CITY OF HENDERSONVILLE
PLANNING BOARD - REGULARLY SCHEDULED
Operations Center - Assembly Room | 305 Williams St. | Hendersonville NC 28792
Monday, October 11, 2021 – 4:00 PM

AGENDA

1. **CALL TO ORDER**
2. **APPROVAL OF AGENDA**
3. **APPROVAL OF MINUTES**
   A. Minutes of the September 13, 2021 meeting
4. **OLD BUSINESS**
5. **NEW BUSINESS**
   A. Conditional Rezoning: World of Clothing Mini Warehouses PIN 9579-56-0884 and 9579-46-9642 (P21-52-CZD) – *Tyler Morrow, Planner II*
   B. Conditional Zoning District – Half Moon Heights (P21-44-CZD) – *Matthew Manley, AICP – Planning Manager*
6. **OTHER BUSINESS**
7. **ADJOURNMENT**

The City of Hendersonville is committed to providing accessible facilities, programs and services for all people in compliance with the Americans with Disabilities Act (ADA). Should you need assistance or an accommodation for this meeting please contact the Community Development Department no later than 24 hours prior to the meeting at 828-697-3010.

Minutes of the Planning Board
Regular Meeting - Electronic
September 13, 2021

Members Present: Jim Robertson, Chair, Neil Brown, Jon Blatt (Vice-Chair), Peter Hanley, Bob Johnson, Tamara Peacock, Barbara Cromar

Members Absent: Hunter Jones, Robert Hogan, Candi Guffey

Staff Present: Tyler Morrow, Planner II, Lew Holloway, Community Development Director, Matt Manley, Planning Manager, Alex Hunt, Planner and Terri Swann, Administrative Assistant III

I Call to Order. ***The Chair called the meeting to order at 4:00 pm. A quorum was established.***

II Approval of Agenda. ***Mr. Hanley moved for the agenda to be approved. The motion was seconded by Mr. Brown and passed unanimously.***

III Approval of Minutes for the meeting of August 9, 2021. ***Mr. Hanley moved to approve the Planning Board minutes of the meeting of August 9, 2021. The motion was seconded by Mr. Brown and passed unanimously.***

IV Old Business

IV(A) Motion to Adopt a Comprehensive Plan Consistency Statement for the Zoning Text Amendment: Addition and Definition of Small Scale Manufacturing with Supplementary Standards. (File #P21-41-ZTA).

Lew Holloway, Community Development Director stated in the motion for this text amendment last month it did not include the reference to the Comprehensive Plan Consistency Statement, and this was an oversight that was caught by the Legal Department. Map Amendments have always referenced the Comp Plan Consistency Statement in the motion, but Text Amendments have not. With the changes of the North Carolina General Statute 160D-604(d), Text Amendments now require this to be added to the motion as well. The Consistency Statement states: 1) Encourages infill development and redevelopment in areas planned for high intensity development. 2) Contributes to downtown's role as the focal point of niche retailers within the city. 3) Encourages mixed-use development that reduces the need to drive. The Consistency statement is in the proposed motion. The Planning Board needs to formally adopt this and send it on to City Council for review. Chair asked if staff received any feedback from City Council. Mr. Holloway stated City Council could not hear this at their last meeting. The Legal Team caught the mistake, and it was sent back to the Planning Board. Staff has not heard any feedback from the public.

Mr. Hanley moved the Planning Board recommend approval of the addition and definition of Small Scale Manufacturing with Supplementary Standards to C-1, C-2, C-3, CMU, GHMU, HMU and CHMU, finding that the text amendment is consistent with the 2030 Comprehensive Plan, the Planning Board formally adopts the Comprehensive Plan Consistency Statement found on page 3 in the P21-41-ZTA staff report as the written recommendation to City Council, and that text amendment is reasonable and in the public's interest because: 1) It will promote additional diversity of job opportunities within the City of Hendersonville. 2) It encourages reinvestment in existing infrastructure and commercial real estate within the City of Hendersonville, supporting sustainable

tax base. 3) It reflects adaptation by the City to changing market trends in retail and manufacturing. Mr. Johnson seconded the motion which passed unanimously.

V(A) Conditional Zoning District – Application for a conditional rezoning from Michael Goforth of High Country Engineering, PC, First Victory Construction, Inc., applicants and Hickory Reality Fund, LLC, property owners. The applicants are requesting to rezone the subject property, PIN 9569-85-3434, 9569-85-7172, 9569-83-4918, 9569-85-1398 and 9569-85-3178 and located on N. Main Street, from PCD, Planned Commercial Development and R-20, Low Density Residential to PRD CZD, Planned Residential Development Conditional Zoning District for the construction of a housing development containing 93 single-family homes. Mr. Manley gave the following background:

This parcel involves five PIN's and included in the parcels is an approved past development that did not occur. These parcels are just over 20 acres and will have 93 single family home lots. Two Neighborhood Compatibility meetings were held for this project due to modifications to the site plan. Concerns from the meetings revolved around security, connections to Strick Garden Lane, traffic safety on North Main Street sight distance at the access points, tree preservation, stormwater and other related traffic concerns. The developer changed the site plan from the first Neighborhood meeting and removed the apartments from the rear of the property and added home sites near the road. This will save additional trees.

Parcels to the north across North Main Street are zoned R-20, Low Density Residential as well as the parcels to the east. Parcels to the south stretching all the way towards Four Seasons Boulevard along Duncan Hill Road are zoned C-3, Highway Business. Parcels to the west are zoned PRD, Planned Residential Development as part of a Housing Assistance Corporation development (Oklawaha Village). Primary land uses around the site are residential and vacant land. There is a large Ford dealership which is immediately adjacent to the site at the southeast corner. The location is primarily designated as Medium Intensity Neighborhood according to the Future Land Use Map. Due to the presence of floodplain, the Natural Resource/Agricultural designation is also present on a portion of the excess parcel which is located in the floodplain and not proposed to be developed. The Medium Intensity Neighborhood goal is to provide a transition between High and Low Intensity Neighborhood areas while providing a wide range of housing formats and price points and promote walkable neighborhood design and compatible infill development.

Chapter 3: Natural & Environmental Resources of the Comprehensive Plan requires the proposed development provide open space and preserve existing forest by clustering the development towards the front of the tract.

Chapter 2: Population and Housing has walkable design goals and encourages recessed garages with a focus on the front porch, which creates a sense of walkable communities. The goal of the Comp Plan is to utilize created space by providing a variety of quality open space that can be used for recreational opportunities and aesthetic enhancements.

Chapter 5 incorporates recreational amenity requirements and incentives in the PRD district.

Existing conditions of the site were shown. There is a pond on site. The tree survey was shown along with the area that is not being disturbed. This area contains a number of large trees. The total number of trees is 196. There are 125 preserved trees and 71 trees that will be removed.

A layout of the site plan was shown, showing the access to Strick Garden Lane. Two connections are required per the Subdivision Ordinance, not the Zoning Ordinance. There are two accesses planned from North Main Street.

The Oklawaha final site plan was shown with the access road being shown as a 45-foot public right-of-way.

Mr. Manley stated under the Subdivision Standards Section c states: the arrangement of streets in a development shall provide for the alignment and continuation of existing or proposed streets into adjoining lands in those cases in which the adjoining lands are undeveloped and deemed appropriate by the DRC for future development or in which the adjoining lands are developed and include opportunities for such connections.

The proposed plan was reviewed by DRC. The proposed site plan is generally compliant with the zoning code and the subdivision standards. The proposed use/site plan are supported by the Comprehensive Plan though some detailed design goals should be considered.

Staff had no recommended conditions. The Tree Board had one condition: Developer to utilize trees and shrubs from the Recommended Landscape Species List for street trees and development projects, to comply with section 15-4 of the Zoning Ordinance and to require all new tree plantings to be minimum of two-inch caliper.

Ms. Peacock asked if the apartments in the original plan had been taken out and they plan to develop that area later. Mr. Manley stated he would defer that to the developer. He believes there were some challenges there with the slope. There are no plans for the future development site.

Ms. Cromar asked if the access to Strick Garden Lane was public or private. Mr. Manley stated it is a platted public right-of-way and this developer will finish the street. It is required by the Subdivision Ordinance.

Mr. Blatt had concerns about the Tree Board condition requiring the trees have a two-inch caliper. What is the requirement in the ordinance? Mr. Manley stated the requirement in the ordinance is 1 ½ to 2 ½ is acceptable. Mr. Blatt asked about a dash line on the site plan. Mr. Manley stated that is an old parcel line.

Discussion was made about an old right-of-way. Mr. Manley explained that if the old right-of-way was in fact a public right-of-way it would need to be closed but if the right-of-way is a private one, it would not need to go before City Council to be closed. Mr. Blatt stated since this old right-of-way is private, the developer would have full control over it and will terminate it. Mr. Fowler stated yes.

Mr. Johnson asked about the R-20 zoning in the area. Mr. Manley pointed out the R-20 zoning. Mr. Johnson asked about the section concerning walkable neighborhoods and if they have any control over the porches being placed in the front. Mr. Manley stated that could be added as a condition if the developer is agreeable.

Mr. Brown stated he is not seeing internal sidewalks. Mr. Manley pointed out the sidewalks and stated a sidewalk will be on one side of the street and along North Main Street.

Mr. Blatt asked about the parking arrangement for each lot. Mr. Manley stated there will be a 12’ x 12’ space and garages on the front. Mr. Blatt stated so roughly two cars can park there. Mr. Manley stated yes.

Chair had concerns about parking ending up on the street. Most people have some type of storage in their garages, and this may create the need for parking on the street. Mr. Manley stated they cannot plan for every worst-case scenario, but they can address concerns with the developer about the building layout. The Comp Plan does state a recessed or rear garage is acceptable.

Jay Johnston, Engineer with High Country Engineering stated he was there in place of Mike Goforth. He stated the house elevations and architectural details will match with the walkable community in nature of design. They will have sidewalks internally and are abiding by the Zoning Code. If they plan to have street

parking, they will make sure it will fit safely and incorporate it nicely with the design. When the Oklawaha project was developed they left the access in there. It is a great access for sewer and utilities. They pitched this access as a need from a regulatory standpoint. They are required to have two accesses in the development. They would like to eliminate one access from North Main Street. After looking at the first entrance on North Main Street they have reconsidered it.

Ms. Cromar asked if they change the access would traffic go through the Oklawaha connection. Mr. Johnston stated no, the primary access is from North Main Street. The nexus of the second access comes from safety and the Fire Code and is a regulatory need.

Mr. Hanley asked if NCDOT had put in their comments about the second access. Mr. Johnston stated they have talked with NCDOT and discussed a right-in, right-out access. They are still in the process of discussing this with them.

Discussion was made concerning a planting strip between the sidewalk and the street. Mr. Blatt was opposed to those strips as a lot of times they get overgrown and are not maintained. Mr. Hanley asked if there would be a HOA to maintain the property.

Travis Fowler, First Victory Construction stated there will be a HOA. The two-foot landscape strip will help adjust the grade and get the sidewalk and street to match up evenly. They will make the neighborhood walkable. Mr. Manley stated this creates an extra buffer between the cars and the pedestrians.

Discussion was made about the rear setback being 30 feet and there is a 25-foot setback on North Main where there is double frontage. The parking and driveways will be reviewed and taken care of prior to the final site plan.

Ms. Peacock asked about their open space and site features. Mr. Fowler stated they will have regular spaced areas such as an area for pets, gathering areas for grilling out, etc. Ms. Peacock asked if they were committed to providing those. Mr. Fowler stated yes.

Chair asked about the four acres in the floodplain. Mr. Fowler stated they are not developing in the floodplain.

Chair asked about the bridge over the pond. Mr. Fowler stated they are planning to deconstruct the pond dam and rebuild it. Chair asked if this would become part of the stormwater area. Mr. Fowler stated yes.

Mr. Brown stated there is a requirement by the Post Office to have cluster mailboxes for developments such as this, where would they be located. Mr. Fowler stated in the open space area. Mr. Manley stated those details will be provided on the final site plan.

Chair asked if there were any further questions for staff. There were no further questions.

Ashlynn McCoy, Executive Director of the Housing Assistance Corporation stated they own the Oklawaha Village development, and she is concerned about the connection of the street. Strick Garden Lane was supposed to be a connection used for utilities and she was unaware that it could be used for the public. They have no issue with the housing because it is needed but they do have an issue with the connection being a public right-of-way. There are transmission lines from Duke Energy, and she feels there may be issues with this being public.

Jeff Moody, 156 Yon Hill Road stated he understands the Oklawaha Drive comes up to the access and that two accesses are needed but he thought the connection was for fire and safety only. The way the streets line up at Yon Hill Road and Oklawaha, and if the connection is opened this could create a huge problem

trying to get onto North Main Street. At the top entrance proposed for this development, that is a terrible idea. Cars come around that bend at 35 mph and this will create a dangerous situation. He thinks they should eliminate that top access. Both of the entrances are questionable. He asked how wide the road will be. Mr. Manley stated there is a 45-foot right-of-way for internal streets. The actual street will be 20-feet. There will be two 10-foot lanes. Mr. Moody stated if cars park on both sides of the street this will create a huge problem. With only a 20-foot street you won't be able to get around cars parked on both sides. Mr. Moody stated the way these projects end up is not always good. There are kids involved as well and their safety should be considered.

Chair asked if anyone else would like to speak. No one spoke.

Chair opened the public comment via zoom.

Ken Fitch, 1046 Patton Street stated for many years this property has been distinguished by the natural character and environment with a very active bird population in this area. The revised site plan is an improvement but there are still issues and future expansion could intensify those issues. The density of the project is appropriate, but the number of vehicles could intensify with any new development. Traffic is already an issue and this project and will create more problems especially with children in the area. The western access to Oklawaha will be placed at risk with their children in the development. Some of the residents do not realize that access is proposed to be used and is on the site plan. Routing traffic through this area will have a major impact on the residents of Oklawaha Village. As a Planning Board member, you are responsible for reasonable growth in the City and this project will have a major impact on property owners in this area.

No one else spoke via zoom.

Chair asked if anyone else had any questions or would like to speak. When no one spoke, Chair closed the public comment time.

Chair asked what would trigger a TIA. Mr. Manley stated this project did not trigger a TIA and it was not even required when the apartments were proposed. Mr. Holloway stated the improvements for the road and the connection will be the responsibility of this developer and not the City or Oklawaha Village. Mr. Manley stated NCDOT will determine where the access will come in off of North Main Street.

Ms. Peacock asked if the developer has done similar projects like this one. Mr. Fowler stated he has done 37 developments in North Georgia. He completed one 10 years ago called Providence Walk and it has 145 lots. Ms. Peacock asked if that development had problems with cars parking on the street. Mr. Fowler stated no.

Mr. Fowler stated the access on Strick Garden Lane will remain closed during construction. They are not through the process with NCDOT yet on the entrance from North Main Street, but they will work with them and meet all the requirements from NCDOT. There has been talk about a roundabout at Baldwin Road.

Chair asked about a deceleration lane going in like the one at Oklawaha Village. Was this a requirement for Oklawaha? Ms. McCoy stated she was not sure if it was a requirement or not.

Discussion was made on open space and it not being developed. Mr. Manley stated they exceed the requirements for open space and that does not include the separate parcel for the future development area.

Mr. Manley explained the reasoning behind having connectivity to neighborhoods and developments. This relieves congestion points and is more effective than widening roads. There are benefits to connectivity and studies related to connectivity have been done.

Chair stated the Zoning Ordinance does not allow for a development to create outside traffic and that was updated in 2018. Mr. Manley stated he is not sure who would use that access from Providence Walk. It would be a longer way in and out. The Subdivision Ordinance was recently updated, and it dives into the streets and connectivity.

Chair stated they should look at the ingress and egress being one way in and out. They could also look at the alleys and having rear garages or have recessed garages which would allow for more room and a more predominant front porch. Mr. Manley stated they would need to talk over the conditions with the developer and be in agreement. Mr. Fowler stated with the amount of grade change that would make it very difficult to have a rear garage. They could push back some of the homes, all the garages are recessed but they could push them back more, but they also want a certain amount of square footage for the home. Chair asked if they could push the recessed garage back further from the street, maybe about six feet. Mr. Fowler stated they can try but he would like for the architect to take a look at it first. They will consider the recessed garages, but he is not sure about the six feet.

Chair asked if he was willing to consider a deceleration lane. Mr. Fowler stated yes.

Mr. Brown discussed keeping the Tree Board recommendation. Mr. Blatt stated the ordinance stated 1 ½" and he feels that is acceptable. Mr. Fowler stated he feels it is more important to pick the correct species of trees instead of the caliper of trees.

Ms. Peacock moved the Planning Board recommend City Council to approve an ordinance amending the official zoning map of the City of Hendersonville changing the zoning designation of the subject property from PCD CZD, Planned Commercial Development Conditional Zoning District and R-20, Low Density Residential District based on the site plan submitted by the applicant and subject to the following: 1. Residential Dwellings, Single-family. Conditions that shall be satisfied prior to final site plan approval include: 1. Require developer to utilize trees and shrubs from the Recommended Landscape Species List for Street Trees and Development Projects, to comply with Section 1504 of the Zoning Ordinance. 2. The developer will work with staff to recess the garages and create longer driveways in accordance with the Comp Plan Chapter 2: Population and Housing for Walkable Neighborhoods and 3. There will be a right-in/right-out northern entrance and the main entrance will include a deceleration lane. Finding that the rezoning is consistent with the Comprehensive Plans Future Land Use map and that the rezoning is reasonable and in the public interest for the following reasons: 1. The location of the proposed Planned Residential Development is in keeping with the surrounding land uses (Chapter 8 LU-6.1). 2. Single family detached is a primary use stated in the Land Use and Development (Chapter 8 LU 6.2). 3. The proposed density of the development (4.6 units/acre) is in line with the Land Use and Development Chapter's guidance of 2-8 units/acre (Chapter 9 LU 6.4). 4. The development has been laid out to minimize the impact to environmentally sensitive resources on the site and to preserve existing vegetation (Chapter 3 NR 2.1). Mr. Blatt seconded the motion. The vote was unanimous to approve.

The Planning Board took a five-minute recess at 5:29 pm. Chair called the meeting to order at 5:34 pm.

V(B) Conditional Zoning District Application for a conditional rezoning from Warren Sugg of Civil Design Concepts and Graycliff Capital Development, LLC. The applicants are requesting to rezone the subject property, PIN 9588-11-9994 and located on S. Allen Road, from Henderson County OI, Office Institutional District to City of Hendersonville PRD CZD, Planned Residential Development

Conditional Zoning District for the construction of a multi-family residential development containing 276 dwelling units on approximately 15.5 acres. Mr. Morrow gave the following background:

Mr. Morrow stated this is a portion of a larger PIN. The PIN was subdivided on Friday. This is a 15-acre parcel, and the County will issue a new PIN for it. The City annexed this property on September 2, 2021. Planned Residential Developments are not a by-right zoning district. All PRD's must go through the CZD process which involves a list of uses and potential conditions and a binding site plan. The total acreage 15.5 acres and they are proposing 264 units. The property is zoned Henderson County Office Institutional, and the proposed use will be multi-family.

A Neighborhood Compatibility meeting was held June 11, 2021. Topics discussed were density, height, traffic concerns, impact on the fire service and parking. A map of the current zoning and proposed zoning was shown. Parcels to the north are zoned Henderson County Office Institutional and City of Hendersonville Planned Residential Development (Landings of Flat Rock) and contain the Elizabeth House, Residential uses and the Blue Ridge Community College property. Parcels to the west are zoned Henderson County Regional Commercial and Residential 1 and contain various uses including Park Place RV Park. Parcels located to the south are zoned Henderson County Regional Commercial, City of Hendersonville C-3, Highway Business and City of Hendersonville Planned Commercial Development and contain various commercial uses such as the Holiday Inn Express, Bojangles and State Employees Credit Union and also include a residential use. Parcels along the east are zoned Henderson County Office Institutional and Regional Commercial and contain I-26, vacant land and commercial uses.

The 2030 Comprehensive plan's Future Land Use Map designates this parcel as Regional Activity Center. Parcels located to the north, east and south are designated Regional Activity Center. Parcels to the west are designated as Business Center and Natural Resource & Agricultural. This designation can be found around the general area of the project, this designation represents areas in the floodplain. Henderson County sites this as Industrial Business in their Comp Plan. The rezoning will have to be done with a Comp Plan Consistency statement.

Photos were shown of the existing conditions. Multi-family residential only makes up 4% of the existing land use acreages. There was not a lot of multi-family when this area was first developed. The goal of the Population and Housing Chapter 2 Comprehensive Plan Consistency is to encourage a wide range of housing types and price points in order to meet the diverse and evolving needs of current and future residents, match the housing supply with the local workforce and promote diverse neighborhoods.

A tree survey was done. The total number of trees is 244. The total number of trees preserved is 117. The total number of trees removed is 127. A lot of the mature trees to the south that are acting as the buffer from the adjacent properties will be retained.

A proposed sidewalk is shown along both sides of the proposed portion of the road. A view of the site plan was shown. Because they are disturbing over an acre, they will be required to have a stormwater maintenance agreement. Stormwater retention areas are required.

They are required to have 421 parking spaces and they are proposing 444 spaces which is over the requirement.

There is a building height limitation exemption. They must meet the three requirements shown on the screen for the exemption. The first one is the major one that everyone looks at which states Such building will not block sunlight from adjacent property between the hours of 10:00 a.m. and 2:00 p.m. from the months of October 1st to May 1st.

Mr. Morrow stated a TIA is normally done for projects this size. This is a large project from the City of Hendersonville standpoint. They plan to have a second access and tie the sidewalks in all the way to Upward Road. Mr. Morrow explained the requirements and what triggers a TIA. He also explained the Density Bonus in Section 5-14-5 and how all five requirements must be met.

The intersections were studied, and the recommended mitigations were: South Allen at Upward Road, Upward Road at Upward Crossing Drive/Commercial Boulevard and South Allen Road at site driveway. A deceleration lane was not a recommend mitigation factor as part of the TIA study.

Staff analysis is the proposed site was reviewed by the DRC, the proposed development is generally compliant with the zoning code and the proposed use/site are supported by the Comprehensive Plan. Staff had one recommended condition: The developer shall build the second access to City Street standards and allow it to be used for resident ingress and egress. The Tree Board also had one recommended condition: To require the developer to plant trees 2 ½ inch caliper size trees rather than 1 ½ inch caliper size trees; to preserve as many trees as possible on the site; and to plant the number of trees as specified by the City's Zoning Ordinance.

The suggested motions were shown.

Mr. Johnson asked about the distance from Upward Road and the Blue Ridge Campus. Mr. Morrow stated he did not know the exact distance, maybe 1,300 feet to the college.

Mr. Blatt asked if South Allen Road was a thoroughfare. Mr. Morrow stated yes, it is a major thoroughfare. Mr. Blatt asked if a sidewalk is required on South Allen. Mr. Morrow stated yes.

Chair asked if there were any further questions for staff. There were no further questions.

Seth Peterson, with Graycliff Capital, Greenville SC stated staff's recommendations were not to gravel the second access and to put in sidewalks and they are on board with those recommendations. They want to create workforce rental housing and the goal is to be able to walk on the sidewalks and go to work in this area. They are trying to create housing near employment and make this area a walkable community. Most of the site is clear and they will design the site around the roads to save 50% of the trees on site. There is a height component but not for the whole project, only for two buildings. There will be stormwater areas and they will keep the drainage area where it already is on site.

Mr. Blatt asked if the garage buildings would be enclosed. Warren Sugg, Civil Design Concepts stated they are enclosed. Buildings 13, 14 and 15 are just garages fully enclosed. Buildings 12, 11, 10 and 9 have garages on the first level and livable units above.

Mr. Brown stated they are asking for a density bonus and height exemption, what will they be offering as a good faith measure. Mr. Sugg stated they are offering workforce housing as a good faith measure. Mr. Peterson stated they are paying more to upgrade the second access to city standards, and they will be putting in 5-foot sidewalks.

Mr. Brown asked if they would consider meeting the Outdoor Lighting Basics from the International Dark Sky Association which are: only be on when needed, only light the area that needs it, be no brighter than necessary, minimize blue light emissions and be fully shielded, pointing downward. Mr. Sugg stated they would be agreeable to that.

Mr. Johnson asked if there would be any gathering spaces. Mr. Sugg stated they plan to have a clubhouse, pool, dog park, open space and green space. He pointed those locations out on the site plan.

Chair opened the public comment and asked if anyone present would like to speak.

June Miller stated she lives in Eagle Pointe right beside the campus. She stated this looks nice on paper, but the two larger buildings may be a problem. Can you see these buildings from South Allen Road? Chair stated they are four-story buildings, and he imagines you can see them from South Allen. Ms. Miller asked how many apartments are in the four-story buildings, she asked if the entrance in the back would be paved. Will the development be gated? Is there only one entrance on South Allen? Chair stated yes, there is only one entrance on South Allen. Ms. Miller asked if they cannot occupy all of the buildings will they use them for subsidized housing. Ms. Miller stated with 444 parking spots, 2,300 students enrolled at the college, 200+ at the career center, 50 in the hospice facility and 100+ at the assisted living facility, traffic is going to become dangerous. People cut through to Four Seasons anyway. This will be a major traffic headache. She feels like South Allen is a country road and people don't move to the mountains to have this type of eyesore built next to them. Most students can't afford to pay $1,600 a month for rent. This is not the right place for this development.

Chair asked if anyone else attending would like to speak. No one else spoke.

Chair opened the public comment via zoom. No one spoke via zoom.

Mr. Peterson stated there will be 62 units in the four-story building. The senior center is three stories, and this building will not be seen any more than that one. They do not propose having any gates. They have considered Section 8 housing, but they do not feel they will not have any trouble occupying the units. Mr. Sugg stated 80 to 90% of the units are occupied in their other developments.

Ms. Cromar asked about the elevator. Mr. Peterson stated they will have one elevator and it will be centered in the building with stairs at the end of the buildings. The ADA requirements for elevators were discussed. Mr. Holloway stated the Building Inspections Department will determine that.

Chair asked about the deceleration lane. Matt Keech, Traffic Engineer stated the multiple access points will dispense the traffic very well. All of the traffic will not be dumped on South Allen Road. Chair stated he felt like deceleration lane was needed and should be considered. Mr. Sugg stated they are not against considering the deceleration lane, but they would like to hear from NCDOT on this. Mr. Holloway stated the driveway permits will be obtained through NCDOT and they will consult with them prior to City Council.

Mr. Blatt stated the caliper of the trees in the Tree Board recommendation grew by ½". Mr. Morrow stated the motion can be amended.

Mr. Brown moved the Planning Board recommend that City Council adopt an ordinance amending the official zoning map of the City of Hendersonville changing the zoning designation of the subject property (portion of PIN 9588-11-9994) from Henderson County Office Institutional Zoning District to City of Hendersonville Planned Residential development Conditional Zoning District based on the site plan submitted by the applicant and subject to the following: Permitted Uses shall include: Multi-family residential dwellings. Conditions that shall be satisfied prior to final site plan approval include: 1. The developer shall construct the rear access that connects to Upward Crossing Drive to City street standards and allow it to be used as an ingress and egress for residents. 2. To preserve as many trees as possible on the site; and to plant the number of trees as specified by the City's Zoning Ordinance. 3. The developer work with city staff to comply with the five Outdoor Lighting Basics from the International Dark Sky Association and 4. Work with NCDOT and city staff for a deceleration lane. Finding that the amended zoning is consistent with the Comprehensive Plan's Future Land Use map, and that the rezoning is reasonable and in the public interest for the following reasons: 1. Multi-family is a secondary use stated in the Land Use & Development

Chapter (Chapter 8 – LU-9.3) 2.The development is in a priority growth area as described in the Land Use and development Chapter (Chapter 8 Section 8.3) 3.The development provides a type of housing that is underrepresented within the City. Outlined in the graphic in Chapter 8 Section 8.2. Mr. Hanley seconded the motion which passed unanimously.

VI **Other Business**. Mr. Manley discussed the goal for having committees and how it would be structured. He asked the Board to think about where their interests are. He will send out an email concerning this since all the members are not in attendance.

VII **Adjournment** – ***The meeting was adjourned at 6:38 pm.***

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Chair

DRAFT

CITY OF HENDERSONVILLE

PLANNING DIVISION
AGENDA ITEM SUMMARY

SUBMITTER:	Tyler Morrow	**MEETING DATE:**	10-11-21
AGENDA SECTION:	New Business	**DEPARTMENT:**	Community Development Department

TITLE OF ITEM: Conditional Rezoning: World of Clothing Mini Warehouses PIN 9579-56-0884 and 9579-46-9642 (P21-52-CZD) – *Tyler Morrow, Planner II*

SUGGESTED MOTION(S):

Planning Board- APPROVAL

I move the Planning Board recommend that City Council adopt an ordinance amending the official zoning map of the City of Hendersonville changing the zoning designation of the subject property PINs 9579-56-0884 and 9579-46-9642 from C-3 Highway Business to C-3 CZD Highway Business Conditional Zoning District based on the site plan submitted by the applicant and subject to the following:

Permitted Uses shall include:

1) Mini-Warehouses
2) All permitted C-3 Uses on November 4th 2021which are listed in the ordinance

Conditions that shall be satisfied prior to final site plan approval include:

City initiated:

1) The developer shall provide a type B buffer along the rear property line, adjacent to the I-26 right of way, preferably evergreen trees selected from the Recommended Tree Species List

Developer Initiated:

2) The developer will provide two 12- foot wide travel lanes and a ten foot wide parking lane where possible, as described in section 16-4-16 of the zoning ordinance at the building located at 135 Sugarloaf Road, however the travel lane width and parking lane requirements may not be implemented everywhere based on existing conditions.

finding that the amended zoning is consistent with the Comprehensive Plan's Future Land Use map, and that the rezoning is reasonable and in the public interest for the following reasons:

[Please state reasons describing why this development is good for the community. Examples follow, or to include your own]

1. This redevelopment is within a high intensity priority infill area as designated in the comprehensive plan (*Chapter 8 - LU 1.1)*

2.The development utilizes an existing large scale commercial building with a use that is compatible with the surrounding area.

3.The development provides additional storage options for the citizens of Hendersonville.

Planning Board– DENIAL

I move the Planning Board recommend that City Council deny the application to amend the official zoning map of the City of Hendersonville for the subject property for the following reasons:

[Please state reasons describing why you are moving to deny the application. Examples follow or include your own.]

1. The development is not consistent with the Comprehensive Plan [if applicable];
2. The development is not compatible with the surrounding uses. [if applicable]
3. The development is not in the public interest because [state why if applicable]
4. The development will have a detrimental impact on the natural environment. [if applicable]

SUMMARY:

The City of Hendersonville is in receipt of an application for a conditional rezoning from Daniel Renckens of Canvass Capital, LLC, applicant and Dreams Dominion, Inc., property owners. The applicants are requesting to rezone the subject property, PIN 9579-56-0884 and PIN 9579-46-9642 and located at 135 Sugarloaf Road, from C-3, Highway Business to C-3 CZD, Highway Business Conditional Zoning District for the development/redevelopment of a 154,385 sq. ft. mini-warehouse facility on approximately 8.24 acres

PROJECT/PETITIONER NUMBER: P21-52-CZD

PETITIONER NAME: Daniel Renckens of Canvass Capital, LLC (applicant) Dreams Dominion, Inc. (property owner)

ATTACHMENTS:

Staff Report, Full Size Site plan, Survey, Ordinance, Proposed Zoning Map, NCM Minutes, Application

WORLD OF CLOTHING MINI WAREHOUSES P21-52-CZD

CITY OF HENDERSONVILLE - COMMUNITY DEVELOPMENT STAFF REPORT

Staff Report Contents

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PROJECT SUMMARY

Applicant: Canvass Capital LLC

Property Owner: Dreams Dominion LLC

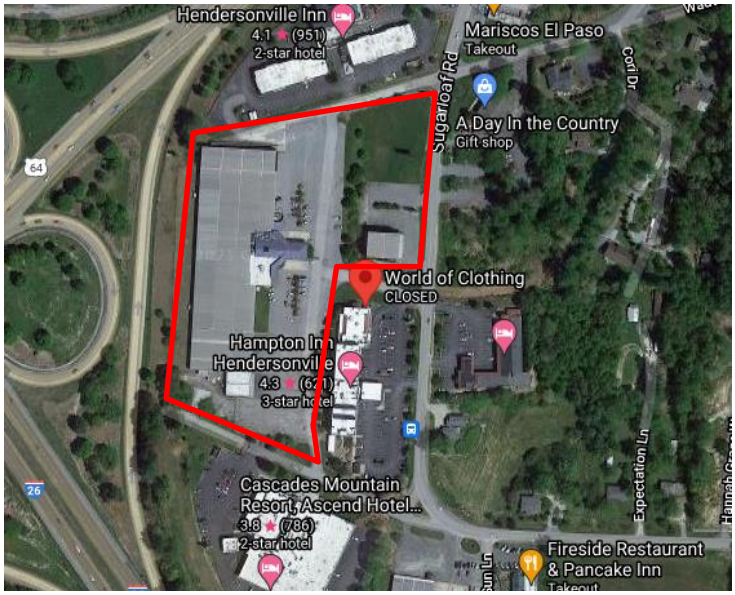
Property Address: 135 Sugarloaf Road

Project Acreage: 8.24 Acres

Parcel Identification Number(s): 9579-56-0884, 9579-46-9642

Current Parcel Zoning: C-3 Highway Business

Neighborhood Compatibility Meeting: September 1st 2021



SITE VICINITY MAP

Summary Statement of Applicant Rezoning Request

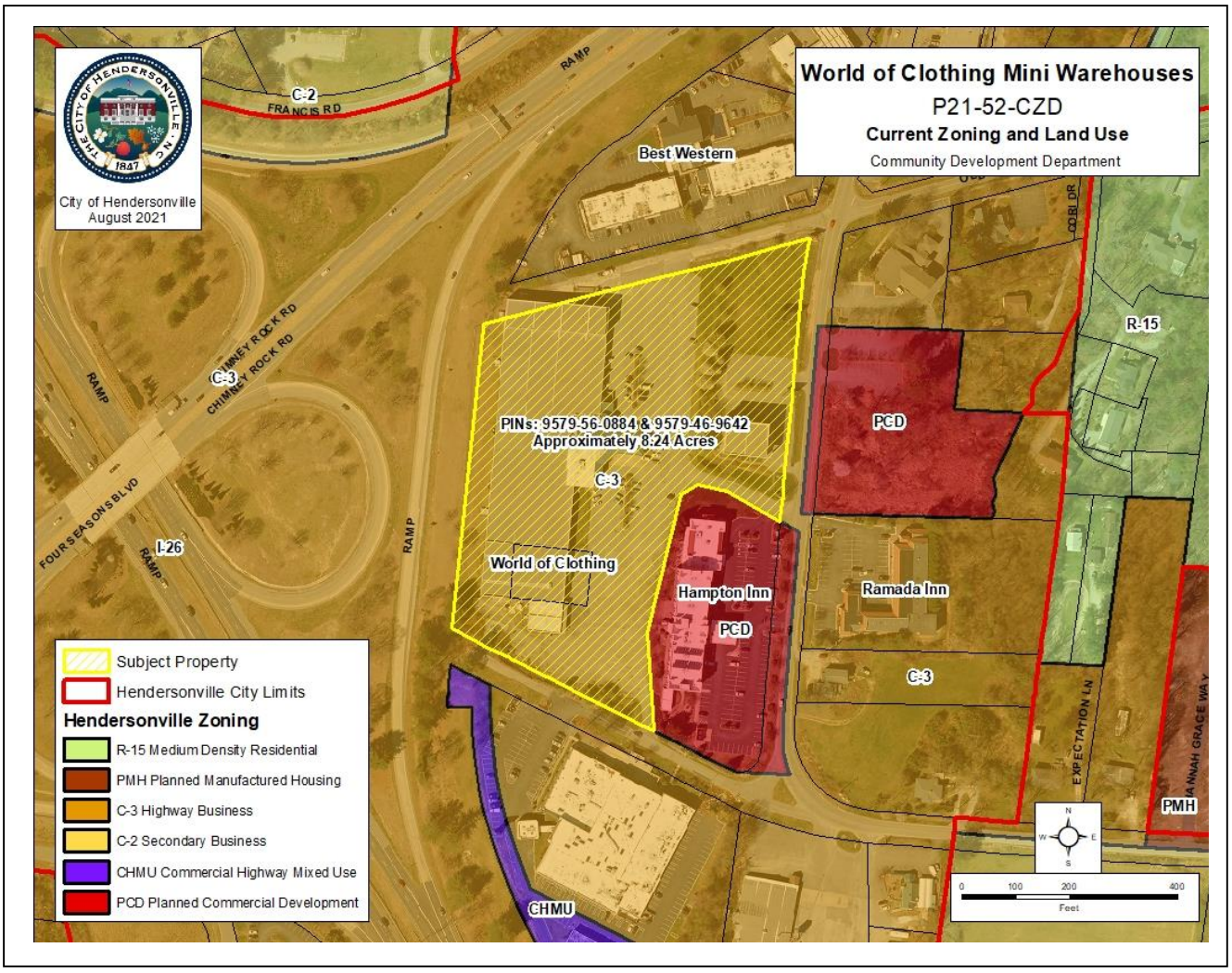
The City of Hendersonville is in receipt of an application for a conditional rezoning from Daniel Renckens of Canvass Capital, LLC, applicant and Dreams Dominion, Inc., property owners. The applicants are requesting to rezone the subject property, PIN 9579-56-0884 and PIN 9579-46-9642 and located at 135 Sugarloaf Road, from C-3, Highway Business to C-3 CZD, Highway Business Conditional Zoning District for the development/redevelopment of a 154,385 sq. ft. mini-warehouse facility on approximately 8.24 acres.

This project required a conditional rezoning due to the redevelopment of floor area exceeding 50,000 square feet.

If the structures did not exceed 50,000 square feet, then the applicant could have petitioned the Board of Adjustment for a Special Use permit and would not have been required to rezone the property.

The applicant is asking that all permitted uses in C-3 and mini warehouses be permitted. A list of requested uses is shown later in this staff report.

PROJECT SUMMARY - CONTINUED



Parcels to the north are zoned C-3 Highway Business and C-2 Secondary Business and contain commercial uses such as the Best Western Hendersonville Inn and El Paso Mexican Restaurant. Parcels to the east are zoned C-3 and PCD Planned Commercial Development and include the Ramada Inn and Hampton Inn. Parcels to the south are zoned C-3 Highway Business and CHMU Commercial Highway Mixed Use and contain Cascades Mountain Resort. Parcels to the west are zoned C-3, Highway Business and contain Interstate 26.

SITE CONDITIONS – SITE IMAGES

View of the main entrance to the World of Clothing building.



View of the property looking north.



View of the northern portion of the building.



SITE CONDITIONS – SITE IMAGES CONTINUED

View of the office building that fronts Sugarloaf Road.



Undeveloped portion of the property that is to remain undeveloped at this time.



View of the right of way on the northern property line.



SITE CONDITIONS – SITE IMAGES CONTINUED

View of the stairwell that connects the 2 sections of the property.



View of the western portion of the property that abuts I-26.



View of the corner of the building that has an existing encroachment into the right of way.



AERIAL PHOTOS

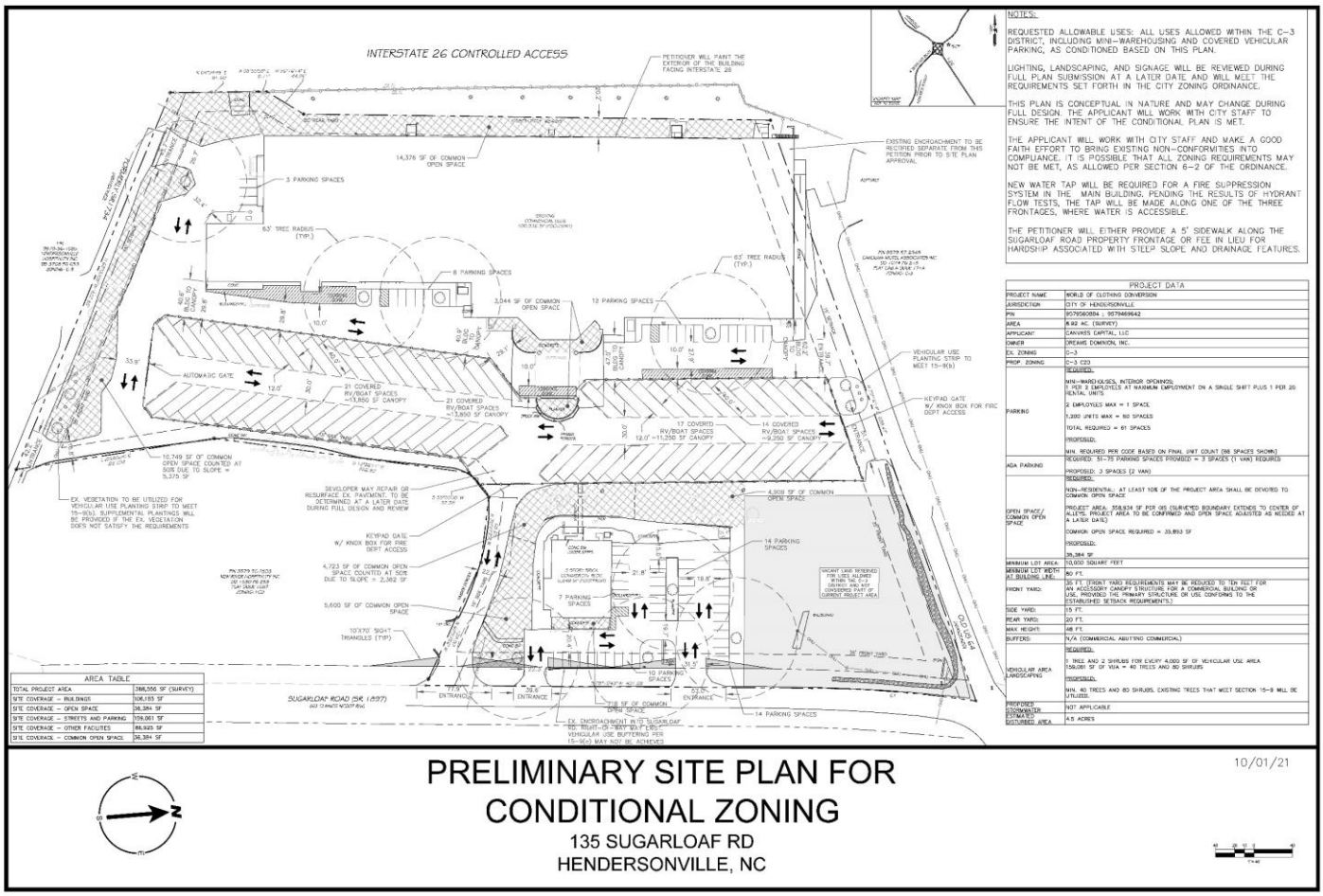
View from the east



View from the west



REZONING/SITE PLAN TOPICS

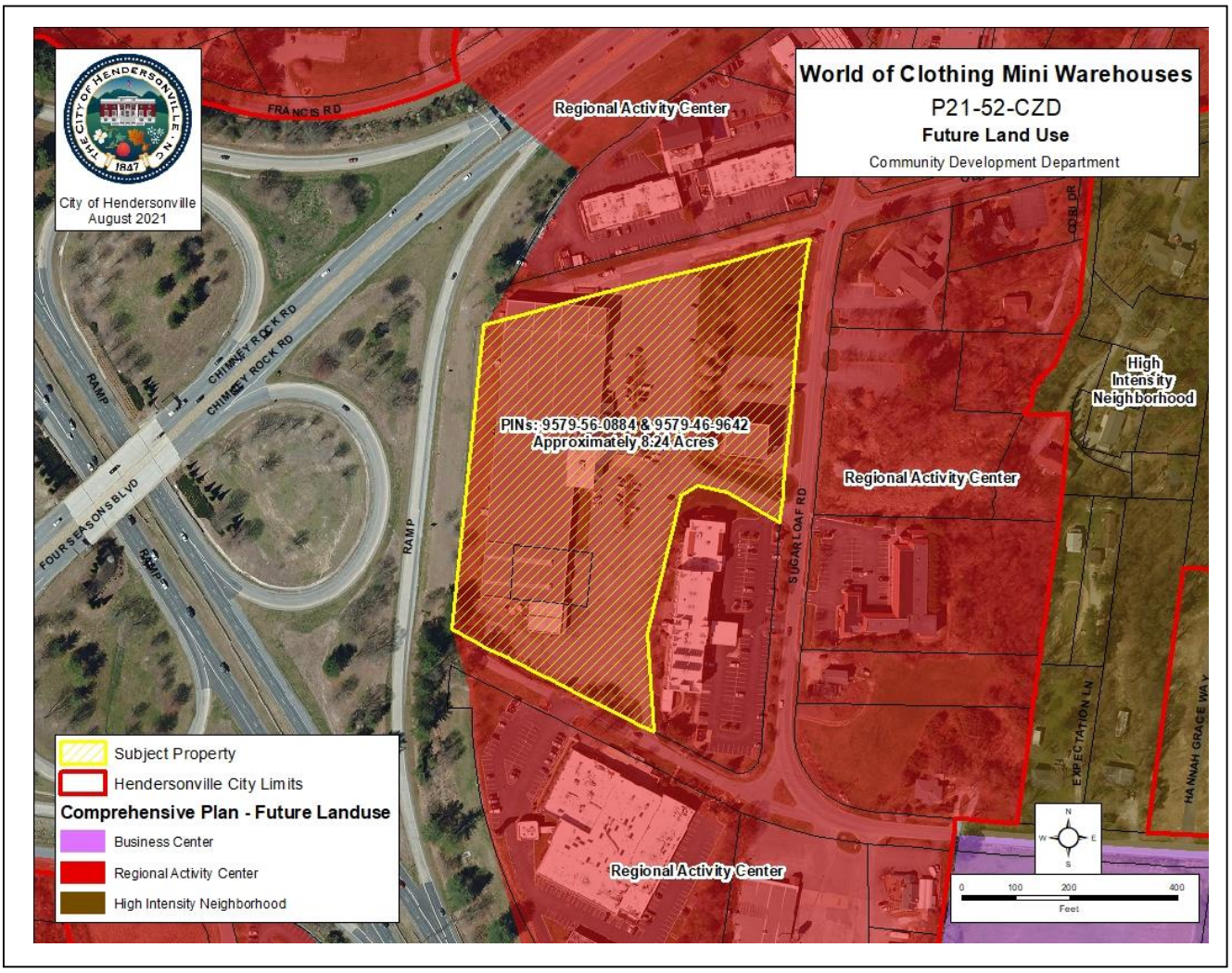


PROPOSED SITE PLAN

AREA TABLE	
TOTAL PROJECT AREA	388,555 SF (SURVEY)
SITE COVERAGE – BUILDINGS	106,185 SF
SITE COVERAGE – OPEN SPACE	36,384 SF
SITE COVERAGE – STREETS AND PARKING	159,061 SF
SITE COVERAGE – OTHER FACILITIES	86,925 SF
SITE COVERAGE – COMMON OPEN SPACE	36,384 SF

REZONING CRITERIA:

COMPREHENSIVE PLAN CONSISTENCY



The 2030 Comprehensive Plan's Future Land Use Map designates parcels to the north, south and east as Regional Activity Center. The area to the West is not designated since it encompasses Interstate 26. Other parcels to the east are classified as High Intensity Neighborhood and Business Center.

Goal LU-9.

Regional Activity Center: Meet the large-scale retail needs of Hendersonville residents while encouraging mixed-use, walkable design through redevelopment and infill projects.

Strategy LU-9.1.

Locations:

- Commercial areas surrounding the US-64/I-26 and Upward Road/I-26 interchanges

Strategy LU-9.2.

Primary recommended land uses:

- Community and regional retail sales and services
- Restaurants

Strategy LU-9.3.

Secondary recommended land uses:

- Multi-family residential
- Offices
- Public and institutional uses
- Pedestrian amenities

Strategy LU-9.4.

Development guidelines:

- Mitigation of bulk of large buildings through façade detailing and window coverage
- Hiding of large parking lots (more than one double-row deep) from thoroughfares with outlot structures



Example of a Regional Activity Center

The subject area is designated Regional Activity Center on the 2030 Comprehensive Plan's Future Land Use Map.

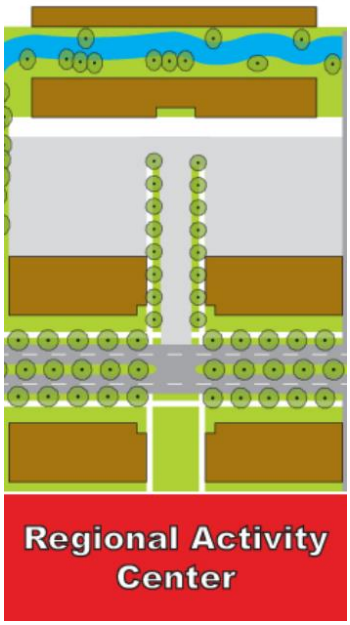


Goal LU-1.

Encourage infill development that utilizes existing infrastructure in order to maximize public investment and revitalize existing neighborhoods.

Strategy LU-1.1.

Encourage infill development and redevelopment in areas planned for high-intensity development, as indicated by the "Priority Infill Areas" on Map 8.3a.



COMPREHENSIVE PLAN CONSISTENCY–CONTINUED

Growth Management

Priority Infill Areas (beige): Areas that are considered a high priority for the City to encourage infill development on remaining vacant lots and redevelopment of underutilized or underdeveloped properties

The map depicts locations of greenfield development opportunities in Hendersonville and surrounding areas

Development Opportunities (includes vacant land, agricultural land, and single-family residential properties greater than five acres)

No blue line streams or floodplain are located on the proposed development site.



SITE PLAN REVIEW

Buildings: The site plan shows 2 buildings on the site to remain and be redeveloped. The 2 existing buildings have a combined footprint of 106,185 square feet.

- World of Clothing Building: 100,936 square feet
- Office building that fronts on Sugarloaf Road: 5,249 square feet
- New Canopies: 48,200 square feet
    - Total square footage for the structures on the site:154,385 square feet

Canopy Structures:

The site plan shows 4 new canopy structures with a combined square footage of 48,200 square feet. A photo of similar canopies provided by the applicant is shown below.



Units:

- Interior mini storage units: 1,200 max
- Exterior canopy storage units: 73

Open Space: Commercial developments are required to provide 10% of their total site to common open space. The project area is 358,934 square feet, the applicant is proposing 36,384 square feet of open space. Open space locations on the site plan are symbolized with a hashed pattern.

Landscaping: The applicant will be required to provide vehicular use landscaping for this

project. Vehicular use landscaping consists of 1 tree and 2 shrubs for every 4,000 square feet of VUA. The site has an existing VUA of 159,061.

- Required: 40 Trees and 80 Shrubs
- The applicant will meet these requirements through new plantings and the use of tree credits.

Parking Requirements - Table 6-5-2

The zoning ordinance requires mini warehouses to have a minimum of 1 per 2 employees at maximum employment on a single shift plus 1 per 20 rental units.

1,200 Units= 60 Spaces

2 max employees on a single shift= 1

61 spaces required.

64 spaces provided.

Sidewalks:

Sidewalks are required along the property frontage on Sugarloaf Road. Due to some site constraints and existing stormwater features along that frontage, the applicant may request to pay a fee in lieu for the sidewalks. Staff will advocate for the installation of sidewalks if possible. This will be determined at the final site plan review stage.

Drive Aisles:

Each drive aisle for this development will be a 2-way access. The drive aisle that will serve the main building is lined with 10’ wide parking/unloading zones and traditional 9’x18’ parking spaces.

Rear Facade:

The applicant is proposing to paint over World of Clothing advertising on the rear façade of the building that fronts on I-26. The applicant states that this is meant to give the building a more appealing appearance of that facade.

Fire Suppression:

Fire code will require that the World of Clothing building be outfitted with a sprinkler system to serve the building in the case of a fire emergency.

Vacant Land:

There is vacant land in the north eastern portion of the property. The applicant is not using this area for open space, parking, access, etc. The applicant wants to leave this area unattached to the requirements of this development so that it could potentially be developed in the future. It will still be connected to this CZD and would have to come back as an amendment if any new development is to occur in this area.

TRANSPORTATION:

Transportation Impact Analysis: According to the 7th Edition of the Institute of Transportation Engineers Trip Generation Manual

The project is not expected to meet either the 100 or more peak-hour trips or the 1,000 or more daily trips thresholds to require a TIA.

Mini Warehouse- Per 1,000 Square Feet Calculation

43.4 Trips AM peak hour.

44.95 trips PM peak hour

No data for daily trips.

2030 Comprehensive Plan Transportation Map



Notable Area NCDOT Projects

There are no planned projects that would directly impact the layout of this development.

However, future improvements associated with the Interstate 26 interchange project could impact the circulation patterns at Sugarloaf Road and Chimney Rock Road. NCDOT has not provided a timeline for these improvements or any further details about the improvements.

REQUESTED USES:

- Accessory dwelling units subject to special requirements contained in Section 16-4, below
- Accessory uses & structures
- Adult care centers registered with the NC Department of Human Resources
- Animal hospitals & clinics as long as they contain no outdoor kennels
- Automobile car washes
- Automobile sales & service establishments
- Automotive paint & body work
- Banks and other financial institutions
- Bed & breakfast facilities
- Business services
- Congregate care facilities, subject to special requirements contained in Section 16-4, below
- Construction trades facilities so long as the storage of equipment and materials is screened from view from any public rights-of-way
- Convenience stores with or without gasoline sales
- Cultural arts buildings
- Dance and fitness facilities
- Dry cleaning and laundry establishment containing less than 6,000 ft2 of floor area
- Farm equipment sales & service
- Food pantries, subject to the special requirements contained in Section, 16-4 below)
- Food processing establishments containing less than 10,000 ft2 of gross floor area
- Funeral homes
- Golf driving ranges & par three golf courses
- Greenhouses & commercial nurseries
- Home occupations
- Hotels and motels
- Laundries, coin-operated
- Microbreweries, subject to special requirements contained in Section 16-4, below
- Mobile food vendors, subject to special requirements contained in Section 16-4, below
- Mobile homes sales establishments so long as they are situated on a major thoroughfare containing four or
- more traffic lanes
- Music and art studios
- Newspaper offices and printing establishments
- Nursing homes subject to special requirements contained in Section 16-4, below
- Offices, business, professional and public

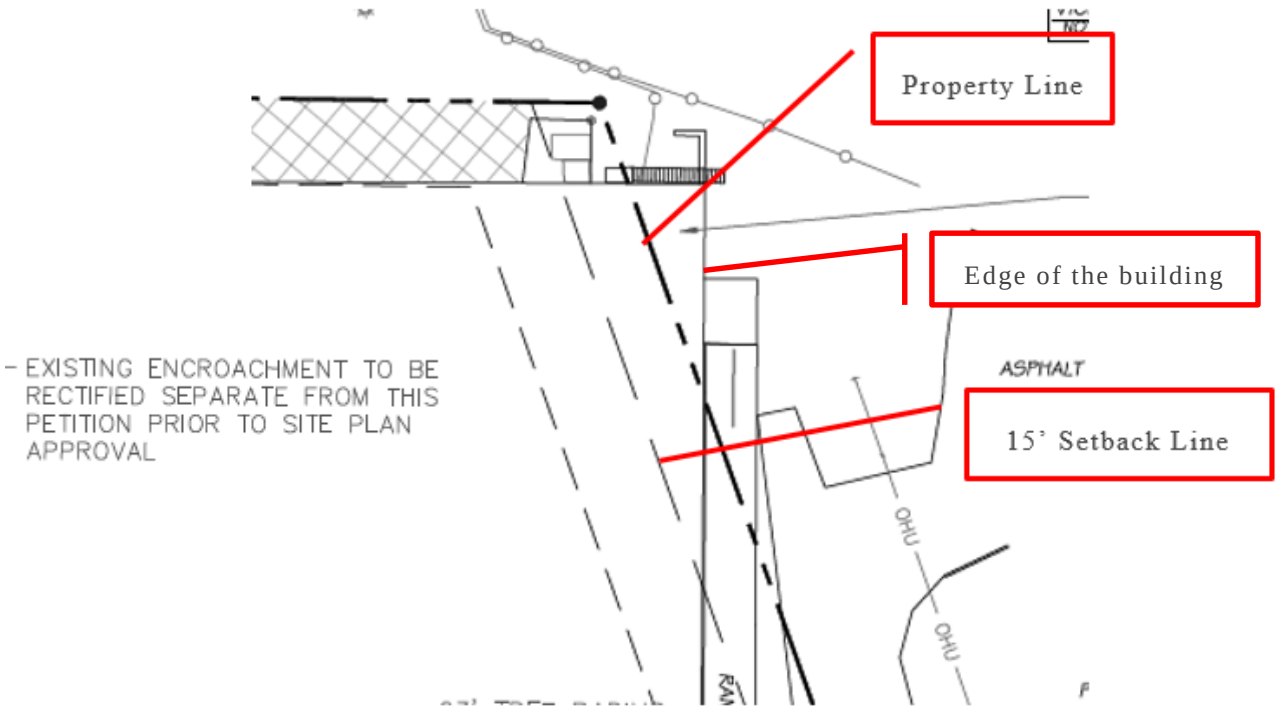
- Parking lots and parking garages
- Parks
- Personal services
- Planned residential developments (minor), subject to the requirements of Article VII, below
- Progressive care facilities subject to special requirements contained in Section 16-4, below
- Public & semi-public buildings
- Recreational facilities, indoors
- Recreational facilities, outdoors, commercial
- Religious institutions
- Repair services, miscellaneous
- Residential care facilities
- Residential dwellings, single-family
- Residential dwellings, two-family
- Rest homes subject to special requirements contained in Section 16-4, below
- Restaurants
- Restaurants, drive-in
- Retail stores
- Schools, post-secondary, business, technical and vocational
- Schools, primary & secondary
- Service stations
- Signs, subject to the provisions of Article XIII
- Telecommunications antennas, subject to special requirements contained in Section 16-4, below.
- Telecommunications towers, subject to special requirements contained in Section 16-4, below.
- Theaters, indoor
- Wholesale businesses
- Mini-warehouses

STAFF ASSESSMENT & COMPREHENSIVE PLAN CONSISTENCY:

Zoning Compliance:

Based on the review by staff, the submitted site plan for this project appears to be generally compliant with the Zoning Ordinance standards established in Article 11 -4 of the City Zoning Ordinance.

The northwestern corner of the building is encroaching into the right of way and setback. The structure is considered a nonconforming structure as outlined in our zoning ordinance in section 6-2-2. The proposed development is in alignment with the requirements of this section.



Staff finds that the application/proposed site plan is in keeping with the standards established for CZD zoning map amendments outlined in Section 11-4 of the zoning ordinance.

Final zoning ordinance compliance will be established at the time of the final site plan review and approval.

The zoning ordinance identifies adaptive reuse as a use permitted through the CZD process. Our ordinance defines an adaptive reuse as "The development of a new use for an older building or buildings.". However, this project is **not** an adaptive reuse as defined in our ordinance because it is strictly found in residential zoning districts. Adaptive reuses are designed to allow a means for the development of new uses for a building originally designed for a different use, such as schools and church buildings.

Comprehensive Plan Consistency:

Staff feels that this development is in alignment with Strategy LU 1.1 of Chapter 8 in the Comprehensive Plan. This strategy states, "Encourage infill development and redevelopment in areas planned for high-intensity development, as indicated by the "Priority Infill Areas" on Map 8.3a." World of Clothing went out of business in April of 2021, and the building is currently vacant. The redevelopment of the existing building allows for the building to be repurposed and not sit vacant. This property is deemed as both high intensity and a priority infill area, so redevelopment in this area is supported within this Comprehensive Plan strategy. The site is not undergoing any major changes, so it will still function as it has for

several decades. This project allows an existing site to be repurposed into another commercial business that provides a service to the citizens of Hendersonville.

Mini Warehouse facilities are not mentioned as a recommended primary or secondary land use in the 2030 comprehensive plan. However, as Chapter 8 mentions, the recommended primary and secondary land uses are not an exhaustive list and that other land uses can be considered.

The comprehensive plan does not give a lot of guidance concerning the adaptive reuse of an existing site. The comprehensive plan primary focuses on new development on vacant sites or infill development. Little guidance is given for existing sites of this magnitude. The site already contains impervious surfaces and existing buildings.

ZONING MAP AMENDMENTS:

Chapter XI of the Zoning Ordinance provides standards for consideration of zoning map amendments. The following factors are to be included in decision making process:

Compatibility with Surrounding Uses

- The project area is surrounded by Commercial uses. The existing building has also been used for commercial uses in the past.

Changed Conditions

- The World of Clothing building is a large-scale retail building that is now vacant. There are not many uses that can utilize a commercial building that is this large. Mini Warehouses are a use that can utilize this type of building.

Public Interest

- This development will utilize an existing building and provide storage options for Hendersonville residents.

Public Facilities

- The subject property is already connected to utilities. The public utilities will not be burdened by this development.

Effect on the Natural Environment

- The development will not be removing any mature trees on the site. They applicant will also have to plant additional landscaping to bring the site into conformance with current landscaping requirements.

PROPOSED CONDITIONS:

Staff does not have any proposed conditions for this development.

The developer has requested the following condition:

- The developer will provide two 12- foot wide travel lanes and a ten foot wide parking lane where possible, as described in section 16-4-16 of the zoning ordinance at the building located at 135 Sugarloaf Road, however the travel lane width and parking lane requirements may not be implemented everywhere based on existing conditions.

PUBLIC COMMENT:

The Neighborhood Compatibility meeting was held on September 1st, 2021. 2 members of the public attended in person with 2 citizens on Zoom. They had questions concerning:

- Ownership of the property
- Storage units on the front of the property.
- RV/Camper Storage
- If there is a need for another storage facility.

TREE BOARD- SUMMARY OF ACTION

The Tree Board recommends a type B buffer along the rear property line, adjacent to the I-26 right of way, preferably evergreen trees selected from the Recommended Tree Species List. Motion by Mark Madsen, Vote – All Ayes

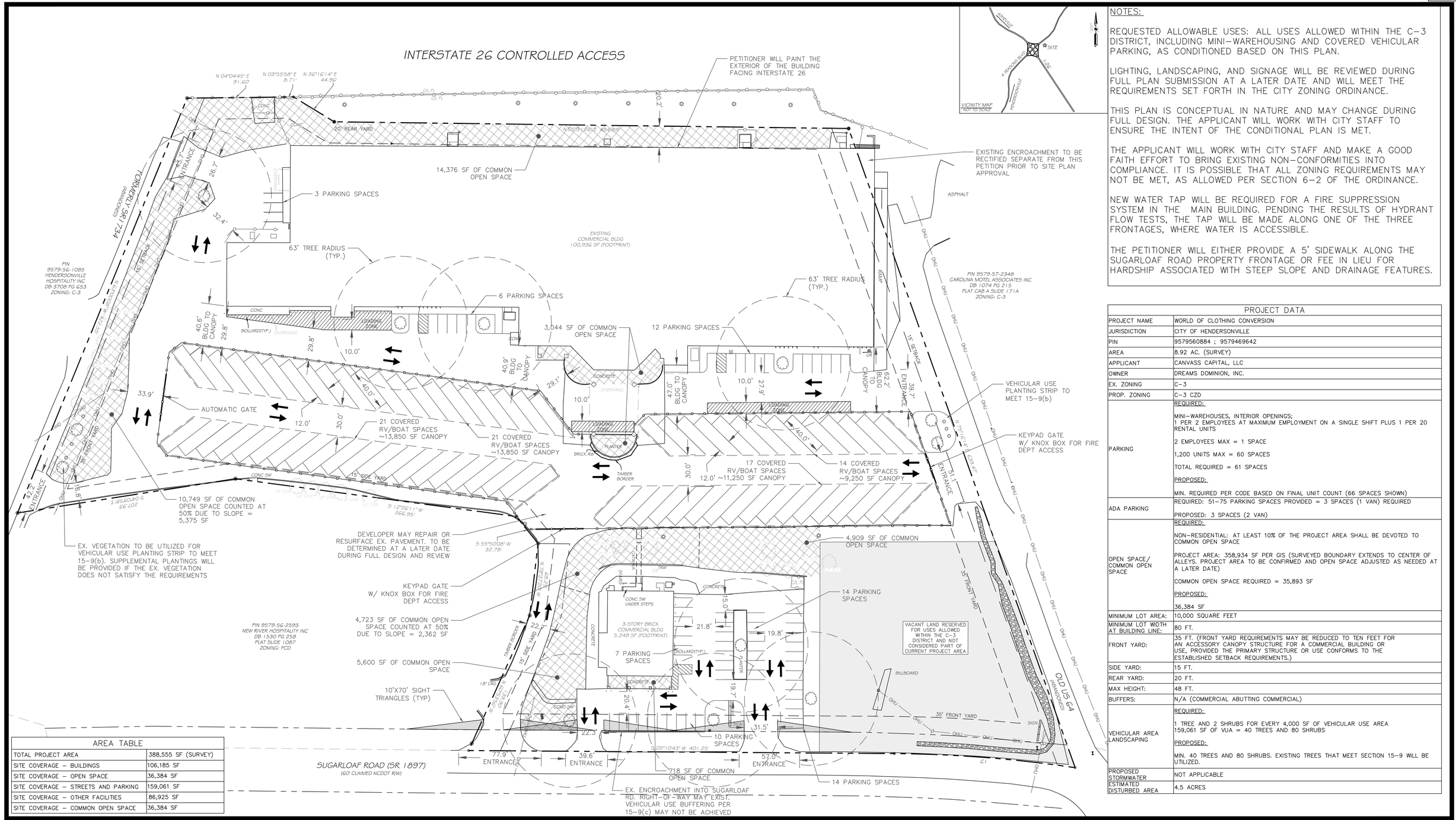
PLANNING BOARD SUMMARY OF ACTION

Summary of Planning Board Discussion

Planning Board Motion

Attachments in the Packet:

1. Staff Report
2. Full Size Site plan
3. Ordinance
4. Proposed Zoning Map
5. NCM Minutes
6. Application



NOTES:

REQUESTED ALLOWABLE USES: ALL USES ALLOWED WITHIN THE C-3 DISTRICT, INCLUDING MINI-WAREHOUSING AND COVERED VEHICULAR PARKING, AS CONDITIONED BASED ON THIS PLAN.

LIGHTING, LANDSCAPING, AND SIGNAGE WILL BE REVIEWED DURING FULL PLAN SUBMISSION AT A LATER DATE AND WILL MEET THE REQUIREMENTS SET FORTH IN THE CITY ZONING ORDINANCE.

THIS PLAN IS CONCEPTUAL IN NATURE AND MAY CHANGE DURING FULL DESIGN. THE APPLICANT WILL WORK WITH CITY STAFF TO ENSURE THE INTENT OF THE CONDITIONAL PLAN IS MET.

THE APPLICANT WILL WORK WITH CITY STAFF AND MAKE A GOOD FAITH EFFORT TO BRING EXISTING NON-CONFORMITIES INTO COMPLIANCE. IT IS POSSIBLE THAT ALL ZONING REQUIREMENTS MAY NOT BE MET, AS ALLOWED PER SECTION 6-2 OF THE ORDINANCE.

NEW WATER TAP WILL BE REQUIRED FOR A FIRE SUPPRESSION SYSTEM IN THE MAIN BUILDING. PENDING THE RESULTS OF HYDRANT FLOW TESTS, THE TAP WILL BE MADE ALONG ONE OF THE THREE FRONTAGES, WHERE WATER IS ACCESSIBLE.

THE PETITIONER WILL EITHER PROVIDE A 5' SIDEWALK ALONG THE SUGARLOAF ROAD PROPERTY FRONTAGE OR FEE IN LIEU FOR HARDSHIP ASSOCIATED WITH STEEP SLOPE AND DRAINAGE FEATURES.

PROJECT DATA	
PROJECT NAME	WORLD OF CLOTHING CONVERSION
JURISDICTION	CITY OF HENDERSONVILLE
PIN	9579560884 ; 9579469642
AREA	8.92 AC. (SURVEY)
APPLICANT	CANVASS CAPITAL, LLC
OWNER	DREAMS DOMINION, INC.
EX. ZONING	C-3
PROP. ZONING	C-3 CZD
PARKING	REQUIRED: MINI-WAREHOUSES, INTERIOR OPENINGS; 1 PER 2 EMPLOYEES AT MAXIMUM EMPLOYMENT ON A SINGLE SHIFT PLUS 1 PER 20 RENTAL UNITS 2 EMPLOYEES MAX = 1 SPACE 1,200 UNITS MAX = 60 SPACES TOTAL REQUIRED = 61 SPACES PROPOSED: MIN. REQUIRED PER CODE BASED ON FINAL UNIT COUNT (66 SPACES SHOWN)
ADA PARKING	REQUIRED: 51-75 PARKING SPACES PROVIDED = 3 SPACES (1 VAN) REQUIRED PROPOSED: 3 SPACES (2 VAN)
OPEN SPACE/ COMMON OPEN SPACE	REQUIRED: NON-RESIDENTIAL: AT LEAST 10% OF THE PROJECT AREA SHALL BE DEVOTED TO COMMON OPEN SPACE PROJECT AREA: 358,934 SF PER GIS (SURVEYED BOUNDARY EXTENDS TO CENTER OF ALLEYS. PROJECT AREA TO BE CONFIRMED AND OPEN SPACE ADJUSTED AS NEEDED AT A LATER DATE) COMMON OPEN SPACE REQUIRED = 35,893 SF PROPOSED: 36,384 SF
MINIMUM LOT AREA:	10,000 SQUARE FEET
MINIMUM LOT WIDTH AT BUILDING LINE:	80 FT.
FRONT YARD:	35 FT. (FRONT YARD REQUIREMENTS MAY BE REDUCED TO TEN FEET FOR AN ACCESSORY CANOPY STRUCTURE FOR A COMMERCIAL BUILDING OR USE, PROVIDED THE PRIMARY STRUCTURE OR USE CONFORMS TO THE ESTABLISHED SETBACK REQUIREMENTS.)
SIDE YARD:	15 FT.
REAR YARD:	20 FT.
MAX HEIGHT:	48 FT.
BUFFERS:	N/A (COMMERCIAL ABUTTING COMMERCIAL)
VEHICULAR AREA LANDSCAPING	REQUIRED: 1 TREE AND 2 SHRUBS FOR EVERY 4,000 SF OF VEHICULAR USE AREA 159,061 SF OF VUA = 40 TREES AND 80 SHRUBS PROPOSED: MIN. 40 TREES AND 80 SHRUBS. EXISTING TREES THAT MEET SECTION 15-9 WILL BE UTILIZED.
PROPOSED STORMWATER	NOT APPLICABLE
ESTIMATED DISTURBED AREA	4.5 ACRES

AREA TABLE	
TOTAL PROJECT AREA	388,555 SF (SURVEY)
SITE COVERAGE – BUILDINGS	106,185 SF
SITE COVERAGE – OPEN SPACE	36,384 SF
SITE COVERAGE – STREETS AND PARKING	159,061 SF
SITE COVERAGE – OTHER FACILITIES	86,925 SF
SITE COVERAGE – COMMON OPEN SPACE	36,384 SF

PRELIMINARY SITE PLAN FOR CONDITIONAL ZONING

135 SUGARLOAF RD
HENDERSONVILLE, NC

10/01/21

40 20 10 0 40
1"= 40'

NOTES:

1) THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

2) PROPERTY SUBJECT TO ALL RIGHTS-OF-WAY AND EASEMENTS OF RECORD, INCLUDING, BUT NOT LIMITED TO, THOSE SHOWN HEREON.

3) SURVEYOR WAS NOT PROVIDED WITH A LEGAL TITLE SEARCH. THERE MAY EXIST EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP TITLE EVIDENCE, OR ANY OTHER FACTS PERTINENT TO THIS PROPERTY THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE THAT ARE NOT SHOWN ON THIS PROPERTY.

4) BUILDINGS, SURFACE AND SUBSURFACE IMPROVEMENTS ADJACENT TO THE SITE ARE NOT NECESSARILY SHOWN. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT SURVEYED OR CONSIDERED AS PART OF THIS SURVEY. NO EVIDENCE OR STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND CONDITIONS, CONTAINERS, OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS PROPERTY.

5) AREA BY COORDINATE COMPUTATION.

6) ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.

7) THE VERTICAL DATUM USED FOR THIS SURVEY IS NAVD '88. THE CONTOUR INTERVAL IS 2 FEET.

8) SUBJECT PROPERTY IS ZONED "C3-HIGHWAY BUSINESS" PER THE CITY OF HENDERSONVILLE ZONING ORDINANCE. REFER TO THIS ORDINANCE FOR REGULATIONS APPLICABLE TO THE SUBJECT PROPERTY.

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
C1	1225.10'	171.13'	170.99'	S 09°14'49" W

NC GRID
NAD 83(2011)
NORTH

VICINITY MAP
NOT TO SCALE
ASHEVILLE
SITE
4 SEASONS BLVD
I-26
HENDERSONVILLE

PIN 9579-57-2348
CAROLINA MOTEL ASSOCIATES INC
DB 1074 PG 215
PLAT CAB A SLIDE 171A

INTERSTATE 26 CONTROLLED ACCESS

ASPHALT
OLD US 64
(ABANDONED)
N 75°16'14" E 639.47'
LANDING
2207.0
2203.1
RAMP
2207.11 FFE
2206.6
2207.11 UPPER FFE
2190.97 LOWER FFE
2189.27
GM
GR
2190.95 FFE
2191.02 FFE
2191.74 FFE
PLANTER
HP
AH
2190.11 FFE
OVERHANG
2191.00 FFE
CONCRETE
2191.01 FFE
TIMBER BORDER
BRICK RW
EXISTING COMMERCIAL BLDG
2191.08 FFE
N 05°31'26" E 484.09'
2190
TP
HP
TA
2190.91 FFE
CONC
2191.07 FFE
GRASS
2190.99 FFE
EP
GV
YH
CIL FL
2190.93 FFE
2191.03 FFE
2191.02 FFE
EM(3)
N 36°16'14" E 44.96'
N 03°55'58" E 8.71'
N 04°04'45" E 91.60'
#4 RBF (FLUSH)
2200
FORMERLY SR 1734
(ABANDONED)
N 63°00'08" W 422.55'
8" B.F.
4" L.C.
10" B.F.
2" L.C.

PIN 9579-56-1085
HENDERSONVILLE HOSPITALITY INC
DB 3708 PG 653

WV
SIGN
C1
BILLBOARD
2170
21 B.F.
12" B.F.
6" B.F.
C/L FL
9" B.F.
2180
CONCRETE
PLANTER
SIGN
BOLLARD(TYP.)
TR
AH
CB
3-STORY BRICK COMMERCIAL BLDG
2168.47 FFE
2168.54 FFE
CATWALK
STAIRS
CONC SW UNDER STEPS
2168.53
CONCRETE
8" A.F.
CB
FH
SUGARLOAF ROAD (SR 1897)
(60' CLAIMED NCDOT R/W)
S 05°10'43" W 401.25'
CONC SW
68.25'
N 78°37'20" W
3/4" IPIPE UNDER CURB
MNF
S 55°50'08" W 32.78'
3/4" IPIPE (-0.3')
TIMBER BORDER
18" CMG
139.90'
N 60°53'56" W
3/4" IPIPE (-0.2')
S 12°26'11" W 266.95'
16" CHR
18" CHR
18" CHR
16" CHR
18" CHR
CONC SW
3/4" IPIPE (FLUSH)
2190
207.93'
S 04°09'58" E
#4 RBF (-0.1')
S 63°00'21" E 185.12' - Tie
#4 RBF (-0.2')
50.01'-Tie
N 81°31'52" W
McAbee Traverse Station #1
NC Grid Localization Point
N=596269.42 ft
E=975478.60 ft
CF=0.9997744

PIN 9579-56-2593
NEW RIVER HOSPITALITY INC
DB 1530 PG 258
PLAT SLIDE 1087

REFERENCES:

- DB 994 PG 208
- DB 1553 PG 464
- PLAT SLIDE 1087
- PLAT CAB A SLIDE 171A

LEGEND & ABBREVIATIONS :

PB= PLAT BOOK
DB= DEED BOOK
PG= PAGE
R/W= RIGHT OF WAY
PIN= PARCEL IDENTIFICATION NUMBER
○ CALCULATED POINT (NOT MARKED IN FIELD)
◉ RECOVERED BOUNDARY MONUMENT (SIZE AND TYPE AS NOTED)
● #4 REBAR WITH "McAbee" ID CAP SET
+/- HEIGHT OF FOUND PROPERTY CORNER ABOVE/BELOW ADJACENT GRADE
AH= AIR HANDLER
APP= APPLE TREE
☼ AREA LIGHT
B.P.= BRADFORD PEAR
C&G= CURB AND GUTTER
CB= CATCH BASIN
CHR= CHERRY TREE
C/L FL= CHAIN LINK FENCE LINE
CONC= CONCRETE
EM= ELECTRIC METER
EP= ELECTRIC PEDESTAL
FH= FIRE HYDRANT
GM= GAS METER
GR= GUARD RAIL
GV= GAS VALVE
HP= HEAT PUMP
INV= INVERT ELEVATION
IPIPE= IRON PIPE FOUND
L.C.= LELAND CYPRESS
MNF= MAG NAIL FOUND
RBF= REBAR FOUND
SW= SIDEWALK
TP= TELECOMMUNICATIONS PEDESTAL
TR= TRANSFORMER
TRW= TIMBER RETAINING WALL
TYP.= TYPICAL
YH= YARD HYDRANT

I, ERIC S. MCABEE, CERTIFY THAT THIS PROJECT WAS COMPLETED UNDER MY SUPERVISION FROM AN ACTUAL TOPOGRAPHICAL GROUND SURVEY PERFORMED UNDER MY SUPERVISION; THAT THIS TOPOGRAPHICAL GROUND SURVEY WAS PERFORMED TO MEET NATIONAL MAP ACCURACY STANDARDS AS APPLICABLE; THAT THE ORIGINAL DATA WAS OBTAINED FROM 8/19/21 THRU 8/30/21; AND THAT ALL COORDINATES ARE LOCALIZED GROUND COORDINATES BASED ON THE NORTH AMERICAN DATUM (NAD83-2011). WITNESS MY ORIGINAL SIGNATURE AND SEAL THIS THE 2ND DAY OF SEPTEMBER, 2021.

PRELIMINARY
L-4095

I, ERIC S. MCABEE, CERTIFY THIS SURVEY IS OF AN EXISTING PARCEL OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET.

I, ERIC S. MCABEE, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY PERFORMED UNDER MY SUPERVISION; DEED DESCRIPTION RECORDED IN BOOK 994 PAGE 208; THAT THE RATIO OF PRECISION AS CALCULATED BY LATITUDES AND DEPARTURES IS 1: 10,000+; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 (F)(11)(C1) AS AMENDED. WITNESS MY ORIGINAL SIGNATURE AND SEAL THIS THE 2nd DAY OF SEPTEMBER, 2021.

PRELIMINARY
L-4095

SCALE: 1" = 40'
40' 20' 0' 40' 80' 120'

GLOBAL POSITIONING SYSTEM CERTIFICATION

I, ERIC S. MCABEE, HEREBY CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL GPS SURVEY MADE UNDER MY SUPERVISION; THAT THIS GPS SURVEY WAS PERFORMED TO CLASS I FGDC SPECIFICATIONS AND THAT I USED THE NCGS VRS RTK NETWORK; GPS FIELD PROCEDURES AND COORDINATES WERE OBTAINED BY THE RTK NETWORK SOLUTIONS; THAT THIS SURVEY WAS PERFORMED ON 8/19, 2021 USING A TRIMBLE 5800 DUAL FREQUENCY RECEIVER AND ALL COORDINATES ARE BASED ON NORTH AMERICAN DATUM OF 1983 - 2011 UPGRADED POSITIONS.

McABEE & ASSOCIATES, P.A.
PROFESSIONAL LAND SURVEYING
Eric S. McAbee, PLS
J. Barry West, PLS
Wallace S. McAbee, PLS (Emeritus)
3 McAbee Trail Fairview North Carolina, 28730
www. mcabeesurvey.com Firm License Number: C-694
Fax (828) 628-1294
Telephone (828) 628-1295

NORTH CAROLINA PROFESSIONAL SEAL L-4095 LAND SURVEYOR ERIC S. McABEE

NO.	DATE	DESCRIPTION	BY

BOUNDARY AND TOPOGRAPHIC SURVEY OF THE PROPERTY OF:

DREAMS DOMINION, INC.,
A NORTH CAROLINA CORPORATION

PIN: 9579-56-0884

HENDERSONVILLE TOWNSHIP
HENDERSON COUNTY, N.C.

DATE:	9-2-21
PROJECT #:	13672
DRAWING #:	G-21-5527
DRAWN BY:	ESM
SCALE:	1"=40'

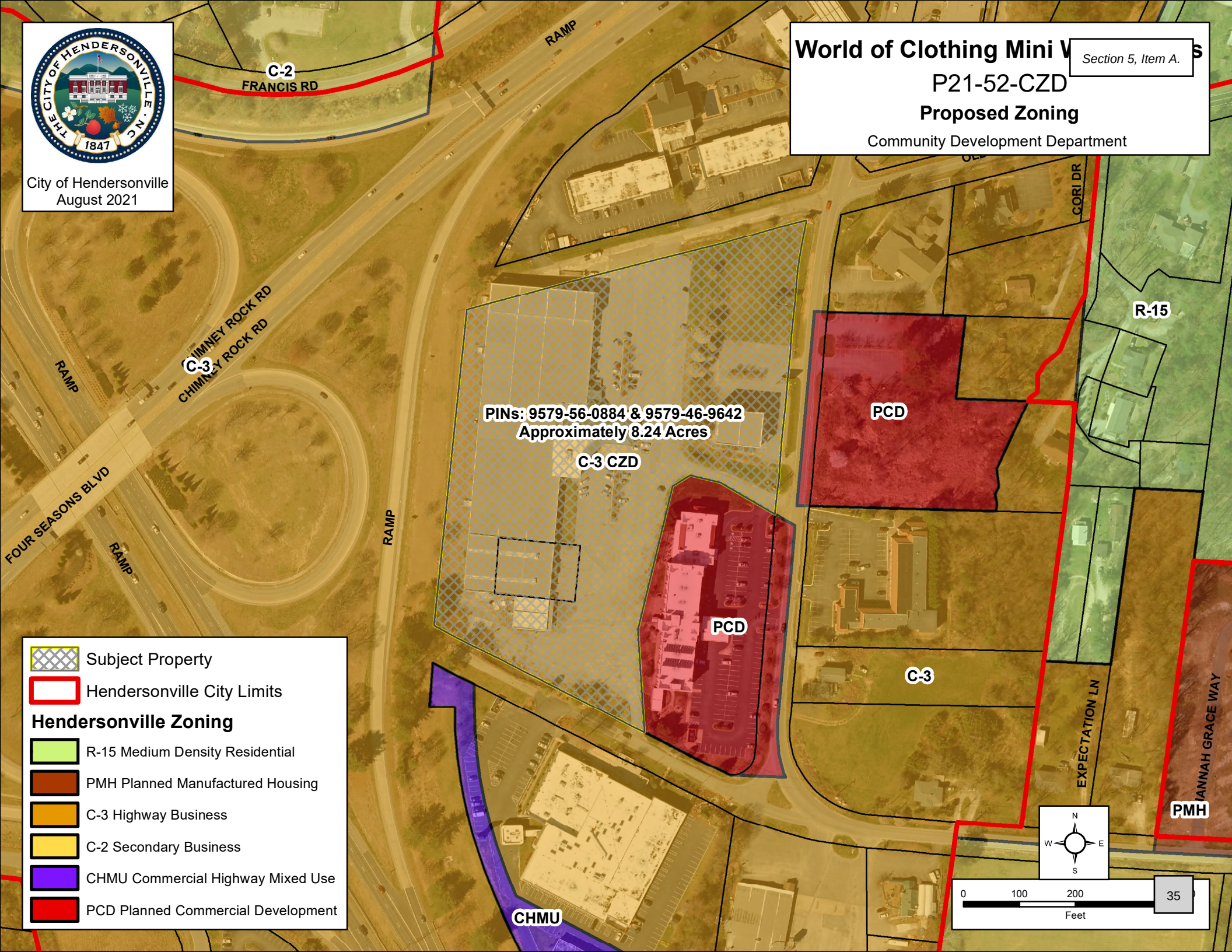
World of Clothing Mini W...s

P21-52-CZD

Proposed Zoning

Community Development Department

City of Hendersonville
August 2021



Ordinance #___-____

AN ORDINANCE OF THE CITY OF HENDERSONVILLE CITY COUNCIL TO AMEND THE OFFICIAL ZONING MAP OF THE CITY OF HENDERSONVILLE FOR PARCEL NUMBERs 9579-56-0884 AND 9579-46-9642 BY CHANGING THE ZONING DESIGNATION FROM C-3 HIGHWAY BUSINESS TO C-3 CZD HIGHWAY BUSINESS CONDITIONAL ZONING DISTRICT

IN RE: Parcel Numbers: 9579-56-0884 and 9579-46-9642 – World of Clothing Mini Warehouses
(File # P21-52-CZD)

WHEREAS, the City is in receipt of a Conditional Rezoning application from Canvass Capital LLC (applicant) and Dreams Dominion LLC (Property Owners) for the development of a 1200 unit mini warehouse facility development on approximately 8.24 acres., and

WHEREAS, the Planning Board took up this application at its regular meeting on September 13th, 2021; voting ___to recommend City Council adopt an ordinance amending the official zoning map of the City of Hendersonville, and

WHEREAS, City Council took up this application at its regular meeting on November 4th, 2021, and

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Hendersonville, North Carolina:

1. Pursuant to Article XI of the Zoning Ordinance of the City of Hendersonville, North Carolina, the Zoning Map is hereby amended by changing the zoning designation of the following: Parcel numbers 9579-56-0884 and 9579-46-9642 from C-3 Highway Business to C-3 CZD Highway Business Conditional Zoning District

2. Development of the parcel shall occur in accordance with the final site plan requirements of Article VII of the Zoning Ordinance of the City of Hendersonville, North Carolina, and shall be subject to the following:
Permitted Uses shall include:
    1) Accessory dwelling units subject to special requirements contained in Section 16-4, below
    2) Accessory uses & structures
    3) Adult care centers registered with the NC Department of Human Resources
    4) Animal hospitals & clinics as long as they contain no outdoor kennels
    5) Automobile car washes
    6) Automobile sales & service establishments
    7) Automotive paint & body work
    8) Banks and other financial institutions
    9) Bed & breakfast facilities
    10) Business services
    11) Congregate care facilities, subject to special requirements contained in Section 16-4, below
    12) Construction trades facilities so long as the storage of equipment and materials is screened from view from any public rights-of-way
    13) Convenience stores with or without gasoline sales
    14) Cultural arts buildings
    15) Dance and fitness facilities
    16) Dry cleaning and laundry establishment containing less than 6,000 ft2 of floor area
    17) Farm equipment sales & service
    18) Food pantries, subject to the special requirements contained in Section, 16-4 below)
    19) Food processing establishments containing less than 10,000 ft2 of gross floor area
    20) Funeral homes
    21) Golf driving ranges & par three golf courses
    22) Greenhouses & commercial nurseries
    23) Home occupations
    24) Hotels and motels
    25) Laundries, coin-operated

26) Microbreweries, subject to special requirements contained in Section 16-4, below
27) Mobile food vendors, subject to special requirements contained in Section 16-4, below
28) Mobile homes sales establishments so long as they are situated on a major thoroughfare containing four or more traffic lanes
29) Music and art studios
30) Newspaper offices and printing establishments
31) Nursing homes subject to special requirements contained in Section 16-4, below
32) Offices, business, professional and public
33) Parking lots and parking garages
34) Parks
35) Personal services
36) Planned residential developments (minor), subject to the requirements of Article VII, below
37) Progressive care facilities subject to special requirements contained in Section 16-4, below
38) Public & semi-public buildings
39) Recreational facilities, indoors
40) Recreational facilities, outdoors, commercial
41) Religious institutions
42) Repair services, miscellaneous
43) Residential care facilities
44) Residential dwellings, single-family
45) Residential dwellings, two-family
46) Rest homes subject to special requirements contained in Section 16-4, below
47) Restaurants
48) Restaurants, drive-in
49) Retail stores
50) Schools, post-secondary, business, technical and vocational
51) Schools, primary & secondary
52) Service stations
53) Signs, subject to the provisions of Article XIII
54) Telecommunications antennas, subject to special requirements contained in Section 16-4, below.
55) Telecommunications towers, subject to special requirements contained in Section 16-4, below.
56) Theaters, indoor
57) Wholesale businesses
58) Mini warehouses

Conditions that shall be satisfied prior to final site plan approval include:

1) None

3. This ordinance shall be not be effective until the stipulated list of conditions is consented to in writing by the applicant and all owners of the subject property. Upon such written consent, this ordinance shall be effective retroactive to the date of its adoption.

Adopted this fourth day of November 2021.

_____

Attest: Barbara G. Volk, Mayor, City of Hendersonville

_____

Angela L. Reece, City Clerk

Approved as to form:

_____

Angela S. Beeker, City Attorney

With their signatures below, the undersigned applicant(s) and property owner(s) consent to and agree to the imposition of all conditions stated.

Applicant: Canvass Capital LLC

Signature:_____

Printed Name:_____

Date:_____

Title Within LLC:_____

Property Owner: Dreams Dominion LLC

Signature:_____

Printed Name:_____

Date:_____

Title Within LLC:_____

Planning Report
Neighborhood Compatibility Meeting
Application for a Conditional Zoning District
World of Clothing Mini Storage File # P21-52-CZD
Wednesday, September 1, 2021 4:00 p.m.

Tyler Morrow, Planner II, convened the compatibility meeting at 4:00 pm in the Assembly Room of the City Operations Building, 305 Williams Street. Approximately two members of the public, the applicant and four City staff were in attendance and two attended via Zoom. The following attended:

Name	***Address***	***Name***	***Address***
Matt Manley	staff		
Tyler Morrow	staff		
Terri Swann	staff		
Lew Holloway	staff		
Daniel Renckens. App	Charlotte, NC		
Mike Vann	55 Bowen Terra Dr.		
Larry Rogers	Hendersonville, NC		

Mr. Morrow opened the meeting explaining this is the Neighborhood Compatibility meeting for the World of Clothing Mini Storage Conversion project. According to the City's Zoning Code, the Neighborhood Compatibility meeting is the first step in the Conditional Zoning process. This project has NOT yet been reviewed by staff for Zoning Code Compliance or Comprehensive Plan Consistency. A more detailed preliminary site plan will be submitted prior to advancing to the next stage of the process. Once the Preliminary Site Plan is submitted, it will be reviewed by staff and the project will then go to the Tree Board before going to the Planning Board. Both of these boards are advisory to the City Council. Planning Board and Tree Board will both make recommendations that will be reviewed by City Council. At both the Planning Board and the City Council meetings, a public hearing will be held on this item – thus providing additional opportunities for public input. City Council is the last step in the Conditional Rezoning process. City Council will review the project and the recommendations from Tree Board and Planning Board, and they will give consideration to public comments before ultimately making a decision on the rezoning. A property is not rezoned until it is approved by City Council.

Pre-submitted public comments for today's meeting were accepted via the City of Hendersonville website and via email and will be addressed during this meeting. Comments and questions will also be accepted during today's meeting, both in-person and through zoom by following these procedures: Participants must use the raise hand feature to make comments or ask questions. At the appropriate time, we will identify users by name and unmute you. You may need to click "participants" to see the raise hand feature. On the telephone, you must press star-9. If you are in the room and would like to speak, please make yourself known and we will direct you up to the podium.

Before you speak, please state your name and address to be included in the record.

Regarding the project:

The subject property is currently zoned C-3 –Highway Business.
The property is proposed to be rezoned to C-3 CZD (Highway Business Conditional Zoning District). Conditional Zoning Districts have a binding SITE PLAN and List of USES AND CONDITIONS.

The site plan shows a 126,913 sq. ft. Mini Storage Facility which utilizes the existing World of Clothing building with the addition of new outside storage.

If approved, the development would be limited to the stated uses and what is shown on the approved plan. Following the developer's presentation, you will be able to question the developer about points which remain unclear. Questioning shall center on the proposal's compatibility as presented. We will identify speakers in order and unmute you.

Before you speak, please give your name and address for the record. Minutes of this meeting are being recorded and will be forwarded to the Planning Board and City Council.

There was one pre-submitted comment:

S. Branham - PO Box 526, Dana, NC wrote: Please stop turning everything into a storage unit. Who needs that many storage units! There is one on Sugarloaf Road near the World of Clothing anyways. There is also a new one being built on Signal Hill Road that is unnecessary also. Trash this town up anymore and tourists will quit coming here.

Daniel Renckens, 2303 West Morehead Street, Charlotte, NC stated he is the developer. This is an adaptive reuse of the former World of Clothing building. He is sticking with the C-3 zoning but having to do a Conditional Zoning District due to the size of the project. Mini-warehouses are allowed in the C-3 zoning. His company SafeNest is headquartered in Charlotte, NC. They have 15 facilities in North Carolina. One of the facilities is off of Naples Road and they are opening one at the old Fun Depot location in Asheville in about three to four weeks. They hold their properties long-term and plan to have 25 employees.

Mr. Renckens showed the site plan. He stated the World of Clothing closed in April of 2021. The state of retail and having large empty buildings is what leads to the construction of mini storage facilities such as this one. Self-storage facilities can fill these vacant properties and still serve the community. A lot of residential growth has created a need for these facilities. The increase in homes and need for self-storage is increasing.

Mr. Renckens stated this location is considered Regional Activity Center on the Comp Plan. Service is the keyword in addressing the public need. This property is not the most aesthetic site. He plans to improve the site and repaint the large sign painted on the building facing the interstate.

Mr. Renckens stated concerning the online comment, the quantity of storage in the area is limited. The Sugarloaf Road storage facility is 100% full and there is a waiting list. At other locations in the area, they are 90% full and have waiting lists also. People will need and use this facility.

Mr. Morrow asked if anyone would like to speak that is in attendance.

Mike Vann started he lives here locally, and he is building the Signal Hill mini storage with 295 units on Signal Hill Road and plans to open it in February. He asked Mr. Renckens if he planned to do storage on the front part of the property. Mr. Renckens stated no, he plans to keep that as offices. Mr. Vann asked if he plans to have storage of RV's. Mr. Renckens stated he does plan to expand and utilize canopy parking for RV storage. Mr. Vann asked if he has purchased this property already. Mr. Renckens stated he is under contract. Mr. Vann wished him good luck and stated he has no objection to the project.

Mr. Morrow stated he would now open up the public comment for anyone attending via zoom.

Ken Fitch, 1046 Patton Street stated this is a landmark commercial property and why isn't the development by right. He was concerned that more parking would be needed. There have been numerous thefts of auto parts in the area, and this might be a target for more of that with vehicles being stored outdoors. What will the security be for this facility and will there be a gate? This is a major issue. There is a major issue with landscaping as well. Will trees be required and additional landscaping?

Mr. Renckens stated he understands the concern for security. The property will be gated with a keypad entry. All three entrances will be gated. They will meet the current ordinance on all landscaping requirements. They will have parking lot landscaping and along the exterior as well. The building encroachment will be resolved, and this is not part of the rezoning. It will be solved separate from the rezoning.

Mr. Morrow stated a conditional rezoning is required on projects with a floor area greater than 50,000 sq. ft. That is why they are going through this process.

Mr. Fitch asked if this would go before the Tree Board. Mr. Morrow stated the Tree Board will review the landscape plan.

Mr. Vann asked if the RV storage would be covered. Mr. Renckens stated yes, the RV part will be covered with roughly 60 spaces. He has no plans to put RV or boat storage in the front of the building.

Mr. Morrow stated the Planning Board will hear this application in October and the City Council will have the final decision in November.

With no further comments or questions, Mr. Morrow closed the meeting at 4:22 pm.

Entry #: 20

Date Submitted: 8/20/2021 4:42 PM

Date:
8/19/2021

Name of Project
World of Clothing Conversion

Address/Location of Property
135 Sugarloaf Rd, Hendersonville, NC 28792

List 10 digit PIN or 7 digit PID number for each property
9579560884, 9579469642

Check type of Development
Commercial

Current Zoning
C-3

Proposed Zoning
C-3 CZD

List requested uses
All allowed uses within the C-3 district, inclusive of self-storage.

Total Acreage
8.24

Proposed Building Sq. ft.
126913

Dwelling Units
0

Conceptual Plan

World of Clothing Conversion NCM Concept Plan.pdf
251.55 KB

Conditional Zoning District Petition
(Continued)

Proposed conditions for the site:
The west side of the building facing the interstate will be repainted to meet the current City ordinances. All uses allowed within the C-3 district will be retained. Existing non-conformities that do not involve extensive demolition or modifications of the structures, will be brought into compliance.

It is important that the applicant consider the following factors. See Section 11-4 of the Zoning Ordinance for more information. Please use additional pages and/or attachments if necessary.

Explain consistency with the City's Comprehensive Plan:
The primary purpose of this rezoning is to allow for mini-warehousing on the property, which is currently allowed as a conditional use within the C-3 district. This petition intends to preserve the existing C-3 zoning of the property, which aligns with the City Comprehensive Plan. The Comprehensive Plan designates this area as a "Regional Activity Center" on the future land use map, which lists the primary use as "Community/regional retail sales and services". Mini-warehousing is a community need and is a service to the local region. As housing supply continues to increase in the nearby activity center, the need for mini-warehousing will also increase. Retaining all allowed C-3 uses ensures that this property aligns with Comprehensive Plan into the future.

Explain compatibility with surrounding land uses:
The surrounding land uses include hotel, gift shop, and restaurant. The mini-warehousing use will conveniently serve the nearby residential communities, while being situated within a commercial corridor so as not impose on the character of the residential areas.

Explain whether changed conditional require a map amendment:
No map amendment is required as a part of this request.

Explain how the petition is in the public interest:
Demand for mini-warehousing is increasing within this submarket. With more residential developments coming online, the supply of self-storage is not keeping up. This use will serve an increasing need of the public and prevent customers from having to travel long distances to utilize storage services.

Explain whether adequate public facilities are available:
The property contains existing buildings that are connected to public utilities. Public water is adjacent to the site for fire suppression.

Explain the impact the petition would have on the natural environment:
Since the impervious area on the site will not be increased, there will be no negative impact to the natural environment. The petitioner is also exploring the use of solar roof panels as an alternative to traditional electricity.

Additional information:
This petition aligns with the Comprehensive Plan, serves a community need, and will have a positive economic impact for the City.

Refer to Owner Signature Addendum for owner's signature.
Fees have been mailed to the Community Development Office.

Note additional approvals prior to issuance of Zoning Compliance Permit may include, but are not limited to:

1. Henderson County Sedimentation & Erosion Control Permit
2. Stormwater management plan
3. Utility approval
4. NCDOT permit
5. Any other applicable permits as determined by the Development Assistance Department

Signature pages for Conditional Zoning District Petition

Designated Agent
Canvass Capital, LLC

Address
2303 W Morehead St, 200, Charlotte, North Carolina 28208

Phone
(704) 654-7538

Email
drenckens@canvasscap.com

Applicant Name
Daniel Renckens

Address

Phone

Signature



Signature of the property owner acknowledges if the property is rezoned the property involved in this request is bound to the use(s) authorized, the approved site plan and any conditions imposed, unless subsequently changed or amended as provided for in the Zoning Ordinance.

Property Owner Name
Dreams Dominion, Inc.

Address
135 Sugarloaf Rd., Hendersonville, NC 28792, Hendersonville, North Carolina 28792

PID or PIN #
9579560884

Signature



Property Owner Name

Address

PID or PIN #

Signature

Signature pages for Conditional Zoning District Petition (continued)

Signature of the property owner acknowledges if the property is rezoned the property involved in this request is bound to the use(s) authorized, the approved site plan and any conditions imposed, unless subsequently changed or amended as provided for in the Zoning Ordinance.

Property Owner Name

Address

PID or PIN #

Signature

Property Owner Name

Address

PID or PIN #

Signature

Property Owner Name

Address

PID or PIN #

Signature

City of Hendersonville
General Application
Applicant Signature Addendum

Application Information

Date of Application 08/20/2021

Application Number P21-52-CZD

Name of Project World of Clothing Conversion Phase # (if subdivision) _____

Parcel Identification Number(s) (PIN) 9579560884, 9579469642

Additional Applicants: (Signature indicates intent that this page be affixed to Application.)

* Printed Name Daniel Renckens on behalf of Canvass Capital, LLC

☐ Corporation ☒ Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

Signature _____

Title Development Manager Email drenckens@canvasscap.com

Address of Applicant 2303 W Morehead St, Ste. 200, Charlotte, NC, 28208

---

* Printed Name _____

☐ Corporation ☐ Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

Signature _____

Title _____ Email _____

Address of Applicant _____

---

* Printed Name _____

☐ Corporation ☐ Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

Signature _____

Title _____ Email _____

Address of Applicant _____

DocuSign Envelope ID: 43D088C1-C595-4BD3-94A3-633559D3B47B

City of Hendersonville
General Application
Property Owner Signature Addendum

Application Information

Date of Application 08/20/2021 Application Number P21-52-CZD

Name of Project World of Clothing Conversion Phase # (if subdivision) _____

Parcel Identification Number(s) (PIN) 9579560884, 9579469642

Property Owners: (Signature indicates intent that this page be affixed to Application.)

* ^ Printed Name Dreams Dominion, Inc.

■ Corporation ☐ Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

Signature DocuSigned by: J. Brooke Williams EDABEAE2C4D946E...

Title President Email dreamsdominion4@yahoo.com

Address of Property Owner _____

---

* ^ Printed Name _____

☐ Corporation ☐Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

Signature _____

Title _____ Email _____

Address of Property Owner _____

---

* ^ Printed Name _____

☐ Corporation ☐Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

Signature _____

Title _____ Email _____

Address of Property Owner _____

---

* Property owner hereby grants permission to the City of Hendersonville personnel to enter the subject property for any purpose required in processing this application.

^ If signed by an agent on behalf of the Owner, this petition MUST be accompanied by a Limited Power of Attorney signed by the property owner (s) and notarized, specifically authorizing the agent to act on the owner (s) behalf in signing this application. Failure of each owner, or their duly authorized agent, to sign, or failure to include the authority of the agent signed by the property owner, will result in an INVALID APPLICATION.

City of Hendersonville
General Application
Applicant Signature Addendum

Application Information

Date of Application 08/20/2021

Application Number P21-52-CZD

Name of Project World of Clothing Conversion Phase # (if subdivision) _____

Parcel Identification Number(s) (PIN) 9579560884, 9579469642

Additional Applicants: (Signature indicates intent that this page be affixed to Application.)

* Printed Name Daniel Renckens on behalf of Canvass Capital, LLC

☐ Corporation ☒ Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

Signature _____

Title Development Manager Email drenckens@canvasscap.com

Address of Applicant 2303 W Morehead St, Ste. 200, Charlotte, NC, 28208

---

* Printed Name _____

☐ Corporation ☐ Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

Signature _____

Title _____ Email _____

Address of Applicant _____

---

* Printed Name _____

☐ Corporation ☐ Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

Signature _____

Title _____ Email _____

Address of Applicant _____

WRITTEN CONSENT OF THE SOLE OPERATING MEMBER

OF

CANVASS SOUTHEAST HOLDINGS, LLC AND SAFENEST STORAGE HOLDINGS, LLC

The undersigned, CANVASS CAPITAL, LLC, a North Carolina limited partnership (the "Partnership"), being the sole operating member of each of Canvass Southeast Holdings, LLC, a Delaware limited liability company and SafeNest Storage Holdings, LLC, a Delaware limited liability company (the "Holding Companies"), DOES HEREBY CONSENT to the adoption of the following resolutions:

WHEREAS, the Partnership, in its own capacity and in its capacity as operating member of each of the Holding Companies deems it advisable and in the best interest of the Partnership and the Holding Companies to approve and ratify the appointment of Daniel Renckens as Authorized Signatory of each of the Holding Companies; and

WHEREAS, it is intended for the Partnership to consider and, if thought appropriate, approve the delegation of certain of its rights and powers to manage and control the business and affairs of each of the Holding Companies to Daniel Renckens, it being understood that Daniel Renckens shall not be deemed to be an Authorized Signatory of the Holding Companies and that such delegation shall not cause the Partnership to cease to be the operating member of either of the Holding Companies.

NOW THEREFORE be it:

RESOLVED: that Daniel Renckens be, and hereby is, appointed Authorized Signatory of each of the Holding Companies;

RESOLVED: that Daniel Renckens be, and acting singly hereby is, authorized and directed as an "Authorized Person", on behalf of the Partnership in its capacity as the operating member of the Holding Companies to execute and deliver, and to cause Holding Companies to execute and deliver any and all documents that are necessary or appropriate in connection with the foregoing up to the amount of $20,000 per transaction, Daniel Renckens's execution thereof being deemed conclusive evidence of his authority therefor;

RESOLVED: that the foregoing delegations to Daniel Renckens shall automatically, and without any further action, terminate upon the earliest to occur of (i) the removal of Daniel Renckens as an officer of the Partnership, (ii) the Partnership's good faith determination that Daniel Renckens has engaged in a "Cause Event" (defined below) under, as applicable, the Amended and Restated Limited Liability Operating Agreement of the Holding Companies, or (iii) upon Daniel Renckens becoming a "Terminated Member" (defined below) under, as applicable, the Amended and Restated Limited Liability Operating Agreement of the Holding Companies.

For the purposes of this resolution, a "Cause Event" and a "Terminated Member" shall have their respective meanings as set forth under the Amended and Restated Limited Liability Operating Agreement of the Holding Companies, as applicable; and

RESOLVED: that all actions heretofore taken by Daniel Renckens with respect to any matter referenced in the foregoing resolutions are hereby ratified and approved in all respects.

IN WITNESS WHEREOF, the undersigned have duly executed this Written Consent effective as of May 17, 2021.

CANVASS CAPITAL, LLC

By: 
Name: Peter Cai
Title: Managing Partner

CITY OF HENDERSONVILLE

AGENDA ITEM SUMMARY
PLANNING DIVISION

SUBMITTER: Matthew Manley, Planning Manager

MEETING DATE: October 11, 2021

AGENDA SECTION: New Business

DEPARTMENT: Community Development

TITLE OF ITEM: Conditional Zoning District – Half Moon Heights (P21-44-CZD) – *Matthew Manley, AICP – Planning Manager*

SUGGESTED MOTION(S):

1. For Recommending Approval:

I move Planning Board recommend City Council ADOPT an ordinance amending the official zoning map of the City of Hendersonville changing the zoning designation of the subject property (PIN: 9568-00-1446) from PRD-CZD (Planned Residential Development-Conditional Zoning District) to PRD-CZD (Planned Residential Development – Conditional Zoning District) based on the site plan submitted by the applicant and subject to the following;

Permitted uses shall include:

1. Residential Dwellings, Single-Family

Conditions that shall be satisfied prior to final site plan approval include:

1. Mitigate traffic impact by providing a right turn lane at Ballantyne Commons and US 64 by providing 75' of storage for vehicles turning right on to Chimney Rock Rd / US 64. (Traffic Impact Analysis)
2. Size the stormwater systems to retain runoff for, at a minimum, 50-year event (Stormwater Administrator); and
3. Utilize Low Impact Development practices (NR-3.2). Incorporate pollinator habitat into a more natural/green stormwater management facility such as bioretention or constructed stormwater wetlands (Stormwater Administrator); and
4. Protect the trees that have been proposed to be preserved in accordance with Section 15-4 of the Zoning Ordinance (Tree Board); and
5. All new vegetation planted must be chosen from the Recommended Landscape Species List for Street Trees and Land Development Projects (Tree Board); and
6. Recess garages or shift parking to rear of lots. Make front porch the primary architectural feature fronting the street (PH-3.1.1); and
7. Pedestrian Crossing at Road C does not appear to have sufficient sight distance. Extend sidewalk along Half Moon Trail south towards Ballantyne Commons and provide pedestrian crossing to Mailbox Cluster / School Bus stop; and
8. Reduce the impact of the development and preserve quality, undisturbed open space by clustering development in areas outside of 25% slope (NR-1.4, NR-2.1, Subdivision Ord Section 5.03, County Future Land Use "Conservation" designation), thus preserving existing woodlands and avoiding grading of steep slopes in these areas (NR-2.3);
9. Provide ROW connection to Gypsy Ln to accommodate pedestrian connection (TC-1.4.1) and utility connections (per City Code). This condition is subject to change based on potential impact of previous condition (Condition #7).

Finding that the rezoning is consistent with the Comprehensive Plan's Future Land Use map and that the rezoning is reasonable and in the public interest for the following reasons:

[Please state reasons describing why this development is good for the community. Example suggestions below or include your own]

1. The location of the proposed Planned Residential Development is in keeping with

	the surrounding land uses. (*Chapter 8 LU-6.1)).* 2. Single-Family Detached is a primary use stated in the Land Use & Development Chapter (*Chapter 8 – LU-6.2*). 3. The proposed density of the development (3.0 Units / Acre) is in line with the Land Use & Development Chapter's guidance of 2 – 8 Unis / Acre. (*Chapter 9 – LU-6.4).* [DISCUSS & VOTE]

For Recommending Denial:

I move Planning Board recommend to City Council to DENY an ordinance amending the official zoning map of the City of Hendersonville changing the zoning designation of the subject property (PIN: 9568-00-1446) from PRD-CZD (Planned Residential Development-Conditional Zoning District) to PRD-CZD (Planned Residential Development – Conditional Zoning District) based on the following:

[Please state reasons describing why you are moving to deny the application. Examples suggestions below or include your own.]

1. The development does not provide a variety of housing types.
2. The development is incompatible with surrounding land uses.
3. The development is inconsistent with the Comprehensive Plan.

[DISCUSS & VOTE]

SUMMARY: *The City is in receipt of an application for a conditional rezoning from Joseph Schlotterbeck of Half Moon Land Holdings, LLC, applicant, and Triangle Ballantyne Hendersonville, Inc., property owners. The applicants are requesting to rezone the subject property, PIN 9680-00-1446 and located on Half Moon Trail, from PRD, Planned Residential Development to PRD CZD, Planned Residential Development Conditional Zoning District for the construction of a housing development containing 101 single-family homes on approximately 33.65 acres with a density of 3 Units / Acre. This project required a conditional rezoning due to the PRD Conditional Zoning District requirements.*

PROJECT/PETITIONER NUMBER:	P21-44-CZD
PETITIONER NAME:	Joseph Schlotterbeck, Half Moon Land Holdings, Inc.
ATTACHMENTS:	1. Staff Report 2. Draft Ordinance 3. Neighborhood Compatibility Meeting Minutes 4. Tree Board Minutes 5. Site Plan 6. TIA Report / Consultant Review 7. Application 8. Owner Signature Addendum

Half Moon Heights P21-44-CZD/SUB

CITY OF HENDERSONVILLE - COMMUNITY DEVELOPMENT STAFF REPORT

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PROJECT SUMMARY

Applicant: Half Moon Land Holding, LLC.

Property Owner: Triangle Ballantyne Hendersonville, Inc.

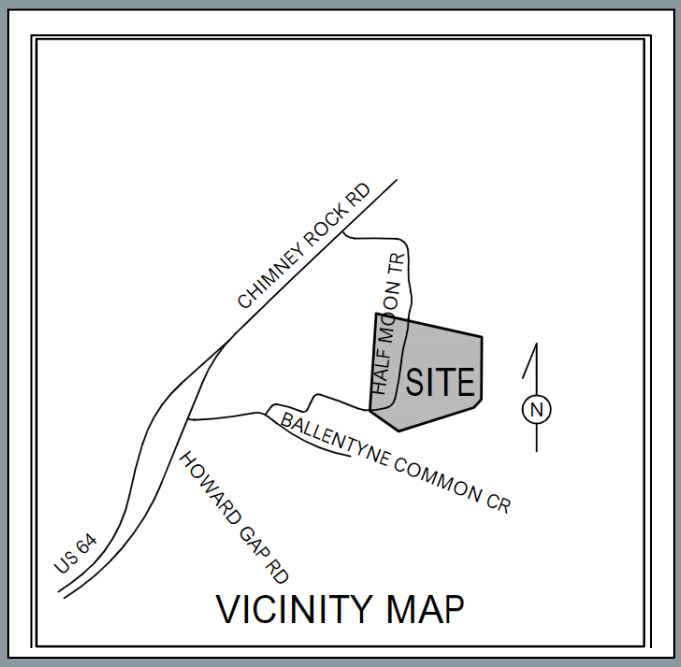
Property Address: 297 Rustling Pines Ln.

Project Acreage: 33.65 Acres

Parcel Identification Number(s): 9680-00-1446

Current Zoning: PRD-CZD (Planned Residential Development-CZD)

Neighborhood Compatibility Meeting: September 1, 2021



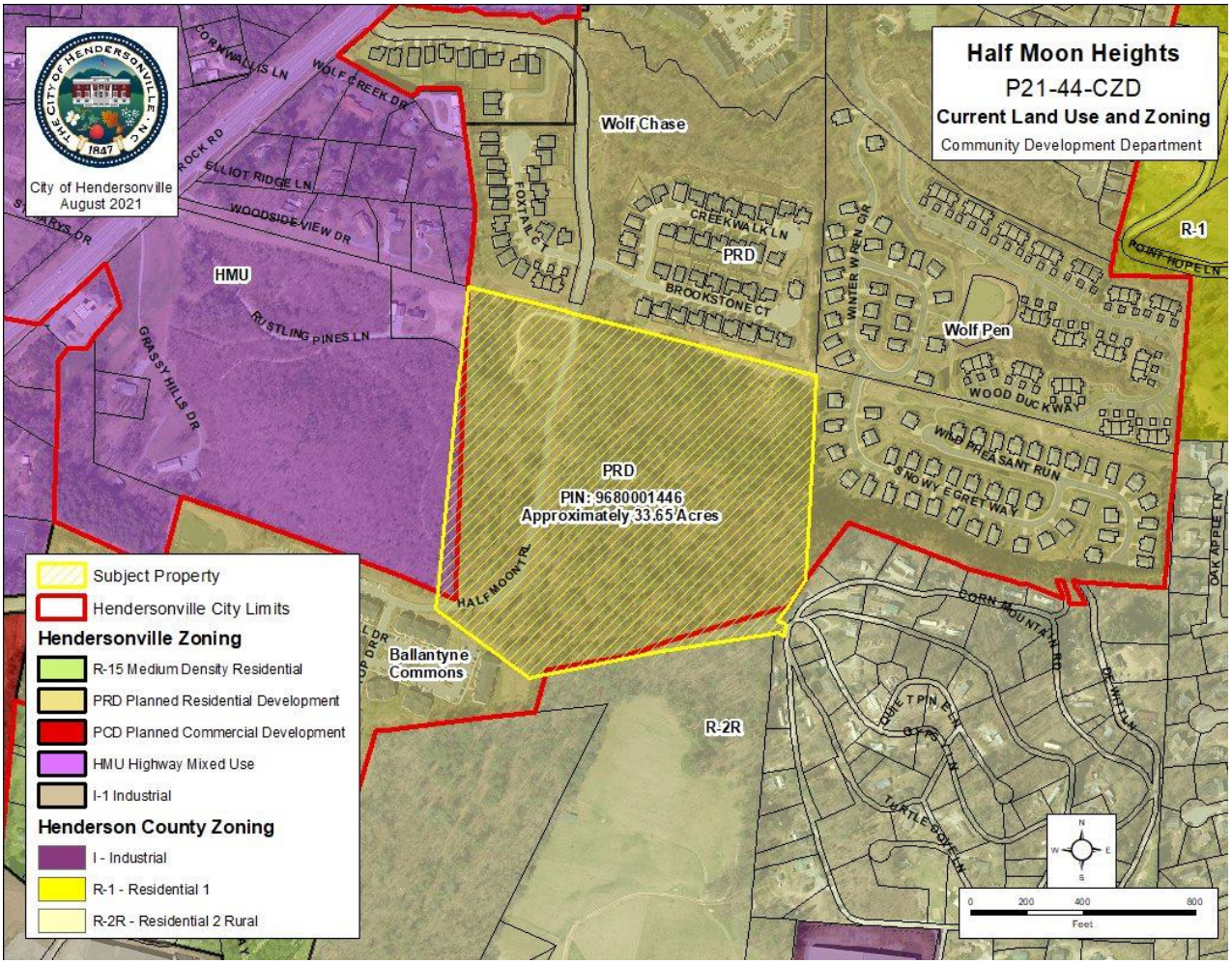
SITE VICINITY MAP

Summary Statement of Applicant Rezoning Request

The City of Hendersonville is in receipt of an application for a conditional rezoning from Joseph Schlotterbeck of Half Moon Land Holdings, LLC, applicant, and Triangle Ballentyne Hendersonville, Inc., property owners. The applicants are requesting to rezone the subject property, PIN 9680-00-1446 and located on Half Moon Trail, from PRD, Planned Residential Development to PRD CZD, Planned Residential Development Conditional Zoning District for the construction of a housing development containing 101 single-family homes on approximately 33.65 acres with a density of 3 Units / Acre.

This project required a conditional rezoning due to the PRD Conditional Zoning District requirements.

PROJECT SUMMARY - CONTINUED



City of Hendersonville Current Zoning & Land Use Map

Parcels to the north and northeast are single-family home subdivisions (PRDs) located within constructed less than 10 years ago. These subdivisions, which have a densities of 2.6 and 2.7 units per acre, respectively. The properties to the southeast are part of a platted subdivision outside of the ETJ (Corn Mountain Estates) and within the County's zoning jurisdiction (Zoned R-2R). This subdivision has approximately 1.7 Units / Acres and consists of a mixture of single-family homes, manufactured homes and mobile homes. To the south, is a large parcel also within the County's R-2R zoning district which features two single-family homes on roughly 30 acres (0.07 Units/Acre). The property directly to the west is another large parcel featuring two single-family homes on 28 Acres (0.07 Units/Acre). It is within the City's ETJ and zoned HMU (Highway Mixed Use). The parcel to the southwest features Ballantyne Apartment complex (12 units/acre) – which originally had slated the subject property as phase 2 for the development of additional multi-family housing. This complex is within the City Limits and is zoned PRD.

SITE CONDITIONS – SITE IMAGES

Entrance through Ballantyne Commons



Entrance from Half Moon Trail / Wolf Chase looking north.



View along Half Moon Trail facing north



SITE CONDITIONS – SITE IMAGES CONTINUED

Mature trees west of Half Moon Trail



View of Duke Energy ROW along north boundary of subject property



View of property boundary at Gypsy Ln/Corn Mountain



SITE CONDITIONS – SITE IMAGES CONTINUED

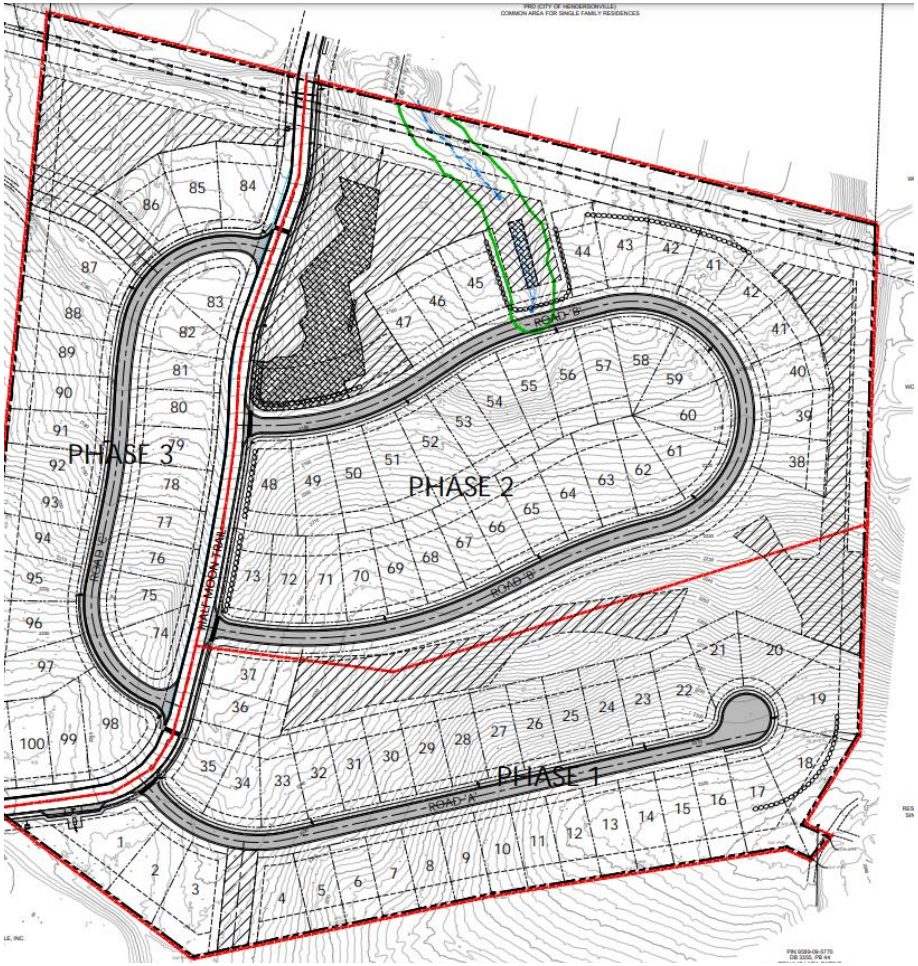
Typical view of forest at center of the subject property	
Typical view of forest at center of the subject property	
Typical view of forest at center of the subject property	

AERIAL PHOTOS

Bird's Eye View - Oriented North



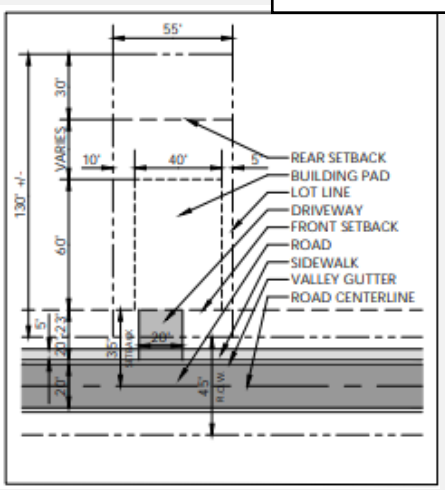
SITE PLAN OVERVIEW





Proposed Site Plan & Proposed Landscaping / Tree Survey & Grading Plan

SITE PLAN OVERVIEW:



***Site Plan Basics**:*

- *101 Individual Lots / Home Sites with setbacks (typical layout shown)*
- *Cluster Mailbox / School Bus Stop*
- *Public Streets with sidewalks (45' Public ROW)*
  - *1 Cul de Sac*
  - *2 Loop roads*
  - *1 Feeder street (Half Moon Trail)*
- *Platted stub outs to parcels to the south and west for connectivity to future development*
- *Wetlands, Stream Buffer and Open Space on undeveloped land*
- *Grading areas (Disturbed Acreage is stated at 1.704 Acres. This number appears to be incorrect and will be updated prior to Planning Board)*

***Preservation of Existing Trees**:*

- *Proposing to preserve 247 (27%) of trees on site (greater than 12" dbh)*
  - *Of the trees proposed to be preserved, 66% are Pine*
- *Proposing to remove 678 (73%) of trees on site (greater than 12" dbh)*
  - *Of the trees proposed to be removed, 57% are hardwoods*

***Utilities**: Water is available at either end of Half Moon Trail. Sewer will be routed to an existing manhole on the north side of Half Moon Trail.*

***Stormwater**: There are 3 proposed StormTech cisterns on the site plan – one for each phase. Staff is in communication with the developer to achieve the best possible stormwater management system. Comments from staff include the following:*

- *Developer is proposing 3 StormTech systems – based on community feedback staff recommends exploring options for sizing the systems to retain runoff from the 25 or 50 year events.*
- *Is there justification for using StormTech systems in open green space? Typically StormTech systems are found in developments where open/green space is limited (high density residential/commercial). The developer is proposing to install pollinator habitat above the proposed StormTech systems. Is it possible to incorporate the pollinator habitat into a more natural/green stormwater management facility such as bioretention or constructed stormwater wetlands?*

***Site Plan Assessment**: Based on the review by staff, the submitted site plan for this project appears to meet the Zoning Ordinance standards established in Article 5-14 (PRD) of the City Zoning Ordinance as well as the standards of the City Subdivision Ordinance - with exception of standards related to steep slope development (Section 5.03). Given the overall site has a slope of greater than 15.1%, requirements to increase minimum lot size x 1.3/1.5 and to limit impervious surface coverage to 25%/20% on any lot with steep slopes appears to be triggered and will be determined at final site plan. Initially, requirements to increase minimum lot size for steep lots appears to have already been met. The minimum lot size for PRD equates to .10 Acres or 4,356 Sq Ft.*

***Connection to Adjacent Properties:** Connections to adjoining properties always garners a great deal of attention. In order to address this issue, staff is providing language from the Subdivision Ordinance (4.03 5. c. & d). below.*

4.03 Streets -5. Continuation & Coordination of New Streets

c. The arrangement of streets in a development shall provide for the alignment and continuation of existing or proposed streets into adjoining lands in those cases in which the adjoining lands are undeveloped and deemed appropriate by the DRC for future development or in which the adjoining lands are developed and include opportunities for such connections.

d. Street rights-of-way shall be extended to or along adjoining property boundaries such that a roadway connection or street stub shall be provided for development where practicable and feasible in each direction (north, south, east, and west) for development which abuts vacant lands.

TRANSPORTATION IMPACT ANALYSIS (TIA)

The proposed development is anticipated to generate 1,107 daily trips as per the International Transportation Engineer Trip Generation Manual, 10th Edition, thus triggering the Zoning Code 1,000 daily trip threshold (Section 6-18).

Half Moon Trail Site Trip Generation

Land Use	AM Peak Hour		PM Peak Hour		
	IN	OUT	IN	OUT	Daily Traffic
107 Single Family Detached Dwelling Units (ITE Land Use 210)	20	61	68	40	1,107

Summary of Findings from Developer's Report

This analysis will show that all study intersections are currently operating at an overall acceptable level of service. When considering the impact of regional traffic growth and approved background developments and the site generated traffic, all intersections are projected to maintain overall acceptable levels of service.

Although the overall intersection level of service of the US 64 at Half Moon Trail is acceptable, the westbound Half Moon Trail approach to US 64 is currently operating at LOS "E" during the PM peak hour and is projected to operate at a LOS "F" by the Year 2024 with or without the proposed Half Moon Trail Residential Development. A potential mitigation measure was explored at the US 64 at Half Moon Trail intersection that included the widening of the westbound Half Moon Trail approach to provide separate left and right turn lanes. However, this improvement was shown to have minimal delay benefits and would not improve the level of service of the westbound Half Moon Trail approach.

The possibility of the installation of a traffic signal at the US 64 at Half Moon Trail intersection was also explored. However, based upon the examination of the AM and PM peak hour traffic data and the crash history at the intersection, the intersection does not meet MUTCD Traffic Signal Warrants.

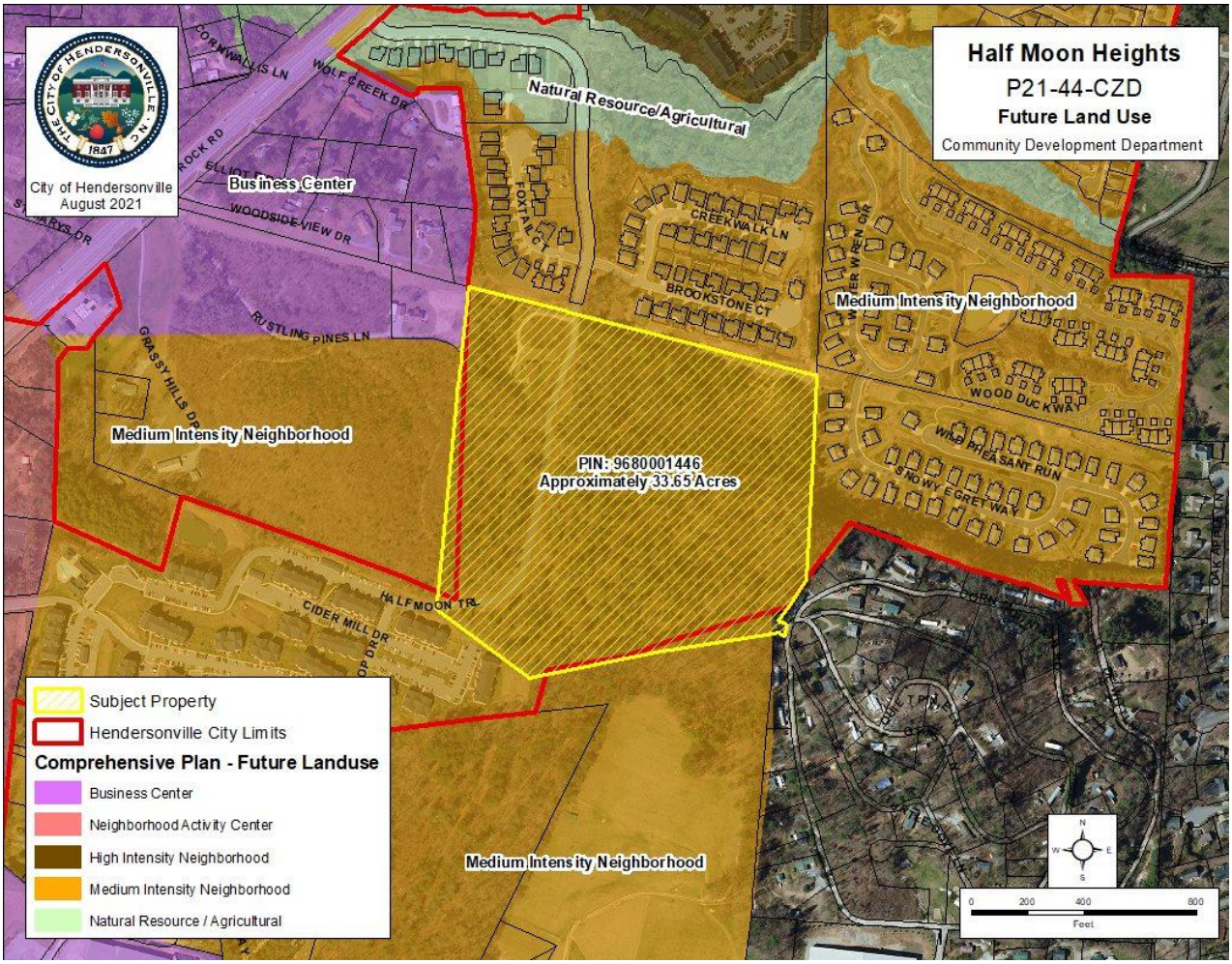
Therefore, the NCDOT would likely not consider a traffic signal at this location.

Even though the westbound Half Moon Trail approach at US 64 is projected to operate with delays of approximately 1 minute per vehicle during the PM peak hour for the Year 2024 Build Condition, the traffic demand for this approach is relatively light with a vehicle expected to arrive at US 64 along westbound Half Moon Trail every 1.5 minute during the PM peak hour. Therefore, even with no improvements at the US 64/Half Moon Trail intersection, there typically would not be more than 1 other vehicle queued at US 64. Thus, improvements to offsite intersections do not appear to be justified (either by physical roadway widening or the installation of a traffic signal).

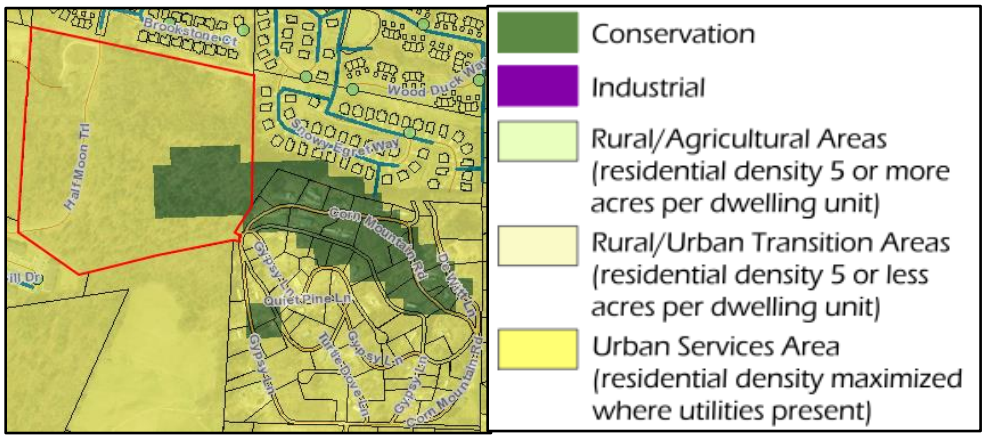
Finally, the site plan for the proposed development is at the concept stage. After a more refined site plan is developed, sight distance evaluations at the driveways along Half Moon Trail should be conducted to ensure that the available sight lines meet NCDOT and City of Hendersonville criteria. The relatively low projected peak period traffic volumes at the site driveways on Half Moon Trail do not require turn lanes at the intersections to meet adequate levels of service.

***Traffic Consultant Review**: TIA presents reasonable assessment. No mitigation warranted.*

REZONING CRITERIA – COMP PLAN CONSISTENCY



The location is primarily designated as Medium Intensity Neighborhood according to the City's Future Land Use Map. Due to the presence of floodplain, the Natural Resource/Agricultural designation is also present on a portion of the Wolf Chase & Wolf Pen developments to the north. Business Center is found along the US Hwy 64 (Chimney Rock Rd) corridor. Interestingly, the County's Future Land Use Map designates a portion of the subject property and the neighboring Corn Mountain Estates as "Conservation" due to the steep slopes, elevation / mountain view in this location.



REZONING CRITERIA – COMP PLAN CONSISTENCY

Chapter 8: Land Use & Development designates the subject property as Medium Intensity Neighborhood on the 2030 Future Land Use Map.



Goal LU-6.

Medium-Intensity Neighborhood: ***Provide a transition between High- and Low-Intensity Neighborhood areas while providing a wide range of housing formats and price points. Promote walkable neighborhood design and compatible infill development in new neighborhoods and as a means of preserving and enhancing existing neighborhoods.***

Strategy LU-6.1.

Locations:

- Existing neighborhoods zoned R-15, R-10, and R-6, including residential historic districts
- Existing or planned neighborhoods that reflect the same densities as the R-15, R-10 and R-6 zoning districts (Two to eight units per gross acre)
- Undeveloped properties that are surrounded by or adjacent to the above neighborhoods

Strategy LU-6.2.

Primary recommended land uses:

- Single-family attached and detached residential
- Open space

Strategy LU-6.3.

Secondary recommended land uses:

- Limited multi-family residential along roadways designated as Boulevards or Major Thoroughfares on the Future Land Use Map
- Planned Residential Developments
- Local public and institutional uses
- Recreational amenities

Strategy LU-6.4.

Development guidelines:

- Two to eight units per gross acre
- At least 60% open space in new developments on three or more acres
- Architectural guidelines to encourage compatibility when different housing types abut one another (e.g. similar building height, massing, roof pitch, and rhythm of windows and façade detailing)
- Encouragement of walkable neighborhood design, as described under Goal PH-3 in Chapter 2

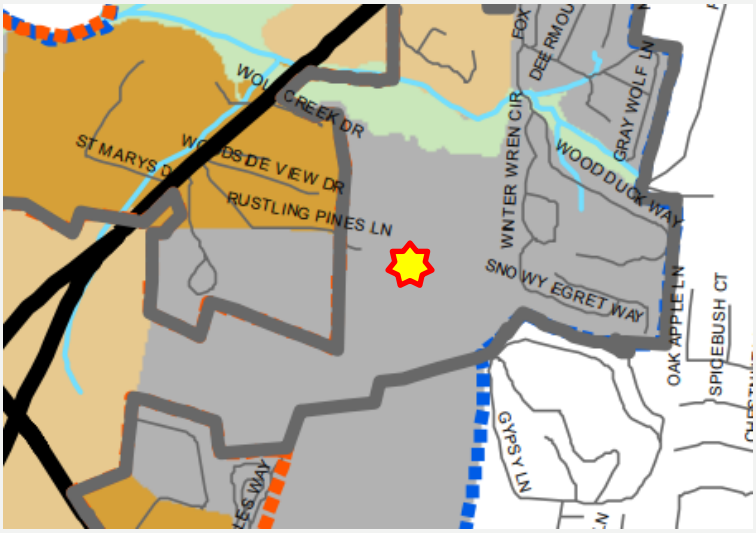


Single-family homes at densities comparable to Medium-Intensity Neighborhood

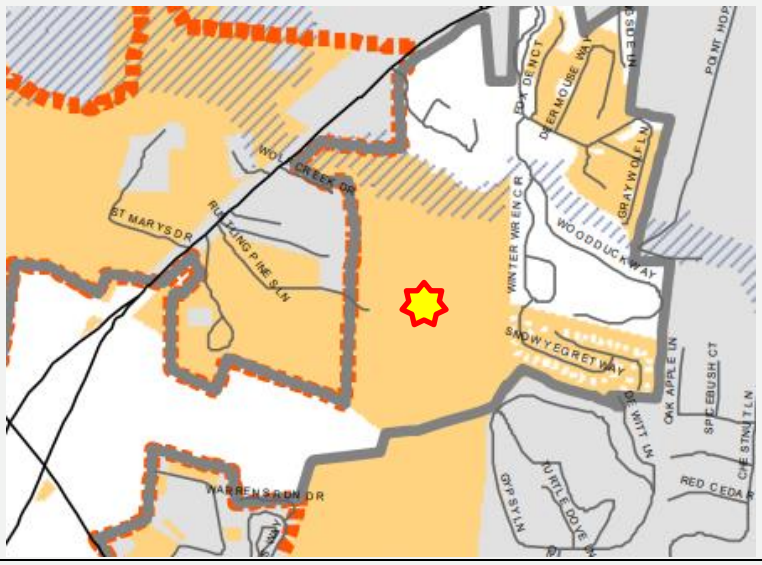
COMPREHENSIVE PLAN CONSISTENCY–CONTINUED

Growth Management

Preservation/Enhancement Areas *(gray): Developed areas in which few significant changes are expected, or undeveloped areas that are not considered a high priority for growth. The City should respond to development or redevelopment in these areas by maintaining and enhancing existing neighborhood character and maintaining consistency with Comprehensive Plan goals and strategies*



Development Framework Map: *The map depicts locations of greenfield development opportunities in Hendersonville and surrounding areas*



Floodplain Considerations: *The Subject Property sits high on a knob to the south of the Wolf Pen Creek floodplain. 2001 Land Cover is also shown on map displaying forested land and cleared land on the site.*



COMPREHENSIVE PLAN CONSISTENCY–CONTINUED

Chapter 2: Population and Housing

While the development is not slated to provide affordable housing, the development does increase the city's overall housing stock. According to the developer, there will be a variety of single story and two-story houses.

While sidewalks are proposed for the site, the design appears to prioritize cars with parking areas in the front of the houses.

Connectivity to surrounding parcels is an added benefit for maintaining an interconnected street network and planning for future development connections.

Goal PH-2.
Encourage a wide range of housing types and price points in order to meet the diverse and evolving needs of current and future residents, match the housing supply with the local workforce, and promote diverse neighborhoods.

Action PH-3.1.1.
Encourage pedestrian-friendly design features in residential developments, such as recessed or rear garages and front porches in single-family development, and rear parking lots and front entrances in multi-family developments.

Chapter 3: Natural & Environmental Resources

The proposed development challenges several aspects of the Natural & Environmental Resources chapter of the Comp Plan including the following goals:

Goal NR-1.4; NR-2.1; NR-2.3; & NR-3.2.

Full text of these goals and accompanying strategies can be found in the Chapter 3 of the Comprehensive Plan. Abbreviated excerpts have been provided.



Strategy NR-1.4.
Control development on steep slopes in order to protect life and property from erosion and landslides and preserve the natural appearance of hillsides. Recent landslide events near Hendersonville underscore the importance of controlling development on or near

Strategy NR-2.1.
Encourage clustered development that preserves open space while allowing a return on investment. Clustering homes on smaller lots, or clustering commercial development in multi-story buildings, preserves open space without sacrificing housing units or leasable floor area. Zoning regulations can encourage such development by avoiding minimum lot area standards and promoting flexibility in design.

Action NR-2.1.1
Maintain density bonuses that allow additional density in return for open space preservation.

Strategy NR-2.3.
Promote preservation of woodlands. Mature trees and wooded areas are significant community-defining natural features that contribute to Hendersonville's identity. Trees provide several additional community benefits, as described in Figure 3.3c.

Strategy NR-3.2.
Enable and encourage Low-Impact Development practices in stormwater management. Low Impact Development (LID) is an innovative approach to stormwater management that mimics natural hydrological processes and

COMPREHENSIVE PLAN CONSISTENCY CONTINUED

Strategy TC-1.4.
Encourage pedestrian connections between dead end streets and adjacent neighborhoods.

Action TC-1.4.1
Incorporate dead-end street sidewalk connection requirements into the Zoning and Subdivision Codes.

Goal TC-3.
Provide a safe and efficient roadway system that meets adequate vehicular level-of-service requirements in order to support business activity and residential quality of life.

Strategy TC-3.1.
Continue to develop and require a connected street grid.

Action TC-3.1.1
Require stub streets and connections to existing stubs in new subdivisions.

Chapter 7: Transportation & Circulation

The proposed connections to adjoining properties, as required by the subdivision ordinance, are supported by the Comprehensive Plan (TC-3.1.1). Staff has asked the developer to provide a connection to Gypsy Ln as well. The developer provided the following response:

"Based off the existing road elevation of Half Moon Trl, it is impossible to build a road at a 10% grade that connects to Gypsy Lane."

Property ownership adjoining either side of the existing Gypsy Ln stub would also constrain a future road connection. However, Action TC-1.4.1 of the Chapter 7 could be employed to create a pedestrian connection to the adjacent neighborhood.



Location where subject property adjoins Corn Mountain Estates near Gypsy Lane.

STAFF ASSESSMENT

Zoning Compliance:

Based on the review by staff, the submitted preliminary site plan for this project meets the Zoning Ordinance standards established for Planned Residential Development CZDs (Section 5-14) and Site Plan Review (Section 7-3).

Final Site Plan -

Final zoning ordinance compliance will be established at the time of Final Site Plan review and approval. The developer has noted that once additional details are known, they will address the standards related to steep slope development – limiting impervious surfaces on lot with steep slopes.

Zoning Map Amendment Standards:

Chapter XI of the Zoning Code provides standards for consideration of zoning map amendments. The following factors are to be included in decision-making process:

a) Comprehensive Plan Consistency:

Ch. 2 – Population & Housing – Relevant portions of this chapter call for providing a variety of housing types (PH-2). As well as considerations related to Walkable Neighborhood Design (PH-3.1.1) which call for rear parking or recessed garages.

Ch. 3 – Natural & Environmental Resources – Relevant portions of this chapter make recommendations related steep slope development, cluster development/open space preservation, woodland preservation, and low-impact stormwater management.

Ch. 8 - Land Use & Development – Relevant portions of this chapter include - Medium Intensity Neighborhood designation calls for new developments adjacent to or surrounded by other single-family neighborhoods / low to medium density residential zoning. This designation also states Single-Family Residential as a Primary Land Use. The development guidelines for Medium Intensity Neighborhood call for 2-8 Units / Acre, Walkable Neighborhood Design and minimum 60% Open Space.

Staff finds that the proposed Conditional Rezoning is consistent with the City's 2030 Comprehensive Plan for the following reasons. Proposed conditions will further align the proposed development with the Comprehensive Plan:

1. The location of the proposed Planned Residential Development is in keeping with the surrounding land uses. (*Chapter 8 LU-6.1)).*
2. Single-Family Detached is a primary use stated in the Land Use & Development Chapter (*Chapter 8 – LU-6.2*).
3. The proposed density of the development (3 Units / Acre) is in line with the Land Use & Development Chapter's guidance of 2 – 8 Unis / Acre. (*Chapter 9 – LU-6.4)*.

b) Compatibility with surrounding uses

The surrounding land uses are single-family neighborhood, multi-family apartments and vacant land.

c) Changed conditions

Development along Chimney Rock Rd (Hwy 64) has continued to intensify and further commercial / multi-family development is anticipated.

d) Public Interest

The addition of 101 single-family homes will fill a need for additional housing stock in Hendersonville.

e) Public facilities

According to the Water & Sewer department, there are adequate facilities in the area. The size of the project did trigger a Transportation Impact Analysis, as noted above. However, no mitigation or turn lanes are warranted.

f) Effect on natural environment.

As mentioned previously under the Comprehensive Plan Consistency, the project, as proposed does present challenges as it relates to the loss of tree canopy/habitat, the development of steep slopes (heavy grading) and stormwater runoff.

PROPOSED CONDITIONS: Staff proposes the following recommended conditions:

1. Size the stormwater systems to retain runoff for, at a minimum, a 25-year event (Stormwater Administrator); and
2. Utilize Low Impact Development practices through incorporation of pervious concrete for sidewalks and driveways (NR-3.2 / Stormwater Administrator); and
3. Protect the trees that have been proposed to be preserved in accordance with Section 15-4 of the Zoning Ordinance (Tree Board);

   Developer Proposed Condition: For Proposed Condition #3, the developer proposes to use silt fencing as opposed to the specific fencing requirements as stated in Section 15-4 of the Zoning Ordinance.
4. All new vegetation planted must be chosen from the Recommended Landscape Species List for Street Trees and Land Development Projects (Tree Board); and
5. Recess garages or shift parking to rear of lots. Make front porch the primary architectural feature fronting the street (PH-3.1.1); and

   Developer Proposed Condition: For Proposed Condition #5, the developer proposes that a ***majority*** of homes will have recessed garages with the front porch being the primary architectural feature.
6. Pedestrian Crossing at Road C does not appear to have sufficient sight distance. Extend sidewalk along Half Moon Trail south towards Ballantyne Commons and provide pedestrian crossing to Mailbox Cluster / School Bus stop; and
7. Reduce the impact of the development and preserve quality, undisturbed open space by clustering development in areas outside of 30% slope (NR-1.4, NR-2.1), thus preserving existing woodlands and avoiding grading of steep slopes in these areas (NR-2.3); and
8. Provide ROW connection to Gypsy Ln to accommodate pedestrian connection (TC-

1.4.1) and utility connections (per City Code). This condition is subject to change based on potential impact of previous condition (Condition #7).

PUBLIC COMMENT

NEIGHBORHOOD COMPATIBILITY MEETING

A Neighborhood Compatibility Meeting was held on September 1, 2021 for this project. Five staff members attended. Forty-seven residents attended in-person while 12 residents participated via Zoom. There were 26 pre-submitted comments – all of which were opposed to the project except for 1 who was in favor of the development. A large majority of attendees were from neighboring Wolf Chase and Wolf Pen subdivisions.

The primary concerns voiced at the meeting covered issues related to: environmental impacts (tree loss, habitat loss, erosion, steep slope development, etc.), impact on views, potential flooding/stormwater management (capacity of proposed system), access/increased traffic through Wolf Chase on Half Moon Trl, increased traffic on Hwy 64, increased access by "renters" from Ballantyne Commons, reduction of property values, liability issues with use of Wolf Chase walking trail, and lack of greenspace/playground in the plans.

TREE BOARD / PLANNING BOARD - SUMMARY OF ACTION

Summary of Tree Board Recommendation

The Tree Board met to review this project on September 21, 2021. An atypical number of residents attended the meeting – largely members of the Wolf Chase and Wolf Pen Subdivision who were there in opposition to the project. Several members of the public spoke about the project expressing concerns with tree loss, potential erosion problems, wildlife habitat loss, the need to protect tree canopy, the need to protect environmentally sensitive areas, and concerns with additional traffic and congestion on the highways.

The Tree Board made a motion that varied from their conventional approach. Typically the Board will offer conditions that are recommended to be placed on a development. However, in this case, they made both a "comprehensive plan consistency statement" while also offering up recommended conditions should the project be approved.

The motion reads as follows:

> *The Tree Board noted that this development is incompatible with Chapter 3, Section 3.3 Goals and Strategies NR-1. Preserve environmentally sensitive areas in order to protect life and property from natural hazards, protect water resources, preserve natural habitat, remaining woodlands, and tree canopy; and a motion was made for the developer to protect the trees that they have proposed to save in accordance with Section 15-4 (C) Protection of Existing Trees of the Zoning Ordinance; and all new vegetation planted must be chosen from the Recommended Landscape Species List for Street Trees and Land Development Projects. Motion by Glenn Lang, Vote – All Ayes.*

Staff has included the Tree Board's recommended conditions in the proposed List of Uses and Conditions

Summary of Planning Board Recommendations

RESERVED

Planning Board Motion

RESERVED

SUGGESTED MOTION(S) & CONSISTENCY STATEMENTS

[SEE AGENDA COVER SHEET]

ATTACHMENTS:

1. Ordinance
2. Neighborhood Compatibility Meeting Minutes
3. Tree Board Minutes
4. Site Plan / Tree Survey
5. TIA Report / Consultant Review
6. Application
7. Owner Signature Addendum

Ordinance #___-____

AN ORDINANCE OF THE CITY OF HENDERSONVILLE CITY COUNCIL TO AMEND THE OFFICIAL ZONING MAP OF THE CITY OF HENDERSONVILLE FOR PARCEL POSSESSING PIN NUMBER 9680-00-1446 BY CHANGING THE ZONING DESIGNATION FROM PRD-CZD (PLANNED RESIDENTIAL DEVELOPMENT-CONDITIONAL ZONING DISTRICT) TO PRD-CZD (PLANNED RESIDENTIAL DEVELOPMENT – CONDITIONAL ZONING DISTRICT)

IN RE: Parcel Numbers: 9568-00-1446 – 297 Rustling Pines Ln (Half Moon Heights)
(File # P21-44-CZD)

WHEREAS, the City is in receipt of a Conditional Rezoning application from applicant Half Moon Holdings, LLC. for the development of 101 detached single-family homes on approximately 33.65 acres, and

WHEREAS, the Planning Board took up this application at its regular meeting on October 11, 2021; voting 0-0 to recommend City Council adopt an ordinance amending the official zoning map of the City of Hendersonville, and

WHEREAS, City Council took up this application at its regular meeting on November 4, 2021, and

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Hendersonville, North Carolina:

1. Pursuant to Article XI of the Zoning Ordinance of the City of Hendersonville, North Carolina, the Zoning Map is hereby amended by changing the zoning designation of the following: Parcel Number: 9568-00-1446 from PRD-CZD (Planned Residential Development-Conditional Zoning District) to PRD-CZD (Planned Residential Development – Conditional Zoning District)

2. Development of the parcel shall occur in accordance with the final site plan requirements of Article VII of the Zoning Ordinance of the City of Hendersonville, North Carolina, and shall be based on the site plan submitted by the applicant and subject to the following.

    a. Permitted uses shall include:
        i. Residential Dwellings, Single-Family.
    b. Conditions that shall be satisfied prior to final site plan approval include:
        i. Mitigate traffic impact by providing a right turn lane at Ballantyne Commons and US 64 by providing 75’ of storage for vehicles turning right on to Chimney Rock Rd / US 64. (Traffic Impact Analysis)
        ii. Size the stormwater systems to retain runoff for, at a minimum, 50-year event (Stormwater Administrator); and
        iii. Utilize Low Impact Development practices (NR-3.2). Incorporate pollinator habitat into a more natural/green stormwater management facility such as bioretention or constructed stormwater wetlands (Stormwater Administrator); and
        iv. Protect the trees that have been proposed to be preserved in accordance with Section 15-4 of the Zoning Ordinance (Tree Board); and
        v. All new vegetation planted must be chosen from the Recommended Landscape Species List for Street Trees and Land Development Projects (Tree Board); and
        vi. Recess garages or shift parking to rear of lots. Make front porch the primary architectural feature fronting the street (PH-3.1.1); and
        vii. Pedestrian Crossing at Road C does not appear to have sufficient sight distance. Extend sidewalk along Half Moon Trail south towards Ballantyne Commons and provide pedestrian crossing to Mailbox Cluster / School Bus stop; and
        viii. Reduce the impact of the development and preserve quality, undisturbed open space by clustering development in areas outside of 25% slope (NR-1.4, NR-2.1, Subdivision Ord Section 5.03, County Future Land Use “Conservation” designation), thus preserving existing woodlands and avoiding grading of steep slopes in these areas (NR-2.3); and
        ix. Provide ROW connection to Gypsy Ln to accommodate pedestrian connection (TC-1.4.1) and utility connections (per City Code). This condition is subject to change based on potential impact of previous condition (Condition #7).

3. This ordinance shall be not be effective until the stipulated list of use(s) and conditions, established herein, is consented to in writing by the applicant and all owners of the subject property. Upon such written consent, this ordinance shall be effective retroactive to the date of its adoption.

Adopted this 7th, day of October 2021.

Attest: Barbara G. Volk, Mayor, City of Hendersonville

_____
Angela L. Reece, City Clerk

Approved as to form:

_____
Angela S. Beeker, City Attorney

With their signatures below, the undersigned applicant(s) and property owner(s) consent to and agree to the imposition of all conditions stated.

Applicant: Half Moon Holdings, INC.

Signature:_____

Printed Name:_____

Title: _____

Date:_____

Property Owner: Triangle Ballantyne Hendersonville, INC.

Signature:_____

Printed Name:_____

Title:_____

Date:_____

Planning Report
Neighborhood Compatibility Meeting
Application for a Conditional Zoning District
Half Moon Heights File # P21-44-CZD
Wednesday, September 1, 2021 2:00 p.m.

Matt Manley, Planning Manager, convened the compatibility meeting at 2:00 pm in the Assembly Room of the City Operations Building, 305 Williams Street. Approximately 47 adjacent property owners and four City staff were in attendance and 12 attended via Zoom. The following attended:

Name	***Address***	***Name***	***Address***
Matt Manley	staff	Elizabeth Mallindine	135 Creekwalk Lane
Tyler Morrow	staff	Joseph Culotta	38 Foxtail court
Terri Swann	staff	Darrell Pennington	156 Snowy Egret Way
Lew Holloway	staff	Lois Van Reese	131 Creekwalk Lane
Bob Partridge	64 Half Moon Trail	David Van Reese	131 Creekwalk Lane
Marie Partridge	64 Half Moon Trail	Kate Cervone	100 Brookstone Court
Linda Martschink	40 Snowy Egret Way	Chris Watenpool	100 Brookstone Court
Gus Martschink	40 Snowy Egret Way	Susan Fitzgerald	36 Grey Wolf Lane
Janice Mallindine	135 Creekwalk Lane	Thomas Umerski	25 Foxtail Court
John Hoover	65 Foxtail Court	Christine Hoover	65 Foxtail Court
Kathryn Costello	59 Creekwalk Lane	Christine Thompson	23 Foxtail Court
Jim Arata	21 Foxtail court	Linda Arata	21 Foxtail court
Maggie Sevek	42 Brookstone Court	Martin F. Sevek	42 Brookstone court
Debbie Culligan	31 Creekwalk Lane	Carolyn Prater	420 Woodbyne Avenue
Sharon Pearson	220 Ewbank Drive	Joyce Lennert	101 Wild Pheasant Run
Joe Lennert	101 Wild Pheasant Run	George Yourick	76 Half Moon Trail
Linda Yourick	76 Half Moon Trail	Gail Mitchell	112 Brookstone Court
Bill Mitchell	112 Brookstone Court	Enes K. Molina	53 Foxtail court
Sharon Molina	53 Foxtail Court	John Goolsby	94 Creekwalk Lane
Robbie Goolsby	94 Creekwalk Lane	Jan Hoffmann	93 Creekwalk Lane
Mike Hoffmann	93 Creekwalk Lane	Doug Nichols	58 Winter Wren Circle
Maria Syrett	70 Snowy Egret Way	Peter Syrett	70 Snowy Egret Way
Nancy K. Clark	1701 Deermouse Way	Pauline Williams	6000 Wood Duck Way
Joseph Taylor	395 Old Sunset Hill Road	David Justus	20 Grassy Hills Drive
Pamela Meister	117 Creekwalk Lane	Barbara Briley	3705 Wood Duck Way
Harry Hudson	3705 Wood Duck Way		

Mr. Manley opened the meeting explaining this is the Neighborhood Compatibility meeting for the Half Moon Heights neighborhood project. According to the City's Zoning Code, the Neighborhood Compatibility meeting is the first step in the Conditional Zoning process. This project has NOT yet been reviewed by staff for Zoning Code Compliance or Comprehensive Plan Consistency. A more detailed preliminary site plan will be submitted prior to advancing to the next stage of the process. Once the Preliminary Site Plan is submitted, it will be reviewed by staff and the project will then go to the Tree Board before going to the Planning Board. Both of these boards are advisory to the City Council. Planning Board and Tree Board will both make recommendations that will be reviewed by City Council. At both the Planning Board and the City Council meetings, a public hearing will be held on this item – thus providing additional opportunities for public input. City Council is the last step in the Conditional Rezoning process. City Council will review the project and the recommendations

from Tree Board and Planning Board, and they will give consideration to public comments before ultimately making a decision on the rezoning. A property is not rezoned until it is approved by City Council.

Pre-submitted public comments for today's meeting were accepted via the City of Hendersonville website and via email and will be addressed during this meeting. Comments and questions will also be accepted during today's meeting, both in-person and through zoom by following these procedures: Participants must use the raise hand feature to make comments or ask questions. At the appropriate time, we will identify users by name and unmute you. You may need to click "participants" to see the raise hand feature. On the telephone, you must press star 9. If you are in the room and would like to speak, please make yourself known and we will direct you up to the podium. Before you speak, please state your name and address to be included in the record.

Regarding the project:

The subject property is currently zoned PRD – Planned Residential Development. The property is proposed to be rezoned to PRD-CZD (Planned Residential Development) with an updated binding SITE PLAN and List of USES AND CONDITIONS. The site plan shows 107 single-family home lots with associated streets and sidewalks. If approved, the development would be limited to the stated uses and what is shown on the approved plan.

Following the developer's presentation, you will be able to question the developer about points which remain unclear. Questioning shall center on the proposal's compatibility as presented. We will identify speakers in order and unmute you.

Before you speak, please give your name and address for the record. Minutes of this meeting are being recorded and will be forwarded to the Planning Board and City Council.

Mr. Manley stated this is a larger crowd than we traditionally have and there is a two-hour window for this meeting. He would like to keep the comments at 3 to 5 minutes each. The HOA is involved and is going to have a presentation. He recognizes that this is where you live, and he understands that changes can cause anxiety however he would ask to show respect to everyone and let everyone have the opportunity to speak. Mr. Manley asked to not duplicate the same comments, once a topic is covered let's move forward.

Mr. Manley stated a full list of the public comments that were submitted will be given to the Planning Board and City Council along with the minutes.

Mr. Manley read out the comments from: Amy Pflug, Brian Scott, Carolyn Schifino, Cheryl and Stan Foster.

Joe Schlotterbeck introduced himself, his father Paul and the designer Bob Grasso. He stated this is a project consisting of 106 single family homes that will be built in three phases. The southern side will have a cul-de-sac, the northern side will be Phase 2 and the western side will be Phase 3. He plans to start the project in January 2022 if they get approval. They hope to have the project finished by the end of 2024 or beginning of 2025. This will be contingent on the weather and being able to get the materials.

Mr. Schlotterbeck stated concerning the stormwater, they plan to collect that on-site. It will be captured on-site and dispensed underground. It will leave the site at a pre-developed rate. He has engineers that are designing three storm tech systems for the property. That is being worked on now by the engineers.

He stated for this project to happen each homesite will be graded and a pad will be poured. They will have to remove trees for this. They will be planting back street trees and will try to retain all trees they are able to

retain. They want to get the Tree Board's advice on this. He also plans to have a butterfly garden or a bee sanctuary. Where trees are not possible, he plans to have a vegetative buffer as much as they can. They had a traffic survey done by their Traffic Engineer and he is on the zoom call today.

Bob Grasso, Project Designer stated they tried to work with the slopes for the lots and they will provide sidewalks and be pedestrian friendly. This will not be radically different than other projects in the area. They will have 3.2 units per acre and that is on the low side of what they could do.

Larry Green, Traffic Engineer stated they did the study and collected data at six different intersections to see which were the most impacted, US 64 and Half Moon Trail, US 64 and Ballantyne Commons Circle, Half Moon Trail and Cider Mill Drive, Cider Mill Drive east and west. They also consulted with the City of Hendersonville about developments that are approved but not yet built which included White Pine Villas so they could get an accurate count. They looked at how traffic had increased over the last 5 years and determined it had actually decreased slightly. They decreased the units from 118 to 107 units. They analyzed sections and levels of service and the proposed development can be supported by the roadway. Phase 2 will follow the existing Half Moon Trail.

Mr. Manley stated even though the traffic will increase the road can support it according to their findings.

Mr. Schlotterbeck stated they will take steps to avoid damage to the road during construction and they will do their best to document the way it is now and leave some things the same if not better.

Mr. Manley stated the City will have their own consultant review the traffic findings.

Mr. Schlotterbeck stated the size of the houses will be 40' x 60' – 2,000 sq. ft. to 2,400 sq. ft., three bedroom and two baths. The lot size will be roughly 7,200 sq. ft. This will not be low-income housing, but they are creating affordable housing. The homes will be in the $350,000 range. He stated their office is in Fairview, NC and that is where they are from. They plan to have a lower cost per lot and build a better house at more affordable price points. An adjacent property owner asked why build here now. Mr. Schlotterbeck stated his Dad has been building homes for 25 years and it is getting harder and harder to find property to build on in this area. It is hard to find property that will support well, septic or sewer and land that meets the zoning for multi-family. This property is a great place to build this type of housing.

Janice Mallindine, HOA President for Wolf Chase gave a presentation. She stated she would like to introduce the Wolf Chase community through her photos and presentation. She showed a photo of the location and photos of the water coming down on their community. She showed a site plan she drew showing the 69 homes in Wolf Chase. She stated they have a nature trail and wetlands, and their community is in a floodplain area. She stated there are many Board members in attendance that would like to speak on the issues. They are opposed to this development. She showed a petition that was signed by the residents. Not all of the residents have signed the petition. She stated studies show that clear cutting lots to accommodate roads and homes will decrease the value of their property. She showed more photos of the homes. She stated the Hendersonville City Code of Ordinances Section 10.3 has a section on the protection of white squirrels. They have white squirrels, bees, bears, foxes, Blue Heron and other wildlife in the area and this project will greatly affect them all. The City Code of Ordinances Section 10.1 addresses the protection of bird sanctuaries and Section 10.2 prevents harming their nests. She feels like the NC Wildlife Preserve must be consulted on the Blue Heron and protecting them. The building of this development will take away their habitat. The City of Hendersonville's own Comp Plan points out where this development will be in violation.

Ms. Mallindine showed photos before and after rainfall and the flooding that occurs there now without the buildings on the lot. This will only get worse once the land is developed. The culvert will not be able to hold all

the water runoff. The City's Comp Plan Section 3-2 under listed under guidelines addresses flooding. This is in the City's own Comp Plan. The water running downhill will affect their homes and the water being deposited in the area will cause problems for their community. She showed photos of some homes with their backyards flooded. She talked about Wolf Chase having a nature trail for their residents and how they pay for the upkeep of this trail. They do not want people outside of their neighborhood walking on the trail. She talked about toxins from water runoff coming downhill onto their property. She referenced Article 17 in the Zoning Ordinance titled the Natural Resource Protection Standards and stated there is a streambank buffer protection standard that the developers could be violation of. Wolf Chase is in a 100-year Floodplain. She showed photos of the creek and what happens when it rains now. The culvert under Highway 64 will wash out. The nature trail becomes a swampland when they have heavy rains now. The street is also too narrow and once they put trash cans out for collection, there will be problems with the street. The school buses pick up the kids at the intersections and it is dangerous during those times. Imagine how to handle the additional children at an already overburdened intersection. It can't handle the traffic now.

Ms. Mallindine stated another concern is Ballantyne Commons residents coming through the road that is currently locked right now. Will your development pay for this? She sees no benefit for the residents of Wolf Chase to open this road up. It will decrease the value of their property and could cause potential landslides with all the flooding it will create. She stated several Wolf Chase residents where there to speak also.

Lois Van Reese, 131 Creekwalk Lane asked if they would have access to the traffic study before the next meeting. Mr. Manley stated yes, it was public record. Ms. Van Reese stated the comment about the traffic actually decreasing is just not true. The traffic backs up from the high school to the Ingles on 64 everyday during school hours. She asked if they took into consideration the school hour traffic. The statement that traffic had decreased over the last 5 years is inaccurate. Mr. Schlotterbeck stated the way the traffic study works, lines are placed over the roads in several locations and traffic is counted by how many cars ride over the lines. They took this count for three days and it was not done during school season. He does understand their concerns and will try to work out any traffic issues.

Kathy Watenpool, 100 Brookstone Court stated she is opposed to this development. She stated when DEENR went up to do core studies, trees had already been removed and there are flags on a lot of the trees. She asked if he plans to log those trees. Mr. Schlotterbeck stated he had to remove some of the trees so that the drilling riggs could get up there. They had to see how the land looks underneath. They have no intention of logging the trees. They will do a tree survey that will show how many large trees are located on the site.

Ms. Van Reese asked if there were any environmental studies done. The flooding may bring contaminated water onto their property. She also asked who will build the homes. Will he sell off the lots and each owner will build their own home? Once this is done, they will be stuck with it forever. They have a nice tree line right now that will be destroyed. The wildlife and bear will be displaced. The bears are underweight now. He will walk away with $1,700,00.00 and they will be left with a huge number of problems and issues. Their homes will go down in value. Preservation according to the City of Hendersonville adds to the City's natural beauty and that is in the City's own vision statement. She doesn't want to see too much growth and overdevelopment.

Mr. Schlotterbeck stated they will have to have a comprehensive stormwater plan approved by the City and they will not make things worse, they will try to make things better.

Mr. Grasso stated he has worked with Gary Davis, a Civil Engineer in Asheville NC since 1985 and Buncombe County thinks very highly of him. He is one of the best. They normally call him in to solve any problems in the county. They are required by the state to retain the water and they cannot allow water to runoff onto other properties. The water has to be detained at a post development rate and he plans to detain it at a

predevelopment rate. The water must be treated before releasing it. The storm tech system will remove the toxins and be maintained by the HOA. There will be no increase in flooding or pollution. They are only adding to the current system.

Mr. Manley stated he would now open up the public comment for anyone attending via zoom.

Shirley Hadley, 44 Half Moon Trail stated she thinks a nice drain system should be installed because they do not want more water coming onto their property. Was the traffic study done during the pandemic? Mr. Schlotterbeck stated the study was done about a month ago. Mr. Grasso stated the traffic decreasing could be from the pandemic, but they received their information from NCDOT. Mr. Schlotterbeck stated they increased their traffic numbers and went above and beyond to get an accurate count.

Mr. Green stated the data they received was from NCDOT at this location. They collect data every two years. In 2014 – 2016 there was an increase in traffic, in 2018 there was a decrease and that was before the pandemic. This study was done in June of this year. The study shows that the traffic and higher levels of service are all good.

Alex Nelon, 109 St. Mary's Drive stated he lives between Fruitland and Howard Gap Road and he would love to read the fairy tales concerning the traffic. They do not live here, and they do not see it. He feels they could find a better place to build this development on. You have to be careful what you build and where you build it. They need to mitigate traffic and stormwater correctly. Does the developer have anything to do with Ballantyne Commons? Mr. Schlotterbeck stated no. Mr. Nelon stated when they built Ballantyne it caused a problem with the neighbors. They need to consider the mitigations that will have to be made.

Maggie Sevek, 42 Brookstone Court stated there is an obvious lack of greenspace for this development. They will not have a playground and there are no public parks in this section of Hendersonville. Wolf Chase has put a lot of money into maintaining their greenspace. Her husband has built bridges, they purchase insurance to cover the walking trail. What will happen when other residents from neighboring developments start using their trails and greenspace? They already deal with people using their walking trail. Mr. Schlotterbeck stated they are still working on their greenspace areas and they are doing their best. They will do as much as they can to keep everyone in their development off of the walking trail in Wolf Chase. What would the residents of Wolf Chase like to see?

Several attendees stated a bear habitat and the development not to be built.

Mr. Schlotterbeck stated if they do not want anyone walking on their trail then he will work on keeping people off the trail. They could possibly take some of their HOA money and donate it to Wolf Chase so that others could walk on the trail and they could help maintain it.

Ms. Mallindine stated they already have problems now and this will create even more. Traffic on Half Moon Trail will be unbearable once the gate is opened. It is in their interest to keep the gate closed. Mr. Schlotterbeck stated Half Moon Trail is a public road with a public access to Ballantyne Commons. He doesn't want to see the kids catching the bus on Highway 64 and will work with the City to see if they can have the buses stop inside the neighborhood.

Mr. Manley stated there are requirements for connectivity in the Subdivision Ordinance. Half Moon Trail was constructed with the intent of being used as a connection for Ballantyne Commons and Phase 2 of that project. Currently it is only being used as a fire and police access and remains locked. The developers are meeting the connectivity requirements by using this public access.

Peter Syrett, Wolf Pen stated he heard them say there would be an underwater drainage system and where will the water go from this system. Mr. Schlotterbeck stated underground storm systems take in the water and release it at a slower rate. He pointed out the retention areas on the site plan. None were on the slope of the property. There will be three large underground tanks in three locations. He pointed out each location on the site plan. Mr. Syrett asked about the bear that go up there weekly. What will happen to them? Bobcats, possums, coyotes all go up there and walk there.

Ms. Goolsby, 94 Creekwalk Lane stated she is a native and she has seen a lot of growth on 64. She was a school nurse, and the north traffic study is invalid. Traffic has increased immensely. She would like an impartial study done and take out the findings from 2020 and 2021 due to the pandemic. She felt like the traffic study should be updated with the numbers being done while school is in session. She is very concerned about the traffic.

Mr. Manley stated if comments have already been made concerning an issue they do not have to be restated. Due to time constraints please just make new comments and not state the same thing over and over.

Joseph Culotta, 38 Foxtail Court stated the PIN shows the property being on Rustling Pines Drive, why can't they use that road and develop that street? This is going to be a big mess. They were told years ago that the gate would remain locked. The Fire Marshal and City Planner told them it was just for an emergency access. Mr. Schlotterbeck stated the gate was put there when Ballantyne was approved, and it was to be left in place until Phase 2 was complete. They have since purchased that property and are using the access for this development.

Gus Martschink stated pulling out onto Highway 64 is like playing Russian Roulette. People are speeding all the time, and someone is going to get killed. Adding over 100 more homes to this area is only going to increase the danger of someone getting killed. They may be following the rules, but the rules need to be fixed. He cannot imagine what it will be like when this development gets built.

Bill Mitchell, 112 Brookstone Court stated the builder does not live here, does he? Mr. Schlotterbeck stated he lives in Fairview, NC. Mr. Mitchell stated they have heard comments from the developer on how they think and hope to do things, but he would like to see that put in a signed document. That way if the developer screws up, they can sue. Windsor Aughtry didn't want the project so what makes you think you can do better than they can? Mr. Schlotterbeck stated he has Bob on this project and Windsor Aughtry does not. There is no one better at designing than Bob.

Mr. Manley stated at this stage in the project the questions should center on the neighborhood compatibly. Questions about assurances from the developer will come at a later time. This is only a concept plan and it is very vague. The next stage will be the Planning Board's review and that will require a preliminary site plan. This Friday is the deadline for the project to be on the October Planning Board meeting. This will be a step up in the level of review. At the City Council meeting the approved site plan will be binding and there is more detail required in the final site plan. The developer is still working through the process at this time. Mr. Mitchell stated Windsor Aughtry did not want to develop this property with all the flooding and concerns. They are real concerns.

Mr. Schlotterbeck stated he would like to discuss the school bus situation with the School Board, and he has every intention of making this as safe as he can for the kids.

Daniel Borgmeyer, 6000 Wood Duck Way stated two-story, 2,400 sq. ft. homes are not compatible homes in this location. We are not talking about just two people living in this home. They will have children and he felt like this should be more compatible with what is in the area.

Mr. Manley asked if they plan to sale the lots to be built on. Mr. Schlotterbeck stated they are weighing their options. They have developed some projects and they have also sold some of the lots to be developed. They have not made that decision yet.

Debbie Culligan, 31 Creekwalk Lane stated she understands this project is going to happen and nothing can be done but she would like to see a smaller number of homes built. The road will be opened up and the gate will come down.

Mr. Manley stated this piece of property was actually Phase 2 for Ballantyne Commons. That part of the development was never built. Ballantyne Commons is shown as a PRD, Planned Residential Development and there has been nothing submitted for Phase 2. Any development would have to go back through the rezoning process. Ms. Culligan stated their homes are being bothered by this development and she asked how they can stop this development. They really do not want it. They are basically shoving 106 homes down their throats. Ballantyne has a lot of cars and a lot of people, once the gate is opened those cars and people will be coming into Wolf Chase. The residents do not want a city like Asheville.

John Goolsby, 94 Creekwalk Lane asked what development Mr. Schlotterbeck has built in the area. Mr. Schlotterbeck stated Clearview in Buncombe County, but it is not to this scale.

Linda Arata, 21 Foxtail Court stated she has erosion concerns where the Duke Energy right-of-way is located. When it rains now, they get inches of mud in their yard. Duke Energy will not do anything about it and this development will only make it worse. She cannot see how this development will not interfere with their subdivision. Mr. Schlotterbeck stated he would try and help fix any issues they are having with the Duke Energy right-of-way.

Kate Cervone, 100 Brookstone Court asked how many gallons the underground tanks would hold. Mr. Schlotterbeck stated he doesn't have the answers yet. Mr. Grasso stated he will look at the projects built now, and they will put in an underground oversized system to help with these concerns. He explained the stormwater system and how it worked. He explained how the water will go into control boxes and will be released at a pre-development rate. Mr. Manley stated the stormwater system will be sized to the scope of the project. Ms. Cervone stated they have a nice view of the mountains now and they will lose their view. Mr. Manley explained basic property rights and stated zoning ensures the uses of the land and makes sure projects are done in a way that is compatible with surrounding neighborhoods. The only way to stop a proposed project would be to own it. The developers have purchased the property and have a right to develop it. Ms. Cervone stated it is not a done deal yet and the neighbors need to figure out how to influence it in a good way that everyone can live with it and be happy. Mr. Manley stated that is a good way of thinking, this still has unresolved issues and ifs not approved yet. City Council will use the Comp Plan as a standard and they will listen to public input. Mr. Manley stated he believes they have covered good ground at this meeting.

Darrell Pennington, 156 Snowy Egret Way stated he was the former president of the HOA Board and he went through this process with Brittany Place. It is a process and people need to go the City Council meeting to represent their community. They need to be at the Planning Board meeting and be at the City Council meeting. They are citizens and taxpayers and have a right to be heard. Their taxes have just gone up roughly $80 more and they have a right to give their input. He talked about the private drive, water and sewer issues and the development having a negative effect on their homes.

Mr. Manley stated they have covered a lot of ground and there is another Neighborhood Compatibility meeting scheduled at 4:00 pm for another project. If this developer submits his plan by Friday, this project will move forward to the Planning Board in October. It will also be on zoom. Planning Board meetings are held at

4:00 pm. The Planning Board will review the project and make a recommendation to City Council. Residents will be able to address the Planning Board and give public comments. The Tree Board will meet prior to Planning Board on September 21st. They will be looking at the trees and make a recommendation to the Planning Board. City Council will potentially hear the project on November 4th at 5:45 pm. All property owners within 400 feet of the project will get a letter concerning the Planning Board meeting and City Council meeting.

With no further comments or questions, Mr. Manley closed the meeting at 3:45 pm.

CITY OF HENDERSONVILLE
TREE BOARD

Operations Center - Assembly Room | 305 Williams St. | Hendersonville NC 28792
Tuesday, September 21, 2021 – 2:00 PM

MINUTES

1. CALL TO ORDER

The meeting was called to order at 2:00 PM.

2. APPROVAL OF AGENDA

A motion was made to remove West Avenue Villas CZD and add World of Clothing CZD and Half Moon Heights CZD as 4A; and to move Public Relations Update to 4B. Motion by Glenn Lang, Vote – All Ayes.

3. APPROVAL OF MINUTES

A. A motion was made to approve the August 17, 2021 Tree Board Minutes. Motion by Mark Madsen, Vote – All Ayes.

4. NEW BUSINESS

A. Conditional Zoning District

World of Clothing CZD – The developer isn't changing the site much. They plan to add some vehicular parking/storage in the parking lot and the interior of the building will hold the storage units. There are not many trees on the site.

The Tree Board recommends a type B buffer along the rear property line, adjacent to the I-26 right of way, preferably evergreen trees selected from the Recommended Tree Species List. Motion by Mark Madsen, Vote – All Ayes.

Half Moon Heights CZD – The developer has proposed 101 single family lots on this site. There will be 164 hardwood trees saved and 387 hardwood trees removed, 83 Pines saved, 291 Pines removed from the site. Erosion control measures will be taken due to the size of the project. The project will be split into three phases to minimize the impact and help with erosion control. Silt fencing will be installed for the erosion control measures and to protect the trees that will be saved. There will be several stormwater detention systems on the site. All slopes will be benched or terraced to help with stormwater flow and erosion control. Buffers are not required since the project is adjacent to other single-family developments however the developer has shown dense buffers along the property lines adjacent to the other single-family developments. Several members of the public spoke about the project expressing concerns with tree loss, potential erosion problems, wildlife habitat loss, the need to protect tree canopy, the need to protect environmentally sensitive areas, concerns with additional traffic and congestion on the highways.

The Tree Board noted that this development is incompatible with Chapter 3, Section 3.3 Goals and Strategies NR-1. Preserve environmentally sensitive areas in order to protect life and

property from natural hazards, protect water resources, preserve natural habitat, remaining woodlands, and tree canopy; and a motion was made for the developer to protect the trees that they have proposed to save in accordance with Section 15-4 Existing Vegetation of the Zoning Ordinance; and all new vegetation planted must be chosen from the Recommended Landscape Species List for Street Trees and Land Development Projects. Motion by Glenn Lang, Vote – All Ayes.

B. Public Relations Update - Mary Jo Padgett

Mary Jo Padgett provided the monthly update to the Tree Board.

The guided tree walk is probably full. Mac has had lots of calls but there are only a few spots remaining for people to attend.

C. Tree Board Budget for Fiscal Year 2021 - 2022

HWY 64 Maintenance - $14,000

Tree Replacement & Supplies - $1,500

Arborist Services - $2,000

Publicity - $3,000

Arbor Day - $250

NeighborWoods - $2,000

Tree Planting at Sullivan Park - $2,000

Maintenance of Pollinator Beds at Hands on Museum and Bearcat Loop - $5,000

Planting of Pollinator Bed on Four Seasons Boulevard - $14,000

Total Request - $43,750

D. Pollinator Bed Traffic Island Four Seasons Boulevard

No update at this time.

5. OLD BUSINESS

A. NeighborWoods

Debbie asked if the date for the 9th Avenue planting could be changed to October 9th rather than October 2nd. The Board agreed to move the planting date to October 9th and to begin at 10 AM. The trees and bagged mulch will be delivered to 822 N. Oak Street prior to the planting event. Debbie will attempt to get the Hendersonville High School students to assist with planting the trees. There is no rain date.

The Druid Hills planting date is October 16th at 10 AM, rain date is October 23rd. The trees and bagged mulch will be delivered to 513 Higate Road prior to the planting event. Andy will attempt to get the students from Hendersonville High School to assist with the tree planting.

Ann will pick up her trees next week at the City Operations Center.

The total cost of the project will be around $3000.

B. HB 496

The bill is still in the appropriations bill but there is some doubt that the Governor will sign it.

C. Tree Maintenance - Bearcat Loop & Oakdale Cemetery

Bill Leatherwood removed the wire guards from the base of the trees, treated the weeds around the base of the trees, and added mulch. He plans to complete the pruning in the fall. Mark Madsen pruned some of the trees.

Chad is waiting on Bill Leatherwood for the Oakdale Cemetery Tree Preservation Plan proposal.

D. Tree Canopy Survey

No update at this time.

6. **OTHER BUSINESS**

A. Utility Update

No update at this time.

B. Staff Comments

No update at this time.

7. **ADJOURNMENT**

The meeting was adjourned at 4:05 PM.

_____ _____

Tree Board Chairperson Signature Date

HALF MOON HEIGHTS

HENDERSONVILLE, NORTH CAROLINA

SEPTEMBER 21, 2021

PROPERTY OWNER:

TRIANGLE BALLANTYNE HENDERSONVILLE, INC.
154 SOUTH YORK STREET
GASTONIA, NC 28052
PHONE: (704) 869-6024
EMAIL: williamratchford@southwoodrealty.com
CONTACT: WILLIAM RATCHFORD

APPLICANT:

HALF MOON LAND HOLDINGS, LLC
P.O. BOX 609
FAIRVIEW, NC 28730
PHONE: (828) 767-7171
EMAIL: j.s@bh-builder.com
CONTACT: JOSEPH SCHLOTTERBECK

LANDSCAPE ARCHITECT:

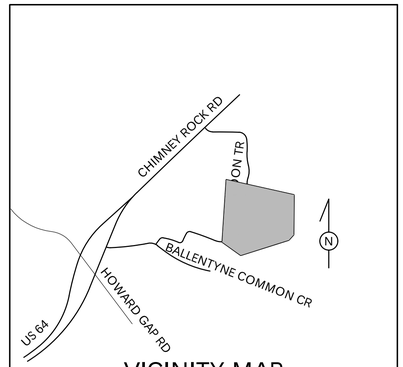
LAND PLANNING COLLABORATIVE
P.O. BOX 2200
ASHEVILLE, NORTH CAROLINA 28802
PHONE: (828) 242-0111
EMAIL: bgrasso@landplancollab.com
CONTACT: ROBERT M. GRASSO, RLA

CIVIL ENGINEER:

DAVIS CIVIL SOLULTIONS
134-A CHARLOTTE HIGHWAY
ASHEVILLE, NORTH CAROLINA 28803
PHONE: (828) 299-9449
EMAIL: gary@cvlsol.com
CONTACT: GARY D. DAVIS, PE

SURVEYOR:

McABEE ASSOCIATES
3 McABEE TRAIL
FAIRVIEW, NC 287303
PHONE: (828) 628-1295
EMAIL: eric@mcabeesurveying.com
CONTACT: ERIC McABEE, PLS



VICINITY MAP

LIST OF DRAWINGS

L-1 TITLE SHEET
L-2 EXISTING CONDITIONS
L-3 MASTER PLAN
L-4 LAYOUT & MATERIALS PLAN
L-5 GRADING PLAN
L-6 ROAD 'A' VERTICAL ROAD DESIGN
L-7 ROAD 'B' VERTICAL ROAD DESIGN
L-8 ROADS 'B' & 'C' VERTICAL ROAD DESIGN
L-9 EXISTING TREE SURVEY
L-10 LANDSCAPE PLAN
C3 PRELIMINARY STORM WATER
C4.1 PRELIMINARY UTILITIES - WATER
C4.2 PRELIMINARY UTILITIES - SEWER

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EMAIL: bgrasso@landplancollab.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 487 ROBERT M. GRASSO

TITLE SHEET

HALF MOON HEIGHTS
HENDERSONVILLE, NORTH CAROLINA

JOB NO.: 2021850
DWG. NAME: half-moon-site.dwg
DATE: September 21, 2021
REVISIONS:

REV.:	DATE:	BY:
1	-	-
2	-	-
3	-	-
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5	-	-

SHEET
L-1

PIN 9680-01-0516
DB 1690, PB 265
WOLF CHASE HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON AREA FOR SINGLE FAMILY RESIDENCES

PIN 9670-91-3013
DB 1085, PB 740
DEONNA J ANDERSON
HMU (CITY OF HENDERSONVILLE ETJ)
SINGLE FAMILY RESIDENCE

PIN 9680-10-4759
DB 1331 PB 117
WOLFPEN II PLANNED COMMUNITY HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON LAND FOR SINGLE FAMILY RESIDENCES

PIN 9680-10-4326
DB 1331 PB 117
WOLFPEN II PLANNED COMMUNITY HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON LAND FOR SINGLE FAMILY RESIDENCES

PIN 9589-09-6938
DB 1659, PB 285
MIGUEL GUERRERO
RES 2 (HENDERSON COUNTY)
SINGLE FAMILY RESIDENCE

PIN 9579-89-5936
DB 1601, PB 205
TRIANGLE BALLENTYNE HENDERSONVILLE, INC.
PRD (CITY OF HENDERSONVILLE)
APARTMENTS

PIN 9589-09-5770
DB 3355, PB 44
BRAULIO LARA PATINO
RES 2 (HENDERSON COUNTY)
SINGLE FAMILY RESIDENCE

PIN 9638396465
DB 1165, PB 0182
JOSEPH HARLEY TAYLOR,
LAURA SUZANNE TAYLOR
RM-8
UNDEVELOPED

HALF MOON TRAIL

EXISTING GRAVEL DRIVE

EXISTING GATE

EXISTING ABANDONED HOUSE

STONE BRICK HOUSE

WOOD DECK

GAZEBO

DUKE POWER EASEMENT DB 1741 PG 253

DUKE POWERLINES

EXISTING OVERHEAD POWERLINE

EXISTING POWER POLE

EXISTING CURB & GUTTER

EXISTING ROAD

NORTH

0 16 40 80 160 240

SCALE: 1" = 80'

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 487 ROBERT M. DESPAIN

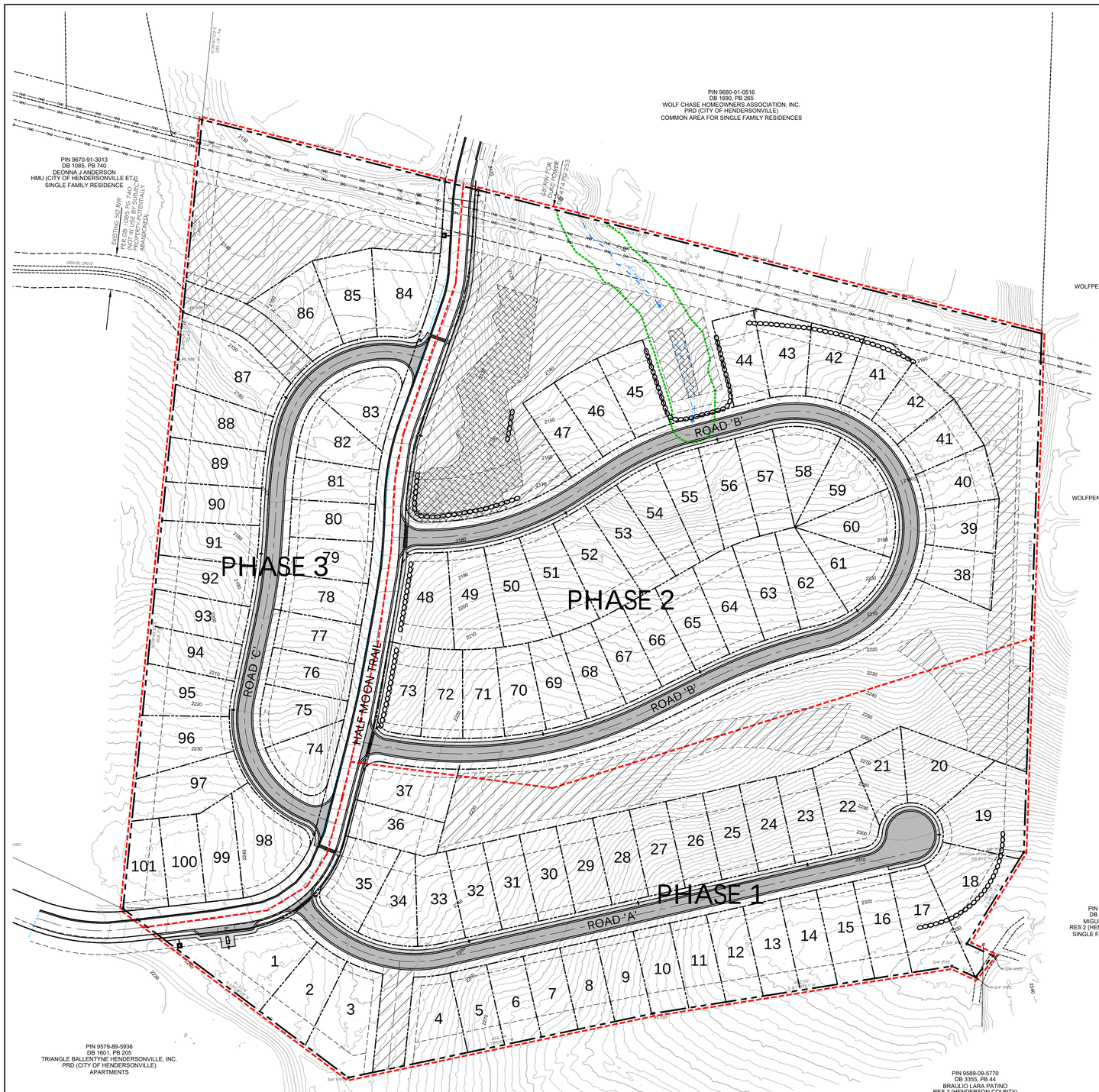
EXISTING CONDITIONS

HALF MOON HEIGHTS
HENDERSONVILLE, NORTH CAROLINA

JOB NO.: 212850
DWG. NAME: half-moon-site.dwg
DATE: September 21, 2021
REVISIONS:

REV.:	DATE:	BY:
1	-	-
2	-	-
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SHEET
L-2



PROJECT INFORMATION

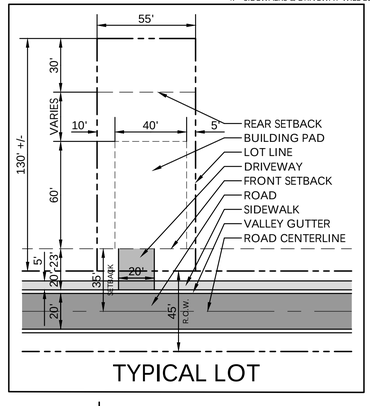
PROPERTY OWNER:	TRIANGLE BALLANTYNE HENDERSONVILLE, INC. 154 SOUTH YORK STREET GASTONIA, NC 28052 PHONE: (704) 869-6024 EMAIL: williamratchford@southwoodrealty.com CONTACT: WILLIAM RATCHFORD
APPLICANT:	HALF MOON LAND HOLDINGS, LLC P.O. BOX 609 FAIRVIEW, NC 28730 PHONE: (828) 767-7171 EMAIL: j.s@bh-builder.com CONTACT: JOSEPH SCHLOTTERBECK
LANDSCAPE ARCHITECT:	LAND PLANNING COLLABORATIVE P.O. BOX 2200 ASHEVILLE, NC 28802 PHONE: (828) 242-0111 EMAIL: bgrasso@landplancollab.com CONTACT: ROBERT M. GRASSO, RLA
CIVIL ENGINEER:	DAVIS CIVIL SOLUTIONS, PA 134 CHARLOTTE HIGHWAY, SUITE A ASHEVILLE, NC 28803 PHONE: (828) 299-9449 EMAIL: gary@daviscivilsolution.com CONTACT: GARY D. DAVIS, PE
SURVEYOR:	McABEE ASSOCIATES 3 McABEE TRAIL FAIRVIEW, NC 287303 PHONE: (828) 628-1295 EMAIL: eric@mcabeesurveying.com CONTACT: ERIC McABEE, PLS

SITE INFORMATION

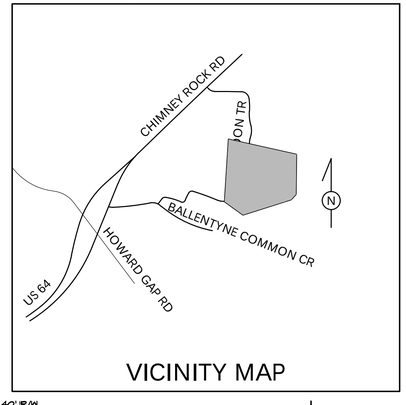
PIN:	9680-00-1446
DEED BOOK/ PAGE:	1601/205
ADDRESS:	297 RUSTLING PINES LANE
ZONING CLASSIFICATION:	PRD CITY OF HENDERSONVILLE
PROJECT ACREAGE:	33.655 AC.
AVERAGE SLOPE:	22.2% (A=33.655, L=162,196', I=2')
PERMITTED DENSITY:	10 UNITS/ACRE
PROPOSED DENSITY:	3.00 UNITS/ACRE
PROPOSED NO. OF LOTS:	101 LOTS
BUILDING SETBACKS: FRONT:	35' FROM ROAD CENTERLINE
SIDE:	N/A
REAR:	30'
PERMITTED MAX. BUILDING HEIGHT:	35'
PROPOSED MAX. BUILDING HEIGHT:	35'
REQUIRED NO. OF PARKING SPACES:	155 SPACES (1.5 SPACES/UNIT & 3 MAIL KIOSK SPACES)
PROPOSED NO. OF PARKING SPACES:	407 SPACES (2 GARAGE & 2 DRIVEWAY SPACES/UNIT & 3 MAIL KIOSK SPACES)
PERMITTED MAXIMUM FOOTPRINT:	20%
PROPOSED MAXIMUM FOOTPRINT:	16.5% (2,400 SF BUILDING FOOTPRINT)
REQUIRED OPEN SPACE:	60% (879,617 SF)
PROPOSED OPEN SPACE:	70% (1,026,445 SF)
REQUIRED COMMON OPEN SPACE:	146,601 SF (10% OF 33.655 AC.)
PROPOSED COMMON OPEN SPACE:	198,300 SF (13.5%)
SITE COVERAGE:	424,001 SF (28.9%)
EXISTING ROAD:	34,277 SF (2.3%)
PROPOSED ROADS:	79,448 SF (5.4%)
PROPOSED WALKS:	24,856 SF (1.7%)
PROPOSED HOUSES:	242,400 SF (16.5%)
PROPOSED DRIVEWAYS:	43,020 SF (2.9%)
LENGTH OF ROADS:	3,686 LF (PUBLICLY MAINTAINED)
WATER:	HENDERSONVILLE WATER
SANITARY SEWER:	HENDERSONVILLE SEWER
UTILITIES:	DUKE ENERGY, UNDERGROUND POWER

GENERAL NOTES:

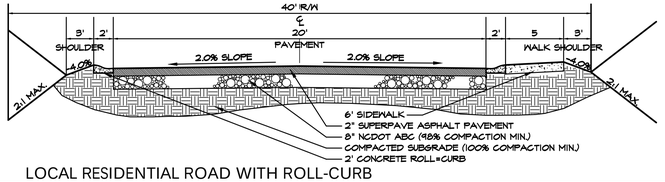
1. THE HOMEOWERS ASSOCIATION WILL MAINTAIN THE COMMON AREAS & OPEN SPACE.
2. PROPOSED LOTS, ROAD & WALKS DO NOT LIE WITHIN FLOOD HAZARD ZONE.
3. STREETS & SIDEWALKS WILL BE DEDICATED TO & MAINTAINED BY CITY OF HENDERSONVILLE.
4. SIDEWALKS & DRIVEWAY WILL BE PERMEABLE CONCRETE OR PAVERS.



TYPICAL LOT



VICINITY MAP



LOCAL RESIDENTIAL ROAD WITH ROLL-CURB

NOT TO SCALE

LEGEND

- COMMON OPEN SPACE
- COMMON OPEN SPACE (STREAM, WETLANDS & >33% SLOPES)
- STREAM/WETLANDS 30' BUFFER
- PHASE LINE
- EXISTING ROAD
- PROPOSED ROAD
- PROPOSED SIDEWALK

NORTH

0 16 40 80 160 240

SCALE: 1" = 80'

LAND PLANNING COLLABORATIVE
Landscape Architects ● Land Planners
P.O. BOX 2200
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(828) 242-0111
EMAIL: bgrasso@landplancollab.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 487 ROBERT M. GRASSO

MASTER PLAN

HALF MOON HEIGHTS
HENDERSONVILLE, NORTH CAROLINA

JOB NO.: 212850
DWG. NAME: half-moon-site.dwg
DATE: September 21, 2021
REVISIONS:

REV.:	DATE:	BY:
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

SHEET
L-3

PIN 9680-01-0516
DB 1690, PB 265
WOLF CHASE HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON AREA FOR SINGLE FAMILY RESIDENCES

PIN 9670-91-3013
DB 1085, PB 740
DEONNA J ANDERSON
HMU (CITY OF HENDERSONVILLE ETJ)
SINGLE FAMILY RESIDENCE

PIN 9680-10-4759
DB 1331 PB 117
WOLFPEN II PLANNED COMMUNITY HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON LAND FOR SINGLE FAMILY RESIDENCES

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DB 1331 PB 117
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DB 3355, PB 44
BRAULIO LARA PATINO
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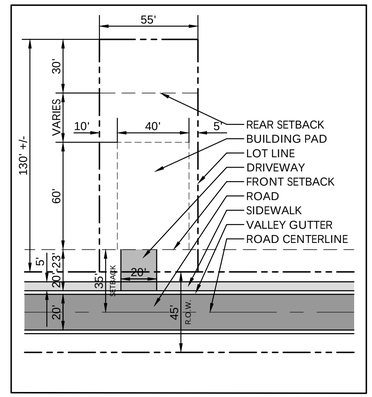
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DB 1165, PB 0182
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RM-8
UNDEVELOPED

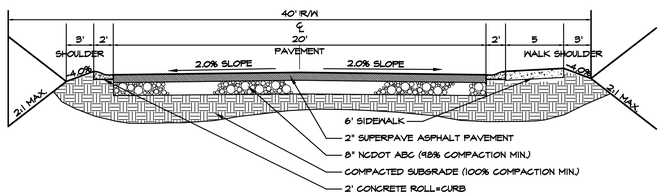
ROAD 'A'
ROAD 'B'
ROAD 'C'
HALF MOON TRAIL

- PROPOSED ENTRANCE SIGN
- PROPOSED STREET LIGHT (TYP.)
- PROPOSED FUTURE 45' R.O.W.
- PROPOSED CROSS-WALK (TYP.)
- PROPOSED ROAD (TYP.)
- PROPOSED SIDEWALK (TYP.)
- BOULDER RETAINING WALL (TYP.)
- EXISTING ROAD
- PROPOSED RESIDENTIAL LOT (TYP.)
- PROPOSED CUL-DE-SAC
- PROPOSED MAIL KIOSK/SCHOOL BUS STOP
- PROPOSED HOUSE PAD (TYP.)
- PROPOSED SETBACK LINE (TYP.)
- PROPOSED FUTURE 45' R.O.W.

LAYOUT NOTES

1. DO NOT SCALE FROM DRAWINGS.
2. ALL DIMENSIONS TO FACE OF CURB OR WALL UNLESS NOTED OTHERWISE.
3. ALL ANGLES 90d UNLESS NOTED OTHERWISE.
4. ALL RADII ARE 5' UNLESS NOTED OTHERWISE.
5. VERIFY LAYOUT IN FIELD.
6. CONTACT LANDSCAPE ARCHITECT IF CONFLICTS OR AMBIGUITIES ARISE.
7. COORDINATE RELOCATION OF UTILITIES WITH UTILITY COMPANIES.
8. LAYOUT SHALL BE STAKED USING COORDINATE GEOMETRY.





LOCAL RESIDENTIAL ROAD WITH ROLL-CURB

NOT TO SCALE

NORTH

0 16 40 80 160 240

SCALE: 1" = 80'

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 487 ROBERT M. GRASSO

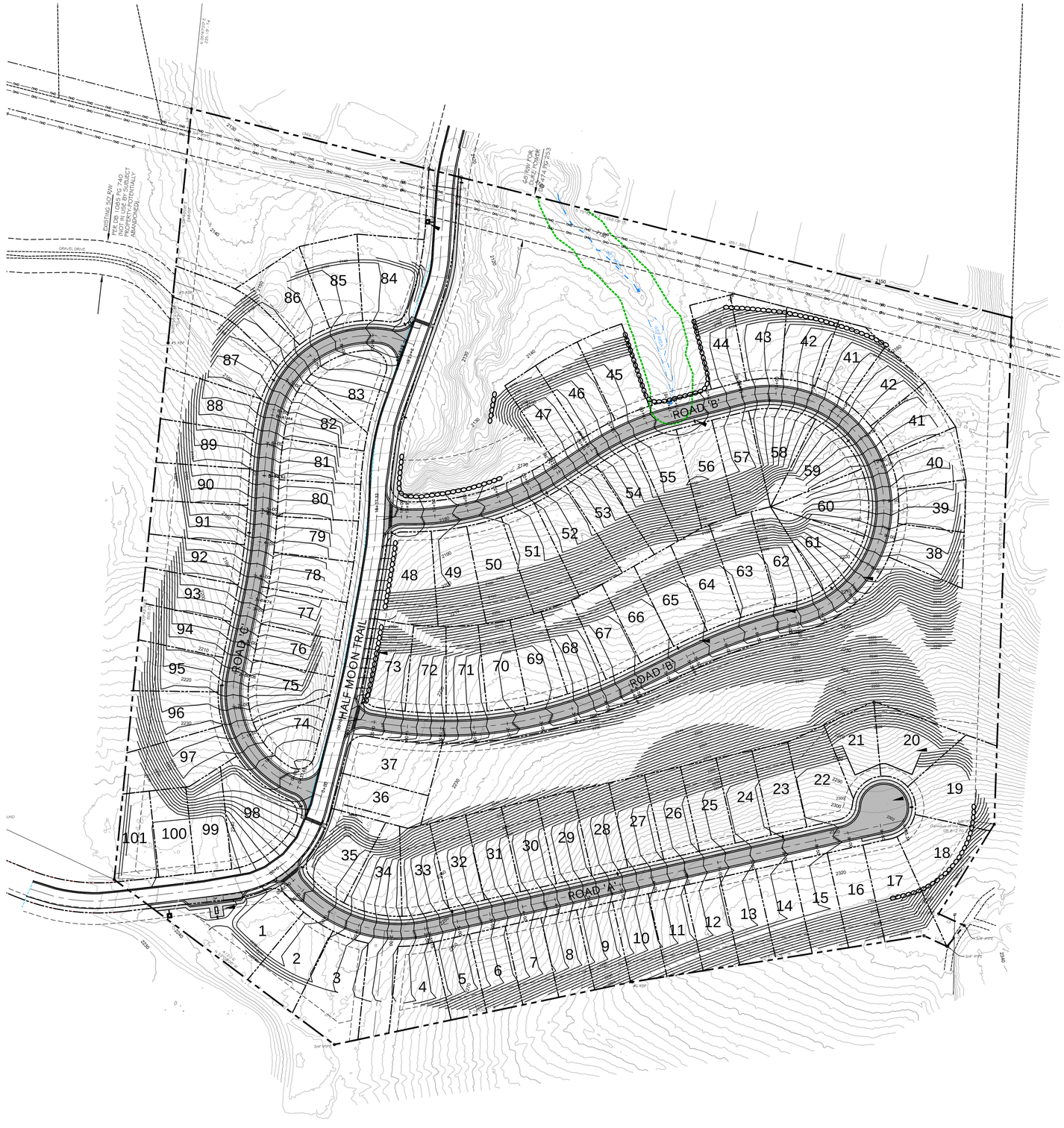
LAYOUT & MATERIALS PLAN

HALF MOON HEIGHTS
HENDERSONVILLE, NORTH CAROLINA

JOB NO.: 212850
DWG. NAME: half-moon-site.dwg
DATE: September 21, 2021
REVISIONS:

REV.:	DATE:	BY:
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

SHEET
L-4



GRADING NOTES

1. CONTRACTOR SHALL PROVIDE PROOF OF ACTIVE GRADING PERMITS FOR ANY OFF-SITE BORROW OR WASTE SITES TO HENDERSON COUNTY & NCDEQ.
2. TEMPORARY VEGETATION SHALL BE SEEDED & MULCHED WITHIN 14 DAYS OF COMPLETION OF GRADING FLAT AREAS OR WITHIN 7 DAYS OF COMPLETION OF ALL BERMS, SWALES, DITCHES, PERIMETER SLOPES, SLOPES ADJACENT TO UNNAMED TRIBUTARY AND SLOPES 3:1 OR GREATER.
3. ALL DISTURBED AREAS SHALL BE SEEDED WITH TEMPORARY OR PERMANENT VEGETATION.
4. PLACE CURLEX II, EROSION CONTROL BLANKET, BY AMERICAN EXCELSIOR COMPANY, ON ALL SLOPES 2:1 OR GREATER. INSTALL & FASTEN PER MANUFACTURER'S SPECIFICATIONS.
5. MAINTAIN 2' UNDISTURBED BUFFER ALONG ALL PROPERTY LINES.
6. INSTALL SILT FENCE AT TOE OF ALL FILL SLOPES.
7. WATER SITE TO CONTROL DUST DURING PERIODS OF DRY WEATHER.
8. COORDINATE ALL WORK WITH HENDERSON COUNTY & NCDEQ.
9. PREPARE SEED BED PRIOR TO TEMPORARY OR PERMANENT SEEDING BY USING SURFACE ROUGHENING METHODS OUTLINED IN 'EROSION & SEDIMENT CONTROL PLANNING & DESIGN MANUAL', SECTION 6.03. ROUGHEN ALL SLOPES USING TRACKED MACHINERY SO THAT GROOVES ARE FORMED PARALLEL WITH THE SLOPE. DO NOT BACK BLADE SLOPES AFTER TRACKING. HYDROSEED & MULCH ROUGHENED SLOPES IMMEDIATELY AFTER TRACKING SLOPES
10. COORDINATE SITE PREPARATION WITH GEOTECHNICAL ENGINEER TO ENSURE REQUIRED COMPACTION HAS BEEN ACHIEVED.
11. ALL SPOT ELEVATIONS AT BASE OF CURB OR WALLS AT FINISHED GRADE OR AT EDGE OF PAVEMENT, UNLESS NOTED OTHERWISE.
12. HDPE: HIGH DENSITY POLYETHYLENE PIPE, TYPE S, NCDOT STD.
13. PVC: POLYVINYL CHLORIDE PIPE, SCH. 40, NCDOT STD.
14. CPP: CORRUGATED PERFORATED PLASTIC PIPE, NCDOT STD.
15. MAINTAIN 12" MIN. COVER OVER ALL STORM DRAINAGE PIPES.
16. MAINTAIN 1.0% SLOPE, MIN. ON ALL STORM DRAIN PIPES & DOWNSPOUT LEADERS.
17. CO: CLEANOUT.
18. DS: DOWNSPOUT.
19. DROP INLET: BOX: NCDOT STD. 840.14, REV. B, STANDARD CONCRETE DROP INLET.
    GRATE: NCDOT STD. 840.16, STANDARD GRATE & FRAME.
20. FLARED END SECTION: NCDOT STD. 320.01, REV. B, STANDARD CORRUGATED METAL FLARED END SECTION
21. VERIFY ALL GRADES IN FIELD. NOTIFY LANDSCAPE ARCHITECT IF CONFLICTS OR AMBIGUITIES ARISE.
22. DISTURBED ACREAGE: 1.704 AC.

BEFORE YOU DIG !
CALL 1-800-632-4949
N.C. ONE-CALL CENTER
IT'S THE LAW !

NORTH

0 16 40 80 160 240
SCALE: 1" = 80'

LAND PLANNING COLLABORATIVE
Landscape Architects ● Land Planners
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 487 ROBERT M. GRASSO

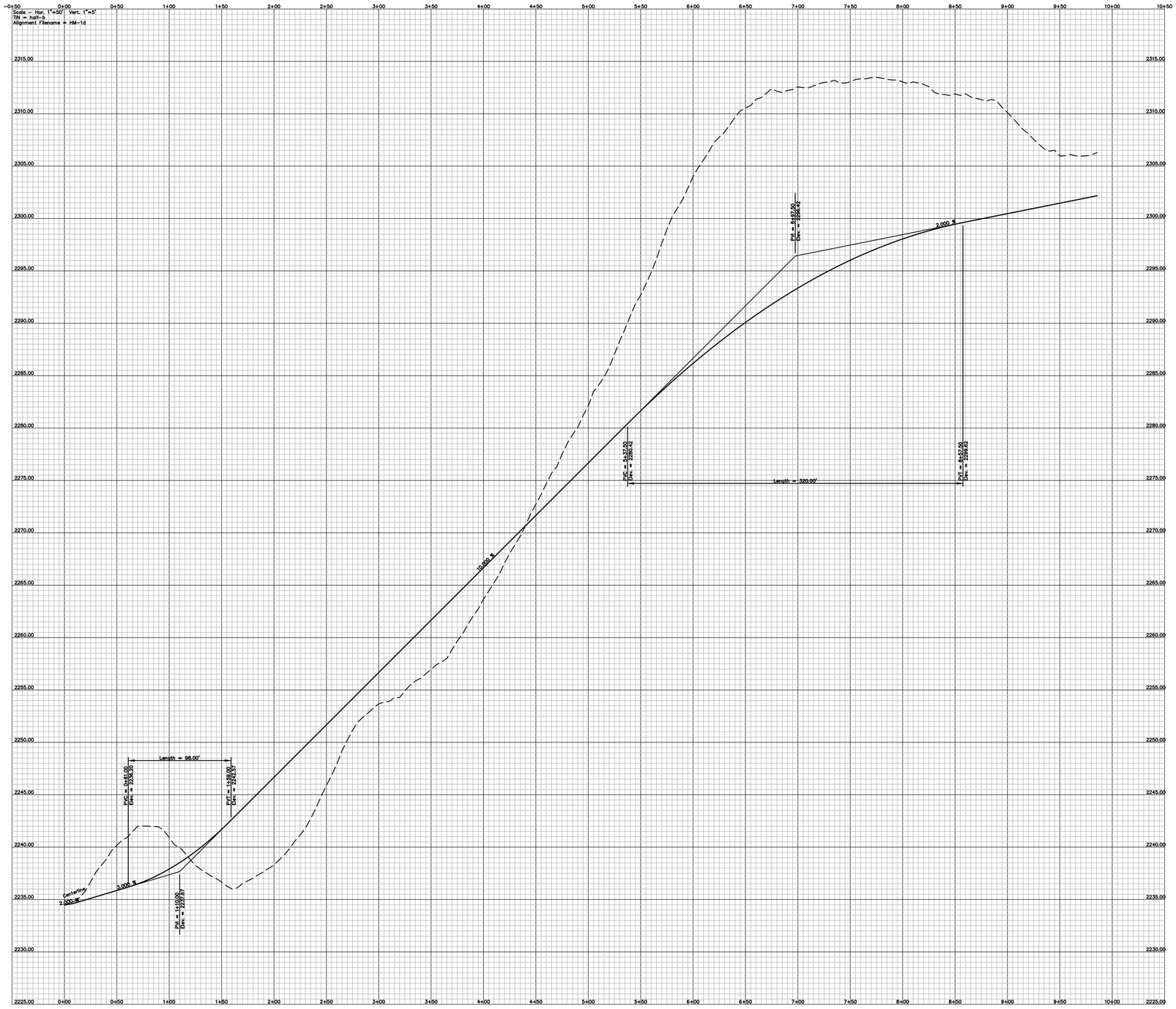
GRADING PLAN

HALF MOON HEIGHTS
HENDERSONVILLE, NORTH CAROLINA

JOB NO.: 212850
DWG. NAME: half-moon-site.dwg
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1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

SHEET
L-5



ROAD 'A'

SCALE: HORIZ.: SCALE: 1" = 50'
VERT.: SCALE: 1" = 5'

LAND PLANNING COLLABORATIVE
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EMAIL: bgrasso@landplancollab.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 487 ROBERT M. OSGOOD

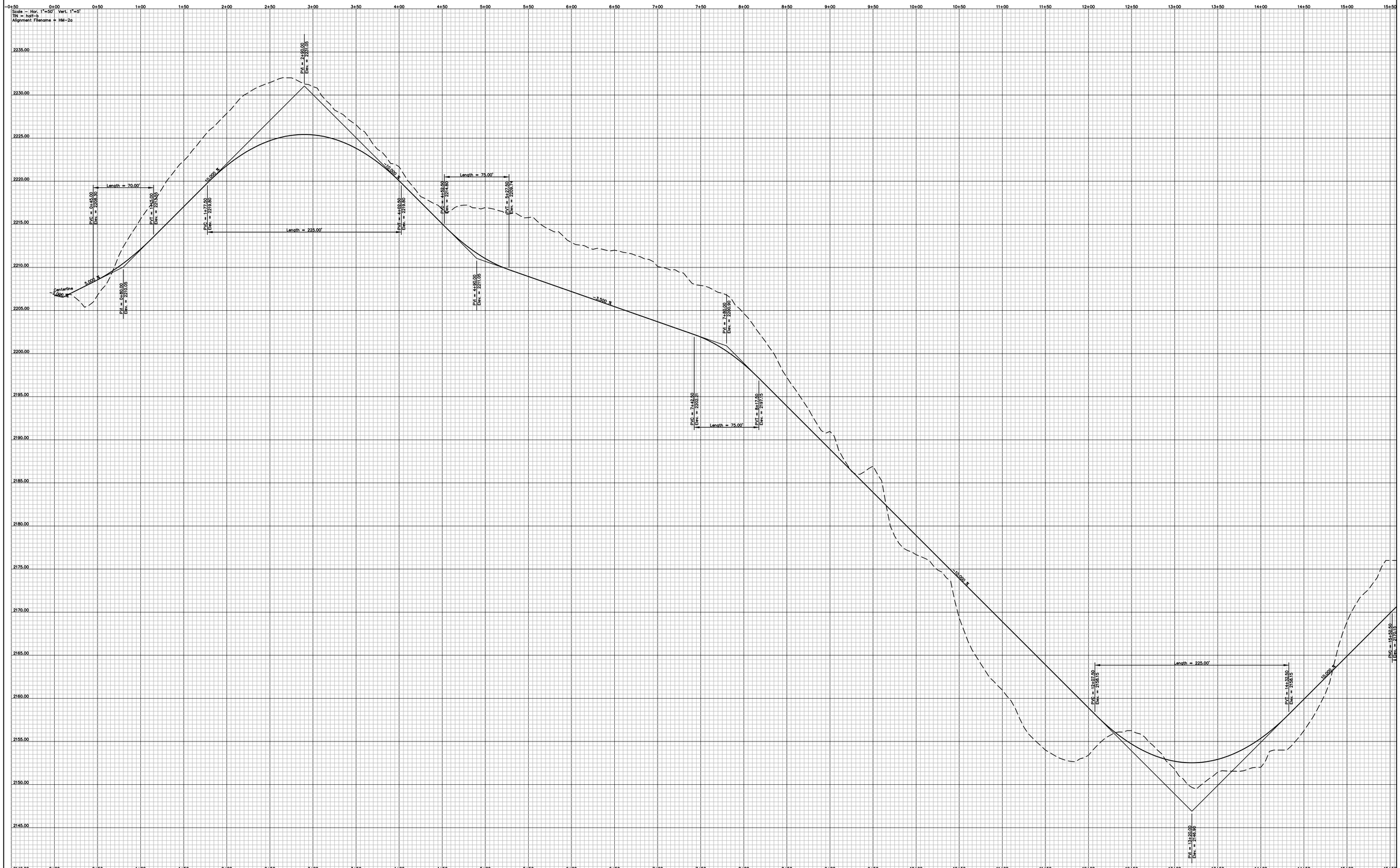
ROAD 'A' VERTICAL ROAD DESIGN

HALF MOON HEIGHTS
HENDERSONVILLE, NORTH CAROLINA

JOB NO.: 212850
DWG. NAME: half-moon-site.dwg
DATE: September 21, 2021
REVISIONS:

REV.:	DATE:	BY:
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

SHEET
L-6



ROAD 'B'

SCALE: HORIZ.: SCALE: 1" = 50'
VERT.: SCALE: 1" = 5'

LAND PLANNING COLLABORATIVE
Landscape Architects ● Land Planners
P.O. BOX 2200
ASHEVILLE, N.C. 28802
(828) 242-0111
EMAIL: bgrasso@landplancollab.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 487 ROBERT M. GRASSO

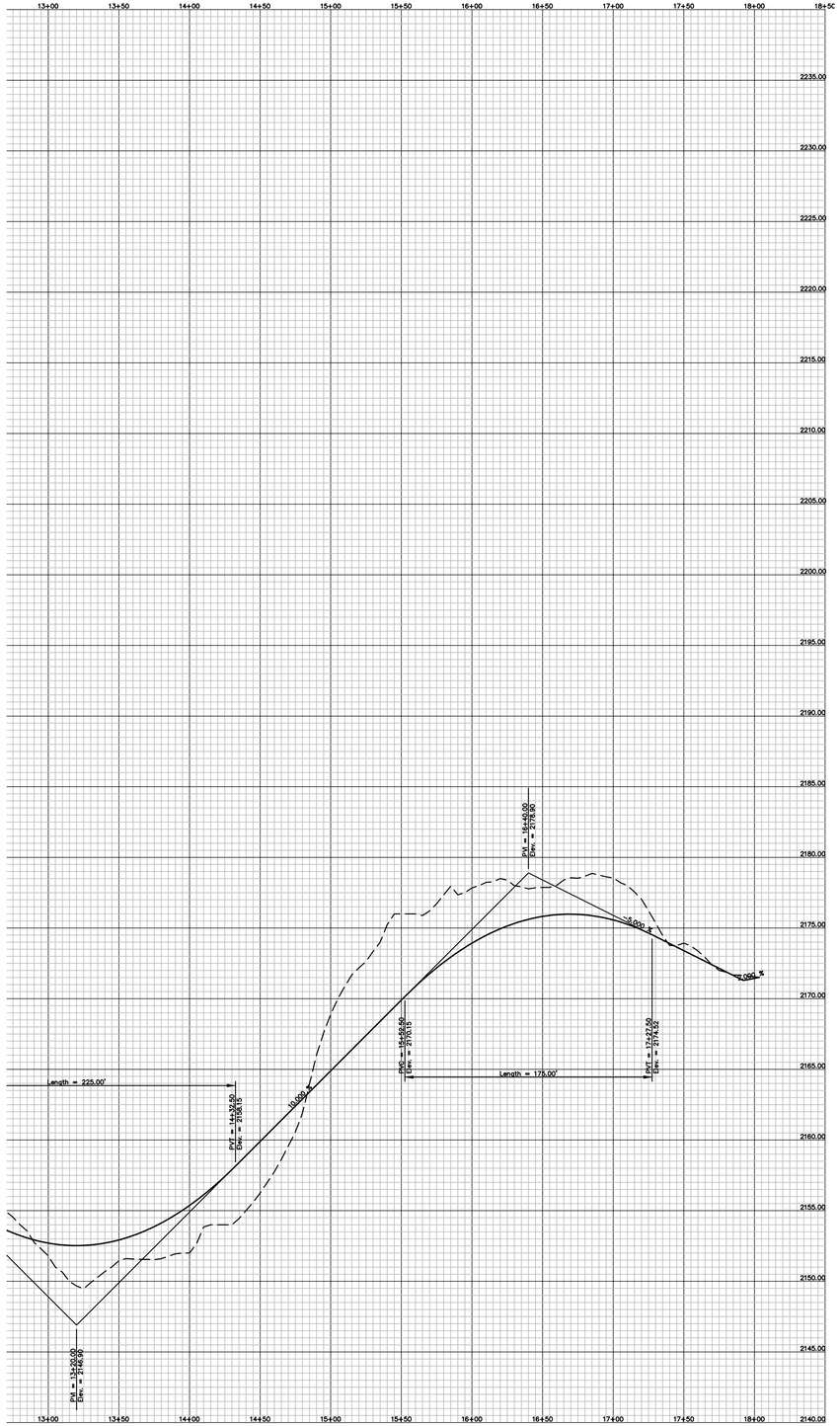
ROAD 'B' VERTICAL ROAD DESIGN

HALF MOON HEIGHTS
HENDERSONVILLE, NORTH CAROLINA

JOB NO.: 212850
DWG. NAME: half-moon-site.dwg
DATE: September 21, 2021
REVISIONS:

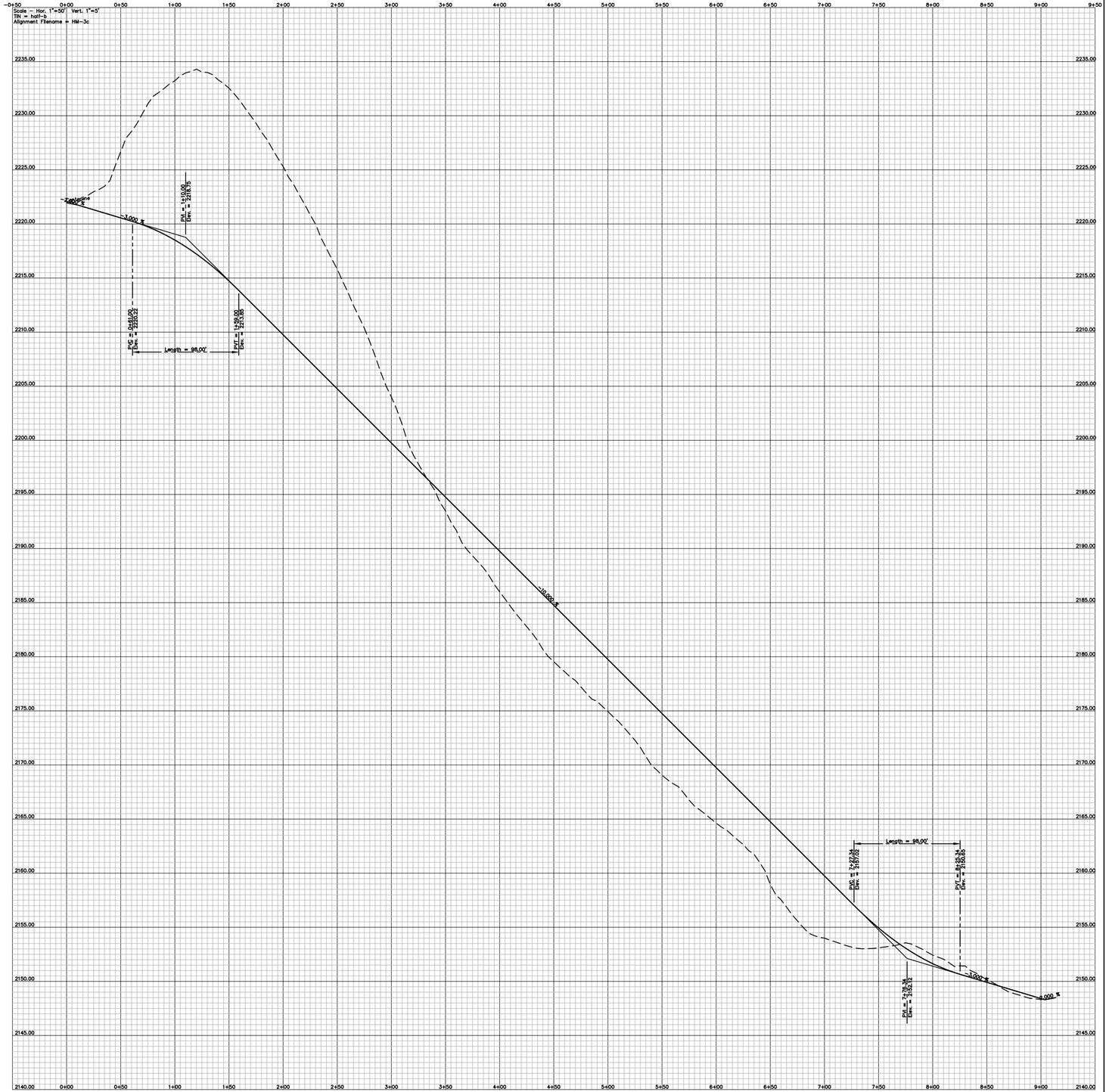
REV.:	DATE:	BY:
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

SHEET
L-7



ROAD 'B'

SCALE: HORIZ.: SCALE: 1" = 50'
VERT.: SCALE: 1" = 5'



ROAD 'C'

SCALE: HORIZ.: SCALE: 1" = 50'
VERT.: SCALE: 1" = 5'

LAND PLANNING COLLABORATIVE
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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 487 ROBERT M. GRASSO

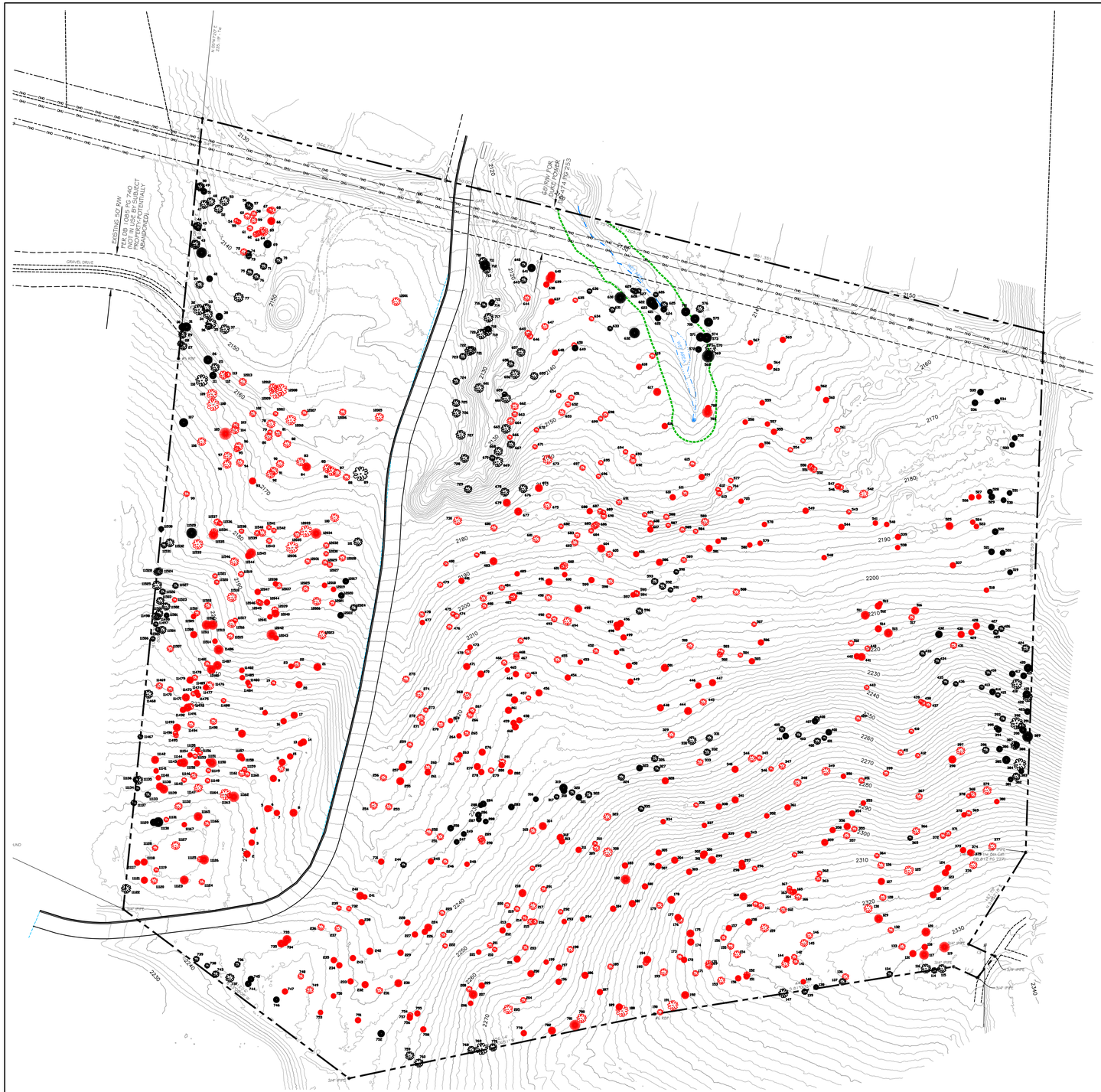
ROADS 'B' & 'C' VERTICAL ROAD DESIGN

HALF MOON HEIGHTS
HENDERSONVILLE, NORTH CAROLINA

JOB NO.: 212850
DWG. NAME: half-moon-site.dwg
DATE: September 21, 2021
REVISIONS:

REV.:	DATE:	BY:
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

SHEET
L-8


EXISTING SILT FENCE TO BE REMOVED AS PART OF FINAL GRADING AND STABILIZATION
GRAVEL DRIVE
GRAVEL DRIVE
DRAIN FOR POND OVERFLOW
EL 2149.79
EL 2153
EL 2150
EL 2140
EL 2160
EL 2170
EL 2180
EL 2190
EL 2200
EL 2210
EL 2220
EL 2230
EL 2240
EL 2250
EL 2260
EL 2270
EL 2280
EL 2290
EL 2300
EL 2310
EL 2320
EL 2330
EL 2340
EL 2350
EL



TREE #	TYPE AND SIZE
1	WHITE PINE 16"
2	POPLAR 14"
3	WHITE PINE 14"
4	WHITE PINE 14"
5	WHITE PINE 16"
6	POPLAR 14"
7	WHITE PINE 14"
8	WHITE PINE 18"
9	WHITE PINE 16"
10	WHITE OAK 16"
11	WHITE PINE 16"
12	WHITE PINE 18"
13	WHITE PINE 14"
14	WHITE PINE 16"
15	WHITE PINE 14"
16	WHITE PINE 14"
17	WHITE PINE 16"
18	WHITE PINE 12"
19	WHITE OAK 12"
20	WHITE PINE 16"
21	WHITE PINE 18"
22	WHITE OAK 16"
23	WHITE PINE 12"
25	RED OAK 20"
26	WHITE PINE 20"
27	POPLAR 18"
28	POPLAR 14"
29	POPLAR 18"
30	WHITE PINE 18"
31	WHITE PINE 20"
32	RED OAK 26"
33	POPLAR 20"
34	POPLAR 22"
35	POPLAR 24"
36	POPLAR 16"
37	POPLAR 22"
38	WHITE PINE 16"
39	WHITE OAK 18"
40	WHITE PINE 14"
41	WHITE PINE 24"
42	RED OAK 22"
43	POPLAR 20"
44	POPLAR 12"
45	POPLAR 20"
46	POPLAR 14"
47	POPLAR 20"
48	POPLAR 20"
49	POPLAR 18"
50	POPLAR 20"
51	WHITE PINE 14"
52	MAPLE 20"
53	POPLAR 22"
54	MAPLE 14"
55	MAPLE 2"
56	POPLAR 16"
57	POPLAR 18"
58	MAPLE 14"
59	POPLAR 16"
60	POPLAR 16"
61	POPLAR 14"
62	MAPLE 14"
63	MAPLE 14"
64	POPLAR 14"
65	MAPLE 22"
66	WHITE PINE 18"
67	POPLAR 14"
68	POPLAR 18"
69	WHITE PINE 18"
70	POPLAR 16"
71	POPLAR 16"
72	POPLAR 16"
73	POPLAR 14"
74	POPLAR 14"
75	POPLAR 16"
76	POPLAR 16"
77	POPLAR 22"
78	POPLAR 20"
79	MAPLE 12"
80	POPLAR 18"
81	POPLAR 16"
82	POPLAR 18"
83	POPLAR 20"
84	WHITE PINE 20"
85	POPLAR 20"
86	POPLAR 22"
87	MAPLE 18"
88	POPLAR 16"
89	POPLAR 34"
90	POPLAR 18"
91	POPLAR 20"
92	POPLAR 20"
93	WHITE PINE 16"
94	POPLAR 18"
95	MAPLE 14"
96	POPLAR 20"
97	POPLAR 20"
98	POPLAR 20"
99	POPLAR 14"
100	POPLAR 20"
101	WHITE OAK 20"
102	WHITE OAK 16"
103	POPLAR 16"
104	MAPLE 20"
105	WHITE PINE 28"
106	MAPLE 20"
107	WHITE PINE 20"
108	WHITE OAK 28"
109	WHITE OAK 24"
110	WHITE OAK 28"
111	WHITE PINE 16"
112	SOURWOOD 20"
113	SOURWOOD 14"
114	WHITE OAK 14"
115	CHEST. OAK 20"
116	POPLAR 22"
117	WHITE PINE 22"
118	WHITE PINE 14"
119	WHITE PINE 24"
120	WHITE PINE 20"
121	WHITE PINE 16"
122	WHITE PINE 18"
123	WHITE PINE 16"
124	WHITE PINE 14"
125	WHITE OAK 22"
126	POPLAR 16"
127	WHITE PINE 16"
128	POPLAR 16"
129	WHITE PINE 20"
130	HICKORY 20"
131	WHITE PINE 16"
132	HICKORY 14"
133	POPLAR 16"
134	POPLAR 14"
136	POPLAR 16"
137	POPLAR 16"
138	WHITE PINE 12"
139	HICKORY 14"
140	WHITE PINE 12"
141	POPLAR 14"
142	POPLAR 14"
143	POPLAR 18"
144	WHITE PINE 14"
145	POPLAR 18"
146	HICKORY 16"
147	POPLAR 22"
150	WHITE PINE 14"
151	WHITE PINE 14"
152	POPLAR 16"
153	WHITE OAK 18"
154	POPLAR 18"
155	SOURWOOD 16"
156	POPLAR 14"
157	YELLOW PINE 14"
158	WHITE PINE 16"
159	POPLAR 20"
160	POPLAR 14"
161	POPLAR 16"
162	POPLAR 16"
163	HICKORY 14"
164	POPLAR 14"
165	WHITE PINE 12"
166	HICKORY 16"
167	POPLAR 12"
168	WHITE PINE 18"
169	CHEST. OAK 16"
170	POPLAR 18"
171	POPLAR 14"
172	YELLOW PINE 14"
173	POPLAR 14"
174	WHITE PINE 16"
175	WHITE PINE 18"
176	POPLAR 16"
177	WHITE PINE 16"
178	WHITE PINE 18"
179	CHEST. OAK 16"
180	YELLOW PINE 14"
181	YELLOW PINE 16"
182	YELLOW PINE 22"
183	YELLOW PINE 14"
184	WHITE PINE 14"
185	MAPLE 14"
186	YELLOW PINE 16"
187	YELLOW PINE 14"
188	WHITE OAK 28"
189	YELLOW PINE 16"
190	HICKORY 14"
191	RED OAK 24"
192	YELLOW PINE 18"
193	CHEST. OAK 18"
194	YELLOW PINE 18"
195	CHEST. OAK 14"
196	YELLOW PINE 14"
197	YELLOW PINE 14"
198	POPLAR 16"
199	WHITE PINE 12"
200	WHITE PINE 16"
201	YELLOW PINE 16"
203	POPLAR 14"
204	POPLAR 14"
205	CHEST. OAK 22"
206	WHITE PINE 12"
207	WHITE PINE 20"
208	MAPLE 14"
209	WHITE PINE 14"
210	POPLAR 12"
211	MAPLE 14"
212	YELLOW PINE 14"
213	YELLOW PINE 12"
214	POPLAR 14"
215	POPLAR 16"
216	POPLAR 14"
217	CHEST. OAK 18"
218	WHITE PINE 18"
219	SOURWOOD 14"
220	POPLAR 14"
221	WHITE PINE 12"
222	POPLAR 12"
223	POPLAR 14"
224	WHITE PINE 18"
225	POPLAR 14"
226	WHITE PINE 14"
227	WHITE PINE 14"
228	WHITE PINE 14"
229	WHITE PINE 14"
230	HEMLOCK 18"
231	MAPLE 16"
232	WHITE PINE 16"
233	WHITE PINE 14"
234	WHITE PINE 14"
235	YELLOW PINE 14"
236	MAPLE 16"
237	MAPLE 16"
238	HEMLOCK 14"
239	POPLAR 12"
240	WHITE PINE 18"
241	WHITE PINE 12"
242	WHITE PINE 16"
243	WHITE PINE 14"
244	POPLAR 14"
245	WHITE PINE 14"
246	POPLAR 14"
247	WHITE PINE 12"
248	WHITE PINE 12"
249	WHITE PINE 12"
250	WHITE PINE 14"
251	MAPLE 16"
252	POPLAR 16"
253	POPLAR 16"
254	MAPLE 18"
255	WHITE PINE 18"
256	BEECH 16"
257	WHITE PINE 14"
258	WHITE PINE 16"
259	WHITE OAK 14"
260	POPLAR 16"
261	WHITE PINE 14"
262	POPLAR 16"
263	HEMLOCK 12"
264	HEMLOCK 12"
265	POPLAR 14"
266	WHITE OAK 16"
267	POPLAR 16"
268	POPLAR 18"
269	HEMLOCK 12"
270	POPLAR 16"
271	MAPLE 12"
272	POPLAR 18"
273	CHEST. OAK 12"
274	CHEST. OAK 18"
275	CHEST. OAK 16"
276	WHITE PINE 16"
277	WHITE PINE 16"
278	WHITE PINE 14"
279	WHITE PINE 14"
280	WHITE PINE 14"
281	POPLAR 16"
282	WHITE PINE 12"
283	WHITE PINE 14"
284	WHITE PINE 14"
285	HEMLOCK 12"
286	HEMLOCK 14"
287	WHITE PINE 12"
288	WHITE PINE 12"
289	POPLAR 16"
290	POPLAR 16"
291	BEECH 14"
292	POPLAR 12"
293	WHITE PINE 12"
294	WHITE PINE 12"
295	POPLAR 12"
296	BEECH 12"
297	WHITE PINE 14"
298	WHITE PINE 16"
299	WHITE PINE 18"
300	HEMLOCK 14"
301	WHITE PINE 14"
302	SOURWOOD 16"
303	WHITE PINE 14"
304	WHITE PINE 16"
305	WHITE PINE 14"
306	SOURWOOD 12"
307	WHITE PINE 14"
308	WHITE OAK 22"
309	POPLAR 16"
310	BEECH 12"
311	WHITE PINE 14"
312	WHITE PINE 16"
313	YELLOW PINE 14"
314	HEMLOCK 18"
315	POPLAR 16"
316	WHITE PINE 12"
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318	WHITE PINE 14"
319	WHITE PINE 18"
320	POPLAR 14"
321	WHITE PINE 14"
322	WHITE OAK 16"
323	CHEST. OAK 18"
324	CHEST. OAK 16"
325	WHITE PINE 14"
326	CHEST. OAK 16"
327	CHEST. OAK 14"
328	HEMLOCK 16"
329	CHEST. OAK 16"
330	CHEST. OAK 20"
331	POPLAR 16"
332	CHEST. OAK 16"
333	CHEST. OAK 16"
334	WHITE PINE 12"
335	POPLAR 14"
336	SOURWOOD 12"
337	WHITE PINE 12"
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339	WHITE PINE 14"
340	WHITE PINE 16"
341	WHITE PINE 16"
343	WHITE PINE 14"
344	WHITE OAK 18"
345	POPLAR 14"
346	POPLAR 12"
347	CHEST. OAK 16"
348	CHEST. OAK 18"
349	CHEST. OAK 20"
350	HEMLOCK 12"
351	BEECH 14"
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353	WHITE PINE 12"
354	WHITE PINE 14"
355	POPLAR 14"
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357	CHEST. OAK 16"
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359	WHITE PINE 16"
360	SOURWOOD 12"
361	WHITE PINE 14"
362	POPLAR 12"
363	BEECH 14"
364	SOURWOOD 12"
365	CHEST. OAK 12"
366	MAPLE 18"
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370	WHITE PINE 12"
371	CHEST. OAK 14"
372	SOURWOOD 14"
373	YELLOW PINE 14"
374	YELLOW PINE 14"
375	POPLAR 16"
376	WHITE OAK 18"
377	POPLAR 18"
378	MAPLE 12"
379	CHEST. OAK 20"
380	WHITE PINE 12"
381	WHITE PINE 12"
382	CHEST. OAK 18"
383	WHITE PINE 12"
384	CHEST. OAK 28"
385	WHITE PINE 18"
386	WHITE PINE 14"
387	CHEST. OAK 20"
388	WHITE PINE 14"
389	WHITE PINE 24"
390	WHITE PINE 16"
391	CHEST. OAK 18"
392	MAPLE 28"
393	CHEST. OAK 14"
394	WHITE PINE 14"
395	BEECH 12"
396	CHEST. OAK 16"
397	CHEST. OAK 20"
398	WHITE PINE 18"
399	CHEST. OAK 14"
400	WHITE PINE 14"
401	CHEST. OAK 12"
402	CHEST. OAK 16"
403	BIRCH 14"
404	WHITE PINE 14"
405	MAPLE 14"
407	WHITE PINE 14"
408	CHEST. OAK 14"
409	CHEST. OAK 12"
410	CHEST. OAK 12"
411	BEECH 14"
412	SOURWOOD 12"
413	MAPLE 12"
414	WHITE PINE 14"
415	SOURWOOD 12"
416	POPLAR 14"
417	WHITE PINE 14"
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420	YELLOW PINE 18"
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423	WHITE PINE 14"
424	BEECH 18"
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426	BIRCH 12"
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428	WHITE PINE 16"
429	WHITE PINE 14"
430	HEMLOCK 12"
431	CHEST. OAK 16"
432	WHITE PINE 16"
433	MAPLE 14"
434	HICKORY 14"
435	POPLAR 14"
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439	MAPLE 12"
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443	CHEST. OAK 12"
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456	WHITE PINE 16"
457	BEECH 12"
458	WHITE PINE 14"
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460	WHITE PINE 16"
461	WHITE PINE 16"
462	WHITE PINE 16"
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468	WHITE OAK 14"
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470	WHITE PINE 16"
471	WHITE PINE 16"
472	POPLAR 14"
473	WHITE PINE 12"
474	CHEST. OAK 14"
475	WHITE OAK 12"
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485	CHEST. OAK 18"
486	CHEST. OAK 18"
487	CHEST. OAK 16"
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489	WHITE PINE 12"
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491	WHITE PINE 16"
492	POPLAR 12"
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501	WHITE PINE 18"
502	POPLAR 14"
503	POPLAR 16"
504	BEECH 12"
505	WHITE PINE 14"
506	WHITE PINE 14"
507	CHEST. OAK 12"
508	CHEST. OAK 16"
509	POPLAR 12"
510	WHITE OAK 14"
511	WHITE PINE 20"
512	WHITE PINE 16"
513	WHITE PINE 12"
514	WHITE PINE 16"
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516	WHITE PINE 18"
517	MAPLE 14"
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561	POPLAR 14"
562	WHITE PINE 12"
563	WHITE PINE 12"
564	WHITE PINE 14"
565	WHITE PINE 14"
567	WHITE PINE 12"
568	WHITE PINE 28"
569	WHITE PINE 16"
570	WHITE OAK 24"
571	WHITE PINE 20"
572	WHITE PINE 14"
573	WHITE PINE 22"
574	WHITE PINE 18"
575	WHITE PINE 20"
576	POPLAR 18"
577	POPLAR 12"
578	WHITE PINE 12"
579	WHITE PINE 12"
580	WHITE PINE 12"
581	WHITE PINE 16"
582	WHITE PINE 12"
583	WHITE OAK 18"
584	MAPLE 12"
585	CHEST. OAK 14"
586	WHITE PINE 16"
587	WHITE OAK 12"
588	MAPLE 14"
589	MAPLE 14"
590	POPLAR 12"
591	MAPLE 12"
592	POPLAR 16"
593	WHITE OAK 16"
594	SOURWOOD 14"
595	MAPLE 14"
596	POPLAR 16"
597	WHITE PINE 12"
598	POPLAR 16"
599	WHITE PINE 14"
600	WHITE PINE 12"
601	MAPLE 14"
602	WHITE OAK 18"
603	MAPLE 16"
604	WHITE PINE 18"
605	CHEST. OAK 16"
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607	WHITE PINE 14"
608	MAPLE 14"
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612	POPLAR 12"
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616	YELLOW PINE 14"
617	WHITE PINE 18"
618	WHITE PINE 14"
619	WHITE OAK 14"
620	WHITE PINE 14"
621	WHITE PINE 18"
622	WHITE PINE 24"
623	POPLAR 20"
624	WHITE PINE 14"
625	POPLAR 12"
626	POPLAR 12"
627	POPLAR 12"
628	MAPLE 14"
629	POPLAR 12"
630	WHITE PINE 26"
631	POPLAR 14"
632	WHITE PINE 24"
633	POPLAR 12"
634	POPLAR 12"
635	POPLAR 12"
636	POPLAR 12"
637	WHITE PINE 14"
638	YELLOW PINE 14"
639	WHITE PINE 22"
640	WHITE PINE 18"
641	WHITE PINE 18"
642	BIRCH 14"
643	WHITE OAK 16"
644	MAPLE 16"
645	POPLAR 16"
646	POPLAR 14"
647	POPLAR 16"
648	WHITE PINE 14"
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653	MAPLE 16"
654	MAPLE 12"
655	MAPLE 18"
656	POPLAR 22"
657	HICKORY 20"
658	MAPLE 16"
659	WHITE OAK 12"
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661	POPLAR 22"
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664	CHEST. OAK 18"
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669	CHEST. OAK 24"
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676	WHITE OAK 20"
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678	WHITE OAK 20"
679	WHITE PINE 18"
680	POPLAR 16"
681	MAPLE 18"
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683	POPLAR 14"
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685	POPLAR 16"
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689	POPLAR 12"
690	POPLAR 14"
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692	POPLAR 16"
693	POPLAR 12"
694	POPLAR 12"
695	POPLAR 12"
696	POPLAR 12"
697	MAPLE 14"
698	BIRCH 12"
699	POPLAR 12"
700	WHITE PINE 20"
701	WHITE PINE 20"
702	HEMLOCK 14"
703	HEMLOCK 24"
704	POPLAR 12"
705	WHITE PINE 12"
710	POPLAR 20"
711	WHITE PINE 24"
712	WHITE PINE 12"
713	POPLAR 18"
714	HICKORY 12"
715	HICKORY 12"
716	POPLAR 14"
717	MAPLE 22"
718	WHITE PINE 14"
719	MAPLE 22"
720	POPLAR 24"
721	POPLAR 20"
722	RED OAK 22"
723	POPLAR 16"
724	POPLAR 16"
725	CHEST. OAK 18"
726	POPLAR 20"
727	WHITE OAK 22"
728	POPLAR 20"
729	POPLAR 18"
730	RED OAK 20"
731	YELLOW PINE 14"
732	POPLAR 12"

LEGEND

EXISTING TREES TO BE PRESERVED

EXISTING TREES TO BE REMOVED

PLANT LIST

SYMBOL	QUANT	NAME	SIZE / SPECIFICATION
	93	Acer rubrum Red Maple	2" - 2 1/2" cal., 12' - 14' Ht., B&B, Single Straight Leader, Matched
	94	Quercus alba White Oak	2" - 2 1/2" cal., 12' - 14' Ht., B&B, Single Straight Leader, Matched
	96	Cercis canadensis Eastern Redbud	1 1/4" - 1 1/2" cal., 8' - 10' Ht., B&B, Multi-stem, 3 stems min., Matched
	96	Cornus florida 'Appalachian Spring' Applachian Spring Flowering Dogwood	1 1/4" - 1 1/2" cal., 8' - 10' Ht., B&B, Single Straight Leader, Matched
	80	Ilex X 'Nellie R. Stevens' Nellie R. Stevens Holly	4'-5' Ht., B&B, Single Straight Leader Dense Full Plants, Matched
	75	Picea abies Norway Spruce	4'-5' Ht., B&B, Single Straight Leader Dense Full Plants, Matched
		Native Shrubs, Bare Root Trees, Pollinator Plants	Varying sizes & heights
	101	Shade Tree Flower Tree	One Tree per Lot , Planted in Front or Rear Yard
TOTAL TREES	635		

LANDSCAPE NOTES:

1. ONE SHADE TREE OR FLOWERING TREE WILL BE PLANTED IN THE FRONT OR REAR OF EACH LOT IN ADDITON TO THE STREET AND BUFFER TREES.
2. LANDSCAPE CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON PLAN & SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
3. PLANT MATERIAL SHALL CONFORM TO ANSI Z60.1-1996 STANDARDS FOR NURSERY STOCK.
4. LANDSCAPE CONTRACTOR SHALL PROVIDE ONE-YEAR WARRANTY FOR PLANTS & LABOR AT TIME OF COMPLETION & ACCEPTANCE OF WORK.
5. PLANT MATERIAL SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING INSTALLATION.
6. LANDSCAPE CONTRACTOR SHALL PREPARE ALL PLANTING BEDS BY TILLING TO A DEPTH OF 24" & INCORPORATING "NATURES HELPER" AT A RATE OF 2:1.
7. LANDSCAPE CONTRACTOR SHALL PREPARE ALL LAWN AREAS BY TILLING EXISTING SOIL TO A DEPTH OF 6" (EXCEPT WITHIN DRIPLINE OF EXISTING TREES).
8. LANDSCAPE CONTRACTOR SHALL MUCH ALL PLANTING BEDS WITH AGED SHREDDED PINE BARK TO A DEPTH OF 3".
10. LANDSCAPE CONTRACTOR SHALL ESTABLISH PERMANENT GRASS COVER ON ALL DISTURBED AREAS & AREAS NOT TO BE PLANTED.

NORTH

0 16 40 80 160 240

SCALE: 1" = 80'

LAND PLANNING COLLABORATIVE
Landscape Architects ● Land Planners
P.O. BOX 2200
ASHEVILLE, N.C. 28802
(828) 242-0111
EMAIL: bgrasso@landplancollab.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 487 ROBERT GRASSO

LANDSCAPE PLAN

HALF MOON HEIGHTS
HENDERSONVILLE, NORTH CAROLINA

JOB NO.: 212850
DWG. NAME: half-moon-site.dwg
DATE: September 21, 2021
REVISIONS:

REV.:	DATE:	BY:
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

SHEET
L-10

PIN 9680-01-0516
DB 1690, PB 265
WOLF CHASE HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON AREA FOR SINGLE FAMILY RESIDENCES

PIN 9670-91-3013
DB 1085, PB 740
DEONNA J ANDERSON
HMU (CITY OF HENDERSONVILLE ETJ)
SINGLE FAMILY RESIDENCE

EXISTING SFD NK
PER DB 1085 PG 740
NOW OR FORMERLY PUBLIC
PROPERTY-PETITIONED
ABANDONED)

GRAVEL DRIVE

GO PWR FOR OVHD POWER
DB 497-74 PG 253

BROOKSTONE COURT
(Private)

PIN 9680-10-4759
DB 1331 PB 117
WOLFPEN II PLANNED COMMUNITY HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON LAND FOR SINGLE FAMILY RESIDENCES

PIN 9680-10-4326
DB 1331 PB 117
WOLFPEN II PLANNED COMMUNITY HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON LAND FOR SINGLE FAMILY RESIDENCES

PIN 9670-80-7843
DB 2014E, PB 182
DAVID LEE JUSTUS
HMU (CITY OF HENDERSONVILLE ETJ)
SINGLE FAMILY RESIDENCE

18" HDPE STORM DRAIN PIPE (TYP)

CURB INLET (TYP)

18" HDPE STORM DRAIN PIPE (TYP)

CURB INLET (TYP)

CURB INLET (TYP)

18" HDPE STORM DRAIN PIPE (TYP)

STORMTECH UNDERGROUND DETENTION SYSTEM (TYP)

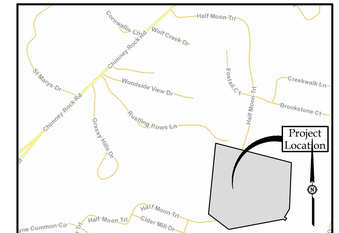
18" HDPE STORM DRAIN PIPE (TYP)

PIN 9579-89-5936
DB 1601, PB 205
TRIANGLE BALLENTYNE HENDERSONVILLE, INC.
PRD (CITY OF HENDERSONVILLE)
APARTMENTS

PIN 9638396466
DB 1165, PB 0182
JOSEPH HARLEY TAYLOR,
LAURA SUZANNE TAYLOR
RM-8
UNDEVELOPED

PIN 9589-09-6938
DB 1059, PB 285
MIGUEL GUERRERO
RES 2 (HENDERSON COUNTY)
SINGLE FAMILY RESIDENCE

PIN 9589-09-9170
DB 3353, PB 94
BRAULIO LARA PARRO
RES 2 (HENDERSON COUNTY)
SINGLE FAMILY RESIDENCE



Vicinity Map
NOT TO SCALE

DEVELOPMENT DATA BLOCK

OWNER/DEVELOPER:	HALF MOON LAND HOLDINGS, LLC
CONTACT:	JOE SCHLOTTERBECK
EMAIL:	JOES@BH-BUILDER.COM
PHONE:	828-628-4319
ADDRESS:	P.O. BOX 609 FAIRVIEW, NORTH CAROLINA 28730
PIN:	9680-00-1446
PHYSICAL ADDRESS:	297 RUSTLING PINES LANE HENDERSONVILLE, NC
PROPERTY SIZE:	33.65 AC.
ZONING DISTRICT:	PRD CITY OF HENDERSONVILLE

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Preliminary

SITE PLAN For

HALF MOON TRAIL

HENDERSONVILLE, NORTH CAROLINA

Job No. 211118
Date: September 2021
Scale: 1"=80'
Revision:

Preliminary
Storm Water

Sheet
C3

EXISTING 8" WATER LINE

REMOVE PLUG CONNECT TO EXISTING 8" DIP WATER LINE FROM WOLFCHASE

PIN 9680-01-0516
DB 1690, PB 265
WOLF CHASE HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON AREA FOR SINGLE FAMILY RESIDENCES

PIN 9670-91-3013
DB 1085, PB 740
DEONNA J ANDERSON
HMU (CITY OF HENDERSONVILLE ETJ)
SINGLE FAMILY RESIDENCE

EXISTING SD FW PER DB 1085 PG 740 PROPERTY LINE BY SURVEY POTENTIALLY ABANDONED

GRAVEL DRIVE

60' R/W FOR DUKE POWER DB 474 PG 285

BROOKSTONE COURT (Private)

PIN 9680-10-4759
DB 1331 PB 117
WOLFPEN II PLANNED COMMUNITY HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON LAND FOR SINGLE FAMILY RESIDENCES

SERVICE LINE & METER (TYP)

6" DIP (CL350) WATER LINE (TYP)

SERVICE LINE & METER (TYP)

FIRE HYDRANT ASSEMBLY (TYP)

8" DIP (CL350) WATER LINE (TYP)

6" GATE VALVE (TYP)

6" DIP (CL350) WATER LINE (TYP)

SERVICE LINE & METER (TYP)

PIN 9670-80-7843
DB 2014E, PB 182
DAVID LEE JUSTUS
HMU (CITY OF HENDERSONVILLE ETJ)
SINGLE FAMILY RESIDENCE

FIRE HYDRANT ASSEMBLY (TYP)

6" GATE VALVE (TYP)

SERVICE LINE & METER (TYP)

6" GATE VALVE (TYP)

PIN 9680-10-4326
DB 1331 PB 117
WOLFPEN II PLANNED COMMUNITY HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON LAND FOR SINGLE FAMILY RESIDENCES

8" DIP (CL350) WATER LINE (TYP)

6" DIP (CL350) WATER LINE (TYP)

REMOVE PLUG CONNECT TO EXISTING 8" DIP WATER LINE FROM BALLANTYNE COMMONS

SERVICE LINE & METER (TYP)

AXLE FOUND

8" DIP (CL350) WATER LINE

PIN 9589-09-6938
DB 1659, PB 285
MIGUEL GUERRERO
RES 2 (HENDERSON COUNTY)
SINGLE FAMILY RESIDENCE

6" DIP (CL350) WATER LINE (TYP)

SERVICE LINE & METER (TYP)

FIRE HYDRANT ASSEMBLY (TYP)

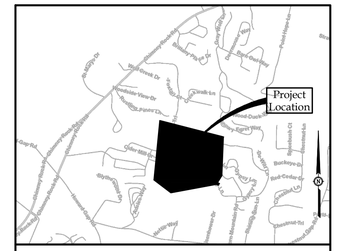
PIN 9579-89-5936
DB 1601, PB 205
TRIANGLE BALLENTYNE HENDERSONVILLE, INC.
PRD (CITY OF HENDERSONVILLE)
APARTMENTS

PIN 9589-09-5770
DB 3355, PB 44
BRAULIO LARA PATINO
RES 2 (HENDERSON COUNTY)
SINGLE FAMILY RESIDENCE

PIN 963896468
DB 1785, PB 0182
JOSEPH HARLEY TAYLOR,
LAURA SUZANNE TAYLOR
RM-8
UNDEVELOPED

PLANTED STONE FOUND

1/2" IPIPE



Vicinity Map
NOT TO SCALE

DEVELOPMENT DATA BLOCK

OWNER/DEVELOPER:	HALF MOON LAND HOLDINGS, LLC
CONTACT:	JOE SCHLOTTERBECK
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PHONE:	828-628-4319
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SITE PLAN For

HALF MOON TRAIL

HENDERSONVILLE, NORTH CAROLINA

Job No.: 21118
Date: September 2021
Scale: 1"=80'
Revision:

Preliminary
Utilities - Water

Sheet
C4.1

PIN 9670-91-3013
DB 1085, PB 740
DEONNA J ANDERSON
HMU (CITY OF HENDERSONVILLE ETJ)
SINGLE FAMILY RESIDENCE

PIN 9680-01-0516
DB 1690, PB 265
WOLF CHASE HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON AREA FOR SINGLE FAMILY RESIDENCES

CONNECT TO EXISTING MANHOLE IN WOLFCHASE

BROOKSTONE COURT (Private)

60' R/W FOR DUKE POWER DB 444 PG 85

EXISTING 50' R/W PER DB 1085, PG 740 PROPERTY SUBJECT TO POTENTIALLY ABANDONED

GRAVEL DRIVE

8" PVC (SDR 35) SEWER LINE (TYP)

SEWER SERVICE LINE (TYP)

PIN 9680-10-4759
DB 1331 PB 117
WOLFPEN II PLANNED COMMUNITY HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON LAND FOR SINGLE FAMILY RESIDENCES

PIN 9670-80-7843
DB 2014E, PB 182
DAVID LEE JUSTUS
HMU (CITY OF HENDERSONVILLE ETJ)
SINGLE FAMILY RESIDENCE

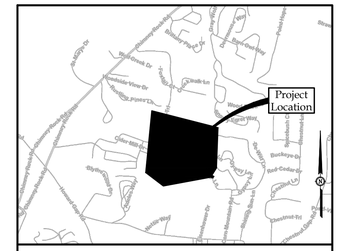
PIN 9680-10-4326
DB 1331 PB 117
WOLFPEN II PLANNED COMMUNITY HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON LAND FOR SINGLE FAMILY RESIDENCES

PIN 9589-09-6938
DB 1659, PB 285
MIGUEL GUERRERO
RES 2 (HENDERSON COUNTY)
SINGLE FAMILY RESIDENCE

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DB 1601, PB 205
TRIANGLE BALLENTYNE HENDERSONVILLE, INC.
PRD (CITY OF HENDERSONVILLE)
APARTMENTS

PIN 9589-09-5770
DB 3355, PB 44
BRAULIO LARA PATINO
RES 2 (HENDERSON COUNTY)
SINGLE FAMILY RESIDENCE

PIN 9538986406
DB 1765, PB 0182
JOSEPH HARLEY TAYLOR,
LAURA SUZANNE TAYLOR
RM-8



Vicinity Map
NOT TO SCALE

DEVELOPMENT DATA BLOCK

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SITE PLAN For

HALF MOON TRAIL

HENDERSONVILLE, NORTH CAROLINA

Job No.: 21118
Date: September 2021
Scale: 1"=80'
Revision:

Preliminary
Utilities - Sewer

Sheet
C4.2

Half Moon Trail Residential Development (Updated Report)

Traffic Impact Analysis

City of Hendersonville, North Carolina

Prepared for:
The City of Hendersonville Planning Department
The North Carolina Department of Transportation

Prepared by:

WETHERILL ENGINEERING
WE Design Your Tomorrow

NC Board of Engineers and Surveyors Certificate: F-0377

Date: September 28, 2021

NORTH CAROLINA PROFESSIONAL SEAL 028137 ENGINEER LAWRENCE H. GREEN

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1. Introduction and Summary of Findings

Study Purpose

Wetherill Engineering has prepared this Updated Traffic Impact Analysis to quantify the impact the proposed Half Moon Trail Residential development will have on the surrounding road network in the City of Hendersonville. This updated report addresses comments received from the City of Hendersonville in a memorandum dated September 9, 2021 from Kimley Horn. A copy of Wetherill Engineering's responses to the TIA Review Comments is included in Appendix A. The subject site is located on undeveloped land between adjacent subdivisions on Half Moon Trail. Access to the development is proposed via five (5) driveways along Half Moon Trail. At the completion of this project, 107 Single Family Detached Dwelling Units will be constructed. Full completion of the project is expected by the year 2024.

It should be noted that the proposed development will generate 1,107 daily trips as per the ITE Trip Generation Manual, 10th Edition (fitted curve equation). Therefore, this development does not meet the threshold for requiring a Traffic Impact Analysis as per the NCDOT Congestion Management guidelines. However, the City of Hendersonville 1,000 daily trip threshold is met, and therefore, this traffic study was prepared to meet the zoning ordinance.

Study Criteria/Methodology

This Traffic Impact Analysis has been prepared in accordance with requirements outlined in the NCDOT Congestion Management Capacity Analysis Guidelines. Trip generation for the Half Moon Trail residential development is based on data contained in the Institute of Transportation Engineers (ITE) Trip Generation (10th Edition). Intersection capacity analyses were conducted at all study intersections using the Synchro Version 11 software and the Highway Capacity Manual, 6th Edition.

Scope of Services

The principal scope of services undertaken for this project was as follows:

- Undertake a site investigation to collect physical information concerning the nearby road system.
- Collect intersection turning movement counts from 6:00–9:00 AM and from 4:00–7:00 PM on a typical weekday at all study intersections.
- Contacted the City of Hendersonville to determine if there are any approved developments (but not constructed yet) that should be considered in the analysis by the build-out year of 2024.
- Research NCDOT traffic growth trends on area roadways to determine appropriate through traffic growth rates.
- Prepare trip generation and trip distribution for all background developments and for the development of the site.
- Undertake intersection capacity analysis using the Synchro 11 traffic analysis software and the Highway Capacity Manual.

- Provide any necessary recommendations to enhance traffic operations and provide adequate levels of service.

Summary of Findings and Recommendations

This analysis will show that all study intersections are currently operating at an overall acceptable level of service. When considering the impact of regional traffic growth and approved background developments and the site generated traffic, all intersections are projected to maintain overall acceptable levels of service.

Although the overall intersection level of service of the US 64 at Half Moon Trail is acceptable, the westbound Half Moon Trail approach to US 64 is currently operating at LOS "E" during the PM peak hour, and is projected to operate at a LOS "F" by the Year 2024 with or without the proposed Half Moon Trail Residential Development. A potential mitigation measure was explored at the US 64 at Half Moon Trail intersection that included the widening of the westbound Half Moon Trail approach to provide separate left and right turn lanes. However, this improvement was shown to have minimal delay benefits and would not improve the level of service of the westbound Half Moon Trail approach.

The possibility of the installation of a traffic signal at the US 64 at Half Moon Trail intersection was also explored. However, based upon the examination of the AM and PM peak hour traffic data and the crash history at the intersection, the intersection does not meet MUTCD Traffic Signal Warrants. Therefore, the NCDOT would likely not consider a traffic signal at this location.

Even though the westbound Half Moon Trail approach at US 64 is projected to operate with delays of approximately 1 minute per vehicle during the PM peak hour for the Year 2024 Build Condition, the traffic demand for this approach is relatively light with a vehicle expected to arrive at US 64 along westbound Half Moon Trail every 1.5 minute during the PM peak hour. Therefore, even with no improvements at the US 64/Half Moon Trail intersection, there typically would not be more than 1 other vehicle queued at US 64. Thus, improvements to offsite intersections do not appear to be justified (either by physical roadway widening or the installation of a traffic signal).

Finally, the site plan for the proposed development is at the concept stage. After a more refined site plan is developed, sight distance evaluations at the driveways along Half Moon Trail should be conducted to ensure that the available sight lines meet NCDOT and City of Hendersonville criteria. The relatively low projected peak period traffic volumes at the site driveways on Half Moon Trail do not require turn lanes at the intersections to meet adequate levels of service.

2. Existing Traffic Conditions

Site Information

The Half Moon Trail residential development is located on an undeveloped, wooded parcel along Half Moon Trail in the city of Hendersonville. The site will be developed with 107 Single Family Detached Dwelling Units. The proposed Master Plan for the site is shown in Figure 1.

Study Area

Based on the correspondence with the NCDOT and the City of Hendersonville, the following locations were determined to be studied:

- US 64 at Half Moon Trail
- US 64 at Ballantyne Common Circle
- Half Moon Trail at Foxtail Court/Brookstone Court
- Half Moon Trail at Cider Mill Drive (East)
- Half Moon Trail at Cider Mill Drive (West)
- Half Moon Trail at Ballantyne Common Circle

A map showing the Off-Site Study Area Intersections is shown in Figure 2. In the vicinity of the proposed Half Moon Trail residential development, Half Moon Trail is a 2-lane roadway. There are no sidewalks and the posted speed limit is 25 MPH. Half Moon Trail generally runs in the north-south direction from Ballantyne Common Circle to US 64. The roadway features access to residential developments on both sides of the street. Figure 3 provides a summary of the Existing Lane Use and Traffic Control Devices at each of the study intersections.

Traffic Volumes

Intersection turning movement counts were collected at each study intersection from 6-9 AM and 4-7 PM on Tuesday, June 15, 2021. The Existing AM and PM Peak Hour Traffic Volumes are shown in Figure 4. Complete turning movement count data is shown in Appendix B. Since schools had already closed during the traffic survey, Wetherill Engineering researched monthly traffic variations available from the NCDOT. It was determined that on a state-wide basis, June traffic volumes were approximately 5% less than May traffic volumes. Wetherill Engineering also contacted the NCDOT with regards to COVID impacts on traffic as of June 2021. Although the NCDOT did not have specific traffic data to reference, the NCDOT believes that traffic has returned to near pre-COVID traffic conditions. However, in order to provide a conservatively high existing traffic reference point, the existing traffic data was increased by a total of 7% to account for the June traffic count to reflect May traffic volumes when schools were in session and any possible remaining COVID traffic impacts. The NCDOT Monthly Travel Trend Chart is shown in Appendix C. The Existing Adjusted AM and PM Peak Hour Traffic Volumes are shown in Figure 5.

PIN 9680-01-0516
DB 1690, PB 265
WOLF CHASE HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON AREA FOR SINGLE FAMILY RESIDENCES

PIN 9670-91-3013
DB 1085, PB 740
DEONNA J ANDERSON
HMU (CITY OF HENDERSONVILLE ETJ)
SINGLE FAMILY RESIDENCE

BROOKSTONE COURT (Private)

PIN 9680-10-4759
DB 1331 PB 117
WOLFPEN II PLANNED COMMUNITY HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON LAND FOR SINGLE FAMILY RESIDENCES

PIN 9680-10-4326
DB 1331 PB 117
WOLFPEN II PLANNED COMMUNITY HOMEOWNERS ASSOCIATION, INC.
PRD (CITY OF HENDERSONVILLE)
COMMON LAND FOR SINGLE FAMILY RESIDENCES

PIN 9680-00-1446
TRIANGLE BALLANTYNE HENDERSONVILLE, INC.
DB 1601 PG 205
33.655 ACRES

PIN 9589-09-6938
DB 1659, PB 264
MIGUEL GUERRERO
RES 2 (HENDERSON COUNTY)
SINGLE FAMILY RESIDENCE

PIN 9579-89-5936
DB 1601, PB 205
TRIANGLE BALLENTYNE HENDERSONVILLE, INC.
PRD (CITY OF HENDERSONVILLE)
APARTMENTS

PIN 9589-09-5770
DB 3355, PB 44
BRAULIO LARA PATINO
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SINGLE FAMILY RESIDENCE

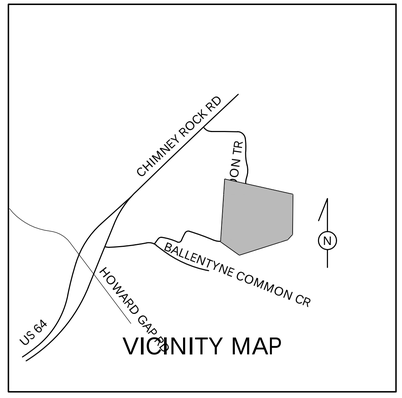
PIN 9638396465
DB 1165, PB 0182
JOSEPH HARLEY TAYLOR
LAURA SUZANNE TAYLOR
RM-8
UNDEVELOPED

PROJECT INFORMATION

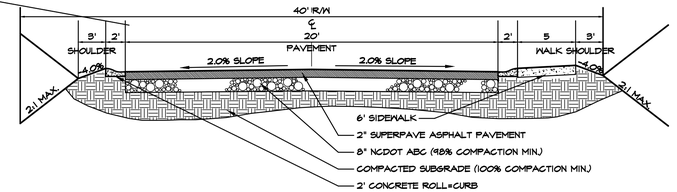
PROPERTY OWNER:	TRIANGLE BALLANTYNE HENDERSONVILLE, INC. 154 SOUTH YORK STREET GASTONIA, NC 28052 PHONE: (704) 869-6024 EMAIL: williamratchford@southwoodrealty.com CONTACT: WILLIAM RATCHFORD
APPLICANT:	HALF MOON LAND HOLDINGS, LLC P.O. BOX 609 FAIRVIEW, NC 28730 PHONE: (828) 767-7171 EMAIL: j.s@bh-builder.com CONTACT: JOSEPH SCHLOTTERBECK
LANDSCAPE ARCHITECT:	LAND PLANNING COLLABORATIVE P.O. BOX 2200 ASHEVILLE, NC 28802 PHONE: (828) 242-0111 EMAIL: bgrasso@landplancollab.com CONTACT: ROBERT M. GRASSO, RLA
CIVIL ENGINEER:	DAVIS CIVIL SOLUTIONS, PA 134 CHARLOTTE HIGHWAY, SUITE A ASHEVILLE, NC 28803 PHONE: (828) 299-9449 EMAIL: gary@daviscivilsolution.com CONTACT: GARY D. DAVIS, PE
SURVEYOR:	McABEE ASSOCIATES 3 McABEE TRAIL FAIRVIEW, NC 287303 PHONE: (828) 628-1295 EMAIL: eric@mcabeesurveying.com CONTACT: ERIC McABEE, PLS

SITE INFORMATION

PIN:	9680-00-1446
DEED BOOK/ PAGE:	1601/205
ADDRESS:	297 RUSTLING PINES LANE
ZONING CLASSIFICATION:	PRD CITY OF HENDERSONVILLE
PROJECT ACREAGE:	33.655 AC.
PROPOSED USE:	SUBDIVISON
PERMITTED DENSITY:	10 UNITS/ACRE
PROPOSED DENSITY:	3.18 UNITS/ACRE
PROPOSED NO. OF LOTS:	107 LOTS
BUILDING SETBACKS: FRONT:	35' FROM ROAD CENTERLINE
SIDE:	N/A
REAR:	30'
PERMITTED MAX. BUILDING HEIGHT:	35'
PROPOSED MAX. BUILDING HEIGHT:	35'
REQUIRED NO. OF PARKING SPACES:	164 SPACES (1.5 SPACES/UNIT & 3 MAIL KIOSK SPACES)
PROPOSED NO. OF PARKING SPACES:	431 SPACES (2 GARAGE & 2 DRIVEWAY SPACES/UNIT & 3 MAIL KIOSK SPACES)
PERMITTED MAXIMUM FOOTPRINT:	20%
PROPOSED MAXIMUM FOOTPRINT:	17.5% (2,400 SF BUILDING FOOTPRINT)
REQUIRED OPEN SPACE:	60% (879,617 SF)
PROPOSED OPEN SPACE:	70% (1,026,445 SF)
PROPOSED IMPERVIOUS:	439,584 SF (30.0%)
EXISTING ROAD:	34,277 SF
PROPOSED ROADS:	82,402 SF
PROPOSED WALKS:	23,085 SF
PROPOSED HOUSES:	256,800 SF
PROPOSED DRIVEWAYS:	43,030 SF
REQUIRED COMMON OPEN SPACE:	439,809 SF (50% OF OPEN SPACE)
EXISTING COMMON OPEN SPACE:	346,013 SF (81.0% MAINTAINED)
WATER:	HENDERSONVILLE WATER
SANITARY SEWER:	HENDERSONVILLE SEWER
UTILITIES:	DUKE ENERGY, UNDERGROUND POWER

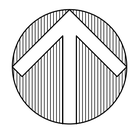


VICINITY MAP

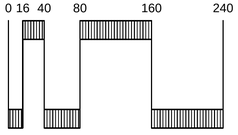


LOCAL RESIDENTIAL ROAD WITH ROLL-CURB

NOT TO SCALE



NORTH



SCALE: 1" = 80'

FIGURE 1 - MASTER PLAN

LAND PLANNING COLLABORATIVE
Landscape Architects ● Land Planners
P.O. BOX 2200
ASHEVILLE, N.C. 28802
(828) 242-0111
EMAIL: bgrasso@landplancollab.com

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 487 ROBERT M. GRASSO

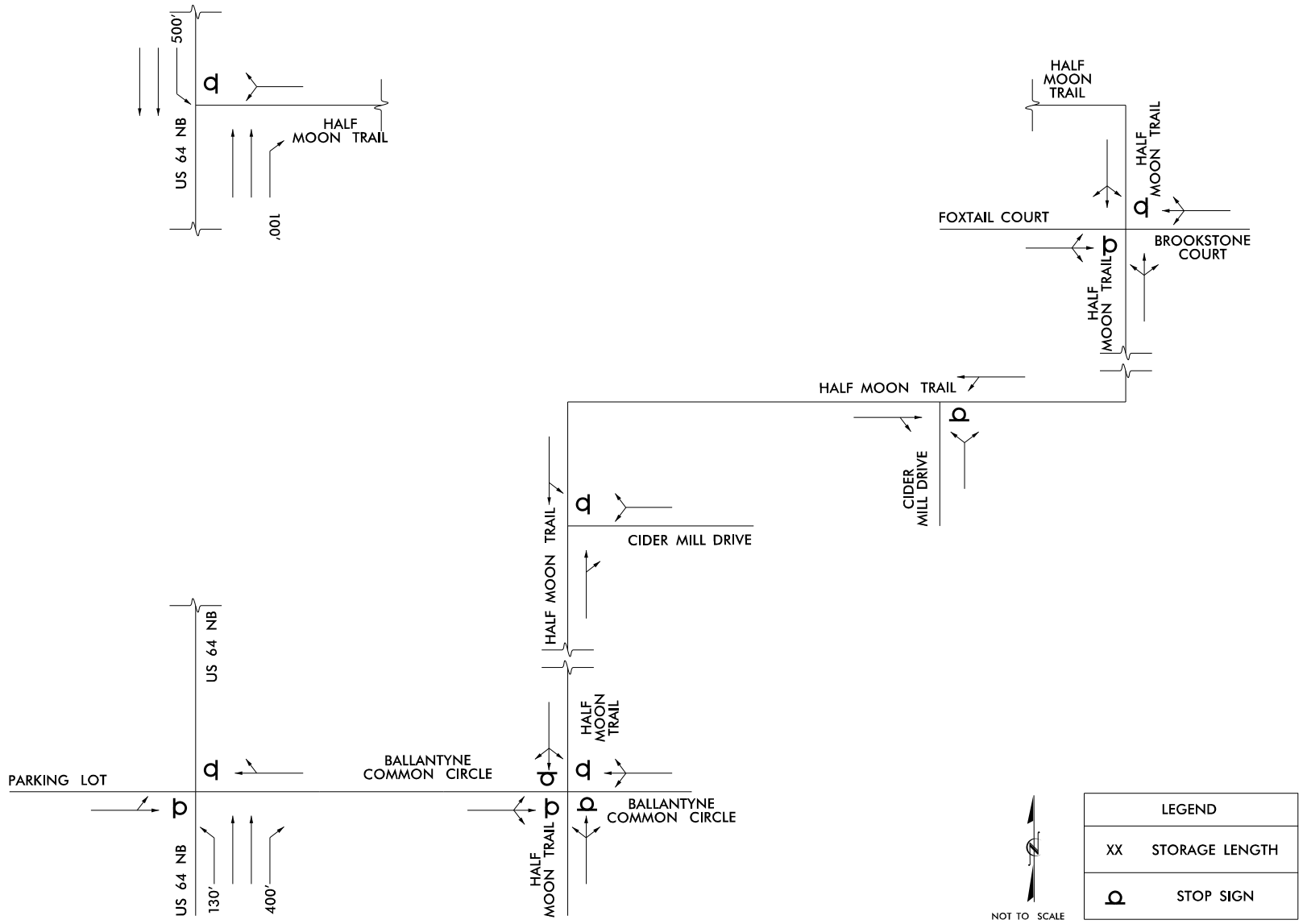
MASTER PLAN

HALF MOON HEIGHTS
HENDERSONVILLE, NORTH CAROLINA

JOB NO.: 212210
DWG. NAME: half-moon-site.dwg
DATE: September 1, 2021
REVISIONS:

REV.:	DATE:	BY:
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

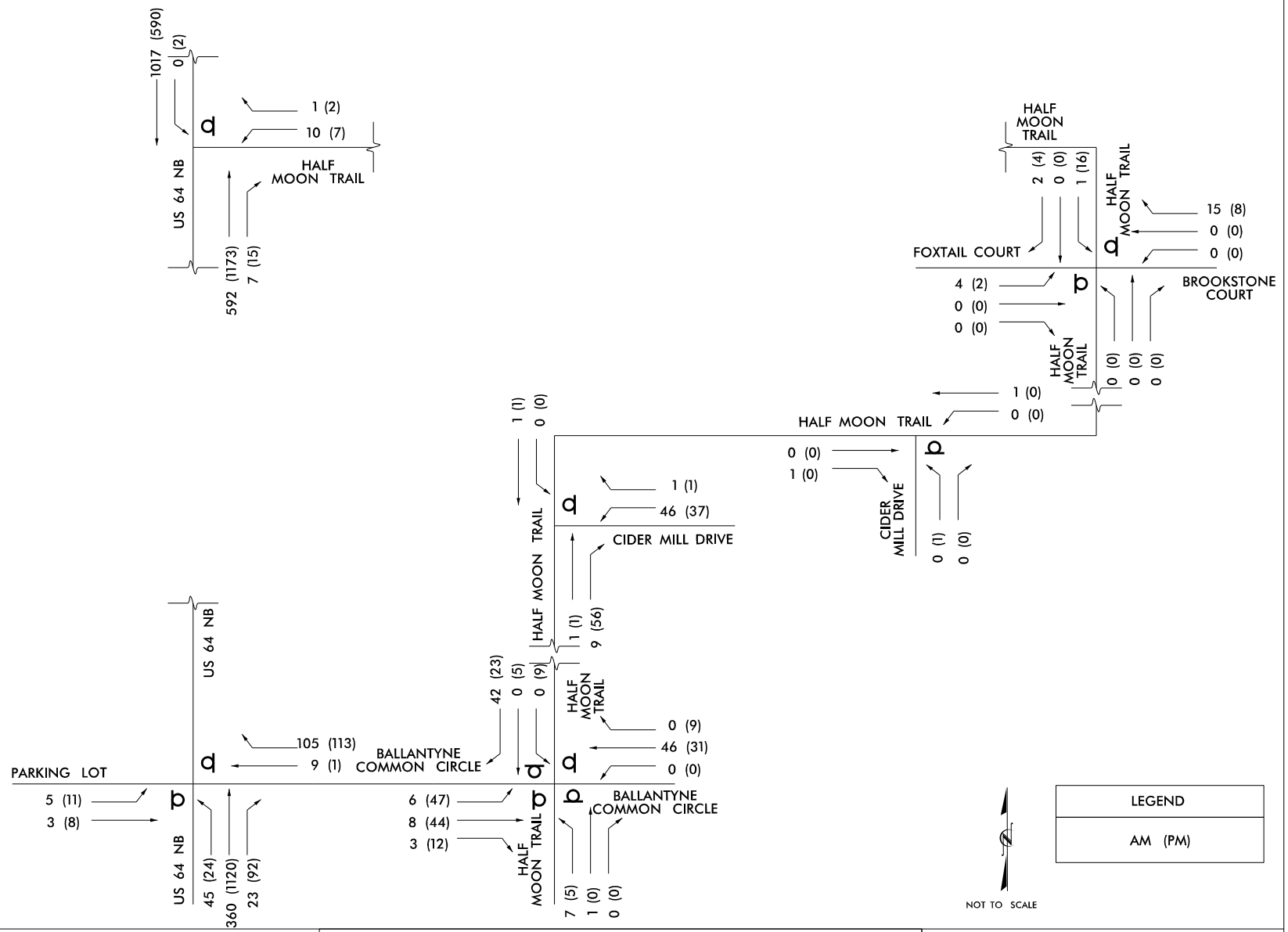
SHEET
L-1



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1223 JONES FRANKLIN RD.
RALEIGH, N.C. 27606
BUS: 919 851 8077
FAX: 919 851 8107
LICENSE: F-0377

FIGURE 3
EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL DEVICES

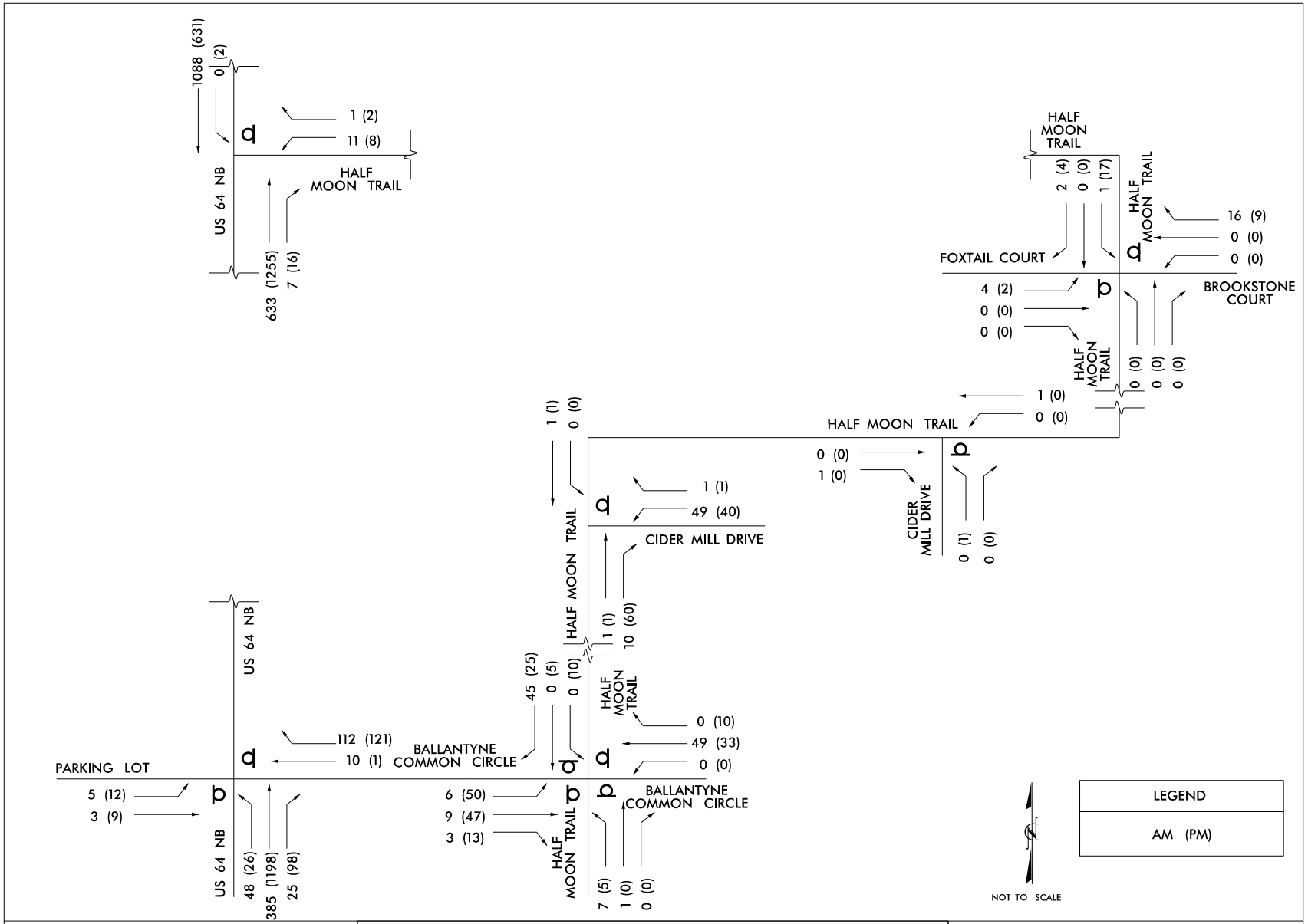
HALF MOON TRAIL
HENDERSONVILLE, NC



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FIGURE 4
EXISTING AM & PM PEAK HOUR TRAFFIC VOLUMES

HALF MOON TRAIL
HENDERSONVILLE, NC



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FIGURE 5
EXISTING ADJUSTED AM & PM PEAK HOUR TRAFFIC VOLUMES

HALF MOON TRAIL
HENDERSONVILLE, NC

3. Background Traffic Conditions

Design Year

The project is anticipated to have a build-out year of 2024. Historic traffic volumes in the area were reviewed from the NCDOT traffic data base. Shown below are the most recent average daily traffic data points on US 64 in the vicinity of the site (NCDOT AADT Station 0450000144):

- Year 2014 – 36,000 ADT
- Year 2016 – 37,000 ADT
- Year 2018 – 35,000 ADT

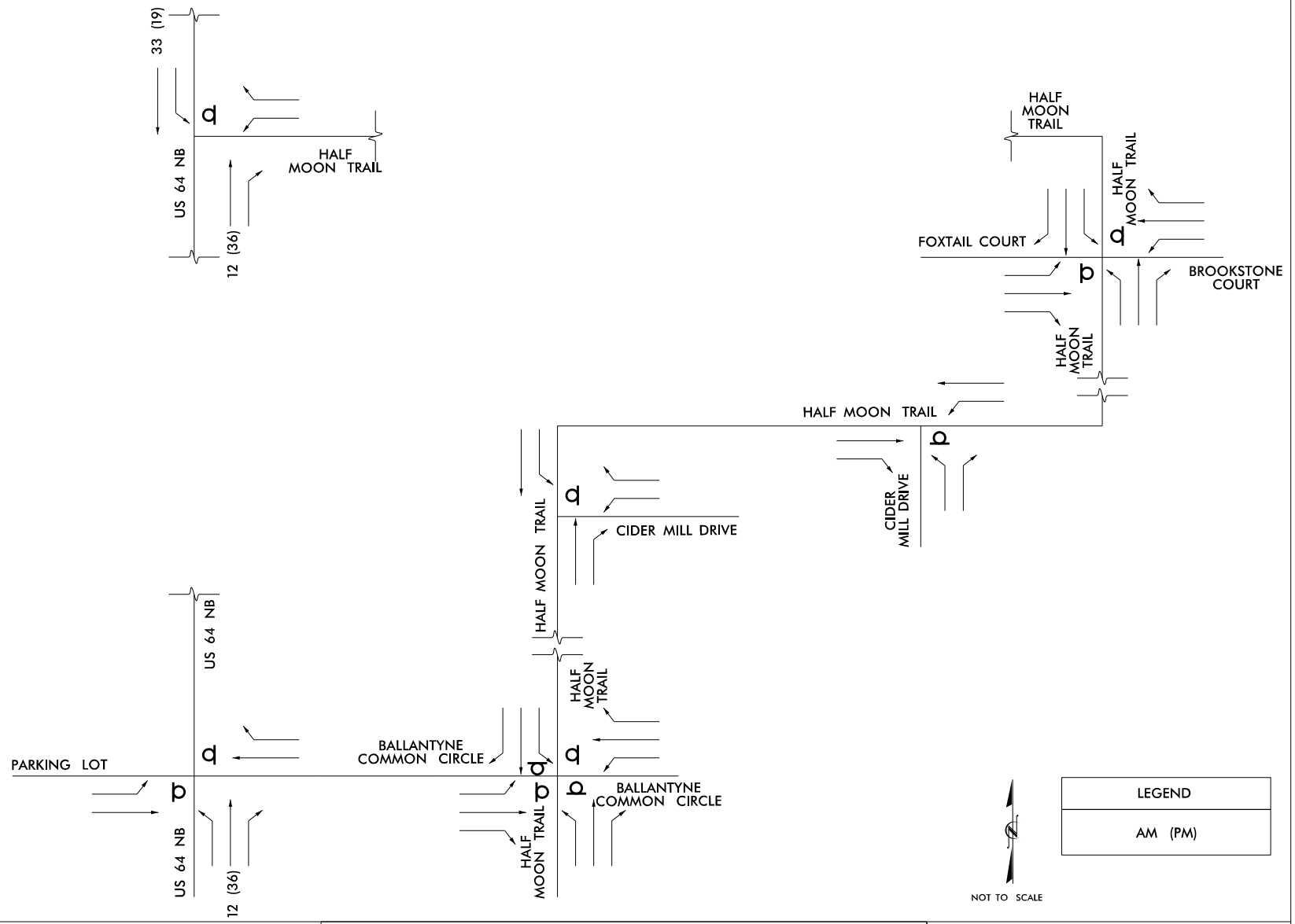
As shown by the traffic data, the trend from 2014 to 2018 showed a negative traffic growth. However, in order to present a more conservative traffic projection, it will be assumed that a 1% annual growth rate of traffic will occur along US 64 in the vicinity of the site. The Through Traffic Growth to Build-Out Year is shown in Figure 6.

In addition, Wetherill Engineering contacted the City of Hendersonville to determine if there were any recently approved developments that have not been constructed but will be built-out during the same time period as the Half Moon Trail residential subdivision. It was determined that a proposed 78-unit Senior Living development (White Pine Villas) will be constructed along the south side of US 64 between the US 64 at Ballantyne Common Circle and US 64 at Half Moon Trail study intersections. Therefore, the traffic from this development will also be included in the future traffic projections. The AM and PM peak period traffic that will be generated by the White Pine Villas background development is shown in Table 1 below. The Background Development Traffic from the White Pine Villas Development assigned to the study area network is shown in Figure 7. The traffic distributions for the White Pine Villas development were based upon examinations of peak period traffic flows.

TABLE 1
White Pine Villas Background Development

Land Use	AM Peak Hour		PM Peak Hour	
	IN	OUT	IN	OUT
78-unit Senior Living (ITE Land Use 252)	6	10	12	9

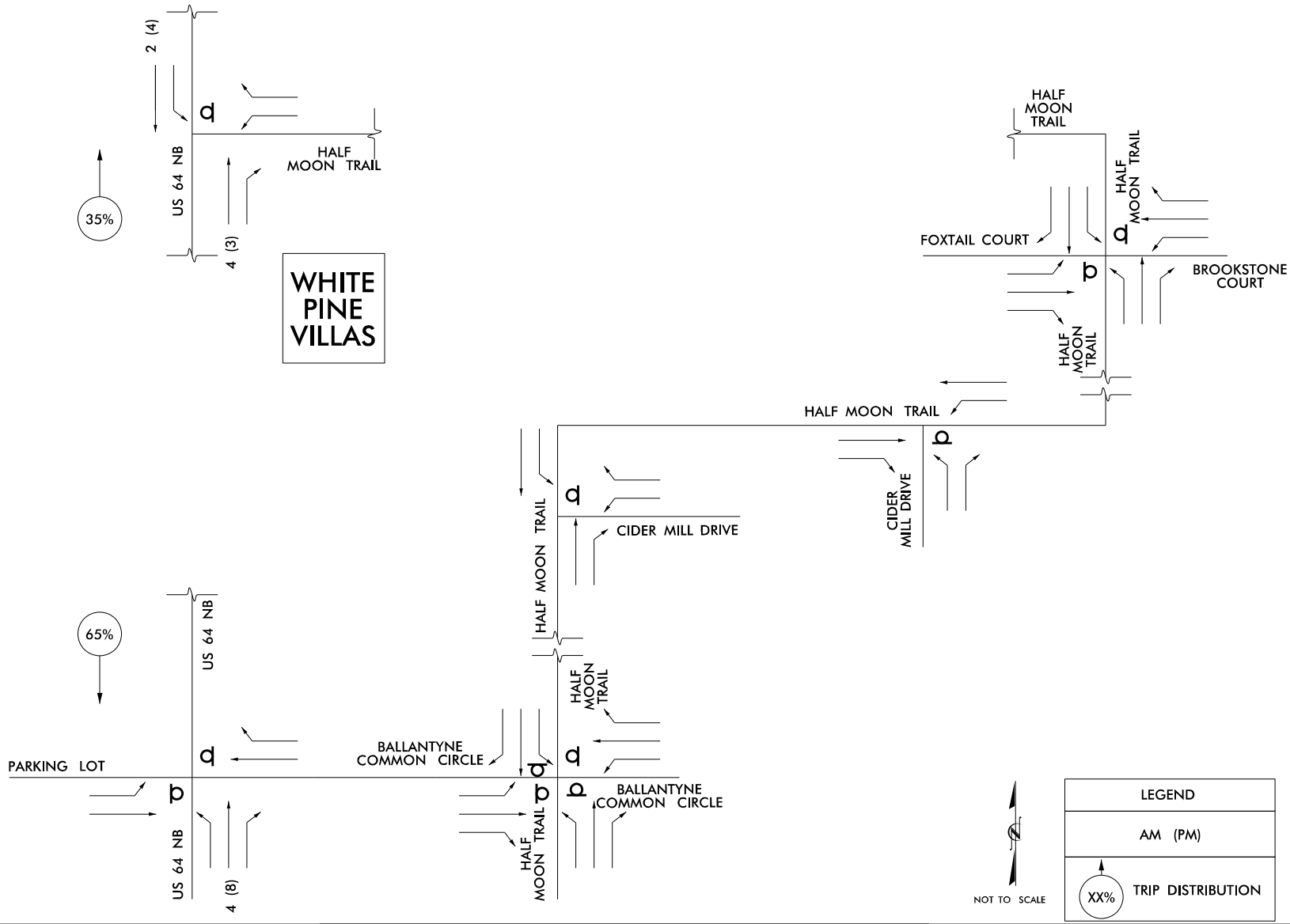
Adding the Existing Adjusted Peak Hour Traffic Volumes shown in Figure 5, the Through Traffic Growth for 3 years to the Build-Out Year of 2024 as shown in Figure 6, and the projected traffic to the proposed White Pine Villas background development as shown in Figure 7, will yield the Year 2024 Background Peak Hour Traffic Volumes which are shown in Figure 8.



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FIGURE 6
THROUGH TRAFFIC GROWTH TO BUILD–OUT YEAR (2024)

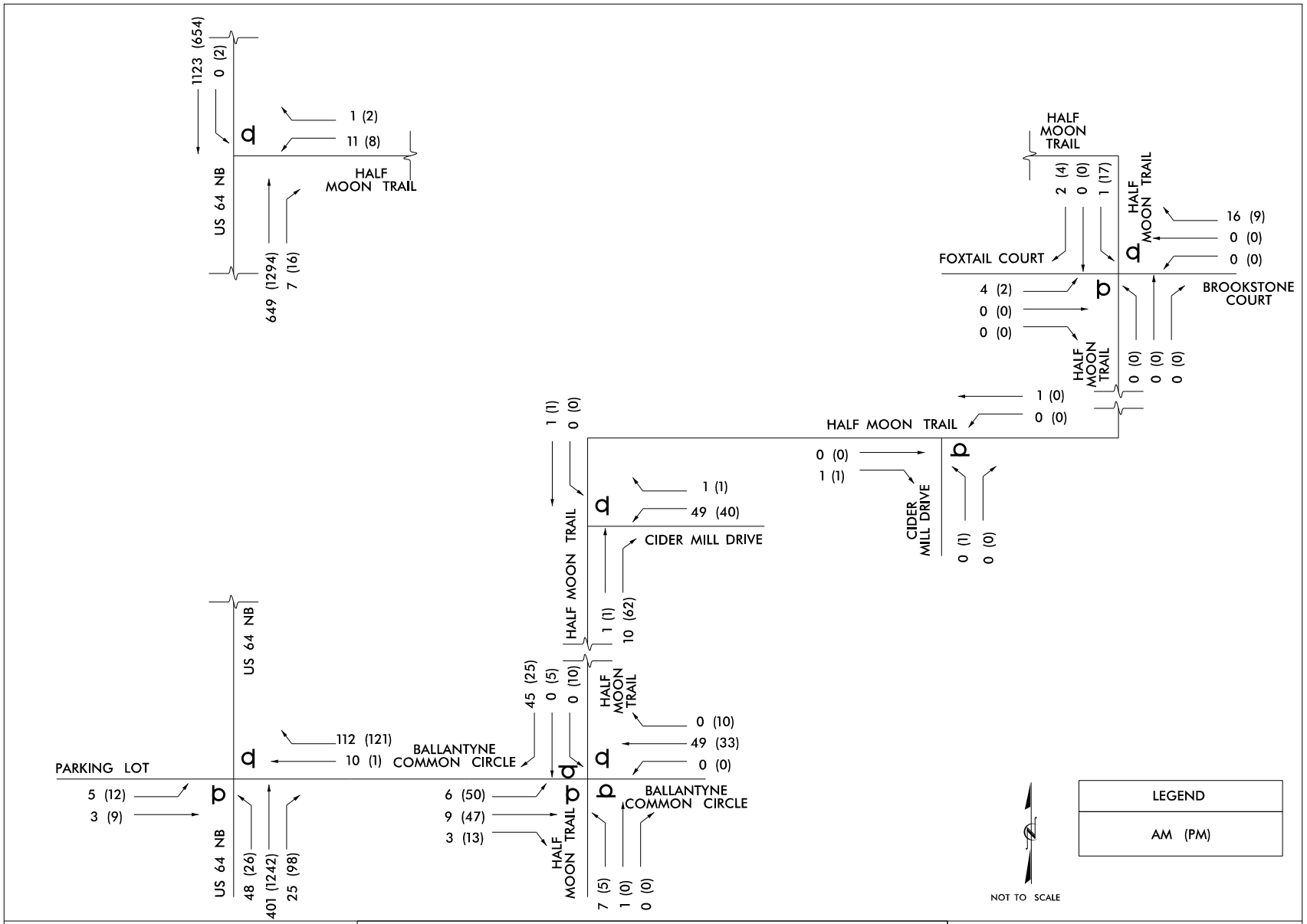
HALF MOON TRAIL
HENDERSONVILLE, NC



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FIGURE 7
BACKGROUND DEVELOPMENT TRAFFIC – WHITE PINE VILLAS

HALF MOON TRAIL
HENDERSONVILLE, NC



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FIGURE 8
YEAR 2024 BACKGROUND PEAK HOUR TRAFFIC VOLUMES

HALF MOON TRAIL
HENDERSONVILLE, NC

4. Build Traffic Conditions

Site Information

The subject site is located on undeveloped land between adjacent subdivisions on Half Moon Trail. Access to the development is proposed via five (5) driveways along Half Moon Trail. At the completion of this project, 107 Single Family Detached Dwelling Units will be constructed. Full completion of the project is expected by the year 2024.

Trip Generation/Distribution

The Institute of Transportation Engineers (ITE) Trip Generation (10th Edition) was utilized to quantify the trips projected to be generated by this site. As mentioned above, 107 Single Family Detached Dwelling Units is proposed for the site. Shown in Table 2 is the projected peak period and daily traffic generation for the site.

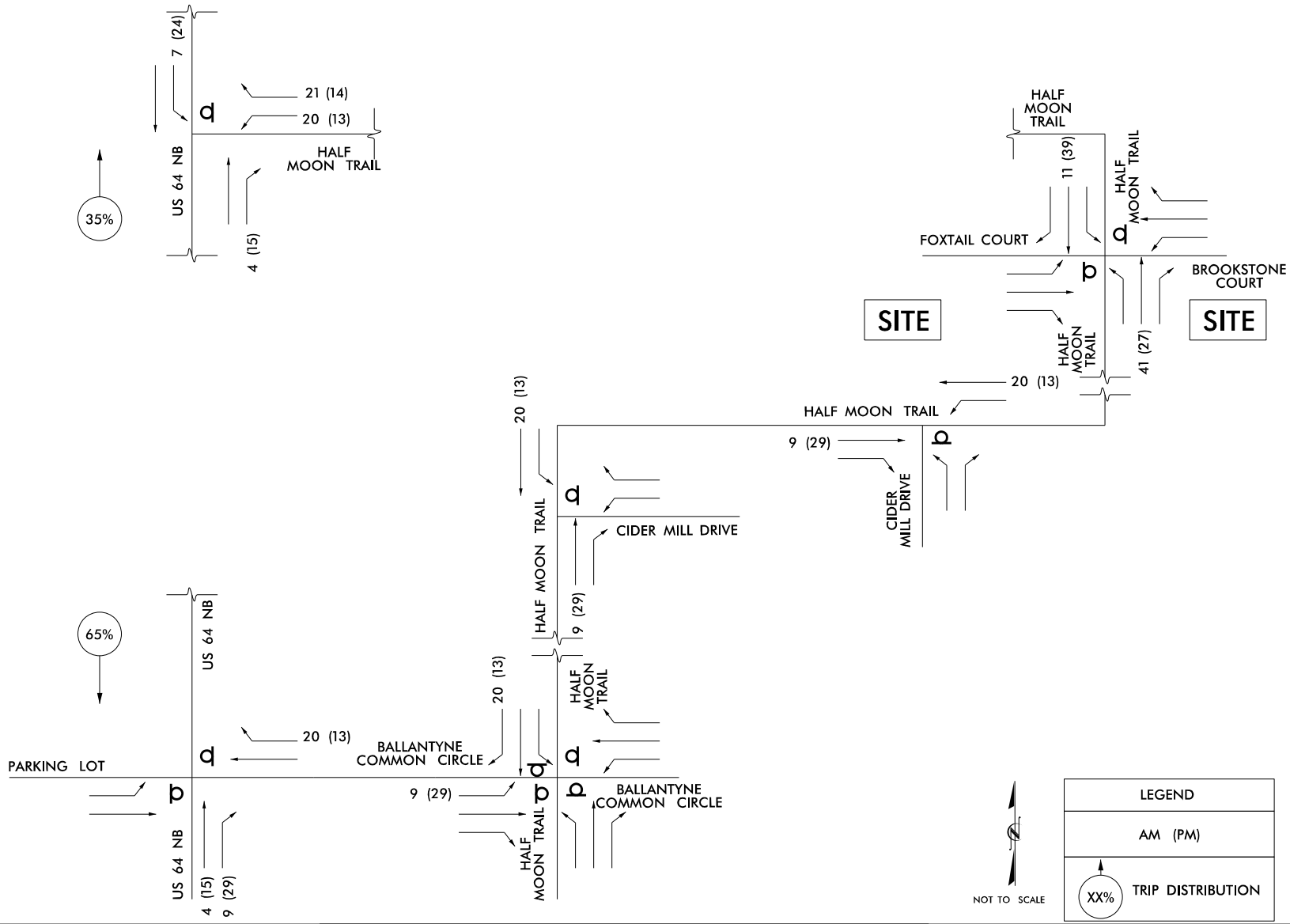
TABLE 2
Half Moon Trail Site Trip Generation

Land Use	AM Peak Hour		PM Peak Hour		
	IN	OUT	IN	OUT	Daily Traffic
107 Single Family Detached Dwelling Units (ITE Land Use 210)	20	61	68	40	1,107

The directionality of traffic along US 64 was examined to determine the anticipated traffic distribution of the proposed Half Moon Trail residential development. Shown in Figure 9 is the Site Development Peak Hour Traffic Volumes.

Adding the Site Development Peak Hour Traffic Volumes shown in Figure 9 to the Year 2024 Background Peak Hour Traffic Volumes shown in Figure 8 will yield the Year 2024 Build Peak Hour Traffic Volumes and are shown in Figure 10.

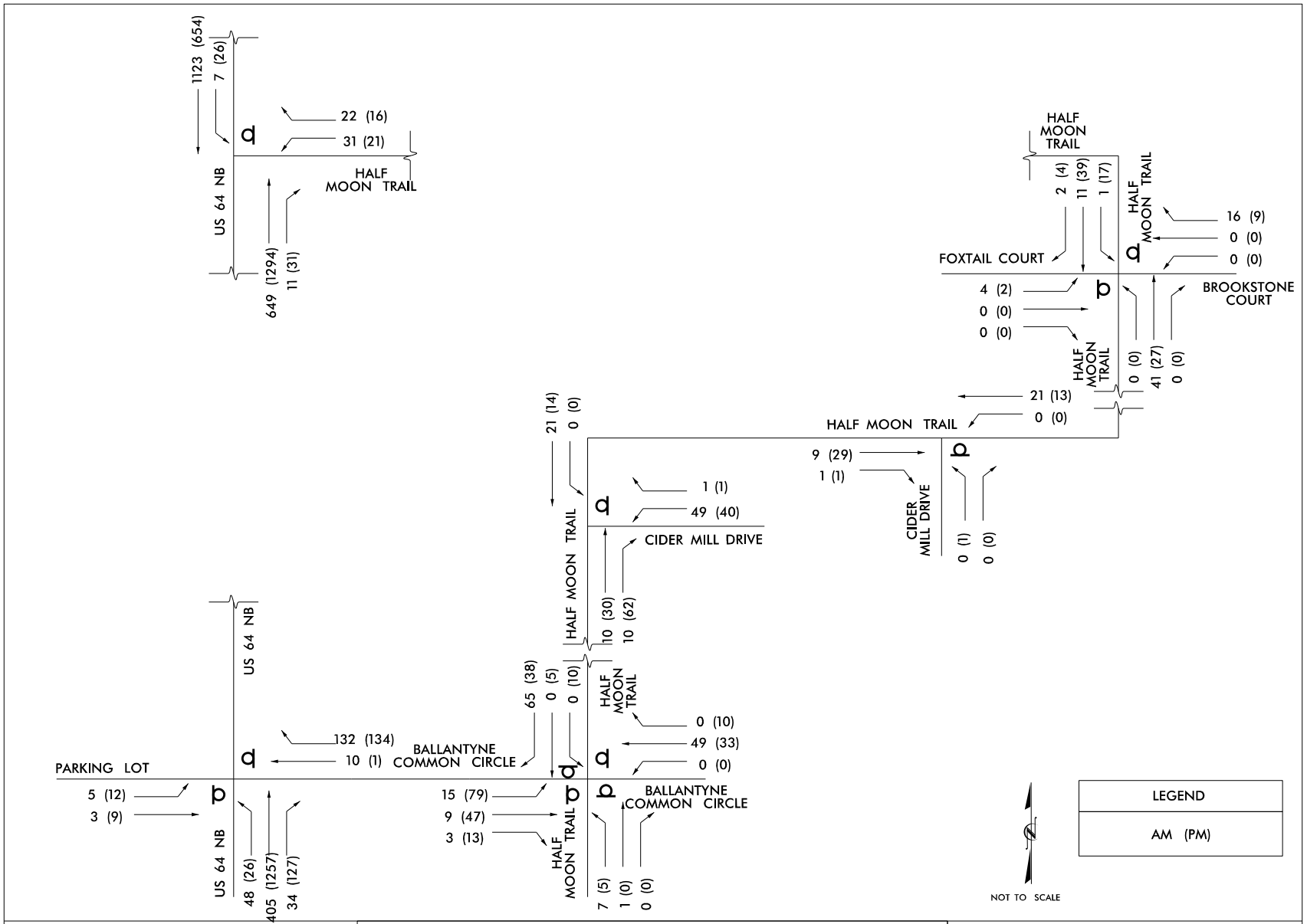
In addition to the off-site intersection analyses, traffic projections were developed at the five (5) site access points on Half Moon Trail. Shown in Figure 11 are the Year 2024 Build Peak Hour Traffic Volumes at the Site Driveways.



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FIGURE 9
SITE DEVELOPMENT PEAK HOUR TRAFFIC VOLUMES – OFF SITE INTERSECTIONS

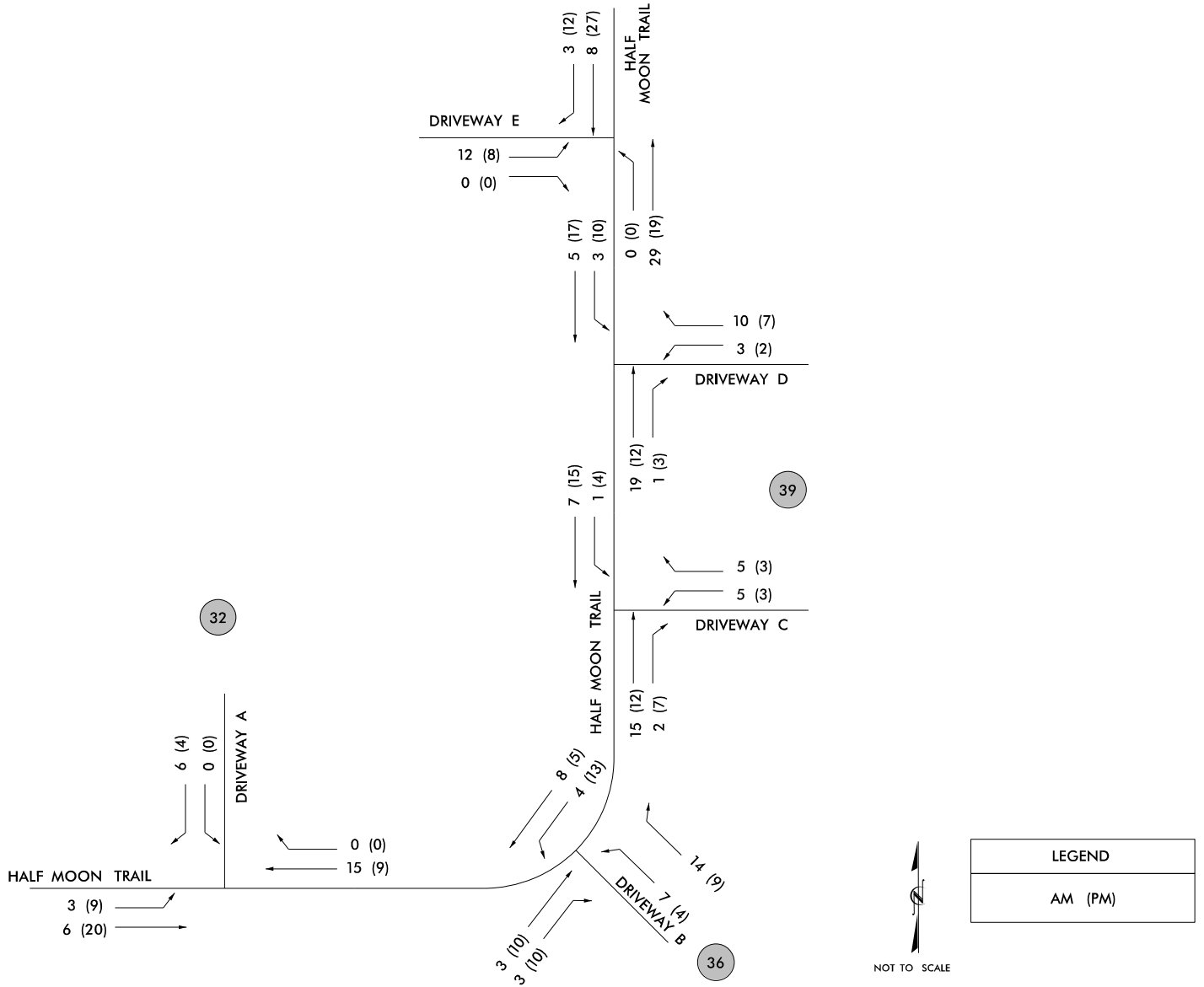
HALF MOON TRAIL
HENDERSONVILLE, NC



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FIGURE 10
YEAR 2024 BUILD PEAK HOUR TRAFFIC VOLUMES

HALF MOON TRAIL
HENDERSONVILLE, NC



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FIGURE 11
YEAR 2024 BUILD PEAK HOUR TRAFFIC VOLUMES AT SITE DRIVEWAYS

HALF MOON TRAIL
HENDERSONVILLE, NC

5. Intersection Capacity Analyses

Intersection capacity analysis and queuing analyses were undertaken at each of the offsite study intersections using the Synchro 11 traffic analysis software. The results of the Existing, Background and Total traffic conditions is shown in Table 3. The complete Synchro reports are shown in Appendix D.

TABLE 3
Intersection Capacity Analyses – Offsite Intersections

Intersections	Existing Adjusted Traffic		Background Traffic		Build Traffic	
	AM LOS (Delay)	PM LOS (Delay)	AM LOS (Delay)	PM LOS (Delay)	AM LOS (Delay)	PM LOS (Delay)
US 64 at Half Moon Trail						
-WB Left/Right	D (28.1)	E (46.7)	D (29.7)	F (51.0)	D (27.9)	F (62.5)
-SB Left	A (Min)	A (Min)	A (Min)	A (Min)	A (9.1)	B (13.2)
-Overall Int.	A (0.2)	A (0.2)	A (0.2)	A (0.3)	A (0.9)	A (1.3)
Half Moon Trail at Foxtail/Brookstone						
- **EB Left/Th/Rt**	A (Min)	A (Min)	A (Min)	A (Min)	A (9.0)	A (9.3)
- **WB Left/Th/Rt**	A (Min)	A (Min)	A (Min)	A (Min)	A (8.6)	A (8.5)
- **NB Left**	A (Min)	A (Min)	A (Min)	A (Min)	A (Min)	A (Min)
- **SB Left**	A (Min)	A (Min)	A (Min)	A (Min)	A (7.3)	A (2.1)
- **Overall Int.**	A (Min)	A (Min)	A (Min)	A (Min)	A (2.4)	A (2.3)
Half Moon Trail at Cider Mill Dr (E)						
- **NB Left/Right**	A (Min)	A (8.5)	A (Min)	A (8.5)	A (Min)	A (8.7)
- **WB Left**	A (Min)	A (Min)	A (Min)	A (0.0)	A (Min)	A (Min)
- **Overall Int.**	A (Min)	A (2.8)	A (Min)	A (2.8)	A (Min)	A (0.2)
Half Moon Trail at Cider Mill Dr (W)						
- **WB Left/Right**	A (8.8)	A (8.9)	A (8.8)	A (8.9)	A (8.9)	A (9.1)
- **SB Left**	A (Min)	A (Min)	A (Min)	A (Min)	A (Min)	A (Min)
- **Overall Int.**	A (7.1)	A (3.5)	A (7.1)	A (3.5)	A (4.9)	A (2.5)
Half Moon Trail at Ballantyne Common						
- **EB Lt/Th/Rt**	A (7.2)	A (7.7)	A (7.2)	A (7.7)	A (7.3)	A (8.0)
- **WB Lt/Th/Rt**	A (7.3)	A (7.2)	A (7.3)	A (7.2)	A (7.4)	A (7.3)
- **NB Lt/Th/Rt**	A (7.4)	A (7.6)	A (7.4)	A (7.6)	A (7.4)	A (7.7)
- **SB Lt/Th/Rt**	A (6.7)	A (7.2)	A (6.7)	A (7.2)	A (6.8)	A (7.2)
- **Overall Int.**	A (7.1)	A (7.5)	A (7.1)	A (7.5)	A (7.1)	A (7.7)
US 64 at Ballantyne Common/Access						
- **EB Left/Th**	B (12.6)	D (29.9)	B (12.8)	D (31.8)	B (13.0)	D (34.2)
- **WB Th/Right**	B (10.8)	C (18.2)	B (10.9)	C (18.9)	B (11.1)	C (19.9)
- **Overall Int.**	A (2.4)	A (1.9)	A (2.4)	A (2.0)	A (2.6)	A (2.2)

Note: Delays are in seconds Min = Minimal Delay

A review of Table 3 indicates that all offsite intersections will operate at an overall acceptable level of service with the proposed Half Moon Trail Residential Development. However, the westbound Half Moon Trail approach level of service at US 64 operates at LOS "E" during the PM peak hour for Existing Adjusted Traffic. In addition, the westbound Half Moon Trail approach at US 64 will operate at a LOS

"F" during both the Background Traffic Condition (without the proposed site traffic) and the Build Traffic Condition (with the proposed site traffic) during the PM peak hour.

When the minor street approach (Half Moon Trail) at an unsignalized intersection operates at a poor level of service, there are typically two potential mitigation measures to explore. First, the widening of the minor street approach should be examined. The westbound Half Moon Trail approach to US 64 is a single lane serving both left and right turn traffic movements to US 64. The widening of Half Moon Trail to provide separate left and right turn movements was analyzed during the failing PM peak period for the Year 2024 Build Condition. The results of the analyses revealed that the delay to the westbound Half Moon Trail approach to US 64 would be reduced from an average delay of 62.5 seconds to an average delay of 56.3 seconds. However, the level of service remained at "F". The Synchro capacity analysis sheet with the widening of the Half Moon Trail approach to 2 lanes is shown at end of the Build Synchro Analysis Reports.

The second mitigation measure to explore would be the installation of a traffic signal at the US 64 at Half Moon Trail intersection. In order for a traffic signal to be installed at the US 64 at Half Moon Trail intersection, the North Carolina Department of Transportation (NCDOT) would need to approve the installation of the traffic signal. The NCDOT follows the criteria set forth in the Manual on Uniform Traffic Control Devices (MUTCD). At a minimum, at least one of the nine traffic signal warrants would need to be satisfied before the NCDOT would even consider the installation of a traffic signal. For roadways such as US 64 with a speed limit of 50 MPH, the absolute minimum minor street approach volume for any of the 8-hour traffic signal warrants is **53 vehicles per hour for at least 8 hours of the day**. Under the Year 2024 Build Traffic Condition, the Half Moon Trail approach to US 64 has 53 vehicles during the AM peak hour and 37 vehicles during the PM peak hour.

For residential communities, the outbound AM peak hour would represent the highest traffic flow. The westbound Half Moon Trail approach to US 64 would be the peak outbound direction in this case. Since 53 westbound Half Moon Trail vehicles are projected during the AM peak hour, this represents the peak flow and the other hours of the day would be less than 53 vehicles. Since only one of the required 8 hours would be met, the intersection would not meet any of the 8-hour traffic signal warrants.

It should be noted that the **Four-Hour Traffic Signal Warrant has a minimum of 60 vehicles per hour for a minimum of 4 hours** along the minor street approach to be satisfied. In addition, the **Peak Hour Traffic Signal Warrant has a minimum of 75 vehicles per hour for a minimum of 1 hour** along the minor street approach to be satisfied. Therefore, the Year 2024 Build Traffic Conditions would not satisfy either the Four-Hour Traffic Signal Warrant or the Peak Hour Traffic Signal Warrant. However, typically, the NCDOT would also require one or more of the 8-hour Traffic Signal Warrants to be satisfied before considering the installation of a traffic signal.

The NCDOT does consider crash activity at an intersection for the installation of a traffic signal. In order to satisfy the Crash Experience Warrant, a total of five (5) crashes must have occurred over a 12-month period that are the type of crashes susceptible for correction by a traffic signal. Based upon the reported crash activity at the US 64 at Half Moon Trail over the past 5 years (2016-2020), there have been zero (0) reported accidents at this intersection.

Therefore, the installation of traffic signal at the US 64 at Half Moon Trail does not appear to be a viable option to lessen the delays along westbound Half Moon Trail. Also, the widening of the Half Moon Trail approach to provide separate left and right turn lanes will not improve the level of service with the proposed development and will only lessen the average delay by 6.2 seconds per vehicle during the PM peak hour. It should be noted that even with the proposed build-out of the Half Moon Trail Residential Development, there are only 37 westbound Half Moon Trail vehicles projected during the PM peak hour (that includes the existing traffic from the Wolf Chase development). This equates to an average of 1 vehicle arriving along westbound Half Moon Trail at US 64 every 1.5 minutes during the PM peak hour. Since the projected Year 2024 Build Traffic condition delay along westbound Half Moon Trail was estimated at 62.5 seconds per vehicle, there typically would not be more than 1 vehicle queued to exit Half Moon Trail to US 64 when another vehicle arrives.

In addition to the offsite intersection evaluations, the operations of the proposed Site Access Driveways on Half Moon Trail were analyzed. Shown in Table 4 below are the intersection capacity analyses for the Year 2024 Build Peak Hour Traffic Volumes at the Site Driveways.

TABLE 4
Intersection Capacity Analyses – Site Access Driveways

Intersections	Build Traffic	
	AM LOS (Delay)	PM LOS (Delay)
Half Moon Trail at Driveway A		
-EB Left	A (7.3)	A (7.2)
-SB Left/Right	A (8.4)	A (8.4)
-Overall Int.	A (2.4)	A (2.4)
Half Moon Trail at Driveway B		
- **WB Left**	A (7.2)	A (7.3)
- **NB Left/Right**	A (8.5)	A (8.5)
- **Overall Int.**	A (5.3)	A (3.1)
Half Moon Trail at Driveway C		
- **WB Left/Right**	A (8.6)	A (8.6)
- **SB Left**	A (7.3)	A (7.3)
- **Overall Int.**	A (2.7)	A (1.8)
Half Moon Trail at Driveway D		
- **WB Left/Right**	A (8.5)	A (8.5)
- **SB Left**	A (7.3)	A (7.3)
- **Overall Int.**	A (3.2)	A (2.9)
Half Moon Trail at Driveway E		
- **EB Left/Right**	A (8.8)	A (8.8)
- **NB Left**	A (Min)	A (Min)
- **Overall Int.**	A (2.0)	A (1.1)

A review of Table 4 indicates that all Site Access intersections will operate at a level of service "A" during both the AM and PM peak hours.

Traffic queuing was all also analyzed at all offsite study intersections. The traffic queuing along each lane group approach is shown in Table 5.

TABLE 5
Intersection Traffic Queuing – Offsite Intersections

Intersections	Existing Adjusted Traffic		Background Traffic		Build Traffic		
	AM Max Queue	PM Max Queue	AM Max Queue	PM Max Queue	AM Max Queue	PM Max Queue	Available Storage
US 64 at Half Moon Trail							
SB Left US 64	0 feet	0 feet	0 feet	0 feet	0 feet	31 feet	500 feet
WB Half Moon Trail	27 feet	27 feet	27 feet	27 feet	70 feet	90 feet	Continuous
Half Moon Trail at Foxtail/Brookstone							
EB Foxtail Court	31 feet	0 feet	31 feet	0 feet	30 feet	31 feet	Continuous
WB Brookstone Ct	31 feet	26 feet	31 feet	31 feet	31 feet	31 feet	Continuous
SB Half Moon Trail	0 feet	0 feet	0 feet	0 feet	0 feet	0 feet	Continuous
Half Moon Trail at Cider Mill Drive (E)							
NB Cider Mill Dr	0 feet	0 feet	0 feet	0 feet	0 feet	29 feet	Continuous
Half Moon Trail at Cider Mill Drive (W)							
WB Cider Mill Dr	31 feet	68 feet	31 feet	68 feet	31 feet	68 feet	Continuous
Half Moon Trail at Ballantyne Common							
EB Ballantyne	31 feet	31 feet	31 feet	54 feet	31 feet	31 feet	Continuous
WB Ballantyne	31 feet	31 feet	31 feet	54 feet	54 feet	31 feet	Continuous
NB Half Moon Trail	31 feet	0 feet	31 feet	0 feet	31 feet	31 feet	Continuous
SB Half Moon Trail	31 feet	68 feet	31 feet	68 feet	31 feet	31 feet	Continuous
US 64 at Ballantyne Common/Access							
EB Access Road	0 feet	27 feet	0 feet	26 feet	26 feet	68 feet	Continuous
WB Ballantyne	30 feet	101 feet	30 feet	92 feet	66 feet	95 feet	Continuous

Note: Continuous signifies that there is not a dedicated storage length.

Based upon an examination of the traffic queueing at all offsite study intersections, it was determined that the existing lane geometrics are adequate to support the existing traffic and future traffic with the proposed Half Moon Trail residential development. Based upon the very low traffic volumes at the Site Access Driveways on Half Moon Trail, traffic queuing is expected to minimal at the site driveway intersections (with maximum traffic queues of 2 vehicles or less). The details of the queuing at the Site Driveways are also shown in Appendix D.

6. Results, Recommendations, and Conclusions

Study Purpose

Wetherill Engineering has prepared this Traffic Impact Analysis to quantify the impact the proposed Half Moon Trail residential development will have on the surrounding road network in the City of Hendersonville. The subject site is located on undeveloped land between adjacent subdivisions on Half Moon Trail. Access to the development is proposed via five (5) driveways along Half Moon Trail. At the completion of this project, 107 Single Family Detached Dwelling Units will be constructed. Full completion of the project is expected by the year 2024.

Study Criteria/Methodology

This Traffic Impact Analysis has been prepared in accordance with requirements outlined in the NCDOT Congestion Management Capacity Analysis Guidelines. Trip generation for the Half Moon Trail residential development is based on data contained in the Institute of Transportation Engineers (ITE) Trip Generation (10th Edition). Intersection capacity analyses were conducted at all study intersections using the Synchro Version 11 software and the Highway Capacity Manual, 6th Edition.

Summary of Findings and Recommendations

These analyses showed that all study intersections are currently operating at an overall acceptable level of service and will continue to operate at an overall acceptable level of service with the completion of the Half Moon Trail residential development. Although the overall intersection level of service of the US 64 at Half Moon Trail is acceptable, the westbound Half Moon Trail approach to US 64 is currently operating at LOS “E” during the PM peak hour, and is projected to operate at a LOS “F” by the Year 2024 with or without the proposed Half Moon Trail Residential Development. A potential mitigation measure was explored at the US 64 at Half Moon Trail intersection that included the widening of the westbound Half Moon Trail approach to provide separate left and right turn lanes. However, this improvement was shown to have minimal delay benefits and would not improve the level of service of the westbound Half Moon Trail approach.

The possibility of the installation of a traffic signal at the US 64 at Half Moon Trail intersection was also explored. However, based upon the examination of the AM and PM peak hour traffic data and the crash history at the intersection, the intersection does not meet MUTCD Traffic Signal Warrants. Therefore, the NCDOT would likely not consider a traffic signal at this location.

Even though the westbound Half Moon Trail approach at US 64 is projected to operate with delays of approximately 1 minute per vehicle during the PM peak hour for the Year 2024 Build Condition, the traffic demand for this approach is relatively light with a vehicle expected to arrive at US 64 along westbound Half Moon Trail every 1.5 minute during the PM peak hour. Therefore, even with no improvements at the US 64/Half Moon Trail intersection, there typically would not be more than 1

other vehicle queued at US 64. Thus, improvements to offsite intersections do not appear to be justified (either by physical roadway widening or the installation of a traffic signal).

Finally, the site plan for the proposed development is at the concept stage. After a more refined site plan is developed, sight distance evaluations at the driveways along Half Moon Trail should be conducted to ensure that the available sight lines meet NCDOT and City of Hendersonville criteria. The relatively low projected peak period traffic volumes at the site driveways on Half Moon Trail do not require turn lanes at the intersections to meet adequate levels of service.

APPENDIX A

WETHERILL ENGINEERING RESPONSE MEMORANDUM TO TIA REVIEW COMMENTS

MEMORANDUM

TO: Tyler Murrow – City of Hendersonville

FROM: Lawrence Green, PE, PTOE

DATE: September 23, 2021

SUBJECT: Responses to Half Moon Trail TIA Review

The purpose of this memorandum is to prepare a response to the comments prepared by Kimley Horn in their letter dated September 9, 2021 on the TIA prepared by Wetherill Engineering for the Half Moon Trail Residential Development dated August 10, 2021. Listed below are the comments and Wetherill Engineering's response.

Comment #1:

- On Page 6, the text states that "the site will be developed with up to 118 dwelling units" and notes that only 112 dwelling units are proposed.

Response #1:

- The development size is now 107 Single Family Detached Dwelling Units and will be revised in the report.

Comment #2:

- The Conceptual Master Plan provided in Figure 1 specifies a permitted density of 10 units per acre. At 33.65 acres, the proposed site is permitted for up to 337 dwelling units, which is double the specified number. The "Site Information" block on the Conceptual Master Plan should be updated to reflect the correct maximum density of single-family detached dwelling units, or the text should be updated to clarify what is meant by "the site will be developed with up to 118 dwelling units".

Response #2:

- The development size will be limited to 107 Single Family Detached Dwelling Units and will be noted as such in the report.

Comment #3:

- Intersection turning movement counts were collected on Tuesday, June 15th, after the last day of classes for Henderson County Public Schools. However, the text does not acknowledge the potential implications of collecting traffic counts while school is not in session. Considering the proximity of North Henderson High School and Apple Valley Middle School to the proposed site, further justification should be provided for using data collected while school was not in session. The potential impact of COVID-19 on travel patterns is not addressed in the TIA. At a minimum, justification should be provided for using the collected traffic counts without adjustment.

Response #3:

- Wetherill Engineering contacted NCDOT for guidance on this issue. There was no local data available to determine the difference between school-time traffic counts and summer time traffic counts. However, NCDOT did have a state-wide model that indicated that May traffic conditions were 5% higher than June traffic conditions. Therefore, a 5% adjustment factor to the traffic counts collected on June 15, 2021 was utilized to reflect traffic conditions when schools were in session. In addition, the NCDOT has indicated that traffic volumes have returned to close to normal conditions but did not have the specific traffic data to justify their opinion. Therefore, no further adjustment to June 15, 2021 traffic counts other than the 5% increase will be utilized in the updated traffic report.

Comment #4:

- No caption/title is provided for Figure 1. In Figure 4 (Existing AM & PM Peak Hour Traffic Volumes): "Cedar Mill Drive" should read "Cider Mill Drive". Based on the collected traffic count data, the westbound left- and right-turn volumes are flipped at the intersection of Half Moon Trail with Ballantyne Common Circle (i.e., 9 PM peak hour eastbound right-turn movements should be shown instead of 9 eastbound left turn movements). Based on the collected traffic count data, the arrow diagrams should be updated to show zero eastbound right-turn movements (PM peak hour) and one westbound through movement (AM peak hour) at the intersection of Half Moon Trail with Cider Mill Drive (East). Based on the collected traffic count data, the arrow diagrams should be updated to show one southbound through movement during the AM and PM peak hours at the intersection of Half Moon Trail with Cider Mill Drive (West).

Response #4:

- The typographical errors will be corrected in the report.

Comment #5:

- The opening line of this section states that the "project is anticipated to having a build-out year…" but instead should read that the "project is anticipated to have a build-out year…".

Response #5:

- Editorial comment addressed.

Comment #6:

- Generic references to NCDOT traffic data are made. Consider updating the text to specify the NCDOT AADT station ID referenced in the development of a background growth rate. Based on existing peak hour traffic volumes and the proposed 1% background growth rate, the northbound through volume growth at the intersection of US 64/Chimney Rock Road with Ballantyne Common Circle should be 7 and 23 vehicles per hour during the AM and PM peak hours, respectively. It is typical practice to apply the chosen background growth rate to all turning movement volumes within the TIA study area (i.e., not just the through volumes on the major adjacent roadway). Application of the selected growth rate only to through volumes on US 64/Chimney Rock Road appears reasonable, in this case; however, justification for the proposed background traffic volume development methodology should be provided in the report text. In Figure 7 (2023 Background Peak Hour Traffic Volumes): "Cedar Mill Drive" should read "Cider Mill Drive". Based on the

collected traffic count data, the westbound left- and right-turn volumes are flipped at the intersection of Half Moon Trail with Ballantyne Common Circle (i.e., 9 PM peak hour eastbound right-turn movements should be shown instead of 9 eastbound left turn movements). Based on the collected traffic count data, the arrow diagrams should be updated to show zero eastbound right-turn movements (PM peak hour) and one westbound through movement (AM peak hour) at the intersection of Half Moon Trail with Cider Mill Drive (East). Based on the collected traffic count data, the arrow diagrams should be updated to show one southbound through movement during the AM and PM peak hours at the intersection of Half Moon Trail with Cider Mill Drive (West).

Response #6:

- NCDOT count station now referenced in report. Other typographical errors corrected in the report.

Comment #7:

- The phrase "Total Traffic Conditions" should be revised to read "Build Traffic Conditions" in all cases. In Table 2, "ITE Land Use 252" should be revised to read "ITE Land Use 210". The projected 1,211 daily trips do not meet the NCDOT minimum threshold that defines the need for a TIA, as stated within the report text. However, the minimum threshold of 1,000 daily trips defined by the City of Hendersonville Zoning Ordinance is met. The TIA report text should be updated to note this distinction and make it clear that the subject study was required, not just completed for the City's reference. Though not explicitly shown in the TIA, 50% of the traffic volume assigned to southbound US 64/Chimney Rock Road makes a westbound right-turn movement at the intersection with Ballantyne Common Circle, then completes a U-turn to the north. Based on the proposed site location and layout, trips bound for southbound US 64/Chimney Rock Road may be more likely to execute a westbound left-turn movement at the full-movement intersection with Half Moon Trail. Consider providing a supplement to Figure 8 (Site Development Peak Hour Traffic Volumes) that shows the proposed trip assignment percentages by turning movement, including that at the U-turn location on northbound US 64/Chimney Rock Road to the north of Ballantyne Common Circle. Provide further justification for the selected trip assignment within the report text and update the capacity analysis, if necessary. In Figure 9 (2023 Total Peak Hour Traffic Volumes): "Cedar Mill Drive" should read "Cider Mill Drive". Based on the collected traffic count data, the westbound left- and right-turn volumes are flipped at the intersection of Half Moon Trail with Ballantyne Common Circle (i.e., 9 PM peak hour eastbound right-turn movements should be shown instead of 9 eastbound left turn movements). Based on the collected traffic count data, the arrow diagrams should be updated to show zero eastbound right-turn movements (PM peak hour) and 22 westbound through movements (AM peak hour) at the intersection of Half Moon Trail with Cider Mill Drive (East). Based on the collected traffic count data, the arrow diagrams should be updated to show 22 and 15 southbound through movements during the AM and PM peak hours, respectively, at the intersection of Half Moon Trail with Cider Mill Drive (West).

Response #7:

- Editorial comments addressed and typographical errors corrected. Statement added to report acknowledging City of Hendersonville minimum threshold for conducting TIA is met. The U-turn movement on US 64 is at an intersection not part of the scoped study and therefore, changes are not necessary.

Comment #8:

- The results presented in Table 3 are reflective of the "Lanes, Volumes, Timings" report in Synchro 11 software. However, NCDOT and City of Hendersonville guidelines specify that analyses should be conducted based on the procedures contained within the "most recent release of the Highway Capacity Manual". The capacity analysis and accompanying Table 3 should be revised to show intersection delay and level of service based on the Highway Capacity Manual, 6th Edition methodology for stop-controlled intersections. This change is likely to have a substantial impact on the analysis results and TIA findings. Where results are presented for two-way stop-controlled intersections, only delay associated with the minor street approaches and major street left-turn movements should be presented in Table 3. Overall intersection delay is typically not reported for two-way stop-controlled intersections. Per NCDOT guidelines, the maximum queue length from SimTraffic outputs should be reported in Table 4 instead of the 95th percentile queue length.

Response #8:

- Analyses results will be modified to reflect the delay and level of service as outlined in the Highway Capacity Manual, 6th Edition for stop-controlled intersections. Queue reports will be modified to reflect maximum queues.

Comment #9:

- The City of Hendersonville Zoning Ordinance states that "all access points, regardless of the classification of the roadway facility the access points connect to, shall follow the North Carolina Department of Transportation's most current Policy on Street and Driveway Access to NC Highways". Capacity analysis results are not presented for any of the five proposed access points on Half Moon Trail. Auxiliary turn lane warrants, intersection sight distance, and pedestrian/bicycle considerations were not addressed in the TIA. Justification for the exclusion of these key analysis elements should be provided within the report text. Otherwise, additional analyses should be conducted for the five proposed access points on Half Moon Trail, and the TIA should be updated accordingly.

Response #9:

- Capacity analyses for the site access points will be added to the report with any turn lane recommendations.

APPENDIX B

EXISTING TRAFFIC COUNT DATA

TRUE DIRECTION

TRAFFIC SERVICES,INC

236-1 Grandview Dr, Sneads

919-749-3979 truedirectiontraffic@gmail.com

Count Number: SITE 1

County: HENDERSON

City: HENDERSONVILLE

Division: 14

Location: US 64 AND BALLANTYNE COMMONS

Location Type: 4-LEG

Count Type: TURNING MOVEMENT NO CLASSIFICATION

Count Start Date: 6/15/21

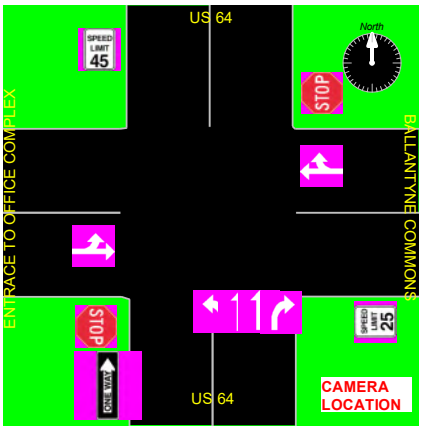
Time: 6:00AM-9:00AM AND 4:00PM-7:00PM

Video Time Used: 6:00AM-9:00AM AND 4:00PM-7:00PM (06-15)

Total Volume: 4,906

Weather: SUNNY

1. School in Session: No
2. Pedestrians Observed During Count: Yes
3. Disabled Pedestrians Present: No
4. Counted By: MICHAEL JOHNSON
5. Data Processor: MICHAEL JOHNSON
6. Signal Inventory: N/A
7. Intersection Controlled By:STOP SIGN
8. Data Collection Method: Jamar DB-400 Electronic Count Board
9. Equipment Operating Properly: Yes
10. Area Lighting: Yes
11. Construction Present: No
12. Traffic Problems Observed: No
    If Yes Describe:





LOCATION OF SITE 1

Westbound Approach



Looking Back Westbound



Westbound Approach:

Stop Sign Within 300':Yes

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Northbound Approach



Looking Back Northbound



Northbound Approach:

Stop Sign Within 300':Yes

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Eastbound Approach



Looking Back Eastbound



Eastbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

TRUE DIRECTION TRAFFIC SERVICES, INC.

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SNEADS FERRY NC 28460
TRUEDIRECTIONTRAFFIC@GMAIL.COM
919-749-3979
MICHAEL JOHNSON

US 64 AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 1
Site Code : SITE 1
Start Date : 6/15/2021
Page No : 1

Groups Printed- ALL VEHICLES

	US 64 SOUTHBOUND					BALLANTYNE COMMONS WESTBOUND					US 64 NORTHBOUND					ENTRACE TO OFFICE COMPLEX EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	1	8	0	9	0	25	1	0	26	0	1	0	0	1	36
06:15 AM	0	0	0	0	0	0	0	10	0	10	0	20	0	0	20	0	1	0	0	1	31
06:30 AM	0	0	0	0	0	0	1	15	0	16	1	39	1	0	41	1	1	0	0	2	59
06:45 AM	0	0	0	0	0	0	1	14	0	15	1	52	1	1	55	0	0	0	1	1	71
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07:15 AM	0	0	0	0	0	0	2	16	0	18	9	85	4	0	98	0	1	0	0	1	117
07:30 AM	0	0	0	0	0	0	1	23	1	25	15	89	6	0	110	1	0	0	0	1	136
07:45 AM	0	0	0	0	0	0	3	25	1	29	14	90	5	0	109	1	1	0	0	2	140
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11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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US 64 AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 1
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Page No : 2

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Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
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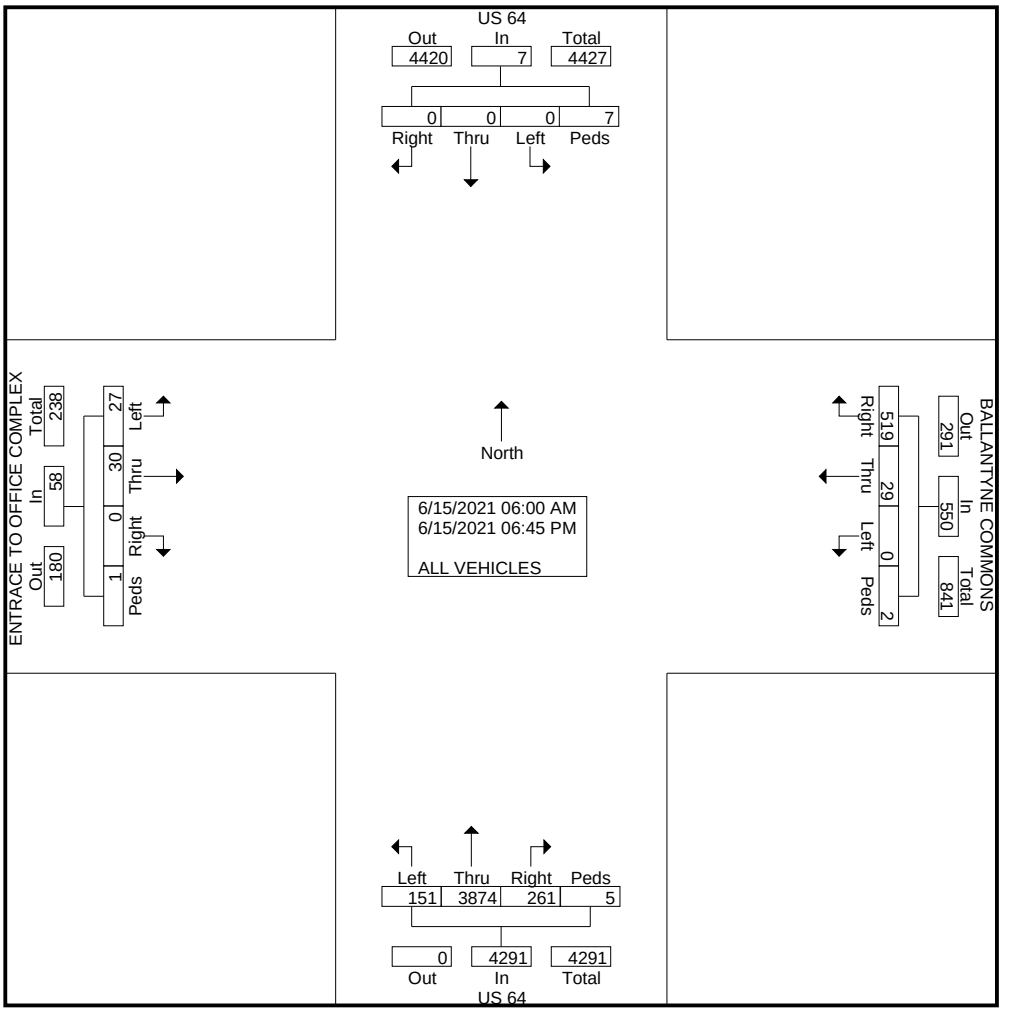
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06:45 PM	0	0	0	0	0	0	2	19	0	21	3	222	11	0	236	2	2	0	0	4	261
Total	0	0	0	0	0	0	5	87	0	92	16	952	62	0	1030	5	6	0	0	11	1133
Grand Total	0	0	0	7	7	0	29	519	2	550	151	3874	261	5	4291	27	30	0	1	58	4906
Apprch %	0	0	0	100		0	5.3	94.4	0.4		3.5	90.3	6.1	0.1		46.6	51.7	0	1.7		
Total %	0	0	0	0.1	0.1	0	0.6	10.6	0	11.2	3.1	79	5.3	0.1	87.5	0.6	0.6	0	0	1.2	



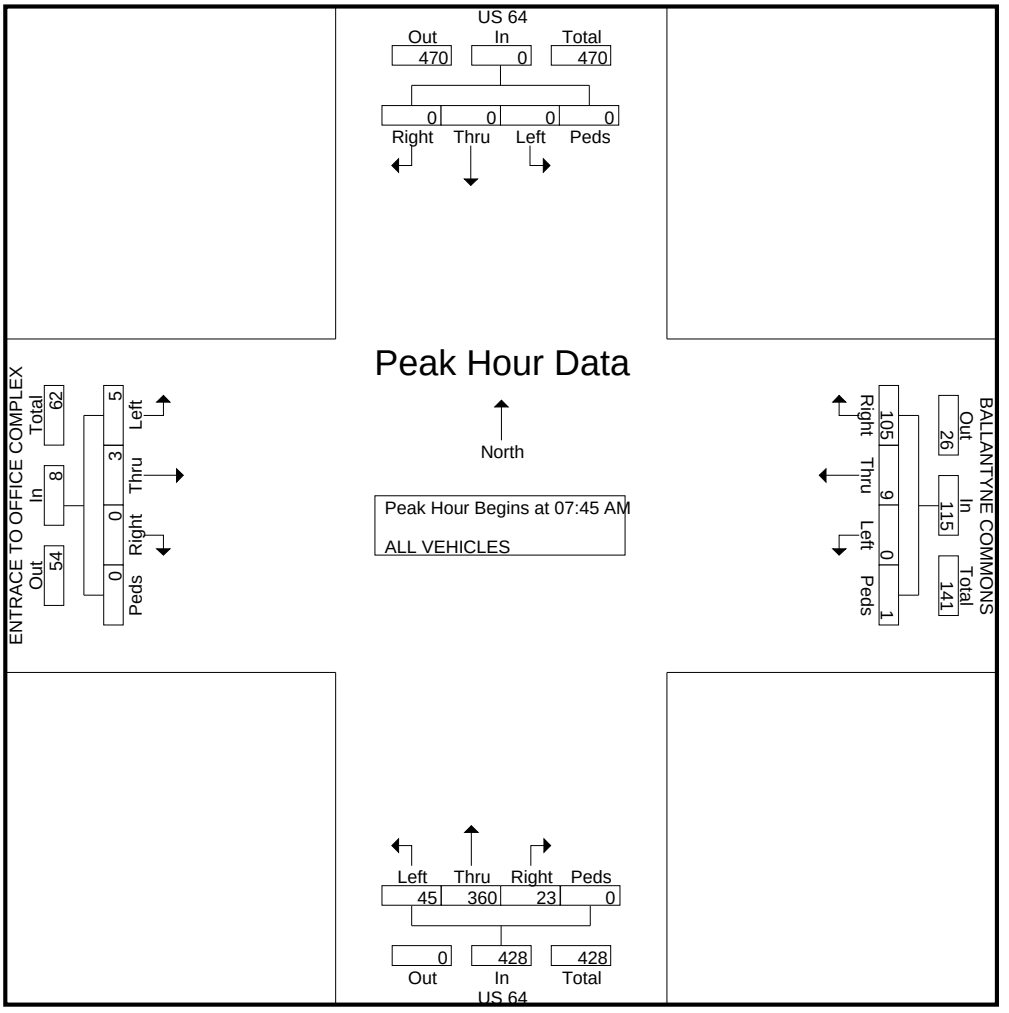
TRUE DIRECTION TRAFFIC SERVICES, INC.

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919-749-3979
MICHAEL JOHNSON

US 64 AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 1
Site Code : SITE 1
Start Date : 6/15/2021
Page No : 4

	US 64 SOUTHBOUND					BALLANTYNE COMMONS WESTBOUND					US 64 NORTHBOUND					ENTRACE TO OFFICE COMPLEX EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	**3**	25	**1**	29	**14**	90	5	0	109	1	**1**	0	0	2	140
08:00 AM	0	0	0	0	0	0	2	**30**	0	**32**	12	92	6	0	**110**	1	1	0	0	2	**144**
08:15 AM	0	0	0	0	0	0	1	28	0	29	10	85	4	0	99	1	0	0	0	1	129
08:30 AM	0	0	0	0	0	0	3	22	0	25	9	**93**	**8**	0	110	**2**	1	0	0	**3**	138
Total Volume	0	0	0	0	0	0	9	105	1	115	45	360	23	0	428	5	3	0	0	8	551
% App. Total	0	0	0	0		0	7.8	91.3	0.9		10.5	84.1	5.4	0		62.5	37.5	0	0		
PHF	.000	.000	.000	.000	.000	.000	.750	.875	.250	.898	.804	.968	.719	.000	.973	.625	.750	.000	.000	.667	.957

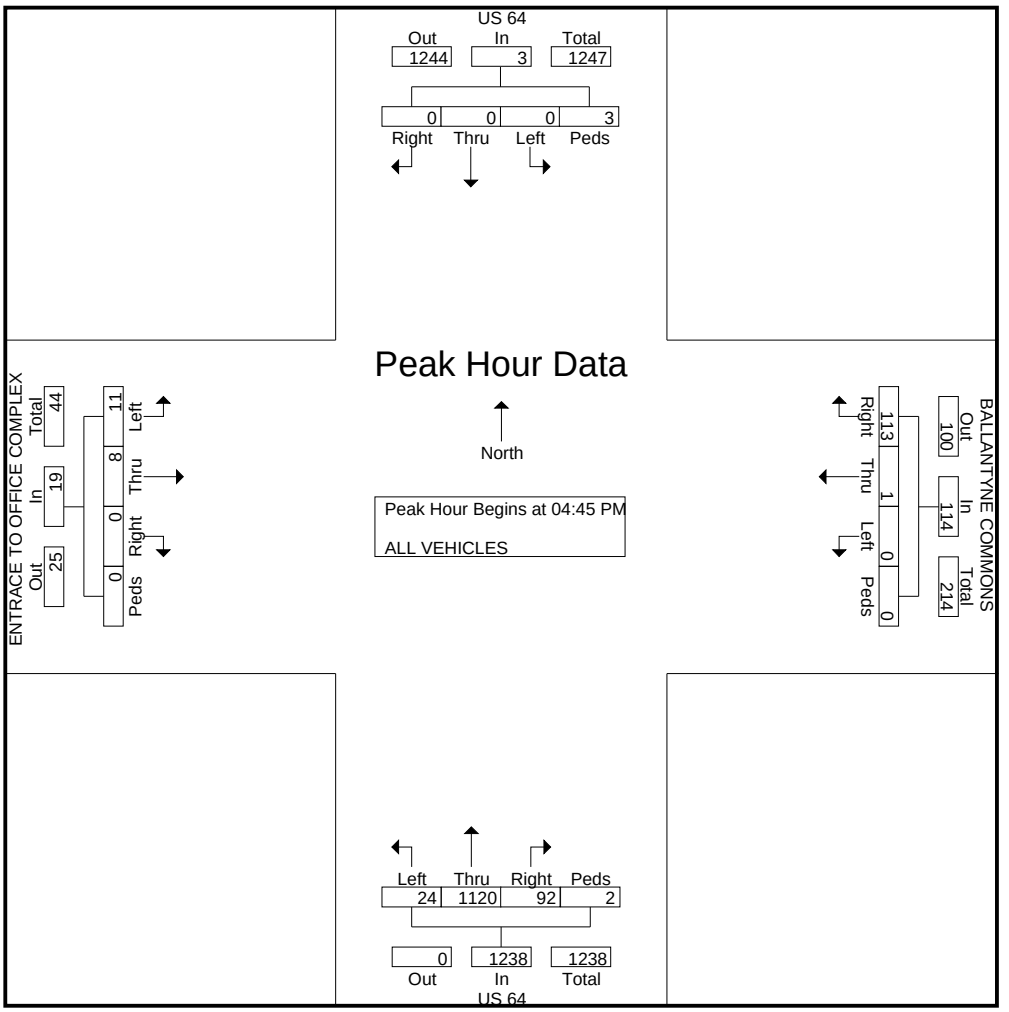


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US 64 AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 1
Site Code : SITE 1
Start Date : 6/15/2021
Page No : 5

	US 64 SOUTHBOUND					BALLANTYNE COMMONS WESTBOUND					US 64 NORTHBOUND					ENTRACE TO OFFICE COMPLEX EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	**3**	**3**	0	0	22	0	22	**8**	268	21	**1**	298	3	0	0	0	3	326
05:00 PM	0	0	0	0	0	0	0	24	0	24	5	289	26	1	**321**	2	**3**	0	0	5	350
05:15 PM	0	0	0	0	0	0	**1**	**39**	0	**40**	4	**295**	15	0	314	1	2	0	0	3	**357**
05:30 PM	0	0	0	0	0	0	0	28	0	28	7	268	**30**	0	305	**5**	3	0	0	**8**	341
Total Volume	0	0	0	3	3	0	1	113	0	114	24	1120	92	2	1238	11	8	0	0	19	1374
% App. Total	0	0	0	100		0	0.9	99.1	0		1.9	90.5	7.4	0.2		57.9	42.1	0	0		
PHF	.000	.000	.000	.250	.250	.000	.250	.724	.000	.713	.750	.949	.767	.500	.964	.550	.667	.000	.000	.594	.962



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File Name : SITE 1
Site Code : SITE 1
Start Date : 6/15/2021
Page No : 6

Westbound BALLANTYNE COMMS



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File Name : SITE 1
Site Code : SITE 1
Start Date : 6/15/2021
Page No : 7

Northbound US 64



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Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 1
Site Code : SITE 1
Start Date : 6/15/2021
Page No : 8

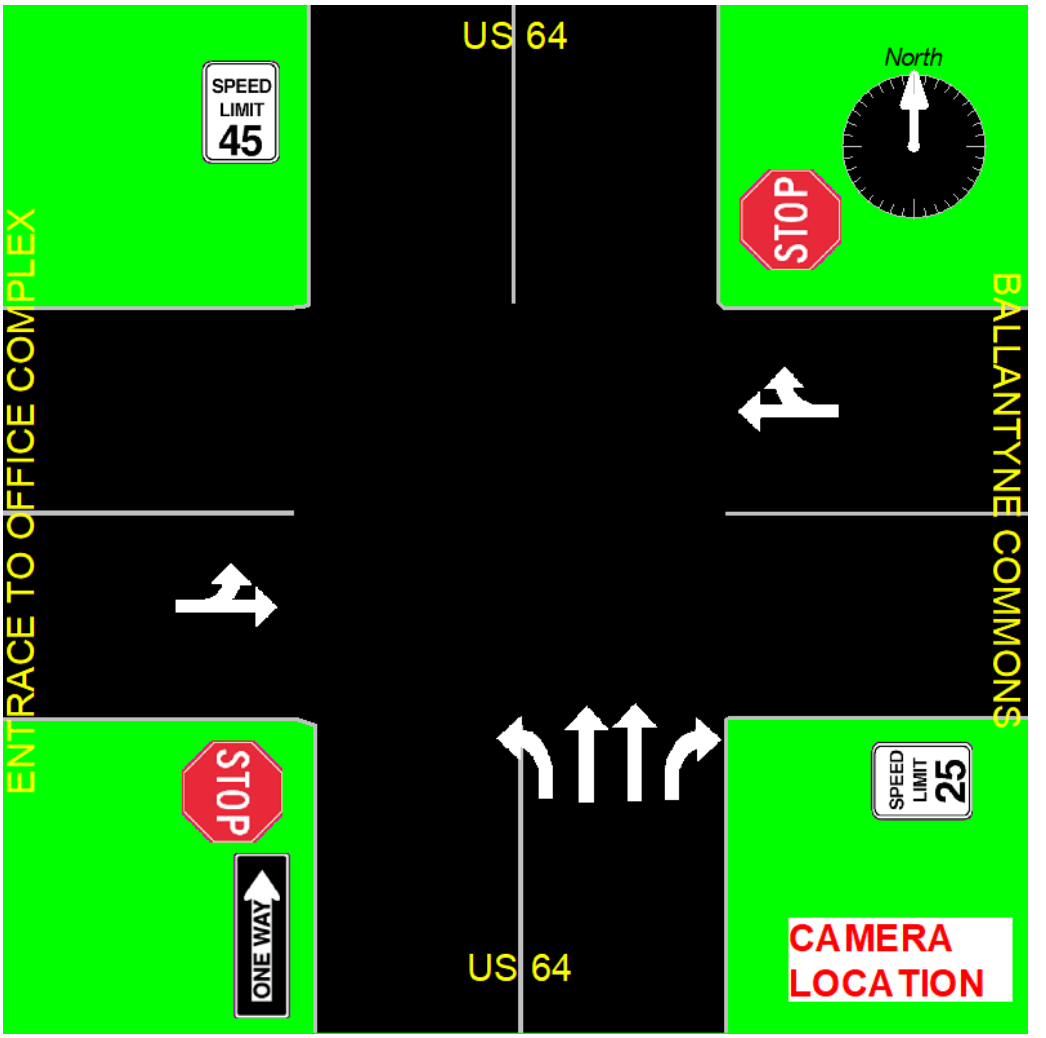
Eastbound ENTRANCE TO OFFICE



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236-1 GRANDVIEW DR.
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US 64 AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
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File Name : SITE 1
Site Code : SITE 1
Start Date : 6/15/2021
Page No : 9



TRUE DIRECTION

TRAFFIC SERVICES,INC

236-1 Grandview Dr, Sneads

919-749-3979 truedirectiontraffic@gmail.com

Count Number: SITE 2

County: HENDERSON

City: HENDERSONVILLE

Division: 14

Location: HALFMOON TRAIL AND BALLANTYNE COMMNS CIRCLE

Location Type: 4-LEG

Count Type: TURNING MOVEMENT NO CLASSIFICATION

Count Start Date: 6/15/21

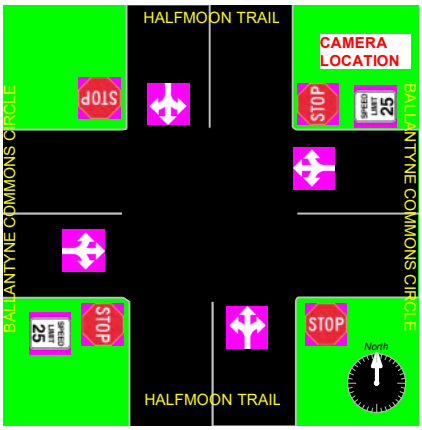
Time: 6:00AM-9:00AM AND 4:00PM-7:00PM

Video Time Used: 6:00AM-9:00AM AND 4:00PM-7:00PM (06-15)

Total Volume: 814

Weather: SUNNY NO RAIN

1. School in Session: No
2. Pedestrians Observed During Count: Yes
3. Disabled Pedestrians Present: No
4. Counted By: MICHAEL JOHNSON
5. Data Processor: MICHAEL JOHNSON
6. Signal Inventory: N/A
7. Intersection Controlled By:STOP SIGN
8. Data Collection Method: Jamar DB-400 Electronic Count Board
9. Equipment Operating Properly: Yes
10. Area Lighting: Yes
11. Construction Present: No
12. Traffic Problems Observed: No
    If Yes Describe:





LOCATION OF SITE 2

Southbound Approach



Looking Back Southbound



Southbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Westbound Approach



Looking Back Westbound



Westbound Approach:

Stop Sign Within 300':Yes

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Northbound Approach



Looking Back Northbound



Northbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Eastbound Approach



Looking Back Eastbound



Eastbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

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HALFMOON TRAIL AND BALLANTYNE COMMONS
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Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 6/15/2021
Page No : 1

Groups Printed- ALL VEHICLES

	HALFMOON TRAIL SOUTHBOUND					BALLANTYNE COMMONS CIRCLE WESTBOUND					HALFMOON TRAIL NORTHBOUND					BALLANTYNE COMMONS CIRCLE EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	4	0	4	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	5
06:15 AM	0	0	10	0	10	0	4	0	0	4	0	0	0	0	0	1	0	0	0	1	15
06:30 AM	0	0	6	1	7	0	12	1	0	13	0	0	0	0	0	1	2	0	0	3	23
06:45 AM	0	0	6	0	6	0	11	0	0	11	4	0	0	0	4	2	1	1	0	4	25
Total	0	0	26	1	27	0	28	1	0	29	4	0	0	0	4	4	3	1	0	8	68
07:00 AM	0	0	11	0	11	0	5	0	0	5	0	0	0	0	0	3	2	0	0	5	21
07:15 AM	0	0	10	3	13	0	16	0	1	17	0	0	0	1	1	0	1	1	1	3	34
07:30 AM	0	0	10	3	13	0	19	0	1	20	0	0	0	0	0	2	3	1	3	9	42
07:45 AM	0	0	9	0	9	0	6	0	0	6	5	1	0	1	7	2	1	0	2	5	27
Total	0	0	40	6	46	0	46	0	2	48	5	1	0	2	8	7	7	2	6	22	124
08:00 AM	0	0	13	1	14	0	5	0	2	7	2	0	0	0	2	2	3	1	1	7	30
08:15 AM	0	2	11	0	13	0	3	0	0	3	2	0	0	0	2	2	2	2	0	6	24
08:30 AM	0	1	8	0	9	0	3	0	0	3	1	0	0	0	1	3	3	2	0	8	21
08:45 AM	0	2	9	0	11	0	2	0	0	2	1	0	0	0	1	2	2	2	0	6	20
Total	0	5	41	1	47	0	13	0	2	15	6	0	0	0	6	9	10	7	1	27	95
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRUE DIRECTION TRAFFIC SERVICES, INC.

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MICHAEL JOHNSON

HALFMOON TRAIL AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 6/15/2021
Page No : 2

Groups Printed- ALL VEHICLES

	HALFMOON TRAIL SOUTHBOUND					BALLANTYNE COMMONS CIRCLE WESTBOUND					HALFMOON TRAIL NORTHBOUND					BALLANTYNE COMMONS CIRCLE EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	2	6	0	8	0	5	1	0	6	1	1	1	0	3	6	10	2	0	18	35
04:15 PM	0	0	8	1	9	0	6	1	0	7	1	1	0	0	2	7	9	1	1	18	36
04:30 PM	2	2	7	2	13	0	3	1	0	4	3	0	0	0	3	8	10	0	0	18	38
04:45 PM	1	0	6	0	7	0	7	0	0	7	0	0	0	2	2	9	11	5	2	27	43
Total	3	4	27	3	37	0	21	3	0	24	5	2	1	2	10	30	40	8	3	81	152
05:00 PM	4	0	4	0	8	0	8	0	0	8	0	0	0	1	1	9	19	4	1	33	50
05:15 PM	0	0	6	1	7	0	5	3	0	8	1	0	0	6	7	8	9	2	2	21	43
05:30 PM	5	3	6	3	17	0	7	3	2	12	1	0	0	0	1	17	9	3	0	29	59
05:45 PM	0	1	4	4	9	0	8	1	0	9	0	0	0	0	0	11	14	6	0	31	49
Total	9	4	20	8	41	0	28	7	2	37	2	0	0	7	9	45	51	15	3	114	201
06:00 PM	4	1	7	3	15	0	11	2	1	14	3	0	0	2	5	11	12	1	2	26	60
06:15 PM	0	1	3	0	4	0	8	0	0	8	2	0	1	1	4	11	6	2	0	19	35

TRUE DIRECTION TRAFFIC SERVICES, INC.

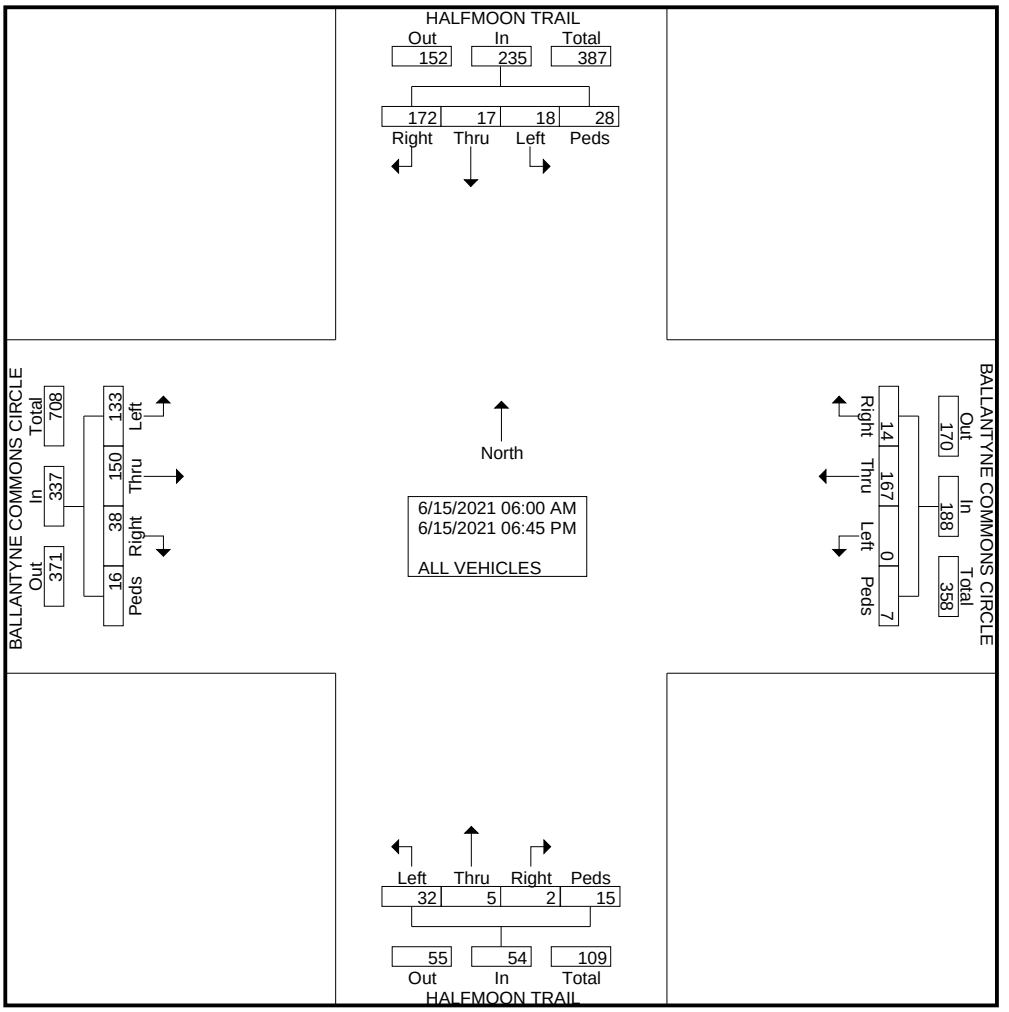
236-1 GRANDVIEW DR.
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MICHAEL JOHNSON

HALFMOON TRAIL AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 6/15/2021
Page No : 3

Groups Printed- ALL VEHICLES

	HALFMOON TRAIL SOUTHBOUND					BALLANTYNE COMMONS CIRCLE WESTBOUND					HALFMOON TRAIL NORTHBOUND					BALLANTYNE COMMONS CIRCLE EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:30 PM	2	1	5	5	13	0	6	0	0	6	2	2	0	1	5	7	12	1	1	21	45
06:45 PM	0	1	3	1	5	0	6	1	0	7	3	0	0	0	3	9	9	1	0	19	34
Total	6	4	18	9	37	0	31	3	1	35	10	2	1	4	17	38	39	5	3	85	174
Grand Total	18	17	172	28	235	0	167	14	7	188	32	5	2	15	54	133	150	38	16	337	814
Apprch %	7.7	7.2	73.2	11.9		0	88.8	7.4	3.7		59.3	9.3	3.7	27.8		39.5	44.5	11.3	4.7		
Total %	2.2	2.1	21.1	3.4	28.9	0	20.5	1.7	0.9	23.1	3.9	0.6	0.2	1.8	6.6	16.3	18.4	4.7	2	41.4	



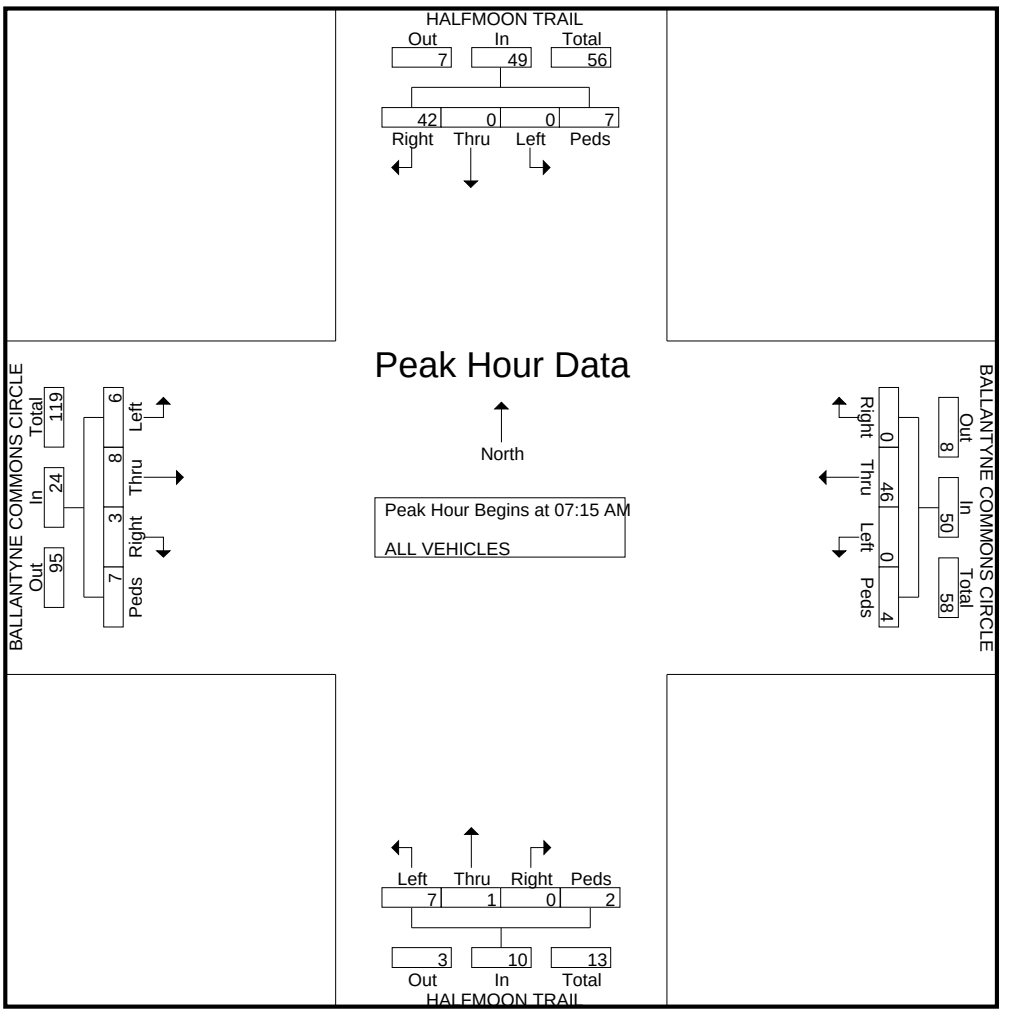
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File Name : SITE 2
Site Code : SITE 2
Start Date : 6/15/2021
Page No : 4

	HALFMOON TRAIL SOUTHBOUND					BALLANTYNE COMMONS CIRCLE WESTBOUND					HALFMOON TRAIL NORTHBOUND					BALLANTYNE COMMONS CIRCLE EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	10	**3**	13	0	16	0	1	17	0	0	0	**1**	1	0	1	**1**	1	3	34
07:30 AM	0	0	10	3	13	0	**19**	0	1	**20**	0	0	0	0	0	**2**	**3**	1	**3**	**9**	**42**
07:45 AM	0	0	9	0	9	0	6	0	0	6	**5**	**1**	0	1	**7**	2	1	0	2	5	27
08:00 AM	0	0	**13**	1	**14**	0	5	0	**2**	7	2	0	0	0	2	2	3	1	1	7	30
Total Volume	0	0	42	7	49	0	46	0	4	50	7	1	0	2	10	6	8	3	7	24	133
% App. Total	0	0	85.7	14.3		0	92	0	8		70	10	0	20		25	33.3	12.5	29.2		
PHF	.000	.000	.808	.583	.875	.000	.605	.000	.500	.625	.350	.250	.000	.500	.357	.750	.667	.750	.583	.667	.792

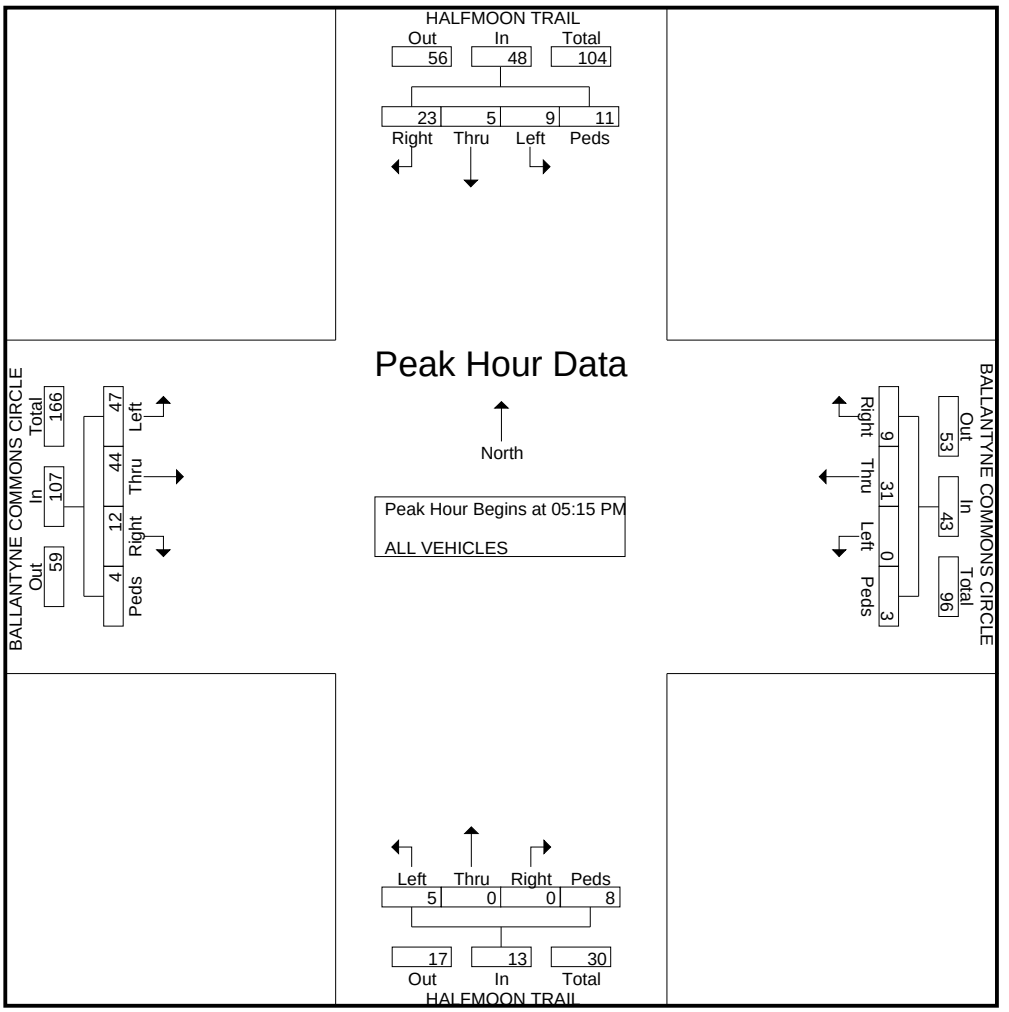


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MICHAEL JOHNSON

HALFMOON TRAIL AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 6/15/2021
Page No : 5

	HALFMOON TRAIL SOUTHBOUND					BALLANTYNE COMMONS CIRCLE WESTBOUND					HALFMOON TRAIL NORTHBOUND					BALLANTYNE COMMONS CIRCLE EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	0	0	6	1	7	0	5	**3**	0	8	1	0	0	**6**	**7**	8	9	2	**2**	21	43
05:30 PM	**5**	**3**	6	3	**17**	0	7	3	**2**	12	1	0	0	0	1	**17**	9	3	0	29	59
05:45 PM	0	1	4	**4**	9	0	8	1	0	9	0	0	0	0	0	11	**14**	**6**	0	**31**	49
06:00 PM	4	1	**7**	3	15	0	**11**	2	1	**14**	**3**	0	0	2	5	11	12	1	2	26	**60**
Total Volume	9	5	23	11	48	0	31	9	3	43	5	0	0	8	13	47	44	12	4	107	211
% App. Total	18.8	10.4	47.9	22.9		0	72.1	20.9	7		38.5	0	0	61.5		43.9	41.1	11.2	3.7		
PHF	.450	.417	.821	.688	.706	.000	.705	.750	.375	.768	.417	.000	.000	.333	.464	.691	.786	.500	.500	.863	.879



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File Name : SITE 2
Site Code : SITE 2
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Southbound HALFMOON TRAIL



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HALFMOON TRAIL AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
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File Name : SITE 2
Site Code : SITE 2
Start Date : 6/15/2021
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Westbound BALLANTYNE COMMONS



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HALFMOON TRAIL AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 6/15/2021
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Northbound HALFMOON TRAIL



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HALFMOON TRAIL AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 6/15/2021
Page No : 9

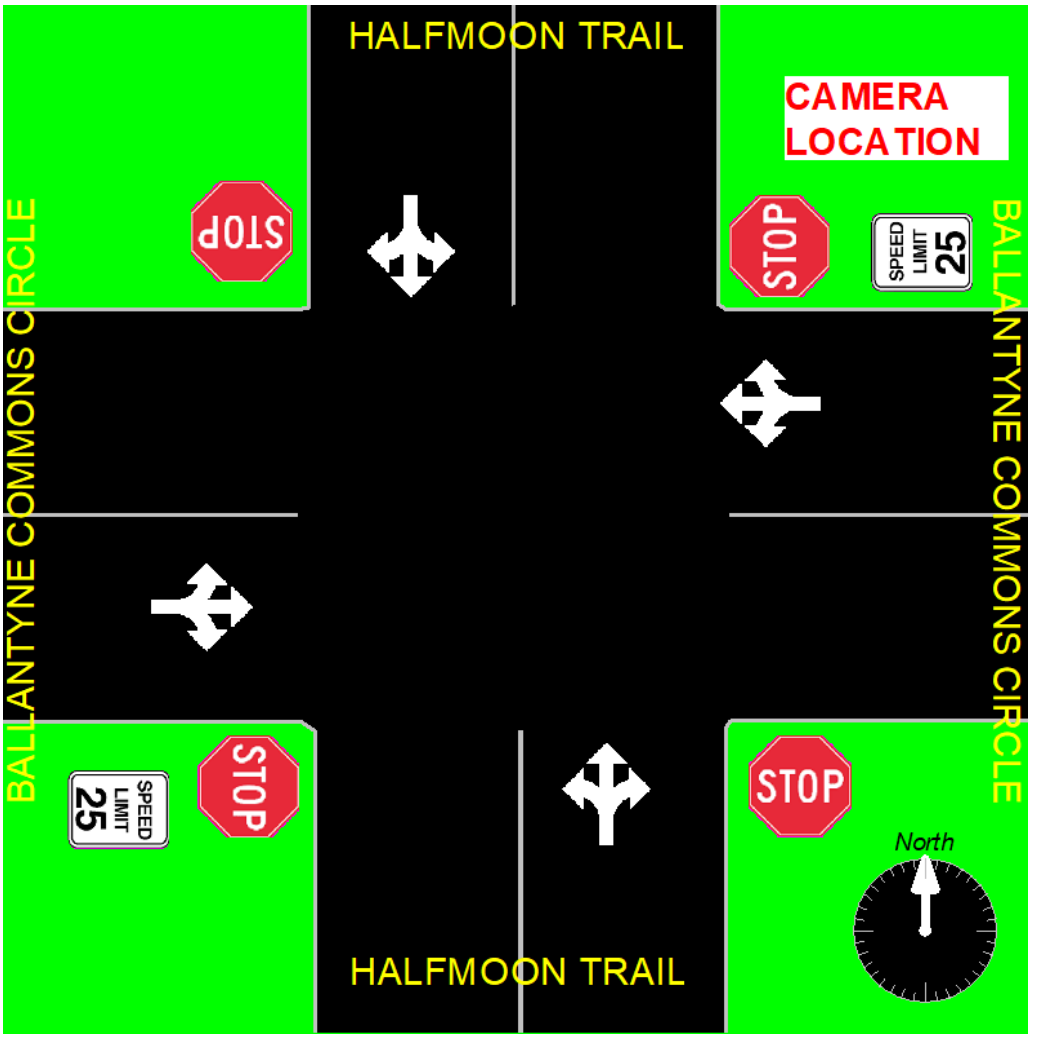
Eastbound BALLANTYNE COMMONS



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HALFMOON TRAIL AND BALLANTYNE COMMONS
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
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File Name : SITE 2
Site Code : SITE 2
Start Date : 6/15/2021
Page No : 10



TRUE DIRECTION

TRAFFIC SERVICES,INC

236-1 Grandview Dr, Sneads

919-749-3979 truedirectiontraffic@gmail.com

Count Number: SITE 3

County: HENDERSON

City: HENDERSONVILLE

Division: 14

Location: HALFMOON TRAIL AND CIDER MILL RD.

Location Type: 3-LEG

Count Type: TURNING MOVEMENT NO CLASSIFICATION

Count Start Date: 6/15/21

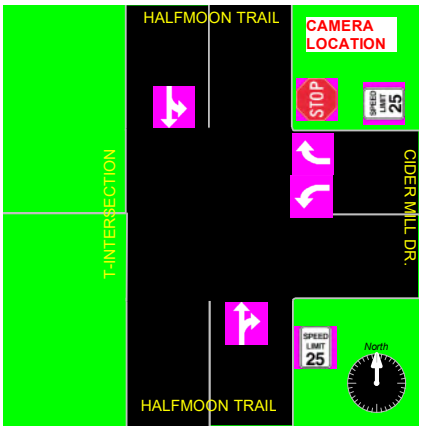
Time: 6:00AM-9:00AM AND 4:00PM-7:00PM

Video Time Used: 6:00AM-9:00AM AND 4:00PM-7:00PM (06-15)

Total Volume: 402

Weather: SUNNY NO RAIN

1. School in Session: No
2. Pedestrians Observed During Count: No
3. Disabled Pedestrians Present: No
4. Counted By: MICHAEL JOHNSON
5. Data Processor: MICHAEL JOHNSON
6. Signal Inventory: N/A
7. Intersection Controlled By:STOP SIGN
8. Data Collection Method: Jamar DB-400 Electronic Count Board
9. Equipment Operating Properly: Yes
10. Area Lighting: Yes
11. Construction Present: No
12. Traffic Problems Observed: No
    If Yes Describe:





OCATION OF SITE 3

Southbound Approach



Looking Back Southbound



Southbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Westbound Approach



Looking Back Westbound



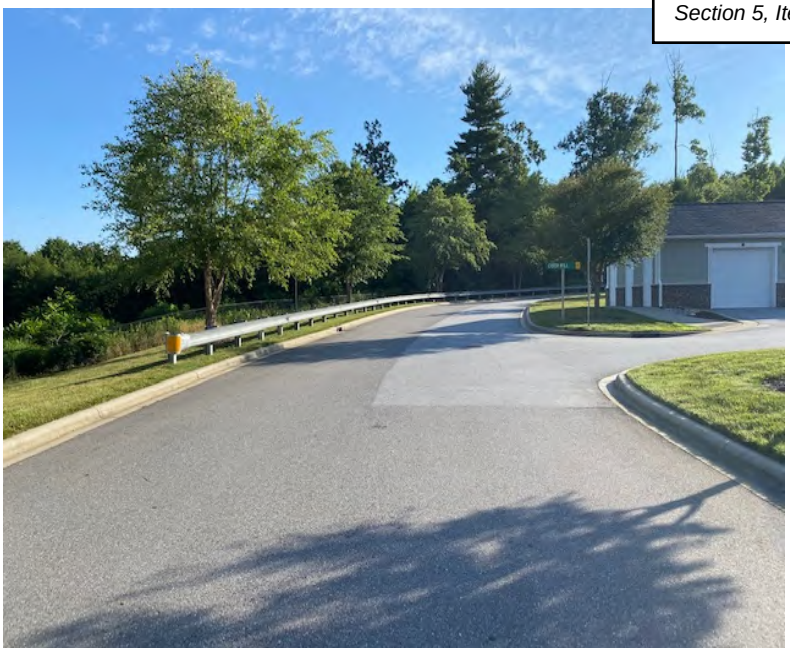
Westbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Northbound Approach



Looking Back Northbound



Northbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

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File Name : SITE 3
Site Code : SITE 3
Start Date : 6/15/2021
Page No : 1

Groups Printed- ALL VEHICLES

	HALFMOON TRAIL SOUTHBOUND					CIDER MILL DR. WESTBOUND					HALFMOON TRAIL NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
06:15 AM	0	0	0	0	0	10	0	0	0	10	0	1	1	0	2	0	0	0	0	0	12
06:30 AM	0	1	0	0	1	6	0	1	0	7	0	0	2	0	2	0	0	0	0	0	10
06:45 AM	0	0	0	1	1	6	0	0	0	6	0	0	2	1	3	0	0	0	0	0	10
Total	0	1	0	1	2	26	0	1	0	27	0	1	5	1	7	0	0	0	0	0	36
07:00 AM	0	1	0	0	1	11	0	0	0	11	0	0	3	0	3	0	0	0	0	0	15
07:15 AM	0	0	0	0	0	10	0	0	1	11	0	1	0	0	1	0	0	0	0	0	12
07:30 AM	0	1	0	0	1	10	0	0	0	10	0	0	2	0	2	0	0	0	0	0	13
07:45 AM	0	0	0	0	0	9	0	0	0	9	0	0	3	0	3	0	0	0	0	0	12
Total	0	2	0	0	2	40	0	0	1	41	0	1	8	0	9	0	0	0	0	0	52
08:00 AM	0	1	0	1	2	13	0	1	0	14	0	1	2	0	3	0	0	0	0	0	19
08:15 AM	0	0	0	0	0	13	0	0	0	13	0	0	2	2	4	0	0	0	0	0	17
08:30 AM	0	0	0	2	2	9	0	0	0	9	0	0	3	0	3	0	0	0	0	0	14
08:45 AM	0	0	0	0	0	11	0	0	2	13	0	0	2	0	2	0	0	0	0	0	15
Total	0	1	0	3	4	46	0	1	2	49	0	1	9	2	12	0	0	0	0	0	65
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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HAFMOON TARIL AND CIDER MILL DR.
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 3
Site Code : SITE 3
Start Date : 6/15/2021
Page No : 2

Groups Printed- ALL VEHICLES

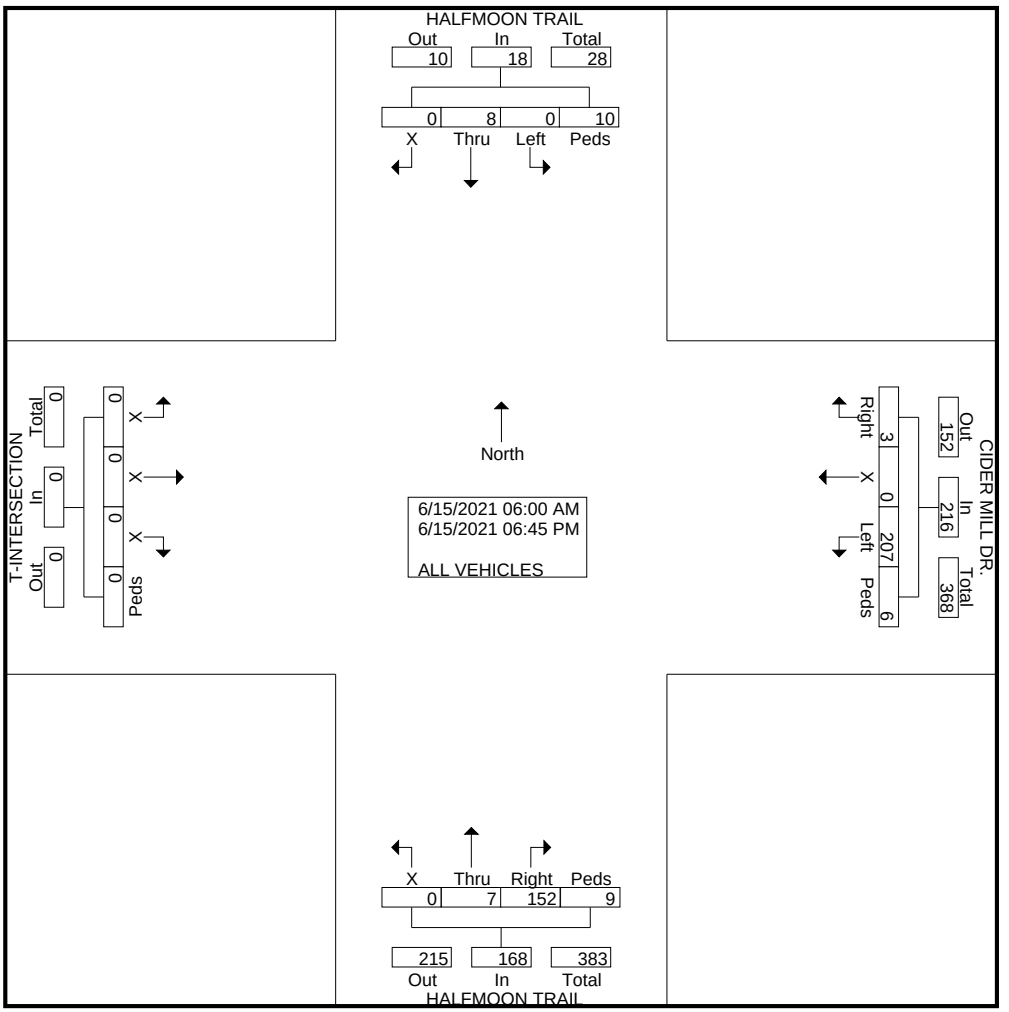
	HALFMOON TRAIL SOUTHBOUND					CIDER MILL DR. WESTBOUND					HALFMOON TRAIL NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	1	0	0	1	8	0	0	0	8	0	0	8	0	8	0	0	0	0	0	17
04:15 PM	0	0	0	0	0	8	0	0	0	8	0	0	9	0	9	0	0	0	0	0	17
04:30 PM	0	1	0	0	1	11	0	0	0	11	0	0	9	0	9	0	0	0	0	0	21
04:45 PM	0	0	0	2	2	7	0	0	0	7	0	0	9	0	9	0	0	0	0	0	18
Total	0	2	0	2	4	34	0	0	0	34	0	0	35	0	35	0	0	0	0	0	73
05:00 PM	0	0	0	0	0	8	0	0	1	9	0	0	9	0	9	0	0	0	0	0	18
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06:00 PM	0	0	0	2	2	12	0	0	0	12	0	0	13	1	14	0	0	0	0	0	28
06:15 PM	0	1	0	2	3	4	0	0	0	4	0	2	11	0	13	0	0	0	0	0	20
06:30 PM	0	0	0	0	0	8	0	0	0	8	0	0	9	3	12	0	0	0	0	0	20
06:45 PM	0	0	0	0	0	4	0	0	0	4	0	1	10	0	11	0	0	0	0	0	15
Total	0	1	0	4	5	28	0	0	0	28	0	3	43	4	50	0	0	0	0	0	83
Grand Total	0	8	0	10	18	207	0	3	6	216	0	7	152	9	168	0	0	0	0	0	402
Apprch %	0	44.4	0	55.6		95.8	0	1.4	2.8		0	4.2	90.5	5.4		0	0	0	0		
Total %	0	2	0	2.5	4.5	51.5	0	0.7	1.5	53.7	0	1.7	37.8	2.2	41.8	0	0	0	0	0	

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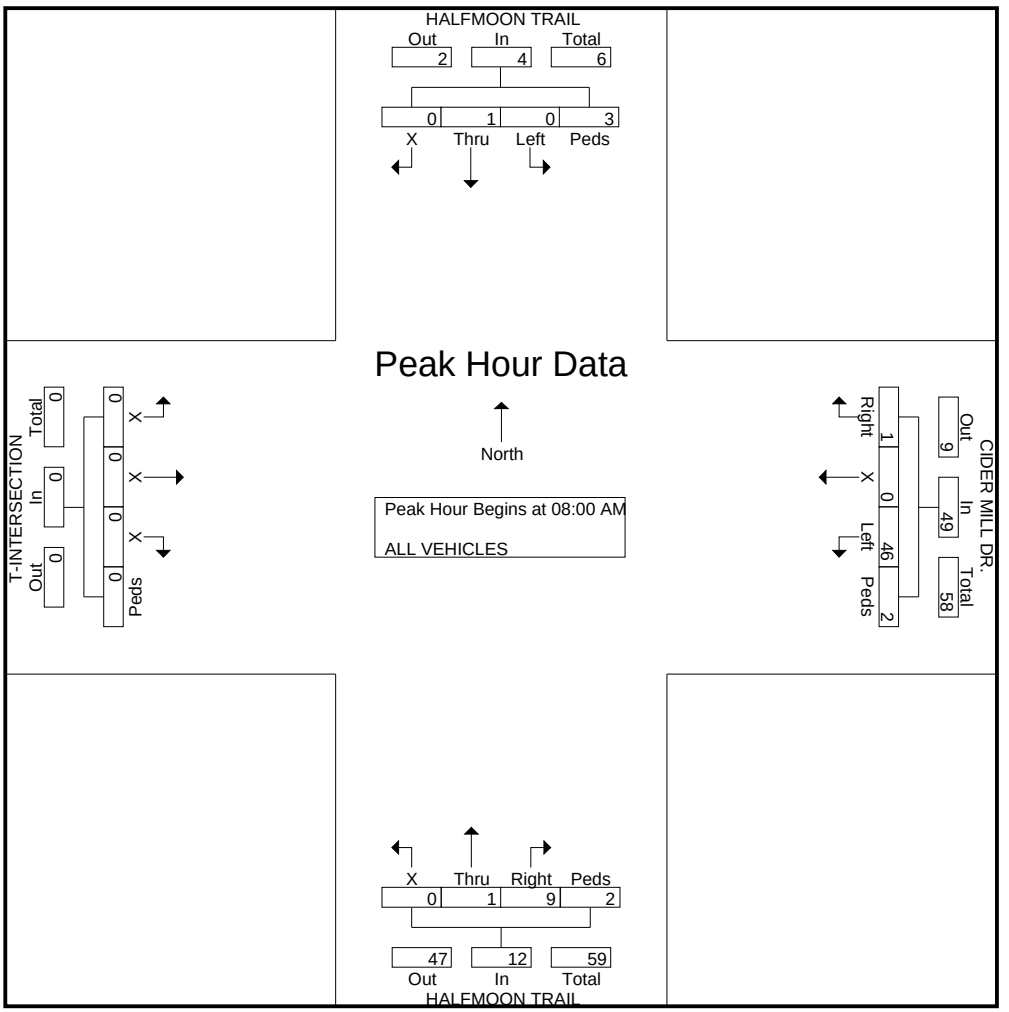
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File Name : SITE 3
Site Code : SITE 3
Start Date : 6/15/2021
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	HALFMOON TRAIL SOUTHBOUND					CIDER MILL DR. WESTBOUND					HALFMOON TRAIL NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	**1**	0	1	**2**	**13**	0	**1**	0	**14**	0	**1**	2	0	3	0	0	0	0	0	**19**
08:15 AM	0	0	0	0	0	13	0	0	0	13	0	0	2	**2**	**4**	0	0	0	0	0	17
08:30 AM	0	0	0	**2**	2	9	0	0	0	9	0	0	**3**	0	3	0	0	0	0	0	14
08:45 AM	0	0	0	0	0	11	0	0	**2**	13	0	0	2	0	2	0	0	0	0	0	15
Total Volume	0	1	0	3	4	46	0	1	2	49	0	1	9	2	12	0	0	0	0	0	65
% App. Total	0	25	0	75		93.9	0	2	4.1		0	8.3	75	16.7		0	0	0	0		
PHF	.000	.250	.000	.375	.500	.885	.000	.250	.250	.875	.000	.250	.750	.250	.750	.000	.000	.000	.000	.000	.855



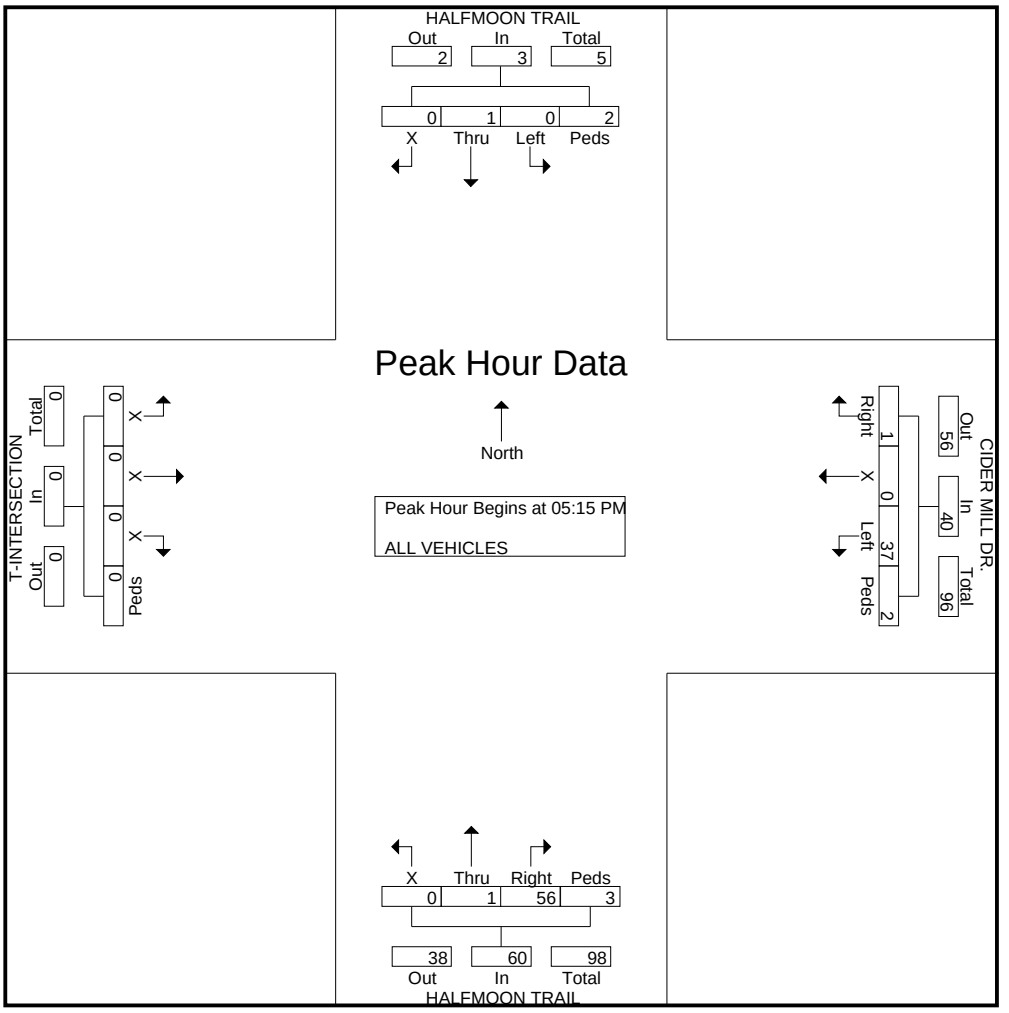
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File Name : SITE 3
Site Code : SITE 3
Start Date : 6/15/2021
Page No : 5

	HALFMOON TRAIL SOUTHBOUND					CIDER MILL DR. WESTBOUND					HALFMOON TRAIL NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	0	**1**	0	0	1	6	0	**1**	0	7	0	**1**	11	0	12	0	0	0	0	0	20
05:30 PM	0	0	0	0	0	**14**	0	0	0	**14**	0	0	**20**	**2**	**22**	0	0	0	0	0	**36**
05:45 PM	0	0	0	0	0	5	0	0	**2**	7	0	0	12	0	12	0	0	0	0	0	19
06:00 PM	0	0	0	**2**	**2**	12	0	0	0	12	0	0	13	1	14	0	0	0	0	0	28
Total Volume	0	1	0	2	3	37	0	1	2	40	0	1	56	3	60	0	0	0	0	0	103
% App. Total	0	33.3	0	66.7		92.5	0	2.5	5		0	1.7	93.3	5		0	0	0	0		
PHF	.000	.250	.000	.250	.375	.661	.000	.250	.250	.714	.000	.250	.700	.375	.682	.000	.000	.000	.000	.000	.715



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HAFMOON TARIL AND CIDER MILL DR.
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 3
Site Code : SITE 3
Start Date : 6/15/2021
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Southbound HALFMOON TRAIL



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Westbound CIDER MILL DR.



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File Name : SITE 3
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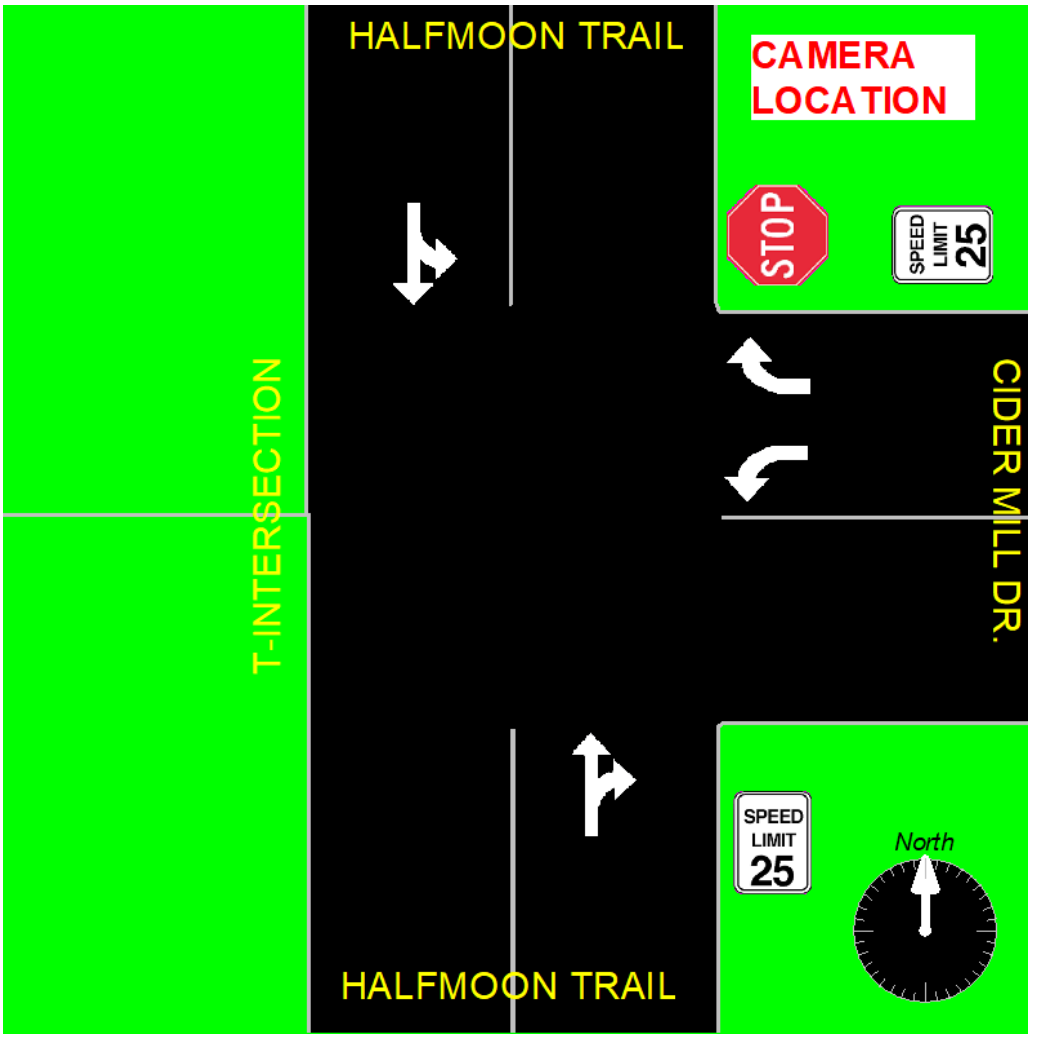
Northbound HALF MOON TARIL



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File Name : SITE 3
Site Code : SITE 3
Start Date : 6/15/2021
Page No : 9



TRUE DIRECTION

TRAFFIC SERVICES,INC

236-1 Grandview Dr, Sneads

919-749-3979 truedirectiontraffic@gmail.com

Count Number: SITE 4

County: HENDERSON

City: HENDERSONVILLE

Division: 14

Location: HALFMOON TRAIL AND CIDER MILL RD.

Location Type: 3-LEG

Count Type: TURNING MOVEMENT NO CLASSIFICATION

Count Start Date: 6/15/21

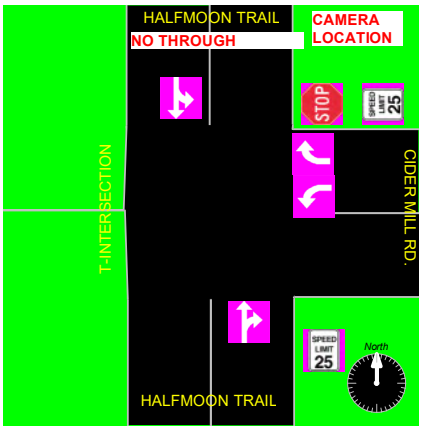
Time: 6:00AM-9:00AM AND 4:00PM-7:00PM

Video Time Used: 6:00AM-9:00AM AND 4:00PM-7:00PM (06-15)

Total Volume: 42

Weather: SUNNY NO RAIN

1. School in Session: No
2. Pedestrians Observed During Count: Yes
3. Disabled Pedestrians Present: No
4. Counted By: MICHAEL JOHNSON
5. Data Processor: MICHAEL JOHNSON
6. Signal Inventory: N/A
7. Intersection Controlled By:STOP SIGN
8. Data Collection Method: Jamar DB-400 Electronic Count Board
9. Equipment Operating Properly: Yes
10. Area Lighting: Yes
11. Construction Present: No
12. Traffic Problems Observed: Yes
    If Yes Describe: **NB HALFMOON TRAIL NO THROUGH TRAFFIC**





LOCATION OF SITE 4

Southbound Approach



Looking Back Southbound



Southbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Westbound Approach



Looking Back Westbound



Westbound Approach:

Stop Sign Within 300':Yes

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Northbound Approach



Looking Back Northbound



Northbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

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File Name : SITE 4
Site Code : SITE 4
Start Date : 6/15/2021
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Groups Printed- ALL VEHICLES

	HALFMOON TRAIL SOUTHBOUND					CIDER MILL RD. WESTBOUND					HALFMOON TRAIL NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
06:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
06:30 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	3
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
Total	0	0	0	0	0	0	2	0	2	4	0	0	0	1	1	0	1	1	2	4	9
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	1	1	0	0	0	0	0	1	0	0	2	3	0	0	0	2	2	6
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0	0	3
Total	0	0	0	1	1	0	0	0	1	1	1	0	0	4	5	0	0	0	2	2	9
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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HALFMOON TRAIL AND CIDER MILL RD.
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 4
Site Code : SITE 4
Start Date : 6/15/2021
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Groups Printed- ALL VEHICLES

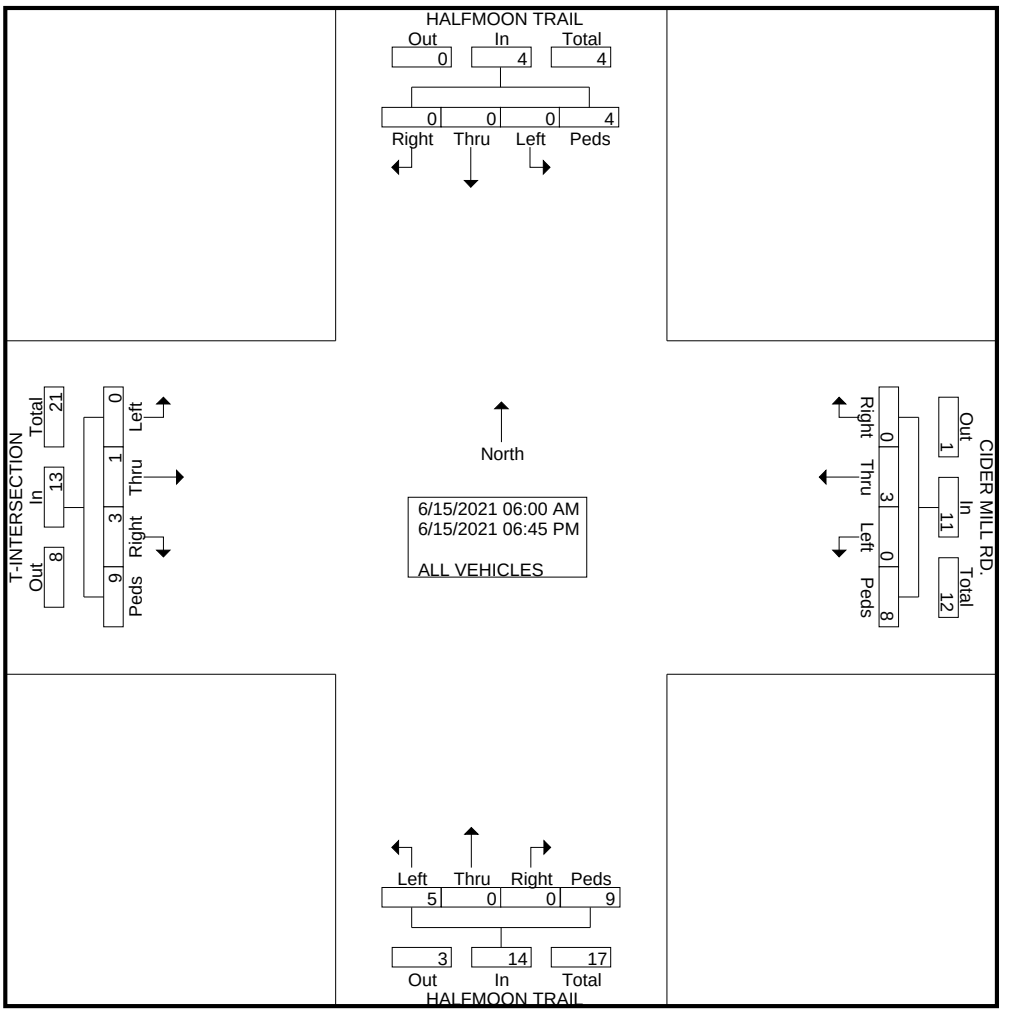
	HALFMOON TRAIL SOUTHBOUND					CIDER MILL RD. WESTBOUND					HALFMOON TRAIL NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	2
04:15 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	4
04:30 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	2
Total	0	0	0	2	2	0	1	0	3	4	1	0	0	2	3	0	0	0	1	1	10
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	3
05:30 PM	0	0	0	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	1	1	0	0	0	1	1	2	0	0	1	3	0	0	0	1	1	6
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	2
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	0	1	1	3
Total	0	0	0	0	0	0	0	0	1	1	1	0	0	1	2	0	0	2	3	5	8
Grand Total	0	0	0	4	4	0	3	0	8	11	5	0	0	9	14	0	1	3	9	13	42
Apprch %	0	0	0	100		0	27.3	0	72.7		35.7	0	0	64.3		0	7.7	23.1	69.2		
Total %	0	0	0	9.5	9.5	0	7.1	0	19	26.2	11.9	0	0	21.4	33.3	0	2.4	7.1	21.4	31	

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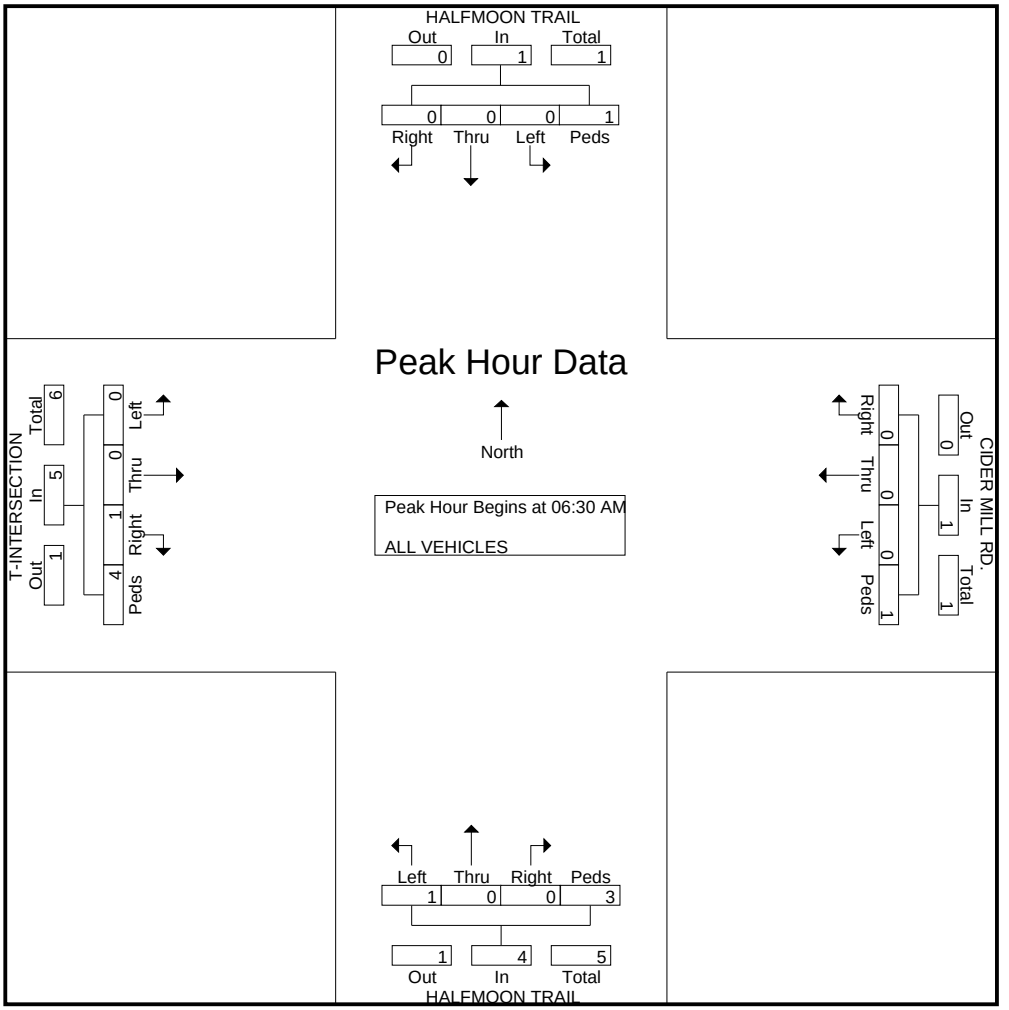
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	HALFMOON TRAIL SOUTHBOUND					CIDER MILL RD. WESTBOUND					HALFMOON TRAIL NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:30 AM																					
06:30 AM	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	1	1	0	0	0	1	1	3
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	1	**2**	2
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	**1**	**1**	0	0	0	0	0	**1**	0	0	**2**	**3**	0	0	0	**2**	2	**6**
Total Volume	0	0	0	1	1	0	0	0	1	1	1	0	0	3	4	0	0	1	4	5	11
% App. Total	0	0	0	100		0	0	0	100		25	0	0	75		0	0	20	80		
PHF	.000	.000	.000	.250	.250	.000	.000	.000	.250	.250	.250	.000	.000	.375	.333	.000	.000	.250	.500	.625	.458



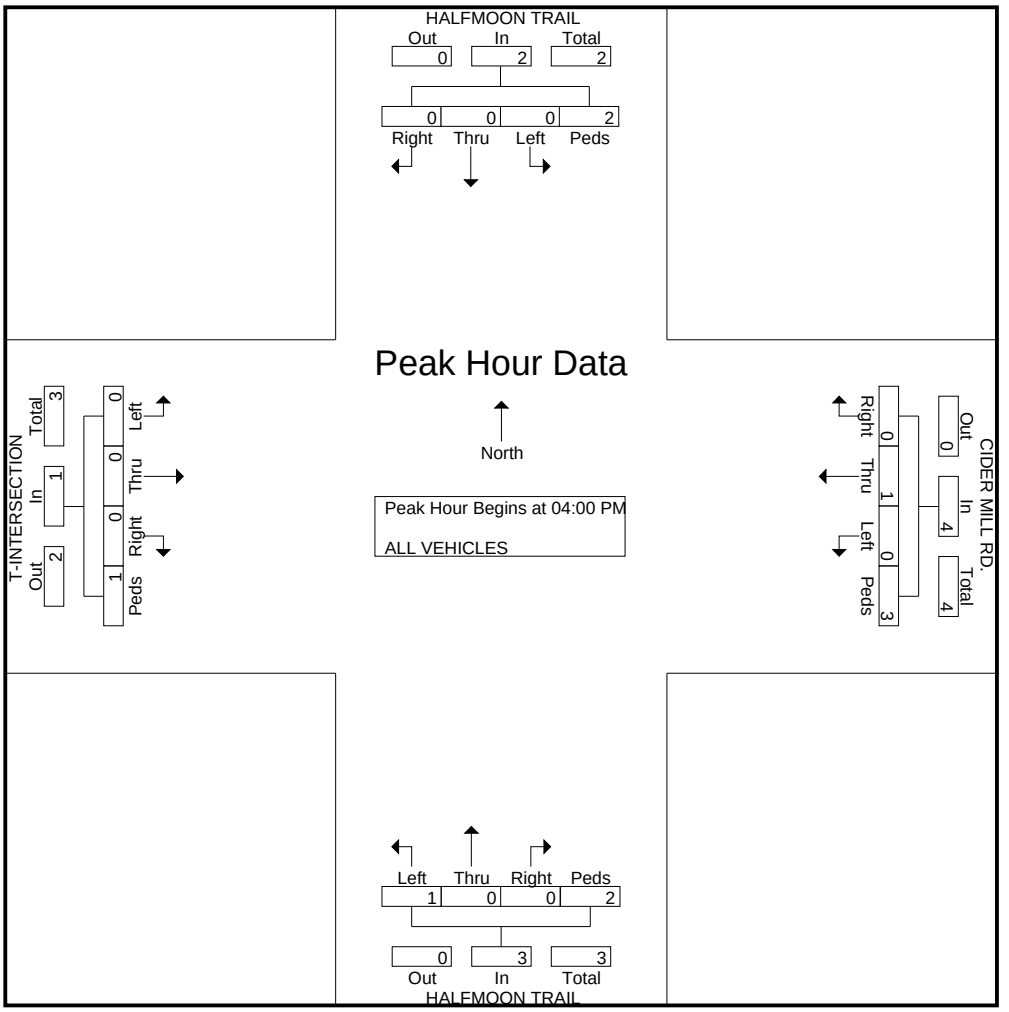
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	HALFMOON TRAIL SOUTHBOUND					CIDER MILL RD. WESTBOUND					HALFMOON TRAIL NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	**1**	0	0	**1**	**1**	0	0	0	**1**	0	0	0	0	0	2
04:15 PM	0	0	0	**1**	**1**	0	0	0	**1**	1	0	0	0	**1**	1	0	0	0	**1**	**1**	**4**
04:30 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	2
Total Volume	0	0	0	2	2	0	1	0	3	4	1	0	0	2	3	0	0	0	1	1	10
% App. Total	0	0	0	100		0	25	0	75		33.3	0	0	66.7		0	0	0	100		
PHF	.000	.000	.000	.500	.500	.000	.250	.000	.750	1.00	.250	.000	.000	.500	.750	.000	.000	.000	.250	.250	.625



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Southbound HALFMOON TR



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Westbound CIDER MILL RD.



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Start Date : 6/15/2021
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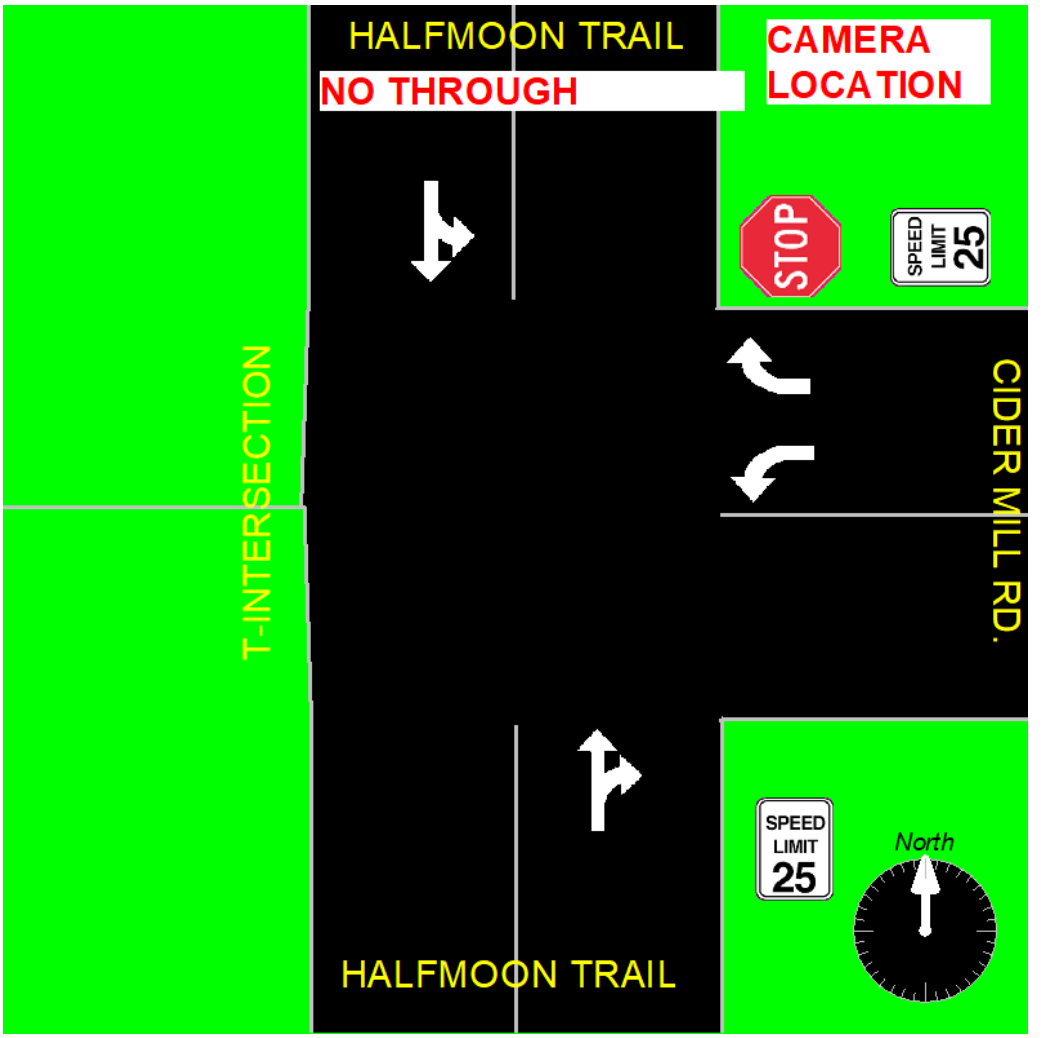
Northbound HALFMOON TRAIL



TRUE DIRECTION TRAFFIC SERVICES, INC.
236-1 GRANDVIEW DR.
SNEADS FERRY NC 28460
TRUEDIRECTIONTRAFFIC@GMAIL.COM
919-749-3979
MICHAEL JOHNSON

HALFMOON TRAIL AND CIDER MILL RD.
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 4
Site Code : SITE 4
Start Date : 6/15/2021
Page No : 9



TRUE DIRECTION

TRAFFIC SERVICES,INC

236-1 Grandview Dr, Sneads

919-749-3979 truedirectiontraffic@gmail.com

Count Number: SITE 5

County: HENDERSON

City: HENDERSONVILLE

Division: 14

Location: HALFMOON TARIL AND BROOKSTONE CT. / FOXTAIL CT.

Location Type: 4-LEG

Count Type: TURNING MOVEMENT NO CLASSIFICATION

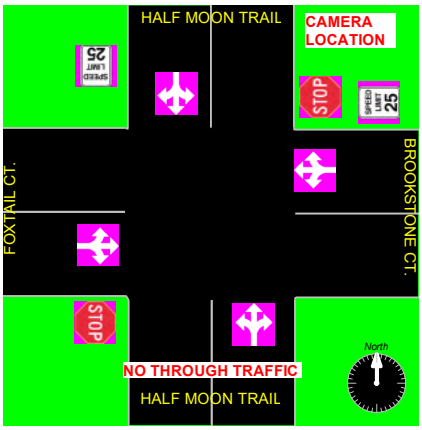
Count Start Date: 6/15/21

Time: 6:00AM-9:00AM AND 4:00PM-7:00PM

Video Time Used: 6:00AM-9:00AM AND 4:00PM-7:00PM (06-15)

Total Volume: 143

Weather: SUNNY NO RAIN



1. School in Session: No
2. Pedestrians Observed During Count: Yes
3. Disabled Pedestrians Present: No
4. Counted By: MICHAEL JOHNSON
5. Data Processor: MICHAEL JOHNSON
6. Signal Inventory: N/A
7. Intersection Controlled By:STOP SIGN
8. Data Collection Method: Jamar DB-400 Electronic Count Board
9. Equipment Operating Properly: Yes
10. Area Lighting: Yes
11. Construction Present: No
12. Traffic Problems Observed: Yes
    If Yes Describe: **SB HALFMOON TARIL NO THROUGH TRAFFIC**



LOCATION OF SITE 5

Southbound Approach



Looking Back Southbound



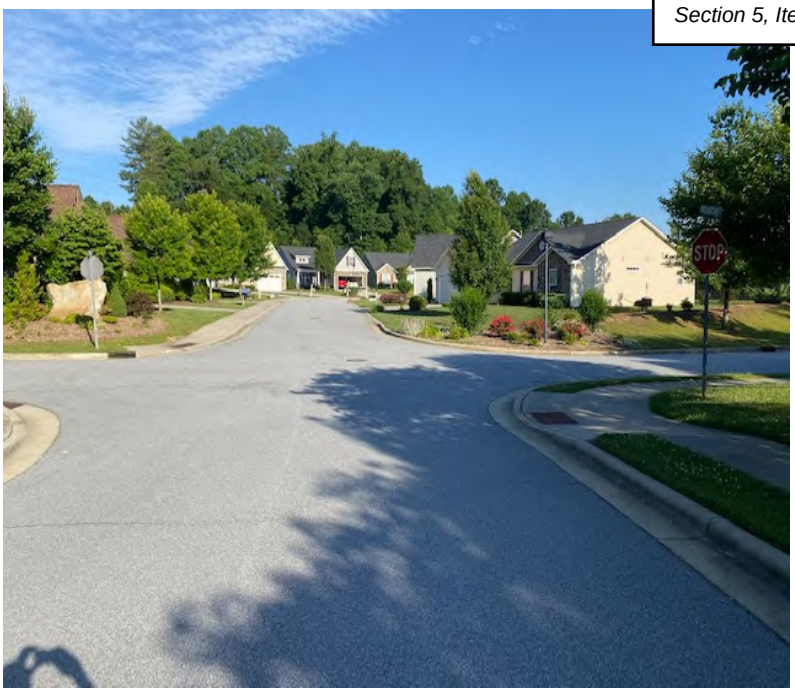
Southbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Westbound Approach



Looking Back Westbound



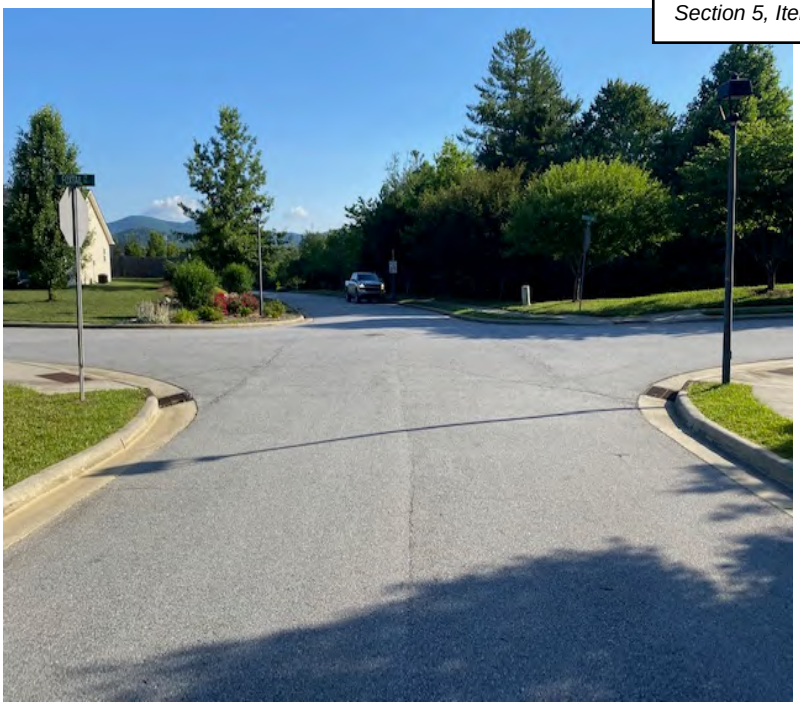
Westbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Northbound Approach



Looking Back Northbound



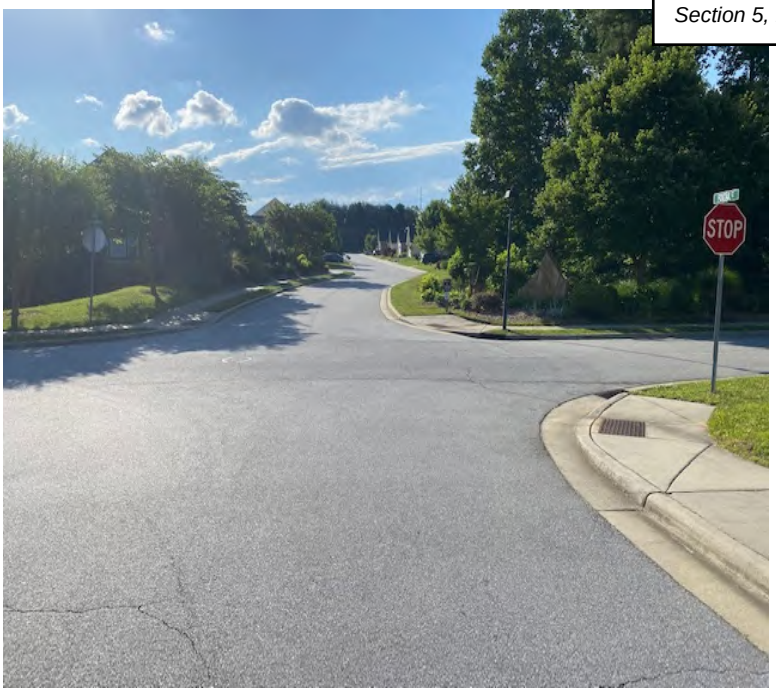
Northbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Eastbound Approach



Looking Back Eastbound



Eastbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

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HALFMOON TARIL AND BROOKSTONE CT/ FOXTAI
HENDERSONVILE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 5
Site Code : SITE 5
Start Date : 6/15/2021
Page No : 1

Groups Printed- ALL VEHICLES

	HALF MOON TRAIL SOUTHBOUND					BROOKSTONE CT. WESTBOUND					HALF MOON TRAIL NORTHBOUND					FOXTAIL CT. EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	2
06:15 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	2
06:30 AM	0	0	0	0	0	0	0	2	1	3	0	0	0	1	1	2	0	0	0	2	6
06:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	1	0	0	4	1	5	0	0	0	1	1	4	0	0	0	4	11
07:00 AM	1	0	0	1	2	0	0	1	0	1	0	0	0	0	0	1	0	0	2	3	6
07:15 AM	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	3
07:30 AM	0	0	1	0	1	0	0	6	0	6	0	0	0	0	0	2	0	0	0	2	9
07:45 AM	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	4
Total	2	0	1	1	4	0	0	12	0	12	0	0	0	0	0	4	0	0	2	6	22
08:00 AM	0	0	0	1	1	0	0	3	0	3	0	0	0	0	0	1	0	0	3	4	8
08:15 AM	1	0	1	0	2	0	0	2	0	2	0	0	0	0	0	1	0	0	0	1	5
08:30 AM	2	0	0	0	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	3
08:45 AM	3	0	0	0	3	0	0	2	0	2	0	0	0	2	2	1	0	0	0	1	8
Total	6	0	1	1	8	0	0	8	0	8	0	0	0	2	2	3	0	0	3	6	24
09:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MICHAEL JOHNSON

HALFMOON TARIL AND BROOKSTONE CT/ FOXTAI
HENDERSONVILE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 5
Site Code : SITE 5
Start Date : 6/15/2021
Page No : 2

Groups Printed- ALL VEHICLES

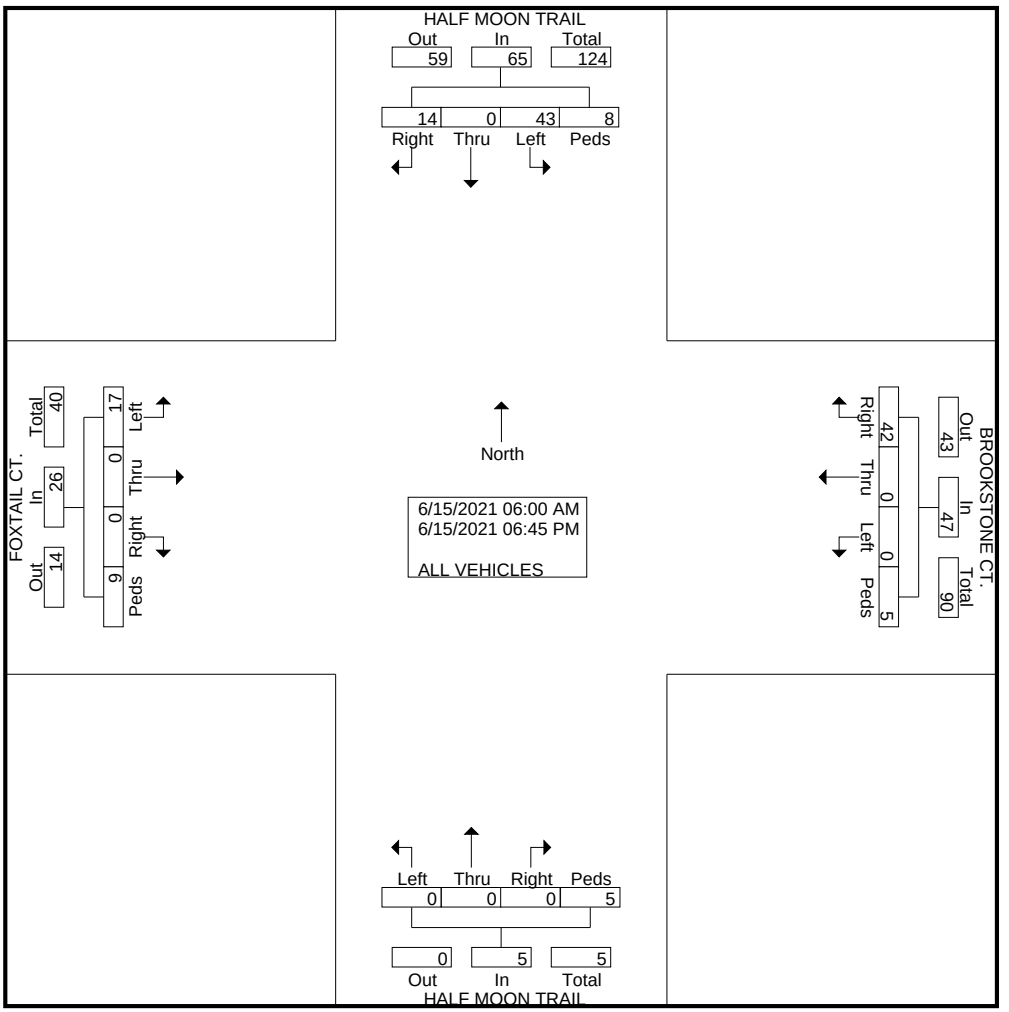
	HALF MOON TRAIL SOUTHBOUND					BROOKSTONE CT. WESTBOUND					HALF MOON TRAIL NORTHBOUND					FOXTAIL CT. EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	1	0	1	0	2	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	4
04:15 PM	4	0	1	0	5	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	6
04:30 PM	1	0	1	1	3	0	0	2	0	2	0	0	0	1	1	1	0	0	2	3	9
04:45 PM	5	0	2	0	7	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	9
Total	11	0	5	1	17	0	0	5	0	5	0	0	0	1	1	3	0	0	2	5	28
05:00 PM	4	0	1	0	5	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	6
05:15 PM	4	0	1	0	5	0	0	3	0	3	0	0	0	0	0	1	0	0	0	1	9
05:30 PM	3	0	2	0	5	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	7
05:45 PM	5	0	0	0	5	0	0	3	1	4	0	0	0	1	1	0	0	0	2	2	12
Total	16	0	4	0	20	0	0	8	1	9	0	0	0	1	1	2	0	0	2	4	34
06:00 PM	3	0	0	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
06:15 PM	3	0	1	3	7	0	0	2	0	2	0	0	0	0	0	1	0	0	0	1	10
06:30 PM	1	0	1	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4
06:45 PM	1	0	0	0	1	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	4
Total	8	0	2	5	15	0	0	5	2	7	0	0	0	0	0	1	0	0	0	1	23
Grand Total	43	0	14	8	65	0	0	42	5	47	0	0	0	5	5	17	0	0	9	26	143
Apprch %	66.2	0	21.5	12.3		0	0	89.4	10.6		0	0	0	100		65.4	0	0	34.6		
Total %	30.1	0	9.8	5.6	45.5	0	0	29.4	3.5	32.9	0	0	0	3.5	3.5	11.9	0	0	6.3	18.2	

TRUE DIRECTION TRAFFIC SERVICES, INC.

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MICHAEL JOHNSON

HALFMOON TARIL AND BROOKSTONE CT/ FOXTAI
HENDERSONVILE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 5
Site Code : SITE 5
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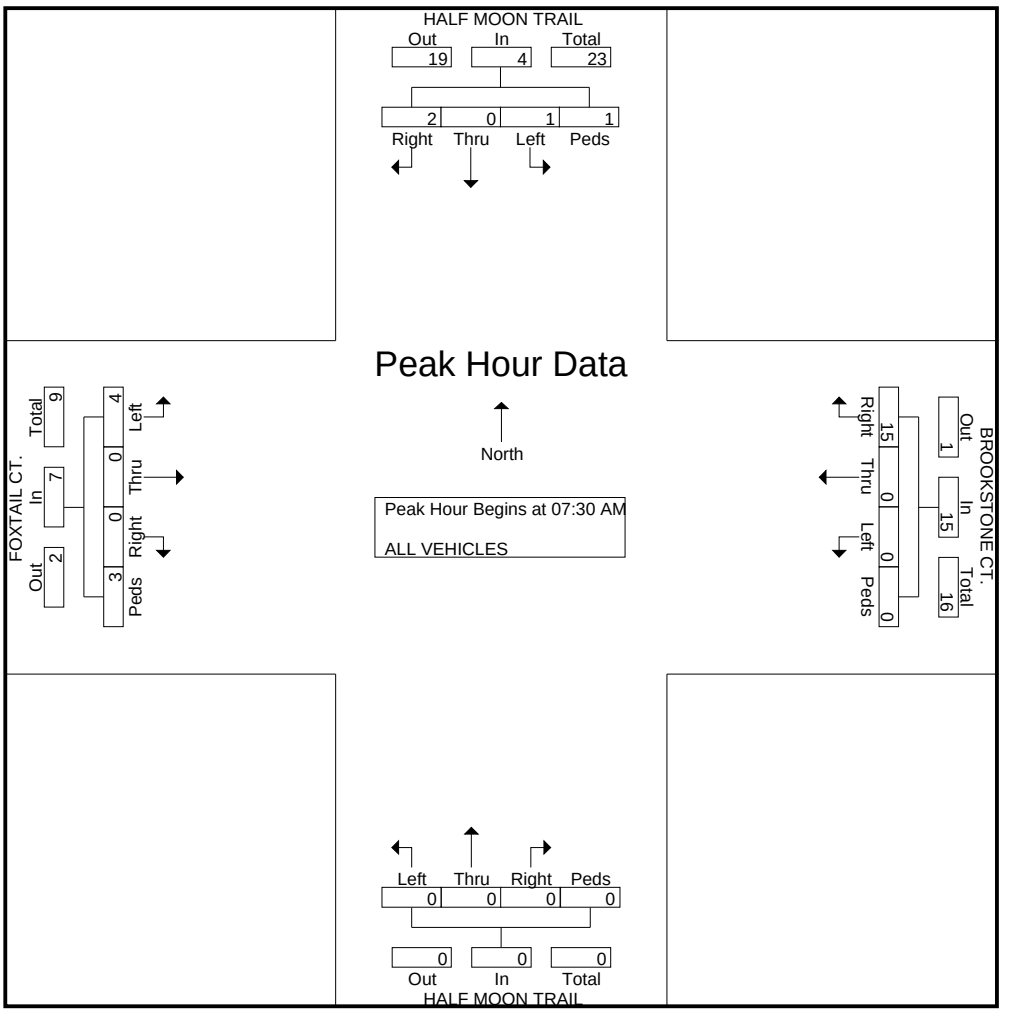
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	HALF MOON TRAIL SOUTHBOUND					BROOKSTONE CT. WESTBOUND					HALF MOON TRAIL NORTHBOUND					FOXTAIL CT. EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	**1**	0	1	0	0	**6**	0	**6**	0	0	0	0	0	**2**	0	0	0	2	**9**
07:45 AM	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	4
08:00 AM	0	0	0	**1**	1	0	0	3	0	3	0	0	0	0	0	1	0	0	**3**	**4**	8
08:15 AM	**1**	0	1	0	**2**	0	0	2	0	2	0	0	0	0	0	1	0	0	0	1	5
Total Volume	1	0	2	1	4	0	0	15	0	15	0	0	0	0	0	4	0	0	3	7	26
% App. Total	25	0	50	25		0	0	100	0		0	0	0	0		57.1	0	0	42.9		
PHF	.250	.000	.500	.250	.500	.000	.000	.625	.000	.625	.000	.000	.000	.000	.000	.500	.000	.000	.250	.438	.722



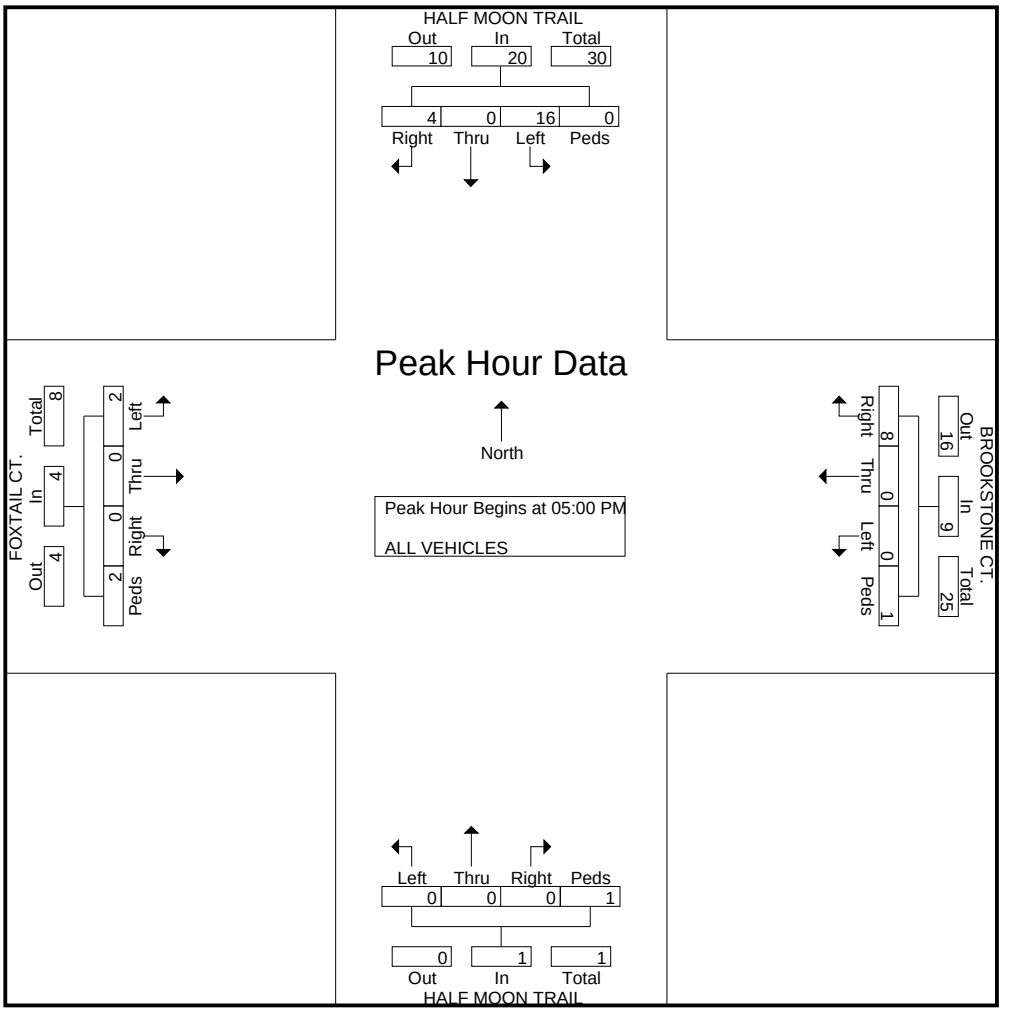
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File Name : SITE 5
Site Code : SITE 5
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	HALF MOON TRAIL SOUTHBOUND					BROOKSTONE CT. WESTBOUND					HALF MOON TRAIL NORTHBOUND					FOXTAIL CT. EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	4	0	1	0	**5**	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	6
05:15 PM	4	0	1	0	5	0	0	**3**	0	3	0	0	0	0	0	**1**	0	0	0	1	9
05:30 PM	3	0	**2**	0	5	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	7
05:45 PM	**5**	0	0	0	5	0	0	3	**1**	**4**	0	0	0	**1**	**1**	0	0	0	**2**	**2**	**12**
Total Volume	16	0	4	0	20	0	0	8	1	9	0	0	0	1	1	2	0	0	2	4	34
% App. Total	80	0	20	0		0	0	88.9	11.1		0	0	0	100		50	0	0	50		
PHF	.800	.000	.500	.000	1.00	.000	.000	.667	.250	.563	.000	.000	.000	.250	.250	.500	.000	.000	.250	.500	.708



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Weather: SUNNY
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File Name : SITE 5
Site Code : SITE 5
Start Date : 6/15/2021
Page No : 6

Southbound HALFMOON TRAIL



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MICHAEL JOHNSON

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File Name : SITE 5
Site Code : SITE 5
Start Date : 6/15/2021
Page No : 7

Westbound BROOKSTONE CT



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File Name : SITE 5
Site Code : SITE 5
Start Date : 6/15/2021
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Northbound HALFMOON TARIL



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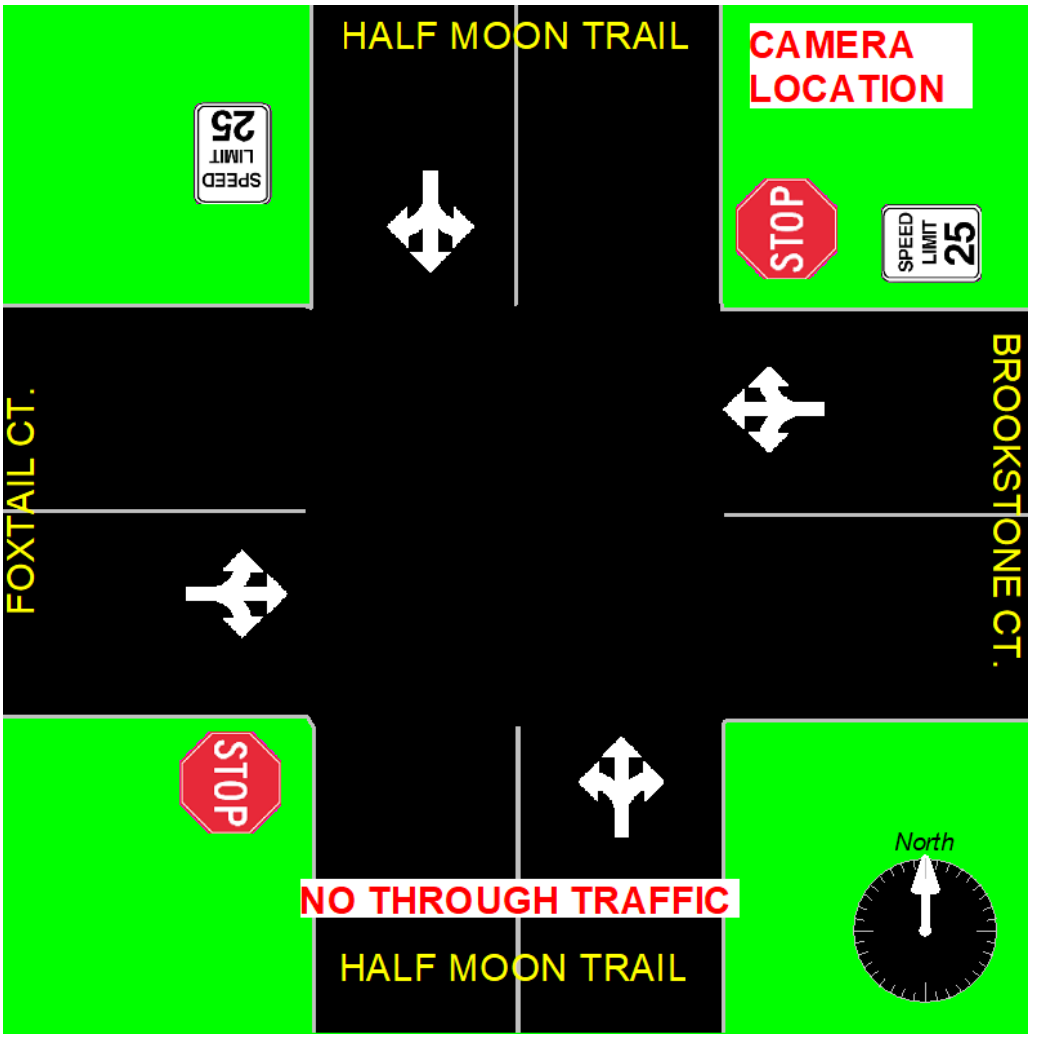
Eastbound FOXTAIL CT.



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File Name : SITE 5
Site Code : SITE 5
Start Date : 6/15/2021
Page No : 10



TRUE DIRECTION

TRAFFIC SERVICES,INC

236-1 Grandview Dr, Sneads

919-749-3979 truedirectiontraffic@gmail.com

Count Number: SITE 6

County: HENDERSON

City: HENDERSONVILLE

Division: 14

Location: US 64 CHIMNEY ROCK RD. AND HALF MOON TARIL

Location Type: 3-LEG

Count Type: TURNING MOVEMENT NO CLASSIFICATION

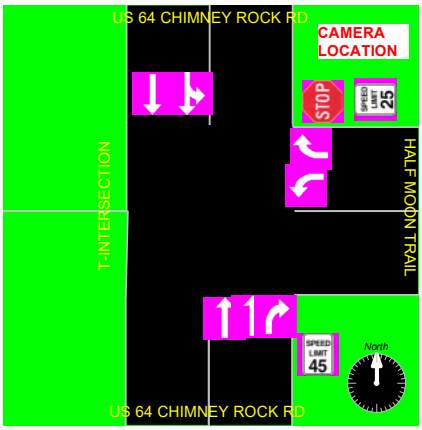
Count Start Date: 6/15/21

Time: 6:00AM-9:00AM AND 4:00PM-7:00PM

Video Time Used: 6:00AM-9:00AM AND 4:00PM-7:00PM (06-15)

Total Volume: 8,974

Weather: SUNNY NO RAIN



1. School in Session: No
2. Pedestrians Observed During Count: Yes
3. Disabled Pedestrians Present: No
4. Counted By: MICHAEL JOHNSON
5. Data Processor: MICHAEL JOHNSON
6. Signal Inventory: N/A
7. Intersection Controlled By:STOP SIGN
8. Data Collection Method: Jamar DB-400 Electronic Count Board
9. Equipment Operating Properly: Yes
10. Area Lighting: No
11. Construction Present: No
12. Traffic Problems Observed: No
    If Yes Describe:



LOCATION OF SITE 6

Southbound Approach



Looking Back Southbound



Southbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Westbound Approach



Looking Back Westbound



Westbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

Northbound Approach



Looking Back Northbound



Northbound Approach:

Stop Sign Within 300':No

Traffic Signal Within 300' No

Railroad within 300': No
If Yes Distance:

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919-749-3979
MICHAEL JOHNSON

US 64 AND HALF MOON TRAIL
HENDERSONVILLE HENDERSON CO.
Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 6
Site Code : SITE 6
Start Date : 6/15/2021
Page No : 1

Groups Printed- ALL VEHICLES

	US 64 CHIMNEY ROCK RD. SOUTHBOUND					HALF MOON TRAIL WESTBOUND					US 64 CHIMNEY ROCK RD. NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
06:00 AM	0	103	0	0	103	2	0	0	0	2	0	24	0	0	24	0	0	0	0	0	129
06:15 AM	0	149	0	0	149	2	0	0	0	2	0	26	0	0	26	0	0	0	0	0	177
06:30 AM	0	176	0	0	176	3	0	1	0	4	0	41	0	0	41	0	0	0	0	0	221
06:45 AM	0	217	0	0	217	0	0	0	0	0	0	74	1	0	75	0	0	0	0	0	292
Total	0	645	0	0	645	7	0	1	0	8	0	165	1	0	166	0	0	0	0	0	819
07:00 AM	0	199	0	0	199	1	0	1	0	2	0	87	1	0	88	0	0	0	0	0	289
07:15 AM	1	242	0	0	243	2	0	0	0	2	0	109	0	0	109	0	0	0	0	0	354
07:30 AM	0	262	0	0	262	8	0	0	0	8	0	116	1	0	117	0	0	0	0	0	387
07:45 AM	0	240	0	0	240	4	0	0	0	4	0	168	0	0	168	0	0	0	0	0	412
Total	1	943	0	0	944	15	0	1	0	16	0	480	2	0	482	0	0	0	0	0	1442
08:00 AM	0	240	0	0	240	4	0	0	0	4	0	158	0	0	158	0	0	0	0	0	402
08:15 AM	0	260	0	0	260	3	0	0	0	3	0	134	2	0	136	0	0	0	0	0	399
08:30 AM	0	255	0	0	255	1	0	0	0	1	0	145	2	0	147	0	0	0	0	0	403
08:45 AM	0	262	0	0	262	2	0	1	0	3	0	155	3	0	158	0	0	0	0	0	423
Total	0	1017	0	0	1017	10	0	1	0	11	0	592	7	0	599	0	0	0	0	0	1627
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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US 64 AND HALF MOON TRAIL
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Weather: SUNNY
Counted By: MICHAEL JOHNSON

File Name : SITE 6
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Start Date : 6/15/2021
Page No : 2

Groups Printed- ALL VEHICLES

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Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	179	0	1	180	1	0	1	0	2	0	236	2	1	239	0	0	0	0	0	421
04:15 PM	0	168	0	0	168	1	0	0	0	1	0	275	5	0	280	0	0	0	0	0	449
04:30 PM	0	135	0	0	135	3	0	0	0	3	0	241	2	0	243	0	0	0	0	0	381
04:45 PM	1	126	0	0	127	1	0	1	0	2	0	288	6	0	294	0	0	0	0	0	423
Total	1	608	0	1	610	6	0	2	0	8	0	1040	15	1	1056	0	0	0	0	0	1674
05:00 PM	0	133	0	0	133	0	0	1	0	1	0	294	5	0	299	0	0	0	0	0	433
05:15 PM	0	130	0	0	130	4	0	0	0	4	0	308	5	0	313	0	0	0	0	0	447
05:30 PM	1	148	0	0	149	1	0	1	0	2	0	298	3	0	301	0	0	0	0	0	452
05:45 PM	0	129	0	0	129	2	0	1	0	3	0	271	5	0	276	0	0	0	0	0	408
Total	1	540	0	0	541	7	0	3	0	10	0	1171	18	0	1189	0	0	0	0	0	1740
06:00 PM	1	183	0	0	184	0	0	0	0	0	0	296	2	0	298	0	0	0	0	0	482
06:15 PM	1	155	0	0	156	3	0	0	0	3	0	226	3	0	229	0	0	0	0	0	388

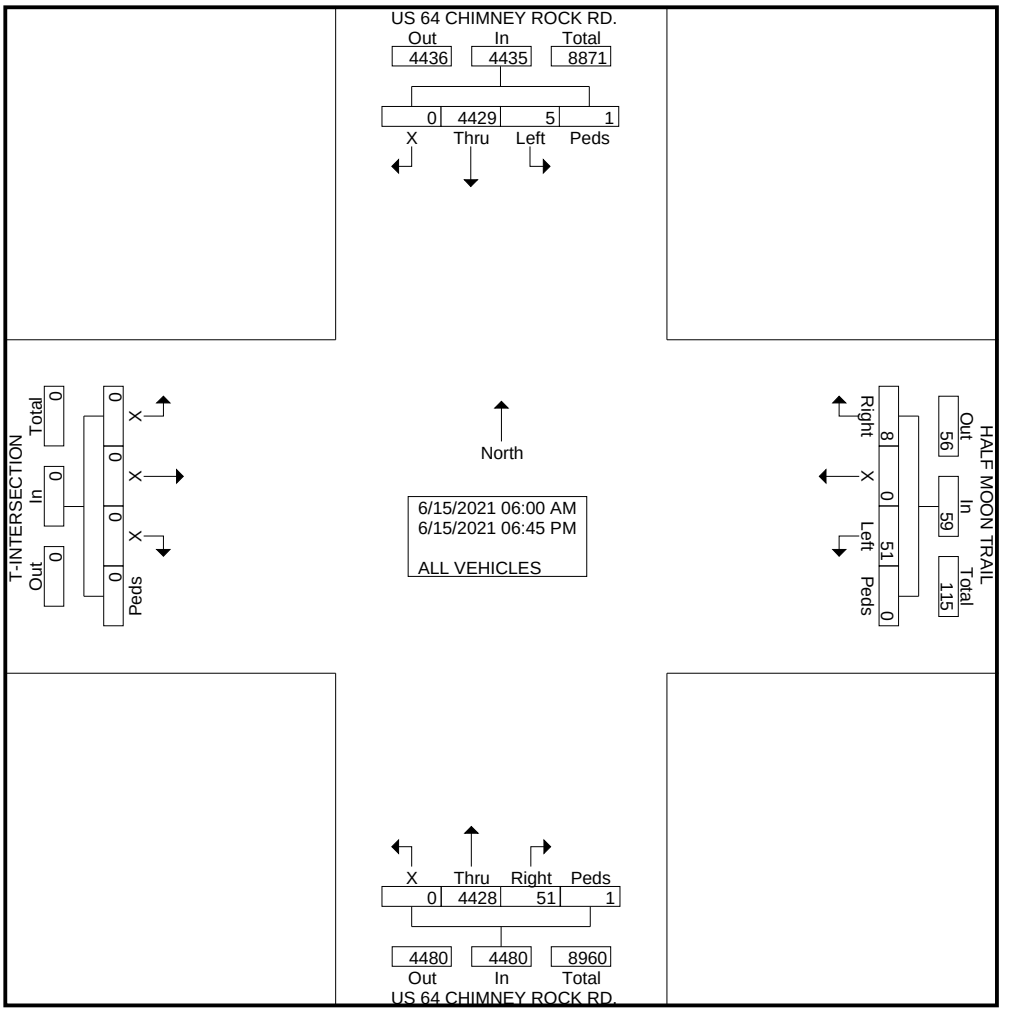
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File Name : SITE 6
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Groups Printed- ALL VEHICLES

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Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
06:30 PM	0	177	0	0	177	0	0	0	0	0	0	230	2	0	232	0	0	0	0	0	409
06:45 PM	0	161	0	0	161	3	0	0	0	3	0	228	1	0	229	0	0	0	0	0	393
Total	2	676	0	0	678	6	0	0	0	6	0	980	8	0	988	0	0	0	0	0	1672
Grand Total	5	4429	0	1	4435	51	0	8	0	59	0	4428	51	1	4480	0	0	0	0	0	8974
Apprch %	0.1	99.9	0	0		86.4	0	13.6	0		0	98.8	1.1	0		0	0	0	0		
Total %	0.1	49.4	0	0	49.4	0.6	0	0.1	0	0.7	0	49.3	0.6	0	49.9	0	0	0	0	0	



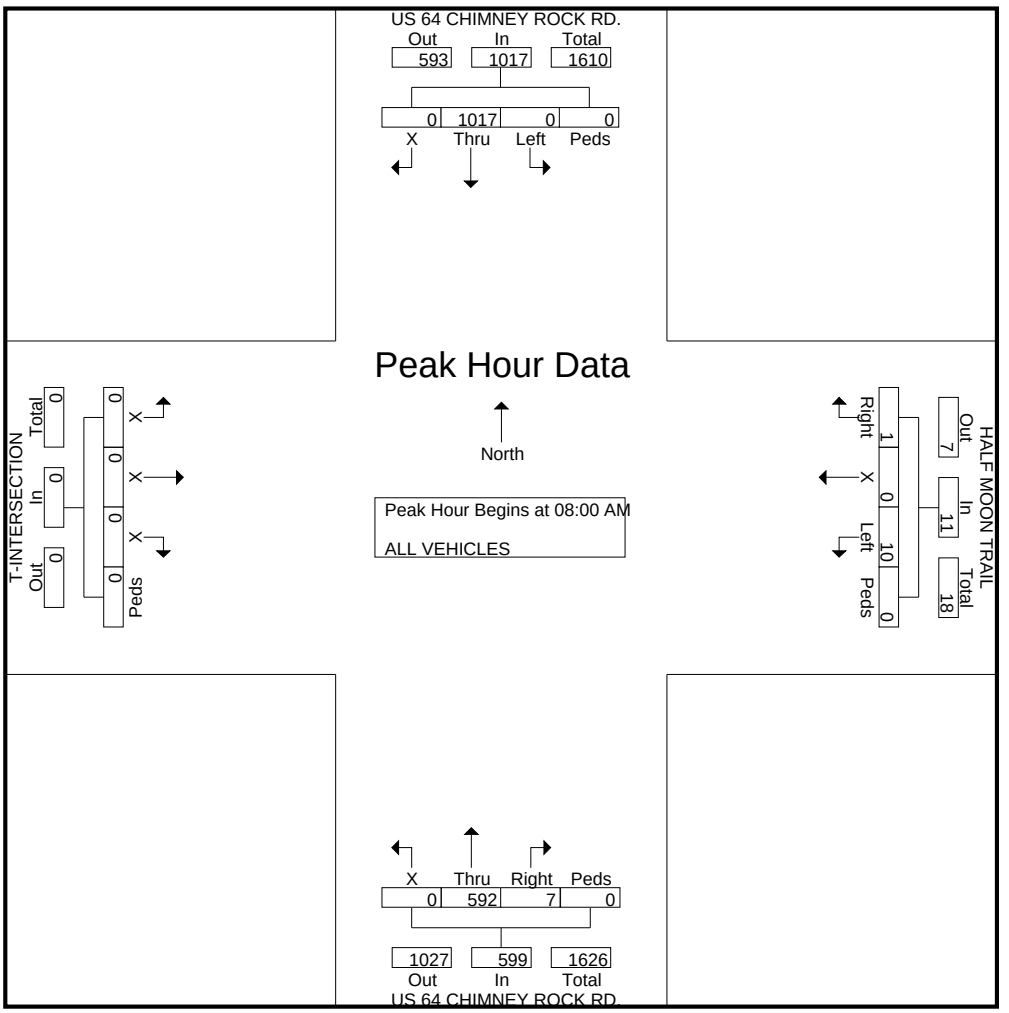
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	US 64 CHIMNEY ROCK RD. SOUTHBOUND					HALF MOON TRAIL WESTBOUND					US 64 CHIMNEY ROCK RD. NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	240	0	0	240	**4**	0	0	0	**4**	0	**158**	0	0	**158**	0	0	0	0	0	402
08:15 AM	0	260	0	0	260	3	0	0	0	3	0	134	2	0	136	0	0	0	0	0	399
08:30 AM	0	255	0	0	255	1	0	0	0	1	0	145	2	0	147	0	0	0	0	0	403
08:45 AM	0	**262**	0	0	**262**	2	0	**1**	0	3	0	155	**3**	0	158	0	0	0	0	0	**423**
Total Volume	0	1017	0	0	1017	10	0	1	0	11	0	592	7	0	599	0	0	0	0	0	1627
% App. Total	0	100	0	0		90.9	0	9.1	0		0	98.8	1.2	0		0	0	0	0		
PHF	.000	.970	.000	.000	.970	.625	.000	.250	.000	.688	.000	.937	.583	.000	.948	.000	.000	.000	.000	.000	.962

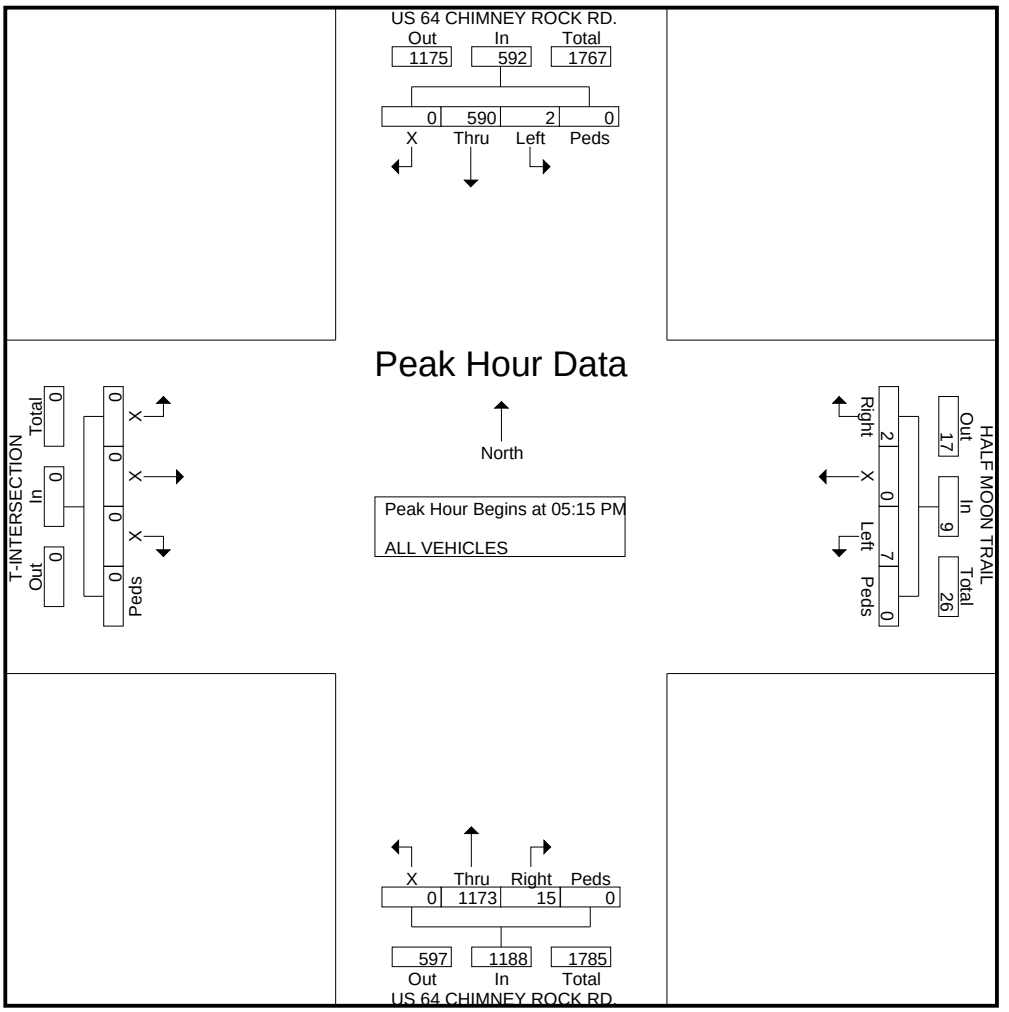


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	US 64 CHIMNEY ROCK RD. SOUTHBOUND					HALF MOON TRAIL WESTBOUND					US 64 CHIMNEY ROCK RD. NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	0	130	0	0	130	**4**	0	0	0	**4**	0	**308**	**5**	0	**313**	0	0	0	0	0	447
05:30 PM	**1**	148	0	0	149	1	0	**1**	0	2	0	298	3	0	301	0	0	0	0	0	452
05:45 PM	0	129	0	0	129	2	0	1	0	3	0	271	5	0	276	0	0	0	0	0	408
06:00 PM	1	**183**	0	0	**184**	0	0	0	0	0	0	296	2	0	298	0	0	0	0	0	**482**
Total Volume	2	590	0	0	592	7	0	2	0	9	0	1173	15	0	1188	0	0	0	0	0	1789
% App. Total	0.3	99.7	0	0		77.8	0	22.2	0		0	98.7	1.3	0		0	0	0	0		
PHF	.500	.806	.000	.000	.804	.438	.000	.500	.000	.563	.000	.952	.750	.000	.949	.000	.000	.000	.000	.000	.928



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Southbound US 64 CHIMNEY ROCK RD.



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Westbound HALF MOON TRAIL



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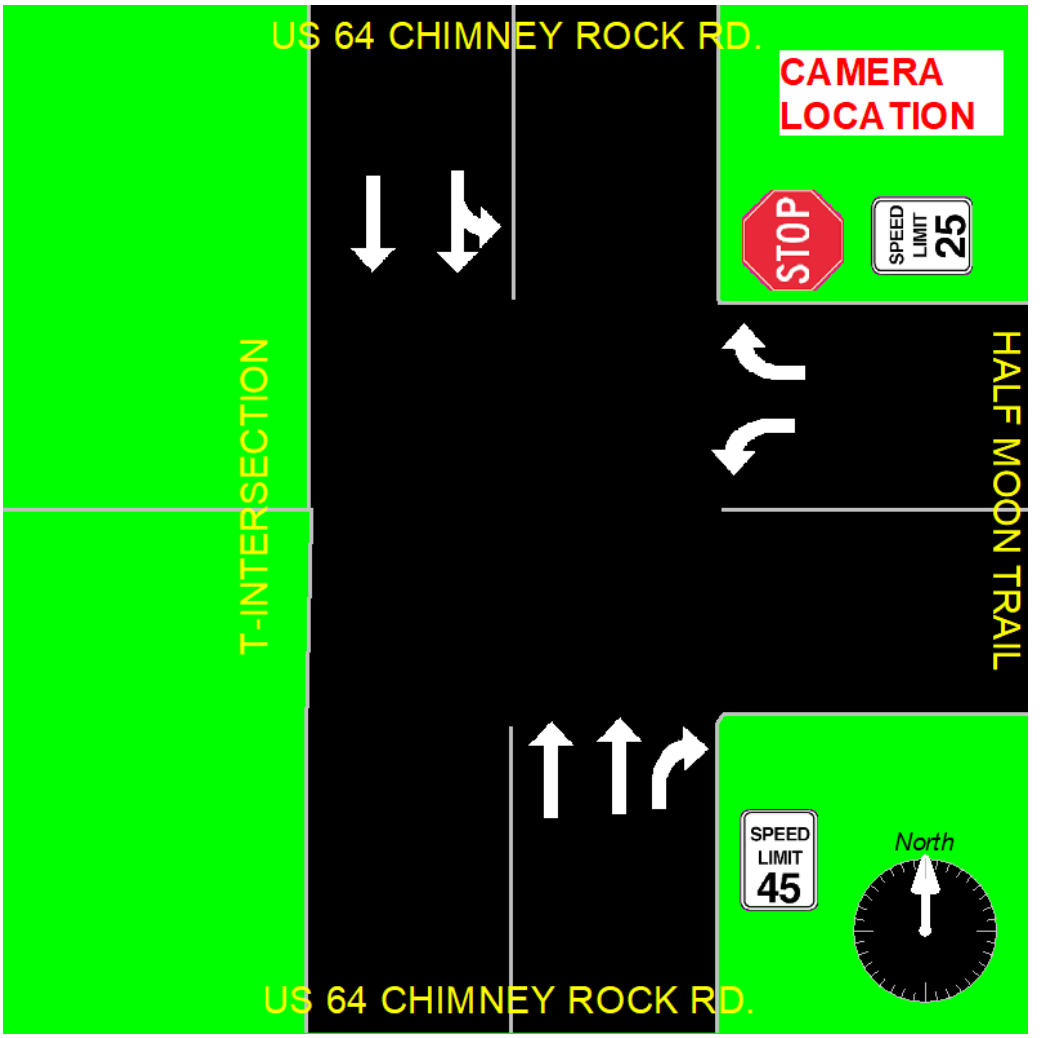
Northbound US 64 CHIMNEY ROCK RD.



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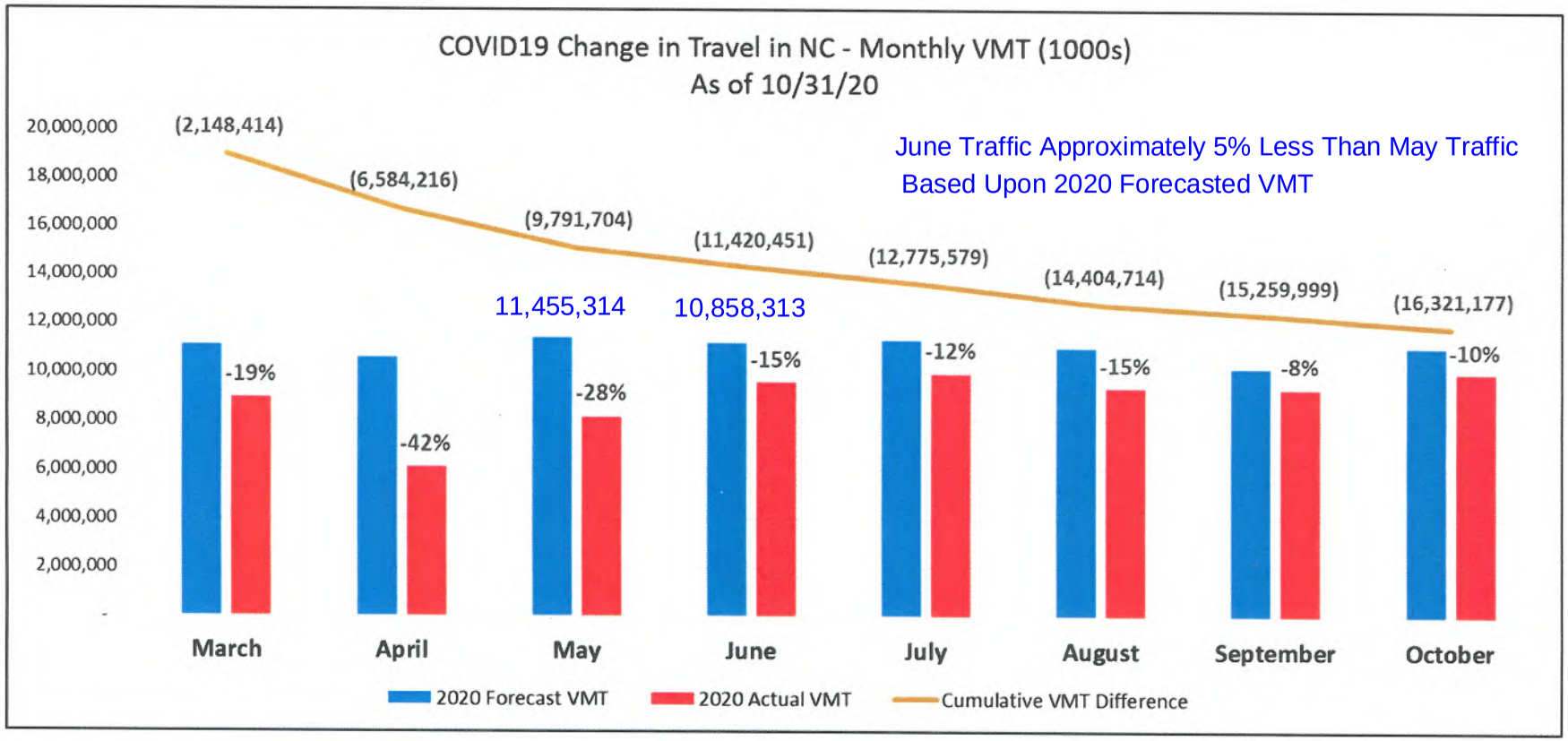
File Name : SITE 6
Site Code : SITE 6
Start Date : 6/15/2021
Page No : 9



APPENDIX C

NCDOT MONTHLY TRAFFIC TRENDS

Travel Trend – Monthly



As of end of October, we have 16 Billion less VMT than forecasted

APPENDIX D

SYNCHRO LEVEL OF SERVICE & QUEUING REPORTS

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	11	1	633	7	0	1088
Future Vol, veh/h	11	1	633	7	0	1088
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	-	-	100	500	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	1	688	8	0	1183

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1280	344	0	0	696	0
Stage 1	688	-	-	-	-	-
Stage 2	592	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	158	652	-	-	896	-
Stage 1	460	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	158	652	-	-	896	-
Mov Cap-2 Maneuver	158	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	516	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	28.1	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	169	896	-
HCM Lane V/C Ratio	-	-	0.077	-	-
HCM Control Delay (s)	-	-	28.1	0	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	0	0	0	16	0	0	0	1	0	2
Future Vol, veh/h	4	0	0	0	0	16	0	0	0	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	4	0	0	0	0	17	0	0	0	1	0	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	12	3	1	3	4	0	2	0	0	0	0	0
Stage 1	3	3	-	0	0	-	-	-	-	-	-	-
Stage 2	9	0	-	3	4	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	1005	893	1084	1019	891	-	1620	-	-	-	-	-
Stage 1	1020	893	-	-	-	-	-	-	-	-	-	-
Stage 2	1012	-	-	1020	892	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	893	1084	1019	891	-	1620	-	-	-	-	-
Mov Cap-2 Maneuver	-	893	-	1019	891	-	-	-	-	-	-	-
Stage 1	1020	893	-	-	-	-	-	-	-	-	-	-
Stage 2	1012	-	-	1020	892	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0	
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1620	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	-	-	-
HCM Lane LOS	A	-	-	-	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	1	1	10	0	1
Future Vol, veh/h	49	1	1	10	0	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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	1	1	11	0	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	8	7	0	0	12	0
Stage 1	7	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1013	1075	-	-	1607	-
Stage 1	1016	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1013	1075	-	-	1607	-
Mov Cap-2 Maneuver	1013	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1014	1607	-
HCM Lane V/C Ratio	-	-	0.054	-	-
HCM Control Delay (s)	-	-	8.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	9	3	0	49	0	7	1	0	0	0	45
Future Vol, veh/h	6	9	3	0	49	0	7	1	0	0	0	45
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	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	10	3	0	53	0	8	1	0	0	0	49
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	7.3	7.4	6.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	88%	33%	0%	0%
Vol Thru, %	12%	50%	100%	0%
Vol Right, %	0%	17%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	18	49	45
LT Vol	7	6	0	0
Through Vol	1	9	49	0
RT Vol	0	3	0	45
Lane Flow Rate	9	20	53	49
Geometry Grp	1	1	1	1
Degree of Util (X)	0.01	0.022	0.06	0.047
Departure Headway (Hd)	4.271	4.041	4.048	3.465
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	835	886	887	1029
Service Time	2.31	2.064	2.064	1.502
HCM Lane V/C Ratio	0.011	0.023	0.06	0.048
HCM Control Delay	7.4	7.2	7.3	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.2	0.1

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	3	0	0	10	112	48	385	25	0	0	0
Future Vol, veh/h	5	3	0	0	10	112	48	385	25	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	130	-	300	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	5	3	0	0	11	122	52	418	27	0	0	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	319	549	-	-	522	209	0	0	0
Stage 1	0	0	-	-	522	-	-	-	-
Stage 2	319	549	-	-	0	-	-	-	-
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	610	442	0	0	458	797	-	-	-
Stage 1	-	-	0	0	529	-	-	-	-
Stage 2	667	515	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	508	442	-	-	458	797	-	-	-
Mov Cap-2 Maneuver	508	442	-	-	458	-	-	-	-
Stage 1	-	-	-	-	529	-	-	-	-
Stage 2	554	515	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	12.6	10.8	
HCM LOS	B	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1
Capacity (veh/h)	-	-	-	481	751
HCM Lane V/C Ratio	-	-	-	0.018	0.177
HCM Control Delay (s)	-	-	-	12.6	10.8
HCM Lane LOS	-	-	-	B	B
HCM 95th %tile Q(veh)	-	-	-	0.1	0.6

Intersection: 3: US 64 & Half Moon Trail

Movement	WB
Directions Served	LR
Maximum Queue (ft)	27
Average Queue (ft)	15
95th Queue (ft)	36
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Half Moon Trail & Foxtail Court/Brookstone Court

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	31
Average Queue (ft)	6	17
95th Queue (ft)	26	39
Link Distance (ft)	310	437
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Cider Mill Dr (E) & Half Moon Trail

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 14: Half Moon Trail & Cider Mill Dr (W)

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	31
95th Queue (ft)	31
Link Distance (ft)	237
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 18: Half Moon Trail & Ballantyne Common Circle

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	31	31	31
Average Queue (ft)	12	30	6	31
95th Queue (ft)	37	31	27	32
Link Distance (ft)	183	326	332	111
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 22: US 64 NB & Commercial Access/Ballantyne Common Circle

Movement	WB
Directions Served	TR
Maximum Queue (ft)	30
Average Queue (ft)	29
95th Queue (ft)	31
Link Distance (ft)	584
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	8	2	1255	16	2	631
Future Vol, veh/h	8	2	1255	16	2	631
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	-	-	100	500	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	2	1364	17	2	686

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1711	682	0	0	1381	0
Stage 1	1364	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	82	392	-	-	492	-
Stage 1	203	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	82	392	-	-	492	-
Mov Cap-2 Maneuver	82	-	-	-	-	-
Stage 1	203	-	-	-	-	-
Stage 2	684	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	46.7	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	97	492	-
HCM Lane V/C Ratio	-	-	0.112	0.004	-
HCM Control Delay (s)	-	-	46.7	12.3	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	0	0	0	9	0	0	0	17	0	4
Future Vol, veh/h	2	0	0	0	0	9	0	0	0	17	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	2	0	0	0	0	10	0	0	0	18	0	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	43	38	2	38	40	0	4	0	0	0	0	0
Stage 1	38	38	-	0	0	-	-	-	-	-	-	-
Stage 2	5	0	-	38	40	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	960	854	1082	967	852	-	1618	-	-	-	-	-
Stage 1	977	863	-	-	-	-	-	-	-	-	-	-
Stage 2	1017	-	-	977	862	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	854	1082	967	852	-	1618	-	-	-	-	-
Mov Cap-2 Maneuver	-	854	-	967	852	-	-	-	-	-	-	-
Stage 1	977	863	-	-	-	-	-	-	-	-	-	-
Stage 2	1017	-	-	977	862	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0	
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1618	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	-	-	-
HCM Lane LOS	A	-	-	-	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	1	0	0	1	0
Future Vol, veh/h	0	1	0	0	1	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, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	0	0	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
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	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1021	-	-	1622	-
HCM Lane V/C Ratio	0.001	-	-	-	-
HCM Control Delay (s)	8.5	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	1	1	60	0	1
Future Vol, veh/h	40	1	1	60	0	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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	1	1	65	0	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	35	34	0	0	66	0
Stage 1	34	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	978	1039	-	-	1536	-
Stage 1	988	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	978	1039	-	-	1536	-
Mov Cap-2 Maneuver	978	-	-	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	979	1536	-
HCM Lane V/C Ratio	-	-	0.046	-	-
HCM Control Delay (s)	-	-	8.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	47	13	0	33	10	5	0	0	10	5	25
Future Vol, veh/h	50	47	13	0	33	10	5	0	0	10	5	25
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	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	51	14	0	36	11	5	0	0	11	5	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.2	7.6	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	45%	0%	25%
Vol Thru, %	0%	43%	77%	12%
Vol Right, %	0%	12%	23%	62%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	110	43	40
LT Vol	5	50	0	10
Through Vol	0	47	33	5
RT Vol	0	13	10	25
Lane Flow Rate	5	120	47	43
Geometry Grp	1	1	1	1
Degree of Util (X)	0.007	0.135	0.052	0.047
Departure Headway (Hd)	4.457	4.076	3.971	3.9
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	793	879	897	906
Service Time	2.54	2.104	2.015	1.976
HCM Lane V/C Ratio	0.006	0.137	0.052	0.047
HCM Control Delay	7.6	7.7	7.2	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.5	0.2	0.1

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	9	0	0	1	121	26	1198	98	0	0	0
Future Vol, veh/h	12	9	0	0	1	121	26	1198	98	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	130	-	300	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	13	10	0	0	1	132	28	1302	107	0	0	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	708	1465	-	-	1358	651	0	0	0
Stage 1	0	0	-	-	1358	-	-	-	-
Stage 2	708	1465	-	-	0	-	-	-	-
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	322	127	0	0	148	411	-	-	-
Stage 1	-	-	0	0	215	-	-	-	-
Stage 2	392	191	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	218	127	-	-	148	411	-	-	-
Mov Cap-2 Maneuver	218	127	-	-	148	-	-	-	-
Stage 1	-	-	-	-	215	-	-	-	-
Stage 2	265	191	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	29.9	18.2	
HCM LOS	D	C	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1
Capacity (veh/h)	-	-	-	167	405
HCM Lane V/C Ratio	-	-	-	0.137	0.327
HCM Control Delay (s)	-	-	-	29.9	18.2
HCM Lane LOS	-	-	-	D	C
HCM 95th %tile Q(veh)	-	-	-	0.5	1.4

Intersection: 3: US 64 & Half Moon Trail

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Half Moon Trail & Foxtail Court/Brookstone Court

Movement	WB
Directions Served	LTR
Maximum Queue (ft)	26
Average Queue (ft)	5
95th Queue (ft)	22
Link Distance (ft)	437
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Cider Mill Dr (E) & Half Moon Trail

Movement	NB
Directions Served	LR
Maximum Queue (ft)	29
Average Queue (ft)	6
95th Queue (ft)	25
Link Distance (ft)	380
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Half Moon Trail & Cider Mill Dr (W)

Movement	WB
Directions Served	LR
Maximum Queue (ft)	68
Average Queue (ft)	26
95th Queue (ft)	67
Link Distance (ft)	237
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 18: Half Moon Trail & Ballantyne Common Circle

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	31	68
Average Queue (ft)	28	24	32
95th Queue (ft)	38	44	67
Link Distance (ft)	183	326	111
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 22: US 64 NB & Commercial Access/Ballantyne Common Circle

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	27	101
Average Queue (ft)	11	49
95th Queue (ft)	32	95
Link Distance (ft)	278	584
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	11	1	649	7	0	1123
Future Vol, veh/h	11	1	649	7	0	1123
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	-	-	100	500	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	1	705	8	0	1221

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1316	353	0	0	713	0
Stage 1	705	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	149	643	-	-	883	-
Stage 1	451	-	-	-	-	-
Stage 2	504	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	149	643	-	-	883	-
Mov Cap-2 Maneuver	149	-	-	-	-	-
Stage 1	451	-	-	-	-	-
Stage 2	504	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	29.7	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	159	883	-
HCM Lane V/C Ratio	-	-	0.082	-	-
HCM Control Delay (s)	-	-	29.7	0	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	0	0	0	16	0	0	0	1	0	2
Future Vol, veh/h	4	0	0	0	0	16	0	0	0	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	4	0	0	0	0	17	0	0	0	1	0	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	12	3	1	3	4	0	2	0	0	0	0	0
Stage 1	3	3	-	0	0	-	-	-	-	-	-	-
Stage 2	9	0	-	3	4	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	1005	893	1084	1019	891	-	1620	-	-	-	-	-
Stage 1	1020	893	-	-	-	-	-	-	-	-	-	-
Stage 2	1012	-	-	1020	892	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	893	1084	1019	891	-	1620	-	-	-	-	-
Mov Cap-2 Maneuver	-	893	-	1019	891	-	-	-	-	-	-	-
Stage 1	1020	893	-	-	-	-	-	-	-	-	-	-
Stage 2	1012	-	-	1020	892	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0	
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1620	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	-	-	-
HCM Lane LOS	A	-	-	-	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	1	0	1	0	0
Future Vol, veh/h	0	1	0	1	0	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, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	0	1	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
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	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	1	1	10	0	1
Future Vol, veh/h	49	1	1	10	0	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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	1	1	11	0	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	8	7	0	0	12	0
Stage 1	7	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1013	1075	-	-	1607	-
Stage 1	1016	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1013	1075	-	-	1607	-
Mov Cap-2 Maneuver	1013	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1014	1607	-
HCM Lane V/C Ratio	-	-	0.054	-	-
HCM Control Delay (s)	-	-	8.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	9	3	0	49	0	7	1	0	0	0	45
Future Vol, veh/h	6	9	3	0	49	0	7	1	0	0	0	45
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	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	10	3	0	53	0	8	1	0	0	0	49
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	7.3	7.4	6.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	88%	33%	0%	0%
Vol Thru, %	12%	50%	100%	0%
Vol Right, %	0%	17%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	18	49	45
LT Vol	7	6	0	0
Through Vol	1	9	49	0
RT Vol	0	3	0	45
Lane Flow Rate	9	20	53	49
Geometry Grp	1	1	1	1
Degree of Util (X)	0.01	0.022	0.06	0.047
Departure Headway (Hd)	4.271	4.041	4.048	3.465
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	835	886	887	1029
Service Time	2.31	2.064	2.064	1.502
HCM Lane V/C Ratio	0.011	0.023	0.06	0.048
HCM Control Delay	7.4	7.2	7.3	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.2	0.1

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	3	0	0	10	112	48	401	25	0	0	0
Future Vol, veh/h	5	3	0	0	10	112	48	401	25	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	130	-	300	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	5	3	0	0	11	122	52	436	27	0	0	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	328	567	-	-	540	218	0	0	0
Stage 1	0	0	-	-	540	-	-	-	-
Stage 2	328	567	-	-	0	-	-	-	-
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	601	432	0	0	447	786	-	-	-
Stage 1	-	-	0	0	519	-	-	-	-
Stage 2	659	505	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	498	432	-	-	447	786	-	-	-
Mov Cap-2 Maneuver	498	432	-	-	447	-	-	-	-
Stage 1	-	-	-	-	519	-	-	-	-
Stage 2	545	505	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	12.8	10.9	
HCM LOS	B	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1
Capacity (veh/h)	-	-	-	471	740
HCM Lane V/C Ratio	-	-	-	0.018	0.179
HCM Control Delay (s)	-	-	-	12.8	10.9
HCM Lane LOS	-	-	-	B	B
HCM 95th %tile Q(veh)	-	-	-	0.1	0.6

Intersection: 3: US 64 & Half Moon Trail

Movement	WB
Directions Served	LR
Maximum Queue (ft)	27
Average Queue (ft)	10
95th Queue (ft)	31
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Half Moon Trail & Foxtail Court/Brookstone Court

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	31
Average Queue (ft)	6	11
95th Queue (ft)	26	35
Link Distance (ft)	310	437
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Cider Mill Dr (E) & Half Moon Trail

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 14: Half Moon Trail & Cider Mill Dr (W)

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	31
95th Queue (ft)	31
Link Distance (ft)	237
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 18: Half Moon Trail & Ballantyne Common Circle

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	31	31	31
Average Queue (ft)	6	30	6	31
95th Queue (ft)	27	31	27	32
Link Distance (ft)	183	326	332	111
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 22: US 64 NB & Commercial Access/Ballantyne Common Circle

Movement	WB
Directions Served	TR
Maximum Queue (ft)	30
Average Queue (ft)	29
95th Queue (ft)	31
Link Distance (ft)	584
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	8	2	1294	16	2	654
Future Vol, veh/h	8	2	1294	16	2	654
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	-	-	100	500	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	2	1407	17	2	711

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1767	704	0	0	1424	0
Stage 1	1407	-	-	-	-	-
Stage 2	360	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	75	379	-	-	474	-
Stage 1	192	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	75	379	-	-	474	-
Mov Cap-2 Maneuver	75	-	-	-	-	-
Stage 1	192	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	51	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	89	474	-
HCM Lane V/C Ratio	-	-	0.122	0.005	-
HCM Control Delay (s)	-	-	51	12.6	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	0	0	0	9	0	0	0	17	0	4
Future Vol, veh/h	2	0	0	0	0	9	0	0	0	17	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	2	0	0	0	0	10	0	0	0	18	0	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	43	38	2	38	40	0	4	0	0	0	0	0
Stage 1	38	38	-	0	0	-	-	-	-	-	-	-
Stage 2	5	0	-	38	40	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	960	854	1082	967	852	-	1618	-	-	-	-	-
Stage 1	977	863	-	-	-	-	-	-	-	-	-	-
Stage 2	1017	-	-	977	862	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	854	1082	967	852	-	1618	-	-	-	-	-
Mov Cap-2 Maneuver	-	854	-	967	852	-	-	-	-	-	-	-
Stage 1	977	863	-	-	-	-	-	-	-	-	-	-
Stage 2	1017	-	-	977	862	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0	
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1618	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	-	-	-
HCM Lane LOS	A	-	-	-	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	1	0	0	1	0
Future Vol, veh/h	0	1	0	0	1	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, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	0	0	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
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	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1021	-	-	1622	-
HCM Lane V/C Ratio	0.001	-	-	-	-
HCM Control Delay (s)	8.5	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	1	1	62	0	1
Future Vol, veh/h	40	1	1	62	0	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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	1	1	67	0	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	36	35	0	0	68	0
Stage 1	35	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	977	1038	-	-	1533	-
Stage 1	987	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	977	1038	-	-	1533	-
Mov Cap-2 Maneuver	977	-	-	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	978	1533	-
HCM Lane V/C Ratio	-	-	0.046	-	-
HCM Control Delay (s)	-	-	8.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	47	13	0	33	10	5	0	0	10	5	25
Future Vol, veh/h	50	47	13	0	33	10	5	0	0	10	5	25
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	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	51	14	0	36	11	5	0	0	11	5	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.2	7.6	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	45%	0%	25%
Vol Thru, %	0%	43%	77%	12%
Vol Right, %	0%	12%	23%	62%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	110	43	40
LT Vol	5	50	0	10
Through Vol	0	47	33	5
RT Vol	0	13	10	25
Lane Flow Rate	5	120	47	43
Geometry Grp	1	1	1	1
Degree of Util (X)	0.007	0.135	0.052	0.047
Departure Headway (Hd)	4.457	4.076	3.971	3.9
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	793	879	897	906
Service Time	2.54	2.104	2.015	1.976
HCM Lane V/C Ratio	0.006	0.137	0.052	0.047
HCM Control Delay	7.6	7.7	7.2	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.5	0.2	0.1

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	9	0	0	1	121	26	1242	98	0	0	0
Future Vol, veh/h	12	9	0	0	1	121	26	1242	98	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	130	-	300	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	13	10	0	0	1	132	28	1350	107	0	0	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	732	1513	-	-	1406	675	0	0	0
Stage 1	0	0	-	-	1406	-	-	-	-
Stage 2	732	1513	-	-	0	-	-	-	-
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	309	119	0	0	138	396	-	-	-
Stage 1	-	-	0	0	204	-	-	-	-
Stage 2	379	181	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	205	119	-	-	138	396	-	-	-
Mov Cap-2 Maneuver	205	119	-	-	138	-	-	-	-
Stage 1	-	-	-	-	204	-	-	-	-
Stage 2	252	181	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	31.8	18.9	
HCM LOS	D	C	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1
Capacity (veh/h)	-	-	-	157	390
HCM Lane V/C Ratio	-	-	-	0.145	0.34
HCM Control Delay (s)	-	-	-	31.8	18.9
HCM Lane LOS	-	-	-	D	C
HCM 95th %tile Q(veh)	-	-	-	0.5	1.5

Intersection: 3: US 64 & Half Moon Trail

Movement	WB
Directions Served	LR
Maximum Queue (ft)	27
Average Queue (ft)	13
95th Queue (ft)	33
Link Distance (ft)	604
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Half Moon Trail & Foxtail Court/Brookstone Court

Movement	WB
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	12
95th Queue (ft)	36
Link Distance (ft)	437
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Cider Mill Dr (E) & Half Moon Trail

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 14: Half Moon Trail & Cider Mill Dr (W)

Movement	WB
Directions Served	LR
Maximum Queue (ft)	68
Average Queue (ft)	40
95th Queue (ft)	78
Link Distance (ft)	237
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 18: Half Moon Trail & Ballantyne Common Circle

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	54	54	68
Average Queue (ft)	35	35	35
95th Queue (ft)	51	51	73
Link Distance (ft)	183	326	111
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 22: US 64 NB & Commercial Access/Ballantyne Common Circle

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	26	92
Average Queue (ft)	5	56
95th Queue (ft)	22	89
Link Distance (ft)	278	584
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	31	22	649	11	7	1123
Future Vol, veh/h	31	22	649	11	7	1123
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	-	-	100	500	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	24	705	12	8	1221

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1332	353	0	0	717	0
Stage 1	705	-	-	-	-	-
Stage 2	627	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	146	643	-	-	880	-
Stage 1	451	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	145	643	-	-	880	-
Mov Cap-2 Maneuver	145	-	-	-	-	-
Stage 1	451	-	-	-	-	-
Stage 2	491	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	27.9	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	214	880	-
HCM Lane V/C Ratio	-	-	0.269	0.009	-
HCM Control Delay (s)	-	-	27.9	9.1	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	1	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	10	19	1	3	5
Future Vol, veh/h	3	10	19	1	3	5
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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	11	21	1	3	5

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	33	22	0	0	22	0
Stage 1	22	-	-	-	-	-
Stage 2	11	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	980	1055	-	-	1593	-
Stage 1	1001	-	-	-	-	-
Stage 2	1012	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	978	1055	-	-	1593	-
Mov Cap-2 Maneuver	978	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	1010	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	2.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1036	1593	-
HCM Lane V/C Ratio	-	-	0.014	0.002	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	0	0	0	16	0	41	0	1	11	2
Future Vol, veh/h	4	0	0	0	0	16	0	41	0	1	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	4	0	0	0	0	17	0	45	0	1	12	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	69	60	13	60	61	45	14	0	0	45	0	0
Stage 1	15	15	-	45	45	-	-	-	-	-	-	-
Stage 2	54	45	-	15	16	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	923	831	1067	936	830	1025	1604	-	-	1563	-	-
Stage 1	1005	883	-	969	857	-	-	-	-	-	-	-
Stage 2	958	857	-	1005	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	906	830	1067	935	829	1025	1604	-	-	1563	-	-
Mov Cap-2 Maneuver	906	830	-	935	829	-	-	-	-	-	-	-
Stage 1	1005	882	-	969	857	-	-	-	-	-	-	-
Stage 2	942	857	-	1004	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	8.6	0	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	906	1025	1563	-	-
HCM Lane V/C Ratio	-	-	-	0.005	0.017	0.001	-	-
HCM Control Delay (s)	0	-	-	9	8.6	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	9	1	0	21	0	0
Future Vol, veh/h	9	1	0	21	0	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, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	1	0	23	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	11	0	34	11
Stage 1	-	-	-	-	11	-
Stage 2	-	-	-	-	23	-
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	-	-	1608	-	979	1070
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1608	-	979	1070
Mov Cap-2 Maneuver	-	-	-	-	979	-
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1000	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1608	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	1	10	10	0	21
Future Vol, veh/h	49	1	10	10	0	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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	1	11	11	0	23

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	40	17	0	0	22	0
Stage 1	17	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	972	1062	-	-	1593	-
Stage 1	1006	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	972	1062	-	-	1593	-
Mov Cap-2 Maneuver	972	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	974	1593	-
HCM Lane V/C Ratio	-	-	0.056	-	-
HCM Control Delay (s)	-	-	8.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	9	3	0	49	0	7	1	0	0	0	65
Future Vol, veh/h	15	9	3	0	49	0	7	1	0	0	0	65
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	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	10	3	0	53	0	8	1	0	0	0	71
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	7.4	7.4	6.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	88%	56%	0%	0%
Vol Thru, %	12%	33%	100%	0%
Vol Right, %	0%	11%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	27	49	65
LT Vol	7	15	0	0
Through Vol	1	9	49	0
RT Vol	0	3	0	65
Lane Flow Rate	9	29	53	71
Geometry Grp	1	1	1	1
Degree of Util (X)	0.01	0.034	0.061	0.068
Departure Headway (Hd)	4.306	4.158	4.095	3.482
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	827	861	876	1022
Service Time	2.354	2.184	2.116	1.527
HCM Lane V/C Ratio	0.011	0.034	0.061	0.069
HCM Control Delay	7.4	7.3	7.4	6.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0.2	0.2

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	3	0	0	10	132	48	405	34	0	0	0
Future Vol, veh/h	5	3	0	0	10	132	48	405	34	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	130	-	300	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	5	3	0	0	11	143	52	440	37	0	0	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	330	581	-	-	544	220	0	0	0
Stage 1	0	0	-	-	544	-	-	-	-
Stage 2	330	581	-	-	0	-	-	-	-
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	599	424	0	0	445	784	-	-	-
Stage 1	-	-	0	0	517	-	-	-	-
Stage 2	657	498	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	480	424	-	-	445	784	-	-	-
Mov Cap-2 Maneuver	480	424	-	-	445	-	-	-	-
Stage 1	-	-	-	-	517	-	-	-	-
Stage 2	525	498	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	13	11.1	
HCM LOS	B	B	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1
Capacity (veh/h)	-	-	-	457	744
HCM Lane V/C Ratio	-	-	-	0.019	0.207
HCM Control Delay (s)	-	-	-	13	11.1
HCM Lane LOS	-	-	-	B	B
HCM 95th %tile Q(veh)	-	-	-	0.1	0.8

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	6	15	0	0	6
Future Vol, veh/h	3	6	15	0	0	6
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, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	7	16	0	0	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	16	0	-	0	29	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	13	-
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	1602	-	-	0	986	1063
Stage 1	-	-	-	0	1007	-
Stage 2	-	-	-	0	1010	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1602	-	-	-	984	1063
Mov Cap-2 Maneuver	-	-	-	-	984	-
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	1602	-	-	1063
HCM Lane V/C Ratio	0.002	-	-	0.006
HCM Control Delay (s)	7.3	0	-	8.4
HCM Lane LOS	A	A	-	A
HCM 95th %tile Q(veh)	0	-	-	0

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	3	4	8	7	14
Future Vol, veh/h	3	3	4	8	7	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	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	3	4	9	8	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	6	0	22	5
Stage 1	-	-	-	-	5	-
Stage 2	-	-	-	-	17	-
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	-	-	1615	-	995	1078
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	1006	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1615	-	993	1078
Mov Cap-2 Maneuver	-	-	-	-	993	-
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	1004	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1048	-	-	1615	-
HCM Lane V/C Ratio	0.022	-	-	0.003	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	5	15	2	1	7
Future Vol, veh/h	5	5	15	2	1	7
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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	16	2	1	8

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	27	17	0	0	18	0
Stage 1	17	-	-	-	-	-
Stage 2	10	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	988	1062	-	-	1599	-
Stage 1	1006	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	987	1062	-	-	1599	-
Mov Cap-2 Maneuver	987	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	1012	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1023	1599	-
HCM Lane V/C Ratio	-	-	0.011	0.001	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	0	0	29	8	3
Future Vol, veh/h	12	0	0	29	8	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, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	0	32	9	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	43	11	12	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	968	1070	1607	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	968	1070	1607	-	-	-
Mov Cap-2 Maneuver	968	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	991	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1607	-	968	-	-
HCM Lane V/C Ratio	-	-	0.013	-	-
HCM Control Delay (s)	0	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection: 3: US 64 & Half Moon Trail

Movement	WB	SW
Directions Served	LR	L
Maximum Queue (ft)	70	31
Average Queue (ft)	45	12
95th Queue (ft)	71	38
Link Distance (ft)	604	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		500
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Half Moon Trail & Driveway D

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	12
95th Queue (ft)	35
Link Distance (ft)	556
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Half Moon Trail & Foxtail Court/Brookstone Court

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	28
Average Queue (ft)	6	6
95th Queue (ft)	27	24
Link Distance (ft)	310	437
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Cider Mill Dr (E) & Half Moon Trail

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 14: Half Moon Trail & Cider Mill Dr (W)

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	30
95th Queue (ft)	31
Link Distance (ft)	237
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 18: Half Moon Trail & Ballantyne Common Circle

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	49	31	31
Average Queue (ft)	6	28	6	31
95th Queue (ft)	26	54	27	31
Link Distance (ft)	183	326	332	111
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 22: US 64 NB & Commercial Access/Ballantyne Common Circle

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	26	75
Average Queue (ft)	5	47
95th Queue (ft)	22	82
Link Distance (ft)	278	584
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 25: Half Moon Trail & Driveway A

Movement	SB
Directions Served	LR
Maximum Queue (ft)	28
Average Queue (ft)	6
95th Queue (ft)	24
Link Distance (ft)	299
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 27: Driveway B & Half Moon Trail

Movement	NB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	12
95th Queue (ft)	36
Link Distance (ft)	401
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 29: Half Moon Trail & Driveway C

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	506
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 32: Half Moon Trail & Driveway E

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	6
95th Queue (ft)	27
Link Distance (ft)	384
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	21	16	1294	31	26	654
Future Vol, veh/h	21	16	1294	31	26	654
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	-	-	100	500	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	17	1407	34	28	711

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1819	704	0	0	1441	0
Stage 1	1407	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	69	379	-	-	467	-
Stage 1	192	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	65	379	-	-	467	-
Mov Cap-2 Maneuver	65	-	-	-	-	-
Stage 1	192	-	-	-	-	-
Stage 2	599	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	62.5	0	0.5
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	WBLn1	SWL	SWT
Capacity (veh/h)	-	-	101	467	-
HCM Lane V/C Ratio	-	-	0.398	0.061	-
HCM Control Delay (s)	-	-	62.5	13.2	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	1.6	0.2	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	0	0	0	9	0	27	0	17	39	4
Future Vol, veh/h	2	0	0	0	0	9	0	27	0	17	39	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	2	0	0	0	0	10	0	29	0	18	42	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	114	109	44	109	111	29	46	0	0	29	0	0
Stage 1	80	80	-	29	29	-	-	-	-	-	-	-
Stage 2	34	29	-	80	82	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	863	781	1026	870	779	1046	1562	-	-	1584	-	-
Stage 1	929	828	-	988	871	-	-	-	-	-	-	-
Stage 2	982	871	-	929	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	847	772	1026	862	770	1046	1562	-	-	1584	-	-
Mov Cap-2 Maneuver	847	772	-	862	770	-	-	-	-	-	-	-
Stage 1	929	818	-	988	871	-	-	-	-	-	-	-
Stage 2	973	871	-	918	817	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	8.5	0	2.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1562	-	-	847	1046	1584	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.009	0.012	-	-
HCM Control Delay (s)	0	-	-	9.3	8.5	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	29	1	0	13	1	0
Future Vol, veh/h	29	1	0	13	1	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, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	1	0	14	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	33	0	47	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	14	-
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	-	-	1579	-	963	1041
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	1009	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1579	-	963	1041
Mov Cap-2 Maneuver	-	-	-	-	963	-
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	1009	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	963	-	-	1579	-
HCM Lane V/C Ratio	0.001	-	-	-	-
HCM Control Delay (s)	8.7	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	1	30	62	0	14
Future Vol, veh/h	40	1	30	62	0	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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	1	33	67	0	15

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	82	67	0	0	100	0
Stage 1	67	-	-	-	-	-
Stage 2	15	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	920	997	-	-	1493	-
Stage 1	956	-	-	-	-	-
Stage 2	1008	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	920	997	-	-	1493	-
Mov Cap-2 Maneuver	920	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	1008	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	922	1493	-
HCM Lane V/C Ratio	-	-	0.048	-	-
HCM Control Delay (s)	-	-	9.1	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	79	47	13	0	33	10	5	0	0	10	5	38
Future Vol, veh/h	79	47	13	0	33	10	5	0	0	10	5	38
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	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	86	51	14	0	36	11	5	0	0	11	5	41
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.3	7.7	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	57%	0%	19%
Vol Thru, %	0%	34%	77%	9%
Vol Right, %	0%	9%	23%	72%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	139	43	53
LT Vol	5	79	0	10
Through Vol	0	47	33	5
RT Vol	0	13	10	38
Lane Flow Rate	5	151	47	58
Geometry Grp	1	1	1	1
Degree of Util (X)	0.007	0.174	0.052	0.062
Departure Headway (Hd)	4.63	4.137	4.019	3.886
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	778	866	883	904
Service Time	2.63	2.172	2.079	1.983
HCM Lane V/C Ratio	0.006	0.174	0.053	0.064
HCM Control Delay	7.7	8	7.3	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.6	0.2	0.2

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	9	0	0	1	134	26	1257	127	0	0	0
Future Vol, veh/h	12	9	0	0	1	134	26	1257	127	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	130	-	300	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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	13	10	0	0	1	146	28	1366	138	0	0	0

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	740	1560	-	-	1422	683	0	0	0
Stage 1	0	0	-	-	1422	-	-	-	-
Stage 2	740	1560	-	-	0	-	-	-	-
Critical Hdwy	7.54	6.54	-	-	6.54	6.94	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	5.54	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	-	-	4.02	3.32	2.22	-	-
Pot Cap-1 Maneuver	305	111	0	0	135	392	-	-	-
Stage 1	-	-	0	0	200	-	-	-	-
Stage 2	375	171	0	0	-	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	191	111	-	-	135	392	-	-	-
Mov Cap-2 Maneuver	191	111	-	-	135	-	-	-	-
Stage 1	-	-	-	-	200	-	-	-	-
Stage 2	234	171	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	34.2	19.9	
HCM LOS	D	C	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1
Capacity (veh/h)	-	-	-	146	387
HCM Lane V/C Ratio	-	-	-	0.156	0.379
HCM Control Delay (s)	-	-	-	34.2	19.9
HCM Lane LOS	-	-	-	D	C
HCM 95th %tile Q(veh)	-	-	-	0.5	1.7

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	20	9	0	0	4
Future Vol, veh/h	9	20	9	0	0	4
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, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	22	10	0	0	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	10	0	-	0	52	10
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	42	-
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	1610	-	-	0	957	1071
Stage 1	-	-	-	0	1013	-
Stage 2	-	-	-	0	980	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1610	-	-	-	951	1071
Mov Cap-2 Maneuver	-	-	-	-	951	-
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	980	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	1610	-	-	1071
HCM Lane V/C Ratio	0.006	-	-	0.004
HCM Control Delay (s)	7.2	0	-	8.4
HCM Lane LOS	A	A	-	A
HCM 95th %tile Q(veh)	0	-	-	0

Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	10	4	8	4	9
Future Vol, veh/h	10	10	4	8	4	9
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, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	11	4	9	4	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	22	0	34	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	17	-
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	-	-	1593	-	979	1062
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1006	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1593	-	976	1062
Mov Cap-2 Maneuver	-	-	-	-	976	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1003	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1034	-	-	1593	-
HCM Lane V/C Ratio	0.014	-	-	0.003	-
HCM Control Delay (s)	8.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	3	12	7	4	15
Future Vol, veh/h	3	3	12	7	4	15
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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	3	13	8	4	16

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	41	17	0	0	21	0
Stage 1	17	-	-	-	-	-
Stage 2	24	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	970	1062	-	-	1595	-
Stage 1	1006	-	-	-	-	-
Stage 2	999	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	967	1062	-	-	1595	-
Mov Cap-2 Maneuver	967	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	996	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	1.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1012	1595	-
HCM Lane V/C Ratio	-	-	0.006	0.003	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	7	12	3	10	17
Future Vol, veh/h	2	7	12	3	10	17
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, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	8	13	3	11	18

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	55	15	0	0	16	0
Stage 1	15	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	953	1065	-	-	1602	-
Stage 1	1008	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	946	1065	-	-	1602	-
Mov Cap-2 Maneuver	946	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	975	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	2.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1036	1602	-
HCM Lane V/C Ratio	-	-	0.009	0.007	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	0	0	19	27	12
Future Vol, veh/h	8	0	0	19	27	12
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, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	0	0	21	29	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	57	36	42	0	-	0
Stage 1	36	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	950	1037	1567	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	950	1037	1567	-	-	-
Mov Cap-2 Maneuver	950	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	1002	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1567	-	950	-	-
HCM Lane V/C Ratio	-	-	0.009	-	-
HCM Control Delay (s)	0	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection: 3: US 64 & Half Moon Trail

Movement	WB	WB	SW
Directions Served	L	R	L
Maximum Queue (ft)	59	24	52
Average Queue (ft)	21	5	23
95th Queue (ft)	55	21	56
Link Distance (ft)	592	592	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			500
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Half Moon Trail & Foxtail Court/Brookstone Court

Movement	WB
Directions Served	LTR
Maximum Queue (ft)	28
Average Queue (ft)	11
95th Queue (ft)	34
Link Distance (ft)	423
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Cider Mill Dr (E) & Half Moon Trail

Movement	NB
Directions Served	LR
Maximum Queue (ft)	29
Average Queue (ft)	6
95th Queue (ft)	25
Link Distance (ft)	380
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Half Moon Trail & Cider Mill Dr (W)

Movement	WB
Directions Served	LR
Maximum Queue (ft)	53
Average Queue (ft)	29
95th Queue (ft)	57
Link Distance (ft)	237
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 18: Half Moon Trail & Ballantyne Common Circle

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	53	31	31	31
Average Queue (ft)	39	24	6	25
95th Queue (ft)	55	43	27	45
Link Distance (ft)	183	326	332	111
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 22: US 64 NB & Commercial Access/Ballantyne Common Circle

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	48	52
Average Queue (ft)	20	37
95th Queue (ft)	50	54
Link Distance (ft)	278	584
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 25: Half Moon Trail & Driveway A

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 27: Driveway B & Half Moon Trail

Movement	NB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	358
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 29: Driveway C

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	483
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 31: Half Moon Trail & Driveway D

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 33: Half Moon Trail & Driveway E

Movement	EB
Directions Served	LR
Maximum Queue (ft)	28
Average Queue (ft)	6
95th Queue (ft)	24
Link Distance (ft)	376
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	21	16	1294	31	26	654
Future Vol, veh/h	21	16	1294	31	26	654
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	0	-	100	500	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	17	1407	34	28	711

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1819	704	0	0	1441	0
Stage 1	1407	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	69	379	-	-	467	-
Stage 1	192	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	65	379	-	-	467	-
Mov Cap-2 Maneuver	65	-	-	-	-	-
Stage 1	192	-	-	-	-	-
Stage 2	599	-	-	-	-	-

Approach	WB	NE	SW
HCM Control Delay, s	56.3	0	0.5
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	WBLn1	WBLn2	SWL	SWT
Capacity (veh/h)	-	-	65	379	467	-
HCM Lane V/C Ratio	-	-	0.351	0.046	0.061	-
HCM Control Delay (s)	-	-	87.8	15	13.2	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	1.3	0.1	0.2	-

Kimley»Horn

October 4, 2021

Mr. Tyler Morrow
City of Hendersonville
Community Development Department
100 N. King Street
Hendersonville, NC 28712

RE: *Half Moon Trail Residential Development TIA Review*

Dear Tyler,

At the request of the City of Hendersonville, Kimley-Horn has conducted a review of the revised traffic impact analysis (TIA) prepared for the Half Moon Trail Residential Development, dated September 28, 2021 by Wetherill Engineering, Inc. The proposed site is located along Half Moon Trail, approximately midway between the US 64/Chimney Rock Road intersections with Ballantyne Common Circle and Half Moon Trail. Up to 107 single-family detached dwelling units are proposed within the currently vacant, wooded parcel surrounding Half Moon Trail to the south of Foxtail Court/Brookstone Court and north of Cider Mill Drive.

The analyses contained with the sealed TIA were reviewed for conformance with the traffic impact analysis guidelines presented within the NCDOT *Policy on Street and Driveway Access to North Carolina* Highways, NCDOT *Congestion Management Capacity Analysis Guidelines*, and City of Hendersonville *Zoning Ordinance.* This memo outlines our technical review of the TIA and corresponding recommendations.

TECHNICAL REVIEW COMMENTS

A review of the updated TIA dated September 28, 2021 indicates that Wetherall Engineering has addressed all the comments provided in Kimley-Horn's (9.9.2021) technical review memo of the August 10, 2021 traffic impact analysis study.

A review of the intersections indicates that no additional turn lanes are warranted, left or right turns.

CONCLUSIONS

Based on the review of the TIA provided by Weatherall Engineering, the TIA presents a reasonable assessment of the proposed impact on the adjacent street network and study area intersections.

Please contact me at (704) 488-3055 or jonathan.guy@kimley-horn.com should you have any questions regarding this analysis.

Sincerely,

Jonathan Guy, PE, AICP, PTOE
Vice President

Entry #: 19

Date Submitted: 8/18/2021 11:01 AM

Date:
8/17/2021

Name of Project
Half Moon Heights

Address/Location of Property
297 Rustling Pines Lane

List 10 digit PIN or 7 digit PID number for each property
9680-00-1446

Check type of Development
Residential

Current Zoning
PRD

Proposed Zoning
PRD

List requested uses
Residential single family housing

Total Acreage
33.65

Proposed Building Sq. ft.
212,000

Dwelling Units
106

Conceptual Plan

Conditional Zoning District Petition (Continued)

Proposed conditions for the site:
See site plan.

It is important that the applicant consider the following factors. See Section 11-4 of the Zoning Ordinance for more information. Please use additional pages and/or attachments if necessary.

Explain consistency with the City's Comprehensive Plan:
Our plan is consistent with the city's plan and compatible with the surrounding properties.

Explain compatibility with surrounding land uses:
The proposed high density single family housing is compatible with the adjoining apartment development and single family high density residential projects. The size, scale, design, and architectural materials are compatible with adjoining properties and surrounding neighborhood.

Explain whether changed conditional require a map amendment:
No map amendment is required.

Explain how the petition is in the public interest:
This project is providing needed single family housing. The roads have been designed to provide safe ingress and egress and accommodate cars trucks and emergency vehicles. It will also provide safe pedestrian circulation with an internal sidewalk connecting to the adjoining properties.

Explain whether adequate public facilities are available:
Adequate water and sewer capacity are available. Existing water and sewer is accessible to the site. An existing road to city specs is installed through the project connecting to highway 64. Proposd utilities will comply with the standards of city of Hendersonville and state of North Carolina.

Explain the impact the petition would have on the natural environment:
The proposed roads and lot layout requires the site to be mass graded due to the topography. The developer will attempt to preserve as much existing slope vegetation on the perimeter of the site to reduce the visual impact of the development on the surrounding property owners. The preserved slope vegetation will serve as a vegetative buffer for the adjoining properties. Additional landscape buffer will be planted where need to reduce the visual impact of the development. Street trees and house planting will also be planted along with bare root trees to be planted on slopes.

Additional information:
The type and size of the project signs has yet to be determined. The developer will submit drawings and application to the city of Hendersonville for their review prior to their constructing of the signs. The lighting of the signs will comply with the city of Hendersonville requirements. Street lights will be provided with an approximate spacing of every 250 feet. The light fixtures will be a 100% cutoff, provided by Duke Energy. The developer requests that the city provide curbside garbage pick up. There are no plans for providing a dumpster. Mail kiosks will be provided.

Note additional approvals prior to issuance of Zoning Compliance Permit may include, but are not limited to:

1. Henderson County Sedimentation & Erosion Control Permit
2. Stormwater management plan
3. Utility approval
4. NCDOT permit
5. Any other applicable permits as determined by the Development Assistance Department

Signature pages for Conditional Zoning District Petition

Designated Agent
Joseph Schlotterbeck

Address
PO Box 609, Fairview, North Carolina 28730

Phone
(828) 767-7171

Email
joe.s@bh-builder.com

Applicant Name
Half Moon Land Holdings, LLC

Address
PO Box 609, Fairview, North Carolina 28730

Phone
(828) 767-7171

Signature



Signature of the property owner acknowledges if the property is rezoned the property involved in this request is bound to the use(s) authorized, the approved site plan and any conditions imposed, unless subsequently changed or amended as provided for in the Zoning Ordinance.

Property Owner Name
TRIANGLE BALLANTYNE HENDERSONVILLE, INC

Address
165 S York St, Gastonia, North Carolina 28053

PID or PIN #
9680001446

Signature



Property Owner Name

Address
165 S York St, Gastonia, North Carolina 28053

PID or PIN #

Signature

Signature pages for Conditional Zoning District Petition (continued)

Signature of the property owner acknowledges if the property is rezoned the property involved in this request is bound to the use(s) authorized, the approved site plan and any conditions imposed, unless subsequently changed or amended as provided for in the Zoning Ordinance.

Property Owner Name

Address

PID or PIN #

Signature

Property Owner Name

Address

PID or PIN #

Signature

Property Owner Name

Address

PID or PIN #

Signature

City of Hendersonville
General Application
Owner Signature Addendum

Application Information

Date of Application 8-18-2021 Application Number P21-44-CZD/SUB

Name of Project Half Moon Heights Phase # (if subdivision) 1

Parcel Identification Number(s) (PIN) 9680-00-1446

Property Owners: (Signature indicates intent that this page be affixed to Application.)

* ^ Printed Name Triangle Ballantyne Hendersonville, Inc.

☒ Corporation ☐ Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

☐ By signature below, I hereby acknowledge, as/on behalf of (circle one) the owner my understanding this application will be considered in a quasi-judicial proceeding and that neither I, nor anyone on my behalf, may contact the City Council except through sworn testimony at the public hearing. (Applicable if box is checked.)

Signature [signature]

Title Vice President Email William.ratchford@southwoodrealty.com

Address of Property Owner 297 Rustling Pines Ln.

* ^ Printed Name _____

☐ Corporation ☐ Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

☐ By signature below, I hereby acknowledge, as/on behalf of (circle one) the owner my understanding this application will be considered in a quasi-judicial proceeding and that neither I, nor anyone on my behalf, may contact the City Council except through sworn testimony at the public hearing. (Applicable if box is checked.)

Signature _____

Title _____ Email _____

Address of Property Owner _____

* ^ Printed Name _____

☐ Corporation ☐ Limited Liability Company ☐ Trust ☐ Partnership ☐ Other: _____

☐ By signature below, I hereby acknowledge, as/on behalf of (circle one) the owner my understanding this application will be considered in a quasi-judicial proceeding and that neither I, nor anyone on my behalf, may contact the City Council except through sworn testimony at the public hearing. (Applicable if box is checked.)

Signature _____

Title _____ Email _____

Address of Property Owner _____

* Property owner hereby grants permission to the City of Hendersonville personnel to enter the subject property for any purpose required in processing this application.

^ If signed by an agent on behalf of the Owner, this petition MUST be accompanied by a Limited Power of Attorney signed by the property owner (s) and notarized, specifically authorizing the agent to act on the owner (s) behalf in signing this application. Failure of each owner, or their duly authorized agent, to sign, or failure to include the authority of the agent signed by the property owner, will result in an INVALID APPLICATION.