Cortland Dr)	LEFT							0.57	54.6	D
		THRU/RIGHT							0.18	48.8	D
		COMPOSITE							-	53.2	D
	SOUTHBOUND (Morris Dr)	LEFT							0.14	50.7	D
		THRU/RIGHT							0.18	48.8	D
		COMPOSITE							-	49.6	D
INTERSECTION	COMPOSITE							-	16.2	B	
6. US 9W & Old Post Road (Unsignalized)	WESTBOUND (Old Post Rd)	LEFT/RIGHT	0.10	20.5	C	0.22	31.0	D	0.27	35.8	E
	NORTHBOUND (US 9W)	THRU/RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND (US 9W)	THRU/LEFT	0.01	8.9	A	0.01	9.3	A	0.01	9.4	A
7. Morris Drive & Site Driveway B (Unsignalized)	EASTBOUND (Site DWY B)	LEFT/RIGHT							0.03	8.6	A
	NORTHBOUND (Morris Dr)	THRU/LEFT		N/A			N/A		0.02	7.3	A
	SOUTHBOUND (Morris Dr)	THRU/RIGHT							-	-	-

Notes:

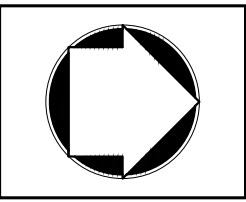
- (1) V/C represents volume/capacity ratio
- (2) Delay is average seconds delay per vehicle
- (3) LOS represents level of service

APPENDIX B

FIGURES



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ROUTE 9W
TOWN OF NEWBURGH, NEW YORK

HUDSON PLACE

2020 EXISTING VOLUMES
PEAK WEEKDAY AM HOUR (7:00 - 8:00)

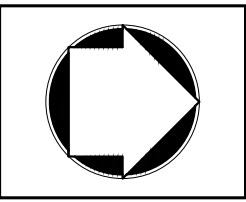
DATE: 12/09/2020
JMC PROJECT: 17088
SCALE: 1" = 800'
FIGURE: 01

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17088 - TRAFFIC - FIG. dwg; TRAFFIC - FIGS. tab



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ROUTE 9W

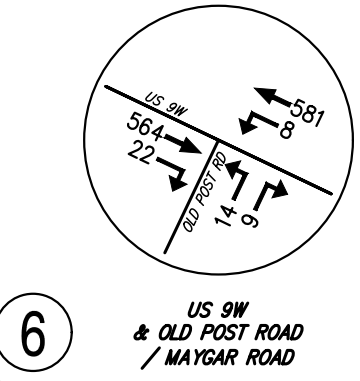
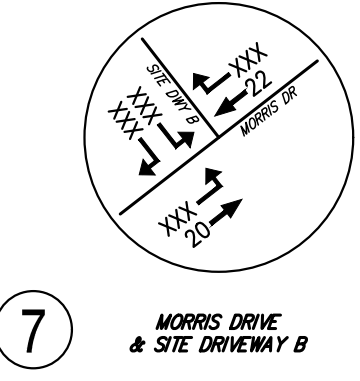
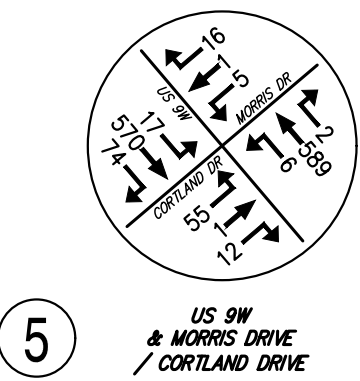
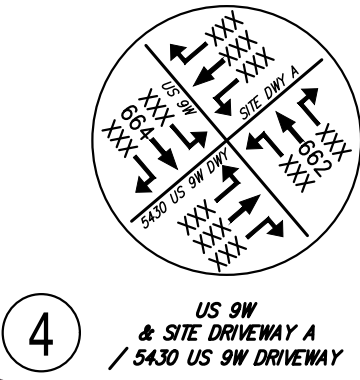
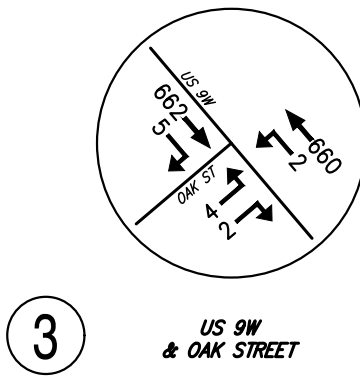
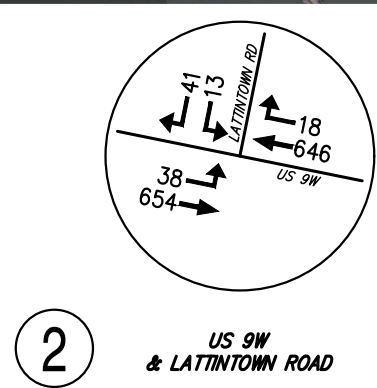
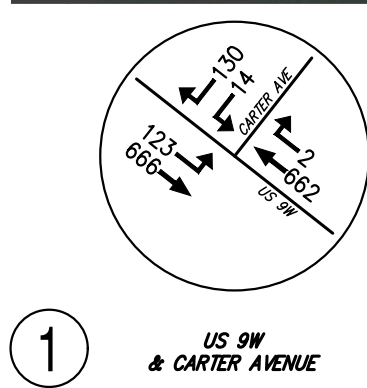
2020 EXISTING VOLUMES
 PEAK WEEKDAY PM HOUR (4:30 - 5:30)

DATE: 12/09/2020
 JMC PROJECT: 17088
 SCALE: 1" = 800'

FIGURE: 02

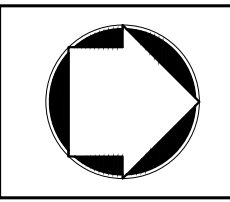
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17088 - TRAFFIC - FIG. DWG: TRAFFIC - FIGS. TAB



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ROUTE 9W

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2020 EXISTING VOLUMES
PEAK SATURDAY MIDDAY HOUR (12:15 - 1:15)

DATE: 12/09/2020

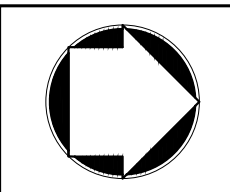
JMC PROJECT: 17088

SCALE: 1" = 800'

FIGURE: 03

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17088 - TRAFFIC - FIG. DWG; TRAFFIC - FIGS. TAB



5417 ROUTE 9W

HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

2025 GENERAL GROWTH VOLUMES

PEAK WEEKDAY AM HOUR

JMC PROJECT: 17088

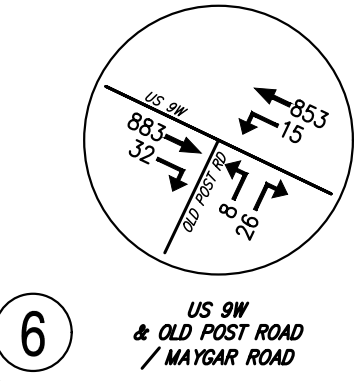
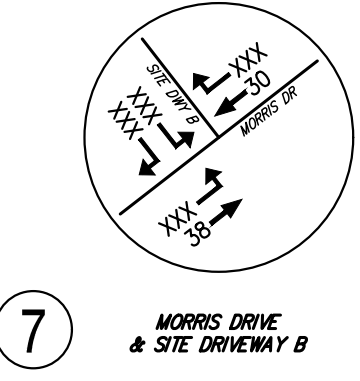
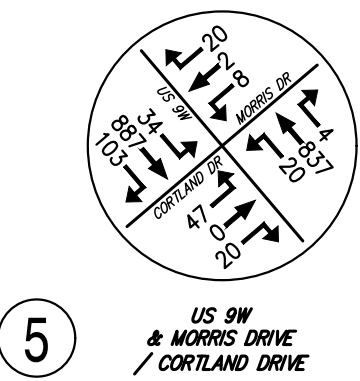
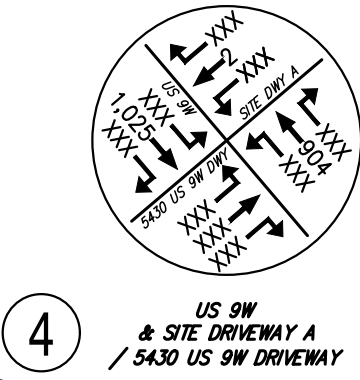
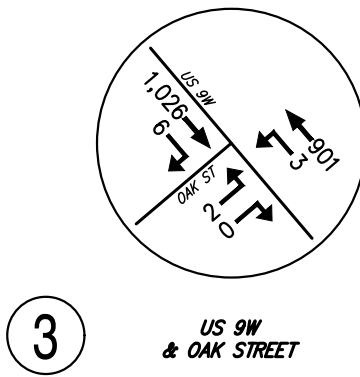
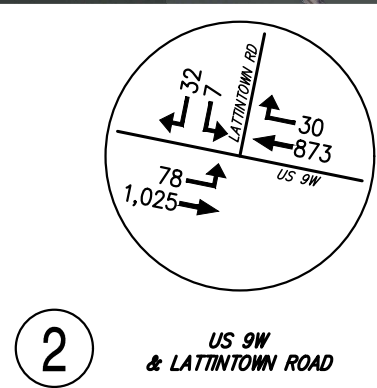
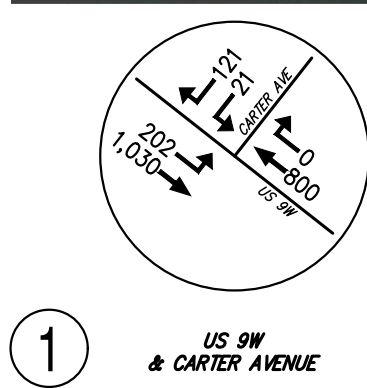
SCALE: 1" = 800'

DATE: 12/09/2020

FIGURE: 04

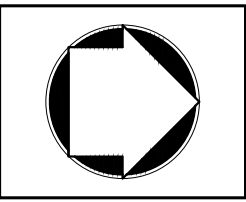
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17088 - TRAFFIC - FIG. DWG: TRAFFIC - FIGS. TAB



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2025 GENERAL GROWTH VOLUMES

PEAK WEEKDAY PM HOUR

JMC PROJECT: 17088

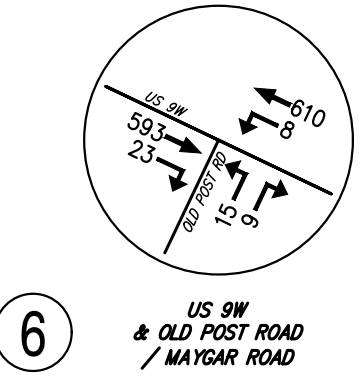
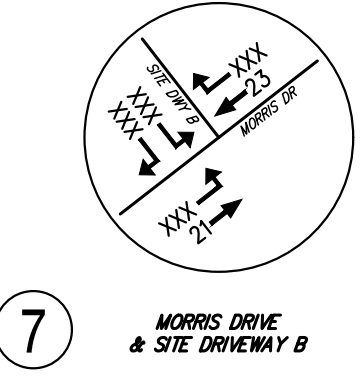
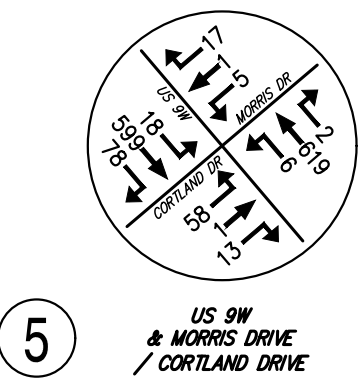
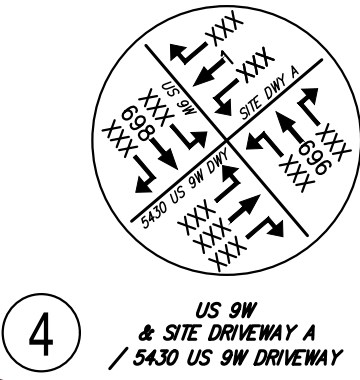
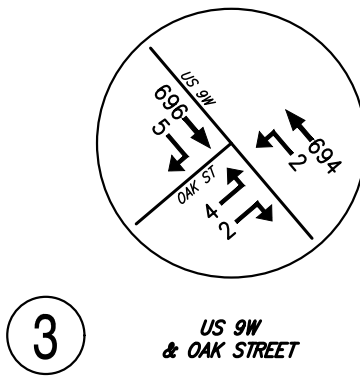
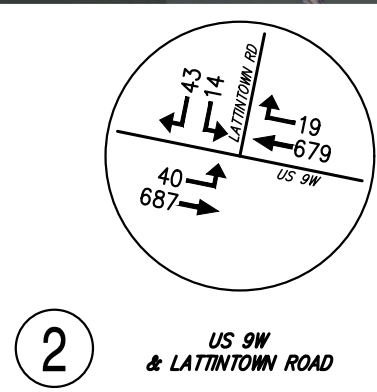
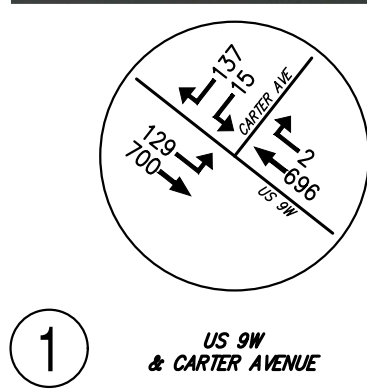
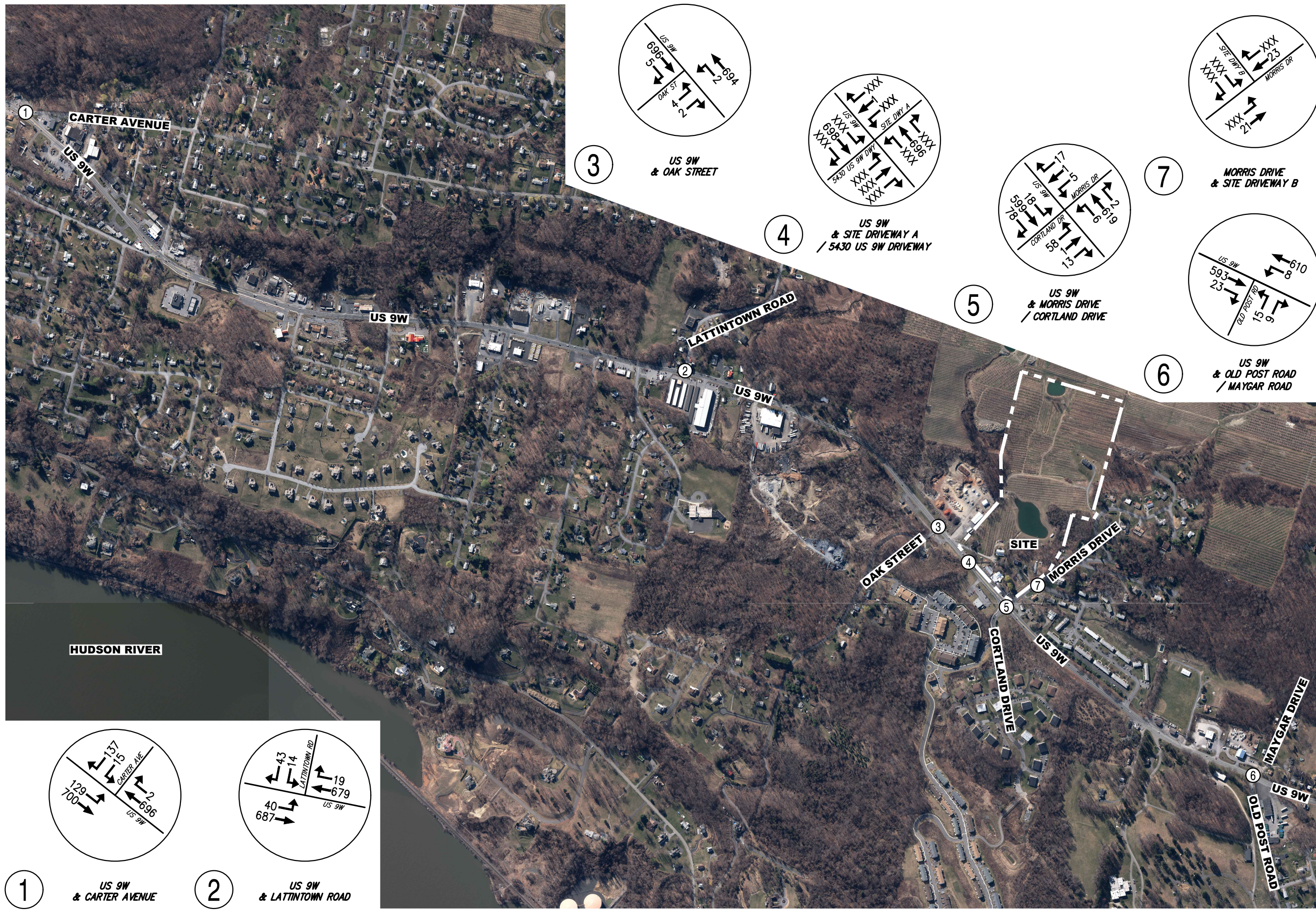
DATE: 12/09/2020

FIGURE: 05

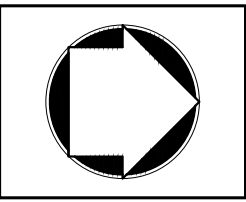
SCALE: 1" = 800'

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17088 - TRAFFIC - FIG. DWG: TRAFFIC - FIGS. TAB



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2025 GENERAL GROWTH VOLUMES
PEAK SATURDAY MIDDAY HOUR

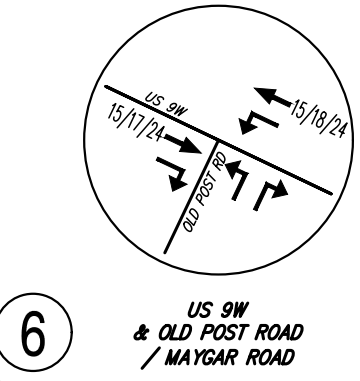
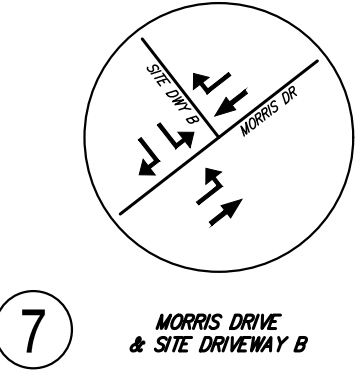
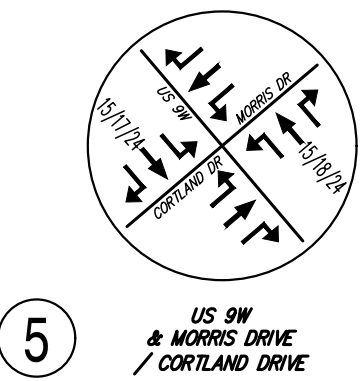
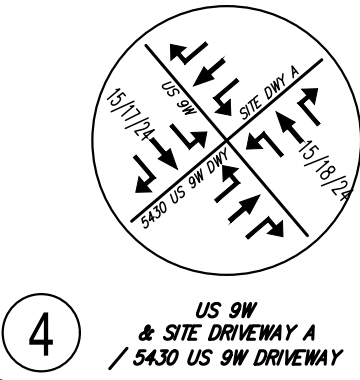
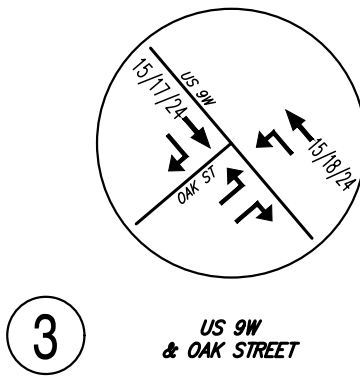
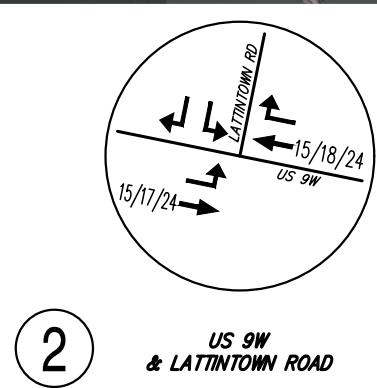
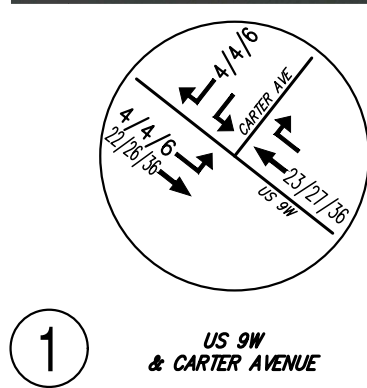
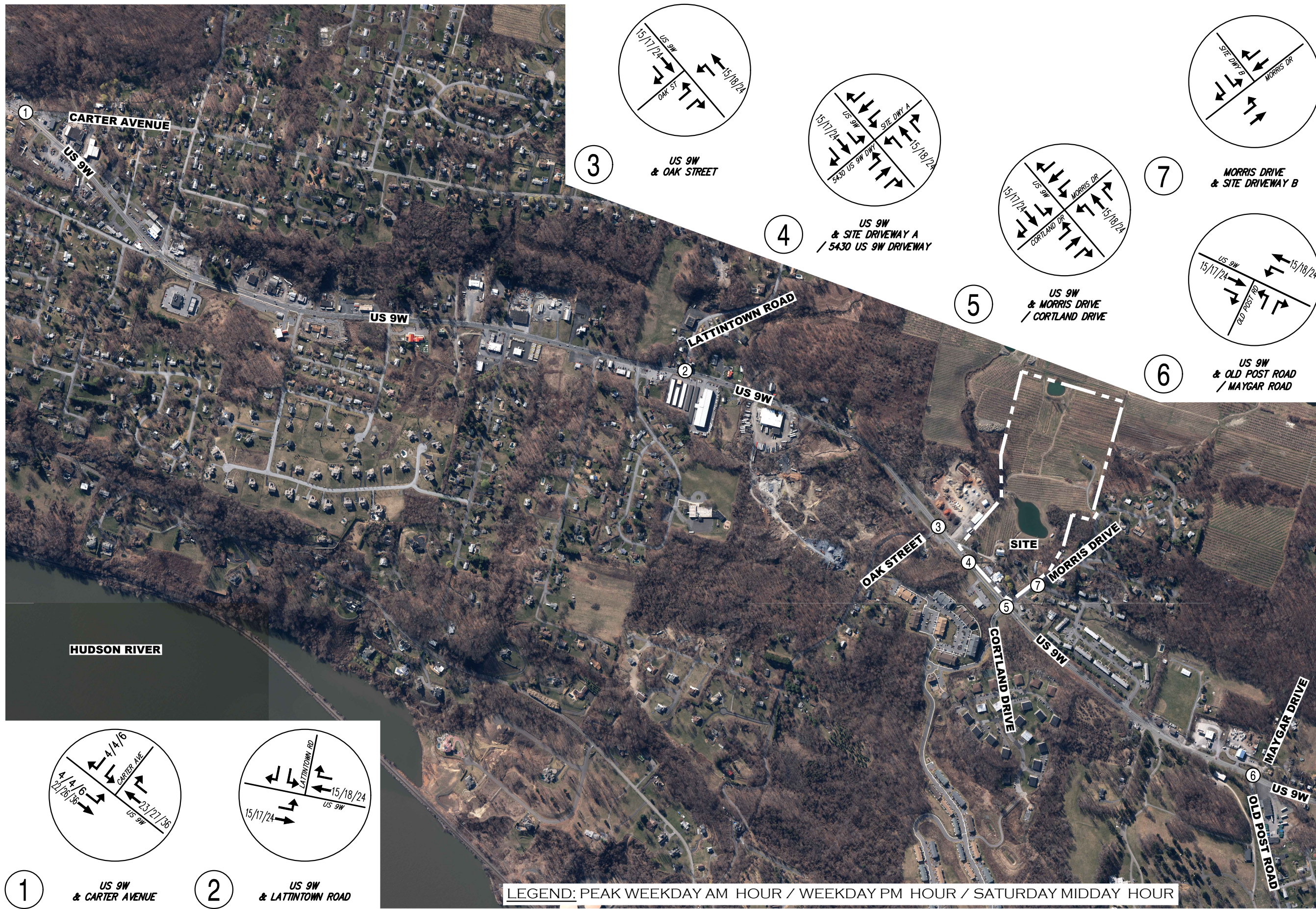
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SCALE: 1" = 800'

FIGURE: 06

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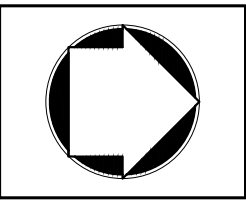
17088 - TRAFFIC - FIG. DWG: TRAFFIC - FIGS. TAB



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

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OTHER DEVELOPMENT VOLUMES

GAS LAND PETROLEUM GAS STATION AND CONVENIENCE MARKET

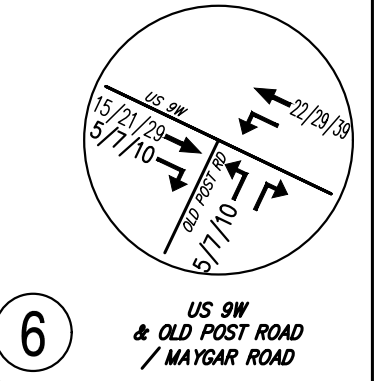
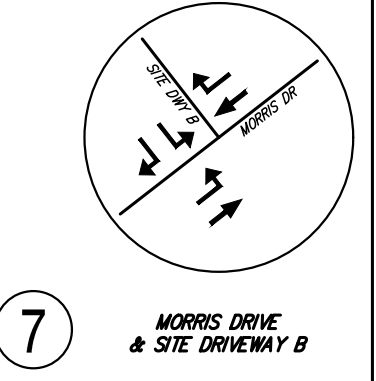
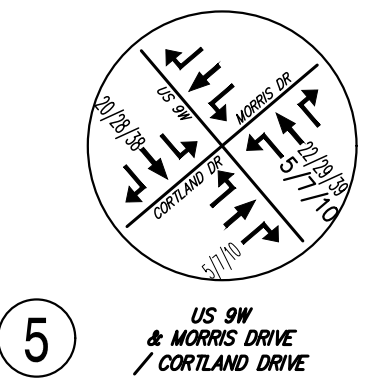
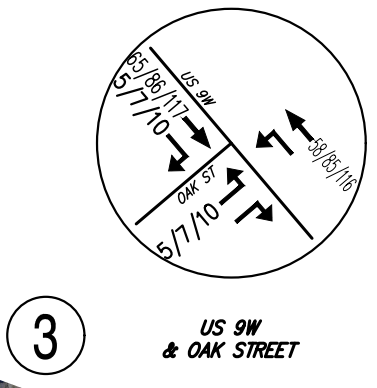
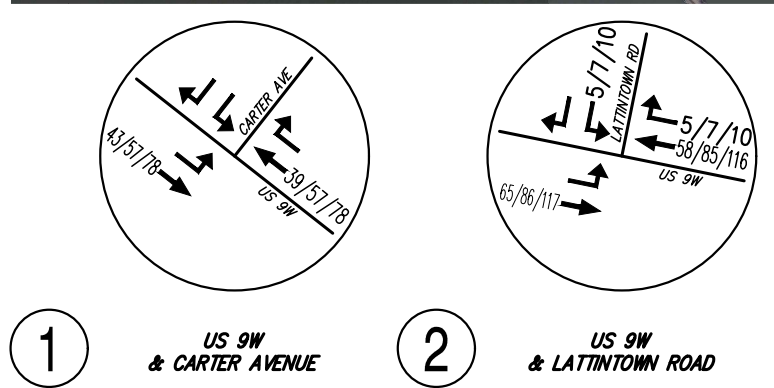
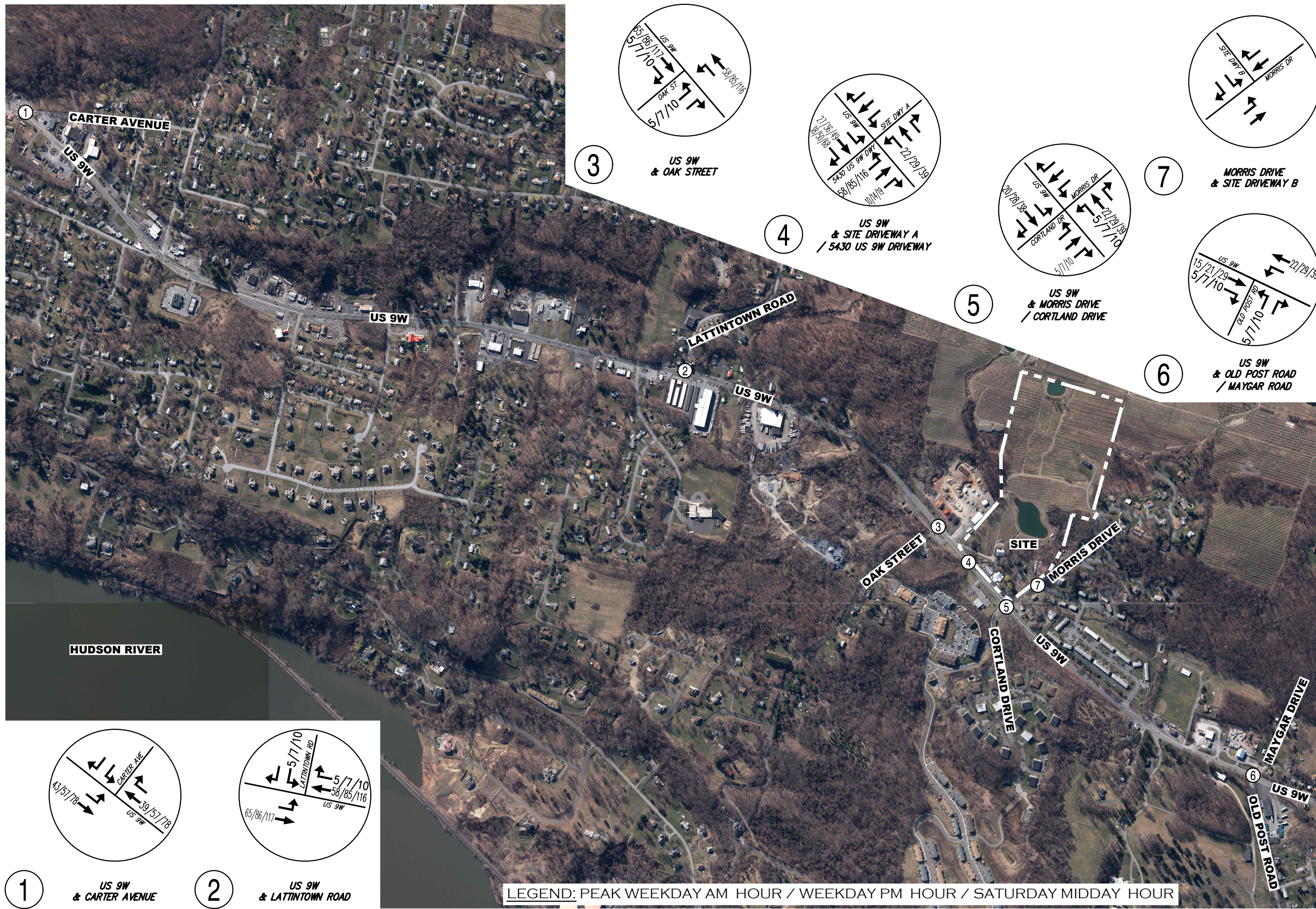
JMC PROJECT: 17088

DATE: 12/09/2020

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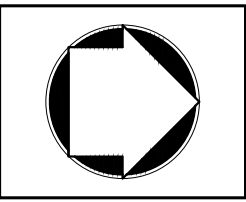
FIGURE: 07

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5417 ROUTE 9W

OTHER DEVELOPMENT VOLUMES
 5430 ROUTE 9W

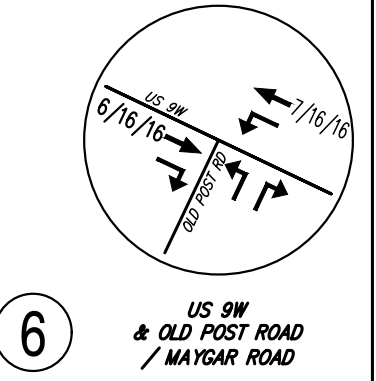
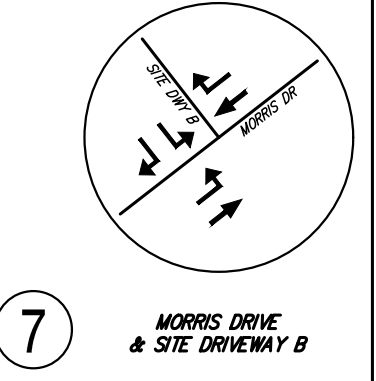
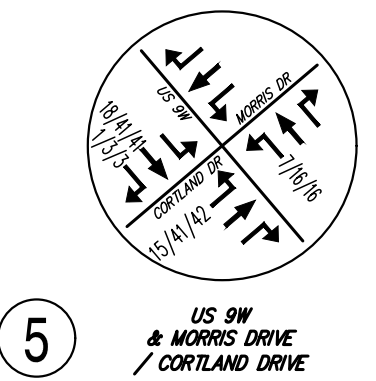
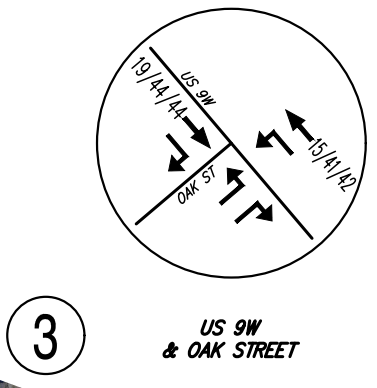
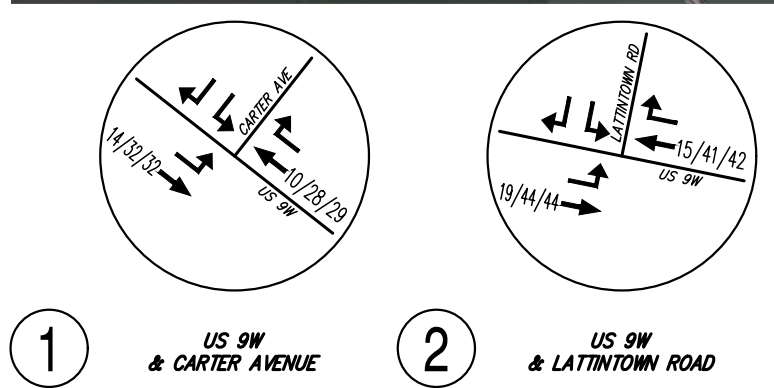
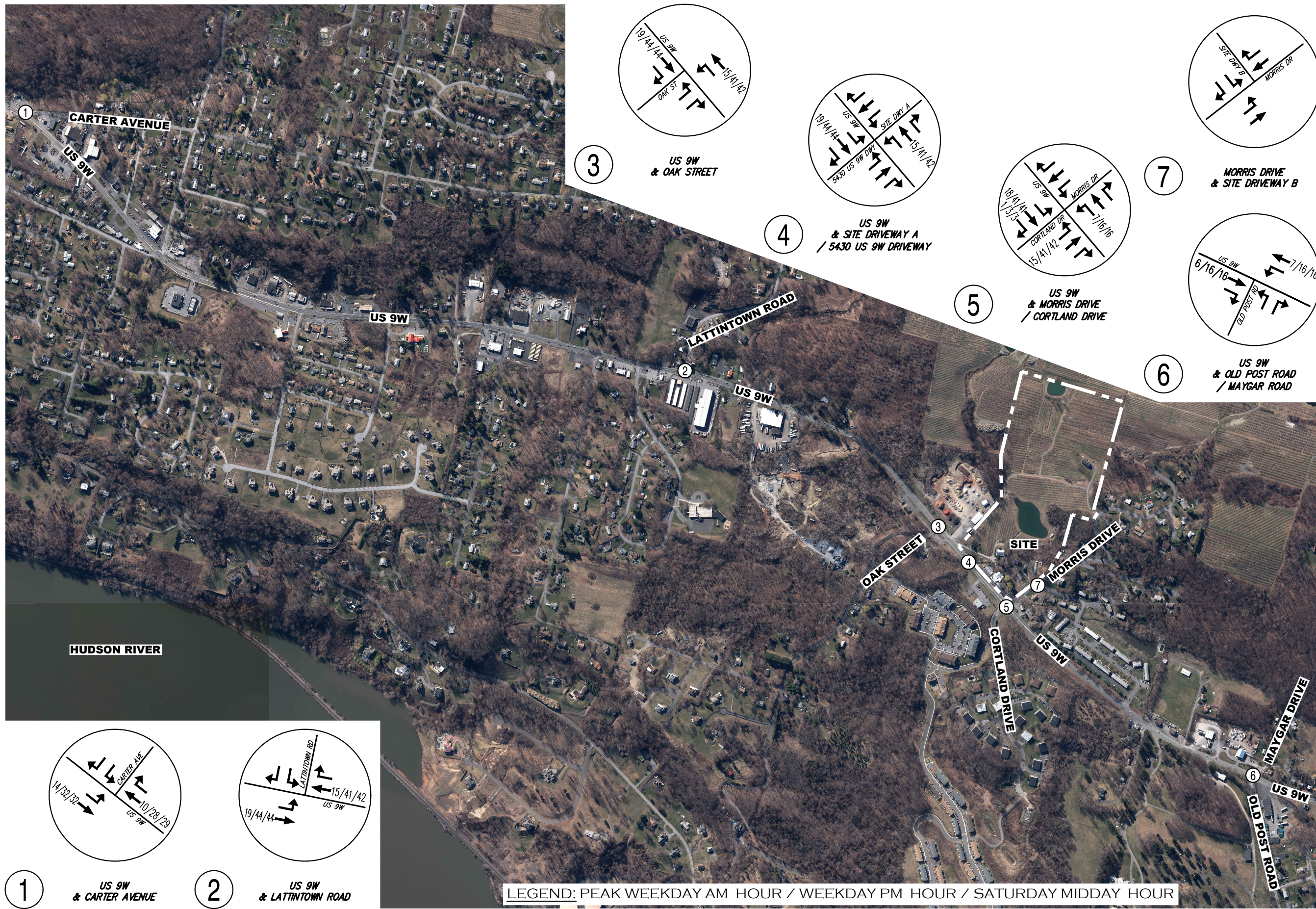
DATE: 12/09/2020
 JMC PROJECT: 17088

SCALE: 1" = 800'

FIGURE: 08

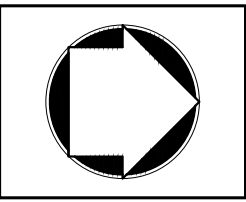
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17088 - TRAFFIC - FIG. DWG: TRAFFIC - FIGS. TAB



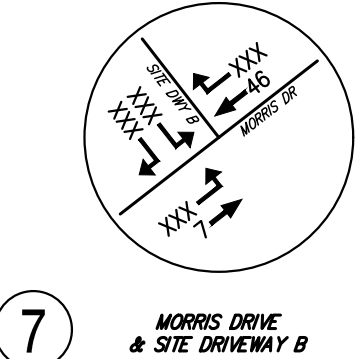
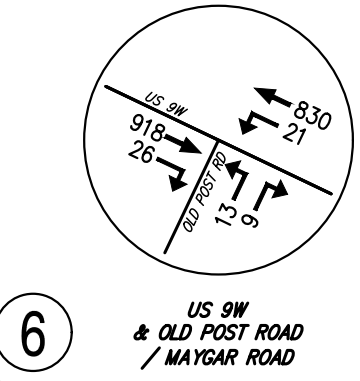
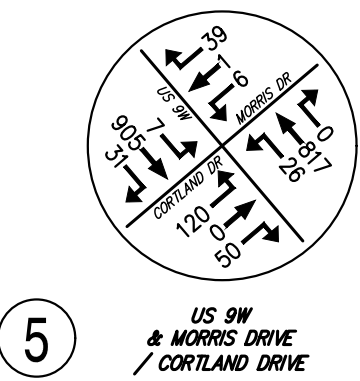
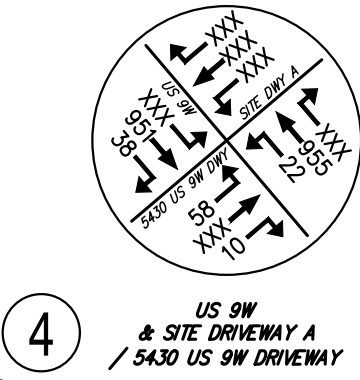
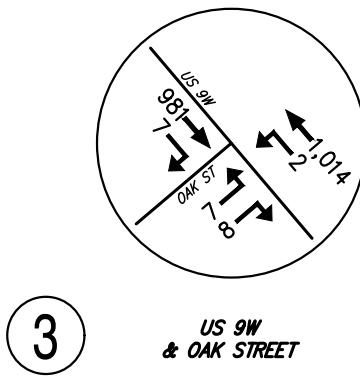
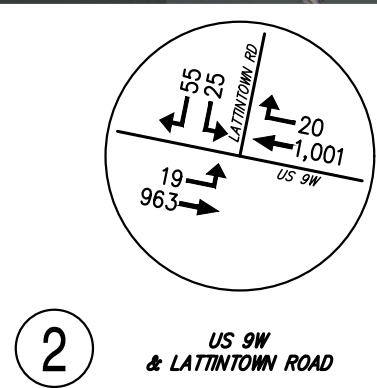
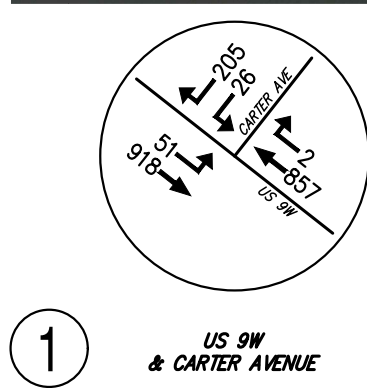
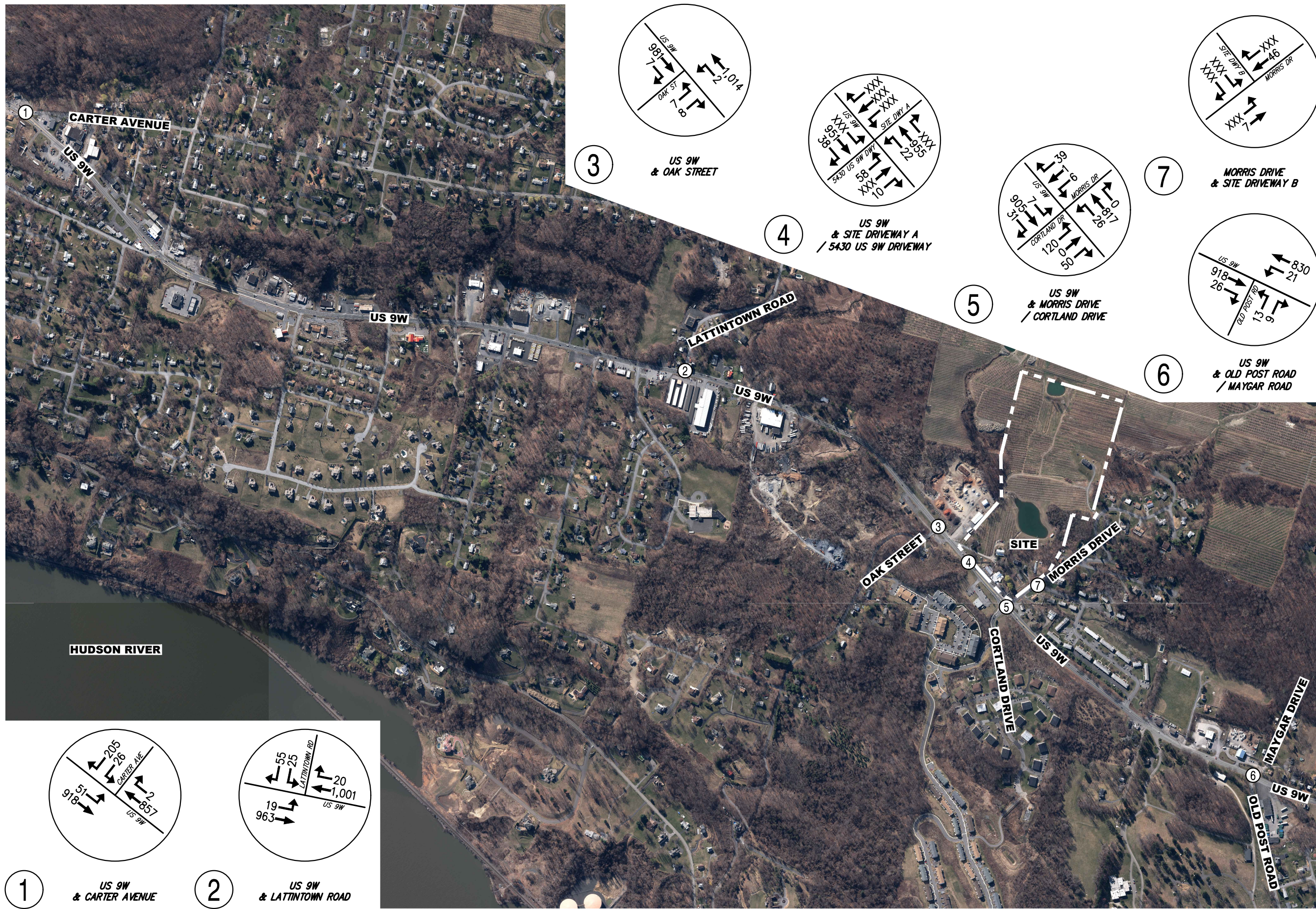
LEGEND: PEAK WEEKDAY AM HOUR / WEEKDAY PM HOUR / SATURDAY MIDDAY HOUR

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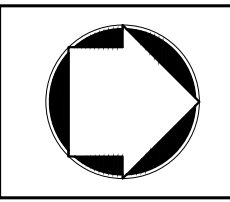
5417 ROUTE 9W
 TOWN OF NEWBURGH, NEW YORK
HUDSON PLACE
 OTHER DEVELOPMENT VOLUMES
 CORTLAND COMMONS
 JMC PROJECT: 17088
 DATE: 12/09/2020
 SCALE: 1" = 800'
 FIGURE: 09

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5417 ROUTE 9W

HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

2025 NO BUILD VOLUMES
PEAK WEEKDAY AM HOUR (7:00 - 8:00)

JMC PROJECT: 17088

SCALE: 1" = 800'

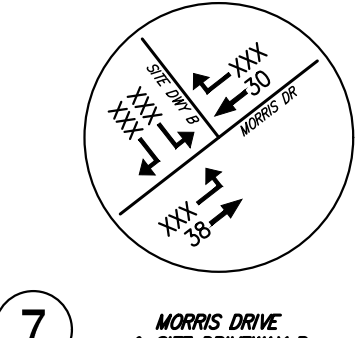
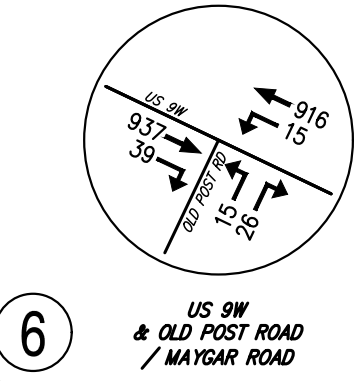
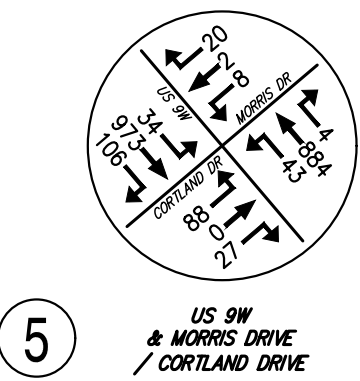
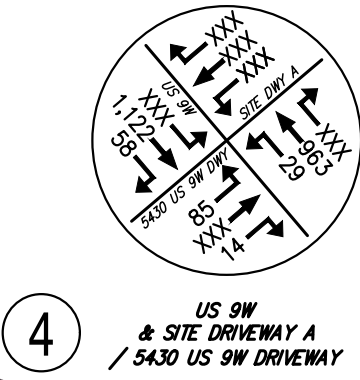
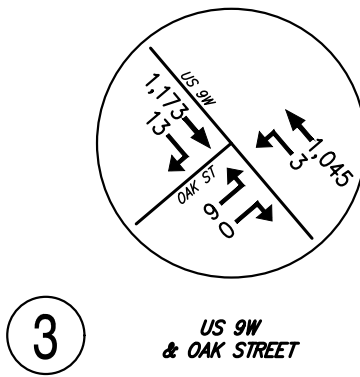
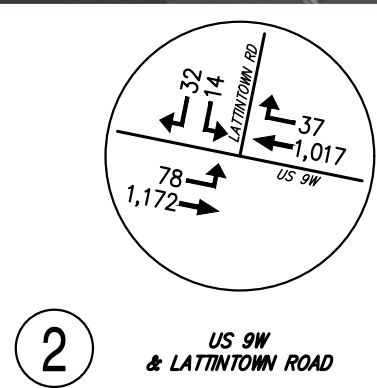
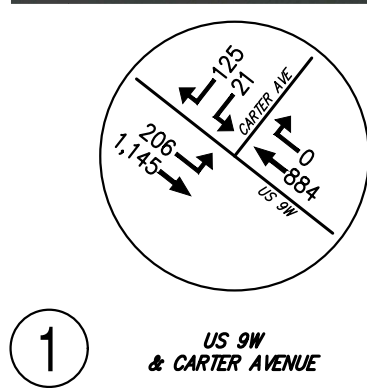
DATE: 12/09/2020

FIGURE: 10

TRAFFIC-FIG. DWG: TRAFFIC-FIGS.TAB

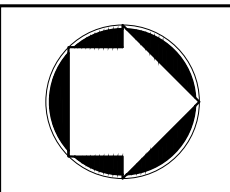
17088-TRAFFIC-FIG.dwg; TRAFFIC-FIGS.tab

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5417 ROUTE 9W

HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

2025 NO BUILD VOLUMES
PEAK WEEKDAY PM HOUR (4:30 - 5:30)

DATE: 12/09/2020

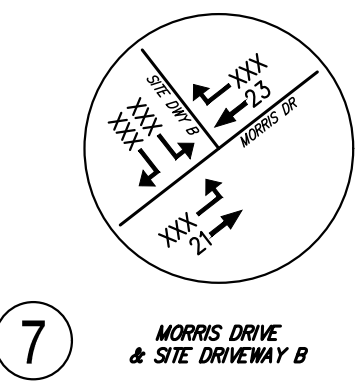
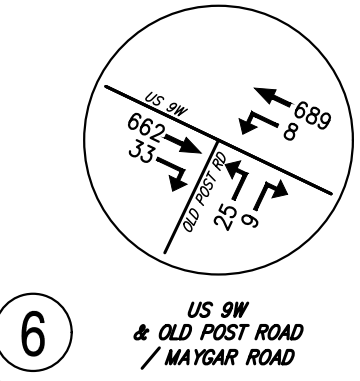
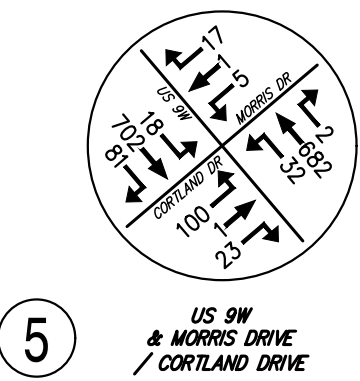
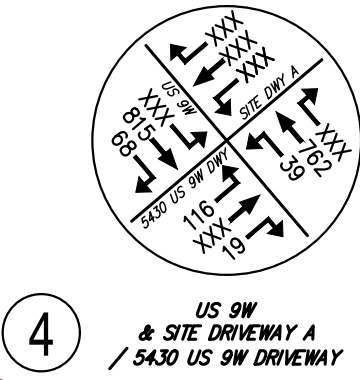
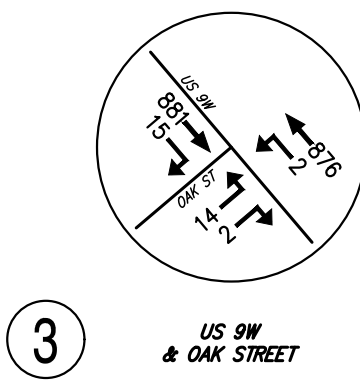
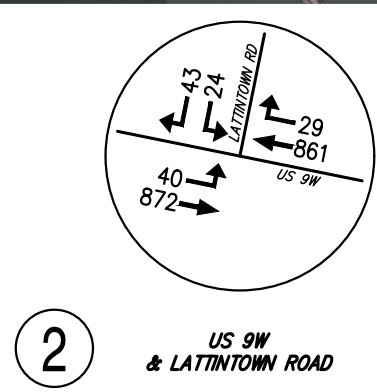
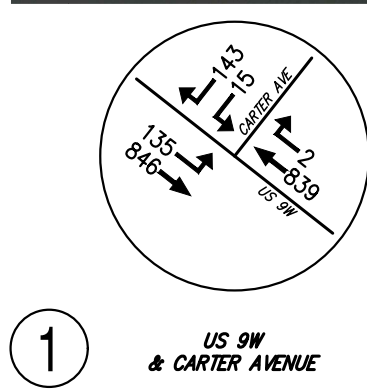
JMC PROJECT: 17088

SCALE: 1" = 800'

FIGURE: 11

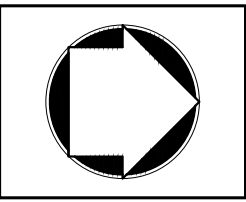
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17088 - TRAFFIC - FIG. DWG: TRAFFIC-FIGS.TAB



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5417 ROUTE 9W

HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

2025 NO BUILD VOLUMES
PEAK SATURDAY MIDDAY HOUR (12:15 - 1:15)

DATE: 12/09/2020

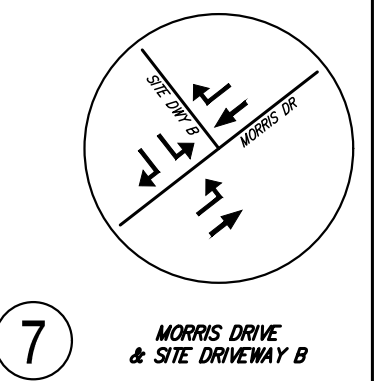
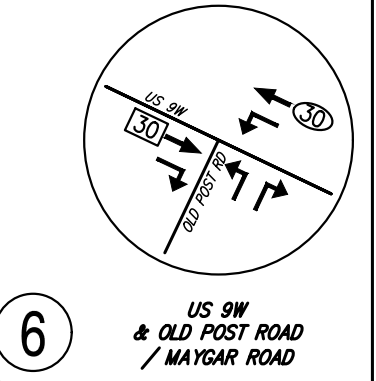
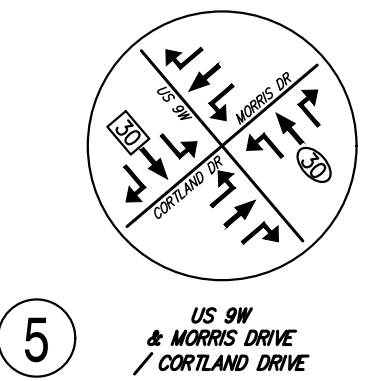
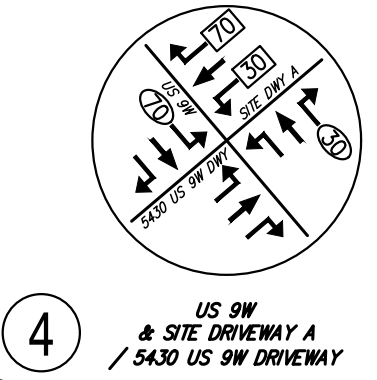
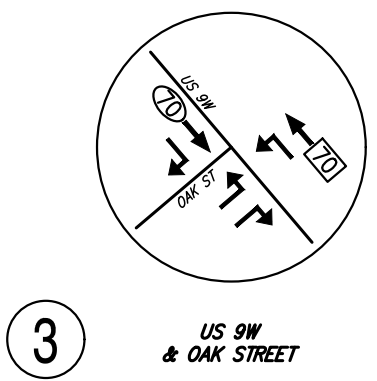
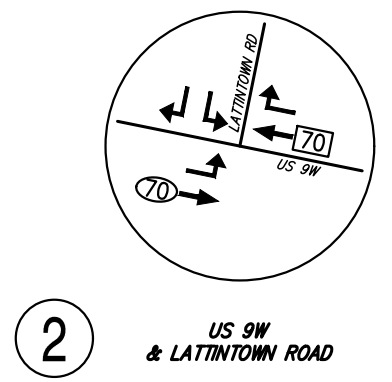
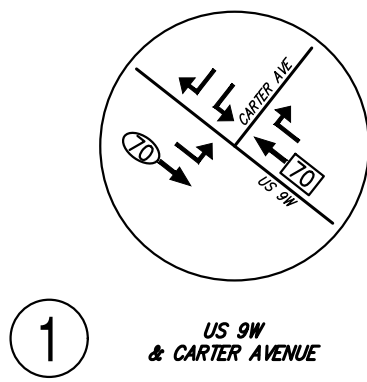
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SCALE: 1" = 800'

FIGURE: 12

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17088 - TRAFFIC - FIG. DWG: TRAFFIC - FIGS. TAB



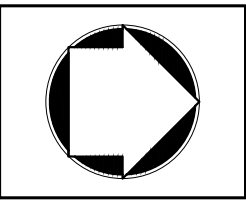
LEGEND

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5417 ROUTE 9W

HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

RESIDENTIAL PRIMARY TRIP DISTRIBUTIONS

JMC PROJECT: 17088

DATE: 12/09/2020

FIGURE: 13

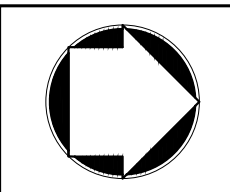
SCALE: 1" = 800'

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17088 - TRAFFIC - FIG. dwg; TRAFFIC - FIGS. tab



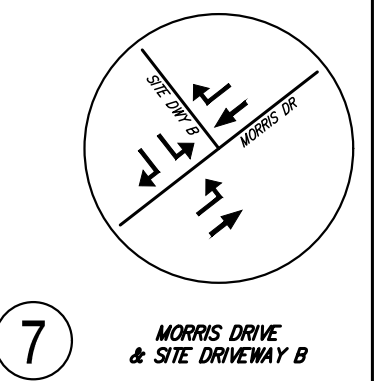
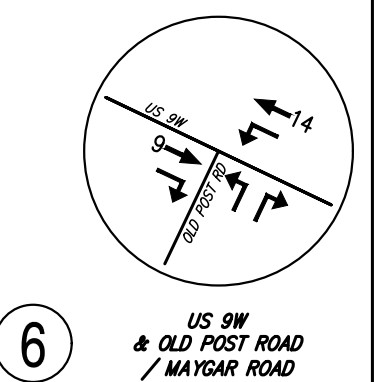
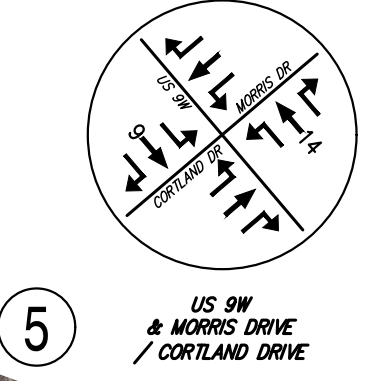
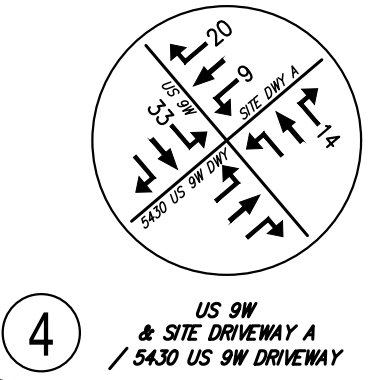
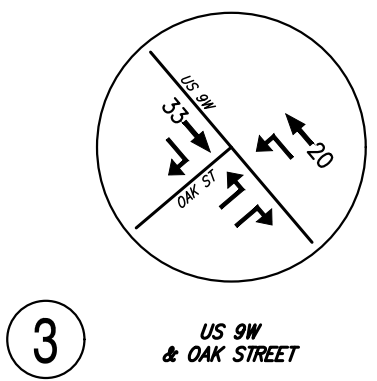
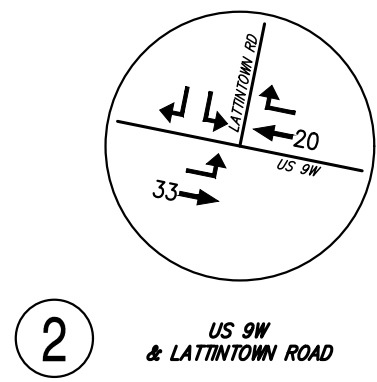
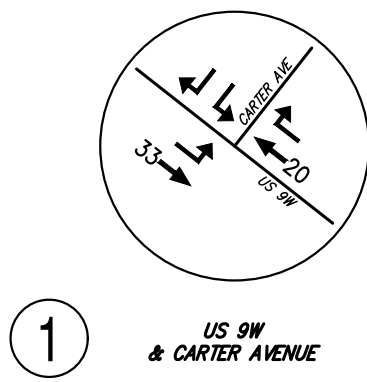
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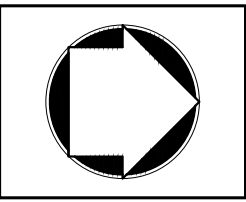
5417 ROUTE 9W
 TOWN OF NEWBURGH, NEW YORK
HUDSON PLACE
RESIDENTIAL PRIMARY VOLUMES
 PEAK WEEKDAY AM HOUR
 DATE: 12/09/2020
 JMC PROJECT: 17088
 SCALE: 1" = 800'
 FIGURE: 14

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17088 - TRAFFIC - FIG. dwg; TRAFFIC - FIGS. tab



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HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

RESIDENTIAL PRIMARY VOLUMES

PEAK WEEKDAY PM HOUR

DATE: 12/09/2020

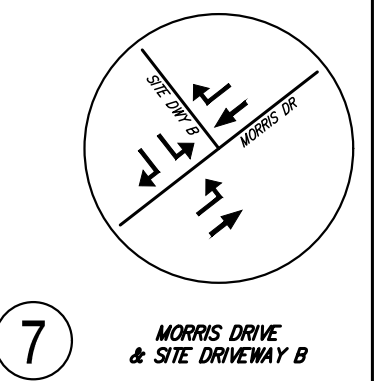
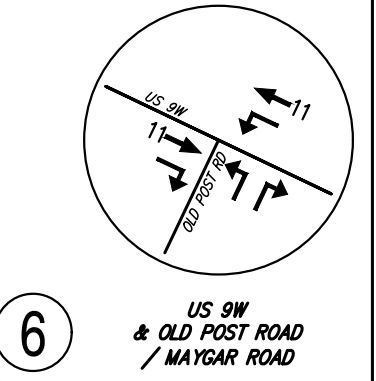
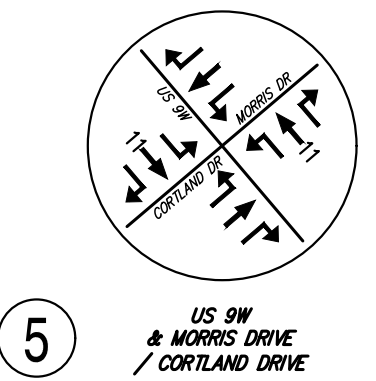
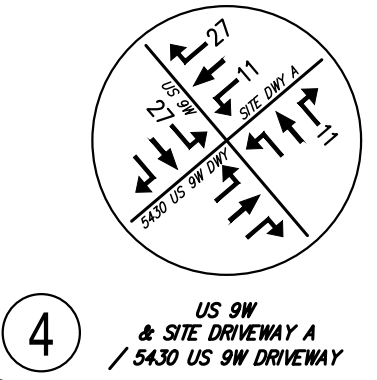
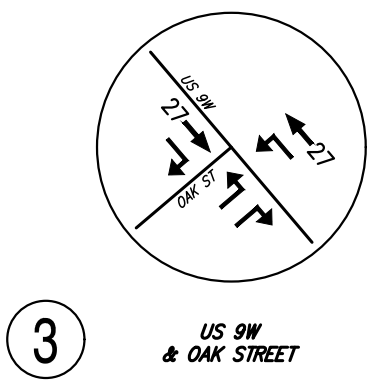
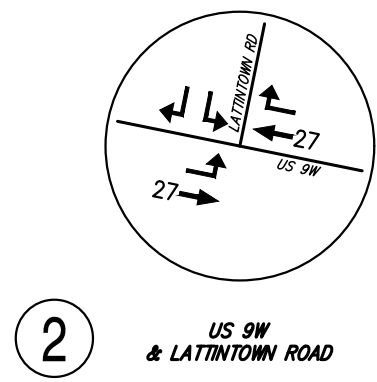
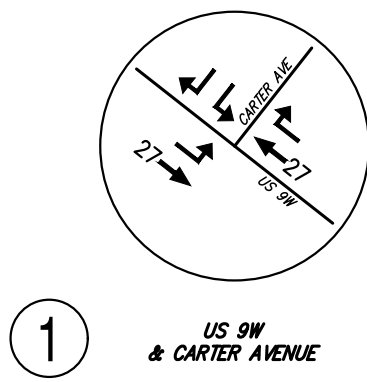
JMC PROJECT: 17088

SCALE: 1" = 800'

FIGURE: 15

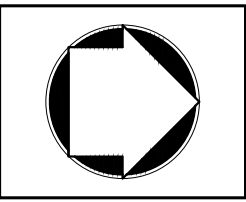
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17088 - TRAFFIC - FIG. dwg; TRAFFIC - FIGS. tab



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HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

RESIDENTIAL PRIMARY VOLUMES

PEAK SATURDAY MIDDAY HOUR

JMC PROJECT: 17088

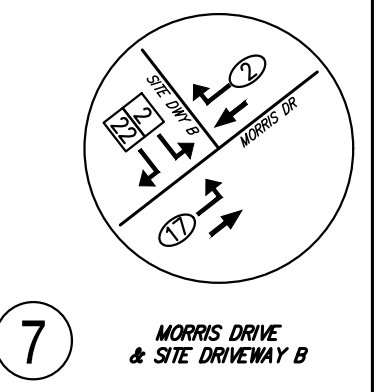
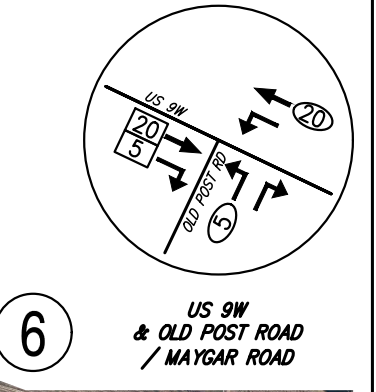
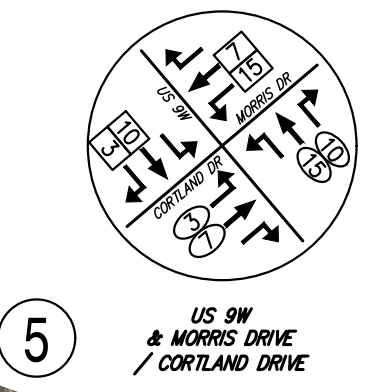
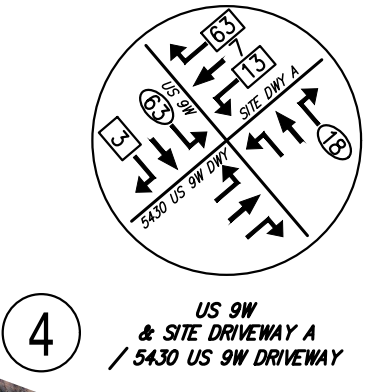
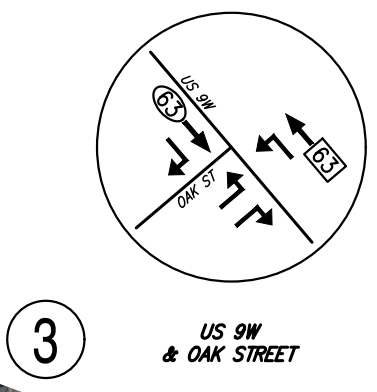
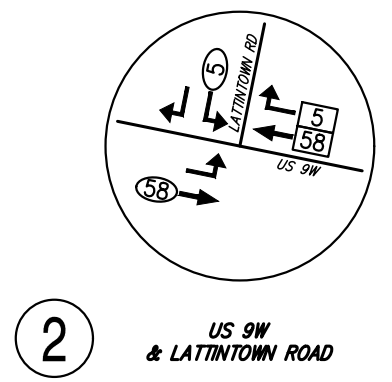
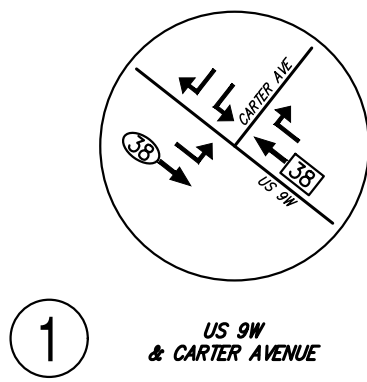
DATE: 12/09/2020

FIGURE: 16

SCALE: 1" = 800'

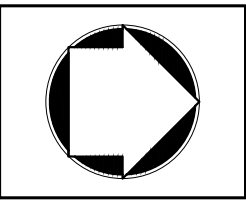
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17088 - TRAFFIC - FIG. dwg; TRAFFIC - FIGS. tab



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 ◻ % EXITING

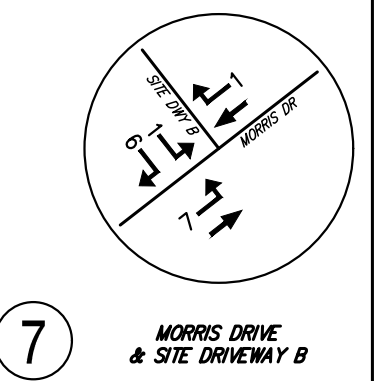
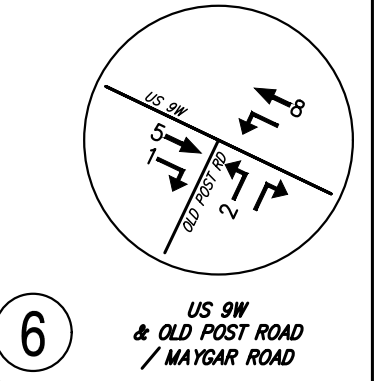
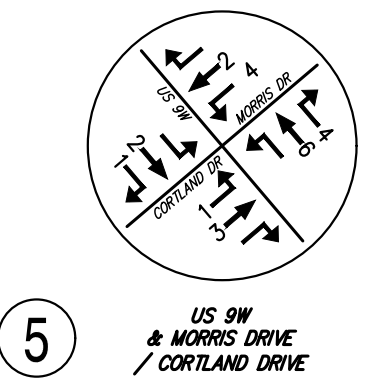
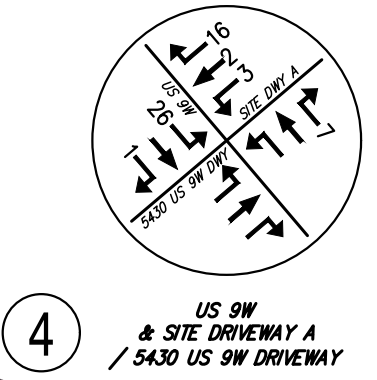
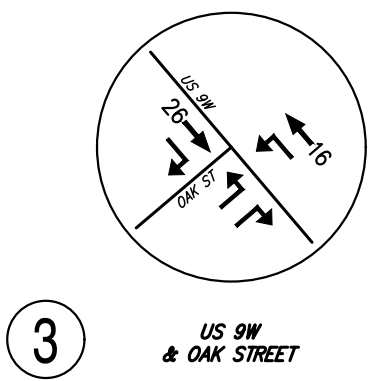
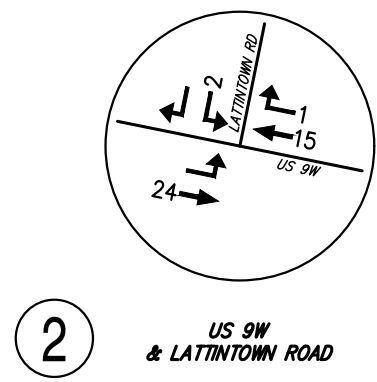
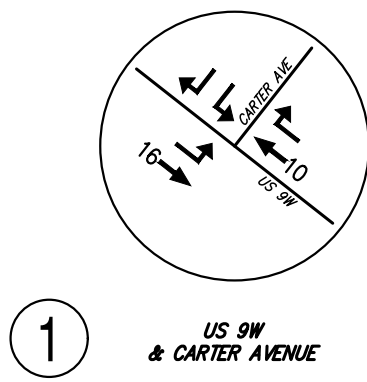
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SUPERMARKET PRIMARY TRIP DISTRIBUTIONS
 JMC PROJECT: 17088
 DATE: 12/09/2020
 SCALE: 1" = 800'
 FIGURE: 17

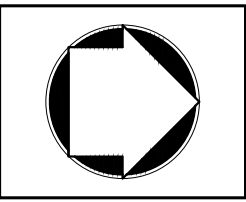
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17088 - TRAFFIC - FIG. dwg; TRAFFIC - FIGS. tab



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TOWN OF NEWBURGH, NEW YORK

SUPERMARKET PRIMARY VOLUMES

PEAK WEEKDAY AM HOUR

JMC PROJECT: 17088

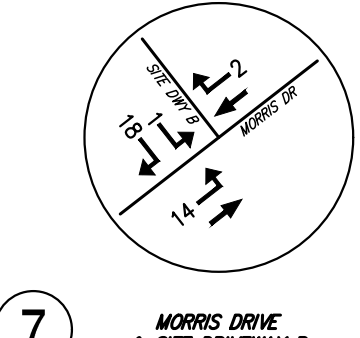
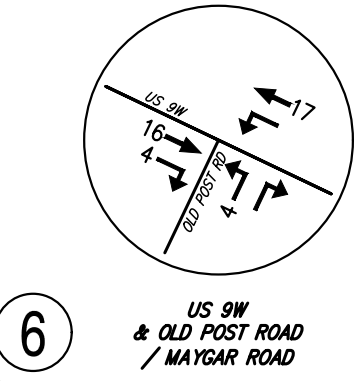
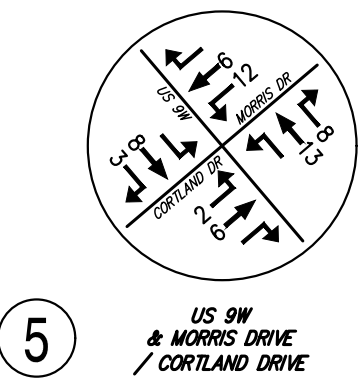
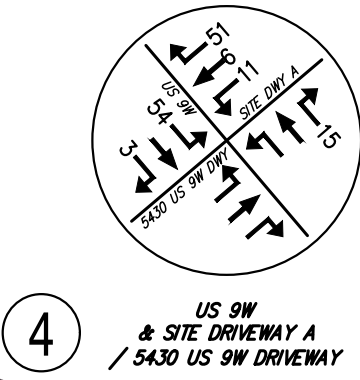
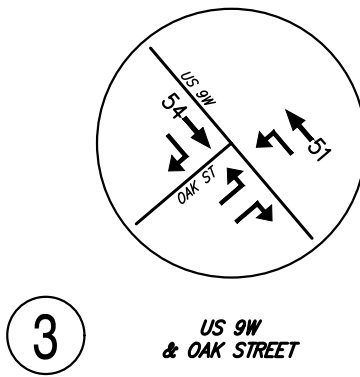
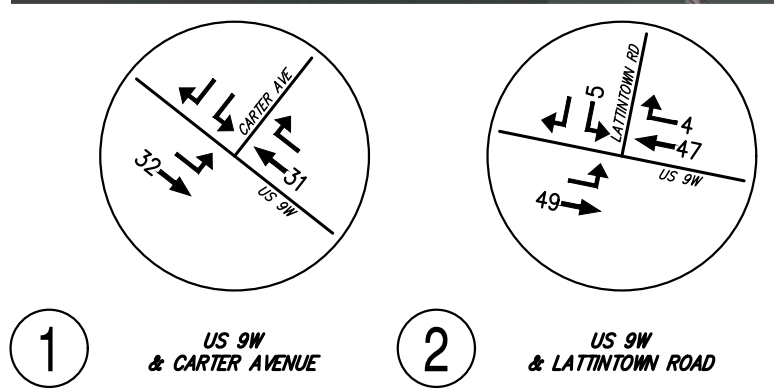
DATE: 12/09/2020

SCALE: 1" = 800'

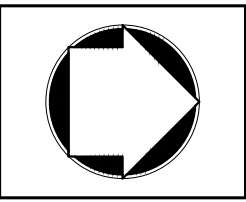
FIGURE: 18

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17088 - TRAFFIC - FIG. DWG: TRAFFIC - FIGS. TAB

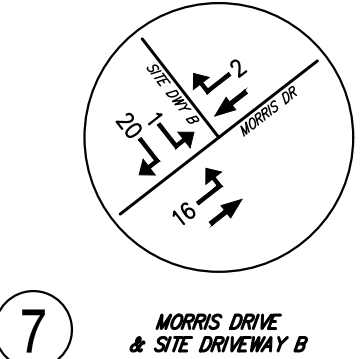
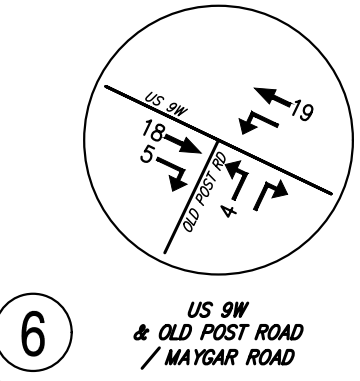
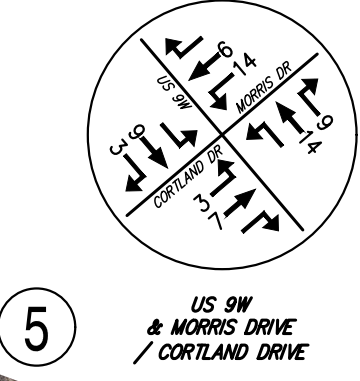
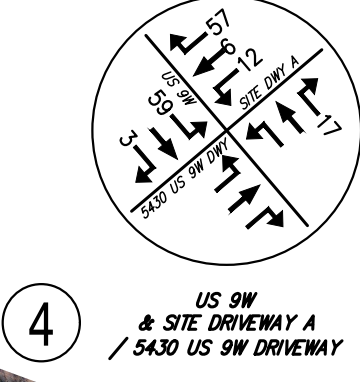
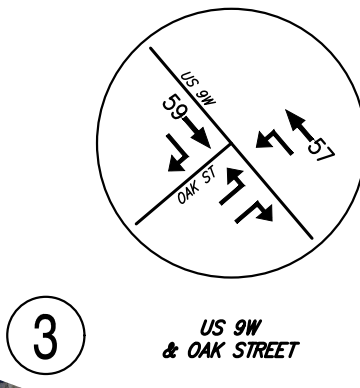
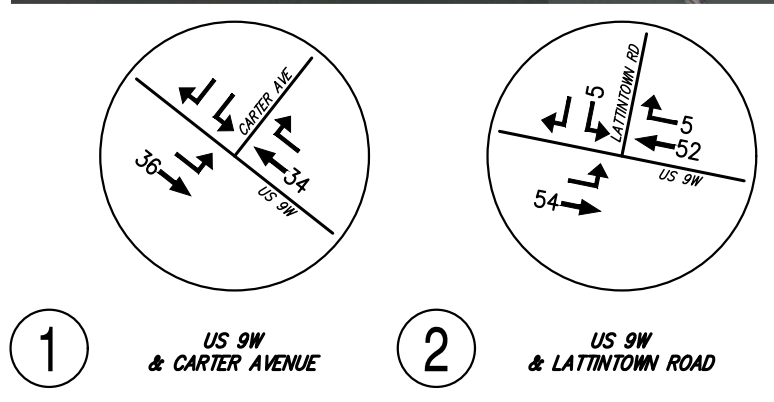


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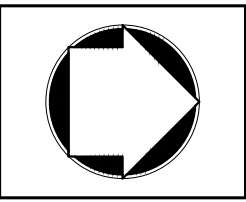
5417 ROUTE 9W
 TOWN OF NEWBURGH, NEW YORK
HUDSON PLACE
SUPERMARKET PRIMARY VOLUMES
 PEAK WEEKDAY PM HOUR
 DATE: 12/09/2020
 JMC PROJECT: 17088
 SCALE: 1" = 800'
 FIGURE: 19

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 17088 - TRAFFIC - FIG. dwg; TRAFFIC - FIGS. tab



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5417 ROUTE 9W

HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

SUPERMARKET PRIMARY VOLUMES

PEAK SATURDAY MIDDAY HOUR

JMC PROJECT: 17088

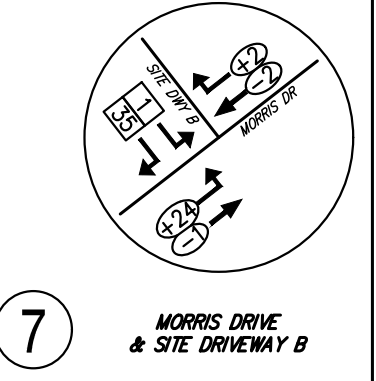
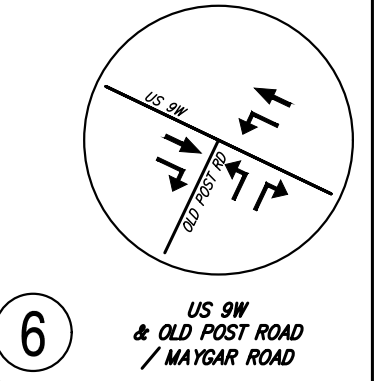
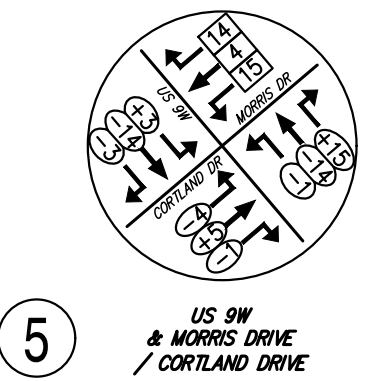
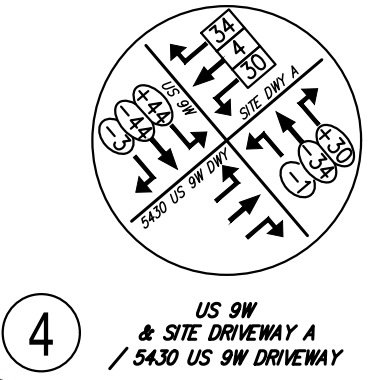
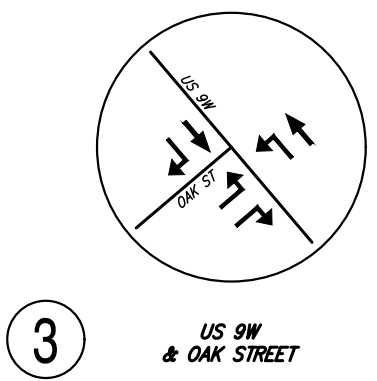
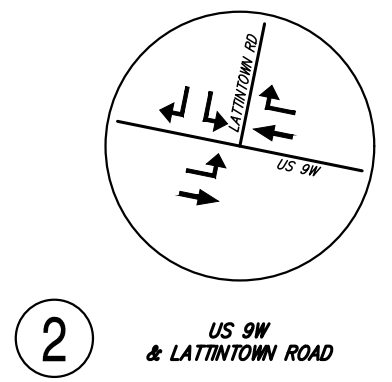
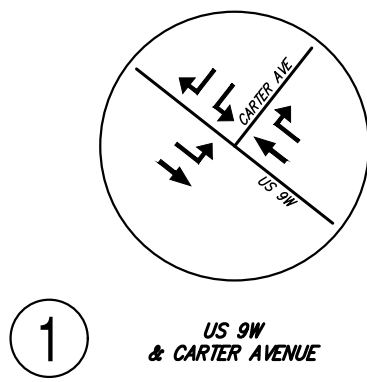
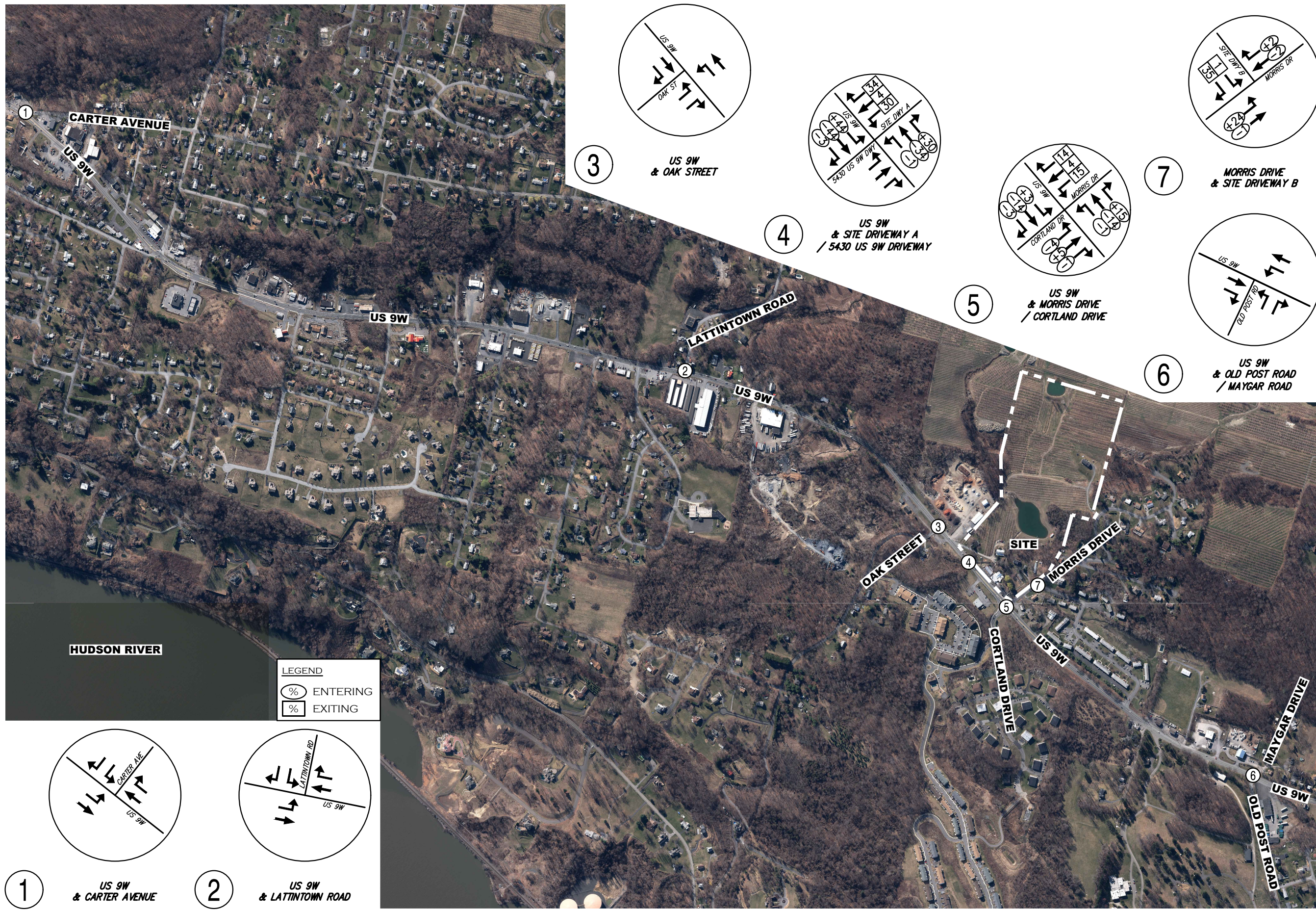
DATE: 12/09/2020

FIGURE: 20

SCALE: 1" = 800'

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17088 - TRAFFIC - FIG. DWG: TRAFFIC - FIGS. TAB



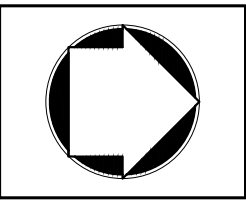
LEGEND

◯ ENTERING

◻ EXITING

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5417 ROUTE 9W

HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

SUPERMARKET PASS-BY TRIP DISTRIBUTIONS

DATE: 12/09/2020

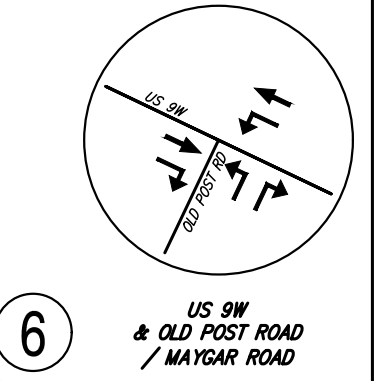
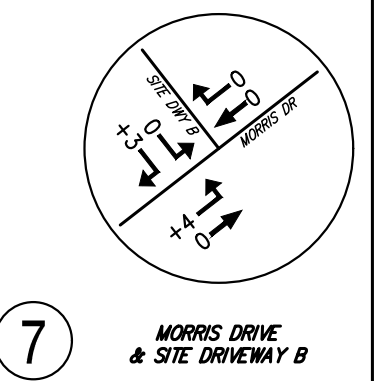
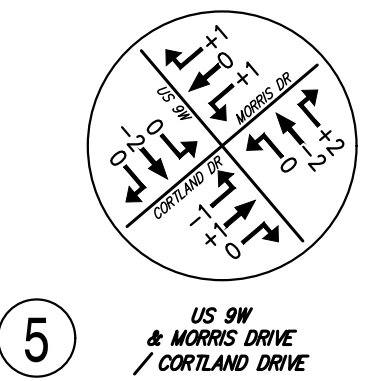
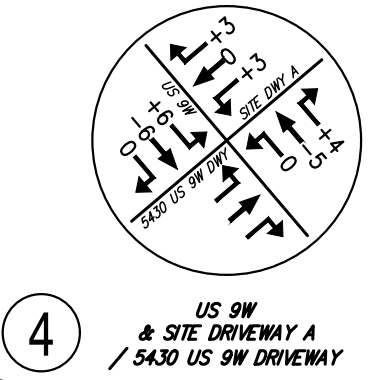
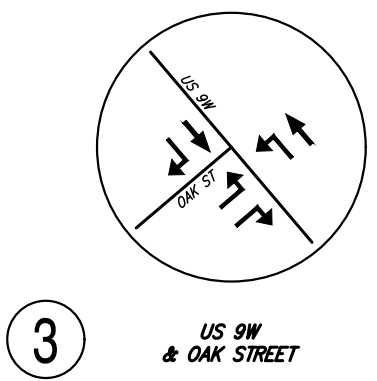
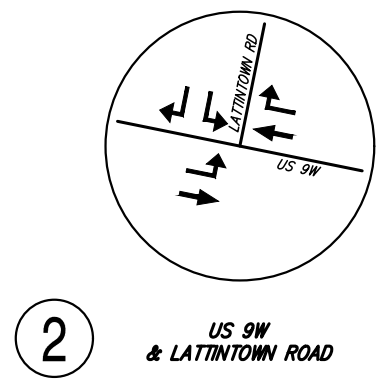
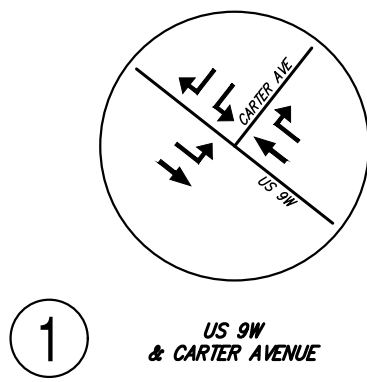
JMC PROJECT: 17088

SCALE: 1" = 800'

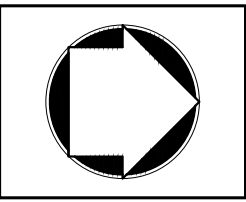
FIGURE: 21

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17088 - TRAFFIC - FIG. dwg; TRAFFIC - FIGS. tab



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5417 ROUTE 9W

HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

SUPERMARKET PASS-BY VOLUMES

PEAK WEEKDAY AM HOUR

DATE: 12/09/2020

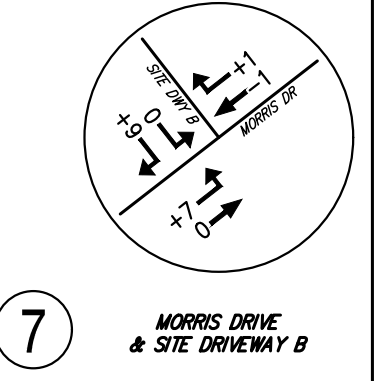
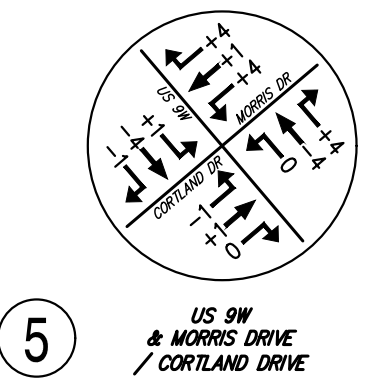
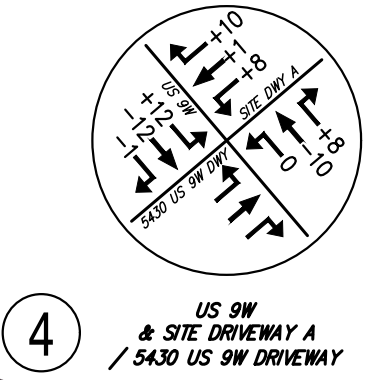
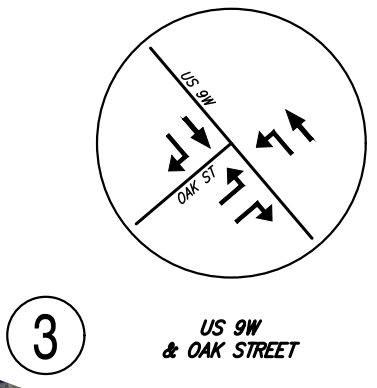
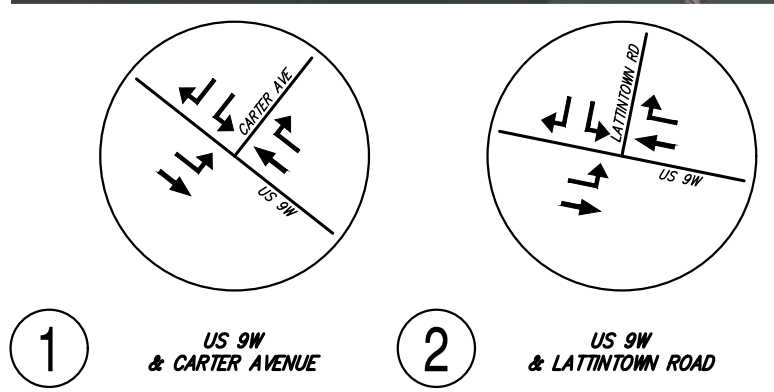
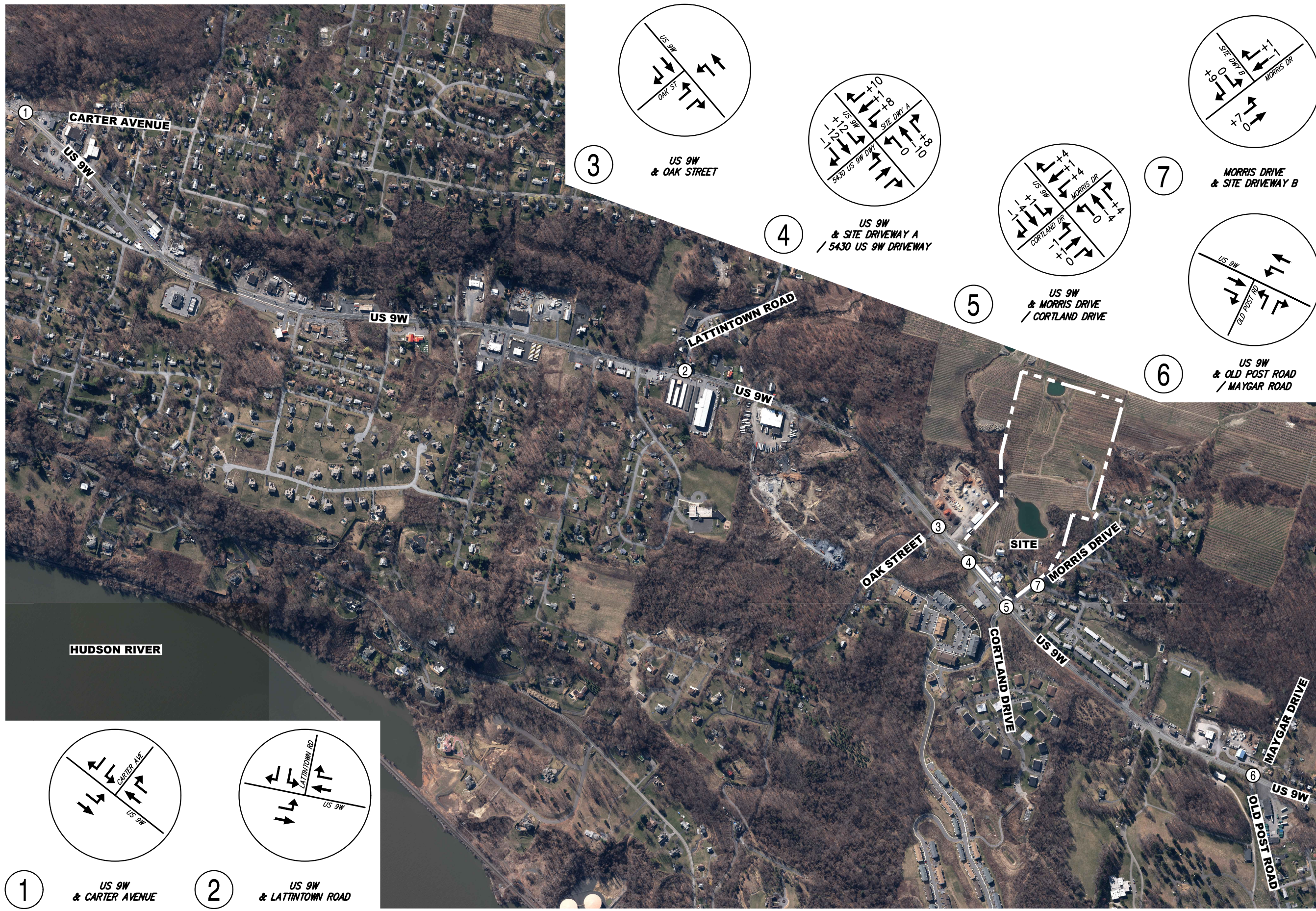
JMC PROJECT: 17088

SCALE: 1" = 800'

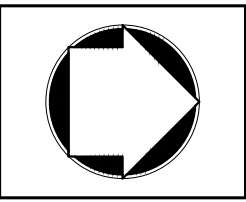
FIGURE: 22

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17088 - TRAFFIC - FIG. DWG: TRAFFIC - FIGS. TAB



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HUDSON PLACE

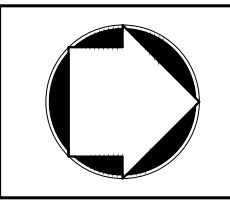
SUPERMARKET PASS-BY VOLUMES
PEAK WEEKDAY PM HOUR

DATE: 12/09/2020
JMC PROJECT: 17088

FIGURE: 23
SCALE: 1" = 800'

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17088 - TRAFFIC - FIG. dwg; TRAFFIC - FIGS. tab



5417 ROUTE 9W

HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

SUPERMARKET PASS-BY VOLUMES

PEAK SATURDAY MIDDAY HOUR

JMC PROJECT: 17088

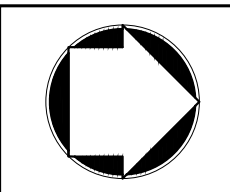
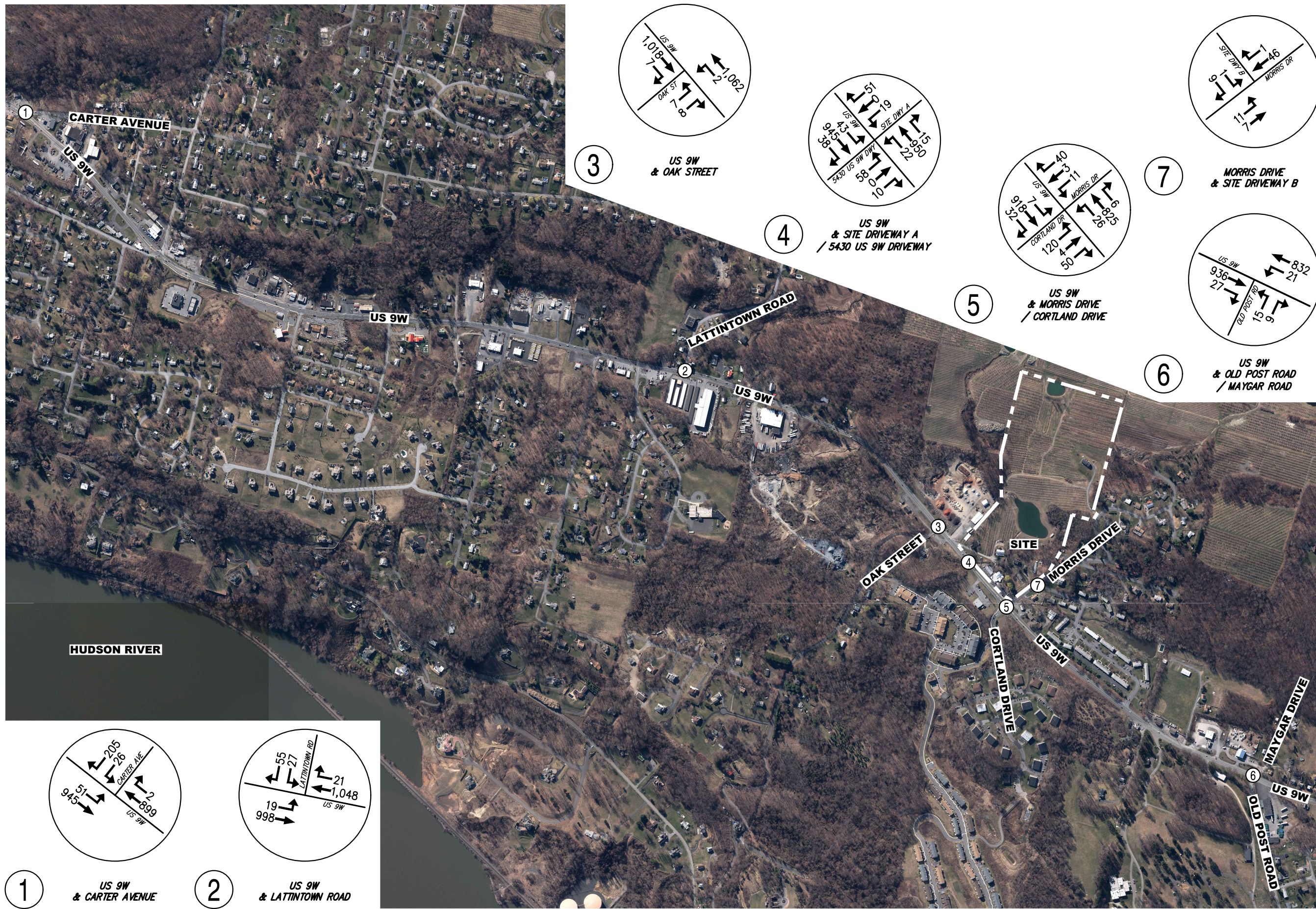
SCALE: 1" = 800'

DATE: 12/09/2020

FIGURE: 24

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17088 - TRAFFIC - FIG. dwg; TRAFFIC - FIGS. tab



TOWN OF NEWBURGH, NEW YORK

HUDSON PLACE

2025 BUILD VOLUMES
PEAK WEEKDAY AM HOUR (7:00 - 8:00)

5417 ROUTE 9W

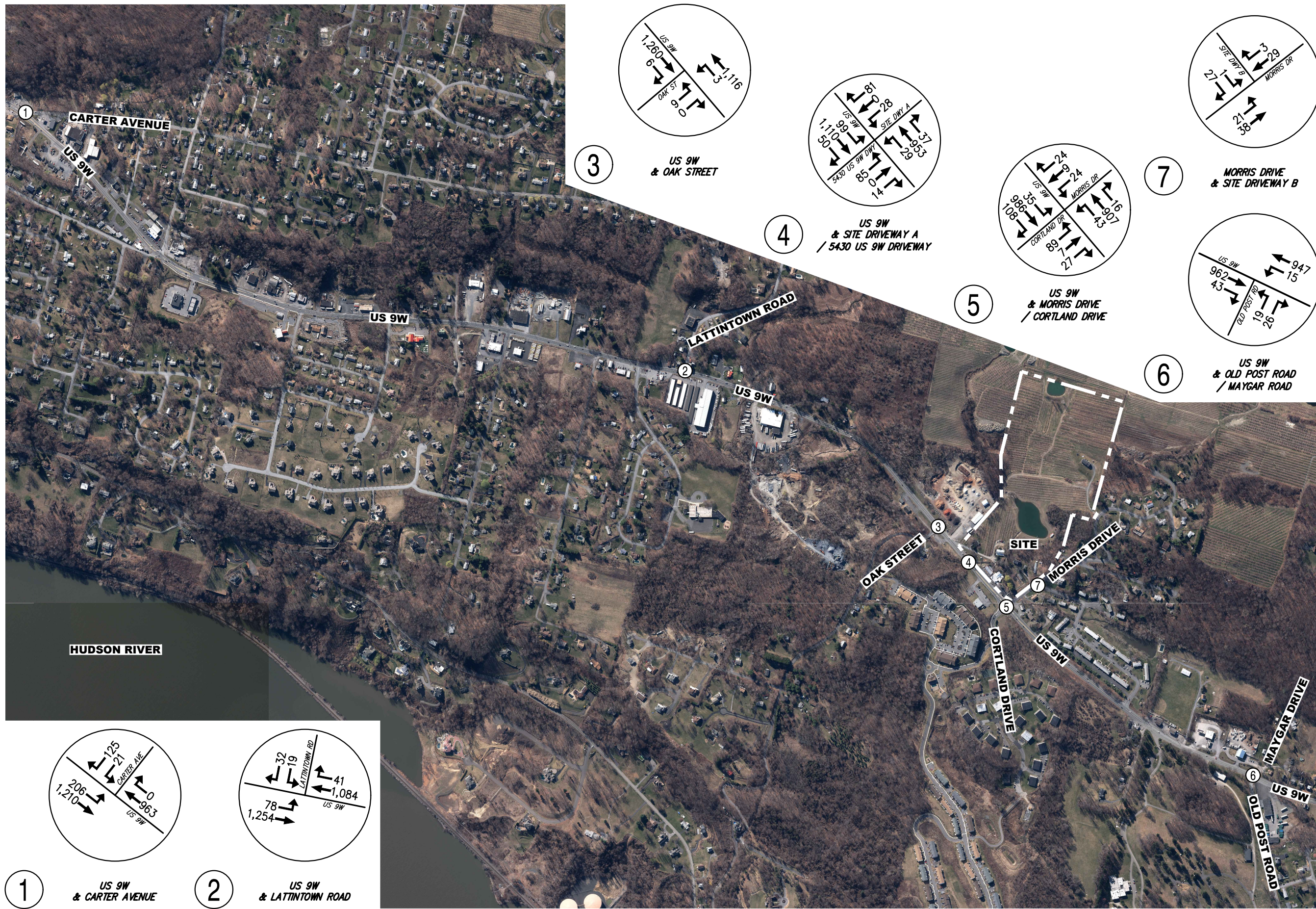
DATE: 12/09/2020

JMC PROJECT: 17088

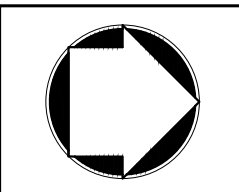
SCALE: 1" = 800'

FIGURE: 25

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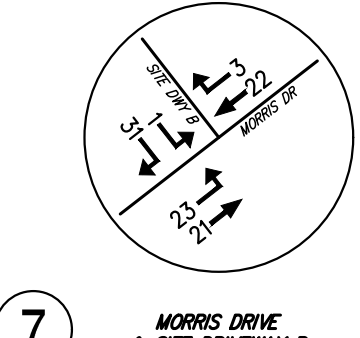
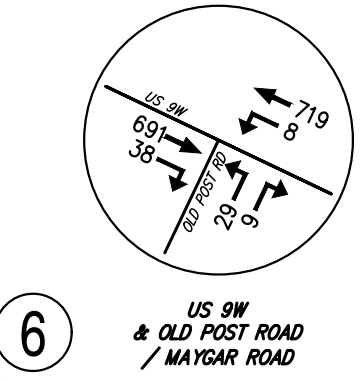
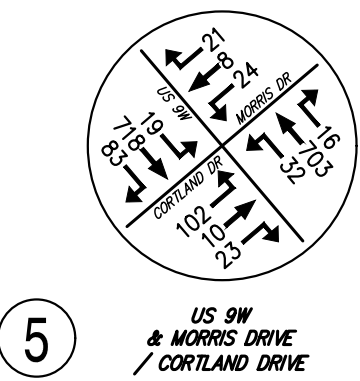
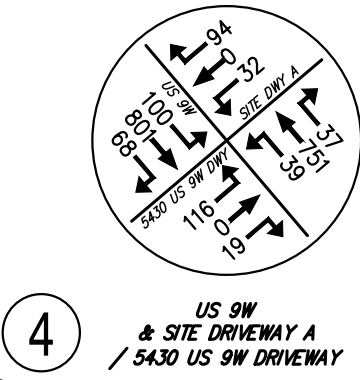
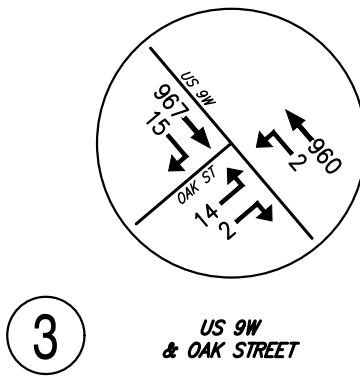
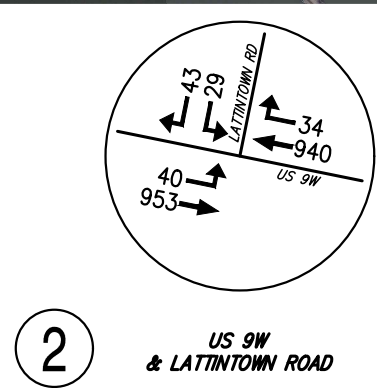
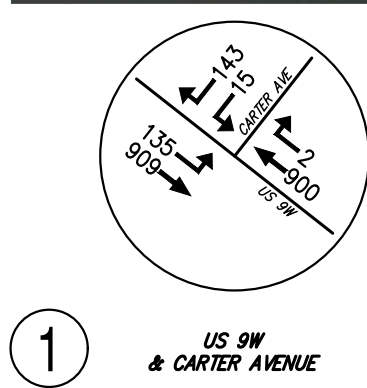
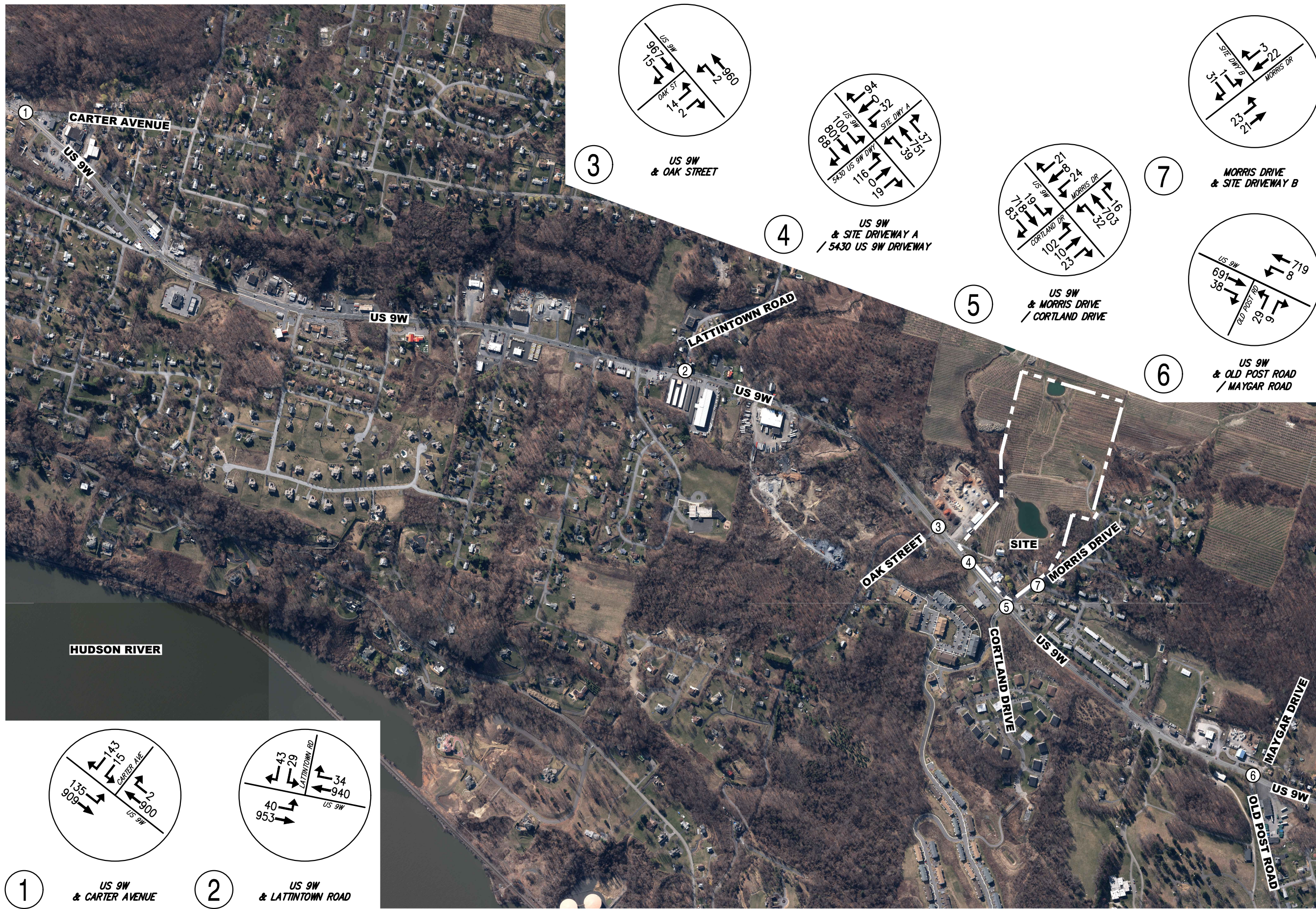


HUDSON PLACE
 TOWN OF NEWBURGH, NEW YORK

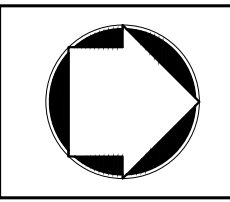
2025 BUILD VOLUMES
 PEAK WEEKDAY PM HOUR (4:30 - 5:30)

5417 ROUTE 9W
 DATE: 12/09/2020
 JMC PROJECT: 17088
 SCALE: 1" = 800'
 FIGURE: 26

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5417 ROUTE 9W

HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

2025 BUILD VOLUMES

PEAK SATURDAY MIDDAY HOUR (12:15 - 1:15)

JMC PROJECT: 17088

SCALE: 1" = 800'

DATE: 12/09/2020

FIGURE: 27

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17088 - TRAFFIC - FIG. DWG: TRAFFIC - FIGS. TAB

APPENDIX C
TURNING MOVEMENT COUNTS

4:00 - 4:15 PM	TOTAL	5	35	44	206			167	1					458					
	TRUCK	1	2	0	8			10	0										
4:15 - 4:30 PM	TOTAL	9	26	38	224			174	2					473					
	TRUCK	0	4	2	12			12	1										
4:30 - 4:45 PM	TOTAL	2	36	52	239			187	0					516					
	TRUCK	0	1	2	13			7	0										
4:45 - 5:00 PM	TOTAL	7	34	48	248			193	0					530					
	TRUCK	1	1	0	4			12	0										
5:00 - 5:15 PM	TOTAL	7	21	41	258			170	0					497					
	TRUCK	1	1	0	9			11	0										
5:15 - 5:30 PM	TOTAL	4	24	51	235			211	0					525					
	TRUCK	0	0	0	1			3	0										
5:30 - 5:45 PM	TOTAL	2	30	51	205			192	0					480					
	TRUCK	0	0	0	8			2	0										
5:45 - 6:00 PM	TOTAL	4	25	49	209			177	0					464					
	TRUCK	0	0	0	3			5	0										

1: Carter Ave EB - Left
 2:
 3: Carter Ave EB - Right
 4: US 9W NB - Left
 5: US 9W NB - Thru
 6:

7:
 8: US 9W SB - Thru
 9: US 9W SB - Right
 10:
 11:
 12:

A: Cross US 9W South Side of INT
 B: Cross US 9W North Side of INT
 C: Cross Carter West Side of INT
 D: Cross Carter EastSide of INT

4:00 - 4:15 PM	TOTAL	3	10	14	188	167	3												
	TRUCK	1	2	1	8	14	0												
4:15 - 4:30 PM	TOTAL	2	8	16	211	201	6												
	TRUCK	0	2	1	5	17	0												
4:30 - 4:45 PM	TOTAL	2	8	15	239	196	6												
	TRUCK	0	0	1	11	7	0												
4:45 - 5:00 PM	TOTAL	2	8	22	232	213	11												
	TRUCK	0	2	0	8	16	1												
5:00 - 5:15 PM	TOTAL	1	5	16	255	197	3												
	TRUCK	0	1	0	9	14	0												
5:15 - 5:30 PM	TOTAL	2	9	21	231	216	9												
	TRUCK	0	0	0	2	1	0												
5:30 - 5:45 PM	TOTAL	2	6	27	201	209	4												
	TRUCK	0	0	0	7	5	0												
5:45 - 6:00 PM	TOTAL	4	14	15	200	201	6												
	TRUCK	0	0	0	4	3	0												

1: Lattintown Rd EB - Left
 2:
 3: Lattintown Rd EB - Right
 4: US 9W NB - Left
 5: US 9W NB - Thru
 6:

7:
 8: US 9W SB - Thru
 9: US 9W SB - Right
 10:
 11:
 12:

A: Cross Lattintown West Side Int
 B: Cross 9W South Side of Int
 C: Cross 9W North Side of Int
 D: Cross Lattintown East Side Int

DATE:	01-30-2020 & 02-01-2020
PERIOD:	Weekday: 7-9 & 4-6 Sat: 12-2
LOCATION:	US 9W & Lattintown Road

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

JOB NO:	17088
NAME:	Traffic Databank
INT #:	2

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
7:00 - 8:00 AM	TOTAL	19		52	18	808		843	14					1,754						0.96
	TRUCK	16%		6%	11%	9%		8%	21%											
7:15 - 8:15 AM	TOTAL	19		57	24	758		820	15					1,693						0.93
	TRUCK	11%		2%	8%	10%		8%	20%											
7:30 - 8:30 AM	TOTAL	15		62	29	692		792	14					1,604						0.88
	TRUCK	7%		8%	24%	11%		7%	29%											
7:45 - 8:45 AM	TOTAL	20		59	33	622		748	11					1,493						0.95
	TRUCK	0%		8%	24%	12%		7%	45%											
8:00 - 9:00 AM	TOTAL	27		58	32	595		734	11					1,457						0.93
	TRUCK	0%		9%	25%	12%		6%	27%											
12:00 - 1:00 PM	TOTAL	12		43	48	620		639	20					1,382						0.87
	TRUCK	0%		5%	4%	3%		2%	0%											
12:15 - 1:15 PM	TOTAL	13		41	38	654		632	18					1,396						0.87
	TRUCK	0%		5%	3%	2%		2%	0%											
12:30 - 1:30 PM	TOTAL	12		33	38	627		583	15					1,308						0.92
	TRUCK	0%		3%	3%	2%		2%	0%											
12:45 - 1:45 PM	TOTAL	15		26	31	641		582	20					1,315						0.92
	TRUCK	0%		0%	3%	3%		3%	0%											
1:00 - 2:00 PM	TOTAL	15		27	35	650		581	25					1,333						0.94
	TRUCK	0%		0%	3%	2%		2%	0%											
4:00 - 5:00 PM	TOTAL	9		34	67	870		777	26					1,783						0.91
	TRUCK	11%		18%	4%	4%		7%	4%											
4:15 - 5:15 PM	TOTAL	7		29	69	937		807	26					1,875						0.96
	TRUCK	0%		17%	3%	4%		7%	4%											
4:30 - 5:30 PM	TOTAL	7		30	74	957		822	29					1,919						0.98
	TRUCK	0%		10%	1%	3%		5%	3%											
4:45 - 5:45 PM	TOTAL	7		28	86	919		835	27					1,902						0.97
	TRUCK	0%		11%	0%	3%		4%	4%											
5:00 - 6:00 PM	TOTAL	9		34	79	887		823	22					1,854						0.95
	TRUCK	0%		3%	0%	2%		3%	0%											

4:00 - 4:15 PM	TOTAL	1	0	179	2	1	171												
	TRUCK	0	0	9	0	0	15												
4:15 - 4:30 PM	TOTAL	0	2	205	0	1	206												
	TRUCK	0	0	6	0	0	17												
4:30 - 4:45 PM	TOTAL	0	0	242	2	0	198												
	TRUCK	0	0	10	0	0	6												
4:45 - 5:00 PM	TOTAL	0	0	225	1	0	218												
	TRUCK	0	0	10	0	0	19												
5:00 - 5:15 PM	TOTAL	1	0	253	1	2	198												
	TRUCK	0	0	8	0	0	13												
5:15 - 5:30 PM	TOTAL	1	0	244	2	1	222												
	TRUCK	0	0	3	0	0	3												
5:30 - 5:45 PM	TOTAL	2	0	179	1	1	207												
	TRUCK	0	0	7	0	0	3												
5:45 - 6:00 PM	TOTAL	1	0	204	1	1	189												
	TRUCK	0	0	6	0	0	2												

1: Oak St WB - Left
 2:
 3: Oak St WB - Right
 4:
 5: NY 9W NB - Thru
 6: NY 9W NB - Right

7: NY 9W SB - Left
 8: NY 9W SB - Thru
 9:
 10:
 11:
 12:

A: Cross Oak West Side Int
 B: Cross 9W South Side of Int
 C: Cross 9W North Side of Int
 D: Cross Oak East Side Int

DATE:	1/30/2020 2/1/2020
PERIOD:	Weekday: 7-9 & 4-6 Sat: 12-2
LOCATION:	US 9W & Morris Drive / Cortland Drive

CALCULATIONS - DO NOT EDIT THIS SHEET

JOB NO:	17088
NAME:	Traffic Databank
INT #:	5

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
7:00 - 7:15 AM	TOTAL	2	0	7	33	0	18	2	210	5	1	176	0	454						
	TRUCK	1	0	3	0	0	2	0	18	3	1	15	0							
7:15 - 7:30 AM	TOTAL	1	0	6	23	0	14	1	217	6	3	193	0	464						
	TRUCK	0	0	1	0	0	1	0	21	2	0	18	0							
7:30 - 7:45 AM	TOTAL	3	0	12	21	0	7	2	197	12	7	191	0	452						
	TRUCK	0	0	2	0	0	0	0	24	1	0	13	0							
7:45 - 8:00 AM	TOTAL	0	1	11	20	0	4	2	153	5	2	157	0	355						
	TRUCK	0	0	1	0	0	0	0	20	0	1	14	0							
8:00 - 8:15 AM	TOTAL	3	1	4	30	1	6	5	170	4	1	154	0	379						
	TRUCK	0	0	1	0	0	0	0	18	0	1	17	0							
8:15 - 8:30 AM	TOTAL	2	0	4	15	0	7	1	149	8	1	172	1	360						
	TRUCK	0	0	0	0	0	0	0	23	1	0	20	0							
8:30 - 8:45 AM	TOTAL	2	0	9	22	0	8	2	137	6	0	143	0	329						
	TRUCK	0	0	0	0	0	0	0	17	1	0	11	0							
8:45 - 9:00 AM	TOTAL	3	0	4	17	0	7	1	144	8	2	171	0	357						
	TRUCK	1	0	0	0	0	0	0	13	0	0	17	0							
12:00 - 12:15 PM	TOTAL	1	0	7	15	0	4	4	123	14	0	153	0	321						
	TRUCK	0	0	0	0	0	0	0	5	0	0	3	0							
12:15 - 12:30 PM	TOTAL	2	0	2	13	1	3	5	149	18	3	162	0	358						
	TRUCK	0	0	0	0	0	0	0	1	0	0	3	0							
12:30 - 12:45 PM	TOTAL	2	0	3	10	0	4	3	127	24	1	138	0	312						
	TRUCK	0	0	0	0	0	0	0	1	0	0	2	0							
12:45 - 1:00 PM	TOTAL	1	1	2	11	0	3	4	133	16	0	126	0	297						
	TRUCK	0	0	0	0	0	0	0	6	0	0	4	0							
1:00 - 1:15 PM	TOTAL	0	0	5	18	0	2	5	149	15	2	131	2	329						
	TRUCK	0	0	0	0	0	0	0	1	0	0	3	0							
1:15 - 1:30 PM	TOTAL	2	0	3	14	0	3	3	134	10	4	123	1	297	1	1			2	
	TRUCK	0	0	0	0	0	0	1	3	0	0	3	0							
1:30 - 1:45 PM	TOTAL	1	0	5	15	1	1	5	155	16	7	122	2	330						
	TRUCK	0	0	1	0	0	0	0	4	0	0	3	0							
1:45 - 2:00 PM	TOTAL	2	0	6	13	0	4	8	139	11	3	121	0	307						
	TRUCK	0	0	0	0	0	0	0	1	0	0	0	0							

4:00 - 4:15 PM	TOTAL	2	0	5	8	0	1	5	161	15	4	155	0	356						
	TRUCK	0	0	1	0	0	0	0	8	0	1	14	0							
4:15 - 4:30 PM	TOTAL	1	1	7	8	1	5	9	171	23	9	195	1	431						
	TRUCK	0	0	1	0	0	0	0	6	0	1	15	0							
4:30 - 4:45 PM	TOTAL	4	1	4	15	0	5	8	197	33	4	180	2	453						
	TRUCK	0	1	1	0	0	0	0	9	0	0	6	0							
4:45 - 5:00 PM	TOTAL	3	1	3	14	0	4	6	195	24	0	201	2	453						
	TRUCK	0	1	2	0	0	0	0	7	1	0	15	0							
5:00 - 5:15 PM	TOTAL	1	0	5	9	0	4	10	223	23	7	184	0	466						
	TRUCK	0	0	0	0	0	0	0	7	0	0	12	0							
5:15 - 5:30 PM	TOTAL	0	0	7	6	0	5	8	214	16	8	211	0	475						
	TRUCK	0	0	0	0	0	0	0	3	0	0	2	0							
5:30 - 5:45 PM	TOTAL	2	0	3	8	0	1	8	153	26	10	189	1	401						
	TRUCK	0	0	0	0	0	0	0	8	0	0	2	0							
5:45 - 6:00 PM	TOTAL	1	0	8	17	0	6	7	165	20	8	176	1	409						
	TRUCK	0	0	0	0	0	0	0	4	0	0	3	0							

1: Morris Dr EB - Left
 2: Morris Dr EB - Thru
 3: Morris Dr EB - Right
 4: Cortland Dr WB - Left
 5: Cortland Dr WB - Thru
 6: Cortland Dr WB - Right

7: NY 9W NB - Left
 8: NY 9W NB - Thru
 9: NY 9W NB - Right
 10: NY 9W SB - Left
 11: NY 9W SB - Thru
 12: NY 9W SB - Right

A: Cross US 9W South of INT
 B: Cross Morris Dr West of INT
 C: Cross US 9W North of INT
 D: Cross Cortland Dr East of INT

DATE:	1/30/2020 2/1/2020
PERIOD:	Weekday: 7-9 & 4-6 Sat: 12-2
LOCATION:	US 9W & Morris Drive / Cortland Drive

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

JOB NO:	17088
NAME:	Traffic Databank
INT #:	5

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
7:00 - 8:00 AM	TOTAL	6	1	36	97		43	7	777	28	13	717		1,725						
	TRUCK	17%	0%	19%	0%		7%	0%	11%	21%	15%	8%								0.93
7:15 - 8:15 AM	TOTAL	7	2	33	94	1	31	10	737	27	13	695		1,650						
	TRUCK	0%	0%	15%	0%	0%	3%	0%	11%	11%	15%	9%								0.89
7:30 - 8:30 AM	TOTAL	8	2	31	86	1	24	10	669	29	11	674	1	1,546						
	TRUCK	0%	0%	13%	0%	0%	0%	0%	13%	7%	18%	9%	0%							0.86
7:45 - 8:45 AM	TOTAL	7	2	28	87	1	25	10	609	23	4	626	1	1,423						
	TRUCK	0%	0%	7%	0%	0%	0%	0%	13%	9%	50%	10%	0%							0.94
8:00 - 9:00 AM	TOTAL	10	1	21	84	1	28	9	600	26	4	640	1	1,425						
	TRUCK	10%	0%	5%	0%	0%	0%	0%	12%	8%	25%	10%	0%							0.94
12:00 - 1:00 PM	TOTAL	6	1	14	49	1	14	16	532	72	4	579		1,288						
	TRUCK	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%								0.90
12:15 - 1:15 PM	TOTAL	5	1	12	52	1	12	17	558	73	6	557	2	1,296						
	TRUCK	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%							0.91
12:30 - 1:30 PM	TOTAL	5	1	13	53		12	15	543	65	7	518	3	1,235	1	1			2	
	TRUCK	0%	0%	0%	0%		0%	7%	2%	0%	0%	2%	0%							0.94
12:45 - 1:45 PM	TOTAL	4	1	15	58	1	9	17	571	57	13	502	5	1,253	1	1			2	
	TRUCK	0%	0%	7%	0%	0%	0%	6%	2%	0%	0%	3%	0%							0.95
1:00 - 2:00 PM	TOTAL	5		19	60	1	10	21	577	52	16	497	5	1,263	1	1			2	
	TRUCK	0%		5%	0%	0%	0%	5%	2%	0%	0%	2%	0%							0.96
4:00 - 5:00 PM	TOTAL	10	3	19	45	1	15	28	724	95	17	731	5	1,693						
	TRUCK	0%	67%	26%	0%	0%	0%	0%	4%	1%	12%	7%	0%							0.93
4:15 - 5:15 PM	TOTAL	9	3	19	46	1	18	33	786	103	20	760	5	1,803						
	TRUCK	0%	67%	21%	0%	0%	0%	0%	4%	1%	5%	6%	0%							0.97
4:30 - 5:30 PM	TOTAL	8	2	19	44		18	32	829	96	19	776	4	1,847						
	TRUCK	0%	100%	16%	0%		0%	0%	3%	1%	0%	5%	0%							0.97
4:45 - 5:45 PM	TOTAL	6	1	18	37		14	32	785	89	25	785	3	1,795						
	TRUCK	0%	100%	11%	0%		0%	0%	3%	1%	0%	4%	0%							0.94
5:00 - 6:00 PM	TOTAL	4		23	40		16	33	755	85	33	760	2	1,751						
	TRUCK	0%		0%	0%		0%	0%	3%	0%	0%	3%	0%							0.92

DATE:	1/30/2020 2/1/2020
PERIOD:	Weekday: 7-9 & 4-6 Sat: 12-2
LOCATION:	NY 9W & Old Post Road

CALCULATIONS - DO NOT EDIT THIS SHEET

JOB NO:	17088
NAME:	Traffic Databank
INT #:	9

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
7:00 - 7:15 AM	TOTAL				3		2	0	221	6	3	181	0	416						
	TRUCK				1		0	0	18	2	0	14	0							
7:15 - 7:30 AM	TOTAL				1		5	0	222	5	6	188	0	427						
	TRUCK				0		0	0	13	2	0	18	0							
7:30 - 7:45 AM	TOTAL				4		2	0	210	7	4	202	0	429						
	TRUCK				0		1	0	23	3	1	15	0							
7:45 - 8:00 AM	TOTAL				0		0	0	158	1	7	152	3	321						
	TRUCK				0		0	0	15	0	3	14	1							
8:00 - 8:15 AM	TOTAL				4		2	0	167	6	1	151	1	332						
	TRUCK				1		1	0	17	0	1	16	1							
8:15 - 8:30 AM	TOTAL				3		1	1	153	3	3	164	2	330						
	TRUCK				2		0	1	19	1	2	13	1							
8:30 - 8:45 AM	TOTAL				3		3	0	135	5	1	135	0	282						
	TRUCK				1		3	0	14	4	0	6	0							
8:45 - 9:00 AM	TOTAL				4		4	0	160	3	2	171	0	344						
	TRUCK				2		1	0	12	1	0	15	0							
12:00 - 12:15 PM	TOTAL				8		4	0	118	3	0	142	0	275						
	TRUCK				0		1	0	6	0	0	1	0							
12:15 - 12:30 PM	TOTAL				4		5	0	141	8	2	159	0	319						
	TRUCK				0		1	0	1	0	0	2	0							
12:30 - 12:45 PM	TOTAL				5		2	0	130	4	1	140	0	282						
	TRUCK				0		0	0	0	0	0	3	0							
12:45 - 1:00 PM	TOTAL				1		1	0	135	5	4	123	0	269						
	TRUCK				0		0	0	7	1	0	3	0							
1:00 - 1:15 PM	TOTAL				3		1	1	131	4	1	127	0	268						
	TRUCK				0		0	0	1	0	0	3	0							
1:15 - 1:30 PM	TOTAL				3		0	0	135	2	1	125	0	266						
	TRUCK				0		0	0	2		1	3	0							
1:30 - 1:45 PM	TOTAL				4		1	0	152	4	1	124	0	286						
	TRUCK				1		0	0	5	1		3	0							
1:45 - 2:00 PM	TOTAL				3		2	0	153	3	2	113	1	277						
	TRUCK				0		0	0	1	0	1	1	0							

4:00 - 4:15 PM	TOTAL					5	4	167	7	1	151	0	335						
	TRUCK					1	0	9	0	0	14	0							
4:15 - 4:30 PM	TOTAL					5	6	180	4	3	216	0	414						
	TRUCK					1	0	6	1	0	14	0							
4:30 - 4:45 PM	TOTAL					2	11	199	5	1	187	0	405						
	TRUCK					1	0	8	0	1	6	0							
4:45 - 5:00 PM	TOTAL					3	5	199	7	4	192	1	411						
	TRUCK					0	1	7	1	1	17	0							
5:00 - 5:15 PM	TOTAL					2	6	207	7	4	190	0	416						
	TRUCK					0	0	7	0	1	10	0							
5:15 - 5:30 PM	TOTAL					1	3	219	10	5	212	0	450						
	TRUCK					0	3	4	1	0	3	0							
5:30 - 5:45 PM	TOTAL					6	8	158	4	2	200	0	378						
	TRUCK					0	0	5	1	0	3	0							
5:45 - 6:00 PM	TOTAL					5	5	163	9	4	178	0	364						
	TRUCK					0	2	6	0	0	2	0							

- 1:
- 2:
- 3:
- 4: Old Post Rd WB - Left
- 5:
- 6: Old Post Rd WB - Right

- 7: NY 9W NB - Left
- 8: NY 9W NB - Thru
- 9: NY 9W NB - Right
- 10: NY 9W SB - Left
- 11: NY 9W SB - Thru
- 12: NY 9W SB - Right

- A: Cross Old Post West Side Int
- B: Cross 9W South Side of Int
- C: Cross 9W North Side of Int
- D: Cross Old Post East Side Int

DATE:	1/30/2020 2/1/2020
PERIOD:	Weekday: 7-9 & 4-6 Sat: 12-2
LOCATION:	NY 9W & Old Post Road

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

JOB NO:	17088
NAME:	Traffic Databank
INT #:	6

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
7:00 - 8:00 AM	TOTAL				8		9		811	19	20	723	3	1,593						
	TRUCK				13%		11%		9%	37%	20%	8%	33%							0.93
7:15 - 8:15 AM	TOTAL				9		9		757	19	18	693	4	1,509						
	TRUCK				11%		22%		9%	26%	28%	9%	50%							0.88
7:30 - 8:30 AM	TOTAL				11		5	1	688	17	15	669	6	1,412						
	TRUCK				27%		40%	100%	11%	24%	47%	9%	50%							0.82
7:45 - 8:45 AM	TOTAL				10		6	1	613	15	12	602	6	1,265						
	TRUCK				40%		67%	100%	11%	33%	50%	8%	50%							0.95
8:00 - 9:00 AM	TOTAL				14		10	1	615	17	7	621	3	1,288						
	TRUCK				43%		50%	100%	10%	35%	43%	8%	67%							0.94
12:00 - 1:00 PM	TOTAL				18		12		524	20	7	564		1,145						
	TRUCK				0%		17%		3%	5%	0%	2%								0.90
12:15 - 1:15 PM	TOTAL				13		9	1	537	21	8	549		1,138						
	TRUCK				0%		11%	0%	2%	5%	0%	2%								0.89
12:30 - 1:30 PM	TOTAL				12		4	1	531	15	7	515		1,085						
	TRUCK				0%		0%	0%	2%	7%	14%	2%								0.96
12:45 - 1:45 PM	TOTAL				11		3	1	553	15	7	499		1,089						
	TRUCK				9%		0%	0%	3%	13%	14%	2%								0.95
1:00 - 2:00 PM	TOTAL				13		4	1	571	13	5	489	1	1,097						
	TRUCK				8%		0%	0%	2%	8%	40%	2%	0%							0.96
4:00 - 5:00 PM	TOTAL				15		26		745	23	9	746	1	1,565						
	TRUCK				20%		4%		4%	9%	22%	7%	0%							0.95
4:15 - 5:15 PM	TOTAL				12		28		785	23	12	785	1	1,646						
	TRUCK				17%		4%		4%	9%	25%	6%	0%							0.99
4:30 - 5:30 PM	TOTAL				8		25		824	29	14	781	1	1,682						
	TRUCK				13%		16%		3%	7%	21%	5%	0%							0.93
4:45 - 5:45 PM	TOTAL				12		22		783	28	15	794	1	1,655						
	TRUCK				0%		18%		3%	11%	13%	4%	0%							0.92
5:00 - 6:00 PM	TOTAL				14		22		747	30	15	780		1,608						
	TRUCK				0%		23%		3%	7%	7%	2%								0.89

APPENDIX D
CAPACITY ANALYSES

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2020-EX-AM
02/21/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	191	45	799	748	2
Future Volume (vph)	25	191	45	799	748	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.880					
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1590	0	1626	1759	1656	0
Flt Permitted	0.994		0.256			
Satd. Flow (perm)	1590	0	438	1759	1656	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	201					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	11%	8%	7%	50%
Adj. Flow (vph)	26	201	47	841	787	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	227	0	47	841	789	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYSDOTNYS DOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2020-EX-AM
02/21/2020

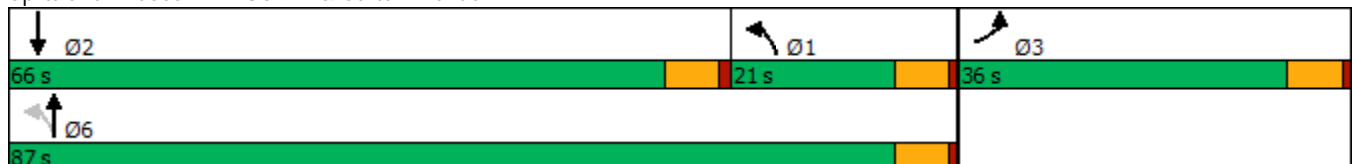


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.66		0.11	0.66	0.74	
Control Delay	18.1		3.9	8.4	15.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	18.1		3.9	8.4	15.9	
Queue Length 50th (ft)	12		4	138	244	
Queue Length 95th (ft)	84		15	329	490	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	809		643	1692	1370	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.28		0.07	0.50	0.58	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 72.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
1: US 9W & Carter Avenue

2020-EX-AM
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	191	45	799	748	2
Future Volume (veh/h)	25	191	45	799	748	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1737	1781	1796	1796
Adj Flow Rate, veh/h	26	201	47	841	787	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	11	8	7	7
Cap, veh/h	32	246	258	1147	859	2
Arrive On Green	0.18	0.18	0.07	0.64	0.48	0.48
Sat Flow, veh/h	180	1389	1654	1781	1791	5
Grp Volume(v), veh/h	228	0	47	841	0	789
Grp Sat Flow(s),veh/h/ln	1576	0	1654	1781	0	1795
Q Serve(g_s), s	9.3	0.0	0.0	21.4	0.0	27.3
Cycle Q Clear(g_c), s	9.3	0.0	0.0	21.4	0.0	27.3
Prop In Lane	0.11	0.88	1.00			0.00
Lane Grp Cap(c), veh/h	279	0	258	1147	0	861
V/C Ratio(X)	0.82	0.00	0.18	0.73	0.00	0.92
Avail Cap(c_a), veh/h	705	0	504	2153	0	1607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	27.9	8.1	0.0	16.2
Incr Delay (d2), s/veh	2.2	0.0	0.1	0.3	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.7	5.3	0.0	9.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.8	0.0	28.0	8.4	0.0	17.9
LnGrp LOS	C	A	C	A	A	B
Approach Vol, veh/h	228			888	789	
Approach Delay, s/veh	28.8			9.4	17.9	
Approach LOS	C			A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.0	38.2			49.2	17.9
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	2.0	29.3			23.4	11.3
Green Ext Time (p_c), s	0.1	2.8			3.2	0.7

Intersection Summary

HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

2020-EX-AM
02/21/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	19	52	18	822	869	14
Future Volume (vph)	19	52	18	822	869	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.901				0.998	
Flt Protected	0.987			0.999		
Satd. Flow (prot)	1540	0	0	1775	1735	0
Flt Permitted	0.987			0.999		
Satd. Flow (perm)	1540	0	0	1775	1735	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	16%	6%	11%	9%	8%	21%
Adj. Flow (vph)	20	54	19	856	905	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	0	0	875	920	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	19	52	18	822	869	14
Future Vol, veh/h	19	52	18	822	869	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	16	6	11	9	8	21
Mvmt Flow	20	54	19	856	905	15

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1807	913	920	0	-	0
Stage 1	913	-	-	-	-	-
Stage 2	894	-	-	-	-	-
Critical Hdwy	5.56	5.76	4.21	-	-	-
Critical Hdwy Stg 1	4.56	-	-	-	-	-
Critical Hdwy Stg 2	4.56	-	-	-	-	-
Follow-up Hdwy	3.644	3.354	2.299	-	-	-
Pot Cap-1 Maneuver	132	370	706	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	125	370	706	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	452	-	-	-	-	-
Stage 2	484	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.2	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	706	-	243	-	-
HCM Lane V/C Ratio	0.027	-	0.304	-	-
HCM Control Delay (s)	10.2	0	26.2	-	-
HCM Lane LOS	B	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	1.2	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W

2020-EX-AM
02/21/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	839	2	2	881	2	8
Future Volume (vph)	839	2	2	881	2	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Flt					0.890	
Flt Protected					0.991	
Satd. Flow (prot)	1727	0	0	1725	1509	0
Flt Permitted					0.991	
Satd. Flow (perm)	1727	0	0	1725	1509	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			359	371	
Travel Time (s)	8.1			4.5	8.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	11%	50%	33%	9%	25%	17%
Adj. Flow (vph)	902	2	2	947	2	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	904	0	0	949	11	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	839	2	2	881	2	8
Future Vol, veh/h	839	2	2	881	2	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	11	50	33	9	25	17
Mvmt Flow	902	2	2	947	2	9

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	904	0	1854
Stage 1	-	-	-	-	903
Stage 2	-	-	-	-	951
Critical Hdwy	-	-	4.43	-	6.65
Critical Hdwy Stg 1	-	-	-	-	5.65
Critical Hdwy Stg 2	-	-	-	-	5.65
Follow-up Hdwy	-	-	2.497	-	3.725
Pot Cap-1 Maneuver	-	-	638	-	71
Stage 1	-	-	-	-	360
Stage 2	-	-	-	-	341
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	638	-	71
Mov Cap-2 Maneuver	-	-	-	-	71
Stage 1	-	-	-	-	360
Stage 2	-	-	-	-	339

Approach	EB	WB	NB
HCM Control Delay, s	0	0	25.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	187	-	-	638	-
HCM Lane V/C Ratio	0.058	-	-	0.003	-
HCM Control Delay (s)	25.4	-	-	10.7	0
HCM Lane LOS	D	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2020-EX-AM
02/21/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	810	29	13	742	0	100	0	43	6	1	37
Future Volume (vph)	7	810	29	13	742	0	100	0	43	6	1	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	80			85			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.850			0.885	
Flt Protected	0.950			0.950			0.950				0.994	
Satd. Flow (prot)	1796	1703	1328	1585	1777	0	1832	1532	0	0	1593	0
Flt Permitted	0.232			0.179			0.726				0.970	
Satd. Flow (perm)	439	1703	1328	299	1777	0	1400	1532	0	0	1554	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85					294			40	
Link Speed (mph)		55		55			30		30		30	
Link Distance (ft)		250		260			201		326			
Travel Time (s)		3.1		3.2			4.6		7.4			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	11%	21%	15%	8%	0%	0%	0%	7%	17%	0%	19%
Adj. Flow (vph)	8	871	31	14	798	0	108	0	46	6	1	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	871	31	14	798	0	108	46	0	0	47	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			12		12		12	
Link Offset(ft)		0		0			0		0		0	
Crosswalk Width(ft)		16		16			16		16		16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	0	0	2	0		2	2		1	2	
Detector Template										Left		
Leading Detector (ft)	78	0	0	78	0		78	78		20	78	
Trailing Detector (ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Position(ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Size(ft)	40	6	20	40	6		40	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	0.0	0.0	2.0	0.0		2.0	2.0		0.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	5.0	0.0	0.0	5.0	0.0		5.0	5.0		0.0	5.0	
Detector 2 Position(ft)	38			38			38	38			38	
Detector 2 Size(ft)	40			40			40	40			40	
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0			2.0			2.0	2.0			2.0	

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2020-EX-AM
02/21/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA			NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8					
Detector Phase	5	2	2	1	6		8	8				4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0				10.0
Minimum Split (s)	12.0	17.0	17.0	12.0	17.0		25.0	25.0				25.0
Total Split (s)	22.0	87.0	87.0	22.0	87.0		32.0	32.0				32.0
Total Split (%)	15.6%	61.7%	61.7%	15.6%	61.7%		22.7%	22.7%				22.7%
Maximum Green (s)	15.0	80.0	80.0	15.0	80.0		25.0	25.0				25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0				2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0				7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0				2.0
Recall Mode	None	Max	Max	None	Max		None	None				None
Walk Time (s)							7.0	7.0				7.0
Flash Dont Walk (s)							11.0	11.0				11.0
Pedestrian Calls (#/hr)							0	0				0
v/c Ratio	0.02	0.79	0.03	0.05	0.67		0.38	0.08				1.18
Control Delay	6.3	23.7	0.1	6.5	16.9		48.8	0.3				217.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	6.3	23.7	0.1	6.5	16.9		48.8	0.3				217.4
Queue Length 50th (ft)	2	409	0	3	332		72	0				~11
Queue Length 95th (ft)	7	791	0	10	622		141	0				#97
Internal Link Dist (ft)		170			180			121				246
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	465	1101	889	361	1183		283	544				40
Starvation Cap Reductn	0	0	0	0	0		0	0				0
Spillback Cap Reductn	0	0	0	0	0		0	0				0
Storage Cap Reductn	0	0	0	0	0		0	0				0
Reduced v/c Ratio	0.02	0.79	0.03	0.04	0.67		0.38	0.08				1.18

Intersection Summary

Area Type: Other

Cycle Length: 141

Actuated Cycle Length: 123.9

Natural Cycle: 90

Control Type: Semi Act-Uncoord

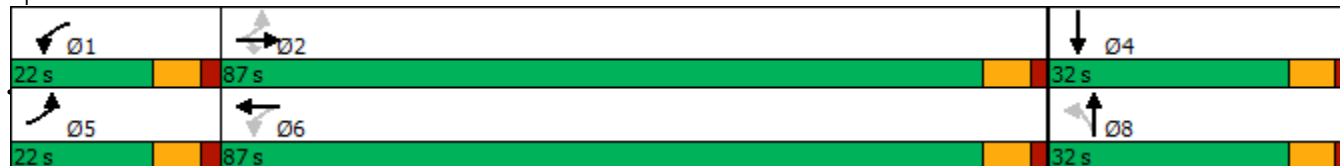
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2020-EX-AM
02/21/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	810	29	13	742	0	100	0	43	6	1	37
Future Volume (veh/h)	7	810	29	13	742	0	100	0	43	6	1	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1731	1583	1754	1859	1859	2018	2018	2018	1970	1970	1970
Adj Flow Rate, veh/h	8	871	0	14	798	0	108	0	46	6	1	40
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	11	21	15	8	8	0	0	0	0	0	0
Cap, veh/h	427	1228		338	1330	0	206	0	151	45	14	126
Arrive On Green	0.01	0.71	0.00	0.02	0.72	0.00	0.09	0.00	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1804	1731	1341	1670	1859	0	1474	0	1710	96	153	1427
Grp Volume(v), veh/h	8	871	0	14	798	0	108	0	46	47	0	0
Grp Sat Flow(s),veh/h/ln	1804	1731	1341	1670	1859	0	1474	0	1710	1677	0	0
Q Serve(g_s), s	0.1	33.2	0.0	0.3	24.1	0.0	4.3	0.0	2.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	33.2	0.0	0.3	24.1	0.0	7.2	0.0	2.8	2.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.13		0.85
Lane Grp Cap(c), veh/h	427	1228		338	1330	0	206	0	151	184	0	0
V/C Ratio(X)	0.02	0.71		0.04	0.60	0.00	0.52	0.00	0.30	0.25	0.00	0.00
Avail Cap(c_a), veh/h	650	1228		534	1330	0	402	0	379	403	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.9	9.6	0.0	9.3	8.0	0.0	49.9	0.0	48.1	48.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.5	0.0	0.0	2.0	0.0	0.8	0.0	0.4	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.1	0.0	0.1	7.6	0.0	3.0	0.0	1.2	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	13.1	0.0	9.3	10.0	0.0	50.7	0.0	48.5	48.4	0.0	0.0
LnGrp LOS	A	B		A	B	A	D	A	D	D	A	A
Approach Vol, veh/h		879	A		812			154				47
Approach Delay, s/veh		13.0			10.0			50.0				48.4
Approach LOS		B			A			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	87.0		17.0	8.1	87.7		17.0				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	15.0	80.0		25.0	15.0	80.0		25.0				
Max Q Clear Time (g_c+I1), s	2.3	0.0		4.9	2.1	0.0		9.2				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.4				

Intersection Summary

HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2020-EX-AM
02/21/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	8	9	839	20	20	747
Future Volume (vph)	8	9	839	20	20	747
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.929		0.997			
Flt Protected	0.977					0.999
Satd. Flow (prot)	1504	0	1736	0	0	1744
Flt Permitted	0.977					0.999
Satd. Flow (perm)	1504	0	1736	0	0	1744
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	11%	9%	37%	20%	8%
Adj. Flow (vph)	9	10	902	22	22	803
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	924	0	0	825
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	8	9	839	20	20	747
Future Vol, veh/h	8	9	839	20	20	747
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	13	11	9	37	20	8
Mvmt Flow	9	10	902	22	22	803

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1760	913	0	0	924
Stage 1	913	-	-	-	-
Stage 2	847	-	-	-	-
Critical Hdwy	6.13	6.11	-	-	4.3
Critical Hdwy Stg 1	5.13	-	-	-	-
Critical Hdwy Stg 2	5.13	-	-	-	-
Follow-up Hdwy	3.617	3.399	-	-	2.38
Pot Cap-1 Maneuver	106	336	-	-	670
Stage 1	414	-	-	-	-
Stage 2	442	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	100	336	-	-	670
Mov Cap-2 Maneuver	100	-	-	-	-
Stage 1	414	-	-	-	-
Stage 2	416	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	30.6	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	159	670
HCM Lane V/C Ratio	-	-	0.115	0.032
HCM Control Delay (s)	-	-	30.6	10.6
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	0.4	0.1

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2020-EX-PM
02/21/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	20	115	192	980	761	0
Future Volume (vph)	20	115	192	980	761	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885					
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1597	0	1787	1845	1705	0
Flt Permitted	0.993		0.230			
Satd. Flow (perm)	1597	0	433	1845	1705	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	117					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	10%	3%	1%	3%	4%	0%
Adj. Flow (vph)	20	117	196	1000	777	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	137	0	196	1000	777	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYSDOTNYS DOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2020-EX-PM
02/21/2020

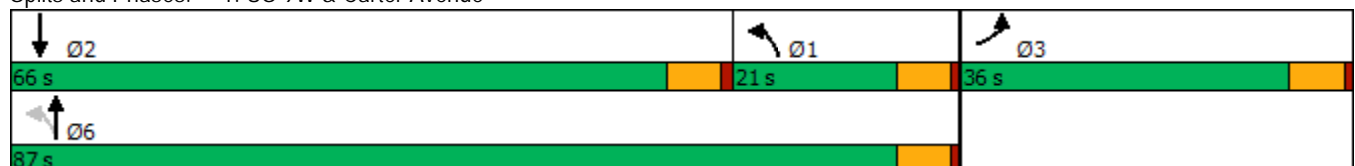


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.54		0.45	0.74	0.81	
Control Delay	19.3		9.3	9.5	21.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	19.3		9.3	9.5	21.0	
Queue Length 50th (ft)	8		18	181	229	
Queue Length 95th (ft)	68		44	401	511	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	748		661	1764	1420	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.18		0.30	0.57	0.55	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 73.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
 1: US 9W & Carter Avenue

2020-EX-PM
 02/21/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	115	192	980	761	0
Future Volume (veh/h)	20	115	192	980	761	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1885	1856	1841	1841
Adj Flow Rate, veh/h	20	117	196	1000	777	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	1	3	4	4
Cap, veh/h	26	149	324	1240	868	0
Arrive On Green	0.12	0.12	0.09	0.67	0.47	0.00
Sat Flow, veh/h	218	1276	1795	1856	1841	0
Grp Volume(v), veh/h	138	0	196	1000	777	0
Grp Sat Flow(s),veh/h/ln	1505	0	1795	1856	1841	0
Q Serve(g_s), s	5.0	0.0	0.5	21.7	21.6	0.0
Cycle Q Clear(g_c), s	5.0	0.0	0.5	21.7	21.6	0.0
Prop In Lane	0.14	0.85	1.00			0.00
Lane Grp Cap(c), veh/h	176	0	324	1240	868	0
V/C Ratio(X)	0.78	0.00	0.60	0.81	0.90	0.00
Avail Cap(c_a), veh/h	809	0	646	2691	1977	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.0	0.0	22.9	6.7	13.5	0.0
Incr Delay (d2), s/veh	2.9	0.0	0.7	0.5	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	2.2	4.1	6.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.9	0.0	23.6	7.1	14.9	0.0
LnGrp LOS	C	A	C	A	B	A
Approach Vol, veh/h	138			1196	777	
Approach Delay, s/veh	26.9			9.8	14.9	
Approach LOS	C			A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.0	32.3			43.3	12.5
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	2.5	23.6			23.7	7.0
Green Ext Time (p_c), s	0.4	2.8			4.3	0.4

Intersection Summary

HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

2020-EX-PM
02/21/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	30	74	975	830	29
Future Volume (vph)	7	30	74	975	830	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.995	
Flt Protected	0.991			0.996		
Satd. Flow (prot)	1535	0	0	1877	1784	0
Flt Permitted	0.991			0.996		
Satd. Flow (perm)	1535	0	0	1877	1784	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	10%	1%	3%	5%	3%
Adj. Flow (vph)	7	31	76	995	847	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	0	1071	877	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			4	4	
Traffic Vol, veh/h	7	30	74	975	830	29
Future Vol, veh/h	7	30	74	975	830	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	10	1	3	5	3
Mvmt Flow	7	31	76	995	847	30

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2009	862	877	0	-	0
Stage 1	862	-	-	-	-	-
Stage 2	1147	-	-	-	-	-
Critical Hdwy	5.4	5.8	4.11	-	-	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.209	-	-	-
Pot Cap-1 Maneuver	115	387	774	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	90	387	774	-	-	-
Mov Cap-2 Maneuver	90	-	-	-	-	-
Stage 1	413	-	-	-	-	-
Stage 2	420	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	774	-	238	-	-
HCM Lane V/C Ratio	0.098	-	0.159	-	-
HCM Control Delay (s)	10.2	0	23	-	-
HCM Lane LOS	B	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.6	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W

2020-EX-PM
02/21/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	976	6	3	857	2	0
Future Volume (vph)	976	6	3	857	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.999					
Fl _t Protected					0.950	
Satd. Flow (prot)	1862	0	0	1792	1925	0
Fl _t Permitted					0.950	
Satd. Flow (perm)	1862	0	0	1792	1925	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			359	371	
Travel Time (s)	8.1			4.5	8.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	0%	0%	5%	0%	0%
Adj. Flow (vph)	1017	6	3	893	2	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1023	0	0	896	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	976	6	3	857	2	0
Future Vol, veh/h	976	6	3	857	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	0	0	5	0	0
Mvmt Flow	1017	6	3	893	2	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1023	0	1919
Stage 1	-	-	-	-	1020
Stage 2	-	-	-	-	899
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	686	-	75
Stage 1	-	-	-	-	351
Stage 2	-	-	-	-	401
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	686	-	74
Mov Cap-2 Maneuver	-	-	-	-	74
Stage 1	-	-	-	-	351
Stage 2	-	-	-	-	397

Approach	EB	WB	NB
HCM Control Delay, s	0	0	55.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	74	-	-	686	-
HCM Lane V/C Ratio	0.028	-	-	0.005	-
HCM Control Delay (s)	55.1	-	-	10.3	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2020-EX-PM
02/21/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	844	98	19	796	4	45	0	18	8	2	19
Future Volume (vph)	32	844	98	19	796	4	45	0	18	8	2	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	80			85			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999			0.850				0.910
Flt Protected	0.950			0.950			0.950					0.987
Satd. Flow (prot)	1796	1835	1591	1823	1826	0	1832	1413	0	0	1924	0
Flt Permitted	0.201			0.177			0.738					0.941
Satd. Flow (perm)	380	1835	1591	340	1826	0	1423	1413	0	0	1835	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85					294				20
Link Speed (mph)		55			55			30				30
Link Distance (ft)		250			260			201				326
Travel Time (s)		3.1			3.2			4.6				7.4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	1%	0%	5%	0%	0%	100%	16%	0%	0%	0%
Adj. Flow (vph)	33	870	101	20	821	4	46	0	19	8	2	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	870	101	20	825	0	46	19	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	0	0	2	0		2	2		1	2	
Detector Template										Left		
Leading Detector (ft)	78	0	0	78	0		78	78		20	78	
Trailing Detector (ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Position(ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Size(ft)	40	6	20	40	6		40	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	0.0	0.0	2.0	0.0		2.0	2.0		0.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	5.0	0.0	0.0	5.0	0.0		5.0	5.0		0.0	5.0	
Detector 2 Position(ft)	38			38			38	38				38
Detector 2 Size(ft)	40			40			40	40				40
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	2.0			2.0			2.0	2.0				2.0

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2020-EX-PM
02/21/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA			NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8					
Detector Phase	5	2	2	1	6		8	8			4	
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0			10.0	
Minimum Split (s)	12.0	17.0	17.0	12.0	17.0		25.0	25.0			25.0	
Total Split (s)	22.0	87.0	87.0	22.0	87.0		32.0	32.0			32.0	
Total Split (%)	15.6%	61.7%	61.7%	15.6%	61.7%		22.7%	22.7%			22.7%	
Maximum Green (s)	15.0	80.0	80.0	15.0	80.0		25.0	25.0			25.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0			5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0			7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0			2.0	
Recall Mode	None	Max	Max	None	Max		None	None			None	
Walk Time (s)							7.0	7.0			7.0	
Flash Dont Walk (s)							11.0	11.0			11.0	
Pedestrian Calls (#/hr)							0	0			0	
v/c Ratio	0.11	0.75	0.10	0.07	0.71		0.19	0.04			1.36	
Control Delay	6.8	22.1	3.2	6.6	21.0		46.4	0.2			332.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	
Total Delay	6.8	22.1	3.2	6.6	21.0		46.4	0.2			332.5	
Queue Length 50th (ft)	8	518	5	5	474		33	0			~18	
Queue Length 95th (ft)	18	714	28	12	657		71	0			#84	
Internal Link Dist (ft)		170			180			121			246	
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	430	1166	1042	410	1157		281	515			22	
Starvation Cap Reductn	0	0	0	0	0		0	0			0	
Spillback Cap Reductn	0	0	0	0	0		0	0			0	
Storage Cap Reductn	0	0	0	0	0		0	0			0	
Reduced v/c Ratio	0.08	0.75	0.10	0.05	0.71		0.16	0.04			1.36	

Intersection Summary

Area Type: Other

Cycle Length: 141

Actuated Cycle Length: 126.8

Natural Cycle: 100

Control Type: Semi Act-Uncoord

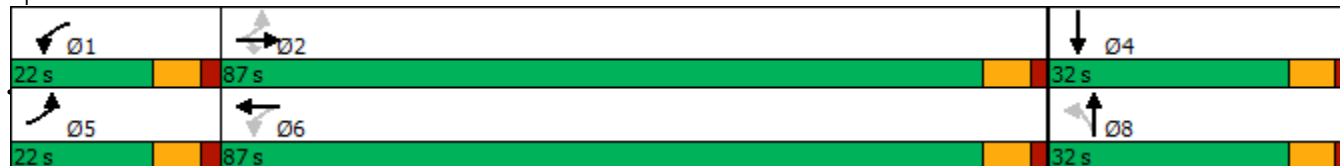
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2020-EX-PM
02/21/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	844	98	19	796	4	45	0	18	8	2	19
Future Volume (veh/h)	32	844	98	19	796	4	45	0	18	8	2	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1850	1879	1979	1904	1904	2018	517	517	1970	1970	1970
Adj Flow Rate, veh/h	33	870	0	20	821	4	46	0	19	8	2	20
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	1	0	5	5	0	100	100	0	0	0
Cap, veh/h	435	1316		408	1331	6	193	0	37	58	26	89
Arrive On Green	0.03	0.71	0.00	0.02	0.70	0.70	0.08	0.00	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1804	1850	1593	1884	1893	9	1499	0	438	218	316	1068
Grp Volume(v), veh/h	33	870	0	20	0	825	46	0	19	30	0	0
Grp Sat Flow(s),veh/h/ln	1804	1850	1593	1884	0	1902	1499	0	438	1602	0	0
Q Serve(g_s), s	0.6	29.2	0.0	0.3	0.0	25.8	0.0	0.0	4.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	29.2	0.0	0.3	0.0	25.8	3.1	0.0	4.7	4.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.27		0.67
Lane Grp Cap(c), veh/h	435	1316		408	0	1338	193	0	37	174	0	0
V/C Ratio(X)	0.08	0.66		0.05	0.00	0.62	0.24	0.00	0.52	0.17	0.00	0.00
Avail Cap(c_a), veh/h	621	1316		618	0	1338	397	0	96	396	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.3	9.0	0.0	8.0	0.0	8.8	49.2	0.0	49.9	48.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.6	0.0	0.0	0.0	2.1	0.2	0.0	4.2	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	9.4	0.0	0.1	0.0	8.6	1.2	0.0	0.6	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	11.6	0.0	8.0	0.0	11.0	49.4	0.0	54.1	48.8	0.0	0.0
LnGrp LOS	A	B		A	A	B	D	A	D	D	A	A
Approach Vol, veh/h		903	A		845			65				30
Approach Delay, s/veh		11.4			10.9			50.8				48.8
Approach LOS		B			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	87.9		16.5	10.2	87.0		16.5				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	15.0	80.0		25.0	15.0	80.0		25.0				
Max Q Clear Time (g_c+I1), s	2.3	0.0		6.7	2.6	0.0		6.7				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.1				

Intersection Summary

HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2020-EX-PM
02/21/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	8	25	840	30	14	811
Future Volume (vph)	8	25	840	30	14	811
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899		0.995			
Flt Protected	0.988					0.999
Satd. Flow (prot)	1430	0	1842	0	0	1794
Flt Permitted	0.988					0.999
Satd. Flow (perm)	1430	0	1842	0	0	1794
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	16%	3%	7%	21%	5%
Adj. Flow (vph)	9	27	903	32	15	872
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	935	0	0	887
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	8	25	840	30	14	811
Future Vol, veh/h	8	25	840	30	14	811
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	13	16	3	7	21	5
Mvmt Flow	9	27	903	32	15	872

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1821	919	0	0	935
Stage 1	919	-	-	-	-
Stage 2	902	-	-	-	-
Critical Hdwy	6.13	6.16	-	-	4.31
Critical Hdwy Stg 1	5.13	-	-	-	-
Critical Hdwy Stg 2	5.13	-	-	-	-
Follow-up Hdwy	3.617	3.444	-	-	2.389
Pot Cap-1 Maneuver	98	326	-	-	660
Stage 1	412	-	-	-	-
Stage 2	419	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	94	326	-	-	660
Mov Cap-2 Maneuver	94	-	-	-	-
Stage 1	412	-	-	-	-
Stage 2	401	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.3	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	204	660
HCM Lane V/C Ratio	-	-	0.174	0.023
HCM Control Delay (s)	-	-	26.3	10.6
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	0.6	0.1

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2020-EX-SAT
02/21/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	130	123	666	662	2
Future Volume (vph)	14	130	123	666	662	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.878					
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1652	0	1787	1863	1739	0
Flt Permitted	0.995		0.249			
Satd. Flow (perm)	1652	0	468	1863	1739	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	137					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	2%	2%	0%
Adj. Flow (vph)	15	137	129	701	697	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	0	129	701	699	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYS DOTNYS DOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2020-EX-SAT
02/21/2020

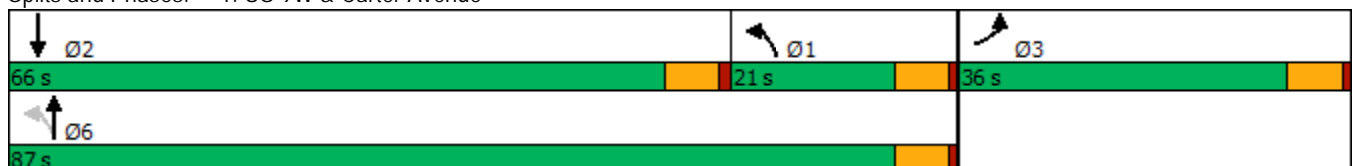


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.50		0.30	0.56	0.83	
Control Delay	13.7		6.8	6.9	22.7	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	13.7		6.8	6.9	22.7	
Queue Length 50th (ft)	5		11	89	182	
Queue Length 95th (ft)	57		31	203	358	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	936		746	1863	1639	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.16		0.17	0.38	0.43	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 58.7
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
1: US 9W & Carter Avenue

2020-EX-SAT
02/21/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	130	123	666	662	2
Future Volume (veh/h)	14	130	123	666	662	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1885	1870	1870	1870
Adj Flow Rate, veh/h	15	137	129	701	697	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	1	2	2	2
Cap, veh/h	20	180	351	1201	796	2
Arrive On Green	0.12	0.12	0.10	0.64	0.43	0.43
Sat Flow, veh/h	159	1454	1795	1870	1864	5
Grp Volume(v), veh/h	153	0	129	701	0	699
Grp Sat Flow(s),veh/h/ln	1624	0	1795	1870	0	1869
Q Serve(g_s), s	4.7	0.0	0.0	11.0	0.0	17.5
Cycle Q Clear(g_c), s	4.7	0.0	0.0	11.0	0.0	17.5
Prop In Lane	0.10	0.90	1.00			0.00
Lane Grp Cap(c), veh/h	201	0	351	1201	0	798
V/C Ratio(X)	0.76	0.00	0.37	0.58	0.00	0.88
Avail Cap(c_a), veh/h	952	0	701	2959	0	2191
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	20.5	5.2	0.0	13.4
Incr Delay (d2), s/veh	2.3	0.0	0.2	0.2	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	1.2	2.0	0.0	5.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.0	0.0	20.8	5.4	0.0	14.7
LnGrp LOS	C	A	C	A	A	B
Approach Vol, veh/h	153			830	699	
Approach Delay, s/veh	24.0			7.8	14.7	
Approach LOS	C			A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.0	27.9			38.9	12.3
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	2.0	19.5			13.0	6.7
Green Ext Time (p_c), s	0.2	2.4			2.4	0.5

Intersection Summary

HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

2020-EX-SAT
02/21/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	41	38	654	646	18
Future Volume (vph)	13	41	38	654	646	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.898				0.996	
Flt Protected	0.988			0.997		
Satd. Flow (prot)	1609	0	0	1893	1838	0
Flt Permitted	0.988			0.997		
Satd. Flow (perm)	1609	0	0	1893	1838	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	5%	3%	2%	2%	0%
Adj. Flow (vph)	15	47	44	752	743	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	62	0	0	796	764	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	13	41	38	654	646	18
Future Vol, veh/h	13	41	38	654	646	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	5	3	2	2	0
Mvmt Flow	15	47	44	752	743	21

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1594	754	764	0	-	0
Stage 1	754	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Critical Hdwy	5.4	5.75	4.13	-	-	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	185	449	844	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	168	449	844	-	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	525	-	-	-	-	-
Stage 2	539	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.9	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	844	-	320	-	-
HCM Lane V/C Ratio	0.052	-	0.194	-	-
HCM Control Delay (s)	9.5	0	18.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W

2020-EX-SAT
02/21/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	662	5	2	660	4	2
Future Volume (vph)	662	5	2	660	4	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.955	
Flt Protected					0.968	
Satd. Flow (prot)	1880	0	0	1844	1874	0
Flt Permitted					0.968	
Satd. Flow (perm)	1880	0	0	1844	1874	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			359	371	
Travel Time (s)	8.1			4.5	8.4	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Adj. Flow (vph)	744	6	2	742	4	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	750	0	0	744	6	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	662	5	2	660	4	2
Future Vol, veh/h	662	5	2	660	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	744	6	2	742	4	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	750	0	1493 747
Stage 1	-	-	-	-	747 -
Stage 2	-	-	-	-	746 -
Critical Hdwy	-	-	4.1	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.2	-	3.5 3.3
Pot Cap-1 Maneuver	-	-	868	-	137 416
Stage 1	-	-	-	-	472 -
Stage 2	-	-	-	-	472 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	868	-	136 416
Mov Cap-2 Maneuver	-	-	-	-	136 -
Stage 1	-	-	-	-	472 -
Stage 2	-	-	-	-	470 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	26.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	175	-	-	868	-
HCM Lane V/C Ratio	0.039	-	-	0.003	-
HCM Control Delay (s)	26.4	-	-	9.2	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2020-EX-SAT
02/21/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	570	74	6	589	2	55	1	12	5	1	16
Future Volume (vph)	17	570	74	6	589	2	55	1	12	5	1	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	80			85			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.861			0.899	
Flt Protected	0.950			0.950			0.950				0.990	
Satd. Flow (prot)	1796	1853	1607	1823	1881	0	1832	1660	0	0	1907	0
Flt Permitted	0.311			0.338			0.742				0.959	
Satd. Flow (perm)	588	1853	1607	649	1881	0	1431	1660	0	0	1847	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85					13			18	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		250			260			201			326	
Travel Time (s)		3.1			3.2			4.6			7.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	19	626	81	7	647	2	60	1	13	5	1	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	19	626	81	7	649	0	60	14	0	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	0	0	2	0		2	2		1	2	
Detector Template										Left		
Leading Detector (ft)	78	0	0	78	0		78	78		20	78	
Trailing Detector (ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Position(ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Size(ft)	40	6	20	40	6		40	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	0.0	0.0	2.0	0.0		2.0	2.0		0.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	5.0	0.0	0.0	5.0	0.0		5.0	5.0		0.0	5.0	
Detector 2 Position(ft)	38			38			38	38			38	
Detector 2 Size(ft)	40			40			40	40			40	
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0			2.0			2.0	2.0			2.0	

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2020-EX-SAT
02/21/2020

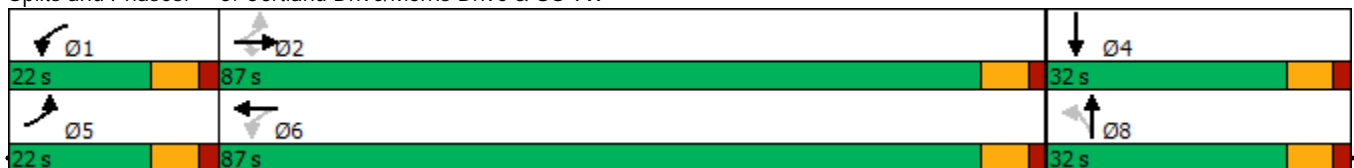


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA			NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8					
Detector Phase	5	2	2	1	6		8	8				4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0				10.0
Minimum Split (s)	12.0	17.0	17.0	12.0	17.0		25.0	25.0				25.0
Total Split (s)	22.0	87.0	87.0	22.0	87.0		32.0	32.0				32.0
Total Split (%)	15.6%	61.7%	61.7%	15.6%	61.7%		22.7%	22.7%				22.7%
Maximum Green (s)	15.0	80.0	80.0	15.0	80.0		25.0	25.0				25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0				2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0				7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0				2.0
Recall Mode	None	Max	Max	None	Max		None	None				None
Walk Time (s)							7.0	7.0				7.0
Flash Dont Walk (s)							11.0	11.0				11.0
Pedestrian Calls (#/hr)							0	0				0
v/c Ratio	0.04	0.51	0.07	0.01	0.53		0.24	0.05				1.00
Control Delay	6.3	12.7	1.9	6.2	14.7		46.0	20.9				219.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	6.3	12.7	1.9	6.2	14.7		46.0	20.9				219.0
Queue Length 50th (ft)	4	217	0	2	227		38	1				6
Queue Length 95th (ft)	12	401	19	6	423		87	20				#65
Internal Link Dist (ft)		170			180			121				246
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	549	1235	1100	586	1217		288	345				24
Starvation Cap Reductn	0	0	0	0	0		0	0				0
Spillback Cap Reductn	0	0	0	0	0		0	0				0
Storage Cap Reductn	0	0	0	0	0		0	0				0
Reduced v/c Ratio	0.03	0.51	0.07	0.01	0.53		0.21	0.04				1.00

Intersection Summary

Area Type: Other
 Cycle Length: 141
 Actuated Cycle Length: 124.2
 Natural Cycle: 70
 Control Type: Semi Act-Uncoord
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



Peak Saturday Midday Hour (12:15 - 1:15)
JMC 17088

HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2020-EX-SAT
02/21/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	570	74	6	589	2	55	1	12	5	1	16
Future Volume (veh/h)	17	570	74	6	589	2	55	1	12	5	1	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1864	1894	1979	1949	1949	2018	2018	2018	1970	1970	1970
Adj Flow Rate, veh/h	19	626	0	7	647	2	60	1	13	5	1	18
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	2	0	0	2	2	0	0	0	0	0	0
Cap, veh/h	547	1343		570	1377	4	196	10	136	52	22	107
Arrive On Green	0.02	0.72	0.00	0.01	0.71	0.71	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1804	1864	1605	1884	1942	6	1503	124	1606	158	264	1267
Grp Volume(v), veh/h	19	626	0	7	0	649	60	0	14	24	0	0
Grp Sat Flow(s),veh/h/ln	1804	1864	1605	1884	0	1948	1503	0	1729	1689	0	0
Q Serve(g_s), s	0.3	15.9	0.0	0.1	0.0	16.4	2.4	0.0	0.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	15.9	0.0	0.1	0.0	16.4	3.9	0.0	0.8	1.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.93	0.21		0.75
Lane Grp Cap(c), veh/h	547	1343		570	0	1382	196	0	146	181	0	0
V/C Ratio(X)	0.03	0.47		0.01	0.00	0.47	0.31	0.00	0.10	0.13	0.00	0.00
Avail Cap(c_a), veh/h	751	1343		804	0	1382	402	0	383	406	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.4	6.6	0.0	5.5	0.0	7.1	48.9	0.0	47.6	47.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.0	0.0	1.1	0.3	0.0	0.1	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	4.9	0.0	0.0	0.0	5.4	1.6	0.0	0.4	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	7.8	0.0	5.5	0.0	8.3	49.2	0.0	47.7	48.0	0.0	0.0
LnGrp LOS	A	A		A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		645	A		656			74			24	
Approach Delay, s/veh		7.7			8.3			49.0			48.0	
Approach LOS		A			A			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	88.3		16.5	9.2	87.0		16.5				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	15.0	80.0		25.0	15.0	80.0		25.0				
Max Q Clear Time (g_c+I1), s	2.1	0.0		3.4	2.3	0.0		5.9				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.1				

Intersection Summary

HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2020-EX-SAT
02/21/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	9	564	22	8	581
Future Volume (vph)	14	9	564	22	8	581
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.948		0.995			
Flt Protected	0.970					0.999
Satd. Flow (prot)	1637	0	1861	0	0	1852
Flt Permitted	0.970					0.999
Satd. Flow (perm)	1637	0	1861	0	0	1852
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	11%	2%	5%	0%	2%
Adj. Flow (vph)	16	10	634	25	9	653
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	659	0	0	662
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	14	9	564	22	8	581
Future Vol, veh/h	14	9	564	22	8	581
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	11	2	5	0	2
Mvmt Flow	16	10	634	25	9	653

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1318	647	0	0	659	0
Stage 1	647	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Critical Hdwy	6	6.11	-	-	4.1	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.399	-	-	2.2	-
Pot Cap-1 Maneuver	203	472	-	-	939	-
Stage 1	564	-	-	-	-	-
Stage 2	551	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	200	472	-	-	939	-
Mov Cap-2 Maneuver	200	-	-	-	-	-
Stage 1	564	-	-	-	-	-
Stage 2	543	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.5	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	258	939
HCM Lane V/C Ratio	-	-	0.1	0.01
HCM Control Delay (s)	-	-	20.5	8.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-NB-AM
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	205	51	918	857	2
Future Volume (vph)	26	205	51	918	857	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.880					
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1590	0	1626	1759	1656	0
Flt Permitted	0.994		0.208			
Satd. Flow (perm)	1590	0	356	1759	1656	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	216					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	11%	8%	7%	50%
Adj. Flow (vph)	27	216	54	966	902	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	243	0	54	966	904	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYS DOTNYS DOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-NB-AM
03/23/2020

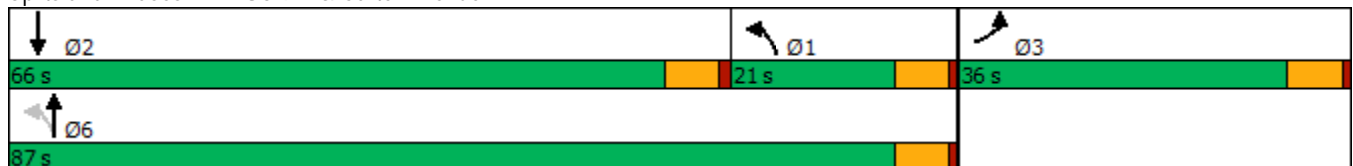


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.72		0.15	0.71	0.81	
Control Delay	20.7		4.6	9.4	19.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	20.7		4.6	9.4	19.9	
Queue Length 50th (ft)	15		5	186	324	
Queue Length 95th (ft)	88		18	483	#775	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	680		530	1588	1120	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.36		0.10	0.61	0.81	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 89.3
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
 1: US 9W & Carter Avenue

2025-NB-AM
 03/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	205	51	918	857	2
Future Volume (veh/h)	26	205	51	918	857	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1737	1781	1796	1796
Adj Flow Rate, veh/h	27	216	54	966	902	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	11	8	7	7
Cap, veh/h	32	255	213	1194	960	2
Arrive On Green	0.18	0.18	0.06	0.67	0.54	0.54
Sat Flow, veh/h	174	1394	1654	1781	1792	4
Grp Volume(v), veh/h	244	0	54	966	0	904
Grp Sat Flow(s),veh/h/ln	1575	0	1654	1781	0	1796
Q Serve(g_s), s	12.2	0.0	0.0	31.9	0.0	38.4
Cycle Q Clear(g_c), s	12.2	0.0	0.0	31.9	0.0	38.4
Prop In Lane	0.11	0.89	1.00			0.00
Lane Grp Cap(c), veh/h	288	0	213	1194	0	962
V/C Ratio(X)	0.85	0.00	0.25	0.81	0.00	0.94
Avail Cap(c_a), veh/h	579	0	415	1768	0	1320
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	35.3	9.7	0.0	17.7
Incr Delay (d2), s/veh	2.7	0.0	0.2	1.0	0.0	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	1.0	9.1	0.0	15.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.0	0.0	35.5	10.7	0.0	26.9
LnGrp LOS	C	A	D	B	A	C
Approach Vol, veh/h	244			1020	904	
Approach Delay, s/veh	35.0			12.0	26.9	
Approach LOS	C			B	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.0	49.7			60.7	20.9
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	2.0	40.4			33.9	14.2
Green Ext Time (p_c), s	0.1	3.3			4.0	0.7

Intersection Summary

HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

2025-NB-AM
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	25	55	19	963	1001	20
Future Volume (vph)	25	55	19	963	1001	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.907				0.997	
Flt Protected	0.985			0.999		
Satd. Flow (prot)	1541	0	0	1776	1732	0
Flt Permitted	0.985			0.999		
Satd. Flow (perm)	1541	0	0	1776	1732	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	16%	6%	11%	9%	8%	21%
Adj. Flow (vph)	26	57	20	1003	1043	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	83	0	0	1023	1064	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	25	55	19	963	1001	20
Future Vol, veh/h	25	55	19	963	1001	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	16	6	11	9	8	21
Mvmt Flow	26	57	20	1003	1043	21

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2097	1054	1064	0	-	0
Stage 1	1054	-	-	-	-	-
Stage 2	1043	-	-	-	-	-
Critical Hdwy	5.56	5.76	4.21	-	-	-
Critical Hdwy Stg 1	4.56	-	-	-	-	-
Critical Hdwy Stg 2	4.56	-	-	-	-	-
Follow-up Hdwy	3.644	3.354	2.299	-	-	-
Pot Cap-1 Maneuver	93	312	622	-	-	-
Stage 1	423	-	-	-	-	-
Stage 2	427	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	86	312	622	-	-	-
Mov Cap-2 Maneuver	86	-	-	-	-	-
Stage 1	392	-	-	-	-	-
Stage 2	427	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	44.6	0.2	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	622	-	171	-	-
HCM Lane V/C Ratio	0.032	-	0.487	-	-
HCM Control Delay (s)	11	0	44.6	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0.1	-	2.3	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W

2025-NB-AM
03/23/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	981	7	2	1014	7	8
Future Volume (vph)	981	7	2	1014	7	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.929	
Flt Protected					0.977	
Satd. Flow (prot)	1723	0	0	1725	1523	0
Flt Permitted					0.977	
Satd. Flow (perm)	1723	0	0	1725	1523	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			358	371	
Travel Time (s)	8.1			4.4	8.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	11%	50%	33%	9%	25%	17%
Adj. Flow (vph)	1055	8	2	1090	8	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1063	0	0	1092	17	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	981	7	2	1014	7	8
Future Vol, veh/h	981	7	2	1014	7	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	11	50	33	9	25	17
Mvmt Flow	1055	8	2	1090	8	9

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1063	0	2153 1059
Stage 1	-	-	-	-	1059 -
Stage 2	-	-	-	-	1094 -
Critical Hdwy	-	-	4.43	-	6.65 6.37
Critical Hdwy Stg 1	-	-	-	-	5.65 -
Critical Hdwy Stg 2	-	-	-	-	5.65 -
Follow-up Hdwy	-	-	2.497	-	3.725 3.453
Pot Cap-1 Maneuver	-	-	551	-	45 255
Stage 1	-	-	-	-	302 -
Stage 2	-	-	-	-	290 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	551	-	45 255
Mov Cap-2 Maneuver	-	-	-	-	45 -
Stage 1	-	-	-	-	302 -
Stage 2	-	-	-	-	287 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	61
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	80	-	-	551	-
HCM Lane V/C Ratio	0.202	-	-	0.004	-
HCM Control Delay (s)	61	-	-	11.6	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Lanes, Volumes, Timings
4: 5430 US 9W Driveway & US 9W

2025-NB-AM
03/23/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	951	38	22	955	58	10
Future Volume (vph)	951	38	22	955	58	10
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	12	12
Grade (%)	1%			-1%	0%	
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			125		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.980	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	1700	0	1660	1752	1751	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	1700	0	1660	1752	1751	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	358			275	179	
Travel Time (s)	4.4			3.4	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	2%	2%	9%	2%	2%
Adj. Flow (vph)	1034	41	24	1038	63	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1075	0	24	1038	74	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			10	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.09	0.99	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection						
Int Delay, s/veh	10.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	951	38	22	955	58	10
Future Vol, veh/h	951	38	22	955	58	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	2	2	9	2	2
Mvmt Flow	1034	41	24	1038	63	11

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1075	0	2141 1055
Stage 1	-	-	-	-	1055 -
Stage 2	-	-	-	-	1086 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	649	-	- 54 274
Stage 1	-	-	-	-	335 -
Stage 2	-	-	-	-	324 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	649	-	- 52 274
Mov Cap-2 Maneuver	-	-	-	-	- 52 -
Stage 1	-	-	-	-	335 -
Stage 2	-	-	-	-	312 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	\$ 316.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	59	-	-	649	-
HCM Lane V/C Ratio	1.253	-	-	0.037	-
HCM Control Delay (s)	\$ 316.9	-	-	10.8	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	6.3	-	-	0.1	-

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-NB-AM
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	905	31	26	817	0	120	0	50	6	1	39
Future Volume (vph)	7	905	31	26	817	0	120	0	50	6	1	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	80			85			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.850			0.884	
Flt Protected	0.950			0.950			0.950				0.994	
Satd. Flow (prot)	1796	1703	1328	1585	1777	0	1832	1532	0	0	1591	0
Flt Permitted	0.230			0.157			0.725				0.962	
Satd. Flow (perm)	435	1703	1328	262	1777	0	1398	1532	0	0	1539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85					267			42	
Link Speed (mph)		55		55			30		30		30	
Link Distance (ft)		250		260			201		326			
Travel Time (s)		3.1		3.2			4.6		7.4			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	11%	21%	15%	8%	0%	0%	0%	7%	17%	0%	19%
Adj. Flow (vph)	8	973	33	28	878	0	129	0	54	6	1	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	973	33	28	878	0	129	54	0	0	49	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12		12			12		12		12	
Link Offset(ft)		0		0			0		0		0	
Crosswalk Width(ft)		16		16			16		16		16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	0	0	2	0		2	2		1	2	
Detector Template										Left		
Leading Detector (ft)	78	0	0	78	0		78	78		20	78	
Trailing Detector (ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Position(ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Size(ft)	40	6	20	40	6		40	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	0.0	0.0	2.0	0.0		2.0	2.0		0.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	5.0	0.0	0.0	5.0	0.0		5.0	5.0		0.0	5.0	
Detector 2 Position(ft)	38			38			38	38			38	
Detector 2 Size(ft)	40			40			40	40			40	
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0			2.0			2.0	2.0			2.0	

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-NB-AM
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	25.0	25.0	12.0	17.0		25.0	25.0		25.0		25.0
Total Split (s)	22.0	87.0	87.0	22.0	87.0		32.0	32.0		32.0		32.0
Total Split (%)	15.6%	61.7%	61.7%	15.6%	61.7%		22.7%	22.7%		22.7%		22.7%
Maximum Green (s)	15.0	80.0	80.0	15.0	80.0		25.0	25.0		25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0				7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Recall Mode	None	Max	Max	None	Max		None	None		None		None
Walk Time (s)		7.0	7.0				7.0	7.0		7.0		7.0
Flash Dont Walk (s)		11.0	11.0				11.0	11.0		11.0		11.0
Pedestrian Calls (#/hr)		2	2				0	0		0		0
v/c Ratio	0.02	0.83	0.04	0.11	0.68		0.69	0.12				0.20
Control Delay	5.1	24.2	0.1	5.6	13.9		69.1	0.6				18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	5.1	24.2	0.1	5.6	13.9		69.1	0.6				18.6
Queue Length 50th (ft)	1	565	0	5	286		99	0				5
Queue Length 95th (ft)	6	#1048	0	15	724		168	0				42
Internal Link Dist (ft)		170			180			121				246
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	499	1169	938	366	1293		300	538				363
Starvation Cap Reductn	0	0	0	0	0		0	0				0
Spillback Cap Reductn	0	0	0	0	0		0	0				0
Storage Cap Reductn	0	0	0	0	0		0	0				0
Reduced v/c Ratio	0.02	0.83	0.04	0.08	0.68		0.43	0.10				0.13

Intersection Summary

Area Type: Other

Cycle Length: 141

Actuated Cycle Length: 117.5

Natural Cycle: 100

Control Type: Semi Act-Uncoord

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



Peak Weekday AM Hour (7:00 - 8:00)
JMC 17088

HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2025-NB-AM
03/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	905	31	26	817	0	120	0	50	6	1	39
Future Volume (veh/h)	7	905	31	26	817	0	120	0	50	6	1	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1731	1583	1754	1859	1859	2018	2018	2018	1970	1970	1970
Adj Flow Rate, veh/h	8	973	0	28	878	0	129	0	54	6	1	42
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	11	21	15	8	8	0	0	0	0	0	0
Cap, veh/h	368	1201		268	1319	0	219	0	168	44	15	141
Arrive On Green	0.01	0.69	0.00	0.03	0.71	0.00	0.10	0.00	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1804	1731	1341	1670	1859	0	1471	0	1710	88	151	1438
Grp Volume(v), veh/h	8	973	0	28	878	0	129	0	54	49	0	0
Grp Sat Flow(s),veh/h/ln	1804	1731	1341	1670	1859	0	1471	0	1710	1677	0	0
Q Serve(g_s), s	0.2	45.3	0.0	0.6	30.0	0.0	5.9	0.0	3.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	45.3	0.0	0.6	30.0	0.0	9.0	0.0	3.4	3.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.12		0.86
Lane Grp Cap(c), veh/h	368	1201		268	1319	0	219	0	168	200	0	0
V/C Ratio(X)	0.02	0.81		0.10	0.67	0.00	0.59	0.00	0.32	0.24	0.00	0.00
Avail Cap(c_a), veh/h	585	1201		443	1319	0	393	0	371	394	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	12.3	0.0	14.0	9.2	0.0	50.6	0.0	48.4	48.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.0	0.0	0.1	2.7	0.0	0.9	0.0	0.4	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.9	0.0	0.3	9.8	0.0	3.7	0.0	1.5	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	18.3	0.0	14.1	11.9	0.0	51.6	0.0	48.8	48.5	0.0	0.0
LnGrp LOS	A	B		B	B	A	D	A	D	D	A	A
Approach Vol, veh/h		981	A		906			183				49
Approach Delay, s/veh		18.2			11.9			50.7				48.5
Approach LOS		B			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	87.0		18.3	8.1	88.8		18.3				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	15.0	80.0		25.0	15.0	80.0		25.0				
Max Q Clear Time (g_c+I1), s	2.6	0.0		5.1	2.2	0.0		11.0				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.4				

Intersection Summary

HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2025-NB-AM
03/23/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	9	918	26	21	830
Future Volume (vph)	13	9	918	26	21	830
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.944		0.996			
Flt Protected	0.972					0.999
Satd. Flow (prot)	1517	0	1733	0	0	1744
Flt Permitted	0.972					0.999
Satd. Flow (perm)	1517	0	1733	0	0	1744
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	11%	9%	37%	20%	8%
Adj. Flow (vph)	14	10	987	28	23	892
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	1015	0	0	915
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T			T
Traffic Vol, veh/h	13	9	918	26	21	830
Future Vol, veh/h	13	9	918	26	21	830
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	13	11	9	37	20	8
Mvmt Flow	14	10	987	28	23	892

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1939	1001	0	0	1015
Stage 1	1001	-	-	-	-
Stage 2	938	-	-	-	-
Critical Hdwy	6.13	6.11	-	-	4.3
Critical Hdwy Stg 1	5.13	-	-	-	-
Critical Hdwy Stg 2	5.13	-	-	-	-
Follow-up Hdwy	3.617	3.399	-	-	2.38
Pot Cap-1 Maneuver	83	299	-	-	618
Stage 1	379	-	-	-	-
Stage 2	404	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	77	299	-	-	618
Mov Cap-2 Maneuver	77	-	-	-	-
Stage 1	379	-	-	-	-
Stage 2	374	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	46	0	0.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	111	618
HCM Lane V/C Ratio	-	-	0.213	0.037
HCM Control Delay (s)	-	-	46	11
HCM Lane LOS	-	-	E	B
HCM 95th %tile Q(veh)	-	-	0.8	0.1

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-NB-PM
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	125	206	1145	912	0
Future Volume (vph)	21	125	206	1145	912	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884					
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1596	0	1787	1845	1705	0
Flt Permitted	0.993		0.161			
Satd. Flow (perm)	1596	0	303	1845	1705	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	128					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	10%	3%	1%	3%	4%	0%
Adj. Flow (vph)	21	128	210	1168	931	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	149	0	210	1168	931	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYS DOT NYS DOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-NB-PM
03/23/2020

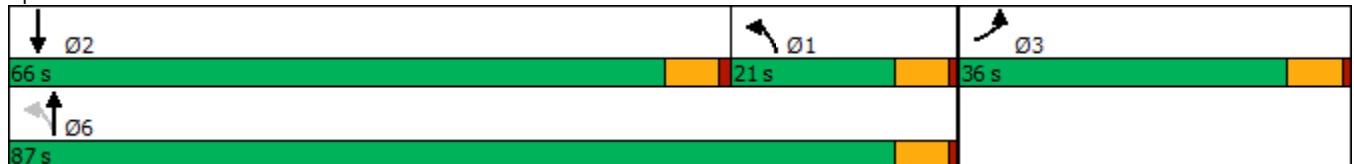


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.63		0.51	0.79	0.88	
Control Delay	23.7		15.1	10.9	28.2	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	23.7		15.1	10.9	28.2	
Queue Length 50th (ft)	12		20	266	424	
Queue Length 95th (ft)	73		58	629	#866	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	585		485	1551	1061	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.25		0.43	0.75	0.88	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 96.7
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
 1: US 9W & Carter Avenue

2025-NB-PM
 03/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	125	206	1145	912	0
Future Volume (veh/h)	21	125	206	1145	912	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1885	1856	1841	1841
Adj Flow Rate, veh/h	21	128	210	1168	931	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	1	3	4	4
Cap, veh/h	26	160	264	1306	1004	0
Arrive On Green	0.12	0.12	0.07	0.70	0.55	0.00
Sat Flow, veh/h	211	1284	1795	1856	1841	0
Grp Volume(v), veh/h	150	0	210	1168	931	0
Grp Sat Flow(s),veh/h/ln	1504	0	1795	1856	1841	0
Q Serve(g_s), s	6.8	0.0	2.7	35.2	32.5	0.0
Cycle Q Clear(g_c), s	6.8	0.0	2.7	35.2	32.5	0.0
Prop In Lane	0.14	0.85	1.00			0.00
Lane Grp Cap(c), veh/h	188	0	264	1306	1004	0
V/C Ratio(X)	0.80	0.00	0.79	0.89	0.93	0.00
Avail Cap(c_a), veh/h	645	0	519	2149	1579	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.8	0.0	30.2	8.3	14.6	0.0
Incr Delay (d2), s/veh	3.0	0.0	2.1	1.8	4.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	3.3	8.3	11.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.7	0.0	32.3	10.1	19.5	0.0
LnGrp LOS	C	A	C	B	B	A
Approach Vol, veh/h	150			1378	931	
Approach Delay, s/veh	32.7			13.5	19.5	
Approach LOS	C			B	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.1	44.1			55.2	14.7
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	4.7	34.5			37.2	8.8
Green Ext Time (p_c), s	0.4	3.6			5.9	0.5

Intersection Summary

HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

2025-NB-PM
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	32	78	1172	1017	37
Future Volume (vph)	14	32	78	1172	1017	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905				0.995	
Flt Protected	0.985			0.997		
Satd. Flow (prot)	1568	0	0	1878	1784	0
Flt Permitted	0.985			0.997		
Satd. Flow (perm)	1568	0	0	1878	1784	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	10%	1%	3%	5%	3%
Adj. Flow (vph)	14	33	80	1196	1038	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	1276	1076	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	14	32	78	1172	1017	37
Future Vol, veh/h	14	32	78	1172	1017	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	10	1	3	5	3
Mvmt Flow	14	33	80	1196	1038	38

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2413	1057	1076	0	-	0
Stage 1	1057	-	-	-	-	-
Stage 2	1356	-	-	-	-	-
Critical Hdwy	5.4	5.8	4.11	-	-	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.209	-	-	-
Pot Cap-1 Maneuver	72	305	652	-	-	-
Stage 1	452	-	-	-	-	-
Stage 2	353	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	46	305	652	-	-	-
Mov Cap-2 Maneuver	46	-	-	-	-	-
Stage 1	287	-	-	-	-	-
Stage 2	353	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	58.6	0.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	652	-	112	-	-
HCM Lane V/C Ratio	0.122	-	0.419	-	-
HCM Control Delay (s)	11.3	0	58.6	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	1.8	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W

2025-NB-PM
03/23/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1173	13	3	1045	9	0
Future Volume (vph)	1173	13	3	1045	9	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.998					
Fl _t Protected					0.950	
Satd. Flow (prot)	1860	0	0	1792	1925	0
Fl _t Permitted					0.950	
Satd. Flow (perm)	1860	0	0	1792	1925	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			359	371	
Travel Time (s)	8.1			4.5	8.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	0%	0%	5%	0%	0%
Adj. Flow (vph)	1222	14	3	1089	9	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1236	0	0	1092	9	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	1173	13	3	1045	9	0
Future Vol, veh/h	1173	13	3	1045	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	0	0	5	0	0
Mvmt Flow	1222	14	3	1089	9	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1236	0	2324
Stage 1	-	-	-	-	1229
Stage 2	-	-	-	-	1095
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	571	-	42
Stage 1	-	-	-	-	279
Stage 2	-	-	-	-	323
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	571	-	41
Mov Cap-2 Maneuver	-	-	-	-	41
Stage 1	-	-	-	-	279
Stage 2	-	-	-	-	319

Approach	EB	WB	NB
HCM Control Delay, s	0	0	117.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	41	-	-	571	-
HCM Lane V/C Ratio	0.229	-	-	0.005	-
HCM Control Delay (s)	117.1	-	-	11.3	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Lanes, Volumes, Timings
4: 5430 US 9W Driveway & US 9W

2025-NB-PM
03/23/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1122	58	29	963	85	14
Future Volume (vph)	1122	58	29	963	85	14
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	12	12
Grade (%)	1%			-1%	0%	
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			125		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.981	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	1823	0	1660	1819	1752	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	1823	0	1660	1819	1752	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	359			276	181	
Travel Time (s)	4.5			3.4	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	5%	2%	2%
Adj. Flow (vph)	1220	63	32	1047	92	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1283	0	32	1047	107	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			10	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.09	0.99	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection						
Int Delay, s/veh	40					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1122	58	29	963	85	14
Future Vol, veh/h	1122	58	29	963	85	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	2	5	2	2
Mvmt Flow	1220	63	32	1047	92	15

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1283	0	2363 1252
Stage 1	-	-	-	-	1252 -
Stage 2	-	-	-	-	1111 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	541	-	~ 39 210
Stage 1	-	-	-	-	269 -
Stage 2	-	-	-	-	315 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	541	-	~ 37 210
Mov Cap-2 Maneuver	-	-	-	-	~ 37 -
Stage 1	-	-	-	-	269 -
Stage 2	-	-	-	-	296 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	\$ 913.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	42	-	-	541	-
HCM Lane V/C Ratio	2.562	-	-	0.058	-
HCM Control Delay (s)	\$ 913.7	-	-	12.1	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	11.7	-	-	0.2	-

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-NB-PM
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	973	106	43	884	4	88	0	27	8	2	20
Future Volume (vph)	34	973	106	43	884	4	88	0	27	8	2	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	80			85			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999			0.850				0.909
Flt Protected	0.950			0.950			0.950					0.987
Satd. Flow (prot)	1796	1835	1591	1823	1826	0	1832	1413	0	0	1922	0
Flt Permitted	0.206			0.148			0.737					0.917
Satd. Flow (perm)	389	1835	1591	284	1826	0	1421	1413	0	0	1786	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85					261				21
Link Speed (mph)		55			55			30				30
Link Distance (ft)		250			260			201				326
Travel Time (s)		3.1			3.2			4.6				7.4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	1%	0%	5%	0%	0%	100%	16%	0%	0%	0%
Adj. Flow (vph)	35	1003	109	44	911	4	91	0	28	8	2	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	1003	109	44	915	0	91	28	0	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	0	0	2	0		2	2		1	2	
Detector Template										Left		
Leading Detector (ft)	78	0	0	78	0		78	78		20	78	
Trailing Detector (ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Position(ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Size(ft)	40	6	20	40	6		40	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	0.0	0.0	2.0	0.0		2.0	2.0		0.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	5.0	0.0	0.0	5.0	0.0		5.0	5.0		0.0	5.0	
Detector 2 Position(ft)	38			38			38	38				38
Detector 2 Size(ft)	40			40			40	40				40
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)	2.0			2.0			2.0	2.0				2.0

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-NB-PM
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	25.0	25.0	12.0	17.0		25.0	25.0		25.0		25.0
Total Split (s)	22.0	87.0	87.0	22.0	87.0		32.0	32.0		32.0		32.0
Total Split (%)	15.6%	61.7%	61.7%	15.6%	61.7%		22.7%	22.7%		22.7%		22.7%
Maximum Green (s)	15.0	80.0	80.0	15.0	80.0		25.0	25.0		25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0				7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Recall Mode	None	Max	Max	None	Max		None	None		None		None
Walk Time (s)		7.0	7.0				7.0	7.0		7.0		7.0
Flash Dont Walk (s)		11.0	11.0				11.0	11.0		11.0		11.0
Pedestrian Calls (#/hr)		2	2				0	0		0		0
v/c Ratio	0.10	0.80	0.10	0.16	0.71		0.59	0.07				0.14
Control Delay	4.4	20.4	2.7	5.0	15.8		66.1	0.4				26.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	4.4	20.4	2.7	5.0	15.8		66.1	0.4				26.0
Queue Length 50th (ft)	5	497	6	6	411		68	0				7
Queue Length 95th (ft)	15	845	28	18	689		125	0				37
Internal Link Dist (ft)		170			180			121				246
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	481	1260	1119	417	1294		305	508				399
Starvation Cap Reductn	0	0	0	0	0		0	0				0
Spillback Cap Reductn	0	0	0	0	0		0	0				0
Storage Cap Reductn	0	0	0	0	0		0	0				0
Reduced v/c Ratio	0.07	0.80	0.10	0.11	0.71		0.30	0.06				0.08

Intersection Summary

Area Type: Other

Cycle Length: 141

Actuated Cycle Length: 116.9

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2025-NB-PM
03/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	973	106	43	884	4	88	0	27	8	2	20
Future Volume (veh/h)	34	973	106	43	884	4	88	0	27	8	2	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1850	1879	1979	1904	1904	2018	517	517	1970	1970	1970
Adj Flow Rate, veh/h	35	1003	0	44	911	4	91	0	28	8	2	21
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	1	0	5	5	0	100	100	0	0	0
Cap, veh/h	373	1283		321	1321	6	178	0	40	52	25	79
Arrive On Green	0.03	0.69	0.00	0.03	0.70	0.70	0.09	0.00	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1804	1850	1593	1884	1894	8	1498	0	438	135	279	868
Grp Volume(v), veh/h	35	1003	0	44	0	915	91	0	28	31	0	0
Grp Sat Flow(s),veh/h/ln	1804	1850	1593	1884	0	1902	1498	0	438	1281	0	0
Q Serve(g_s), s	0.6	41.8	0.0	0.8	0.0	32.4	1.3	0.0	7.2	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.6	41.8	0.0	0.8	0.0	32.4	8.5	0.0	7.2	7.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	0.26		0.68
Lane Grp Cap(c), veh/h	373	1283		321	0	1326	178	0	40	156	0	0
V/C Ratio(X)	0.09	0.78		0.14	0.00	0.69	0.51	0.00	0.70	0.20	0.00	0.00
Avail Cap(c_a), veh/h	555	1283		504	0	1326	366	0	95	360	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.2	11.8	0.0	12.6	0.0	10.2	51.6	0.0	50.9	48.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.8	0.0	0.1	0.0	3.0	0.8	0.0	7.9	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	14.4	0.0	0.4	0.0	11.1	2.6	0.0	0.9	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	16.6	0.0	12.7	0.0	13.1	52.5	0.0	58.8	48.7	0.0	0.0
LnGrp LOS	A	B		B	A	B	D	A	E	D	A	A
Approach Vol, veh/h		1038	A		959			119				31
Approach Delay, s/veh		16.4			13.1			54.0				48.7
Approach LOS		B			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	87.0		17.5	10.4	87.4		17.5				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	15.0	80.0		25.0	15.0	80.0		25.0				
Max Q Clear Time (g_c+I1), s	2.8	0.0		9.2	2.6	0.0		10.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2025-NB-PM
03/23/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	26	937	39	15	916
Future Volume (vph)	15	26	937	39	15	916
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.914		0.995			
Flt Protected	0.982					0.999
Satd. Flow (prot)	1449	0	1842	0	0	1794
Flt Permitted	0.982					0.999
Satd. Flow (perm)	1449	0	1842	0	0	1794
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	16%	3%	7%	21%	5%
Adj. Flow (vph)	16	28	1008	42	16	985
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	0	1050	0	0	1001
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	15	26	937	39	15	916
Future Vol, veh/h	15	26	937	39	15	916
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	13	16	3	7	21	5
Mvmt Flow	16	28	1008	42	16	985

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	2046	1029	0	0	1050
Stage 1	1029	-	-	-	-
Stage 2	1017	-	-	-	-
Critical Hdwy	6.13	6.16	-	-	4.31
Critical Hdwy Stg 1	5.13	-	-	-	-
Critical Hdwy Stg 2	5.13	-	-	-	-
Follow-up Hdwy	3.617	3.444	-	-	2.389
Pot Cap-1 Maneuver	72	282	-	-	595
Stage 1	369	-	-	-	-
Stage 2	373	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	68	282	-	-	595
Mov Cap-2 Maneuver	68	-	-	-	-
Stage 1	369	-	-	-	-
Stage 2	351	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	45.8	0	0.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	131	595
HCM Lane V/C Ratio	-	-	0.337	0.027
HCM Control Delay (s)	-	-	45.8	11.2
HCM Lane LOS	-	-	E	B
HCM 95th %tile Q(veh)	-	-	1.4	0.1

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-NB-SAT
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	143	135	846	839	2
Future Volume (vph)	15	143	135	846	839	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.878					
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1652	0	1787	1863	1739	0
Flt Permitted	0.995		0.208			
Satd. Flow (perm)	1652	0	391	1863	1739	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	151					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	2%	2%	0%
Adj. Flow (vph)	16	151	142	891	883	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	0	142	891	885	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYSDOTNYSDOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-NB-SAT
03/23/2020

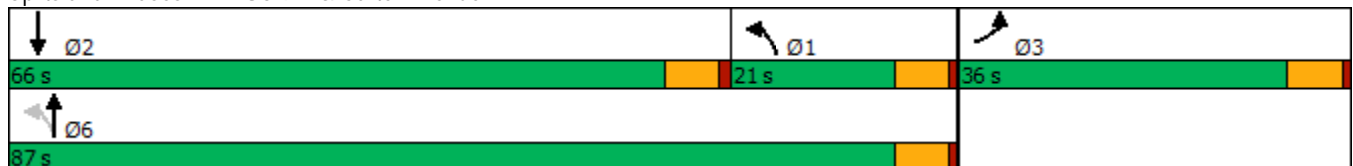


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.63		0.34	0.60	0.78	
Control Delay	20.5		6.5	6.2	19.0	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	20.5		6.5	6.2	19.0	
Queue Length 50th (ft)	9		13	138	296	
Queue Length 95th (ft)	71		33	309	#736	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	643		573	1651	1141	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.26		0.25	0.54	0.78	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 91.7
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
 1: US 9W & Carter Avenue

2025-NB-SAT
 03/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	143	135	846	839	2
Future Volume (veh/h)	15	143	135	846	839	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1885	1870	1870	1870
Adj Flow Rate, veh/h	16	151	142	891	883	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	1	2	2	2
Cap, veh/h	20	193	280	1280	963	2
Arrive On Green	0.13	0.13	0.08	0.68	0.52	0.52
Sat Flow, veh/h	155	1459	1795	1870	1865	4
Grp Volume(v), veh/h	168	0	142	891	0	885
Grp Sat Flow(s),veh/h/ln	1624	0	1795	1870	0	1870
Q Serve(g_s), s	6.6	0.0	0.0	18.8	0.0	28.4
Cycle Q Clear(g_c), s	6.6	0.0	0.0	18.8	0.0	28.4
Prop In Lane	0.10	0.90	1.00			0.00
Lane Grp Cap(c), veh/h	214	0	280	1280	0	965
V/C Ratio(X)	0.78	0.00	0.51	0.70	0.00	0.92
Avail Cap(c_a), veh/h	745	0	554	2316	0	1715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	27.5	6.2	0.0	14.5
Incr Delay (d2), s/veh	2.4	0.0	0.5	0.3	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	2.0	4.2	0.0	9.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.9	0.0	28.1	6.5	0.0	16.7
LnGrp LOS	C	A	C	A	A	B
Approach Vol, veh/h	168			1033	885	
Approach Delay, s/veh	29.9			9.4	16.7	
Approach LOS	C			A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.0	39.8			50.8	14.6
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	2.0	30.4			20.8	8.6
Green Ext Time (p_c), s	0.3	3.3			3.4	0.5

Intersection Summary

HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

2025-NB-SAT
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	43	40	872	861	29
Future Volume (vph)	24	43	40	872	861	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.914				0.996	
Flt Protected	0.982			0.998		
Satd. Flow (prot)	1638	0	0	1895	1838	0
Flt Permitted	0.982			0.998		
Satd. Flow (perm)	1638	0	0	1895	1838	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	5%	3%	2%	2%	0%
Adj. Flow (vph)	28	49	46	1002	990	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	0	1048	1023	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	24	43	40	872	861	29
Future Vol, veh/h	24	43	40	872	861	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	5	3	2	2	0
Mvmt Flow	28	49	46	1002	990	33

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2101	1007	1023	0	-	0
Stage 1	1007	-	-	-	-	-
Stage 2	1094	-	-	-	-	-
Critical Hdwy	5.4	5.75	4.13	-	-	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	103	332	675	-	-	-
Stage 1	471	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	87	332	675	-	-	-
Mov Cap-2 Maneuver	87	-	-	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	439	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	44.6	0.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	675	-	165	-	-
HCM Lane V/C Ratio	0.068	-	0.467	-	-
HCM Control Delay (s)	10.7	0	44.6	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0.2	-	2.2	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W

2025-NB-SAT
03/23/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	881	15	2	876	14	2
Future Volume (vph)	881	15	2	876	14	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998			0.985		
Flt Protected				0.957		
Satd. Flow (prot)	1878	0	0	1844	1910	0
Flt Permitted				0.957		
Satd. Flow (perm)	1878	0	0	1844	1910	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			359	371	
Travel Time (s)	8.1			4.5	8.4	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Adj. Flow (vph)	990	17	2	984	16	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1007	0	0	986	18	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	881	15	2	876	14	2
Future Vol, veh/h	881	15	2	876	14	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	990	17	2	984	16	2

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1007	0	1987
Stage 1	-	-	-	-	999
Stage 2	-	-	-	-	988
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	696	-	68
Stage 1	-	-	-	-	359
Stage 2	-	-	-	-	364
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	696	-	68
Mov Cap-2 Maneuver	-	-	-	-	68
Stage 1	-	-	-	-	359
Stage 2	-	-	-	-	362

Approach	EB	WB	NB
HCM Control Delay, s	0	0	67.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	75	-	-	696	-
HCM Lane V/C Ratio	0.24	-	-	0.003	-
HCM Control Delay (s)	67.5	-	-	10.2	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Lanes, Volumes, Timings
4: 5430 US 9W Driveway & US 9W

2025-NB-SAT
03/23/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↵	↕	↵↶	
Traffic Volume (vph)	815	68	39	762	116	19
Future Volume (vph)	815	68	39	762	116	19
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	12	12	12
Grade (%)	1%			-1%	0%	
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			125		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.981	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	1835	0	1660	1872	1752	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	1835	0	1660	1872	1752	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	359			276	173	
Travel Time (s)	4.5			3.4	3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	886	74	42	828	126	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	960	0	42	828	147	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			10	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.09	0.99	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	32.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	815	68	39	762	116	19
Future Vol, veh/h	815	68	39	762	116	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	886	74	42	828	126	21

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	960	0	1835 923
Stage 1	-	-	-	-	923 -
Stage 2	-	-	-	-	912 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	717	-	~ 83 327
Stage 1	-	-	-	-	387 -
Stage 2	-	-	-	-	392 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	717	-	~ 78 327
Mov Cap-2 Maneuver	-	-	-	-	~ 78 -
Stage 1	-	-	-	-	387 -
Stage 2	-	-	-	-	369 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	\$ 436
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	87	-	-	717	-
HCM Lane V/C Ratio	1.687	-	-	0.059	-
HCM Control Delay (s)	\$ 436	-	-	10.3	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	12	-	-	0.2	-

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-NB-SAT
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	701	81	32	682	2	100	1	23	5	1	17
Future Volume (vph)	18	701	81	32	682	2	100	1	23	5	1	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	16	16	16
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (ft)	80			85			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.856			0.897	
Flt Protected	0.950			0.950			0.950				0.990	
Satd. Flow (prot)	1796	1853	1607	1823	1881	0	1832	1651	0	0	1903	0
Flt Permitted	0.295			0.272			0.741				0.943	
Satd. Flow (perm)	558	1853	1607	522	1881	0	1429	1651	0	0	1812	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85					25			19	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		250			260			201			326	
Travel Time (s)		3.1			3.2			4.6			7.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	20	770	89	35	749	2	110	1	25	5	1	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	770	89	35	751	0	110	26	0	0	25	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	0.85	0.85	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	0	0	2	0		2	2		1	2	
Detector Template										Left		
Leading Detector (ft)	78	0	0	78	0		78	78		20	78	
Trailing Detector (ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Position(ft)	-10	0	0	-10	0		-10	-10		0	-10	
Detector 1 Size(ft)	40	6	20	40	6		40	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	0.0	0.0	2.0	0.0		2.0	2.0		0.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	5.0	0.0	0.0	5.0	0.0		5.0	5.0		0.0	5.0	
Detector 2 Position(ft)	38			38			38	38			38	
Detector 2 Size(ft)	40			40			40	40			40	
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0			2.0			2.0	2.0			2.0	

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-NB-SAT
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	25.0	25.0	12.0	17.0		25.0	25.0		25.0		25.0
Total Split (s)	22.0	87.0	87.0	22.0	87.0		32.0	32.0		32.0		32.0
Total Split (%)	15.6%	61.7%	61.7%	15.6%	61.7%		22.7%	22.7%		22.7%		22.7%
Maximum Green (s)	15.0	80.0	80.0	15.0	80.0		25.0	25.0		25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0				7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Recall Mode	None	Max	Max	None	Max		None	None		None		None
Walk Time (s)		7.0	7.0				7.0	7.0		7.0		7.0
Flash Dont Walk (s)		11.0	11.0				11.0	11.0		11.0		11.0
Pedestrian Calls (#/hr)		2	2				0	0		0		0
v/c Ratio	0.04	0.60	0.08	0.08	0.56		0.64	0.12				0.11
Control Delay	4.5	13.3	2.2	4.5	11.3		66.7	18.6				23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	4.5	13.3	2.2	4.5	11.3		66.7	18.6				23.9
Queue Length 50th (ft)	3	309	1	5	189		83	1				4
Queue Length 95th (ft)	11	516	21	16	482		146	28				31
Internal Link Dist (ft)		170			180			121				246
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	584	1290	1145	565	1350		310	378				409
Starvation Cap Reductn	0	0	0	0	0		0	0				0
Spillback Cap Reductn	0	0	0	0	0		0	0				0
Storage Cap Reductn	0	0	0	0	0		0	0				0
Reduced v/c Ratio	0.03	0.60	0.08	0.06	0.56		0.35	0.07				0.06

Intersection Summary

Area Type: Other

Cycle Length: 141

Actuated Cycle Length: 115.7

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2025-NB-SAT
03/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	701	81	32	682	2	100	1	23	5	1	17
Future Volume (veh/h)	18	701	81	32	682	2	100	1	23	5	1	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1864	1894	1979	1949	1949	2018	2018	2018	1970	1970	1970
Adj Flow Rate, veh/h	20	770	0	35	749	2	110	1	25	5	1	19
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	2	0	0	2	2	0	0	0	0	0	0
Cap, veh/h	479	1305		480	1377	4	199	6	144	51	22	112
Arrive On Green	0.02	0.70	0.00	0.03	0.71	0.71	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1804	1864	1605	1884	1943	5	1502	66	1654	150	254	1282
Grp Volume(v), veh/h	20	770	0	35	0	751	110	0	26	25	0	0
Grp Sat Flow(s),veh/h/ln	1804	1864	1605	1884	0	1948	1502	0	1720	1686	0	0
Q Serve(g_s), s	0.4	24.1	0.0	0.6	0.0	20.9	6.3	0.0	1.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	24.1	0.0	0.6	0.0	20.9	7.8	0.0	1.6	1.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.96	0.20		0.76
Lane Grp Cap(c), veh/h	479	1305		480	0	1380	199	0	150	185	0	0
V/C Ratio(X)	0.04	0.59		0.07	0.00	0.54	0.55	0.00	0.17	0.14	0.00	0.00
Avail Cap(c_a), veh/h	679	1305		672	0	1380	397	0	376	399	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.3	8.8	0.0	6.9	0.0	7.9	51.0	0.0	48.4	48.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.0	0.0	0.0	0.0	1.5	0.9	0.0	0.2	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	8.0	0.0	0.2	0.0	7.0	3.1	0.0	0.7	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	10.7	0.0	7.0	0.0	9.4	51.9	0.0	48.6	48.5	0.0	0.0
LnGrp LOS	A	B		A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		790	A		786			136				25
Approach Delay, s/veh		10.6			9.3			51.3				48.5
Approach LOS		B			A			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	87.0		16.9	9.4	88.0		16.9				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	15.0	80.0		25.0	15.0	80.0		25.0				
Max Q Clear Time (g_c+I1), s	2.6	0.0		3.5	2.4	0.0		9.8				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2025-NB-SAT
03/23/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	9	662	33	8	689
Future Volume (vph)	25	9	662	33	8	689
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.964		0.994			
Flt Protected	0.964					0.999
Satd. Flow (prot)	1675	0	1858	0	0	1852
Flt Permitted	0.964					0.999
Satd. Flow (perm)	1675	0	1858	0	0	1852
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	11%	2%	5%	0%	2%
Adj. Flow (vph)	28	10	744	37	9	774
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	781	0	0	783
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	9	662	33	8	689
Future Vol, veh/h	25	9	662	33	8	689
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	11	2	5	0	2
Mvmt Flow	28	10	744	37	9	774

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1555	763	0	0	781	0
Stage 1	763	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Critical Hdwy	6	6.11	-	-	4.1	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.399	-	-	2.2	-
Pot Cap-1 Maneuver	149	407	-	-	845	-
Stage 1	505	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	146	407	-	-	845	-
Mov Cap-2 Maneuver	146	-	-	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	482	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	176	845
HCM Lane V/C Ratio	-	-	0.217	0.011
HCM Control Delay (s)	-	-	31	9.3
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.8	0

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-BD-AM
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	205	51	945	899	2
Future Volume (vph)	26	205	51	945	899	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.880					
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1590	0	1626	1759	1656	0
Flt Permitted	0.994		0.184			
Satd. Flow (perm)	1590	0	315	1759	1656	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	216					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	11%	8%	7%	50%
Adj. Flow (vph)	27	216	54	995	946	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	243	0	54	995	948	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYSDOTNYS DOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-BD-AM
03/23/2020

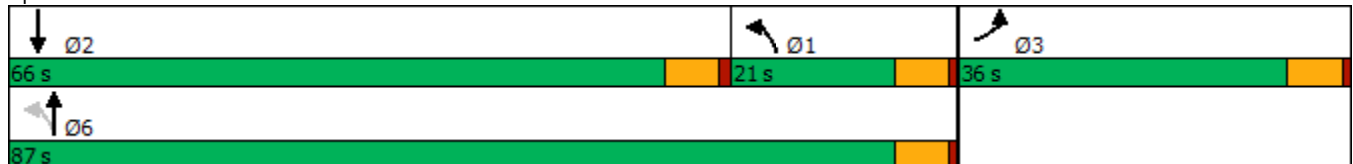


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.71		0.17	0.73	0.85	
Control Delay	20.6		5.0	10.0	22.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	20.6		5.0	10.0	22.5	
Queue Length 50th (ft)	15		5	198	360	
Queue Length 95th (ft)	88		18	521	#836	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	680		500	1587	1119	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.36		0.11	0.63	0.85	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 89.4
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
1: US 9W & Carter Avenue

2025-BD-AM
03/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	205	51	945	899	2
Future Volume (veh/h)	26	205	51	945	899	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1737	1781	1796	1796
Adj Flow Rate, veh/h	27	216	54	995	946	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	11	8	7	7
Cap, veh/h	32	252	197	1215	997	2
Arrive On Green	0.18	0.18	0.06	0.68	0.56	0.56
Sat Flow, veh/h	174	1394	1654	1781	1792	4
Grp Volume(v), veh/h	244	0	54	995	0	948
Grp Sat Flow(s),veh/h/ln	1575	0	1654	1781	0	1796
Q Serve(g_s), s	13.1	0.0	0.0	35.2	0.0	43.4
Cycle Q Clear(g_c), s	13.1	0.0	0.0	35.2	0.0	43.4
Prop In Lane	0.11	0.89	1.00			0.00
Lane Grp Cap(c), veh/h	285	0	197	1215	0	999
V/C Ratio(X)	0.86	0.00	0.27	0.82	0.00	0.95
Avail Cap(c_a), veh/h	540	0	386	1649	0	1231
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.7	0.0	38.3	10.0	0.0	18.2
Incr Delay (d2), s/veh	2.9	0.0	0.3	1.8	0.0	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	1.1	10.5	0.0	18.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.7	0.0	38.5	11.8	0.0	30.7
LnGrp LOS	D	A	D	B	A	C
Approach Vol, veh/h	244			1049	948	
Approach Delay, s/veh	37.7			13.2	30.7	
Approach LOS	D			B	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.0	54.7			65.7	21.8
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	2.0	45.4			37.2	15.1
Green Ext Time (p_c), s	0.1	3.3			4.3	0.7

Intersection Summary

HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

2025-BD-AM
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	55	19	998	1048	21
Future Volume (vph)	27	55	19	998	1048	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.909				0.997	
Flt Protected	0.984			0.999		
Satd. Flow (prot)	1541	0	0	1776	1732	0
Flt Permitted	0.984			0.999		
Satd. Flow (perm)	1541	0	0	1776	1732	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	16%	6%	11%	9%	8%	21%
Adj. Flow (vph)	28	57	20	1040	1092	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	0	1060	1114	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	27	55	19	998	1048	21
Future Vol, veh/h	27	55	19	998	1048	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	16	6	11	9	8	21
Mvmt Flow	28	57	20	1040	1092	22

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2183	1103	1114	0	-	0
Stage 1	1103	-	-	-	-	-
Stage 2	1080	-	-	-	-	-
Critical Hdwy	5.56	5.76	4.21	-	-	-
Critical Hdwy Stg 1	4.56	-	-	-	-	-
Critical Hdwy Stg 2	4.56	-	-	-	-	-
Follow-up Hdwy	3.644	3.354	2.299	-	-	-
Pot Cap-1 Maneuver	84	294	595	-	-	-
Stage 1	406	-	-	-	-	-
Stage 2	414	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	77	294	595	-	-	-
Mov Cap-2 Maneuver	77	-	-	-	-	-
Stage 1	374	-	-	-	-	-
Stage 2	414	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	55.4	0.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	595	-	152	-	-
HCM Lane V/C Ratio	0.033	-	0.562	-	-
HCM Control Delay (s)	11.3	0	55.4	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.1	-	2.9	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W

2025-BD-AM
03/23/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1018	7	2	1062	7	8
Future Volume (vph)	1018	7	2	1062	7	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.929	
Flt Protected					0.977	
Satd. Flow (prot)	1723	0	0	1725	1523	0
Flt Permitted					0.977	
Satd. Flow (perm)	1723	0	0	1725	1523	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			359	371	
Travel Time (s)	8.1			4.5	8.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	11%	50%	33%	9%	25%	17%
Adj. Flow (vph)	1095	8	2	1142	8	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1103	0	0	1144	17	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			10	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	1018	7	2	1062	7	8
Future Vol, veh/h	1018	7	2	1062	7	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	11	50	33	9	25	17
Mvmt Flow	1095	8	2	1142	8	9

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1103	0	2245 1099
Stage 1	-	-	-	-	1099 -
Stage 2	-	-	-	-	1146 -
Critical Hdwy	-	-	4.43	-	6.65 6.37
Critical Hdwy Stg 1	-	-	-	-	5.65 -
Critical Hdwy Stg 2	-	-	-	-	5.65 -
Follow-up Hdwy	-	-	2.497	-	3.725 3.453
Pot Cap-1 Maneuver	-	-	531	-	39 241
Stage 1	-	-	-	-	288 -
Stage 2	-	-	-	-	273 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	531	-	39 241
Mov Cap-2 Maneuver	-	-	-	-	39 -
Stage 1	-	-	-	-	288 -
Stage 2	-	-	-	-	270 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	70
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	71	-	-	531	-
HCM Lane V/C Ratio	0.227	-	-	0.004	-
HCM Control Delay (s)	70	-	-	11.8	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Lanes, Volumes, Timings
 4: 5430 US 9W Driveway/Site Driveway A & US 9W

2025-BD-AM
 03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	945	38	22	950	15	58	0	10	19	0	51
Future Volume (vph)	43	945	38	22	950	15	58	0	10	19	0	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	12	11	12	12	12	12	12	12
Grade (%)		1%			-1%			0%				-3%
Storage Length (ft)	100		0	100		115	0		0	0		50
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	185			110			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994				0.850		0.980				0.850
Flt Protected	0.950			0.950				0.959		0.950		
Satd. Flow (prot)	1643	1698	0	1660	1752	1538	0	1751	0	1796	0	1607
Flt Permitted	0.950			0.950				0.959		0.950		
Satd. Flow (perm)	1643	1698	0	1660	1752	1538	0	1751	0	1796	0	1607
Link Speed (mph)		55			55			30				30
Link Distance (ft)		359			276			172				213
Travel Time (s)		4.5			3.4			3.9				4.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	2%	2%	9%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	47	1027	41	24	1033	16	63	0	11	21	0	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1068	0	24	1033	16	0	74	0	21	0	55
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.10	1.01	1.01	1.09	0.99	1.04	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection												
Int Delay, s/veh	40.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖		↕		↖		↖
Traffic Vol, veh/h	43	945	38	22	950	15	58	0	10	19	0	51
Future Vol, veh/h	43	945	38	22	950	15	58	0	10	19	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	115	-	-	-	0	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	11	2	2	9	2	2	2	2	2	2	2
Mvmt Flow	47	1027	41	24	1033	16	63	0	11	21	0	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1049	0	0	1068	0	0	2259	2239	1048	2228	-	1033
Stage 1	-	-	-	-	-	-	1142	1142	-	1081	-	-
Stage 2	-	-	-	-	-	-	1117	1097	-	1147	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	6.52	-	5.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	5.52	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	5.52	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	-	3.318
Pot Cap-1 Maneuver	663	-	-	653	-	-	~ 29	42	277	44	0	308
Stage 1	-	-	-	-	-	-	244	275	-	316	0	-
Stage 2	-	-	-	-	-	-	252	289	-	293	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	663	-	-	653	-	-	~ 22	38	277	39	-	308
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 22	38	-	39	-	-
Stage 1	-	-	-	-	-	-	227	255	-	294	-	-
Stage 2	-	-	-	-	-	-	199	278	-	262	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	\$ 1210	61.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	25	663	-	-	653	-	-	39	308
HCM Lane V/C Ratio	2.957	0.07	-	-	0.037	-	-	0.53	0.18
HCM Control Delay (s)	\$ 1210	10.8	-	-	10.7	-	-	173.7	19.2
HCM Lane LOS	F	B	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	9.1	0.2	-	-	0.1	-	-	1.9	0.6

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-BD-AM
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	918	32	26	825	6	120	4	50	11	3	40
Future Volume (vph)	7	918	32	26	825	6	120	4	50	11	3	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	11	12	12
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		80
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	80			85			50			80		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999			0.860			0.860	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1703	1328	1585	1776	0	1832	1557	0	1484	1381	0
Flt Permitted	0.222			0.150			0.727			0.719		
Satd. Flow (perm)	420	1703	1328	250	1776	0	1402	1557	0	1123	1381	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85					54			43	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		250			260			201			325	
Travel Time (s)		3.1			3.2			4.6			7.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	11%	21%	15%	8%	0%	0%	0%	7%	17%	0%	19%
Adj. Flow (vph)	8	987	34	28	887	6	129	4	54	12	3	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	987	34	28	893	0	129	58	0	12	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	1.05	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	0	0	2	0		2	2		2	2	
Detector Template												
Leading Detector (ft)	78	0	0	78	0		78	78		78	78	
Trailing Detector (ft)	-10	0	0	-10	0		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	0	0	-10	0		-10	-10		-10	-10	
Detector 1 Size(ft)	40	6	20	40	6		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	0.0	0.0	2.0	0.0		2.0	2.0		2.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	5.0	0.0	0.0	5.0	0.0		5.0	5.0		5.0	5.0	
Detector 2 Position(ft)	38			38			38	38		38	38	
Detector 2 Size(ft)	40			40			40	40		40	40	
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0			2.0			2.0	2.0		2.0	2.0	

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-BD-AM
03/23/2020

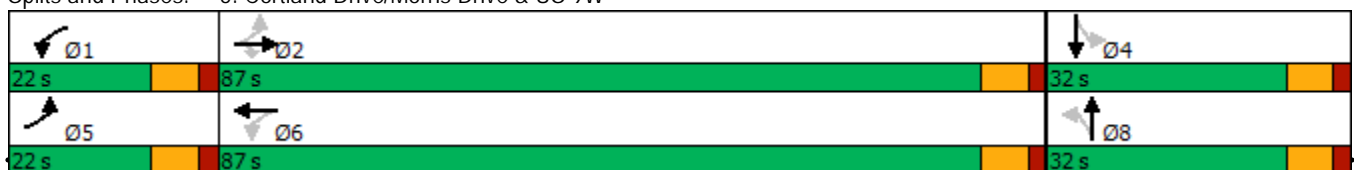


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	25.0	25.0	12.0	17.0		25.0	25.0		25.0		25.0
Total Split (s)	22.0	87.0	87.0	22.0	87.0		32.0	32.0		32.0		32.0
Total Split (%)	15.6%	61.7%	61.7%	15.6%	61.7%		22.7%	22.7%		22.7%		22.7%
Maximum Green (s)	15.0	80.0	80.0	15.0	80.0		25.0	25.0		25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0		7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Recall Mode	None	Max	Max	None	Max		None	None		None		None
Walk Time (s)		7.0	7.0				7.0	7.0		7.0		7.0
Flash Dont Walk (s)		11.0	11.0				11.0	11.0		11.0		11.0
Pedestrian Calls (#/hr)		2	2				0	0		0		0
v/c Ratio	0.02	0.84	0.04	0.11	0.69		0.69	0.23		0.08		0.21
Control Delay	5.1	25.0	0.1	5.7	14.3		69.1	15.7		46.9		17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	5.1	25.0	0.1	5.7	14.3		69.1	15.7		46.9		17.0
Queue Length 50th (ft)	1	584	0	5	296		99	3		8		2
Queue Length 95th (ft)	6	#1071	0	15	749		168	42		28		38
Internal Link Dist (ft)		170			180			121				245
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	490	1169	938	358	1293		300	376		240		330
Starvation Cap Reductn	0	0	0	0	0		0	0		0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0		0
Reduced v/c Ratio	0.02	0.84	0.04	0.08	0.69		0.43	0.15		0.05		0.14

Intersection Summary

Area Type: Other
 Cycle Length: 141
 Actuated Cycle Length: 117.4
 Natural Cycle: 100
 Control Type: Semi Act-Uncoord
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



Peak Weekday AM Hour (7:00 - 8:00)
JMC 17088

HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2025-BD-AM
03/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	918	32	26	825	6	120	4	50	11	3	40
Future Volume (veh/h)	7	918	32	26	825	6	120	4	50	11	3	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1731	1583	1754	1859	1859	2018	2018	2018	1642	1894	1894
Adj Flow Rate, veh/h	8	987	0	28	887	6	129	4	54	12	3	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	11	21	15	8	8	0	0	0	17	0	0
Cap, veh/h	324	1157		224	1261	9	215	16	211	179	14	199
Arrive On Green	0.01	0.67	0.00	0.03	0.68	0.68	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1804	1731	1341	1670	1844	12	1467	119	1609	1181	106	1516
Grp Volume(v), veh/h	8	987	0	28	0	893	129	0	58	12	0	46
Grp Sat Flow(s),veh/h/ln	1804	1731	1341	1670	0	1856	1467	0	1728	1181	0	1621
Q Serve(g_s), s	0.2	52.7	0.0	0.6	0.0	35.1	10.3	0.0	3.6	1.1	0.0	3.0
Cycle Q Clear(g_c), s	0.2	52.7	0.0	0.6	0.0	35.1	13.4	0.0	3.6	4.7	0.0	3.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.93	1.00		0.93
Lane Grp Cap(c), veh/h	324	1157		224	0	1269	215	0	226	179	0	212
V/C Ratio(X)	0.02	0.85		0.12	0.00	0.70	0.60	0.00	0.26	0.07	0.00	0.22
Avail Cap(c_a), veh/h	533	1157		391	0	1269	329	0	361	271	0	339
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.9	15.3	0.0	17.9	0.0	11.5	52.5	0.0	46.8	48.9	0.0	46.5
Incr Delay (d2), s/veh	0.0	8.1	0.0	0.1	0.0	3.3	1.0	0.0	0.2	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	18.7	0.0	0.3	0.0	12.3	3.9	0.0	1.6	0.3	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.9	23.4	0.0	18.0	0.0	14.8	53.5	0.0	47.0	48.9	0.0	46.7
LnGrp LOS	B	C		B	A	B	D	A	D	D	A	D
Approach Vol, veh/h		995	A		921			187				58
Approach Delay, s/veh		23.3			14.9			51.5				47.2
Approach LOS		C			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	87.0		22.7	8.2	88.9		22.7				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	15.0	80.0		25.0	15.0	80.0		25.0				
Max Q Clear Time (g_c+I1), s	2.6	0.0		6.7	2.2	0.0		15.4				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.4				

Intersection Summary

HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2025-BD-AM
03/23/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	9	936	27	21	832
Future Volume (vph)	15	9	936	27	21	832
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.948		0.996			
Flt Protected	0.970					0.999
Satd. Flow (prot)	1520	0	1732	0	0	1744
Flt Permitted	0.970					0.999
Satd. Flow (perm)	1520	0	1732	0	0	1744
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	11%	9%	37%	20%	8%
Adj. Flow (vph)	16	10	1006	29	23	895
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	1035	0	0	918
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	15	9	936	27	21	832
Future Vol, veh/h	15	9	936	27	21	832
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	13	11	9	37	20	8
Mvmt Flow	16	10	1006	29	23	895

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1962	1021	0	0	1035
Stage 1	1021	-	-	-	-
Stage 2	941	-	-	-	-
Critical Hdwy	6.13	6.11	-	-	4.3
Critical Hdwy Stg 1	5.13	-	-	-	-
Critical Hdwy Stg 2	5.13	-	-	-	-
Follow-up Hdwy	3.617	3.399	-	-	2.38
Pot Cap-1 Maneuver	81	292	-	-	607
Stage 1	372	-	-	-	-
Stage 2	403	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	75	292	-	-	607
Mov Cap-2 Maneuver	75	-	-	-	-
Stage 1	372	-	-	-	-
Stage 2	373	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	50.7	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	104	607
HCM Lane V/C Ratio	-	-	0.248	0.037
HCM Control Delay (s)	-	-	50.7	11.2
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	0.9	0.1

Lanes, Volumes, Timings
7: Morris Drive & Site Driveway B

2025-BD-AM
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	9	11	7	46	1
Future Volume (vph)	1	9	11	7	46	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	11	11	12	12
Grade (%)	-5%			2%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.877				0.997	
Flt Protected	0.995			0.971		
Satd. Flow (prot)	1722	0	0	1745	1652	0
Flt Permitted	0.995			0.971		
Satd. Flow (perm)	1722	0	0	1745	1652	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	284			325	436	
Travel Time (s)	6.5			7.4	9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	19%	2%
Adj. Flow (vph)	1	10	12	8	50	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	20	51	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.93	0.93	1.06	1.06	0.96	0.96
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	9	11	7	46	1
Future Vol, veh/h	1	9	11	7	46	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	2	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	19	2
Mvmt Flow	1	10	12	8	50	1

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	83	51	51	0	0
Stage 1	51	-	-	-	-
Stage 2	32	-	-	-	-
Critical Hdwy	5.42	5.72	4.12	-	-
Critical Hdwy Stg 1	4.42	-	-	-	-
Critical Hdwy Stg 2	4.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	940	1024	1555	-	-
Stage 1	985	-	-	-	-
Stage 2	999	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	932	1024	1555	-	-
Mov Cap-2 Maneuver	932	-	-	-	-
Stage 1	977	-	-	-	-
Stage 2	999	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	4.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1555	-	1014	-	-
HCM Lane V/C Ratio	0.008	-	0.011	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-BD-PM
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	125	206	1210	963	0
Future Volume (vph)	21	125	206	1210	963	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884					
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1596	0	1787	1845	1705	0
Flt Permitted	0.993		0.126			
Satd. Flow (perm)	1596	0	237	1845	1705	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	128					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	10%	3%	1%	3%	4%	0%
Adj. Flow (vph)	21	128	210	1235	983	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	149	0	210	1235	983	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYSDOTNYS DOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-BD-PM
03/23/2020

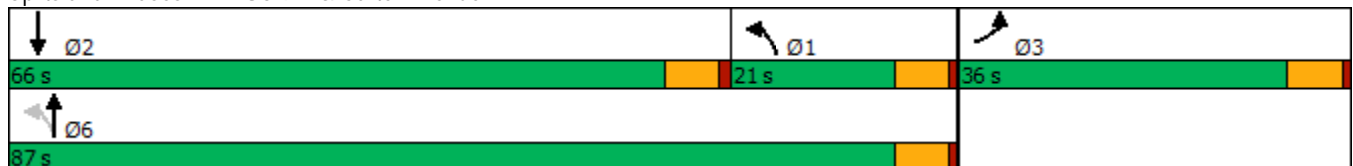


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.63		0.55	0.83	0.94	
Control Delay	23.8		20.8	13.1	35.4	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	23.8		20.8	13.1	35.4	
Queue Length 50th (ft)	12		20	314	481	
Queue Length 95th (ft)	73		91	769	#942	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	581		436	1536	1051	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.26		0.48	0.80	0.94	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 97.5
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
 1: US 9W & Carter Avenue

2025-BD-PM
 03/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	125	206	1210	963	0
Future Volume (veh/h)	21	125	206	1210	963	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1885	1856	1841	1841
Adj Flow Rate, veh/h	21	128	210	1235	983	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	1	3	4	4
Cap, veh/h	26	159	258	1340	1046	0
Arrive On Green	0.12	0.12	0.08	0.72	0.57	0.00
Sat Flow, veh/h	211	1284	1795	1856	1841	0
Grp Volume(v), veh/h	150	0	210	1235	983	0
Grp Sat Flow(s),veh/h/ln	1504	0	1795	1856	1841	0
Q Serve(g_s), s	7.6	0.0	3.6	43.0	38.5	0.0
Cycle Q Clear(g_c), s	7.6	0.0	3.6	43.0	38.5	0.0
Prop In Lane	0.14	0.85	1.00			0.00
Lane Grp Cap(c), veh/h	186	0	258	1340	1046	0
V/C Ratio(X)	0.81	0.00	0.81	0.92	0.94	0.00
Avail Cap(c_a), veh/h	580	0	466	1930	1418	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.2	0.0	33.6	9.0	15.6	0.0
Incr Delay (d2), s/veh	3.1	0.0	2.4	4.7	8.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	3.8	11.7	15.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.4	0.0	35.9	13.7	24.3	0.0
LnGrp LOS	D	A	D	B	C	A
Approach Vol, veh/h	150			1445	983	
Approach Delay, s/veh	36.4			16.9	24.3	
Approach LOS	D			B	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.0	50.3			62.2	15.6
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	5.6	40.5			45.0	9.6
Green Ext Time (p_c), s	0.4	3.8			6.7	0.4

Intersection Summary

HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

2025-BD-PM
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	19	32	78	1254	1084	41
Future Volume (vph)	19	32	78	1254	1084	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.914				0.995	
Flt Protected	0.982			0.997		
Satd. Flow (prot)	1589	0	0	1878	1784	0
Flt Permitted	0.982			0.997		
Satd. Flow (perm)	1589	0	0	1878	1784	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	10%	1%	3%	5%	3%
Adj. Flow (vph)	19	33	80	1280	1106	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	0	0	1360	1148	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	19	32	78	1254	1084	41
Future Vol, veh/h	19	32	78	1254	1084	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	10	1	3	5	3
Mvmt Flow	19	33	80	1280	1106	42

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2567	1127	1148	0	-	0
Stage 1	1127	-	-	-	-	-
Stage 2	1440	-	-	-	-	-
Critical Hdwy	5.4	5.8	4.11	-	-	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.209	-	-	-
Pot Cap-1 Maneuver	60	280	612	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	33	280	612	-	-	-
Mov Cap-2 Maneuver	33	-	-	-	-	-
Stage 1	234	-	-	-	-	-
Stage 2	329	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	127.8	0.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	612	-	74	-	-
HCM Lane V/C Ratio	0.13	-	0.703	-	-
HCM Control Delay (s)	11.8	0	127.8	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	3.3	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W

2025-BD-PM
03/23/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1260	6	3	1116	9	0
Future Volume (vph)	1260	6	3	1116	9	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.999					
Fl _t Protected					0.950	
Satd. Flow (prot)	1861	0	0	1792	1925	0
Fl _t Permitted					0.950	
Satd. Flow (perm)	1861	0	0	1792	1925	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			359	371	
Travel Time (s)	8.1			4.5	8.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	0%	0%	5%	0%	0%
Adj. Flow (vph)	1313	6	3	1163	9	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1319	0	0	1166	9	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			10	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1260	6	3	1116	9	0
Future Vol, veh/h	1260	6	3	1116	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	0	0	5	0	0
Mvmt Flow	1313	6	3	1163	9	0

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1319	0	2485	1316
Stage 1	-	-	-	-	1316	-
Stage 2	-	-	-	-	1169	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	531	-	33	195
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	298	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	531	-	32	195
Mov Cap-2 Maneuver	-	-	-	-	32	-
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	293	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	158.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	32	-	-	531	-
HCM Lane V/C Ratio	0.293	-	-	0.006	-
HCM Control Delay (s)	158.8	-	-	11.8	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	0.9	-	-	0	-

Lanes, Volumes, Timings
 4: 5430 US 9W Driveway/Site Driveway A & US 9W

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	1110	50	29	953	37	85	0	14	28	0	81
Future Volume (vph)	99	1110	50	29	953	37	85	0	14	28	0	81
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	12	11	12	12	12	12	12	12
Grade (%)		1%			-1%			0%				-3%
Storage Length (ft)	100		0	100		115	0		0	0		50
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	185			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994				0.850		0.981				0.850
Flt Protected	0.950			0.950				0.959		0.950		
Satd. Flow (prot)	1643	1825	0	1660	1819	1538	0	1752	0	1796	0	1607
Flt Permitted	0.950			0.950				0.959		0.950		
Satd. Flow (perm)	1643	1825	0	1660	1819	1538	0	1752	0	1796	0	1607
Link Speed (mph)		55			55			30				30
Link Distance (ft)		359			275			193				203
Travel Time (s)		4.5			3.4			4.4				4.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	108	1207	54	32	1036	40	92	0	15	30	0	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	1261	0	32	1036	40	0	107	0	30	0	88
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.10	1.01	1.01	1.09	0.99	1.04	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection												
Int Delay, s/veh	175.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖		↕		↖		↖
Traffic Vol, veh/h	99	1110	50	29	953	37	85	0	14	28	0	81
Future Vol, veh/h	99	1110	50	29	953	37	85	0	14	28	0	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	115	-	-	-	0	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	5	2	2	2	2	2	2	2
Mvmt Flow	108	1207	54	32	1036	40	92	0	15	30	0	88

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1076	0	0	1261	0	0	2614	2590	1234	2558	-	1036
Stage 1	-	-	-	-	-	-	1450	1450	-	1100	-	-
Stage 2	-	-	-	-	-	-	1164	1140	-	1458	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	6.52	-	5.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	5.52	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	5.52	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	-	3.318
Pot Cap-1 Maneuver	648	-	-	551	-	-	~ 16	25	215	~ 27	0	307
Stage 1	-	-	-	-	-	-	163	196	-	309	0	-
Stage 2	-	-	-	-	-	-	237	276	-	205	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	648	-	-	551	-	-	~ 10	20	215	~ 21	-	307
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 10	20	-	~ 21	-	-
Stage 1	-	-	-	-	-	-	136	163	-	257	-	-
Stage 2	-	-	-	-	-	-	159	260	-	159	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0.3			\$ 4201.1			176.9		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	12	648	-	-	551	-	-	21	307
HCM Lane V/C Ratio	8.967	0.166	-	-	0.057	-	-	1.449	0.287
HCM Control Delay (s)	\$ 4201.1	11.7	-	-	11.9	-	-	\$ 626.8	21.4
HCM Lane LOS	F	B	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	14.7	0.6	-	-	0.2	-	-	4	1.2

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-BD-PM
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	986	108	43	907	16	89	7	27	24	9	24
Future Volume (vph)	35	986	108	43	907	16	89	7	27	24	9	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	11	12	12
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		80
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	80			85			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.997			0.880			0.890	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1835	1591	1823	1824	0	1832	1499	0	1736	1683	0
Flt Permitted	0.186			0.140			0.735			0.734		
Satd. Flow (perm)	352	1835	1591	269	1824	0	1417	1499	0	1341	1683	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85		1			28			25	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		250			260			201			325	
Travel Time (s)		3.1			3.2			4.6			7.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	1%	0%	5%	0%	0%	2%	16%	0%	0%	0%
Adj. Flow (vph)	36	1016	111	44	935	16	92	7	28	25	9	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	1016	111	44	951	0	92	35	0	25	34	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	1.05	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	0	0	2	0		2	2		2	2	
Detector Template												
Leading Detector (ft)	78	0	0	78	0		78	78		78	78	
Trailing Detector (ft)	-10	0	0	-10	0		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	0	0	-10	0		-10	-10		-10	-10	
Detector 1 Size(ft)	40	6	20	40	6		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	0.0	0.0	2.0	0.0		2.0	2.0		2.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	5.0	0.0	0.0	5.0	0.0		5.0	5.0		5.0	5.0	
Detector 2 Position(ft)	38			38			38	38		38	38	
Detector 2 Size(ft)	40			40			40	40		40	40	
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0			2.0			2.0	2.0		2.0	2.0	

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-BD-PM
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	25.0	25.0	12.0	17.0		25.0	25.0		25.0		25.0
Total Split (s)	22.0	87.0	87.0	22.0	87.0		32.0	32.0		32.0		32.0
Total Split (%)	15.6%	61.7%	61.7%	15.6%	61.7%		22.7%	22.7%		22.7%		22.7%
Maximum Green (s)	15.0	80.0	80.0	15.0	80.0		25.0	25.0		25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0		7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Recall Mode	None	Max	Max	None	Max		None	None		None		None
Walk Time (s)		7.0	7.0				7.0	7.0		7.0		7.0
Flash Dont Walk (s)		11.0	11.0				11.0	11.0		11.0		11.0
Pedestrian Calls (#/hr)		2	2				0	0		0		0
v/c Ratio	0.11	0.81	0.10	0.16	0.74		0.59	0.19		0.17		0.16
Control Delay	4.6	21.0	2.8	5.1	16.9		66.3	22.9		50.7		24.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	4.6	21.0	2.8	5.1	16.9		66.3	22.9		50.7		24.3
Queue Length 50th (ft)	5	513	6	6	445		68	5		18		6
Queue Length 95th (ft)	15	876	29	18	755		126	36		46		38
Internal Link Dist (ft)		170			180			121				245
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	457	1260	1119	407	1292		304	343		287		380
Starvation Cap Reductn	0	0	0	0	0		0	0		0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0		0
Reduced v/c Ratio	0.08	0.81	0.10	0.11	0.74		0.30	0.10		0.09		0.09

Intersection Summary

Area Type: Other

Cycle Length: 141

Actuated Cycle Length: 117

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2025-BD-PM
03/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	35	986	108	43	907	16	89	7	27	24	9	24
Future Volume (veh/h)	35	986	108	43	907	16	89	7	27	24	9	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1850	1879	1979	1904	1904	2018	1988	1988	1894	1894	1894
Adj Flow Rate, veh/h	36	1016	0	44	935	16	92	7	28	25	9	25
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	1	0	5	5	0	2	2	0	0	0
Cap, veh/h	344	1274		306	1291	22	179	34	135	172	43	120
Arrive On Green	0.03	0.69	0.00	0.03	0.69	0.69	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1804	1850	1593	1884	1866	32	1483	348	1390	1391	443	1230
Grp Volume(v), veh/h	36	1016	0	44	0	951	92	0	35	25	0	34
Grp Sat Flow(s),veh/h/ln	1804	1850	1593	1884	0	1898	1483	0	1738	1391	0	1673
Q Serve(g_s), s	0.7	44.0	0.0	0.8	0.0	35.9	7.1	0.0	2.2	2.0	0.0	2.2
Cycle Q Clear(g_c), s	0.7	44.0	0.0	0.8	0.0	35.9	9.2	0.0	2.2	4.1	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.80	1.00		0.74
Lane Grp Cap(c), veh/h	344	1274		306	0	1314	179	0	169	172	0	163
V/C Ratio(X)	0.10	0.80		0.14	0.00	0.72	0.51	0.00	0.21	0.15	0.00	0.21
Avail Cap(c_a), veh/h	524	1274		488	0	1314	354	0	374	336	0	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.5	12.5	0.0	13.6	0.0	11.0	52.5	0.0	48.3	50.2	0.0	48.3
Incr Delay (d2), s/veh	0.0	5.2	0.0	0.1	0.0	3.5	0.9	0.0	0.2	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	15.5	0.0	0.4	0.0	12.6	2.7	0.0	0.9	0.7	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.5	17.7	0.0	13.7	0.0	14.5	53.4	0.0	48.5	50.3	0.0	48.5
LnGrp LOS	B	B		B	A	B	D	A	D	D	A	D
Approach Vol, veh/h		1052	A		995			127				59
Approach Delay, s/veh		17.5			14.5			52.0				49.3
Approach LOS		B			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	87.0		18.3	10.4	87.4		18.3				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	15.0	80.0		25.0	15.0	80.0		25.0				
Max Q Clear Time (g_c+I1), s	2.8	0.0		6.1	2.7	0.0		11.2				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2025-BD-PM
03/23/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	19	26	962	43	15	947
Future Volume (vph)	19	26	962	43	15	947
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.921		0.994			
Flt Protected	0.980					0.999
Satd. Flow (prot)	1459	0	1840	0	0	1794
Flt Permitted	0.980					0.999
Satd. Flow (perm)	1459	0	1840	0	0	1794
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	16%	3%	7%	21%	5%
Adj. Flow (vph)	20	28	1034	46	16	1018
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	1080	0	0	1034
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	19	26	962	43	15	947
Future Vol, veh/h	19	26	962	43	15	947
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	13	16	3	7	21	5
Mvmt Flow	20	28	1034	46	16	1018

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	2107	1057	0	0	1080
Stage 1	1057	-	-	-	-
Stage 2	1050	-	-	-	-
Critical Hdwy	6.13	6.16	-	-	4.31
Critical Hdwy Stg 1	5.13	-	-	-	-
Critical Hdwy Stg 2	5.13	-	-	-	-
Follow-up Hdwy	3.617	3.444	-	-	2.389
Pot Cap-1 Maneuver	66	272	-	-	579
Stage 1	358	-	-	-	-
Stage 2	361	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	62	272	-	-	579
Mov Cap-2 Maneuver	62	-	-	-	-
Stage 1	358	-	-	-	-
Stage 2	338	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	59.6	0	0.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	112	579
HCM Lane V/C Ratio	-	-	0.432	0.028
HCM Control Delay (s)	-	-	59.6	11.4
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	1.9	0.1

Lanes, Volumes, Timings
7: Morris Drive & Site Driveway B

2025-BD-PM
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	27	21	38	29	3
Future Volume (vph)	1	27	21	38	29	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	11	11	12	12
Grade (%)	-5%			2%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.869				0.988	
Flt Protected	0.998			0.982		
Satd. Flow (prot)	1711	0	0	1773	1940	0
Flt Permitted	0.998			0.982		
Satd. Flow (perm)	1711	0	0	1773	1940	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	284			325	437	
Travel Time (s)	6.5			7.4	9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	2%
Adj. Flow (vph)	1	29	23	41	32	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	0	0	64	35	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.93	0.93	1.06	1.06	0.96	0.96
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	27	21	38	29	3
Future Vol, veh/h	1	27	21	38	29	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	2	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	0	2
Mvmt Flow	1	29	23	41	32	3

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	121	34	35	0	0
Stage 1	34	-	-	-	-
Stage 2	87	-	-	-	-
Critical Hdwy	5.42	5.72	4.12	-	-
Critical Hdwy Stg 1	4.42	-	-	-	-
Critical Hdwy Stg 2	4.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	904	1044	1576	-	-
Stage 1	998	-	-	-	-
Stage 2	959	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	890	1044	1576	-	-
Mov Cap-2 Maneuver	890	-	-	-	-
Stage 1	983	-	-	-	-
Stage 2	959	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1576	-	1038	-	-
HCM Lane V/C Ratio	0.014	-	0.029	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-BD-SAT
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	143	135	909	900	2
Future Volume (vph)	15	143	135	909	900	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.878					
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1652	0	1787	1863	1739	0
Flt Permitted	0.995		0.170			
Satd. Flow (perm)	1652	0	320	1863	1739	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	151					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	2%	2%	0%
Adj. Flow (vph)	16	151	142	957	947	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	0	142	957	949	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYSDOTNYS DOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-BD-SAT
03/23/2020

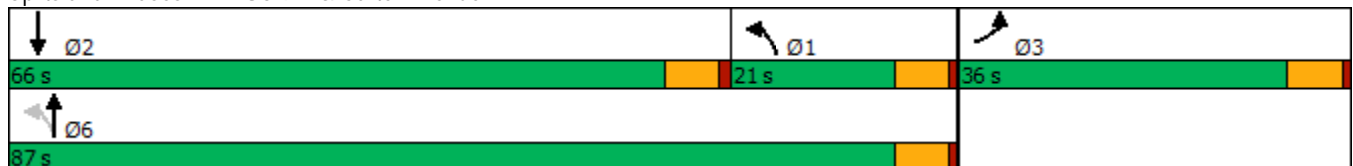


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.63		0.38	0.65	0.85	
Control Delay	20.9		8.5	6.8	23.3	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	20.9		8.5	6.8	23.3	
Queue Length 50th (ft)	9		13	159	362	
Queue Length 95th (ft)	72		33	360	#846	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	636		516	1625	1123	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.26		0.28	0.59	0.85	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 93.1
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
1: US 9W & Carter Avenue

2025-BD-SAT
03/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	143	135	909	900	2
Future Volume (veh/h)	15	143	135	909	900	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1885	1870	1870	1870
Adj Flow Rate, veh/h	16	151	142	957	947	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	1	2	2	2
Cap, veh/h	20	191	258	1311	1020	2
Arrive On Green	0.13	0.13	0.07	0.70	0.55	0.55
Sat Flow, veh/h	155	1459	1795	1870	1866	4
Grp Volume(v), veh/h	168	0	142	957	0	949
Grp Sat Flow(s),veh/h/ln	1624	0	1795	1870	0	1870
Q Serve(g_s), s	7.2	0.0	0.0	22.3	0.0	33.3
Cycle Q Clear(g_c), s	7.2	0.0	0.0	22.3	0.0	33.3
Prop In Lane	0.10	0.90	1.00			0.00
Lane Grp Cap(c), veh/h	212	0	258	1311	0	1022
V/C Ratio(X)	0.79	0.00	0.55	0.73	0.00	0.93
Avail Cap(c_a), veh/h	683	0	509	2124	0	1573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	30.4	6.5	0.0	14.9
Incr Delay (d2), s/veh	2.5	0.0	0.7	0.3	0.0	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	2.2	5.2	0.0	12.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.6	0.0	31.1	6.8	0.0	20.2
LnGrp LOS	C	A	C	A	A	C
Approach Vol, veh/h	168			1099	949	
Approach Delay, s/veh	32.6			10.0	20.2	
Approach LOS	C			A	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.0	45.0			56.0	15.3
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	2.0	35.3			24.3	9.2
Green Ext Time (p_c), s	0.3	3.7			3.9	0.5

Intersection Summary

HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

2025-BD-SAT
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	43	40	953	940	34
Future Volume (vph)	29	43	40	953	940	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919				0.995	
Flt Protected	0.980			0.998		
Satd. Flow (prot)	1646	0	0	1895	1836	0
Flt Permitted	0.980			0.998		
Satd. Flow (perm)	1646	0	0	1895	1836	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	5%	3%	2%	2%	0%
Adj. Flow (vph)	33	49	46	1095	1080	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	82	0	0	1141	1119	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	43	40	953	940	34
Future Vol, veh/h	29	43	40	953	940	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	5	3	2	2	0
Mvmt Flow	33	49	46	1095	1080	39

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2287	1100	1119	0	-	0
Stage 1	1100	-	-	-	-	-
Stage 2	1187	-	-	-	-	-
Critical Hdwy	5.4	5.75	4.13	-	-	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	83	297	620	-	-	-
Stage 1	437	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	67	297	620	-	-	-
Mov Cap-2 Maneuver	67	-	-	-	-	-
Stage 1	354	-	-	-	-	-
Stage 2	406	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	77.6	0.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	620	-	125	-	-
HCM Lane V/C Ratio	0.074	-	0.662	-	-
HCM Control Delay (s)	11.3	0	77.6	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	3.5	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W

2025-BD-SAT
03/23/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	967	15	2	960	14	2
Future Volume (vph)	967	15	2	960	14	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998			0.985		
Flt Protected				0.957		
Satd. Flow (prot)	1878	0	0	1844	1910	0
Flt Permitted				0.957		
Satd. Flow (perm)	1878	0	0	1844	1910	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			359	371	
Travel Time (s)	8.1			4.5	8.4	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1087	17	2	1079	16	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1104	0	0	1081	18	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			10	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	967	15	2	960	14	2
Future Vol, veh/h	967	15	2	960	14	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	1087	17	2	1079	16	2

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1104	0	2179
Stage 1	-	-	-	-	1096
Stage 2	-	-	-	-	1083
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	640	-	51
Stage 1	-	-	-	-	323
Stage 2	-	-	-	-	328
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	640	-	51
Mov Cap-2 Maneuver	-	-	-	-	51
Stage 1	-	-	-	-	323
Stage 2	-	-	-	-	325

Approach	EB	WB	NB
HCM Control Delay, s	0	0	94.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	57	-	-	640	-
HCM Lane V/C Ratio	0.315	-	-	0.004	-
HCM Control Delay (s)	94.9	-	-	10.6	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	1.1	-	-	0	-

Lanes, Volumes, Timings
 4: 5430 US 9W Driveway/Site Driveway A & US 9W

2025-BD-SAT
 03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	801	68	39	751	37	116	0	19	32	0	94
Future Volume (vph)	100	801	68	39	751	37	116	0	19	32	0	94
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	12	11	12	12	12	12	12	12
Grade (%)		1%			-1%			0%				-3%
Storage Length (ft)	100		0	100		115	0		0	0		50
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	185			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988				0.850		0.981				0.850
Flt Protected	0.950			0.950				0.959		0.950		
Satd. Flow (prot)	1643	1831	0	1660	1872	1538	0	1752	0	1796	0	1607
Flt Permitted	0.950			0.950				0.959		0.950		
Satd. Flow (perm)	1643	1831	0	1660	1872	1538	0	1752	0	1796	0	1607
Link Speed (mph)		55			55			30				30
Link Distance (ft)		359			275			172				213
Travel Time (s)		4.5			3.4			3.9				4.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	871	74	42	816	40	126	0	21	35	0	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	945	0	42	816	40	0	147	0	35	0	102
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.10	1.01	1.01	1.09	0.99	1.04	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection												
Int Delay, s/veh	148.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖		↕		↖		↖
Traffic Vol, veh/h	100	801	68	39	751	37	116	0	19	32	0	94
Future Vol, veh/h	100	801	68	39	751	37	116	0	19	32	0	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	115	-	-	-	0	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	871	74	42	816	40	126	0	21	35	0	102

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	856	0	0	945	0	0	2097	2066	908	2037	-	816
Stage 1	-	-	-	-	-	-	1126	1126	-	900	-	-
Stage 2	-	-	-	-	-	-	971	940	-	1137	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	6.52	-	5.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	5.52	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	5.52	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	-	3.318
Pot Cap-1 Maneuver	784	-	-	726	-	-	~ 38	54	334	59	0	403
Stage 1	-	-	-	-	-	-	249	280	-	387	0	-
Stage 2	-	-	-	-	-	-	304	342	-	296	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	784	-	-	726	-	-	~ 24	44	334	47	-	403
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 24	44	-	47	-	-
Stage 1	-	-	-	-	-	-	214	241	-	333	-	-
Stage 2	-	-	-	-	-	-	214	322	-	239	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			0.5			\$ 2189.4			61.7		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)		28	784	-	-	726	-	-	47	403
HCM Lane V/C Ratio		5.241	0.139	-	-	0.058	-	-	0.74	0.254
HCM Control Delay (s)		\$ 2189.4	10.3	-	-	10.3	-	-	193.2	16.9
HCM Lane LOS		F	B	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)		17.9	0.5	-	-	0.2	-	-	2.9	1

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-BD-SAT
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	718	83	32	703	16	102	10	23	24	8	21
Future Volume (vph)	19	718	83	32	703	16	102	10	23	24	8	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	11	12	12
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		80
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	80			85			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.997			0.896			0.892	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1853	1607	1823	1877	0	1832	1728	0	1736	1686	0
Flt Permitted	0.272			0.261			0.736			0.734		
Satd. Flow (perm)	514	1853	1607	501	1877	0	1419	1728	0	1341	1686	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85		1			25			23	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		250			260			201			325	
Travel Time (s)		3.1			3.2			4.6			7.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	21	789	91	35	773	18	112	11	25	26	9	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	789	91	35	791	0	112	36	0	26	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	1.05	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	0	0	2	0		2	2		2	2	
Detector Template												
Leading Detector (ft)	78	0	0	78	0		78	78		78	78	
Trailing Detector (ft)	-10	0	0	-10	0		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	0	0	-10	0		-10	-10		-10	-10	
Detector 1 Size(ft)	40	6	20	40	6		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	0.0	0.0	2.0	0.0		2.0	2.0		2.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	5.0	0.0	0.0	5.0	0.0		5.0	5.0		5.0	5.0	
Detector 2 Position(ft)	38			38			38	38		38	38	
Detector 2 Size(ft)	40			40			40	40		40	40	
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0			2.0			2.0	2.0		2.0	2.0	

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-BD-SAT
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	25.0	25.0	12.0	17.0		25.0	25.0		25.0		25.0
Total Split (s)	22.0	87.0	87.0	22.0	87.0		32.0	32.0		32.0		32.0
Total Split (%)	15.6%	61.7%	61.7%	15.6%	61.7%		22.7%	22.7%		22.7%		22.7%
Maximum Green (s)	15.0	80.0	80.0	15.0	80.0		25.0	25.0		25.0		25.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0		7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Recall Mode	None	Max	Max	None	Max		None	None		None		None
Walk Time (s)		7.0	7.0				7.0	7.0		7.0		7.0
Flash Dont Walk (s)		11.0	11.0				11.0	11.0		11.0		11.0
Pedestrian Calls (#/hr)		2	2				0	0		0		0
v/c Ratio	0.05	0.61	0.08	0.08	0.59		0.65	0.15		0.16		0.14
Control Delay	4.6	13.9	2.3	4.6	12.1		67.0	24.4		49.0		24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Delay	4.6	13.9	2.3	4.6	12.1		67.0	24.4		49.0		24.1
Queue Length 50th (ft)	3	326	1	5	209		85	8		18		6
Queue Length 95th (ft)	11	543	22	16	531		148	39		47		36
Internal Link Dist (ft)		170			180			121				245
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	555	1287	1142	551	1345		308	394		291		384
Starvation Cap Reductn	0	0	0	0	0		0	0		0		0
Spillback Cap Reductn	0	0	0	0	0		0	0		0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0		0
Reduced v/c Ratio	0.04	0.61	0.08	0.06	0.59		0.36	0.09		0.09		0.08

Intersection Summary

Area Type: Other

Cycle Length: 141

Actuated Cycle Length: 115.9

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2025-BD-SAT
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	19	718	83	32	703	16	102	10	23	24	8	21
Future Volume (veh/h)	19	718	83	32	703	16	102	10	23	24	8	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1864	1894	1979	1949	1949	2018	2018	2018	1894	1894	1894
Adj Flow Rate, veh/h	21	789	0	35	773	18	112	11	25	26	9	23
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	2	0	0	2	2	0	0	0	0	0	0
Cap, veh/h	430	1272		442	1308	30	199	60	137	189	52	133
Arrive On Green	0.02	0.68	0.00	0.03	0.69	0.69	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1804	1864	1605	1884	1897	44	1486	548	1246	1390	472	1205
Grp Volume(v), veh/h	21	789	0	35	0	791	112	0	36	26	0	32
Grp Sat Flow(s),veh/h/ln	1804	1864	1605	1884	0	1941	1486	0	1794	1390	0	1677
Q Serve(g_s), s	0.4	27.4	0.0	0.6	0.0	25.0	8.7	0.0	2.1	2.0	0.0	2.0
Cycle Q Clear(g_c), s	0.4	27.4	0.0	0.6	0.0	25.0	10.7	0.0	2.1	4.2	0.0	2.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.69	1.00		0.72
Lane Grp Cap(c), veh/h	430	1272		442	0	1339	199	0	197	189	0	184
V/C Ratio(X)	0.05	0.62		0.08	0.00	0.59	0.56	0.00	0.18	0.14	0.00	0.17
Avail Cap(c_a), veh/h	623	1272		628	0	1339	352	0	382	332	0	357
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.8	10.3	0.0	8.3	0.0	9.5	52.2	0.0	47.4	49.3	0.0	47.4
Incr Delay (d2), s/veh	0.0	2.3	0.0	0.0	0.0	1.9	0.9	0.0	0.2	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	9.5	0.0	0.2	0.0	8.9	3.3	0.0	1.0	0.7	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	12.6	0.0	8.4	0.0	11.4	53.2	0.0	47.6	49.4	0.0	47.5
LnGrp LOS	A	B		A	A	B	D	A	D	D	A	D
Approach Vol, veh/h		810	A		826			148				58
Approach Delay, s/veh		12.4			11.3			51.8				48.4
Approach LOS		B			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	87.0		19.9	9.5	87.9		19.9				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	15.0	80.0		25.0	15.0	80.0		25.0				
Max Q Clear Time (g_c+I1), s	2.6	0.0		6.2	2.4	0.0		12.7				
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	0.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2025-BD-SAT
03/23/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	29	9	691	38	8	719
Future Volume (vph)	29	9	691	38	8	719
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.969		0.993			
Flt Protected	0.963					0.999
Satd. Flow (prot)	1688	0	1856	0	0	1852
Flt Permitted	0.963					0.999
Satd. Flow (perm)	1688	0	1856	0	0	1852
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	11%	2%	5%	0%	2%
Adj. Flow (vph)	33	10	776	43	9	808
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	819	0	0	817
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	9	691	38	8	719
Future Vol, veh/h	29	9	691	38	8	719
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	11	2	5	0	2
Mvmt Flow	33	10	776	43	9	808

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1624	798	0	0	819	0
Stage 1	798	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Critical Hdwy	6	6.11	-	-	4.1	-
Critical Hdwy Stg 1	5	-	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-	-
Follow-up Hdwy	3.5	3.399	-	-	2.2	-
Pot Cap-1 Maneuver	137	389	-	-	818	-
Stage 1	488	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	134	389	-	-	818	-
Mov Cap-2 Maneuver	134	-	-	-	-	-
Stage 1	488	-	-	-	-	-
Stage 2	466	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	35.8	0	0.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	159	818
HCM Lane V/C Ratio	-	-	0.269	0.011
HCM Control Delay (s)	-	-	35.8	9.4
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	1	0

Lanes, Volumes, Timings
7: Morris Drive & Site Driveway B

2025-BD-SAT
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	31	23	21	22	3
Future Volume (vph)	1	31	23	21	22	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	11	11	12	12
Grade (%)	-5%			2%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.869				0.985	
Flt Protected	0.999			0.975		
Satd. Flow (prot)	1713	0	0	1755	1933	0
Flt Permitted	0.999			0.975		
Satd. Flow (perm)	1713	0	0	1755	1933	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	277			325	436	
Travel Time (s)	6.3			7.4	9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	2%
Adj. Flow (vph)	1	34	25	23	24	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	0	0	48	27	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.93	0.93	1.06	1.06	0.96	0.96
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	31	23	21	22	3
Future Vol, veh/h	1	31	23	21	22	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	2	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	0	2
Mvmt Flow	1	34	25	23	24	3

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	99	26	27	0	0
Stage 1	26	-	-	-	-
Stage 2	73	-	-	-	-
Critical Hdwy	5.42	5.72	4.12	-	-
Critical Hdwy Stg 1	4.42	-	-	-	-
Critical Hdwy Stg 2	4.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	925	1054	1587	-	-
Stage 1	1004	-	-	-	-
Stage 2	969	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	910	1054	1587	-	-
Mov Cap-2 Maneuver	910	-	-	-	-
Stage 1	988	-	-	-	-
Stage 2	969	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	3.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1587	-	1049	-	-
HCM Lane V/C Ratio	0.016	-	0.033	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-BD-AM-IMP
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	205	51	945	899	2
Future Volume (vph)	26	205	51	945	899	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.880					
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1590	0	1626	1759	1656	0
Flt Permitted	0.994		0.184			
Satd. Flow (perm)	1590	0	315	1759	1656	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	216					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	4%	4%	11%	8%	7%	50%
Adj. Flow (vph)	27	216	54	995	946	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	243	0	54	995	948	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYSDOTNYS DOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

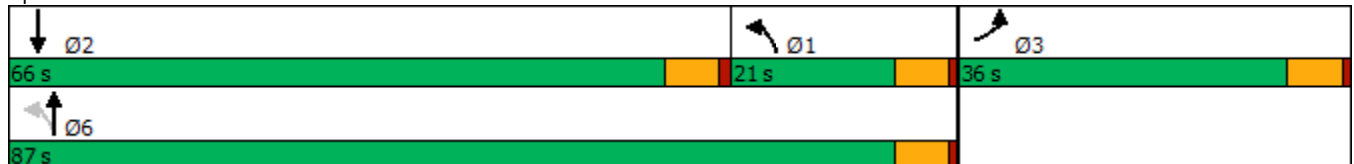


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.71		0.17	0.73	0.85	
Control Delay	20.6		5.0	10.0	22.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	20.6		5.0	10.0	22.5	
Queue Length 50th (ft)	15		5	198	360	
Queue Length 95th (ft)	88		18	521	#836	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	680		500	1587	1119	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.36		0.11	0.63	0.85	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 89.4
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
 1: US 9W & Carter Avenue

2025-BD-AM-IMP
 03/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	205	51	945	899	2
Future Volume (veh/h)	26	205	51	945	899	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1737	1781	1796	1796
Adj Flow Rate, veh/h	27	216	54	995	946	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	11	8	7	7
Cap, veh/h	32	252	197	1215	997	2
Arrive On Green	0.18	0.18	0.06	0.68	0.56	0.56
Sat Flow, veh/h	174	1394	1654	1781	1792	4
Grp Volume(v), veh/h	244	0	54	995	0	948
Grp Sat Flow(s),veh/h/ln	1575	0	1654	1781	0	1796
Q Serve(g_s), s	13.1	0.0	0.0	35.2	0.0	43.4
Cycle Q Clear(g_c), s	13.1	0.0	0.0	35.2	0.0	43.4
Prop In Lane	0.11	0.89	1.00			0.00
Lane Grp Cap(c), veh/h	285	0	197	1215	0	999
V/C Ratio(X)	0.86	0.00	0.27	0.82	0.00	0.95
Avail Cap(c_a), veh/h	540	0	386	1649	0	1231
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.7	0.0	38.3	10.0	0.0	18.2
Incr Delay (d2), s/veh	2.9	0.0	0.3	1.8	0.0	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	1.1	10.5	0.0	18.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.7	0.0	38.5	11.8	0.0	30.7
LnGrp LOS	D	A	D	B	A	C
Approach Vol, veh/h	244			1049	948	
Approach Delay, s/veh	37.7			13.2	30.7	
Approach LOS	D			B	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.0	54.7			65.7	21.8
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	2.0	45.4			37.2	15.1
Green Ext Time (p_c), s	0.1	3.3			4.3	0.7

Intersection Summary

HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	55	19	998	1048	21
Future Volume (vph)	27	55	19	998	1048	21
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.909				0.997	
Flt Protected	0.984			0.999		
Satd. Flow (prot)	1541	0	0	1776	1732	0
Flt Permitted	0.984			0.999		
Satd. Flow (perm)	1541	0	0	1776	1732	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	16%	6%	11%	9%	8%	21%
Adj. Flow (vph)	28	57	20	1040	1092	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	0	1060	1114	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	27	55	19	998	1048	21
Future Vol, veh/h	27	55	19	998	1048	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	16	6	11	9	8	21
Mvmt Flow	28	57	20	1040	1092	22

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2183	1103	1114	0	-	0
Stage 1	1103	-	-	-	-	-
Stage 2	1080	-	-	-	-	-
Critical Hdwy	5.56	5.76	4.21	-	-	-
Critical Hdwy Stg 1	4.56	-	-	-	-	-
Critical Hdwy Stg 2	4.56	-	-	-	-	-
Follow-up Hdwy	3.644	3.354	2.299	-	-	-
Pot Cap-1 Maneuver	84	294	595	-	-	-
Stage 1	406	-	-	-	-	-
Stage 2	414	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	77	294	595	-	-	-
Mov Cap-2 Maneuver	77	-	-	-	-	-
Stage 1	374	-	-	-	-	-
Stage 2	414	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	55.4	0.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	595	-	152	-	-
HCM Lane V/C Ratio	0.033	-	0.562	-	-
HCM Control Delay (s)	11.3	0	55.4	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.1	-	2.9	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1018	7	2	1062	7	8
Future Volume (vph)	1018	7	2	1062	7	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.929	
Flt Protected					0.977	
Satd. Flow (prot)	1723	0	0	1725	1523	0
Flt Permitted					0.977	
Satd. Flow (perm)	1723	0	0	1725	1523	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			359	371	
Travel Time (s)	8.1			4.5	8.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	11%	50%	33%	9%	25%	17%
Adj. Flow (vph)	1095	8	2	1142	8	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1103	0	0	1144	17	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			10	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1018	7	2	1062	7	8
Future Vol, veh/h	1018	7	2	1062	7	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	11	50	33	9	25	17
Mvmt Flow	1095	8	2	1142	8	9

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1103	0	2245 1099
Stage 1	-	-	-	-	1099 -
Stage 2	-	-	-	-	1146 -
Critical Hdwy	-	-	4.43	-	6.65 6.37
Critical Hdwy Stg 1	-	-	-	-	5.65 -
Critical Hdwy Stg 2	-	-	-	-	5.65 -
Follow-up Hdwy	-	-	2.497	-	3.725 3.453
Pot Cap-1 Maneuver	-	-	531	-	39 241
Stage 1	-	-	-	-	288 -
Stage 2	-	-	-	-	273 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	531	-	39 241
Mov Cap-2 Maneuver	-	-	-	-	39 -
Stage 1	-	-	-	-	288 -
Stage 2	-	-	-	-	270 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	70
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	71	-	-	531	-
HCM Lane V/C Ratio	0.227	-	-	0.004	-
HCM Control Delay (s)	70	-	-	11.8	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	0.8	-	-	0	-

Lanes, Volumes, Timings
4: 5430 US 9W Driveway/Site Driveway A & US 9W

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	945	38	22	950	15	58	0	10	19	0	51
Future Volume (vph)	43	945	38	22	950	15	58	0	10	19	0	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	12	11	12	12	12	12	12	12
Grade (%)		1%			-1%			0%				-3%
Storage Length (ft)	100		0	100		115	0		0	0		50
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	185			110			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994				0.850		0.980			0.850	
Flt Protected	0.950			0.950				0.959		0.950		
Satd. Flow (prot)	1643	1698	0	1660	1752	1538	0	1751	0	1796	1607	0
Flt Permitted	0.167			0.163				0.719		0.799		
Satd. Flow (perm)	289	1698	0	285	1752	1538	0	1313	0	1511	1607	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				100		100			195	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		359			276			172			213	
Travel Time (s)		4.5			3.4			3.9			4.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	2%	2%	9%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	47	1027	41	24	1033	16	63	0	11	21	0	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1068	0	24	1033	16	0	74	0	21	55	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.01	1.01	1.09	0.99	1.04	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2	2	1	2		2	2	
Detector Template	NYS	DOT	NYS	DOT	NYS	DOT	NYS	DOT	NYS	DOT	NYS	DOT
Leading Detector (ft)	78	78		78	78	78	20	78		78	78	
Trailing Detector (ft)	-10	-10		-10	-10	-10	0	-10		-10	-10	
Detector 1 Position(ft)	-10	-10		-10	-10	-10	0	-10		-10	-10	
Detector 1 Size(ft)	40	40		40	40	40	20	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	2.0		2.0	2.0	2.0	0.0	2.0		2.0	2.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	38	38		38	38	38		38		38	38	
Detector 2 Size(ft)	40	40		40	40	40		40		40	40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0	2.0		2.0	2.0	2.0		2.0		2.0	2.0	

Lanes, Volumes, Timings
 4: 5430 US 9W Driveway/Site Driveway A & US 9W

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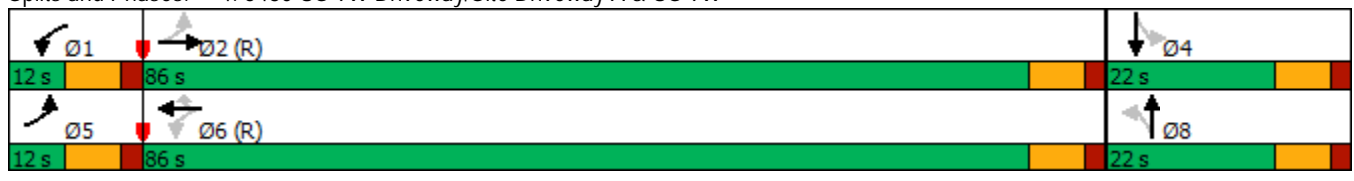


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6		6	8			4		
Detector Phase	5	2		1	6	6	8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	5.0		5.0		5.0
Minimum Split (s)	12.0	17.0		12.0	17.0	17.0	12.0	12.0		12.0		12.0
Total Split (s)	12.0	86.0		12.0	86.0	86.0	22.0	22.0		22.0		22.0
Total Split (%)	10.0%	71.7%		10.0%	71.7%	71.7%	18.3%	18.3%		18.3%		18.3%
Maximum Green (s)	5.0	79.0		5.0	79.0	79.0	15.0	15.0		15.0		15.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0		7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None		None
v/c Ratio	0.15	0.80		0.08	0.77	0.01		0.42		0.22		0.19
Control Delay	3.5	17.5		2.6	12.8	0.0		12.0		58.1		1.5
Queue Delay	0.0	0.8		0.0	0.1	0.0		0.0		0.0		0.0
Total Delay	3.5	18.4		2.6	12.9	0.0		12.0		58.1		1.5
Queue Length 50th (ft)	5	565		2	593	0		0		16		0
Queue Length 95th (ft)	13	#1034		m4	288	m0		28		42		0
Internal Link Dist (ft)		279			196			92				133
Turn Bay Length (ft)	100			100		115						
Base Capacity (vph)	304	1337		293	1338	1198		251		188		371
Starvation Cap Reductn	0	0		0	14	0		0		0		0
Spillback Cap Reductn	0	84		0	0	0		4		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.15	0.85		0.08	0.78	0.01		0.30		0.11		0.15

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 110 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: 5430 US 9W Driveway/Site Driveway A & US 9W



HCM 6th Signalized Intersection Summary
 4: 5430 US 9W Driveway/Site Driveway A & US 9W

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖		↕		↖	↗	
Traffic Volume (veh/h)	43	945	38	22	950	15	58	0	10	19	0	51
Future Volume (veh/h)	43	945	38	22	950	15	58	0	10	19	0	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1731	1731	1909	1804	1909	1870	1870	1870	1988	1988	1988
Adj Flow Rate, veh/h	47	1027	41	24	1033	16	63	0	11	21	0	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	11	11	2	9	2	2	2	2	2	2	2
Cap, veh/h	273	1167	47	223	1256	1126	132	5	14	220	0	162
Arrive On Green	0.03	0.71	0.71	0.02	0.70	0.70	0.10	0.00	0.10	0.10	0.00	0.10
Sat Flow, veh/h	1776	1653	66	1818	1804	1618	801	47	148	1492	0	1685
Grp Volume(v), veh/h	47	0	1068	24	1033	16	74	0	0	21	0	55
Grp Sat Flow(s),veh/h/ln	1776	0	1719	1818	1804	1618	996	0	0	1492	0	1685
Q Serve(g_s), s	0.9	0.0	57.8	0.5	48.9	0.4	5.9	0.0	0.0	0.0	0.0	3.7
Cycle Q Clear(g_c), s	0.9	0.0	57.8	0.5	48.9	0.4	9.5	0.0	0.0	1.4	0.0	3.7
Prop In Lane	1.00		0.04	1.00		1.00	0.85		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	273	0	1214	223	1256	1126	151	0	0	220	0	162
V/C Ratio(X)	0.17	0.00	0.88	0.11	0.82	0.01	0.49	0.00	0.00	0.10	0.00	0.34
Avail Cap(c_a), veh/h	289	0	1214	257	1256	1126	191	0	0	263	0	211
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.4	0.0	13.7	18.8	13.0	5.6	54.7	0.0	0.0	49.6	0.0	50.7
Incr Delay (d2), s/veh	0.3	0.0	9.3	0.2	6.2	0.0	2.4	0.0	0.0	0.2	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	19.5	0.3	17.0	0.1	2.3	0.0	0.0	0.6	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	0.0	23.0	19.0	19.1	5.6	57.1	0.0	0.0	49.8	0.0	51.9
LnGrp LOS	B	A	C	B	B	A	E	A	A	D	A	D
Approach Vol, veh/h		1115			1073			74				76
Approach Delay, s/veh		22.6			18.9			57.1				51.3
Approach LOS		C			B			E				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	91.7		18.5	11.0	90.5		18.5				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	5.0	79.0		15.0	5.0	79.0		15.0				
Max Q Clear Time (g_c+I1), s	2.5	59.8		5.7	2.9	50.9		11.5				
Green Ext Time (p_c), s	0.0	6.7		0.2	0.0	7.3		0.1				

Intersection Summary

HCM 6th Ctrl Delay	23.0
HCM 6th LOS	C

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

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03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	918	32	26	825	6	120	4	50	11	3	40
Future Volume (vph)	7	918	32	26	825	6	120	4	50	11	3	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	11	12	12
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		80
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	80			85			50			80		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999			0.860			0.860	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1703	1328	1585	1776	0	1832	1557	0	1484	1381	0
Flt Permitted	0.221			0.150			0.727			0.719		
Satd. Flow (perm)	418	1703	1328	250	1776	0	1402	1557	0	1123	1381	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100		1			54				43
Link Speed (mph)		55			55			30				30
Link Distance (ft)		250			260			201				325
Travel Time (s)		3.1			3.2			4.6				7.4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	11%	21%	15%	8%	0%	0%	0%	7%	17%	0%	19%
Adj. Flow (vph)	8	987	34	28	887	6	129	4	54	12	3	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	987	34	28	893	0	129	58	0	12	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	1.05	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	0	2	2		2	2		2	2	
Detector Template	NYSDOT	NYSDOT		NYSDOT	NYSDOT		NYSDOT	NYSDOT		NYSDOT	NYSDOT	
Leading Detector (ft)	78	78	0	78	78		78	78		78	78	
Trailing Detector (ft)	-10	-10	0	-10	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	0	-10	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	40	40	20	40	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	2.0	0.0	2.0	2.0		2.0	2.0		2.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	38	38		38	38		38	38		38	38	
Detector 2 Size(ft)	40	40		40	40		40	40		40	40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-BD-AM-IMP
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	25.0	25.0	12.0	17.0		25.0	25.0		25.0		25.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0		25.0	25.0		25.0		25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%		20.8%	20.8%		20.8%		20.8%
Maximum Green (s)	5.0	76.0	76.0	5.0	76.0		18.0	18.0		18.0		18.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0		7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None		None
Walk Time (s)		7.0	7.0				7.0	7.0		7.0		7.0
Flash Dont Walk (s)		11.0	11.0				11.0	11.0		11.0		11.0
Pedestrian Calls (#/hr)		2	2				0	0		0		0
v/c Ratio	0.02	0.83	0.04	0.12	0.68		0.75	0.24		0.09		0.22
Control Delay	1.0	10.9	0.1	5.2	13.2		75.3	15.8		46.1		17.3
Queue Delay	0.0	1.0	0.0	0.0	0.5		0.0	0.0		0.0		0.0
Total Delay	1.0	11.9	0.1	5.2	13.7		75.3	15.8		46.1		17.3
Queue Length 50th (ft)	0	256	0	5	293		97	3		8		2
Queue Length 95th (ft)	m1	#969	m0	13	671		163	42		27		37
Internal Link Dist (ft)		170			180			121				245
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	360	1190	958	242	1313		210	279		168		243
Starvation Cap Reductn	0	60	0	0	0		0	0		0		0
Spillback Cap Reductn	0	0	0	0	119		0	0		0		2
Storage Cap Reductn	0	0	0	0	0		0	0		0		0
Reduced v/c Ratio	0.02	0.87	0.04	0.12	0.75		0.61	0.21		0.07		0.19

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2025-BD-AM-IMP
03/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	7	918	32	26	825	6	120	4	50	11	3	40
Future Volume (veh/h)	7	918	32	26	825	6	120	4	50	11	3	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1731	1583	1754	1859	1859	2018	2018	2018	1642	1894	1894
Adj Flow Rate, veh/h	8	987	0	28	887	6	129	4	54	12	3	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	11	21	15	8	8	0	0	0	17	0	0
Cap, veh/h	327	1161		227	1265	9	212	15	208	177	14	196
Arrive On Green	0.01	0.67	0.00	0.03	0.69	0.69	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1804	1731	1341	1670	1844	12	1467	119	1609	1181	106	1516
Grp Volume(v), veh/h	8	987	0	28	0	893	129	0	58	12	0	46
Grp Sat Flow(s),veh/h/ln	1804	1731	1341	1670	0	1856	1467	0	1728	1181	0	1621
Q Serve(g_s), s	0.2	52.5	0.0	0.6	0.0	34.9	10.4	0.0	3.6	1.1	0.0	3.1
Cycle Q Clear(g_c), s	0.2	52.5	0.0	0.6	0.0	34.9	13.4	0.0	3.6	4.7	0.0	3.1
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.93	1.00		0.93
Lane Grp Cap(c), veh/h	327	1161		227	0	1273	212	0	223	177	0	210
V/C Ratio(X)	0.02	0.85		0.12	0.00	0.70	0.61	0.00	0.26	0.07	0.00	0.22
Avail Cap(c_a), veh/h	384	1161		254	0	1273	243	0	259	201	0	243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.8	15.2	0.0	17.8	0.0	11.4	52.8	0.0	47.1	49.2	0.0	46.8
Incr Delay (d2), s/veh	0.0	7.9	0.0	0.1	0.0	3.2	1.8	0.0	0.2	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	18.6	0.0	0.3	0.0	12.2	3.9	0.0	1.6	0.3	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.8	23.1	0.0	17.8	0.0	14.6	54.6	0.0	47.3	49.3	0.0	47.0
LnGrp LOS	B	C		B	A	B	D	A	D	D	A	D
Approach Vol, veh/h		995	A		921			187				58
Approach Delay, s/veh		23.0			14.7			52.3				47.5
Approach LOS		C			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	87.5		22.5	8.2	89.3		22.5				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	5.0	76.0		18.0	5.0	76.0		18.0				
Max Q Clear Time (g_c+I1), s	2.6	54.5		6.7	2.2	36.9		15.4				
Green Ext Time (p_c), s	0.0	3.3		0.1	0.0	2.9		0.1				

Intersection Summary

HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2025-BD-AM-IMP
03/23/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	9	936	27	21	832
Future Volume (vph)	15	9	936	27	21	832
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.948		0.996			
Flt Protected	0.970					0.999
Satd. Flow (prot)	1520	0	1732	0	0	1744
Flt Permitted	0.970					0.999
Satd. Flow (perm)	1520	0	1732	0	0	1744
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	11%	9%	37%	20%	8%
Adj. Flow (vph)	16	10	1006	29	23	895
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	1035	0	0	918
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	15	9	936	27	21	832
Future Vol, veh/h	15	9	936	27	21	832
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	13	11	9	37	20	8
Mvmt Flow	16	10	1006	29	23	895

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1962	1021	0	0	1035
Stage 1	1021	-	-	-	-
Stage 2	941	-	-	-	-
Critical Hdwy	6.13	6.11	-	-	4.3
Critical Hdwy Stg 1	5.13	-	-	-	-
Critical Hdwy Stg 2	5.13	-	-	-	-
Follow-up Hdwy	3.617	3.399	-	-	2.38
Pot Cap-1 Maneuver	81	292	-	-	607
Stage 1	372	-	-	-	-
Stage 2	403	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	75	292	-	-	607
Mov Cap-2 Maneuver	75	-	-	-	-
Stage 1	372	-	-	-	-
Stage 2	373	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	50.7	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	104	607
HCM Lane V/C Ratio	-	-	0.248	0.037
HCM Control Delay (s)	-	-	50.7	11.2
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	0.9	0.1

Lanes, Volumes, Timings
7: Morris Drive & Site Driveway B

2025-BD-AM-IMP

03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	9	11	7	46	1
Future Volume (vph)	1	9	11	7	46	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	11	11	12	12
Grade (%)	-5%			2%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.877				0.997	
Flt Protected	0.995			0.971		
Satd. Flow (prot)	1722	0	0	1745	1652	0
Flt Permitted	0.995			0.971		
Satd. Flow (perm)	1722	0	0	1745	1652	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	284			325	436	
Travel Time (s)	6.5			7.4	9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	19%	2%
Adj. Flow (vph)	1	10	12	8	50	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	20	51	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.93	0.93	1.06	1.06	0.96	0.96
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	9	11	7	46	1
Future Vol, veh/h	1	9	11	7	46	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	2	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	19	2
Mvmt Flow	1	10	12	8	50	1

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	83	51	51	0	0
Stage 1	51	-	-	-	-
Stage 2	32	-	-	-	-
Critical Hdwy	5.42	5.72	4.12	-	-
Critical Hdwy Stg 1	4.42	-	-	-	-
Critical Hdwy Stg 2	4.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	940	1024	1555	-	-
Stage 1	985	-	-	-	-
Stage 2	999	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	932	1024	1555	-	-
Mov Cap-2 Maneuver	932	-	-	-	-
Stage 1	977	-	-	-	-
Stage 2	999	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	4.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1555	-	1014	-	-
HCM Lane V/C Ratio	0.008	-	0.011	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-BD-PM-IMP
03/24/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	125	206	1210	963	0
Future Volume (vph)	21	125	206	1210	963	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884					
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1596	0	1787	1845	1705	0
Flt Permitted	0.993		0.126			
Satd. Flow (perm)	1596	0	237	1845	1705	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	128					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	10%	3%	1%	3%	4%	0%
Adj. Flow (vph)	21	128	210	1235	983	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	149	0	210	1235	983	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYSDOTNYS DOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

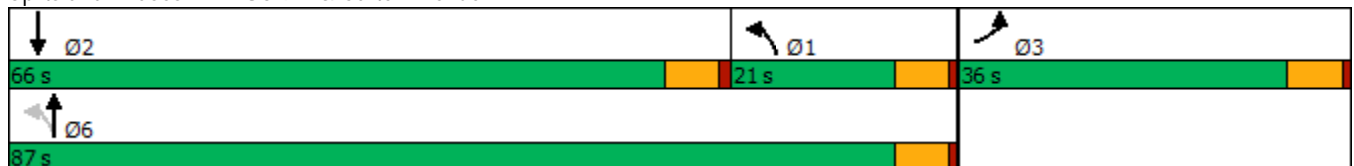


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.63		0.55	0.83	0.94	
Control Delay	23.8		20.8	13.1	35.4	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	23.8		20.8	13.1	35.4	
Queue Length 50th (ft)	12		20	314	481	
Queue Length 95th (ft)	73		91	769	#942	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	581		436	1536	1051	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.26		0.48	0.80	0.94	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 97.5
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
 1: US 9W & Carter Avenue

2025-BD-PM-IMP
 03/24/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	125	206	1210	963	0
Future Volume (veh/h)	21	125	206	1210	963	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1885	1856	1841	1841
Adj Flow Rate, veh/h	21	128	210	1235	983	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	1	3	4	4
Cap, veh/h	26	159	258	1340	1046	0
Arrive On Green	0.12	0.12	0.08	0.72	0.57	0.00
Sat Flow, veh/h	211	1284	1795	1856	1841	0
Grp Volume(v), veh/h	150	0	210	1235	983	0
Grp Sat Flow(s),veh/h/ln	1504	0	1795	1856	1841	0
Q Serve(g_s), s	7.6	0.0	3.6	43.0	38.5	0.0
Cycle Q Clear(g_c), s	7.6	0.0	3.6	43.0	38.5	0.0
Prop In Lane	0.14	0.85	1.00			0.00
Lane Grp Cap(c), veh/h	186	0	258	1340	1046	0
V/C Ratio(X)	0.81	0.00	0.81	0.92	0.94	0.00
Avail Cap(c_a), veh/h	580	0	466	1930	1418	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.2	0.0	33.6	9.0	15.6	0.0
Incr Delay (d2), s/veh	3.1	0.0	2.4	4.7	8.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	3.8	11.7	15.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.4	0.0	35.9	13.7	24.3	0.0
LnGrp LOS	D	A	D	B	C	A
Approach Vol, veh/h	150			1445	983	
Approach Delay, s/veh	36.4			16.9	24.3	
Approach LOS	D			B	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.0	50.3			62.2	15.6
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	5.6	40.5			45.0	9.6
Green Ext Time (p_c), s	0.4	3.8			6.7	0.4

Intersection Summary						
HCM 6th Ctrl Delay			20.9			
HCM 6th LOS			C			

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	19	32	78	1254	1084	41
Future Volume (vph)	19	32	78	1254	1084	41
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.914				0.995	
Flt Protected	0.982			0.997		
Satd. Flow (prot)	1589	0	0	1878	1784	0
Flt Permitted	0.982			0.997		
Satd. Flow (perm)	1589	0	0	1878	1784	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	10%	1%	3%	5%	3%
Adj. Flow (vph)	19	33	80	1280	1106	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	0	0	1360	1148	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	19	32	78	1254	1084	41
Future Vol, veh/h	19	32	78	1254	1084	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	10	1	3	5	3
Mvmt Flow	19	33	80	1280	1106	42

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2567	1127	1148	0	-	0
Stage 1	1127	-	-	-	-	-
Stage 2	1440	-	-	-	-	-
Critical Hdwy	5.4	5.8	4.11	-	-	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.209	-	-	-
Pot Cap-1 Maneuver	60	280	612	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	33	280	612	-	-	-
Mov Cap-2 Maneuver	33	-	-	-	-	-
Stage 1	234	-	-	-	-	-
Stage 2	329	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	127.8	0.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	612	-	74	-	-
HCM Lane V/C Ratio	0.13	-	0.703	-	-
HCM Control Delay (s)	11.8	0	127.8	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	3.3	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Traffic Volume (vph)	1260	6	3	1116	9	0
Future Volume (vph)	1260	6	3	1116	9	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.999					
Fl _t Protected					0.950	
Satd. Flow (prot)	1861	0	0	1792	1925	0
Fl _t Permitted					0.950	
Satd. Flow (perm)	1861	0	0	1792	1925	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			359	371	
Travel Time (s)	8.1			4.5	8.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	0%	0%	5%	0%	0%
Adj. Flow (vph)	1313	6	3	1163	9	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1319	0	0	1166	9	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			10	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1260	6	3	1116	9	0
Future Vol, veh/h	1260	6	3	1116	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	3	0	0	5	0	0
Mvmt Flow	1313	6	3	1163	9	0

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1319	0	2485	1316
Stage 1	-	-	-	-	1316	-
Stage 2	-	-	-	-	1169	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	531	-	33	195
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	298	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	531	-	32	195
Mov Cap-2 Maneuver	-	-	-	-	32	-
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	293	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	158.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	32	-	-	531	-
HCM Lane V/C Ratio	0.293	-	-	0.006	-
HCM Control Delay (s)	158.8	-	-	11.8	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	0.9	-	-	0	-

Lanes, Volumes, Timings
 4: 5430 US 9W Driveway/Site Driveway A & US 9W

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	1110	50	29	953	37	85	0	14	28	0	81
Future Volume (vph)	99	1110	50	29	953	37	85	0	14	28	0	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	12	11	12	12	12	12	12	12
Grade (%)		1%			-1%			0%				-3%
Storage Length (ft)	100		0	100		115	0		0	0		50
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	185			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994				0.850		0.981			0.850	
Flt Protected	0.950			0.950				0.959		0.950		
Satd. Flow (prot)	1643	1825	0	1660	1819	1538	0	1752	0	1796	1607	0
Flt Permitted	0.140			0.048				0.695		0.792		
Satd. Flow (perm)	242	1825	0	84	1819	1538	0	1270	0	1497	1607	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				100		100			199	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		359			275			193			203	
Travel Time (s)		4.5			3.4			4.4			4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	2%	2%	5%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	108	1207	54	32	1036	40	92	0	15	30	0	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	1261	0	32	1036	40	0	107	0	30	88	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.01	1.01	1.09	0.99	1.04	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2	2	1	2		2	2	
Detector Template	NYS DOT	NYS DOT		NYS DOT	NYS DOT	NYS DOT	Left	NYS DOT		NYS DOT	NYS DOT	
Leading Detector (ft)	78	78		78	78	78	20	78		78	78	
Trailing Detector (ft)	-10	-10		-10	-10	-10	0	-10		-10	-10	
Detector 1 Position(ft)	-10	-10		-10	-10	-10	0	-10		-10	-10	
Detector 1 Size(ft)	40	40		40	40	40	20	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	2.0		2.0	2.0	2.0	0.0	2.0		2.0	2.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	38	38		38	38	38		38		38	38	
Detector 2 Size(ft)	40	40		40	40	40		40		40	40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0	2.0		2.0	2.0	2.0		2.0		2.0	2.0	

Lanes, Volumes, Timings
 4: 5430 US 9W Driveway/Site Driveway A & US 9W

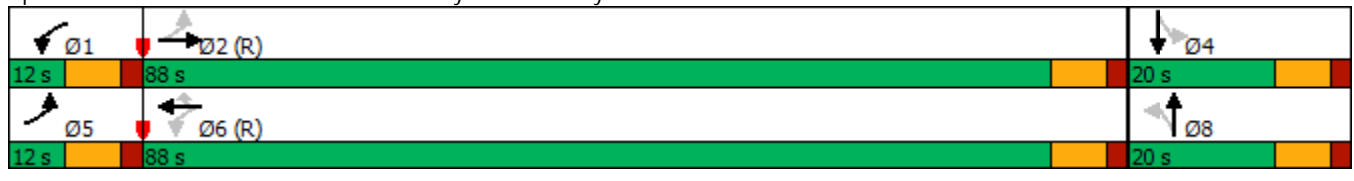


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6		6	8			4		
Detector Phase	5	2		1	6	6	8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	5.0		5.0		5.0
Minimum Split (s)	12.0	17.0		12.0	17.0	17.0	12.0	12.0		12.0		12.0
Total Split (s)	12.0	88.0		12.0	88.0	88.0	20.0	20.0		20.0		20.0
Total Split (%)	10.0%	73.3%		10.0%	73.3%	73.3%	16.7%	16.7%		16.7%		16.7%
Maximum Green (s)	5.0	81.0		5.0	81.0	81.0	13.0	13.0		13.0		13.0
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0		0.0
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0		7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None		None
v/c Ratio	0.41	0.92		0.23	0.81	0.04		0.58		0.28		0.29
Control Delay	7.6	27.6		8.8	14.5	0.1		24.9		58.1		2.5
Queue Delay	0.0	1.5		0.0	1.1	0.0		0.0		0.0		0.0
Total Delay	7.6	29.1		8.8	15.6	0.1		24.9		58.1		2.5
Queue Length 50th (ft)	13	822		3	635	0		5		23		0
Queue Length 95th (ft)	30	#1304		m7	251	m0		61		52		0
Internal Link Dist (ft)		279			195			113				123
Turn Bay Length (ft)	100			100		115						
Base Capacity (vph)	264	1366		137	1272	1105		226		162		351
Starvation Cap Reductn	0	0		0	82	0		0		0		0
Spillback Cap Reductn	0	33		0	0	0		1		0		0
Storage Cap Reductn	0	0		0	0	0		0		0		0
Reduced v/c Ratio	0.41	0.95		0.23	0.87	0.04		0.48		0.19		0.25

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 110 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: 5430 US 9W Driveway/Site Driveway A & US 9W



HCM 6th Signalized Intersection Summary
 4: 5430 US 9W Driveway/Site Driveway A & US 9W

2025-BD-PM-IMP

03/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	1110	50	29	953	37	85	0	14	28	0	81
Future Volume (veh/h)	99	1110	50	29	953	37	85	0	14	28	0	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1850	1850	1909	1864	1909	1870	1870	1870	1988	1988	1988
Adj Flow Rate, veh/h	108	1207	54	32	1036	40	92	0	15	30	0	88
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	2	5	2	2	2	2	2	2	2
Cap, veh/h	274	1211	54	113	1261	1094	124	4	12	245	0	183
Arrive On Green	0.04	0.69	0.69	0.03	0.68	0.68	0.11	0.00	0.11	0.11	0.00	0.11
Sat Flow, veh/h	1776	1757	79	1818	1864	1618	630	34	108	1486	0	1685
Grp Volume(v), veh/h	108	0	1261	32	1036	40	107	0	0	30	0	88
Grp Sat Flow(s),veh/h/ln	1776	0	1836	1818	1864	1618	773	0	0	1486	0	1685
Q Serve(g_s), s	2.2	0.0	81.8	0.6	48.6	1.0	7.1	0.0	0.0	0.0	0.0	5.9
Cycle Q Clear(g_c), s	2.2	0.0	81.8	0.6	48.6	1.0	13.0	0.0	0.0	1.9	0.0	5.9
Prop In Lane	1.00		0.04	1.00		1.00	0.86		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	274	0	1265	113	1261	1094	139	0	0	245	0	183
V/C Ratio(X)	0.39	0.00	1.00	0.28	0.82	0.04	0.77	0.00	0.00	0.12	0.00	0.48
Avail Cap(c_a), veh/h	276	0	1265	139	1261	1094	139	0	0	245	0	183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	0.0	18.5	32.8	14.2	6.5	56.9	0.0	0.0	48.6	0.0	50.3
Incr Delay (d2), s/veh	0.9	0.0	24.5	1.4	6.1	0.1	22.3	0.0	0.0	0.2	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	34.2	0.6	18.0	0.3	4.1	0.0	0.0	0.8	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	0.0	43.0	34.1	20.3	6.5	79.1	0.0	0.0	48.8	0.0	52.3
LnGrp LOS	B	A	D	C	C	A	E	A	A	D	A	D
Approach Vol, veh/h		1369			1108			107				118
Approach Delay, s/veh		41.1			20.2			79.1				51.4
Approach LOS		D			C			E				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	89.7		20.0	11.9	88.1		20.0				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	5.0	81.0		13.0	5.0	81.0		13.0				
Max Q Clear Time (g_c+I1), s	2.6	83.8		7.9	4.2	50.6		15.0				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	7.6		0.0				

Intersection Summary

HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	986	108	43	907	16	89	7	27	24	9	24
Future Volume (vph)	35	986	108	43	907	16	89	7	27	24	9	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	11	12	12
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		80
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	80			85			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.997			0.880			0.890	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1835	1591	1823	1824	0	1832	1499	0	1736	1683	0
Flt Permitted	0.186			0.141			0.735			0.734		
Satd. Flow (perm)	352	1835	1591	271	1824	0	1417	1499	0	1341	1683	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100		1			28			25	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		250			260			201			325	
Travel Time (s)		3.1			3.2			4.6			7.4	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	3%	1%	0%	5%	0%	0%	2%	16%	0%	0%	0%
Adj. Flow (vph)	36	1016	111	44	935	16	92	7	28	25	9	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	1016	111	44	951	0	92	35	0	25	34	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	1.05	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	0	2	2		2	2		2	2	
Detector Template	NYS DOT			NYS DOT								
Leading Detector (ft)	78	78	0	78	78		78	78		78	78	
Trailing Detector (ft)	-10	-10	0	-10	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	-10	-10	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	40	40	40	40	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	5.0	0.0	0.0	5.0	0.0		5.0	5.0		5.0	5.0	
Detector 2 Position(ft)	38	38		38	38		38	38		38	38	
Detector 2 Size(ft)	40	40		40	40		40	40		40	40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

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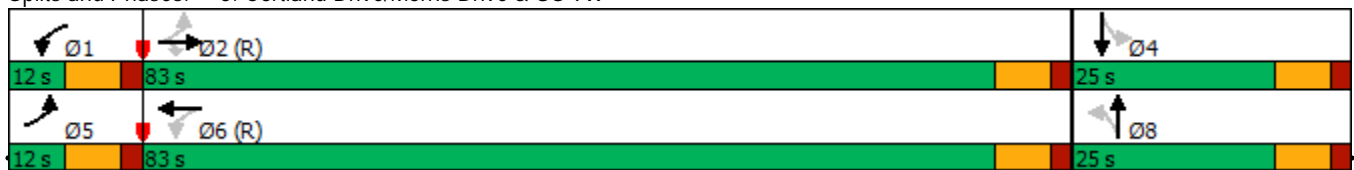


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	25.0	25.0	12.0	17.0		25.0	25.0		25.0		25.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0		25.0	25.0		25.0		25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%		20.8%	20.8%		20.8%		20.8%
Maximum Green (s)	5.0	76.0	76.0	5.0	76.0		18.0	18.0		18.0		18.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0		7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None		None
Walk Time (s)		7.0	7.0				7.0	7.0		7.0		7.0
Flash Dont Walk (s)		11.0	11.0				11.0	11.0		11.0		11.0
Pedestrian Calls (#/hr)		2	2				0	0		0		0
v/c Ratio	0.11	0.80	0.10	0.16	0.73		0.60	0.19		0.17		0.17
Control Delay	2.1	8.7	0.3	5.2	16.7		66.8	22.4		49.8		23.8
Queue Delay	0.0	2.7	0.0	0.0	0.7		0.0	0.0		0.0		0.0
Total Delay	2.1	11.3	0.3	5.2	17.4		66.8	22.4		49.8		23.8
Queue Length 50th (ft)	6	183	4	6	447		70	5		18		6
Queue Length 95th (ft)	m2	m142	m1	18	742		120	35		44		37
Internal Link Dist (ft)		170			180			121				245
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	317	1273	1134	267	1302		212	248		201		273
Starvation Cap Reductn	0	154	0	0	0		0	0		0		0
Spillback Cap Reductn	0	0	0	0	112		0	0		0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0		0
Reduced v/c Ratio	0.11	0.91	0.10	0.16	0.80		0.43	0.14		0.12		0.12

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



Peak Weekday PM Hour (4:30 - 5:30)
JMC 17088

HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2025-BD-PM-IMP
03/24/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	986	108	43	907	16	89	7	27	24	9	24
Future Volume (veh/h)	35	986	108	43	907	16	89	7	27	24	9	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1850	1879	1979	1904	1904	2018	1988	1988	1894	1894	1894
Adj Flow Rate, veh/h	36	1016	0	44	935	16	92	7	28	25	9	25
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	3	1	0	5	5	0	2	2	0	0	0
Cap, veh/h	350	1289		312	1305	22	175	33	134	168	43	118
Arrive On Green	0.03	0.70	0.00	0.03	0.70	0.70	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1804	1850	1593	1884	1866	32	1483	348	1390	1391	443	1230
Grp Volume(v), veh/h	36	1016	0	44	0	951	92	0	35	25	0	34
Grp Sat Flow(s),veh/h/ln	1804	1850	1593	1884	0	1898	1483	0	1738	1391	0	1673
Q Serve(g_s), s	0.7	44.4	0.0	0.8	0.0	36.2	7.3	0.0	2.2	2.0	0.0	2.3
Cycle Q Clear(g_c), s	0.7	44.4	0.0	0.8	0.0	36.2	9.6	0.0	2.2	4.3	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.80	1.00		0.74
Lane Grp Cap(c), veh/h	350	1289		312	0	1328	175	0	167	168	0	161
V/C Ratio(X)	0.10	0.79		0.14	0.00	0.72	0.53	0.00	0.21	0.15	0.00	0.21
Avail Cap(c_a), veh/h	373	1289		330	0	1328	255	0	261	243	0	251
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.3	12.2	0.0	13.4	0.0	10.9	54.4	0.0	50.0	52.0	0.0	50.0
Incr Delay (d2), s/veh	0.0	4.9	0.0	0.1	0.0	3.3	0.9	0.0	0.2	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	15.6	0.0	0.4	0.0	12.7	2.8	0.0	1.0	0.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	17.2	0.0	13.5	0.0	14.2	55.3	0.0	50.2	52.1	0.0	50.3
LnGrp LOS	B	B		B	A	B	E	A	D	D	A	D
Approach Vol, veh/h		1052	A		995			127				59
Approach Delay, s/veh		17.0			14.2			53.9				51.0
Approach LOS		B			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	90.6		18.6	10.5	91.0		18.6				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	5.0	76.0		18.0	5.0	76.0		18.0				
Max Q Clear Time (g_c+I1), s	2.8	46.4		6.3	2.7	38.2		11.6				
Green Ext Time (p_c), s	0.0	3.6		0.1	0.0	3.3		0.2				

Intersection Summary

HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2025-BD-PM-IMP

03/24/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	19	26	962	43	15	947
Future Volume (vph)	19	26	962	43	15	947
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.921		0.994			
Flt Protected	0.980					0.999
Satd. Flow (prot)	1459	0	1840	0	0	1794
Flt Permitted	0.980					0.999
Satd. Flow (perm)	1459	0	1840	0	0	1794
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	16%	3%	7%	21%	5%
Adj. Flow (vph)	20	28	1034	46	16	1018
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	1080	0	0	1034
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	19	26	962	43	15	947
Future Vol, veh/h	19	26	962	43	15	947
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	13	16	3	7	21	5
Mvmt Flow	20	28	1034	46	16	1018

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	2107	1057	0	0	1080	0
Stage 1	1057	-	-	-	-	-
Stage 2	1050	-	-	-	-	-
Critical Hdwy	6.13	6.16	-	-	4.31	-
Critical Hdwy Stg 1	5.13	-	-	-	-	-
Critical Hdwy Stg 2	5.13	-	-	-	-	-
Follow-up Hdwy	3.617	3.444	-	-	2.389	-
Pot Cap-1 Maneuver	66	272	-	-	579	-
Stage 1	358	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	62	272	-	-	579	-
Mov Cap-2 Maneuver	62	-	-	-	-	-
Stage 1	358	-	-	-	-	-
Stage 2	338	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	59.6	0	0.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	112	579
HCM Lane V/C Ratio	-	-	0.432	0.028
HCM Control Delay (s)	-	-	59.6	11.4
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	1.9	0.1

Lanes, Volumes, Timings
7: Morris Drive & Site Driveway B



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	27	21	38	29	3
Future Volume (vph)	1	27	21	38	29	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	11	11	12	12
Grade (%)	-5%			2%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.869				0.988	
Flt Protected	0.998			0.982		
Satd. Flow (prot)	1711	0	0	1773	1940	0
Flt Permitted	0.998			0.982		
Satd. Flow (perm)	1711	0	0	1773	1940	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	284			325	437	
Travel Time (s)	6.5			7.4	9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	2%
Adj. Flow (vph)	1	29	23	41	32	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	0	0	64	35	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.93	0.93	1.06	1.06	0.96	0.96
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	27	21	38	29	3
Future Vol, veh/h	1	27	21	38	29	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	2	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	0	2
Mvmt Flow	1	29	23	41	32	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	121	34	35	0	-	0
Stage 1	34	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	5.42	5.72	4.12	-	-	-
Critical Hdwy Stg 1	4.42	-	-	-	-	-
Critical Hdwy Stg 2	4.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	904	1044	1576	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	890	1044	1576	-	-	-
Mov Cap-2 Maneuver	890	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	959	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1576	-	1038	-	-
HCM Lane V/C Ratio	0.014	-	0.029	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-BD-SAT
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	143	135	909	900	2
Future Volume (vph)	15	143	135	909	900	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	10
Grade (%)	1%			0%	0%	
Storage Length (ft)	0	0	130			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		80			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.878					
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1652	0	1787	1863	1739	0
Flt Permitted	0.995		0.170			
Satd. Flow (perm)	1652	0	320	1863	1739	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	151					
Link Speed (mph)	30			40	40	
Link Distance (ft)	853			361	360	
Travel Time (s)	19.4			6.2	6.1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	2%	2%	0%
Adj. Flow (vph)	16	151	142	957	947	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	0	142	957	949	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	1.00	1.00	1.09	1.09
Turning Speed (mph)	15	9	15			9
Number of Detectors	2		2	2	2	
Detector Template			NYS DOTNYS DOT			
Leading Detector (ft)	78		78	78	78	
Trailing Detector (ft)	-10		-10	-10	-10	
Detector 1 Position(ft)	-10		-10	-10	-10	
Detector 1 Size(ft)	40		40	40	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	2.0		2.0	2.0	2.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	5.0		5.0	0.0	0.0	
Detector 2 Position(ft)	38		38	38	38	
Detector 2 Size(ft)	40		40	40	40	
Detector 2 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	2.0		2.0	2.0	2.0	

Lanes, Volumes, Timings
1: US 9W & Carter Avenue

2025-BD-SAT
03/23/2020

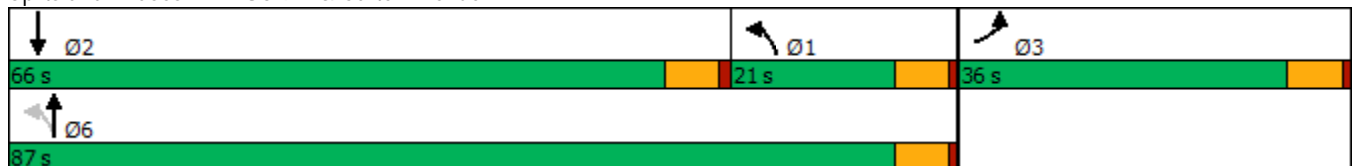


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	3		1	6	2	
Permitted Phases			6			
Detector Phase	3		1	6	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	10.0	10.0	
Minimum Split (s)	11.0		11.0	16.0	16.0	
Total Split (s)	36.0		21.0	87.0	66.0	
Total Split (%)	29.3%		17.1%	70.7%	53.7%	
Maximum Green (s)	30.0		15.0	81.0	60.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0	6.0	6.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	None		None	Min	Min	
v/c Ratio	0.63		0.38	0.65	0.85	
Control Delay	20.9		8.5	6.8	23.3	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	20.9		8.5	6.8	23.3	
Queue Length 50th (ft)	9		13	159	362	
Queue Length 95th (ft)	72		33	360	#846	
Internal Link Dist (ft)	773			281	280	
Turn Bay Length (ft)			130			
Base Capacity (vph)	636		516	1625	1123	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.26		0.28	0.59	0.85	

Intersection Summary

Area Type: Other
 Cycle Length: 123
 Actuated Cycle Length: 93.1
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 1: US 9W & Carter Avenue



HCM 6th Signalized Intersection Summary
1: US 9W & Carter Avenue

2025-BD-SAT
03/23/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	143	135	909	900	2
Future Volume (veh/h)	15	143	135	909	900	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1894	1894	1885	1870	1870	1870
Adj Flow Rate, veh/h	16	151	142	957	947	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	1	2	2	2
Cap, veh/h	20	191	258	1311	1020	2
Arrive On Green	0.13	0.13	0.07	0.70	0.55	0.55
Sat Flow, veh/h	155	1459	1795	1870	1866	4
Grp Volume(v), veh/h	168	0	142	957	0	949
Grp Sat Flow(s),veh/h/ln	1624	0	1795	1870	0	1870
Q Serve(g_s), s	7.2	0.0	0.0	22.3	0.0	33.3
Cycle Q Clear(g_c), s	7.2	0.0	0.0	22.3	0.0	33.3
Prop In Lane	0.10	0.90	1.00			0.00
Lane Grp Cap(c), veh/h	212	0	258	1311	0	1022
V/C Ratio(X)	0.79	0.00	0.55	0.73	0.00	0.93
Avail Cap(c_a), veh/h	683	0	509	2124	0	1573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.1	0.0	30.4	6.5	0.0	14.9
Incr Delay (d2), s/veh	2.5	0.0	0.7	0.3	0.0	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	2.2	5.2	0.0	12.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.6	0.0	31.1	6.8	0.0	20.2
LnGrp LOS	C	A	C	A	A	C
Approach Vol, veh/h	168			1099	949	
Approach Delay, s/veh	32.6			10.0	20.2	
Approach LOS	C			A	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.0	45.0			56.0	15.3
Change Period (Y+Rc), s	6.0	6.0			6.0	6.0
Max Green Setting (Gmax), s	15.0	60.0			81.0	30.0
Max Q Clear Time (g_c+I1), s	2.0	35.3			24.3	9.2
Green Ext Time (p_c), s	0.3	3.7			3.9	0.5

Intersection Summary

HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Lanes, Volumes, Timings
2: US 9W & Lattintown Road

2025-BD-SAT
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	43	40	953	940	34
Future Volume (vph)	29	43	40	953	940	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-5%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919				0.995	
Flt Protected	0.980			0.998		
Satd. Flow (prot)	1646	0	0	1895	1836	0
Flt Permitted	0.980			0.998		
Satd. Flow (perm)	1646	0	0	1895	1836	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	1022			2082	1333	
Travel Time (s)	23.2			35.5	22.7	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	5%	3%	2%	2%	0%
Adj. Flow (vph)	33	49	46	1095	1080	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	82	0	0	1141	1119	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.97	0.97	1.01	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	43	40	953	940	34
Future Vol, veh/h	29	43	40	953	940	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	-4	2	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	5	3	2	2	0
Mvmt Flow	33	49	46	1095	1080	39

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2287	1100	1119	0	-	0
Stage 1	1100	-	-	-	-	-
Stage 2	1187	-	-	-	-	-
Critical Hdwy	5.4	5.75	4.13	-	-	-
Critical Hdwy Stg 1	4.4	-	-	-	-	-
Critical Hdwy Stg 2	4.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.345	2.227	-	-	-
Pot Cap-1 Maneuver	83	297	620	-	-	-
Stage 1	437	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	67	297	620	-	-	-
Mov Cap-2 Maneuver	67	-	-	-	-	-
Stage 1	354	-	-	-	-	-
Stage 2	406	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	77.6	0.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	620	-	125	-	-
HCM Lane V/C Ratio	0.074	-	0.662	-	-
HCM Control Delay (s)	11.3	0	77.6	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	3.5	-	-

Lanes, Volumes, Timings
3: Oak Street & US 9W

2025-BD-SAT
03/23/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	967	15	2	960	14	2
Future Volume (vph)	967	15	2	960	14	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	14
Grade (%)	-2%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.985	
Flt Protected					0.957	
Satd. Flow (prot)	1878	0	0	1844	1910	0
Flt Permitted					0.957	
Satd. Flow (perm)	1878	0	0	1844	1910	0
Link Speed (mph)	55			55	30	
Link Distance (ft)	650			359	371	
Travel Time (s)	8.1			4.5	8.4	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Adj. Flow (vph)	1087	17	2	1079	16	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1104	0	0	1081	18	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			10	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.99	0.99	1.01	1.01	0.92	0.92
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	967	15	2	960	14	2
Future Vol, veh/h	967	15	2	960	14	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	2	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	1087	17	2	1079	16	2

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1104	0	2179
Stage 1	-	-	-	-	1096
Stage 2	-	-	-	-	1083
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	640	-	51
Stage 1	-	-	-	-	323
Stage 2	-	-	-	-	328
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	640	-	51
Mov Cap-2 Maneuver	-	-	-	-	51
Stage 1	-	-	-	-	323
Stage 2	-	-	-	-	325

Approach	EB	WB	NB
HCM Control Delay, s	0	0	94.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	57	-	-	640	-
HCM Lane V/C Ratio	0.315	-	-	0.004	-
HCM Control Delay (s)	94.9	-	-	10.6	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	1.1	-	-	0	-

Lanes, Volumes, Timings
 4: 5430 US 9W Driveway/Site Driveway A & US 9W

2025-BD-SAT
 03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	801	68	39	751	37	116	0	19	32	0	94
Future Volume (vph)	100	801	68	39	751	37	116	0	19	32	0	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	10	12	11	12	12	12	12	12	12
Grade (%)		1%			-1%			0%				-3%
Storage Length (ft)	100		0	100		115	0		0	0		50
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	185			105			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988				0.850		0.981			0.850	
Flt Protected	0.950			0.950				0.959		0.950		
Satd. Flow (prot)	1643	1831	0	1660	1872	1538	0	1752	0	1796	1607	0
Flt Permitted	0.242			0.193				0.686		0.803		
Satd. Flow (perm)	419	1831	0	337	1872	1538	0	1254	0	1518	1607	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				100		100			257	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		359			275			172			213	
Travel Time (s)		4.5			3.4			3.9			4.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	871	74	42	816	40	126	0	21	35	0	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	945	0	42	816	40	0	147	0	35	102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.10	1.01	1.01	1.09	0.99	1.04	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2		2	2	2	1	2		2	2	
Detector Template	NYS DOT	NYS DOT		NYS DOT	NYS DOT	NYS DOT	Left	NYS DOT		NYS DOT	NYS DOT	
Leading Detector (ft)	78	78		78	78	78	20	78		78	78	
Trailing Detector (ft)	-10	-10		-10	-10	-10	0	-10		-10	-10	
Detector 1 Position(ft)	-10	-10		-10	-10	-10	0	-10		-10	-10	
Detector 1 Size(ft)	40	40		40	40	40	20	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	2.0		2.0	2.0	2.0	0.0	2.0		2.0	2.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	38	38		38	38	38		38		38	38	
Detector 2 Size(ft)	40	40		40	40	40		40		40	40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0	2.0		2.0	2.0	2.0		2.0		2.0	2.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	

Lanes, Volumes, Timings
 4: 5430 US 9W Driveway/Site Driveway A & US 9W

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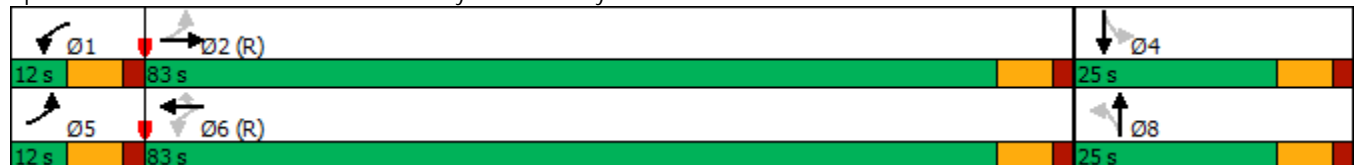


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	5	2		1	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	12.0	17.0		12.0	17.0	17.0	12.0	12.0		12.0	12.0	
Total Split (s)	12.0	83.0		12.0	83.0	83.0	25.0	25.0		25.0	25.0	
Total Split (%)	10.0%	69.2%		10.0%	69.2%	69.2%	20.8%	20.8%		20.8%	20.8%	
Maximum Green (s)	5.0	76.0		5.0	76.0	76.0	18.0	18.0		18.0	18.0	
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	
v/c Ratio	0.29	0.73		0.14	0.64	0.04		0.71		0.25	0.27	
Control Delay	5.5	17.0		3.4	11.1	0.1		37.6		52.6	1.7	
Queue Delay	0.0	0.0		0.0	0.2	0.0		0.0		0.0	0.0	
Total Delay	5.5	17.0		3.4	11.3	0.1		37.6		52.6	1.7	
Queue Length 50th (ft)	15	426		5	403	0		35		26	0	
Queue Length 95th (ft)	37	722		m10	134	m0		101		56	0	
Internal Link Dist (ft)		279			195			92			133	
Turn Bay Length (ft)	100			100		115						
Base Capacity (vph)	381	1293		309	1268	1074		273		227	459	
Starvation Cap Reductn	0	0		0	86	0		0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0		0	0	
Storage Cap Reductn	0	0		0	0	0		0		0	0	
Reduced v/c Ratio	0.29	0.73		0.14	0.69	0.04		0.54		0.15	0.22	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 110 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: 5430 US 9W Driveway/Site Driveway A & US 9W



HCM 6th Signalized Intersection Summary
 4: 5430 US 9W Driveway/Site Driveway A & US 9W

2025-BD-SAT
 03/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	801	68	39	751	37	116	0	19	32	0	94
Future Volume (veh/h)	100	801	68	39	751	37	116	0	19	32	0	94
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1864	1864	1864	1909	1909	1909	1870	1870	1870	1988	1988	1988
Adj Flow Rate, veh/h	109	871	74	42	816	40	126	0	21	35	0	102
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	365	1091	93	279	1211	1027	164	2	18	316	0	253
Arrive On Green	0.04	0.64	0.64	0.03	0.63	0.63	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1776	1695	144	1818	1909	1618	722	14	123	1478	0	1685
Grp Volume(v), veh/h	109	0	945	42	816	40	147	0	0	35	0	102
Grp Sat Flow(s),veh/h/ln	1776	0	1839	1818	1909	1618	859	0	0	1478	0	1685
Q Serve(g_s), s	2.6	0.0	45.2	0.9	32.7	1.1	11.4	0.0	0.0	0.0	0.0	6.6
Cycle Q Clear(g_c), s	2.6	0.0	45.2	0.9	32.7	1.1	18.0	0.0	0.0	2.1	0.0	6.6
Prop In Lane	1.00		0.08	1.00		1.00	0.86		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	365	0	1183	279	1211	1027	185	0	0	316	0	253
V/C Ratio(X)	0.30	0.00	0.80	0.15	0.67	0.04	0.80	0.00	0.00	0.11	0.00	0.40
Avail Cap(c_a), veh/h	366	0	1183	297	1211	1027	185	0	0	316	0	253
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.1	0.0	15.7	15.6	14.0	8.2	54.8	0.0	0.0	44.3	0.0	46.1
Incr Delay (d2), s/veh	0.5	0.0	5.7	0.2	3.0	0.1	21.1	0.0	0.0	0.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	17.2	0.4	12.7	0.4	5.6	0.0	0.0	0.9	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.6	0.0	21.4	15.8	17.0	8.3	75.9	0.0	0.0	44.4	0.0	47.2
LnGrp LOS	B	A	C	B	B	A	E	A	A	D	A	D
Approach Vol, veh/h		1054			898			147				137
Approach Delay, s/veh		20.4			16.6			75.9				46.5
Approach LOS		C			B			E				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.8	84.2		25.0	11.9	83.1		25.0				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	5.0	76.0		18.0	5.0	76.0		18.0				
Max Q Clear Time (g_c+I1), s	2.9	47.2		8.6	4.6	34.7		20.0				
Green Ext Time (p_c), s	0.0	6.1		0.4	0.0	5.1		0.0				

Intersection Summary

HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-BD-SAT
03/23/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	718	83	32	703	16	102	10	23	24	8	21
Future Volume (vph)	19	718	83	32	703	16	102	10	23	24	8	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	11	12	12
Grade (%)		1%			-2%			-3%			1%	
Storage Length (ft)	75		40	100		0	80		0	0		80
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	80			85			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.997			0.896			0.892	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1796	1853	1607	1823	1877	0	1832	1728	0	1736	1686	0
Flt Permitted	0.271			0.259			0.736			0.734		
Satd. Flow (perm)	512	1853	1607	497	1877	0	1419	1728	0	1341	1686	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			100		2			25				23
Link Speed (mph)		55			55			30				30
Link Distance (ft)		250			260			201				325
Travel Time (s)		3.1			3.2			4.6				7.4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	21	789	91	35	773	18	112	11	25	26	9	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	789	91	35	791	0	112	36	0	26	32	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	0.98	0.98	0.98	1.05	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2	0	2	2		2	2		2	2	
Detector Template	NYS DOT			NYS DOT								
Leading Detector (ft)	78	78	0	78	78		78	78		78	78	
Trailing Detector (ft)	-10	-10	0	-10	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	0	-10	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	40	40	20	40	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	2.0	2.0	0.0	2.0	2.0		2.0	2.0		2.0	2.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	5.0	0.0	0.0	5.0	0.0		5.0	5.0		5.0	5.0	
Detector 2 Position(ft)	38	38		38	38		38	38		38	38	
Detector 2 Size(ft)	40	40		40	40		40	40		40	40	
Detector 2 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	

Lanes, Volumes, Timings
5: Cortland Drive/Morris Drive & US 9W

2025-BD-SAT
03/23/2020

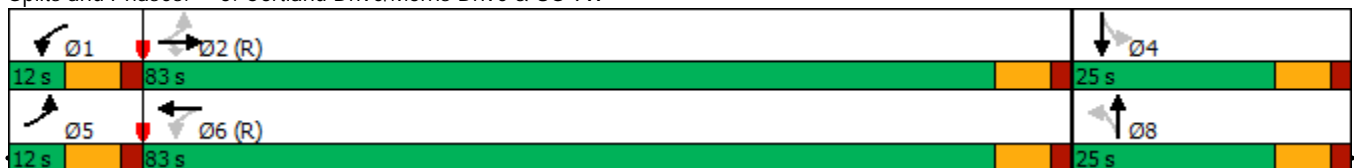


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2		2	6			8			4		
Detector Phase	5	2	2	1	6		8	8		4		4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	12.0	25.0	25.0	12.0	17.0		25.0	25.0		25.0		25.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0		25.0	25.0		25.0		25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%		20.8%	20.8%		20.8%		20.8%
Maximum Green (s)	5.0	76.0	76.0	5.0	76.0		18.0	18.0		18.0		18.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0		5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0		7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0		2.0
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None		None
Walk Time (s)		7.0	7.0				7.0	7.0		7.0		7.0
Flash Dont Walk (s)		11.0	11.0				11.0	11.0		11.0		11.0
Pedestrian Calls (#/hr)		2	2				0	0		0		0
v/c Ratio	0.05	0.61	0.08	0.08	0.58		0.66	0.16		0.16		0.14
Control Delay	3.6	6.4	0.6	4.7	12.1		68.0	23.3		47.7		23.1
Queue Delay	0.0	0.4	0.0	0.0	0.1		0.0	0.0		0.0		0.0
Total Delay	3.6	6.7	0.6	4.7	12.2		68.0	23.3		47.7		23.1
Queue Length 50th (ft)	2	81	0	5	209		84	8		18		6
Queue Length 95th (ft)	m4	140	m3	16	531		140	38		45		35
Internal Link Dist (ft)		170			180			121				245
Turn Bay Length (ft)	75		40	100			80					
Base Capacity (vph)	427	1307	1163	427	1364		217	286		206		278
Starvation Cap Reductn	0	148	0	0	0		0	0		0		0
Spillback Cap Reductn	0	0	0	0	43		0	0		0		0
Storage Cap Reductn	0	0	0	0	0		0	0		0		0
Reduced v/c Ratio	0.05	0.68	0.08	0.08	0.60		0.52	0.13		0.13		0.12

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green, Master Intersection
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Cortland Drive/Morris Drive & US 9W



Peak Saturday Midday Hour (12:15 - 1:15)
JMC 17088

HCM 6th Signalized Intersection Summary
5: Cortland Drive/Morris Drive & US 9W

2025-BD-SAT
03/23/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	718	83	32	703	16	102	10	23	24	8	21
Future Volume (veh/h)	19	718	83	32	703	16	102	10	23	24	8	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1894	1864	1894	1979	1949	1949	2018	2018	2018	1894	1894	1894
Adj Flow Rate, veh/h	21	789	0	35	773	18	112	11	25	26	9	23
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	2	0	0	2	2	0	0	0	0	0	0
Cap, veh/h	435	1282		447	1319	31	196	60	135	186	51	131
Arrive On Green	0.02	0.69	0.00	0.03	0.70	0.70	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1804	1864	1605	1884	1897	44	1486	548	1246	1390	472	1205
Grp Volume(v), veh/h	21	789	0	35	0	791	112	0	36	26	0	32
Grp Sat Flow(s),veh/h/ln	1804	1864	1605	1884	0	1941	1486	0	1794	1390	0	1677
Q Serve(g_s), s	0.4	27.5	0.0	0.6	0.0	25.1	8.9	0.0	2.2	2.1	0.0	2.1
Cycle Q Clear(g_c), s	0.4	27.5	0.0	0.6	0.0	25.1	11.0	0.0	2.2	4.3	0.0	2.1
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.69	1.00		0.72
Lane Grp Cap(c), veh/h	435	1282		447	0	1350	196	0	195	186	0	182
V/C Ratio(X)	0.05	0.62		0.08	0.00	0.59	0.57	0.00	0.18	0.14	0.00	0.18
Avail Cap(c_a), veh/h	472	1282		472	0	1350	257	0	269	243	0	252
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.7	10.1	0.0	8.2	0.0	9.4	53.6	0.0	48.7	50.6	0.0	48.6
Incr Delay (d2), s/veh	0.0	2.2	0.0	0.0	0.0	1.9	1.0	0.0	0.2	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	9.6	0.0	0.2	0.0	8.9	3.4	0.0	1.0	0.7	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.7	12.4	0.0	8.3	0.0	11.3	54.6	0.0	48.8	50.7	0.0	48.8
LnGrp LOS	A	B		A	A	B	D	A	D	D	A	D
Approach Vol, veh/h		810	A		826			148				58
Approach Delay, s/veh		12.2			11.1			53.2				49.6
Approach LOS		B			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	89.5		20.0	9.5	90.5		20.0				
Change Period (Y+Rc), s	7.0	7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s	5.0	76.0		18.0	5.0	76.0		18.0				
Max Q Clear Time (g_c+I1), s	2.6	29.5		6.3	2.4	27.1		13.0				
Green Ext Time (p_c), s	0.0	2.4		0.1	0.0	2.4		0.2				

Intersection Summary

HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
6: US 9W & Old Post Road

2025-BD-SAT
03/23/2020



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	29	9	691	38	8	719
Future Volume (vph)	29	9	691	38	8	719
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12
Grade (%)	-2%		-1%			1%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.969		0.993			
Flt Protected	0.963					0.999
Satd. Flow (prot)	1688	0	1856	0	0	1852
Flt Permitted	0.963					0.999
Satd. Flow (perm)	1688	0	1856	0	0	1852
Link Speed (mph)	30		55			55
Link Distance (ft)	946		1025			1655
Travel Time (s)	21.5		12.7			20.5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	11%	2%	5%	0%	2%
Adj. Flow (vph)	33	10	776	43	9	808
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	819	0	0	817
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.03	1.03	0.99	0.99	1.01	1.01
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	9	691	38	8	719
Future Vol, veh/h	29	9	691	38	8	719
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-2	-	-1	-	-	1
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	11	2	5	0	2
Mvmt Flow	33	10	776	43	9	808

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1624	798	0	0	819
Stage 1	798	-	-	-	-
Stage 2	826	-	-	-	-
Critical Hdwy	6	6.11	-	-	4.1
Critical Hdwy Stg 1	5	-	-	-	-
Critical Hdwy Stg 2	5	-	-	-	-
Follow-up Hdwy	3.5	3.399	-	-	2.2
Pot Cap-1 Maneuver	137	389	-	-	818
Stage 1	488	-	-	-	-
Stage 2	475	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	134	389	-	-	818
Mov Cap-2 Maneuver	134	-	-	-	-
Stage 1	488	-	-	-	-
Stage 2	466	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	35.8	0	0.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	159	818
HCM Lane V/C Ratio	-	-	0.269	0.011
HCM Control Delay (s)	-	-	35.8	9.4
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	1	0

Lanes, Volumes, Timings
7: Morris Drive & Site Driveway B

2025-BD-SAT
03/23/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	31	23	21	22	3
Future Volume (vph)	1	31	23	21	22	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	13	13	11	11	12	12
Grade (%)	-5%			2%	-7%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.869				0.985	
Flt Protected	0.999			0.975		
Satd. Flow (prot)	1713	0	0	1755	1933	0
Flt Permitted	0.999			0.975		
Satd. Flow (perm)	1713	0	0	1755	1933	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	277			325	436	
Travel Time (s)	6.3			7.4	9.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	2%
Adj. Flow (vph)	1	34	25	23	24	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	0	0	48	27	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	13			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.93	0.93	1.06	1.06	0.96	0.96
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	31	23	21	22	3
Future Vol, veh/h	1	31	23	21	22	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-5	-	-	2	-7	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	0	2
Mvmt Flow	1	34	25	23	24	3

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	99	26	27	0	0
Stage 1	26	-	-	-	-
Stage 2	73	-	-	-	-
Critical Hdwy	5.42	5.72	4.12	-	-
Critical Hdwy Stg 1	4.42	-	-	-	-
Critical Hdwy Stg 2	4.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	925	1054	1587	-	-
Stage 1	1004	-	-	-	-
Stage 2	969	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	910	1054	1587	-	-
Mov Cap-2 Maneuver	910	-	-	-	-
Stage 1	988	-	-	-	-
Stage 2	969	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	3.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1587	-	1049	-	-
HCM Lane V/C Ratio	0.016	-	0.033	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

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

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

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

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Hudson Place		
Project Location (describe, and attach a general location map): 5417 Route 9W Newburgh, NY [Sec. 09, Block 01, Lots 10, 11, 12, 56.21 and 56.22]		
Brief Description of Proposed Action (include purpose or need): The proposed action is comprised of three components: Residential Development consisting of eleven (11) twelve(12) unit buildings, one (1) eleven (11) unit building and three (3) twenty (20) unit buildings for a total of fifteen (15) buildings with two hundred and three (203) units. The residential portion of the site will include recreation area for the development with a clubhouse, pool, tennis courts and dog park. There will also be a main driveway and associated parking for the units. 25,000 sf retail building with associated parking, as well as a private sewage treatment facility which will serve the site and nearby off-site properties/developments.		
Name of Applicant/Sponsor: Farrell Building Company		Telephone: (631) 537-1068 E-Mail: zags1413@gmail.com
Address: 2317 Montauk Highway		
City/PO: Bridgehampton	State: NY	Zip Code: 11932
Project Contact (if not same as sponsor; give name and title/role): Mr. Stephen Zagoren		Telephone: (631) 537-1068 E-Mail: zags1413@gmail.com
Address:		
City/PO: Armonk	State:	Zip Code:
Property Owner (if not same as sponsor): See attachment		Telephone: E-Mail:
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. (“Funding” includes grants, loans, tax relief, and any other forms of financial assistance.)		
Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No or Village Board of Trustees		
b. City, Town or Village Planning Board or Commission <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Town Planning Board: Site Plan Approval	10/23/2019
c. City, Town or Village Zoning Board of Appeals <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
d. Other local agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Building Department: Building Permit, Sewer Main Extension	TBD
e. County agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Health Department: Water Main Extension	TBD
f. Regional agencies <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
g. State agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	NYSDEC: SPDES General Permits	TBD
h. Federal agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	ACOE Wetland Permitted, FEMA CLOMR	TBD
i. Coastal Resources.		
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
iii. Is the project site within a Coastal Erosion Hazard Area?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

C. Planning and Zoning

C.1. Planning and zoning actions.	
Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> • If Yes, complete sections C, F and G. • If No, proceed to question C.2 and complete all remaining sections and questions in Part 1 	
C.2. Adopted land use plans.	
a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located?	<input type="checkbox"/> Yes <input type="checkbox"/> No
b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes, identify the plan(s):	

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes, identify the plan(s):	

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. Yes No
If Yes, what is the zoning classification(s) including any applicable overlay district?

R-3 - Residence District and B - Business District

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

c. Is a zoning change requested as part of the proposed action? Yes No
If Yes,

i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

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

b. What police or other public protection forces serve the project site?

Town of Newburgh Police Department

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

Middle Hope Fire Department

d. What parks serve the project site?

Cronomer Hill County Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Residential, commercial (retail), and private sewage treatment facility

b. a. Total acreage of the site of the proposed action? 32.71 acres

b. Total acreage to be physically disturbed? 28 acres

c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 32.71 acres

c. Is the proposed action an expansion of an existing project or use? Yes No

i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? Yes No

If Yes,

i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
Residential, commercial (retail), and sanitary treatment facility.

ii. Is a cluster/conservation layout proposed? Yes No

iii. Number of lots proposed? 1

iv. Minimum and maximum proposed lot sizes? Minimum 32.71 acres Maximum 32.71 acres

e. Will the proposed action be constructed in multiple phases? Yes No

i. If No, anticipated period of construction: _____ months

ii. If Yes:

- Total number of phases anticipated 2
- Anticipated commencement date of phase 1 (including demolition) 06 month 2021 year
- Anticipated completion date of final phase 06 month 2022 year

• Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

The residential development and private sewage treatment facility will be the first phase and the retail building and area will be the second phase.

f. Does the project include new residential uses? Yes No
 If Yes, show numbers of units proposed.

	<u>One Family</u>	<u>Two Family</u>	<u>Three Family</u>	<u>Multiple Family (four or more)</u>
Initial Phase	_____	_____	_____	203
At completion of all phases	_____	_____	_____	203

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

i. Total number of structures 3

ii. Dimensions (in feet) of largest proposed structure: 30 height; 185 width; and 135 length

iii. Approximate extent of building space to be heated or cooled: 25,000 square feet

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

i. Purpose of the impoundment: Stormwater Basins/Stormwater Management Practices and Floodplain volume storage

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

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

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

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

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): Earthwork, rip-rap stone, and outlet control structures/concrete

D.2. Project Operations

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

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

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

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

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

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

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

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

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

viii. Will the excavation require blasting? Yes No

ix. Summarize site reclamation goals and plan: _____

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

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): Fresh Water Pond: PUBHh
Riverines/Streams: R5UBH and R4SBC, wetland

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres: Some areas will have a stream relocated and/or piped to existing outlet locations. Ponds will be maintained as features for residential development. Wetland disturbance amounting to 0.3 acres.

iii. Will the proposed action cause or result in disturbance to bottom sediments? Yes No
 If Yes, describe: Earthwork within and around streams, wetland and man made pond

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

- acres of aquatic vegetation proposed to be removed: TBD
- expected acreage of aquatic vegetation remaining after project completion: TBD
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): Modification of existing man made irrigation pond and earthwork for residential development
- proposed method of plant removal: Excavation
- if chemical/herbicide treatment will be used, specify product(s): -

v. Describe any proposed reclamation/mitigation following disturbance: Recreation of stream bed in some areas. Disturbed areas will be vegetated (or seeded) with erosion control vegetation/grass.

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

i. Total anticipated water usage/demand per day: ±32,040 gallons/day

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

- Name of district or service area: Newburgh Water Department
- Does the existing public water supply have capacity to serve the proposal? Yes No
- Is the project site in the existing district? Yes No
- Is expansion of the district needed? Yes No
- Do existing lines serve the project site? Yes No

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

- Describe extensions or capacity expansions proposed to serve this project: Water supply will be extended to the proposed building locations on site (approximately 18 buildings).
- Source(s) of supply for the district: Lake Washington, Catskill Aqueduct, Brown's Pond

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

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

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

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

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

i. Total anticipated liquid waste generation per day: ±32,040 gallons/day

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

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

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

• Do existing sewer lines serve the project site? Yes No
 • Will a 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: Farrell Building Company
 • Date application submitted or anticipated: TBD
 • What is the receiving water for the wastewater discharge? On-Site Stream: R4SBC

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):
Proposed private sewage treatment facility to be designed and constructed

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

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 11.85 acres (impervious surface)
 _____ Square feet or 32.74 acres (parcel size)
 ii. Describe types of new point sources. Curbs, swales, retaining walls, and pipes.

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 practices and on-site surface waters.

• If to surface waters, identify receiving water bodies or wetlands: _____
Freshwater man made ponds (PUBHh).

• Will stormwater runoff flow to adjacent properties? Yes No

iv. Does the 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 (CO₂)
 • _____ Tons/year (short tons) of Nitrous Oxide (N₂O)
 • _____ Tons/year (short tons) of Perfluorocarbons (PFCs)
 • _____ Tons/year (short tons) of Sulfur Hexafluoride (SF₆)
 • _____ Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflouorocarbons (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): TBD

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

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 truck trips/day and type (e.g., semi trailers and dump trucks): _____
 Two semi-trailers per day

iii. Parking spaces: Existing 25 Proposed 573 Net increase/decrease +548

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

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:
New access driveway will be created, including re-striping and modification to Route 9W.

vi. Are public/private transportation service(s) or facilities available within 1/2 mile of the proposed site? Yes No

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

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

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

If Yes:

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

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

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

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

i. During Construction:		ii. During Operations:	
• Monday - Friday:	<u>7 AM - 7 PM</u>	• Monday - Friday:	<u>24/7</u>
• Saturday:	<u>9 AM - 5 PM</u>	• Saturday:	<u>24/7</u>
• Sunday:	<u>None</u>	• Sunday:	<u>24/7</u>
• Holidays:	<u>None</u>	• Holidays:	<u>24/7</u>

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

If yes:

i. Provide details including sources, time of day and duration:
Construction equipment during temporary construction process, during permitted construction hours.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? Yes No
Describe: _____

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

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:
Building security lighting and lighting along proposed roadways. Fixtures will be high efficiency LED down lighting.

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

o. Does the proposed action have the potential to produce odors for more than one hour per day? Yes No
If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

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

If Yes:

i. Product(s) to be stored _____

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

iii. Generally, describe the proposed storage facilities: _____

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

If Yes:

i. Describe proposed treatment(s):
Typical landscape treatment as required to maintain the lawns and plant materials.

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

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

If Yes:

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

- Construction: _____ TBD tons per _____ (unit of time)
- Operation : _____ ±10-15 (retail) tons per _____ month (unit of time)

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

- Construction: Debris recycling will be in accordance with all applicable local requirements.
- Operation: Recycling will be in accordance with applicable County requirements.

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

- Construction: Private hauler
- Operation: Private hauler

s. Does the proposed action include construction or modification of a solid waste management facility? Yes No
 If Yes:
 i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____
 ii. Anticipated rate of disposal/processing:
 • _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
 • _____ Tons/hour, if combustion or thermal treatment
 iii. If landfill, anticipated site life: _____ years

t. Will the 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): _____
 ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	1.85	12.52	+10.67
• Forested	3.30	0.41	-2.89
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0	0	0
• Agricultural (includes active orchards, field, greenhouse etc.)	25.27	0	-25.27
• Surface water features (lakes, ponds, streams, rivers, etc.)	1.71	1.52	-0.19
• Wetlands (freshwater or tidal)	0.58	0.28	-0.30
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: <u>Landscaping</u>	0	17.98	+17.98

c. Is the project site presently used by members of the community for public recreation? Yes No
 i. If Yes: explain: _____

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

e. Does the project site contain an existing dam? Yes No
 If Yes:
 i. Dimensions of the dam and impoundment:
 • Dam height: _____ feet
 • Dam length: _____ feet
 • Surface area: _____ acres
 • Volume impounded: _____ gallons OR acre-feet
 ii. Dam's existing hazard classification: _____
 iii. Provide date and summarize results of last inspection: _____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? Yes No
 If Yes:
 i. Has the facility been formally closed? Yes No
 • If yes, cite sources/documentation: _____
 ii. Describe the location of the project site relative to the boundaries of the solid waste management facility: _____

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

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? Yes No
 If Yes:
 i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred: _____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? Yes No
 If Yes:
 i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: Yes No
 Yes – Spills Incidents database Provide DEC ID number(s): _____
 Yes – Environmental Site Remediation database Provide DEC ID number(s): _____
 Neither database
 ii. If site has been subject of RCRA corrective activities, describe control measures: _____

 iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? Yes No
 If yes, provide DEC ID number(s): _____
 iv. If yes to (i), (ii) or (iii) above, describe current status of site(s): _____

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

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- 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? _____ 0-5 feet

b. Are there bedrock outcroppings on the project site? Yes No
 If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ 1 %

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

BnB (C/D)	36.78 %
BnC (C/D)	36.40 %
UH (A)	13.05 %

d. What is the average depth to the water table on the project site? Average: _____ 4 feet

e. Drainage status of project site soils: Well Drained: _____ 86.23 % of site
 Moderately Well Drained: _____ 0 % of site
 Poorly Drained _____ 13.77 % of site

f. Approximate proportion of proposed action site with slopes: 0-10%: _____ 40.61 % of site
 10-15%: _____ 19.65 % of site
 15% or greater: _____ 39.74 % 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 862-374 Classification C
- Lakes or Ponds: Name Man made Classification N/A
- Wetlands: Name Federal Wetland Approximate Size 0.58 acre
- Wetland No. (if regulated by DEC) N/A

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? Yes No
 If yes, name of impaired water body/bodies and basis for listing as impaired: _____

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

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

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

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? Yes No
 If Yes:
 i. Name of aquifer: _____

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

n. Does the project site contain a designated significant natural community? Yes No
 If Yes:
 i. Describe the habitat/community (composition, function, and basis for designation): _____

 ii. Source(s) of description or evaluation: _____
 iii. Extent of community/habitat:
 • Currently: _____ acres
 • Following completion of project as proposed: _____ acres
 • Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? Yes No
 If Yes:
 i. Species and listing (endangered or threatened): _____

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? Yes No
 If Yes:
 i. Species and listing: _____

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: ORAN001

b. Are agricultural lands consisting of highly productive soils present? Yes No
 i. If Yes: acreage(s) on project site? 10
 ii. Source(s) of soil rating(s): agriculture.ny.gov and USDA NRCS Web Soil Survey

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 the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? Yes No

If Yes:

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

ii. Name: _____

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

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

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

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

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

If Yes:

i. Identify resource: _____

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

iii. Distance between project and resource: _____ miles.

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

If Yes:

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

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

F. Additional Information

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

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

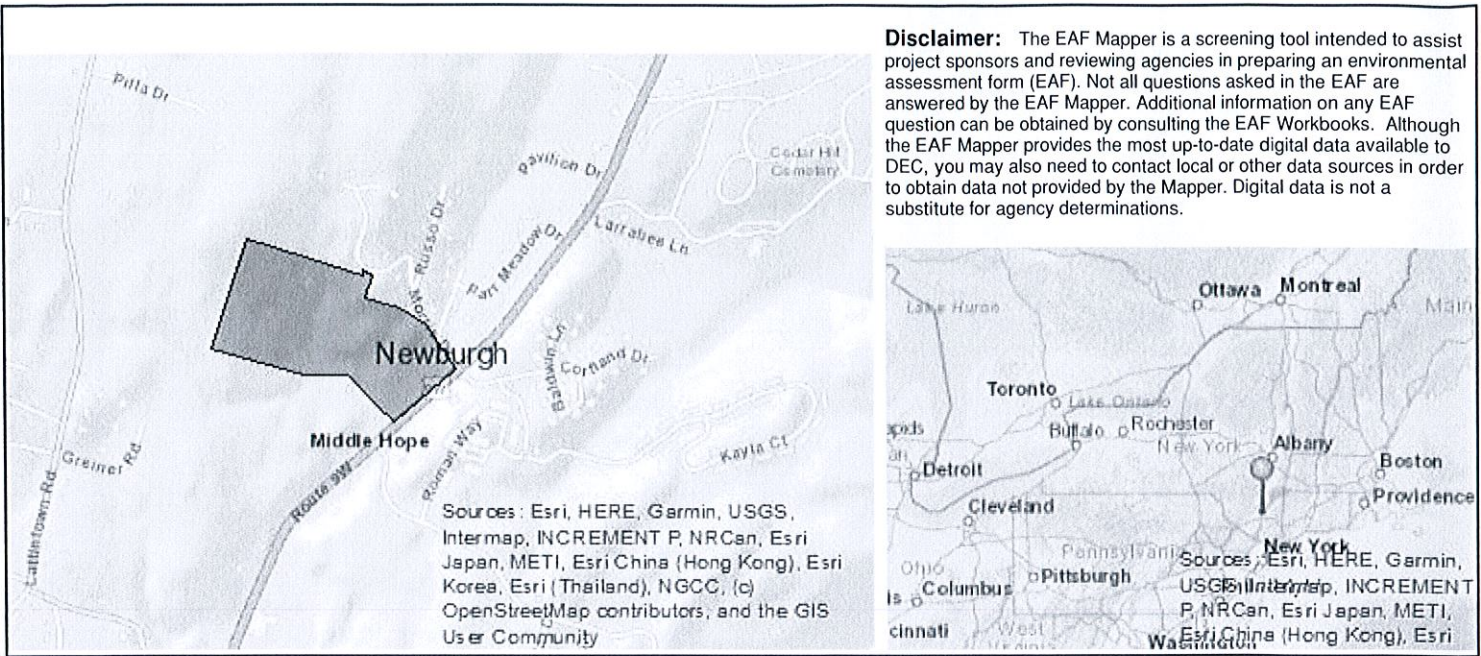
G. Verification

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

Applicant/Sponsor Name JMC PLLC, Agent Date 10/23/2019, revised 12/09/2020

Signature  Title Associate Principal

PRINT FORM



B.i.i [Coastal or Waterfront Area]	Yes
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]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	862-374
E.2.h.iv [Surface Water Features - Stream Classification]	C
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	Yes
E.2.k. [500 Year Floodplain]	No

E.2.i. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes No, based on site specific evaluation by Ecological Solutions, LLC.
E.2.o. [Endangered or Threatened Species - Name]	Indiana Bat
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	ORAN001
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	No
E.3.i. [Designated River Corridor]	No

PRELIMINARY SITE PLAN APPROVAL DRAWINGS

HUDSON PLACE

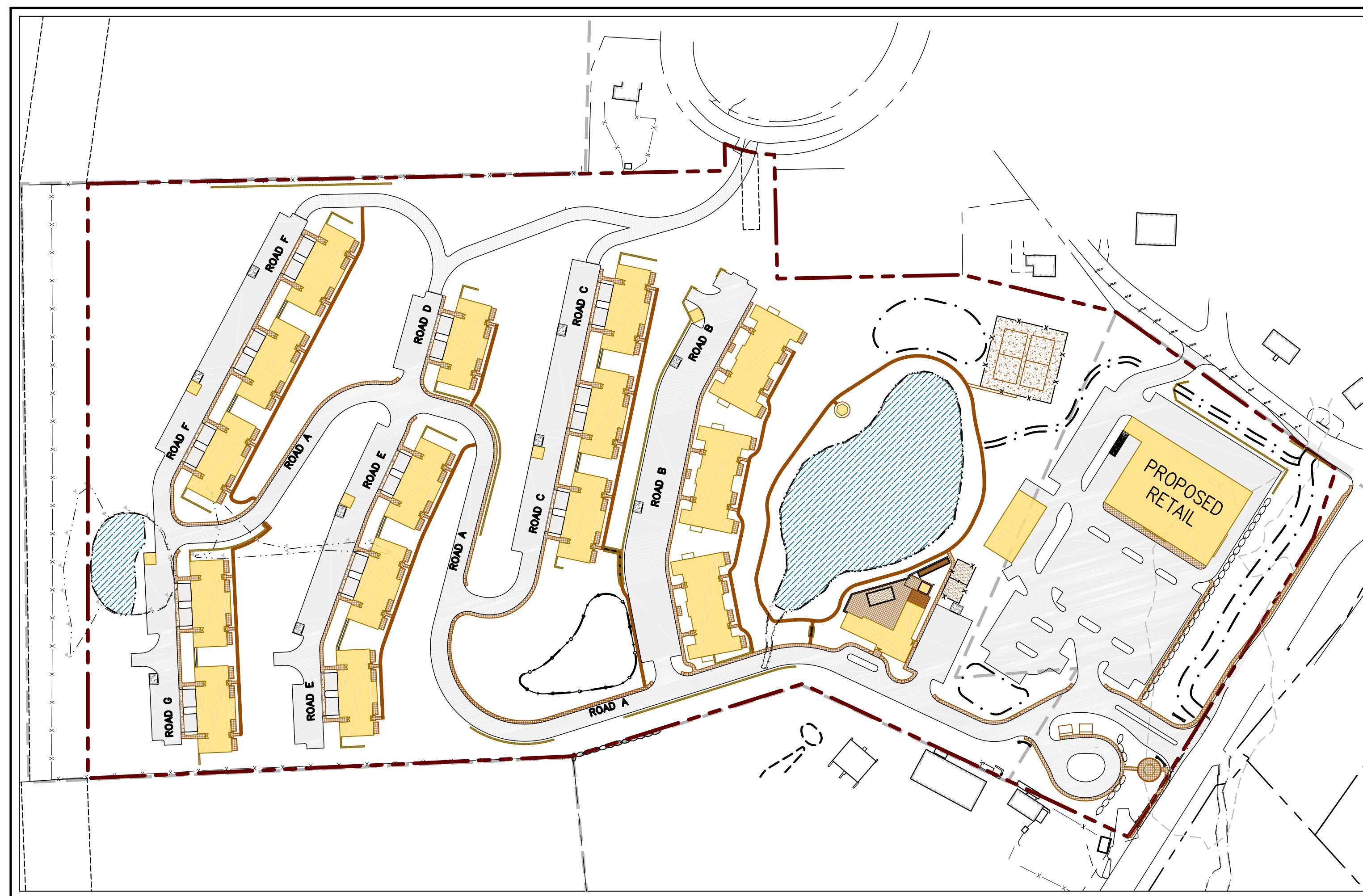
TAX MAP SECTION 09 | BLOCK 01 | LOTS 10, 11, 12, 56.21, 56.22
 ORANGE COUNTY
 5417 ROUTE 9W
 TOWN OF NEWBURGH, NEW YORK

Applicant/Owner:
FARRELL BUILDING COMPANY
 2317 MONTAUK HIGHWAY
 BRIDGEHAMPTON, NY 11932
 (631) 537-1068

Attorney
HANIG & SCHUTZMAN
 61 S MAIN STREET
 SUITE 5 - 2ND FLOOR
 NEW CITY, NY 10956
 (845) 600-8529

Architect
PETER F. GAITO & ASSOCIATES
 333 WESTCHESTER AVENUE
 SOUTH BUILDING, SUITE 303
 WHITE PLAINS, NY 10604
 (914) 682-3381

**Site Planner, Civil & Traffic Engineer,
 Surveyor and Landscape Architect:**
JMC
 120 BEDFORD ROAD
 ARMONK, NY 10504
 (914) 273-5225



SITE PLAN
 SCALE: 1"=130'

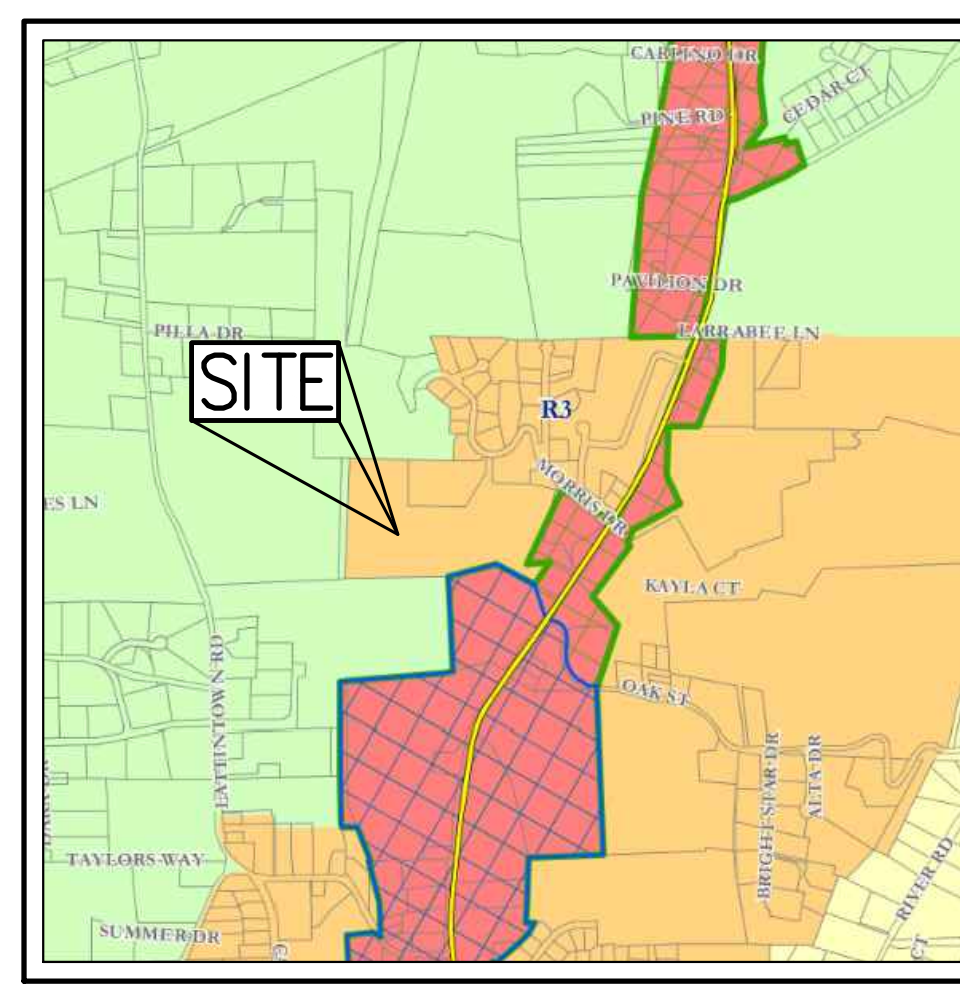
TABLE OF LAND USE				
TAX PARCELS: SECTION 09, BLOCK 01, LOTS 10, 11, 12, 56.21 AND 56.22				
TOTAL LOT AREA = 32.71 ACRES				
ZONE DISTRICTS: "R-3" - RESIDENCE DISTRICT				
PROPOSED USES:		MULTI-FAMILY DEVELOPMENT		
DESCRIPTION	REQUIREMENT	EXISTING	PROPOSED	
MINIMUM LOT AREA (ACRE)	4	32.71	27.31 ⁽¹⁾	
MINIMUM LOT WIDTH (FEET)	150	655±	655±	
MINIMUM LOT DEPTH (FEET)	150	1,800±	1,800±	
MAXIMUM BUILDING HEIGHT (STORIES/FEET)	35	2 STORIES	30	
MAXIMUM BUILDING COVERAGE (%)	35	0.2±	10±	
MAXIMUM IMPERVIOUS COVERAGE (%)	60	6±	34±	
MINIMUM BUILDING SETBACKS				
FRONT YARD (FEET)	60 ⁽¹⁾	35	425	
SIDE YARD (FEET)	30	533	30	
REAR YARD (FEET)	50	135	149	
BUILDING SUMMARY				
MAXIMUM NUMBER OF UNITS	203 ⁽⁴⁾	-	203	
REAR WALL TO ADJACENT BUILDING SEPARATION (FEET)	75	-	112	
SIDE TO SIDE BUILDING SEPARATION (FEET)	30	-	30	
HABITABLE FLOOR AREA PER UNIT (SQ.FT.)	1-BEDROOM 600 2-BEDROOM 800	-	1-BEDROOM 600 2-BEDROOM 800	
HABITABLE FLOOR AREA PER SENIOR UNIT (SQ.FT.)	3,000 MAX SEC 185-4.8 (4)	-	4,100	
PARKING SPACES				
STANDARD PARKING SPACES (SPACES)	397	-	409	
ACCESSIBLE PARKING SPACES (SPACES)	9	-	30	
TOTAL PARKING SPACES (SPACES)	406 (2 PER UNIT)	-	439	
ZONE DISTRICTS: "B" - BUSINESS DISTRICT				
PROPOSED USES:		RETAIL		
DESCRIPTION	REQUIREMENT	EXISTING	PROPOSED	
MINIMUM LOT AREA (SF/ACRE)	15,000/0.34	32.71	5,400 ⁽¹⁾	
MINIMUM LOT WIDTH (FEET)	100	655±	700±	
MINIMUM LOT DEPTH (FEET)	125	1,800±	1,800±	
MAXIMUM BUILDING HEIGHT (STORIES/FEET)	40	2 STORIES	30	
MAXIMUM BUILDING COVERAGE (%)	35	4±	11±	
MAXIMUM IMPERVIOUS COVERAGE (%)	80	6±	60±	
MINIMUM BUILDING SETBACKS				
FRONT YARD (FEET)	60 ⁽¹⁾	35	109	
SIDE YARD (FEET)	15 MIN/30 TOTAL ⁽⁴⁾	52/180±	102/403	
REAR YARD (FEET)	30	533	1500±	
PARKING SPACES				
STANDARD PARKING SPACES (SPACES)	163	-	163	
ACCESSIBLE PARKING SPACES (SPACES)	6	-	6	
TOTAL PARKING SPACES (SPACES)	1 PER 150 SF (167)	-	167	

NOTES:
 (1) TOTAL LOT AREA IS 32.71 ACRES. 27.31 ACRES LIES WITHIN THE R-3 ZONE AND 5.40 ACRES LIES WITHIN THE B ZONE.
 (2) SECTION 185-18 - EXCEPTIONS TO DISTRICT REGULATIONS (4)(b) REQUIRES FRONT YARDS ABUTTING ALL STATE AND COUNTY HIGHWAYS BE AT LEAST 60 FEET IN DEPTH.
 (3) SECTION 185-18 - EXCEPTIONS TO DISTRICT REGULATIONS (5)(a) REQUIRES COMMERCIAL USES ABUTTING A SIDE YARD AND BUILDING SQUARE FOOTAGE LESS THAN 30,000, MINIMUM SIDE YARD IS 25 FEET.
 (4) SEE RESIDENTIAL UNIT DENSITY CALCULATIONS ON THIS SHEET.

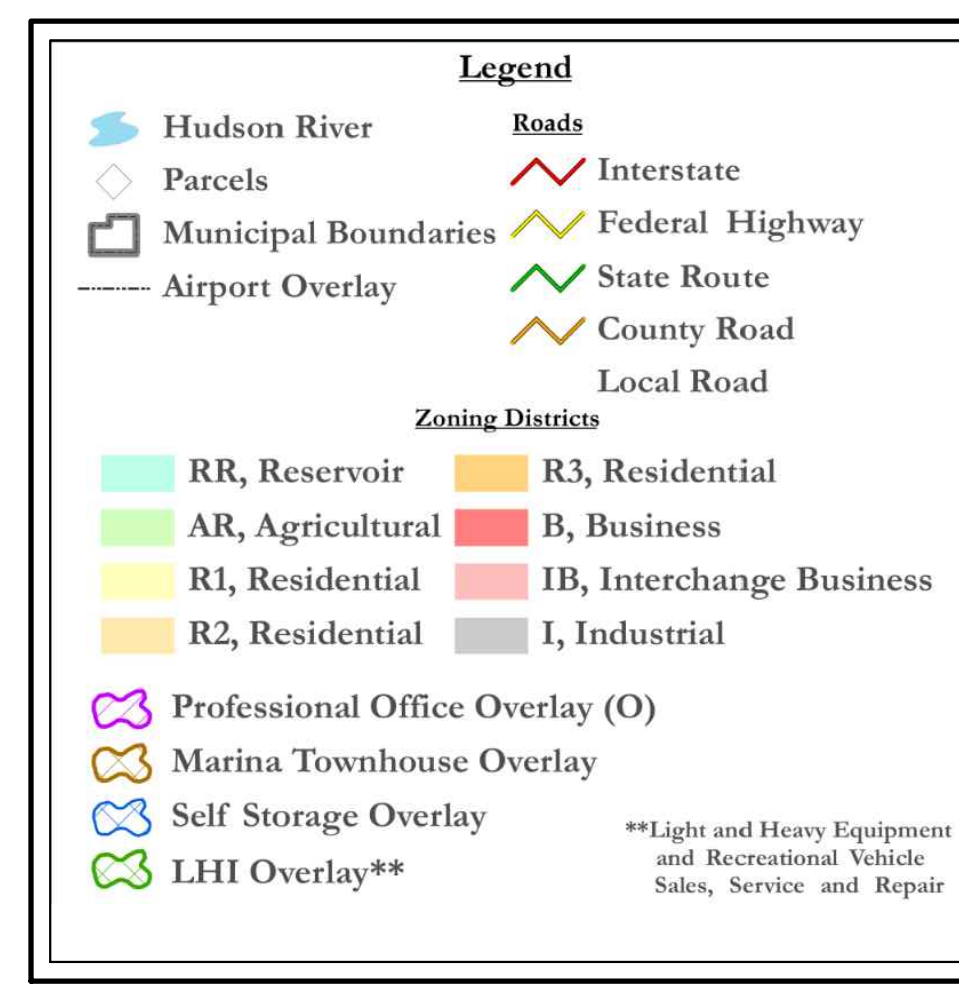
RESIDENTIAL UNIT DENSITY CALCULATIONS:
 RESIDENTIAL LOT AREA FOR DENSITY DETERMINATION = 27.31 ACRES
 EXCLUDES B-ZONE AREA (5.40 ACRE)

1. **BASE DENSITY CALCULATIONS**
 SENIOR HOUSING DEVELOPMENT DENSITY = 9 DWELLING UNITS PER ACRE
 1/3 OF THE TOTAL NUMBER OF PROPOSED UNITS ARE GAINED DUE TO THE SENIOR HOUSING DEVELOPMENT PROVISION.
 1/2 OF THE TOTAL NUMBER OF UNITS GAINED MUST BE SENIOR HOUSING.
 THEREFORE: 1/3 OF THE TOTAL UNITS X 1/3 MUST BE SENIOR HOUSING = 1/9 OF THE TOTAL UNITS MUST BE SENIOR HOUSING OR 11%
 2. **NET PARCEL AREA CALCULATIONS**
 A. FEDERAL WETLANDS, STEEP SLOPES AND WATERBODIES (POND) (75% DEDUCTED FOR SENIOR HOUSING):
 0.58 ACRES OF FEDERAL WETLANDS + 2.78 ACRES OF STEEP SLOPES + 1.45 ACRES POND = 4.81 ACRES
 B. 100 YEAR FLOODPLAIN (100% DEDUCTED FOR ALL USES):
 0 ACRES OF 100 YEAR FLOODPLAIN.
 11% OF 4.81 IS SUBTRACTED AT A RATE OF 75% = (0.11)(4.81)(0.75) = 0.40 AC.
 89% OF 4.81 IS SUBTRACTED AT A RATE OF 100% = (0.89)(4.81)(1.00) = 4.28 AC.
 TOTAL AREA CONSIDERED NOT USABLE NET AREA CALC = 0.40+4.28 = 4.68 AC.
 THEREFORE: 27.31 AC - 4.68 AC = 22.63 AC (NET PARCEL AREA)
 22.63 AC X 9 UNITS = 203 UNITS PERMITTED (203 PROPOSED)
 203 UNITS / 9 = 23 SENIOR UNITS REQUIRED (23 PROPOSED)

*TAKEN FROM ZONING CODE ORDINANCE SECTION 185-48.5 C.



ZONING MAP
 SCALE: NTS
 SOURCE: TOWN OF NEWBURGH
 ORANGE COUNTY, NEW YORK
 OFFICIAL ZONING MAP
 LAST AMENDMENT ADOPTED 11 JUNE 2012



ZONING MAP LEGEND



VICINITY MAP
 SCALE: NTS
 SOURCE: OPENSTREETMAP.ORG

GENERAL CONSTRUCTION NOTES APPLY TO ALL WORK HEREIN:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 "DIG SAFELY" (1-800-962-7862) TO HAVE UNDERGROUND UTILITIES LOCATED INCLUDING ARRANGING FOR A PRIVATE MARKOUT ON-SITE WHERE APPLICABLE. EXPLORATORY EXCAVATIONS SHALL COMPLY WITH CODE 753 REQUIREMENTS. NO WORK SHALL COMMENCE UNTIL ALL THE OPERATORS HAVE NOTIFIED THE CONTRACTOR THAT THEIR UTILITIES HAVE BEEN LOCATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE UNDERGROUND AND SURFACE UTILITIES AND STRUCTURES AT OR ADJACENT TO THE SITE OF CONSTRUCTION. INsofar as they may be endangered by the CONTRACTOR'S OPERATIONS, THIS SHALL HOLD TRUE WHETHER OR NOT THEY ARE SHOWN ON THE CONTRACT DRAWINGS. IF THEY ARE SHOWN ON THE DRAWINGS, THEIR LOCATIONS ARE NOT GUARANTEED EVEN THOUGH THE INFORMATION WAS OBTAINED FROM THE BEST AVAILABLE SOURCES, AND IN ANY EVENT, OTHER UTILITIES ON THESE PLANS MAY BE ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, IMMEDIATELY REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES THAT HE DAMAGES, AND SHALL CONSTANTLY PROCEED WITH CAUTION TO PREVENT UNDUE INTERRUPTION OF UTILITY SERVICE.

2. CONTRACTOR SHALL HAND DIG TEST PITS TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL VERIFY EXISTING UTILITIES DEPTHS AND ADVISE OF ANY CONFLICTS WITH PROPOSED UTILITIES. IF CONFLICTS ARE PRESENT, THE OWNER'S FIELD REPRESENTATIVE, JMC, PLLC AND THE APPLICABLE MUNICIPALITY OR AGENCY SHALL BE NOTIFIED IN WRITING. THE EXISTING/PROPOSED UTILITIES RELOCATION SHALL BE DESIGNED BY JMC, PLLC.

3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL LOCAL PERMITS REQUIRED.

4. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS. ALL CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL SAFETY CODES. APPLICABLE SAFETY CODES MEAN THE LATEST EDITION INCLUDING ANY AND ALL AMENDMENTS, REVISIONS, AND ADDITIONS THERETO, TO THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S OCCUPATIONAL SAFETY AND HEALTH STANDARDS (OSHA); AND APPLICABLE SAFETY, HEALTH REGULATIONS AND BUILDING CODES FOR CONSTRUCTION IN THE STATE OF NEW YORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GUARDING AND PROTECTING ALL OPEN EXCAVATIONS IN ACCORDANCE WITH THE PROVISION OF SECTION 107-05 (SAFETY AND HEALTH REQUIREMENTS) OF THE NYSOOT STANDARD SPECIFICATIONS. IF THE CONTRACTOR PERFORMS ANY HAZARDOUS CONSTRUCTION PRACTICES, ALL OPERATIONS IN THE AFFECTED AREA SHALL BE DISCONTINUED AND IMMEDIATE ACTION SHALL BE TAKEN TO CORRECT THE SITUATION TO THE SATISFACTION OF THE APPROVAL AUTHORITY HAVING JURISDICTION.

5. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AFFECTED BY THE SCOPE OF WORK SHOWN HEREON AT ALL TIMES TO THE SATISFACTION OF THE OWNERS REPRESENTATIVE. RAMPING CONSTRUCTION TO PROVIDE ACCESS MAY BE CONSTRUCTED WITH SUBBASE MATERIAL EXCEPT THAT TEMPORARY ASPHALT CONCRETE SHALL BE PLACED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE PEDESTRIAN ACCESS AT ALL TIMES.

6. CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING PAVEMENT TO REMAIN.

SUBSURFACE UTILITY LOCATIONS ARE BASED ON A COMPILED OF FIELD EVIDENCE, AVAILABLE RECORD PLANS AND/OR UTILITY MARK-OUTS. THE LOCATION OR COMPLETENESS OF UNDERGROUND INFORMATION CANNOT BE GUARANTEED. VERIFY THE ACTUAL LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION.

811 Know what's below. Call before you dig.

No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	12/09/2020	BMS

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
 JMC Site Development Consultants, LLC
 John Meyer Consulting, Inc.
 120 BEDFORD ROAD - ARMONK, NY 10504
 voice 914.273.5225 • fax 914.273.2102
 www.jmcpllc.com

Scale: **NOT TO SCALE**
 Date: 10/23/2019
 Project No: 17088
 Drawn By: JMC
 Checked By: JMC
 Approved By: JMC
C-000

NOT FOR CONSTRUCTION

NOT FOR CONSTRUCTION



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- APPROXIMATE ZONE BOUNDARY
- EXISTING METLAND LINE AND DELINEATION
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GUIDE RAIL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING TREE LINE
- EXISTING DIRECTIONAL ARROWS
- EXISTING PAINT
- EXISTING PARKING WITH NUMBER OF SPACES
- EXISTING ACCESSIBLE PARKING WITH NUMBER OF SPACES
- EXISTING PEDESTRIAN CROSSING
- EXISTING STORM DRAIN LINE AND SIZE
- EXISTING SANITARY LINE AND SIZE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- BORING LOCATION AND DESIGNATION

NOTES

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "SURVEY OF PROPERTY," PREPARED BY JMC, PLLC, DATED 11/26/2016.

APP/CANT	DATE	BY
REVISION	REASON	DATE
1.	REVISED PER TOWN COMMENTS	12/29/2020
<p>FARRELL BUILDING COMPANY 2317 MONTAUK HIGHWAY BRIDGEHAMPTON, NY 11932</p> <p>PETER F. GATO & ASSOCIATES 333 WESTCHESTER AVE WHITE PLAINS, NY 10604</p>		

JMC Planning, Engineering, Landscape Architecture & Land Surveys, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.

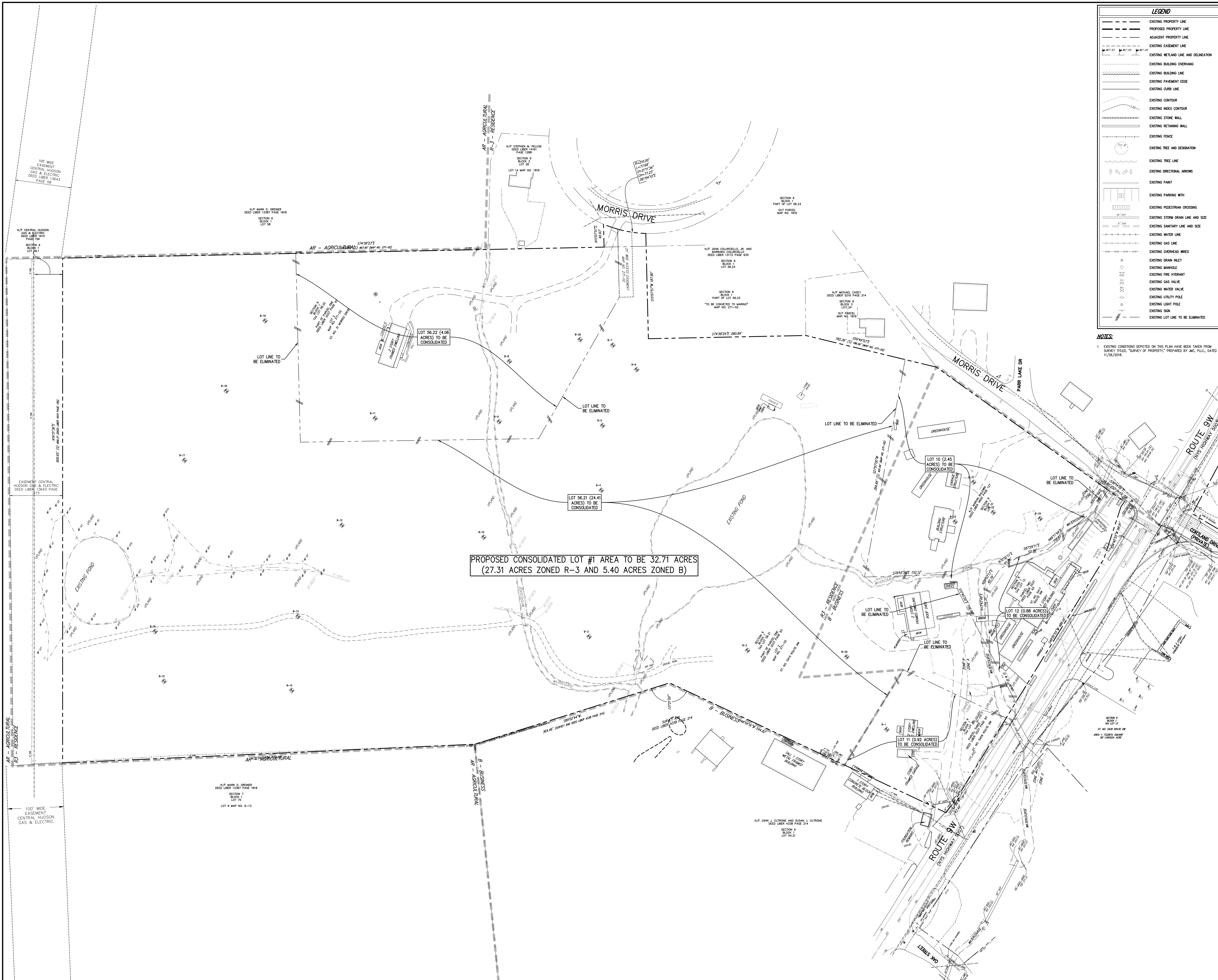
120 BEGFORD ROAD • ARMONK, NY 10534
PHONE 914.233.2223 • FAX 914.233.2192
www.jmcpllc.com

EXISTING CONDITIONS PLAN
HUDSON PLACE
TOWN OF NEWBURGH, NEW YORK

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

Drawn	BMS	Approved	JS
Scale	1" = 50'		
Date	10/23/2019		
Project No.	17088		
1708-01	EXIST	EXIST	EXIST
Drawing No.	C-010		

NOT FOR CONSTRUCTION



LEGEND

- EXISTING PROPERTY LINE
- PROPOSED PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING WETLAND LINE AND DELINEATION
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING TREE LINE
- EXISTING DIRECTIONAL ARROWS
- EXISTING PAINT
- EXISTING PARKING WITH
- EXISTING PEDESTRIAN CROSSING
- EXISTING STORM DRAIN LINE AND SIZE
- EXISTING SANITARY LINE AND SIZE
- EXISTING WATER LINE
- EXISTING OVERHEAD WIRES
- EXISTING GRAB INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- EXISTING LOT LINE TO BE ELIMINATED

NOTES

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "SURVEY OF PROPERTY," PREPARED BY JMC, PLLC, DATED 11/26/2018.

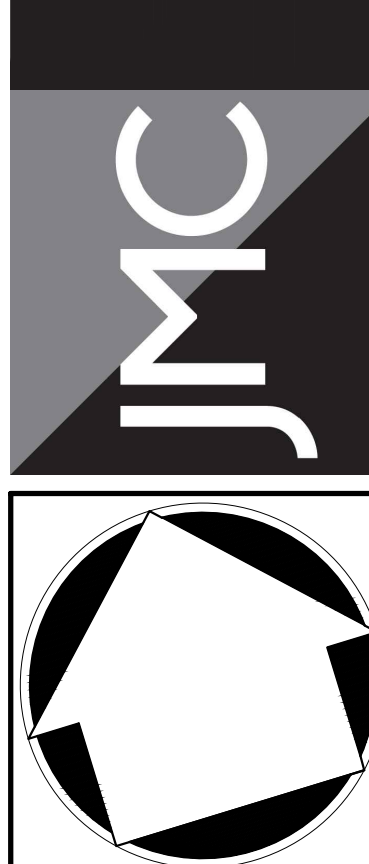
REVISIONS

No.	REVISION	Date
1.	REVISED PER TOWN COMMENTS	12/09/2020

APPLICANT: FARRELL BUILDING COMPANY
2317 MONTAUK HIGHWAY
BRIDGEHAMPTON, NY 11932

ARCHITECT: PETER F. GATO & ASSOCIATES
333 WESTCHESTER AVE
WHITE PLAINS, NY 10604

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
John Meyer Consulting, Inc.
120 BELFORD ROAD • AMTOWN, NY 10554
PHONE: 518.233.2223 • FAX: 518.233.2192
www.jmcpllc.com



LOT CONSOLIDATION & SUBDIVISION PLAN
HUDSON PLACE
TOWN OF NEWBURGH, NEW YORK

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

Drawn:	BMS	Approved:	JS
Scale:	1" = 50'		
Date:	10/23/2019		
Project No.:	17088		
Sheet No.:	LOT	LOT	LOT
Sheet No.:	C-011		



ENVIRONMENTAL CONSTRAINTS LEGEND

- POND AREA
- FEDERAL WETLAND AREA
- 100% USABLE AREA IN R3 ZONE
- STEEP SLOPE AREAS (> 25% SLOPE)

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- APPROXIMATE ZONE BOUNDARY
- EXISTING WETLAND LINE AND DELINEATION
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING GROUND RAIL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING TREE LINE
- EXISTING DIRECTIONAL ARROWS
- EXISTING PAINT
- EXISTING PARKING WITH NUMBER OF SPACES
- EXISTING ACCESSIBLE PARKING WITH NUMBER OF SPACES
- EXISTING PEDESTRIAN CROSSING
- EXISTING STORM DRAIN LINE AND SIZE
- EXISTING SANITARY LINE AND SIZE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- BORING LOCATION AND DESIGNATION

RESIDENTIAL UNIT DENSITY CALCULATIONS:
RESIDENTIAL LOT AREA FOR DENSITY DETERMINATION = 27.31 ACRES EXCLUDES B-ZONE AREA (5.40 ACRE)

1. BASE DENSITY CALCULATIONS
SENIOR HOUSING DEVELOPMENT DENSITY = 9 DWELLING UNITS PER ACRE
1/3 OF THE TOTAL NUMBER OF PROPOSED UNITS ARE GAINED DUE TO THE SENIOR HOUSING DEVELOPMENT PROVISION.
1/3 OF THE TOTAL NUMBER OF UNITS GAINED MUST BE SENIOR HOUSING.
THEREFORE, 1/3 OF THE TOTAL UNITS X 1/3 MUST BE SENIOR HOUSING = 1/9 OF THE TOTAL UNITS MUST BE SENIOR HOUSING OR 11%.

2. NET PARCEL AREA CALCULATIONS*

A. FEDERAL WETLANDS, STEEP SLOPES AND WATERBODIES (POND) (75% DEDUCTED FOR SENIOR HOUSING):
0.36 ACRES OF FEDERAL WETLANDS + 2.78 ACRES OF STEEP SLOPES + 1.45 ACRES POND = 4.81 ACRES
B. 100 YEAR FLOODPLAIN (100% DEDUCTED FOR ALL USES):
0 ACRES OF 100 YEAR FLOODPLAIN.

11% OF 4.81 IS SUBTRACTED AT A RATE OF 75% = (0.11)(4.81)(0.75) = 0.40 AC.
89% OF 4.81 IS SUBTRACTED AT A RATE OF 100% = (0.89)(4.81)(1.00) = 4.28 AC.
TOTAL AREA CONSIDERED NOT USABLE NET AREA CALC = 0.40+4.28 = 4.68 AC.

THEREFORE: 27.31 AC - 4.68 AC = 22.63 AC (NET PARCEL AREA)
22.63 AC X 9 UNITS = 203 UNITS PERMITTED (203 PROPOSED)
203 UNITS / 9 = 23 SENIOR UNITS REQUIRED (23 PROPOSED)

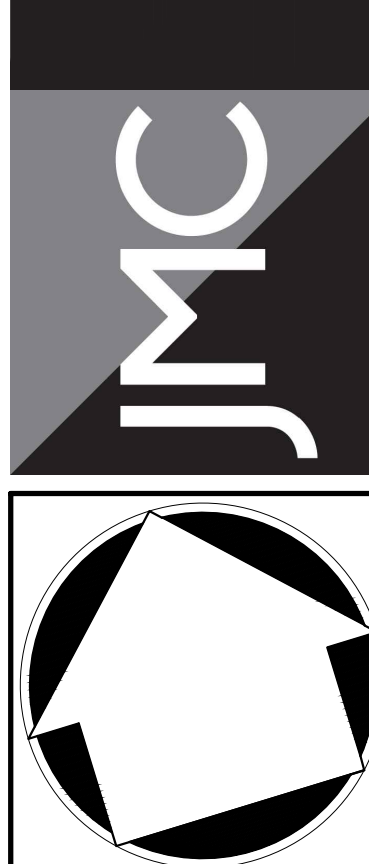
*TAKEN FROM ZONING CODE ORDINANCE SECTION 185-48.5 C.

NOTES:
1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED "SURVEY OF PROPERTY" PREPARED BY JMC, PLLC, DATED 11/26/2016.

APP/CA/IT	DATE	REVISION
	12/09/2020	BUS
NO.	REVISED PER TOWN COMMENTS	
1.		

APPLICANT:
FARRELL BUILDING COMPANY
2317 MONTAUK HIGHWAY
BRIDGEHAMPTON, NY 11932

ARCHITECT:
PETER F. GATO & ASSOCIATES
333 WESTCHESTER AVE
WHITE PLAINS, NY 10604



ENVIRONMENTAL CONSTRAINTS PLAN
HUDSON PLACE
TOWN OF NEWBURGH, NEW YORK

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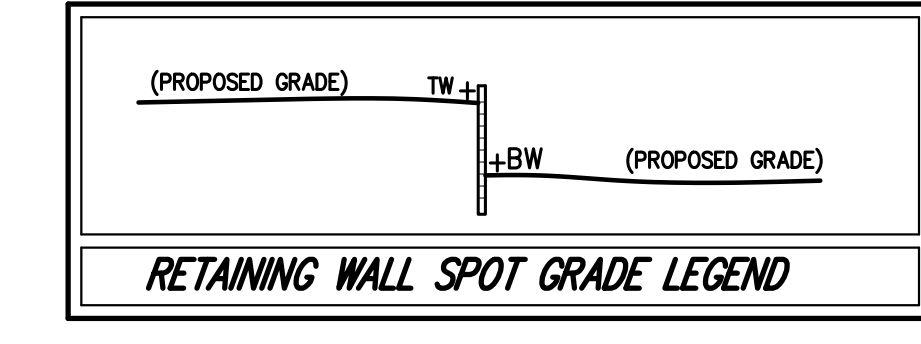
Drawn:	BMS	Approved:	JS
Scale:	1" = 50'		
Date:	10/23/2019		
Project No.:	17088		
1788-01	ENV-CONS	ENV-CONS	ENV-CONS

C-020

NOT FOR CONSTRUCTION



- NOTES:**
- EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "SURVEY OF PROPERTY," PREPARED BY JMC, P.L.L.C., DATED 11/26/2014.
 - GEOTECHNICAL BORING/TEST PIT LOCATIONS DEPICTED ON THIS PLAN WERE TAKEN FROM THE GEOTECHNICAL REPORT ENTITLED, "XXXXX," DATED XXXX, PREPARED BY XXXX.
 - ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. HOWEVER DURING CONSTRUCTION OF THE PROJECT THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.
 - ALL FILLS SHALL BE COMPACTED TO PROVIDE STABILITY OF MATERIAL AND TO PREVENT SETTLEMENT.
 - EXCAVATIONS AND FILLS SHALL NOT ENDANGER ADJOINING PROPERTIES, NOR DIVERT WATER ONTO THE PROPERTY OF OTHERS AT ANY TIME DURING THE COURSE OF CONSTRUCTION.
 - CONTRACTOR SHALL REFER TO EROSION AND SEDIMENT CONTROL PLAN FOR FURTHER DIRECTION REGARDING SITE STABILIZATION THROUGHOUT THE COURSE OF CONSTRUCTION.



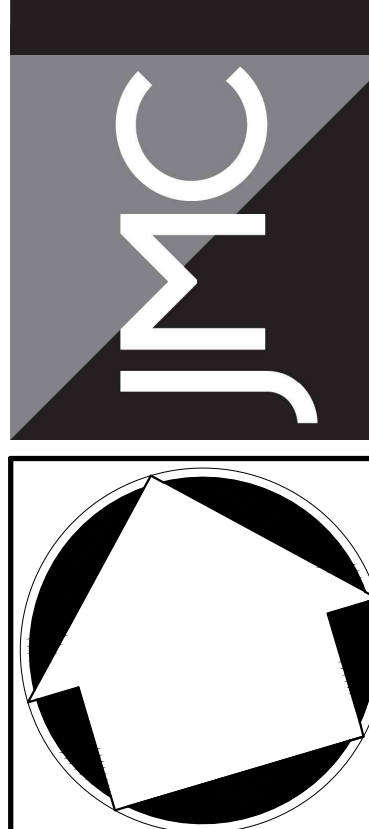
LEGEND

[Symbol]	EXISTING PROPERTY LINE
[Symbol]	ADJACENT PROPERTY LINE
[Symbol]	PROPOSED PROPERTY LINE
[Symbol]	EXISTING EASEMENT LINE
[Symbol]	EXISTING METALAND LINE AND DELINEATION
[Symbol]	EXISTING METALAND BUFFER
[Symbol]	EXISTING BUILDING OVERHANG
[Symbol]	EXISTING BUILDING LINE
[Symbol]	EXISTING PAVEMENT EDGE
[Symbol]	EXISTING CURB LINE
[Symbol]	EXISTING CONTOUR
[Symbol]	EXISTING INDEX CONTOUR
[Symbol]	EXISTING SPOT GRADE
[Symbol]	EXISTING STONE WALL
[Symbol]	EXISTING RETAINING WALL
[Symbol]	EXISTING GUIDE RAIL
[Symbol]	EXISTING FENCE
[Symbol]	EXISTING GRAB INLET
[Symbol]	EXISTING MANHOLE
[Symbol]	EXISTING UTILITY POLE
[Symbol]	EXISTING LIGHT POLE
[Symbol]	EXISTING SIGN
[Symbol]	PROPOSED BUILDING LINE
[Symbol]	PROPOSED CONCRETE CURB
[Symbol]	PROPOSED CONCRETE SIDEWALK
[Symbol]	PROPOSED DROP CURB AND RAMP
[Symbol]	PROPOSED PATHWAY
[Symbol]	PROPOSED CONTOUR
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[Symbol]	PROPOSED SANITARY SEWER MANHOLE
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[Symbol]	PROPOSED TYPE CI DRAIN INLET
[Symbol]	PROPOSED TYPE LI DRAIN INLET
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[Symbol]	PROPOSED HEADWALL
[Symbol]	PROPOSED HEADWALL
[Symbol]	PROPOSED OUTLET CONTROL STRUCTURE
[Symbol]	PROPOSED HYDRANT
[Symbol]	PROPOSED RETAINING WALL (DESIGN BY OTHERS)
[Symbol]	PROPOSED DOUBLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
[Symbol]	PROPOSED SINGLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
[Symbol]	BORING LOCATION AND DESIGNATION
[Symbol]	PROPOSED LIMIT OF DISTURBANCE
[Symbol]	PROPOSED DITCH OR SWALE
[Symbol]	PROPOSED RFP-RAP
[Symbol]	EXISTING FEATURE TO BE REMOVED

REVISIONS

No.	Date	By	Reason
1.	12/29/2020	BMS	REVISED PER TOWN COMMENTS

FARRELL BUILDING COMPANY
 377 MONROE HIGHWAY
 BROOKHAVEN, NY 11932



GRADING PLAN
HUDSON PLACE
 TOWN OF NEWBURGH, NEW YORK

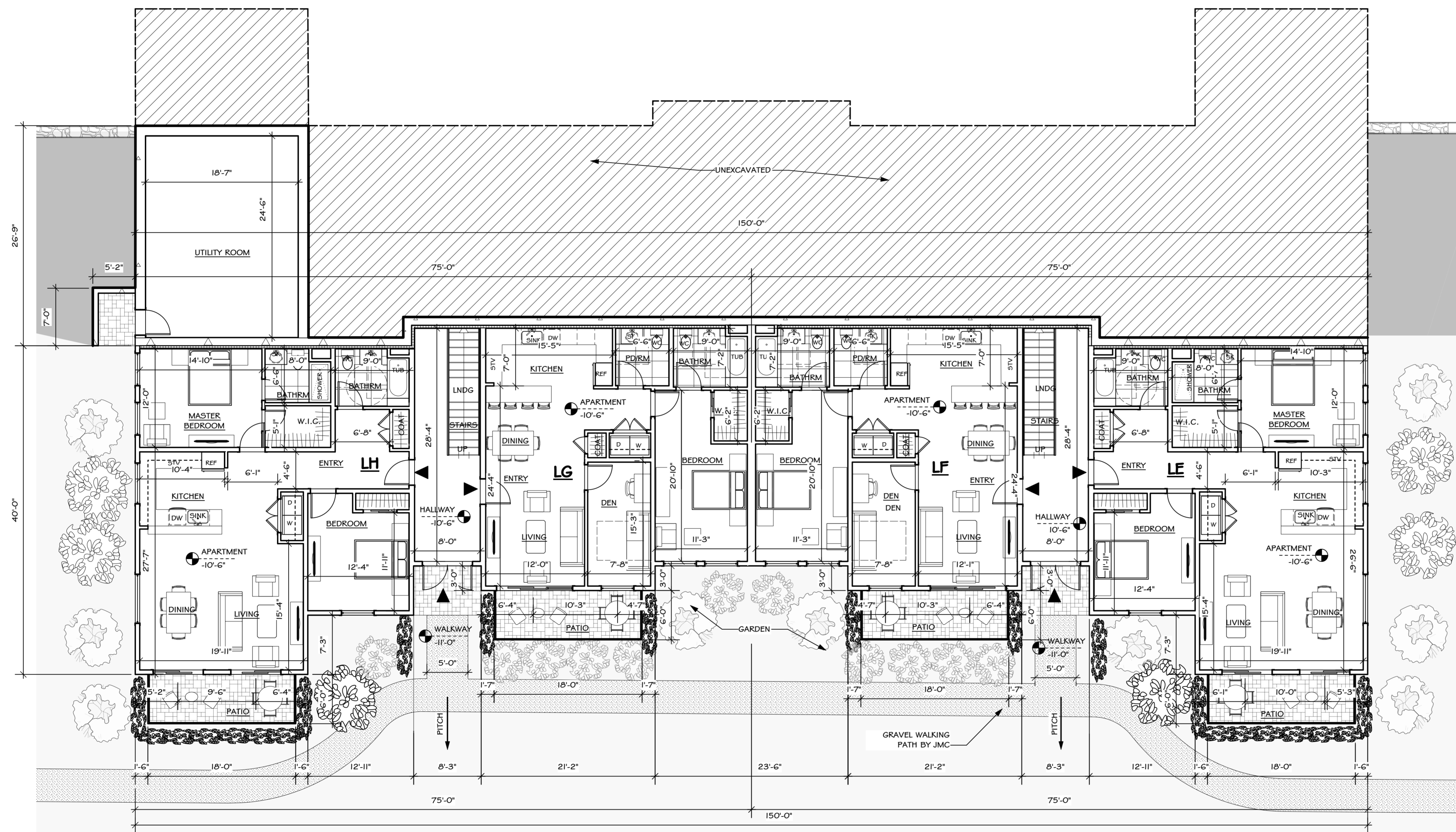
ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

Drawn:	BMS	Approved:	J.S.
Scale:	1" = 50'		
Date:	10/23/2019		
Project No.:	17088		
Sheet No.:	040	of	147

C-200



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1 BUILDING TYPE I - LOWER LEVEL FLOOR PLAN
Scale: 1/8" = 1'-0"

No.	Date	Revisions / Submissions
1	12/09/20	REVISED PER TOWN COMMENTS

GENERAL NOTE

EACH CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION WITH OTHER TRADES AND THE GENERAL CONTRACTOR. FOR ALL WORK, HE IS TO EXAMINE ALL DRAWINGS AND SPECIFICATIONS OF ALL OTHER TRADES PRIOR TO INSTALLATION OF HIS WORK. IF ANY OF HIS WORK IS CALLED FOR ON ANY OTHER DRAWINGS AND SPECIFICATIONS, IT IS HIS RESPONSIBILITY TO PROVIDE THAT WORK WHETHER CALLED FOR ON HIS DRAWINGS OR NOT. A FULL SET OF DRAWINGS AND SPECIFICATIONS ARE ON FILE AT THE ARCHITECT'S OFFICE. FOR THEIR REVIEW.

Project Title

HUDSON PLACE
5417 ROUTE 9W
NEWBURGH, NEW YORK 12550

BUILDING TYPE I - LOWER LEVEL FLOOR PLAN

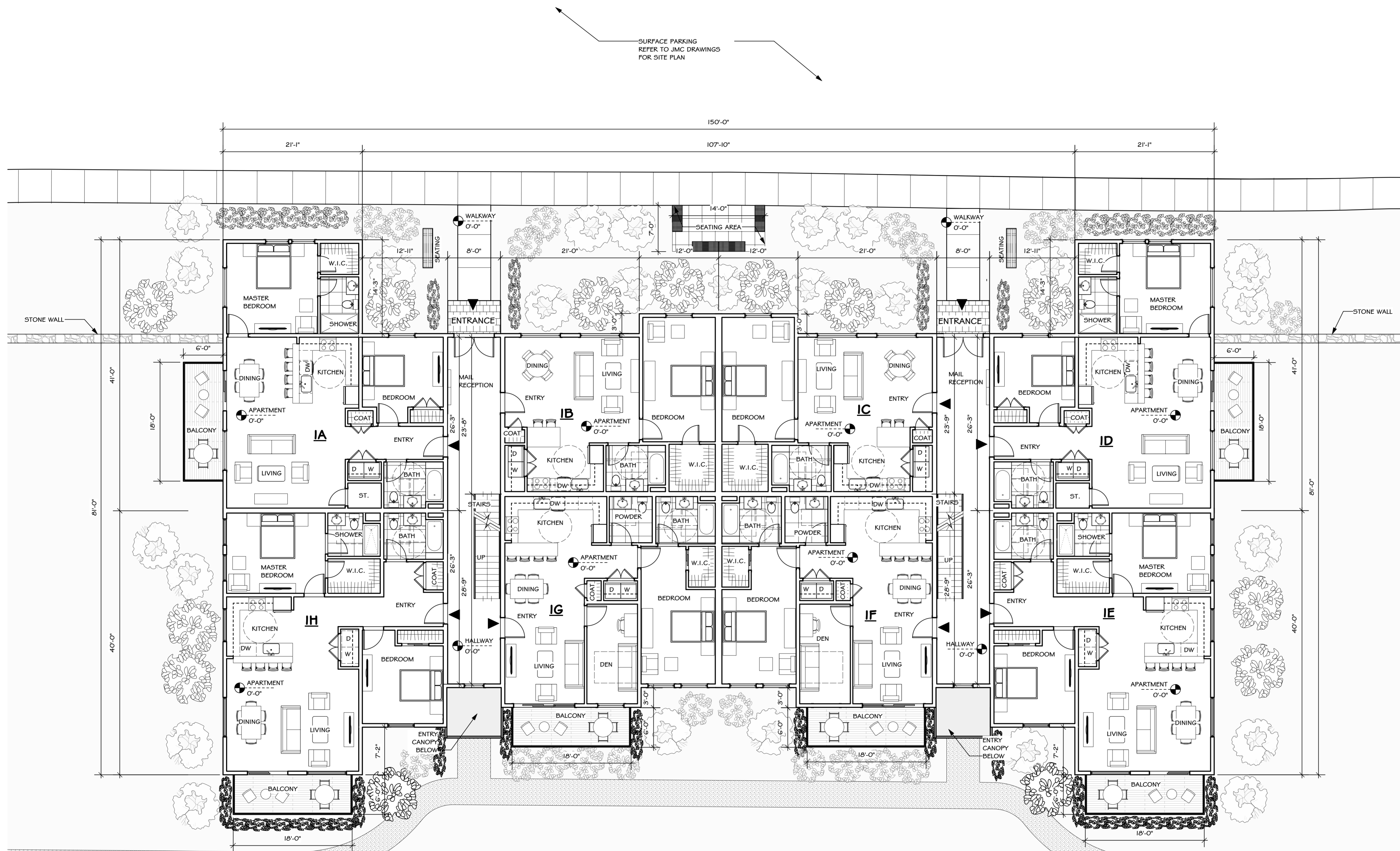
Date: 09/26/18
Project ID: 1901
Drawn By: KK/NA/OS
Checked By: PFG
Scale: AS NOTED
Sheet No. **A-100**

LOWER LEVEL UNIT INFORMATION		
UNIT	UNIT COUNT	UNIT TYPE SQ.FT. TOTAL
E	1	(1 X 1,180) = 1,180 SQ.FT.
F	1	(1 X 960) = 960 SQ.FT.
G	1	(1 X 960) = 960 SQ.FT.
H	1	(1 X 1,180) = 1,180 SQ.FT.
TOTAL UNIT SQ. FT. FOR THIS FLOOR		4,280 SQ.FT.
TOTAL UNITS ON THIS FLOOR		4

BUILDING TYPE I			
SQUARE FOOTAGES		UNIT INFORMATION	
LOWER LEVEL GROSS AREA	5,760 SQ.FT.	UNIT TYPE	UNIT NUMBER
FIRST FLOOR GROSS AREA	9,545 SQ.FT.	1 BED	1B, 1C, 2B, 2C
SECOND FLOOR GROSS AREA	9,545 SQ.FT.	1 BED + DEN	1F, 1G, 1F, 1G, 2F, 2G
TOTAL GROSS AREA FOR THIS BLDG TYPE	24,850 SQ.FT.	2 BED	1A, 1D, 2A, 2D
TOTAL UNIT SQ. FT. FOR THIS BLDG TYPE	20,460 SQ.FT.	2 BED	1E, 1H, 1E, 1H, 2E, 2H
TOTAL UNITS ON THIS BLDG TYPE	20		



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I BUILDING TYPE I - FIRST FLOOR PLAN
Scale: 1/8" = 1'-0"

No.	Date	Revisions / Submissions
1	12/09/20	REVISED PER TOWN COMMENTS

GENERAL NOTE

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FIRST FLOOR UNIT INFORMATION			
UNIT	UNIT COUNT	UNIT TYPE	UNIT SQ. FT. TOTAL
A	1	(1 X 1,130)	1,130 SQ. FT.
B	1	(1 X 775)	775 SQ. FT.
C	1	(1 X 775)	775 SQ. FT.
D	1	(1 X 1,130)	1,130 SQ. FT.
E	1	(1 X 1,180)	1,180 SQ. FT.
F	1	(1 X 960)	960 SQ. FT.
G	1	(1 X 960)	960 SQ. FT.
H	1	(1 X 1,180)	1,180 SQ. FT.
TOTAL UNIT SQ. FT. FOR THIS FLOOR			8,090 SQ. FT.
TOTAL UNITS ON THIS FLOOR			8

HUDSON PLACE
5417 ROUTE 9W
NEWBURGH, NEW YORK 12550

BUILDING TYPE I - FIRST FLOOR PLAN

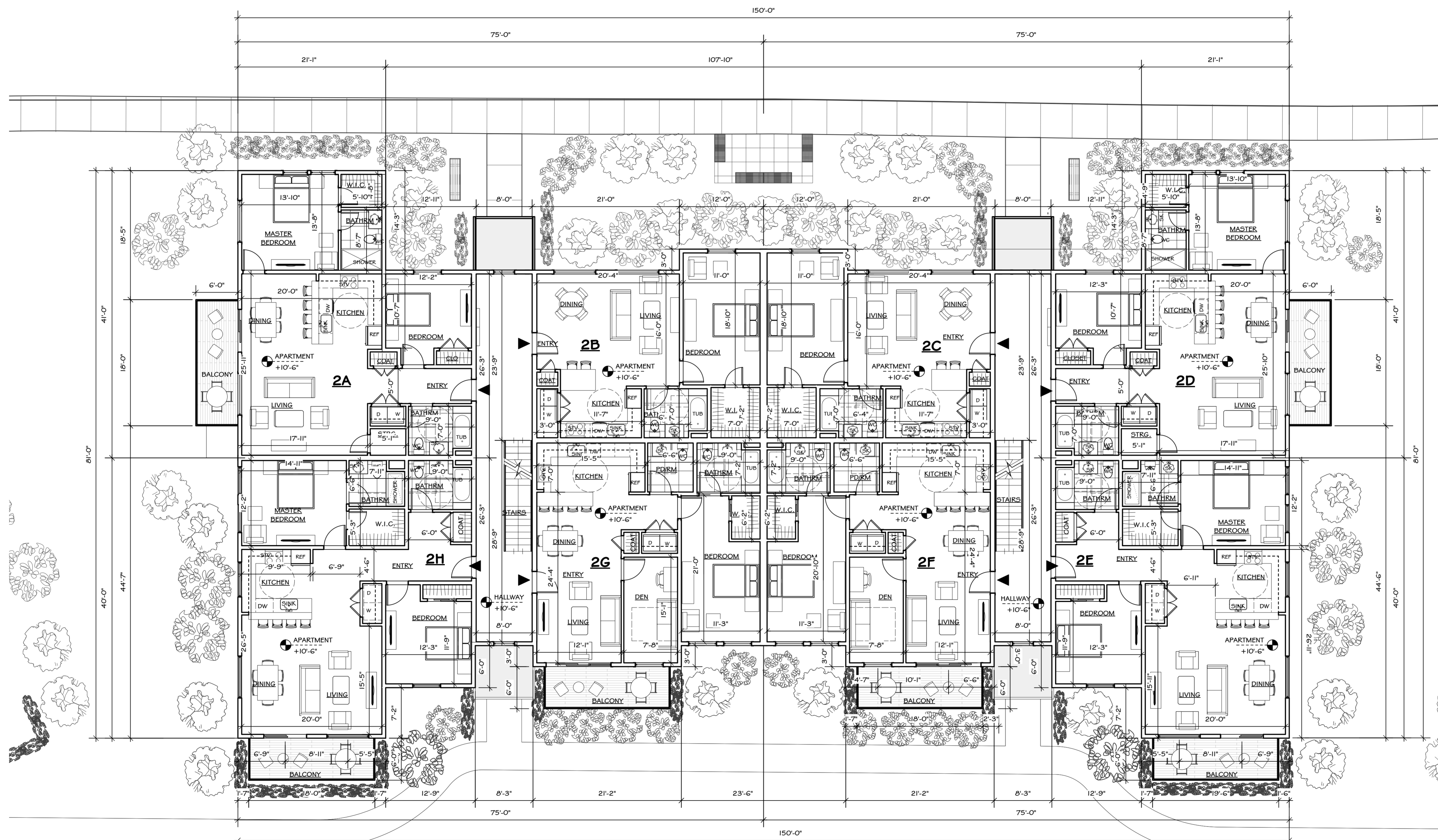
Date: 09/26/18
Project ID: 1901
Drawn By: KK/NA/O/S
Checked By: PFG
Scale: AS NOTED
Sheet No.:

A-101
3 of 18

BUILDING TYPE I			
SQUARE FOOTAGES		UNIT INFORMATION	
LOWER LEVEL GROSS AREA	5,760 SQ. FT.	UNIT TYPE	UNIT NUMBER
FIRST FLOOR GROSS AREA	9,545 SQ. FT.	1 BED	1B, 1C, 2B, 2C
SECOND FLOOR GROSS AREA	9,545 SQ. FT.	1 BED + DEN	1F, 1G, 1F, 1G, 2F, 2G
TOTAL GROSS AREA FOR THIS BLDG TYPE	24,850 SQ. FT.	2 BED	1A, 1D, 2A, 2D
TOTAL UNIT SQ. FT. FOR THIS BLDG TYPE	20,460 SQ. FT.	2 BED	1E, 1H, 1E, 1H, 2E, 2H
TOTAL UNITS ON THIS BLDG TYPE	20		



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1 BUILDING TYPE I - SECOND FLOOR PLAN
Scale: 1/8" = 1'-0"

No.	Date	Revisions / Submissions
1	12/09/20	REVISED PER TOWN COMMENTS

GENERAL NOTE

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SECOND FLOOR UNIT INFORMATION			
UNIT	UNIT COUNT	UNIT TYPE	SQ. FT. TOTAL
A	1	(1 X 1,130)	1,130 SQ. FT.
B	1	(1 X 775)	775 SQ. FT.
C	1	(1 X 775)	775 SQ. FT.
D	1	(1 X 1,130)	1,130 SQ. FT.
E	1	(1 X 1,180)	1,180 SQ. FT.
F	1	(1 X 960)	960 SQ. FT.
G	1	(1 X 960)	960 SQ. FT.
H	1	(1 X 1,180)	1,180 SQ. FT.
TOTAL UNIT SQ. FT. FOR THIS FLOOR		8,090 SQ. FT.	
TOTAL UNITS ON THIS FLOOR		8	

HUDSON PLACE
5417 ROUTE 9W
NEWBURGH, NEW YORK 12550

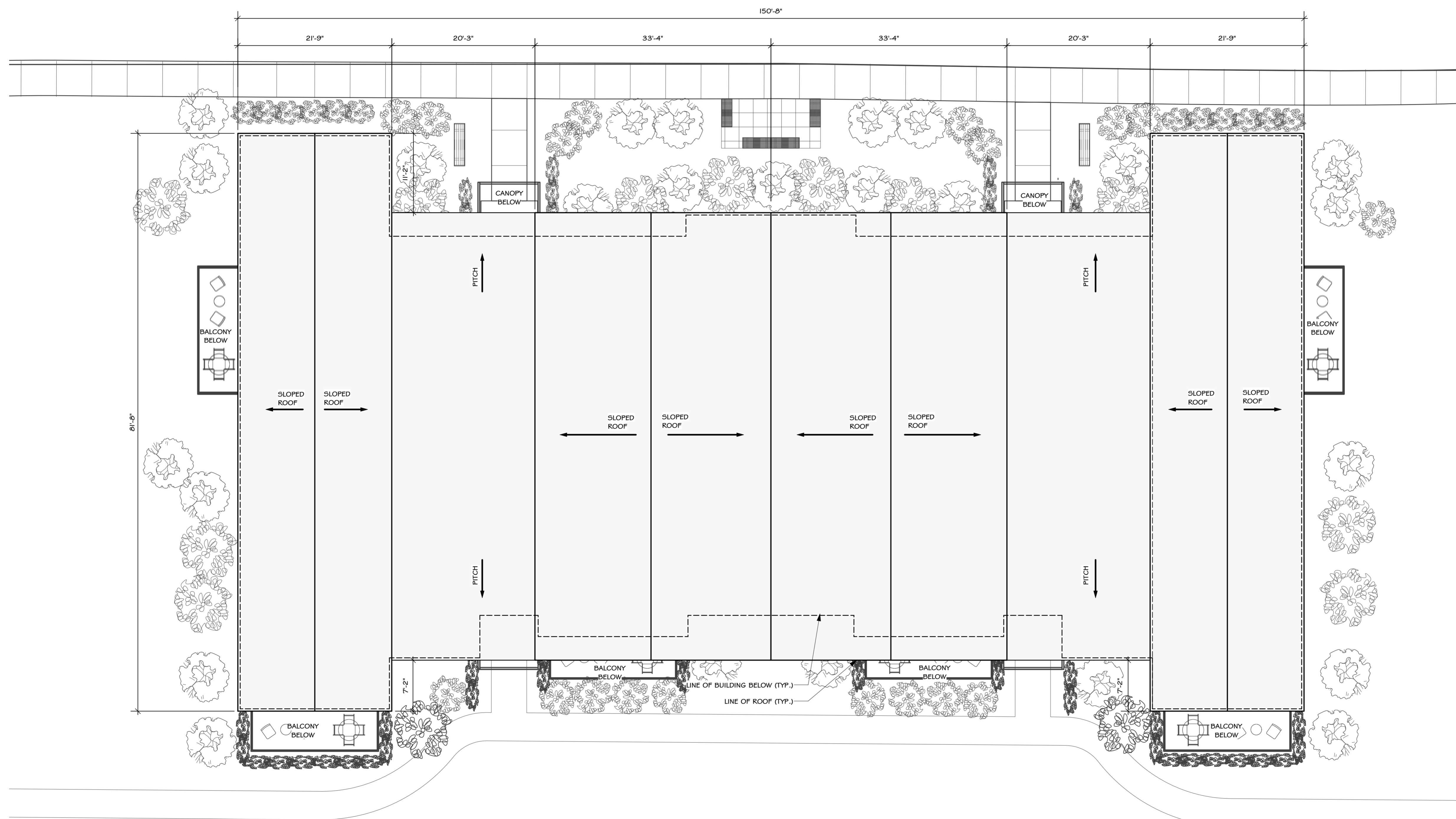
BUILDING TYPE 1 - SECOND FLOOR PLAN

Date: 09/26/18
Project ID: 1901
Drawn By: KK/NA/OS
Checked By: PFG
Scale: AS NOTED
Sheet No. **A-102**

BUILDING TYPE I			
SQUARE FOOTAGES		UNIT INFORMATION	
LOWER LEVEL GROSS AREA	5,760 SQ. FT.	UNIT TYPE	UNIT NUMBER
FIRST FLOOR GROSS AREA	9,545 SQ. FT.	1 BED	1B, 1C, 2B, 2C
SECOND FLOOR GROSS AREA	9,545 SQ. FT.	1 BED + DEN	1F, 1G, 1F, 1G, 2F, 2G
TOTAL GROSS AREA FOR THIS BLDG TYPE	24,850 SQ. FT.	2 BED	1A, 1D, 2A, 2D
TOTAL UNIT SQ. FT. FOR THIS BLDG TYPE	20,460 SQ. FT.	2 BED	1E, 1H, 1E, 1H, 2E, 2H
TOTAL UNITS ON THIS BLDG TYPE	20		



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1 BUILDING TYPE I - ROOF PLAN
Scale: 1/8" = 1'-0"

No.	Date	Revisions / Submissions
1	12/09/20	REVISED PER TOWN COMMENTS

GENERAL NOTE

EACH CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION WITH OTHER TRADES AND THE GENERAL CONTRACTOR FOR ALL WORK. HE IS TO EXAMINE ALL DRAWINGS AND SPECIFICATIONS OF ALL OTHER TRADES PRIOR TO INSTALLATION OF HIS WORK. IF ANY OF HIS WORK IS CALLED FOR ON ANY OTHER DRAWINGS AND SPECIFICATIONS, IT IS HIS RESPONSIBILITY TO PROVIDE THAT WORK WHETHER CALLED FOR ON HIS DRAWINGS OR NOT. A FULL SET OF DRAWINGS AND SPECIFICATIONS ARE ON FILE AT THE ARCHITECT'S OFFICE, FOR THEIR REVIEW.

Project Title

HUDSON PLACE

5417 ROUTE 9W
NEWBURGH, NEW YORK 12550

Sheet Title

BUILDING TYPE 1 - ROOF PLAN

Date: 09/26/18 Sign and Seal

Project ID: 1901

Drawn By: KK/NA/OS

Checked By: PFG

Scale: AS NOTED

Sheet No.

A-103

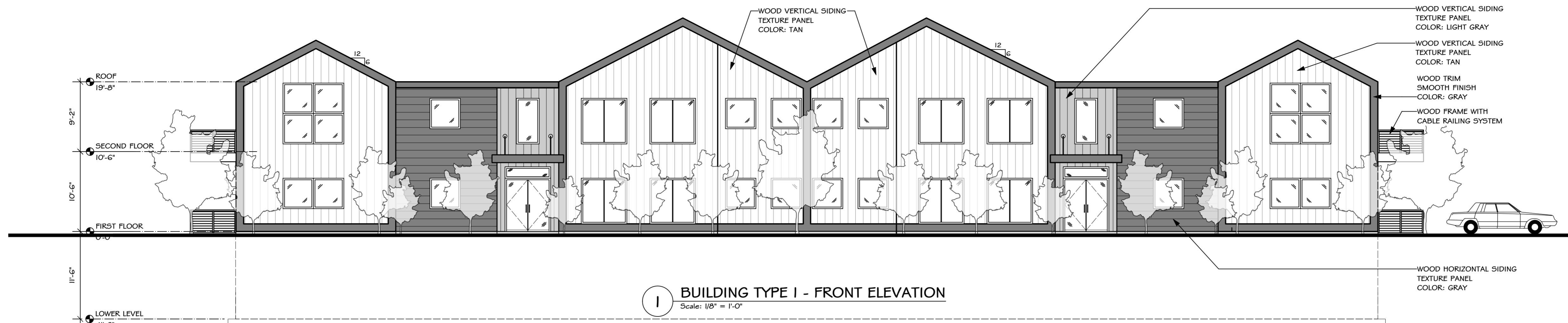
4 of 18

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CAD File Name: 1901 CD - PB V2020.vsw
B-Scan Label

SECOND FLOOR UNIT INFORMATION			
UNIT	UNIT COUNT	UNIT TYPE	SQ. FT. TOTAL
A	1	(1 X 1,130)	1,130 SQ. FT.
B	1	(1 X 775)	775 SQ. FT.
C	1	(1 X 775)	775 SQ. FT.
D	1	(1 X 1,130)	1,130 SQ. FT.
E	1	(1 X 1,180)	1,180 SQ. FT.
F	1	(1 X 960)	960 SQ. FT.
G	1	(1 X 960)	960 SQ. FT.
H	1	(1 X 1,180)	1,180 SQ. FT.
TOTAL UNIT SQ. FT. FOR THIS FLOOR			8,090 SQ. FT.
TOTAL UNITS ON THIS FLOOR			8

BUILDING TYPE I			
SQUARE FOOTAGES		UNIT INFORMATION	
LOWER LEVEL GROSS AREA	5,760 SQ. FT.	UNIT TYPE	UNIT NUMBER
FIRST FLOOR GROSS AREA	9,545 SQ. FT.	UNIT TYPE	SQ. FT PER UNIT
SECOND FLOOR GROSS AREA	9,545 SQ. FT.	1 BED	1B, 1C, 2B, 2C
TOTAL GROSS AREA FOR THIS BLDG. TYPE	24,850 SQ. FT.	1 BED + DEN	1F, 1G, 1F, 1G, 2F, 2G
TOTAL UNIT SQ. FT. FOR THIS BLDG. TYPE	20,460 SQ. FT.	2 BED	1A, 1D, 2A, 2D
TOTAL UNITS ON THIS BLDG. TYPE	20	2 BED	1E, 1H, 1E, 1H, 2E, 2H

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No.	Date	Revisions / Submissions
1	12/09/20	REVISED PER TOWN COMMENTS

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Project Title

HUDSON PLACE

5417 ROUTE 9W
NEWBURGH, NEW YORK 12550

Sheet Title

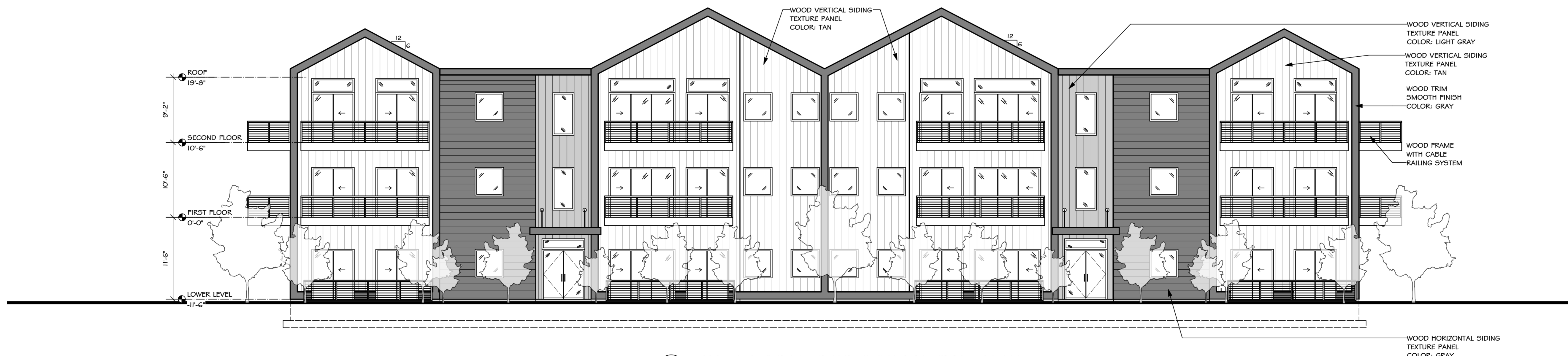
BUILDING TYPE 1 - BUILDING ELEVATIONS

Date	09/26/18	Sign and Seal
Project ID	1901	
Drawn By	KK/NA/OS	
Checked By	PFG	
Scale	AS NOTED	
Sheet No.		

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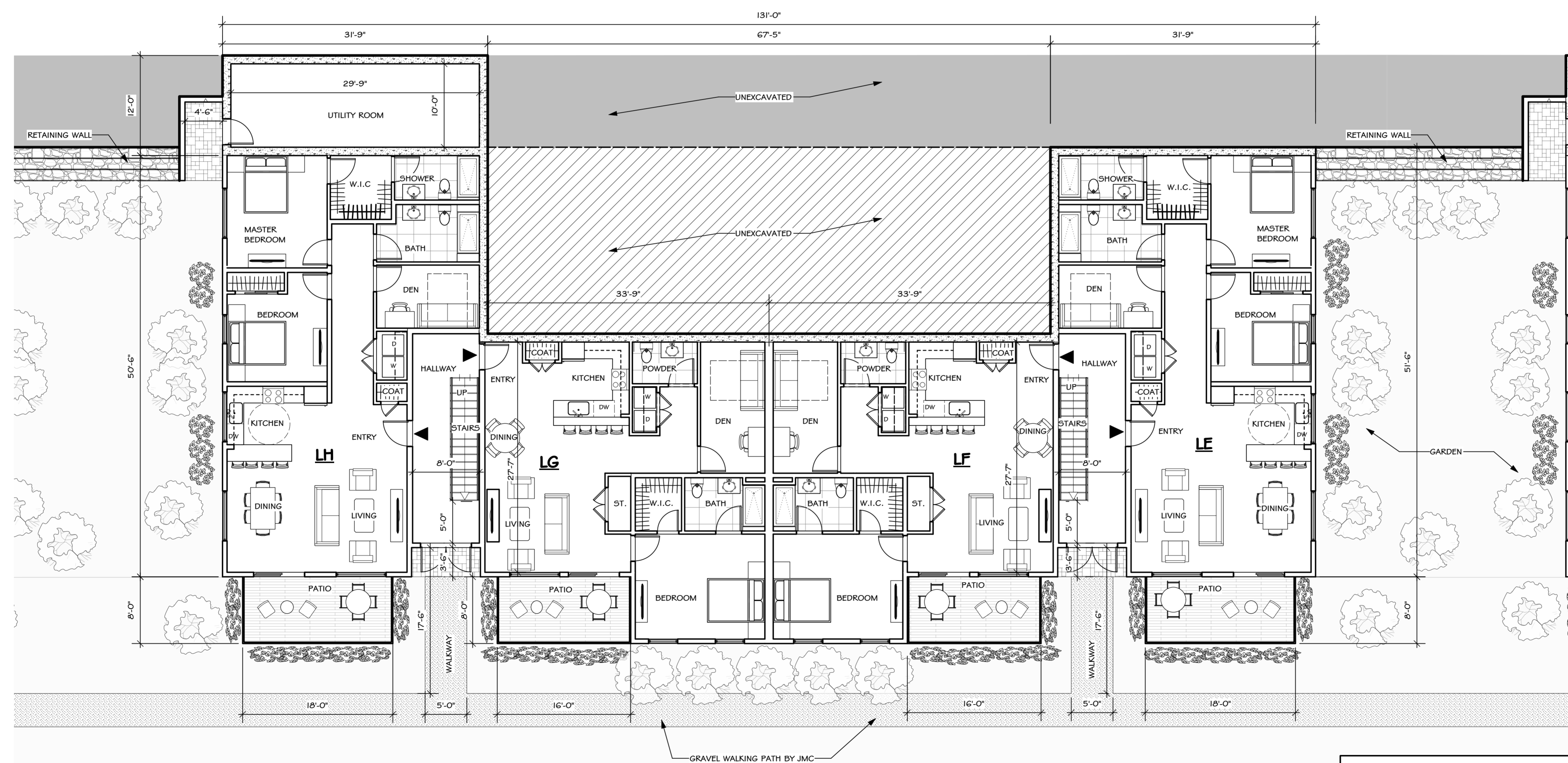
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3 BUILDING TYPE I - REAR ELEVATION (POND VIEW)
Scale: 1/8" = 1'-0"



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1 BUILDING TYPE 2 - LOWER LEVEL FLOOR PLAN
Scale: 1/8" = 1'-0"

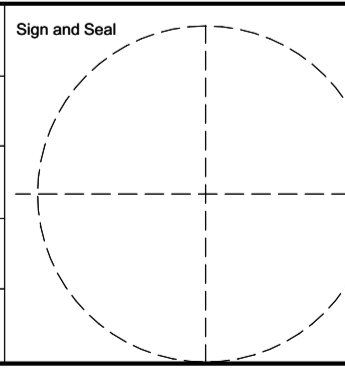
No.	Date	Revisions / Submissions
1	12/09/20	REVISED PER TOWN COMMENTS

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HUDSON PLACE
5417 ROUTE 9W
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Sheet Title
BUILDING TYPE 2 - LOWER LEVEL FLOOR PLAN

Date: 09/26/18
Project ID: 1901
Drawn By: KK/NA/OS
Checked By: PFG
Scale: AS NOTED
Sheet No.



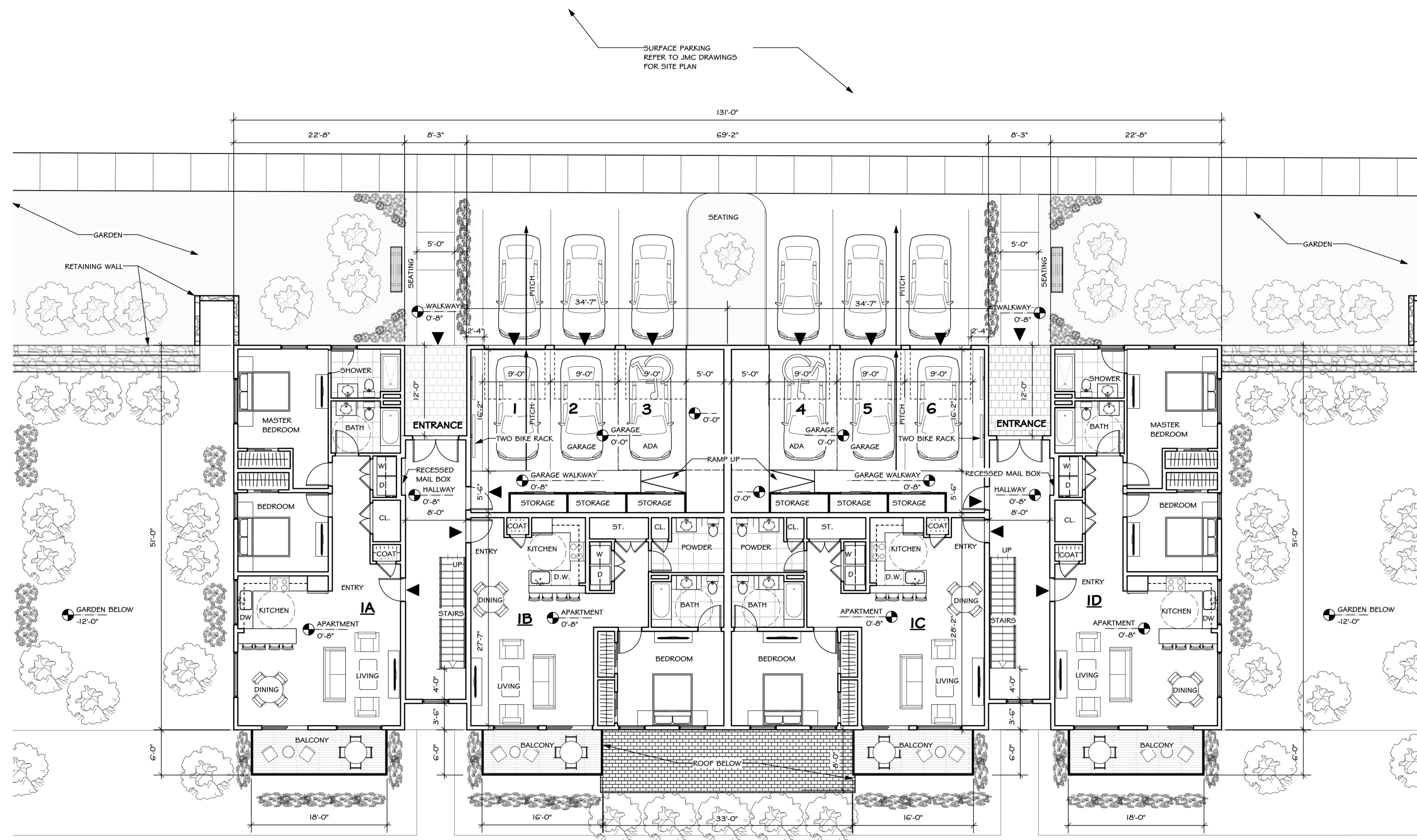
A-200
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LOWER LEVEL UNIT INFORMATION		
UNIT	UNIT COUNT	UNIT TYPE SQ.FT. TOTAL
E	1	(1 X 1,255) = 1,255 SQ.FT.
F	1	(1 X 1,050) = 1,050 SQ.FT.
G	1	(1 X 1,050) = 1,050 SQ.FT.
H	1	(1 X 1,255) = 1,255 SQ.FT.
TOTAL UNIT SQ. FT. FOR THIS FLOOR		4,610 SQ.FT.
TOTAL UNITS ON THIS FLOOR		4

BUILDING TYPE 2			
SQUARE FOOTAGES		UNIT INFORMATION	
LOWER LEVEL GROSS AREA	5,795 SQ.FT.	UNIT TYPE	UNIT NUMBER
FIRST FLOOR GROSS AREA	6,425 SQ.FT.	1 BED	1B, 1C
SECOND FLOOR GROSS AREA	6,425 SQ.FT.	1 BED + DEN	1F, 1G
TOTAL GROSS AREA FOR THIS BLDG TYPE	18,645 SQ.FT.	2 BED	1A, 1D, 2A, 2D
TOTAL UNIT SQ. FT. FOR THIS BLDG TYPE	14,110 SQ.FT.	2 BED + DEN	2I, 2J
TOTAL UNITS ON THIS BLDG TYPE	12	2 BED + DEN	1E, 1H



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HUDSON PLACE
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Sheet Title

BUILDING TYPE 2 - FIRST FLOOR PLAN

Date

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FIRST FLOOR UNIT INFORMATION		
UNIT	UNIT COUNT	UNIT TYPE SQ. FT. TOTAL
A	1	(1 X 1,075) = 1,075 SQ. FT.
B	1	(1 X 925) = 925 SQ. FT.
C	1	(1 X 925) = 925 SQ. FT.
D	1	(1 X 1,075) = 1,075 SQ. FT.
TOTAL UNIT SQ. FT. FOR THIS FLOOR		4,000 SQ. FT.
TOTAL UNITS ON THIS FLOOR		4

BUILDING TYPE 2			
SQUARE FOOTAGES		UNIT INFORMATION	
LOWER LEVEL GROSS AREA	5,795 SQ. FT.	UNIT TYPE	UNIT NUMBER
FIRST FLOOR GROSS AREA	6,425 SQ. FT.	1 BED	IB, IC
SECOND FLOOR GROSS AREA	6,425 SQ. FT.	1 BED + DEN	LF, LG
TOTAL GROSS AREA FOR THIS BLDG TYPE	18,645 SQ. FT.	2 BED	IA, ID, 2A, 2D
TOTAL UNIT SQ. FT. FOR THIS BLDG TYPE	14,110 SQ. FT.	2 BED + DEN	2I, 2J
TOTAL UNITS ON THIS BLDG TYPE	12	2 BED + DEN	LE, LH

BUILDING TYPE 2 - FIRST FLOOR PLAN
Scale: 1/8" = 1'-0"



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HUDSON PLACE

5417 ROUTE 9W
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Sheet Title

BUILDING TYPE 2 - SECOND FLOOR PLAN

Date

09/26/18

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Project ID

1901

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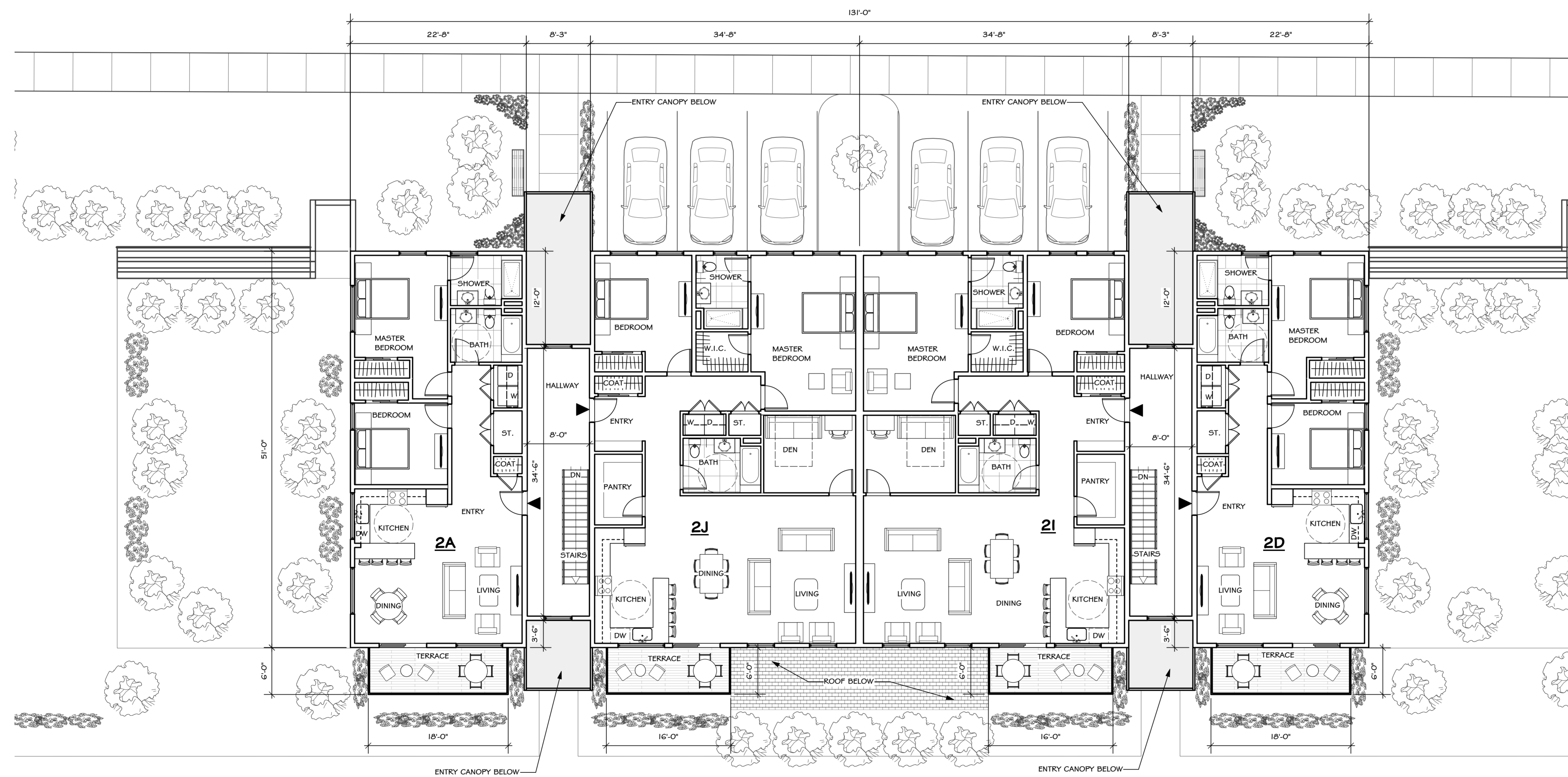
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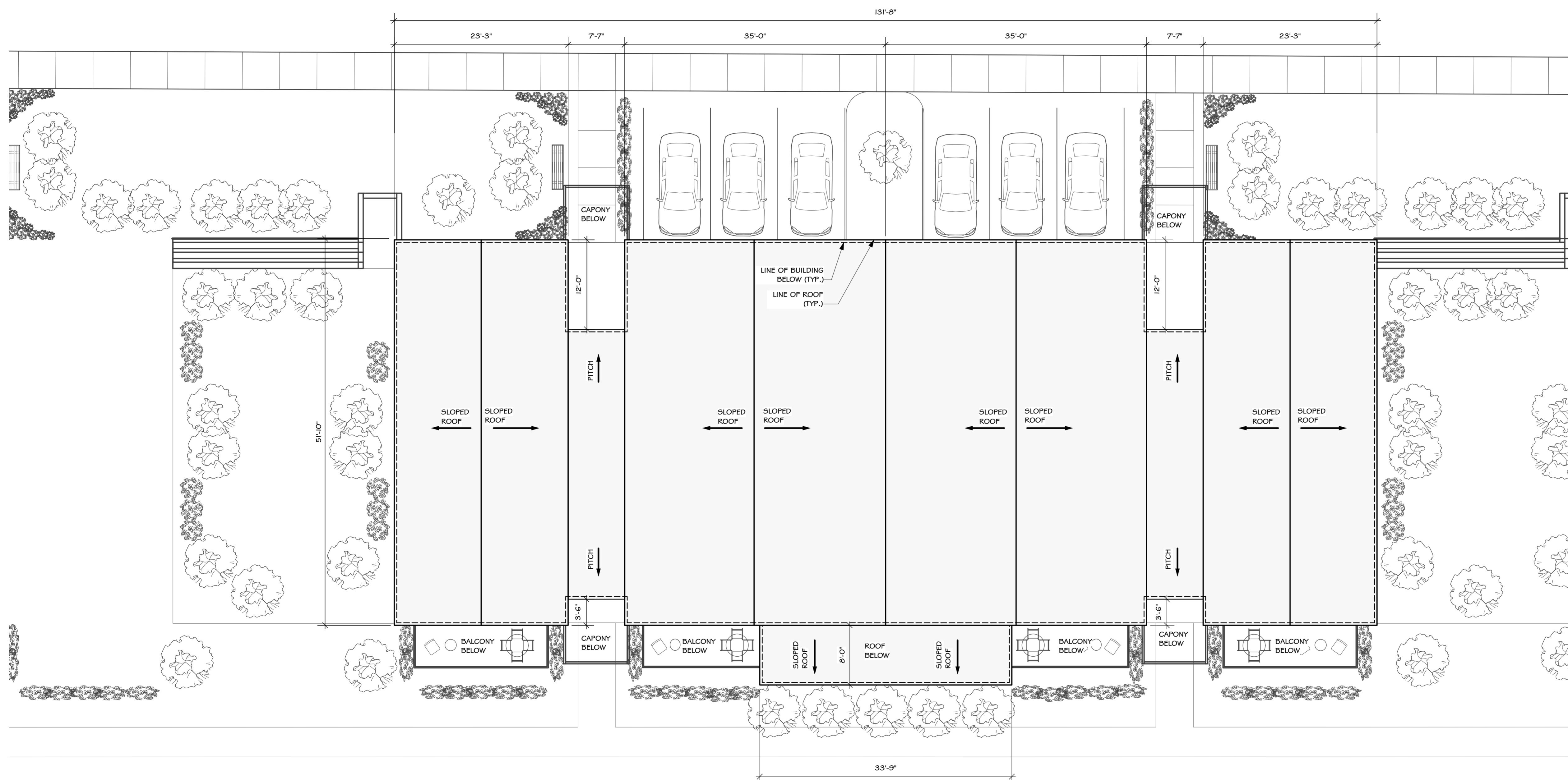
SECOND FLOOR UNIT INFORMATION		
UNIT	UNIT COUNT	UNIT TYPE SQ. FT. TOTAL
A	1	(1 X 1,075) = 1,075 SQ. FT.
D	1	(1 X 1,075) = 1,075 SQ. FT.
I	1	(1 X 1,675) = 1,675 SQ. FT.
J	1	(1 X 1,675) = 1,675 SQ. FT.
TOTAL UNIT SQ. FT. FOR THIS FLOOR		5,500 SQ. FT.
TOTAL UNITS ON THIS FLOOR		4

BUILDING TYPE 2			
SQUARE FOOTAGES		UNIT INFORMATION	
LOWER LEVEL GROSS AREA	5,795 SQ. FT.	UNIT TYPE	UNIT NUMBER
FIRST FLOOR GROSS AREA	6,425 SQ. FT.	1 BED	1B, 1C
SECOND FLOOR GROSS AREA	6,425 SQ. FT.	1 BED + DEN	1F, 1G
TOTAL GROSS AREA FOR THIS BLDG TYPE	18,645 SQ. FT.	2 BED	1A, 1D, 2A, 2D
TOTAL UNIT SQ. FT. FOR THIS BLDG TYPE	14,110 SQ. FT.	2 BED + DEN	2I, 2J
TOTAL UNITS ON THIS BLDG TYPE	12	2 BED + DEN	1E, 1H

BUILDING TYPE 2 - SECOND FLOOR PLAN
Scale: 1/8" = 1'-0"



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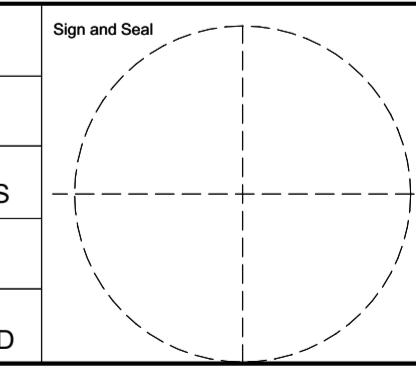
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HUDSON PLACE
5417 ROUTE 9W
NEWBURGH, NEW YORK 12550

Sheet Title
BUILDING TYPE 2 - ROOF PLAN

Date: 09/26/18
Project ID: 1901
Drawn By: KK/NA/OS
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Scale: AS NOTED
Sheet No.:



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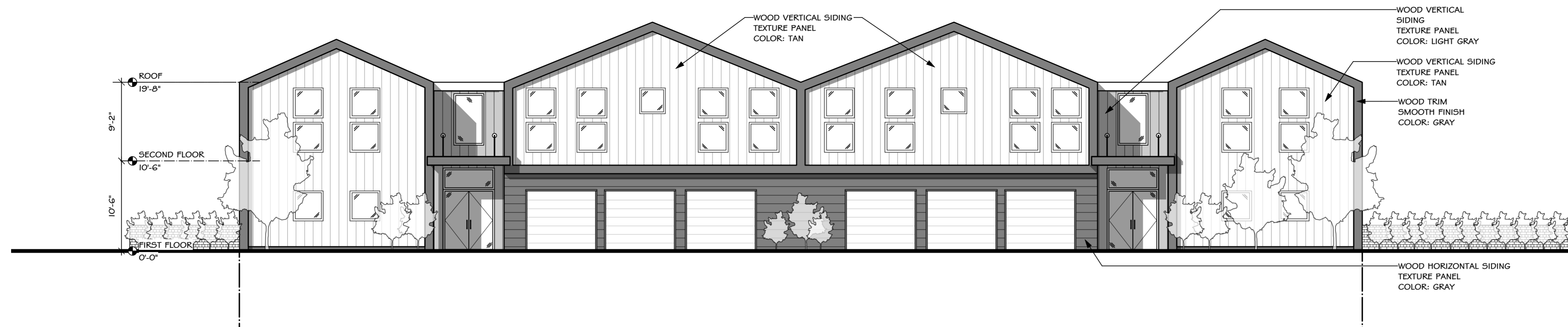
SECOND FLOOR UNIT INFORMATION			
UNIT	UNIT COUNT	UNIT TYPE	SQ. FT. TOTAL
A	1	(1 X 1,075)	1,075 SQ. FT.
D	1	(1 X 1,075)	1,075 SQ. FT.
I	1	(1 X 1,675)	1,675 SQ. FT.
J	1	(1 X 1,675)	1,675 SQ. FT.
TOTAL UNIT SQ. FT. FOR THIS FLOOR			5,500 SQ. FT.
TOTAL UNITS ON THIS FLOOR			4

BUILDING TYPE 2			
SQUARE FOOTAGES		UNIT INFORMATION	
LOWER LEVEL GROSS AREA	5,795 SQ. FT.	UNIT TYPE	UNIT NUMBER
FIRST FLOOR GROSS AREA	6,425 SQ. FT.	1 BED	1B, 1C
SECOND FLOOR GROSS AREA	6,425 SQ. FT.	1 BED + DEN	1F, 1G
TOTAL GROSS AREA FOR THIS BLDG TYPE	18,645 SQ. FT.	2 BED	1A, 1D, 2A, 2D
TOTAL UNIT SQ. FT. FOR THIS BLDG TYPE	14,110 SQ. FT.	2 BED + DEN	2I, 2J
TOTAL UNITS ON THIS BLDG TYPE	12	2 BED + DEN	1E, 1H

BUILDING TYPE 2 - ROOF PLAN
Scale: 1/8" = 1'-0"



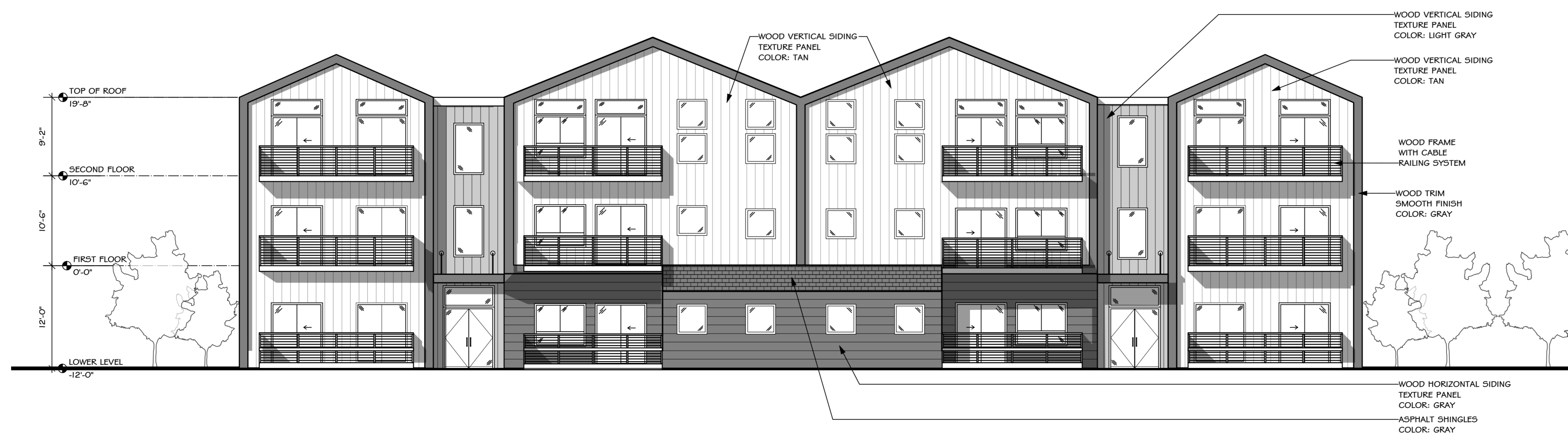
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1 BUILDING TYPE 2 - FRONT ELEVATION
Scale: 1/8" = 1'-0"



2 BUILDING TYPE 2 - TYPICAL SIDE ELEVATION
Scale: 1/8" = 1'-0"



3 BUILDING TYPE 2 - REAR ELEVATION (POND VIEW)
Scale: 1/8" = 1'-0"

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HUDSON PLACE
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Sheet Title

BUILDING TYPE 2 - BUILDING ELEVATIONS

Date

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1901

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Sheet No.

A-204

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Project Title
HUDSON PLACE
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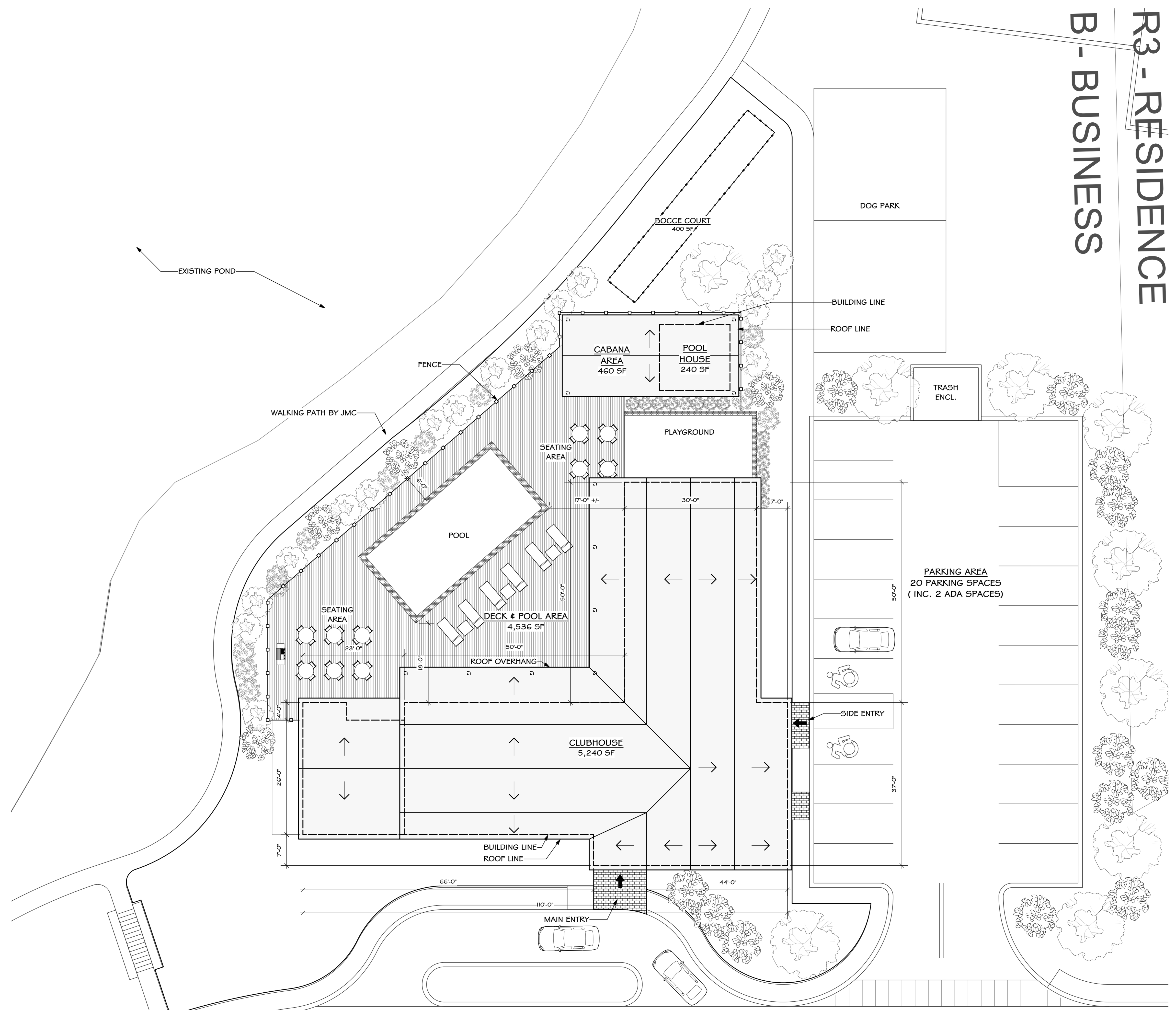
Sheet Title
CLUBHOUSE - ROOF PLAN

Date: 09/26/18
 Project ID: 1901
 Drawn By: KK/NA/OS
 Checked By: PFG
 Scale: AS NOTED
 Sheet No.

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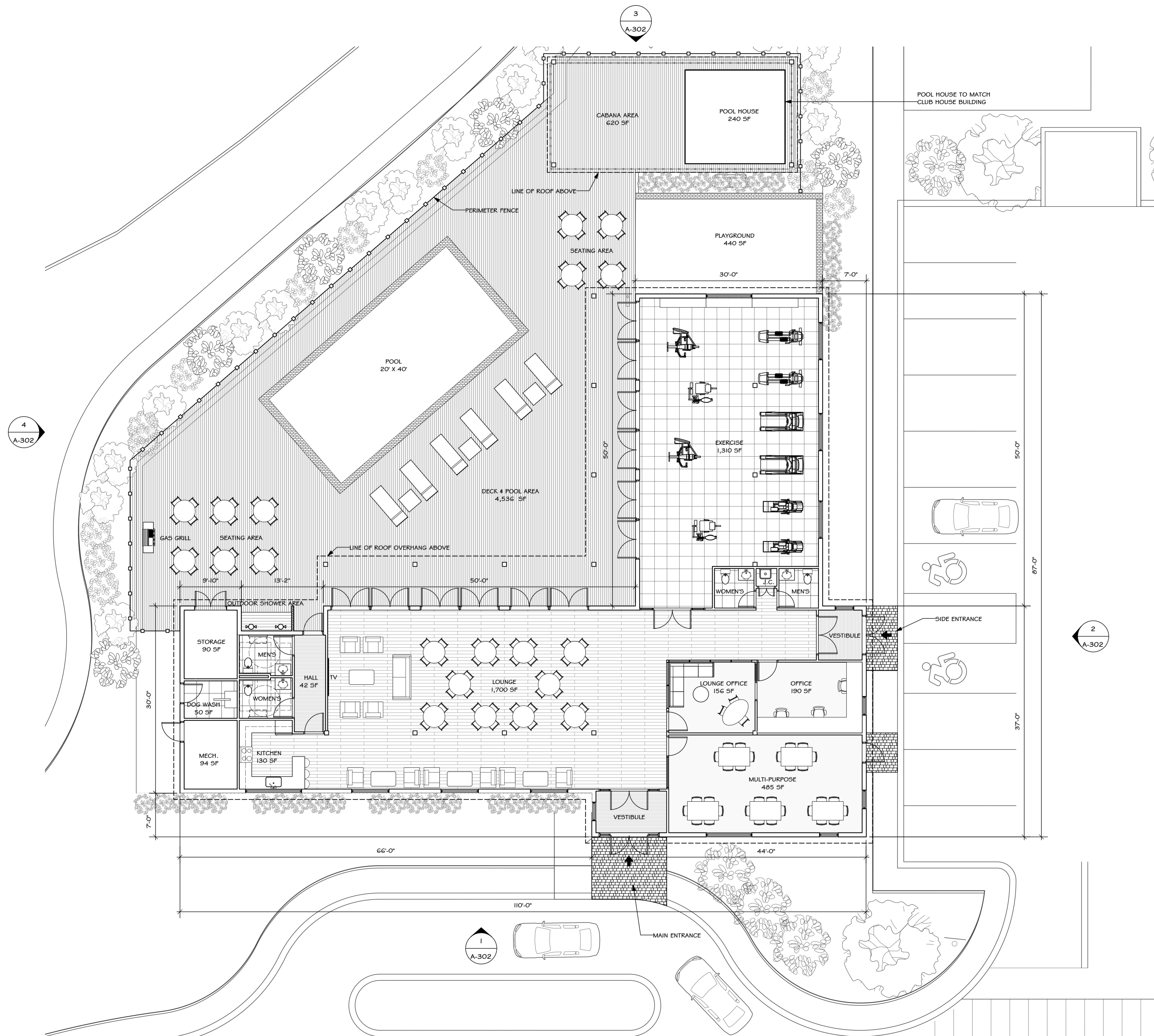
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R3 - RESIDENCE
B - BUSINESS



1 CLUBHOUSE - ROOF PLAN
 Scale: 3/32" = 1'-0"

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Project Title
HUDSON PLACE
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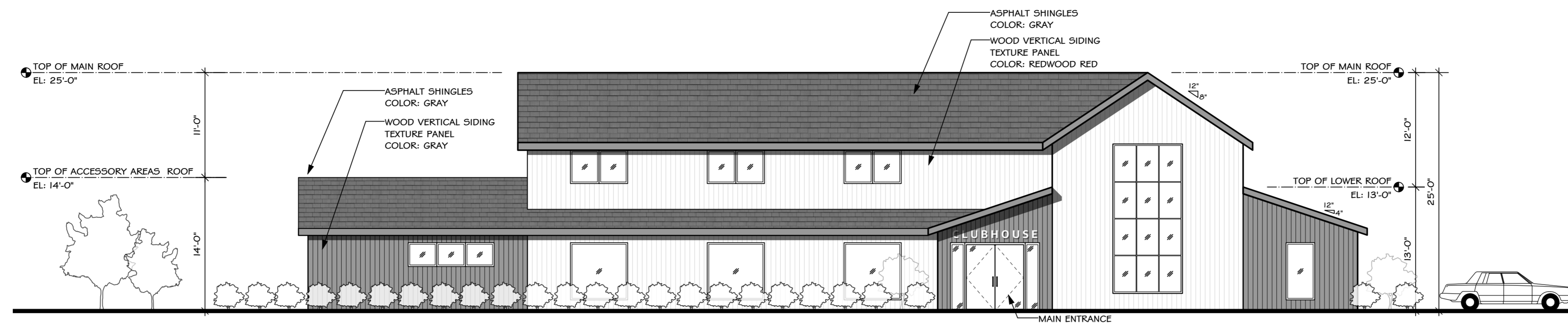
Sheet Title
CLUBHOUSE - FLOOR PLAN

Date: 09/26/18
 Project ID: 1901
 Drawn By: KK/NA/OS
 Checked By: PFG
 Scale: AS NOTED
 Sheet No. **A-301**

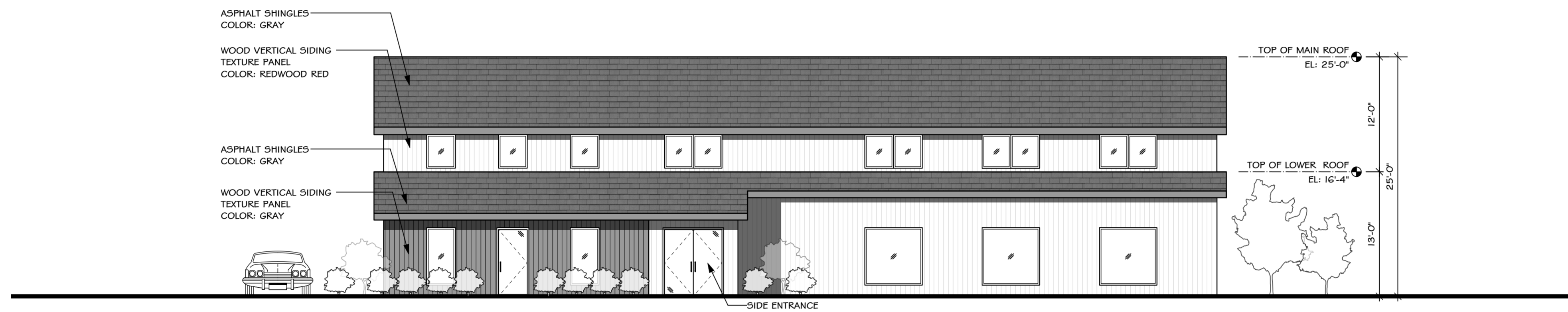
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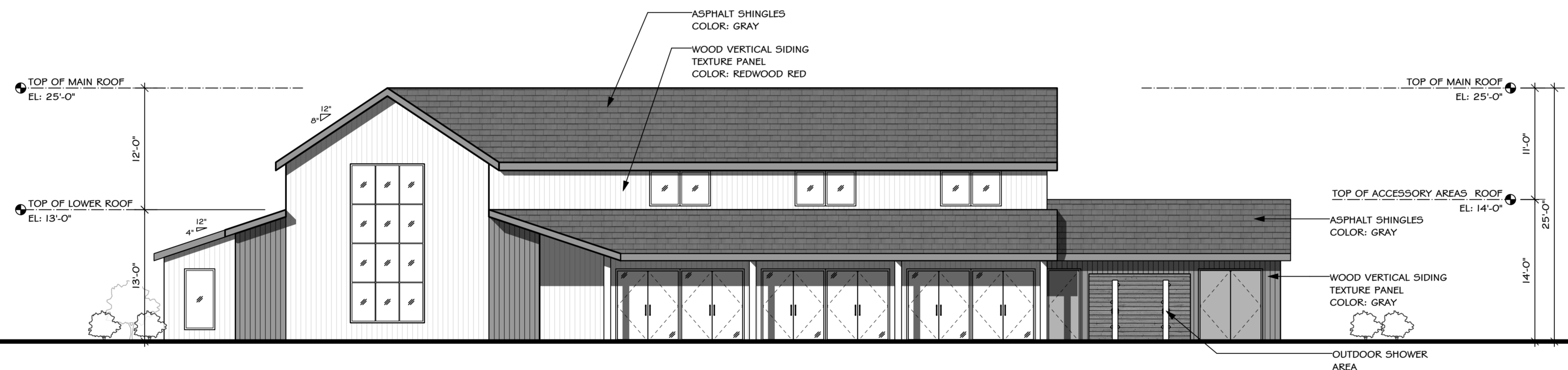
1 CLUBHOUSE - FLOOR PLAN
 Scale: 1/8" = 1'-0"



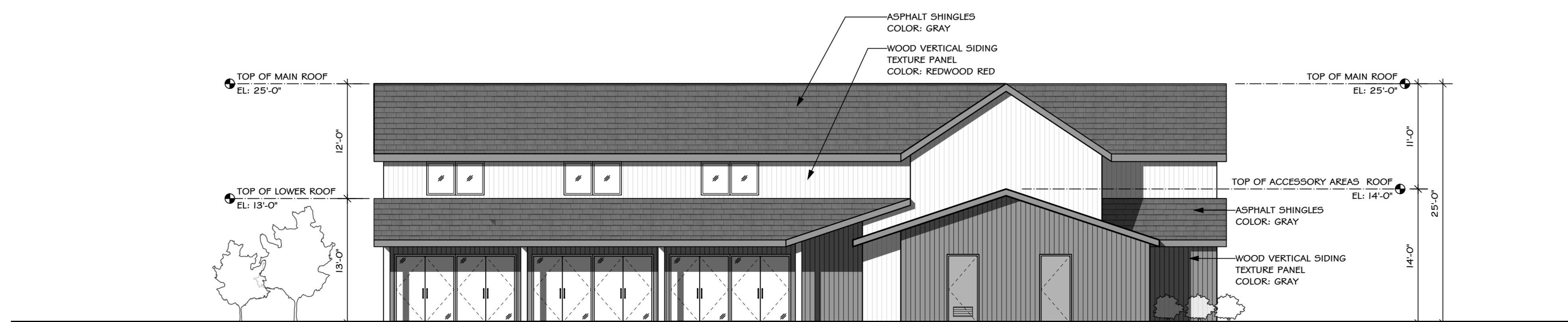
1 CLUBHOUSE - SOUTH ELEVATION (FRONT ENTRANCE)
Scale: 1/8" = 1'-0"



2 CLUBHOUSE - EAST ELEVATION (SIDE ENTRANCE)
Scale: 1/8" = 1'-0"



3 CLUBHOUSE - NORTH ELEVATION (POOL SIDE)
Scale: 1/8" = 1'-0"



4 CLUBHOUSE - WEST ELEVATION
Scale: 1/8" = 1'-0"



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Project Title

HUDSON PLACE

5417 ROUTE 9W
NEWBURGH, NEW YORK 12550

Sheet Title

CLUBHOUSE - BUILDING ELEVATIONS

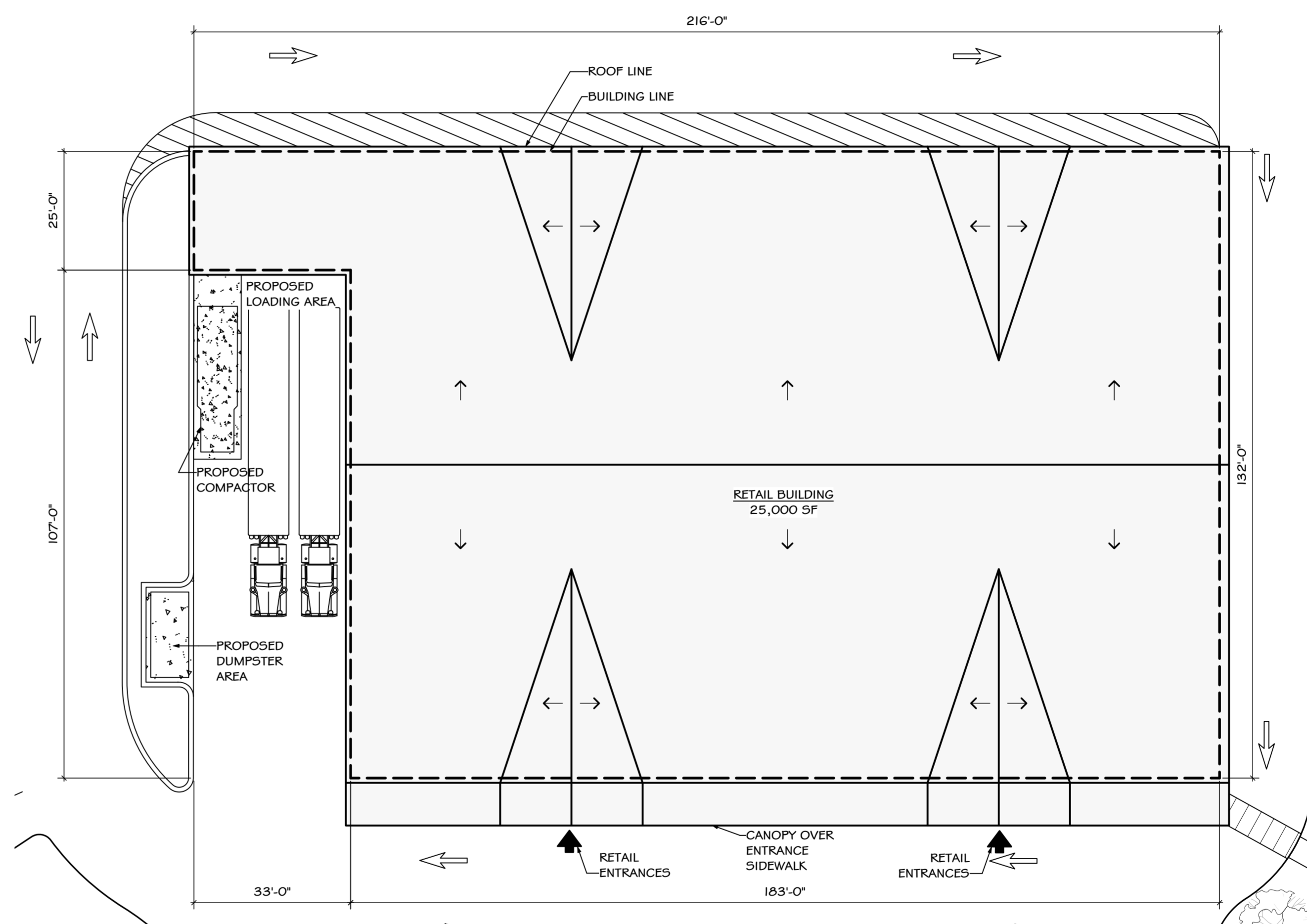
Date	09/26/18	Sign and Seal
Project ID	1901	
Drawn By	KK/NA/OS	
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Scale	AS NOTED	
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I RETAIL BUILDING - ROOF PLAN
Scale: 1" = 20'-0"

NOTE:
I. FOR SITE PLAN REFER TO JMC DRAWINGS

No.	Date	Revisions / Submissions
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**RETAIL BUILDING
ROOF PLAN**

Date

09/26/18

Sign and Seal

Project ID

1901

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Scale

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Sheet No.

A-400

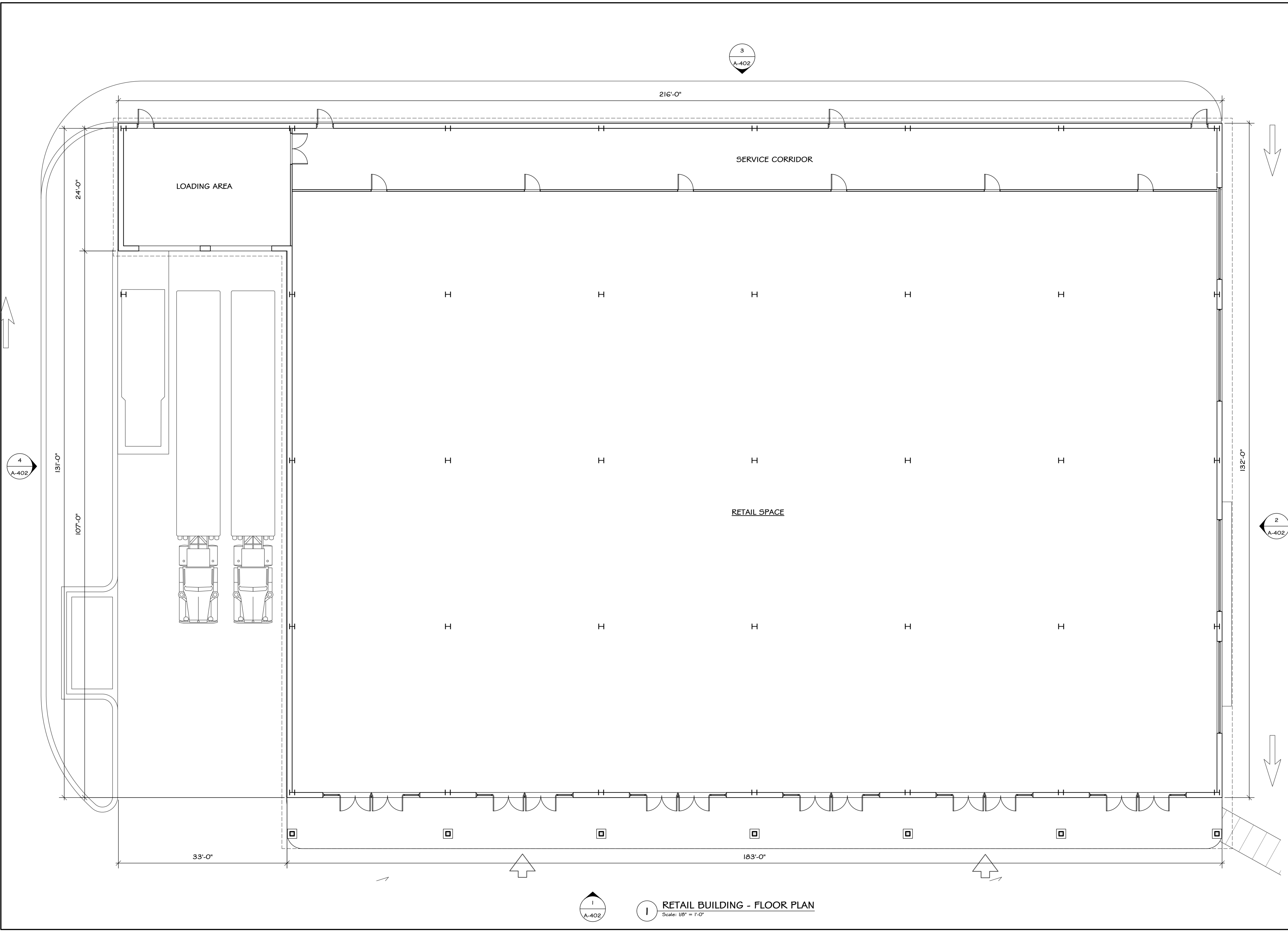
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RETAIL BUILDING - FLOOR PLAN

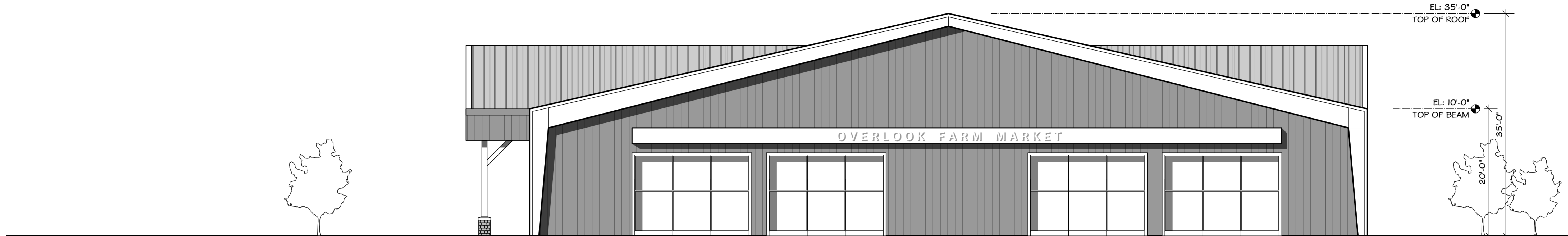
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 Checked By: PFG
 Scale: AS NOTED

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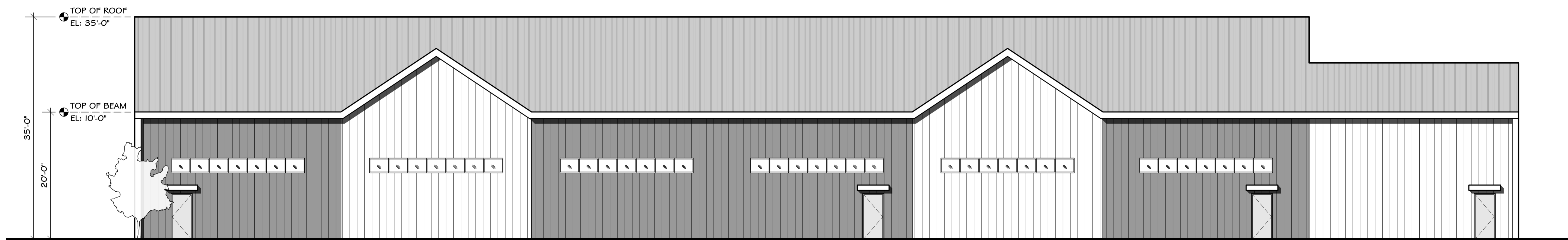
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 A-402
RETAIL BUILDING - FLOOR PLAN
 Scale: 1/8" = 1'-0"



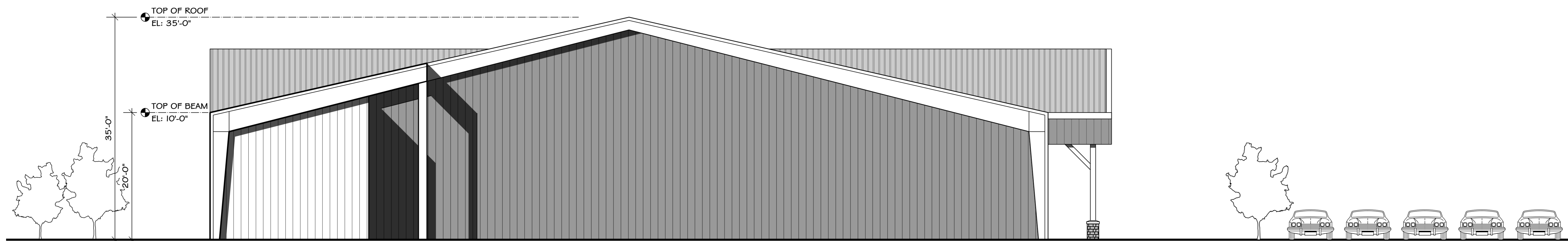
1 SOUTH ELEVATION (MAIN ENTRANCE)
Scale: 1/8" = 1'-0"



2 EAST ELEVATION (@ ROUTE 9W)
Scale: 1/8" = 1'-0"



3 NORTH ELEVATION (@ MORRIS DRIVE)
Scale: 1/8" = 1'-0"



4 WEST ELEVATION
Scale: 1/8" = 1'-0"

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Sheet Title

RETAIL BUILDING - BUILDING ELEVATIONS

Date

09/26/18

Sign and Seal

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Drawn By

KK/NA/OS

Checked By

PFG

Scale

AS NOTED

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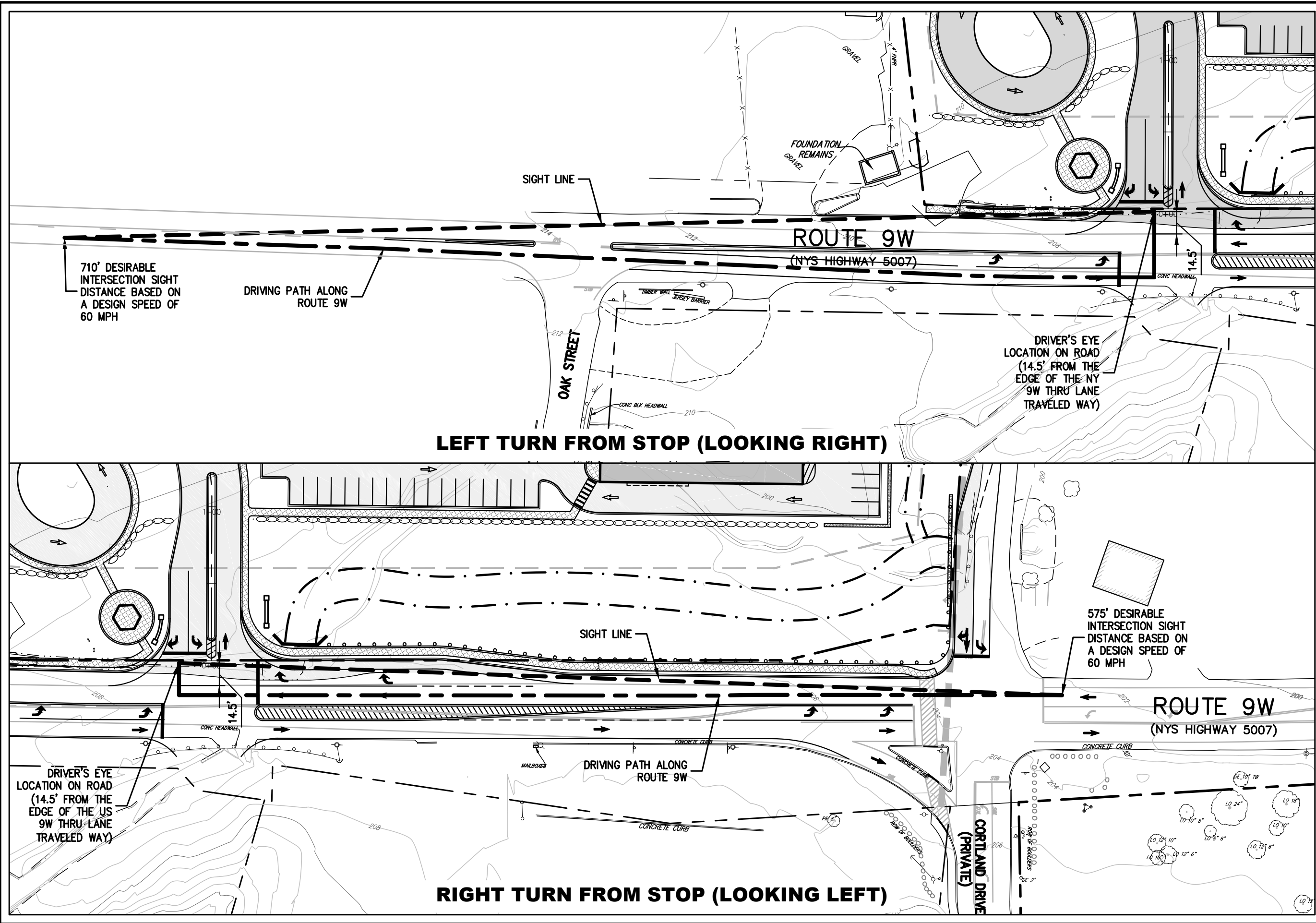
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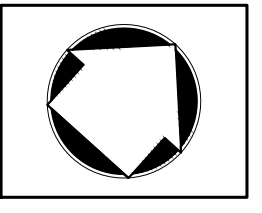
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HUDSON PLACE

TOWN OF NEWBURGH, NEW YORK

SIGHT DISTANCE ANALYSIS

5417 ROUTE 9W

DATE: 12/09/2020

JMC PROJECT: 17088

SCALE: 1" = 60'

FIGURE: SD-1

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17088 - SITE PLAN - SIGHT DISTANCE TAB