# CITY OF HENDERSONVILLE
# PLANNING BOARD - REGULAR MEETING
**Operations Assembly Room | 305 Williams St. | Hendersonville, NC 28792**
**Thursday, October 09, 2025 – 4:00 PM**

# AGENDA

1. **CALL TO ORDER**

2. **APPROVAL OF AGENDA**

3. **APPROVAL OF MINUTES**

   A. Minutes of September 11, 2025

4. **OLD BUSINESS**

5. **NEW BUSINESS**

   A. Rezoning: Standard Rezoning –Locust St Small Area Rezoning | 25-58-RZO – *Matthew Manley, AICP | Long-Range Planning Manager*

   B. Rezoning: Standard Rezoning – 1207 Kanuga Rd Rezoning | R-15 to C-4 (25-59-RZO) – *Matthew Manley, AICP – Long-Range Planning Manager*

   C. Rezoning: Conditional Zoning District – LEO at Hendersonville (25-48-CZD) – *Sam Hayes – Planner II*

   D. Administrative Review: Preliminary Plat / Major Subdivision – Signal Hill Townhomes (25-57-SUB) – *Sam Hayes – Planner II*

6. **OTHER BUSINESS**

   A. Approval of Annual Meeting Dates for 2026

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
# September 11, 2025

**Members Present:** Jim Robertson, (Chair), Tamara Peacock (Vice-Chair), Donna Waters, Bob Johnson, Laura Flores, Mark Russell, David McKinley

**Members Absent:** Kyle Gilgis, Lauren Rippy

**Staff Present:** Sam Hayes, Planner II, Matthew Manley, Long Range Planning Manager, Lew Holloway, Community Development Director

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

**II Approval of Agenda.** ***Ms. Waters moved to approve the agenda. The motion was seconded by Ms. Peacock and passed unanimously.***

**III(A) Approval of Minutes for the meeting of August 14, 2025.** ***Mr. Johnson moved to approve the Planning Board minutes of the meeting of August 14, 2025. The motion was seconded by Ms. Waters and passed unanimously.***

**IV Old Business**

**V New Business**

**V(A) Zoning Text Amendment – CMU Lot Size and On-Street Parking (25-55-ZTA)** Mr. Manley gave the following background:

Mr. Manley stated this is a zoning text amendment addressing the CMU zoning district. There are some other changes from other sections of the ordinance included, but it's all related to the Central Mixed Use zoning district. We have an applicant that submitted this request, Watermark Landscape Architects. The request is to reduce or eliminate the minimum lot size requirements in CMU and also to allow on-street parking that's available to count towards the parking requirements for a development.

A map of the CMU zoning district was shown and discussed and is included in the staff report and presentation.

The proposed amendment for CMU was discussed and is included in the staff report and presentation.

The proposed amendment additions for CMU were discussed and are included in the staff report and presentation.

The MUTCD standards were shown and discussed and are included in the staff report and presentation.

The proposed amendment of off-street parking was shown and is primarily staying the same. This is included in the staff report and presentation.

The proposed amendment for the minimum lot size was shown and discussed and is included in the staff report and presentation. This would align the CMU district with all the other mixed use districts. Mr. Manley stated staff is in support of this change as well.

The changes for general provisions for the off-street parking standards were discussed and shown and are included in the staff report and presentation.

Comprehensive plan consistency was discussed and is included in the staff report and presentation.

The relationship to the Gen H Comp Plan Character areas were discussed and included in the staff report and presentation.

General rezoning standards were discussed and are included in the staff report and presentation.

A draft Comprehensive Consistency statement was included in the presentation and staff report.

A draft reasonableness statement for approval and denial were included in the staff report and presentation.

Chair asked if there were any questions for staff.

Chair asked about the 33% and discussion was made on the parking spaces.

Chair stated if the theory is we're becoming a multimodal community, more bicycles, bicycle friendly, then perhaps somebody might live in an apartment downtown and have a bicycle and go to work on that. Maybe add something in the text amendment about requiring bicycle storage if there's' over a certain number of units, something like that. Mr. Manley stated they discussed this in the committee meeting and he thinks it would be a great addition.

Discussion was made on bicycle requirements. Lew Holloway, Community Development Director stated this sounds like a larger change and since this is an applicant driven application, This is not a city initiated text amendment. He thinks there are a couple of factors that he suggests should be discussed in a committee meeting first.

There were no further questions for staff.

Chair asked if the applicant would like to speak.

Hunter Marks with Watermark Landscape Architecture stated he felt like Mr. Manley covered it very well. Speaking as a business owner in Hendersonville and living here for the time he has and seeing what is going on, he thinks in general this is just something , this is the way the city is moving. This is a downtown support district. We really need to think about more density and something like this would allow townhomes where right now CMU really doesn't make that practical. It's hard to do. We need to be a little bit less car-centric. He thinks this would allow that as well. He thinks we still have plenty of opportunities for parking but the more opportunities we have reasonably, reduce the requirements for that, that's better environmentally, it's better economically and he thinks it's better all around the town. He thinks this is the only mixed use district that has a minimum lot size and there are other districts that do allow for partial use of on-street parking. Again, he thinks it's pretty reasonable and he thinks in general it is just an overall good thing.

Chair asked if there were any questions for the applicant. There were no questions.

Chair opened public comment.

Ken Fitch, 1046 Patton Street stated there many aspects and future impacts to consider from this text amendment. Clearly, the applicant may have a project which this proposal would facilitate and it may be a location where this is feasible but when we look at the map, there are many locations with a very specific character and locations for which issues would emerge. Some streets are wide and free-flowing and some are not. The packet acknowledges that CMU represents zoning for some of the most historic parts of historic Hendersonville. New development and redevelopment within this district will have lasting impacts on the city's character. We have no design standards now and incompatibility is an issue. Parking is already a sensitive subject as you have heard over and over. He stated the new courthouse will have issues with parking as a parking deck is no longer being built. That overflow parking will be searching nearby streets for spaces. There could also be issues with the Ecusta Trail visitors and parking. Once this is enacted it will be what it will be and there will be no way to fix it.

Bonnie Likens, 744 North Grove Street stated she has had a house here for about seven years. She came to this meeting and drove around the block three times to find a parking space and then said, "what am I doing?" She went back home, parked her car and walked. She just wanted to reinforce that a pedestrian environment does not come easily. You have to get out and walk.

Chair closed public comment.

Chair stated the CMU district does surround the courthouse area, does it not? Mr. Manley stated yes it is in that vicinity. Chair stated and they did reduce their number of parking spaces when they axed the garage. Mr. Holloway stated the city never saw a site plan that included the garage. There was never a project submittal from the county that included a parking garage. As he understands it, they had discussed that internally and the commissioners considered it early in the design development but it never came to the city. The project that came to the city did not include a garage as was stated but it did meet the parking requirements for the facility. There was a request for a condition to reduce the parking required by code.

Discussion was made on the on-street parking situation and the width of the spaces. Discussion was also made on mixed use districts traditionally having design standards. Mr. Manley stated the CMU district does have some design standards.

***Ms. Peacock moved Planning Board recommend City Council adopt an ordinance amending the official zoning code of the City of Hendersonville Article V. – Zoning District Classifications, Article VI. General Provisions, Article VII. Development Review, to eliminate minimum lot size requirements and to allow qualifying on-street parking to count towards minimum parking requirements in the CMU zoning district based on the following: 1. The petition is found to be consistent with the City of Hendersonville Gen H Comprehensive Plan based on the information from the staff analysis and the public hearing because: The proposed amendments aligns with the Gen H Comprehensive Plan Future Land Use and Conservation Map and the Character Area Descriptions. 2. Furthermore, we find this petition in conjunction with the recommendations presented by staff to be reasonable and in the public interest based on the information from the staff analysis, public hearing and because: 1. The proposed amendment creates an opportunity to accommodate infill development.. 2. The proposed amendment allows for greater utilization of existing infrastructure. 3. The proposed amendment increases opportunities for additional housing in city core.*** *Mr. Manley stated to clarify in the motion the one-third thing and then to mirror the language in both A and B that it has to be abutting the right-of-way. Ms. Peacock clarified this for the motion****. Mr. Johnson seconded the motion which passed unanimously.***

**V(B) Zoning Map Amendment– Standard Rezoning – Locust Street (25-58-RZO).** Mr. Manley gave the following background:

Chair stated when a property is rezoned you have to consider all the uses. So therefore the applicant cannot tell the Board and city staff cannot tell us what is proposed here. We have to consider all of the different uses that are allowed in the new zoning district.

Mr. Manley stated there have been updates to the staff report and changes to the motion and additions to the properties included in this. The applicants are Daniel Huggins and Hailey Lamoreux and they have submitted a petition for a standard rezoning for their property at 824 Suite 400 on Locust Street. This is the last building to the northwest in the row of buildings on Locust Street between Lynn Street and 8th Avenue. This application is serving as a catalyst for a small area rezoning for the surrounding properties, all of which are zoned I-1. Staff is proposing that each of these properties be rezoned to CMU. A nearly identical situation was before you in November of last year. You may remember just one block from here, the entire block from Track Street to 7th Avenue and from Maple Street to Locust Street were all rezoned from C-2 to CMU. The block had about nine properties. We had a single applicant and staff recommended that all of those, the entire block be rezoned from C-2 to CMU and that passed and that aligned with the Comp Plan and the changing conditions in the 7th Avenue District.

Mr. Manley stated what makes this unique is that one month later, in December of last year, the North Carolina General Assembly passed a bill, Senate Bill 382, that stripped the authority of municipalities to rezone properties in certain situations, without the owner's consent. This proposed small area rezoning is one of those situations. This is based on one basic fact, that the current zoning of I-1 allows more permitted uses by right than the number of permitted uses under CMU. This difference in the total number of permitted uses is the sole determining factor that's making this a down zoning. Down zoning , by state law (new state law) requires property owner's consent. There are several other factors of the situation that suggest that rezoning to CMU would, in reality, be more favorable to the property owners than the I-1 zoning and be more in line with the changes that have occurred in the area. Staff invited the neighboring property owners to participate, to give their consent and to participate and take advantage of the opportunity. Staff is waiving application fees like we would with any other city initiated rezoning. To date we have four property owners that have fully consented. We have two other condominium property owners that need at least one more condo owner to agree for that entire property to come in. All the properties in purple were invited and informed and encouraged and communicated with but only some have consented so far.

Mr. Manley stated beginning in early August, staff developed a communication plan once we received the initial application and we started engaging with all the property owners in multiple forms, including hosting a meeting for them on August 26th. This meeting was well attended and all information has been clearly communicated in verbal and written form. To date, some have shown some skepticism though staff has done their best to convey all the facts. All existing businesses and uses of these properties that are shown on screen would still be allowed under CMU. There's no impact to any existing businesses. I-1 allows other uses that CMU does not. That would potentially be considered incompatible with this area. So there is the potential for negative impacts from currently permissible uses, such as, adult bookstores, video gambling, storage yards, body shops with outdoor storage, treatment plants, concrete plants, etc. All those things are allowed by right currently, under I-1. CMU on the other hand allows uses that I-1 does not allow that would be considered the highest and best economic use for this area based on the prevailing market trends. These additional uses complement and conform with the emerging identity of the district. There are potential new economic opportunities that would be gained under CMU if it was rezoned, such as multi-family residential with no density cap, music and art studios, professional office, etc. Taxes would not be impacted, changing the zoning would not increase the tax rate. The existing buildings are all nonconforming which means if they are substantially damaged they would not be allowed to rebuild without meeting the I-1 setbacks and most of these properties have zero setbacks and are very small in size. If

they had to rebuild, they would have a 30-foot front setback, 20-foot side setback on both sides and a 20-foot rear setback. That would encompass some of those properties entirely. The minimum lot size for I-1 is 40,000 square feet. The average lot size for parcels along Locust Street is 10,000 almost 11,000 square feet and the smallest parcel is 3,000 square feet. All this to say, the current zoning does not align with the existing character of the area. If you wanted to add an addition to the rear or anything you would have to meet those I-1 setbacks. Under the CMU zoning, the setbacks would allow for additions. It would also make all these buildings go from nonconforming to conforming so they would no longer be subject to those nonconforming limitations.

Site photos were shown and discussed and are included in the staff report and presentation.

Comprehensive Plan Consistency Future Land Use Map was shown and discussed and is included in the staff report and presentation.

The Current Land Use and Zoning Map was shown and is included in the staff report and presentation.

Comprehensive plan consistency was discussed and is included in the staff report and presentation.

General rezoning standards were discussed and are included in the staff report and presentation.

A draft Comprehensive Consistency statement was included in the presentation and staff report.

A draft reasonableness statement for approval and denial were included in the staff report and presentation.

Chair asked if there were any questions for staff.

Mr. Johnson asked how much effort was put into talking to the these folks that didn't want to do this. Mr. Manley stated there were between downtown staff and planning staff eight or nine emails. Everyone received a letter in the mail. Staff visited in person multiple times and then had a meeting where everyone attended. It was a lot of work and that was done between the deadline for applications which is the first Friday of August until this morning. This was a completely different set of demands on staff to be able to bring this to you. Not just planning staff but legal staff because this is kind of new territory. This is the first one like this done under new state law.

Chair stated there are only three areas of the city that are zoned I-1 that he knows of. One out by Berkeley Mills, one right here on Locust Street and one over by Whitted Street where Trailside Brewing is, Lenox Station. He could see the same thing happening over by Lenox Station where it is no longer Industrial. There is not even a railroad there anymore and that was the reason it was zoned Industrial. If we reduce the amount of I-1 in the city to only out by Berkeley Mills, have we broken any state laws or do we have to keep a percentage of the land in that I-1 designation, because we only allow certain types of businesses in that area. Mr. Manley stated certainly not any type of legal standard for a certain percentage. It is more strategic, we need to be thinking about the future. There are benefits to industrial uses. The city wants them, we have got to find the right places for them. The Future Land Use Map has identified several new areas beyond the ones that are zoned industrial where we said this would be appropriate to recruit or incentivize these types of uses in these areas. Mostly out along larger roadways.

Ms. Waters stated in talking with these folks that own the other properties that did not agree, what were their objections to losing the I-1 zoning. Mr. Manley stated there were comments about their taxes going up. That was something they believed or questioned. Here were some questions about the change in character, potential limitations. They had one property owner that said if they land a tenant that wants to

make concrete, he wants them to be able to do that. He wants to have that opportunity to accommodate that tenant. There were certain uses they wanted to maintain.

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

Chair asked if the applicant would like to come up and address the Board.

Daniel Huggins stated he was here with his wife Hailey Lamoureux and he is a Hendersonville native and his wife has been a downtown business owner for 21 years and a Main Street property owner for ten years. They own the current Bliss Salon at 421 N. Main Street. They love old buildings and they love Hendersonville and they have restored many historic houses here in town. They only specifically ask that their property at 824 Locust Street be rezoned. They did not intend to impact any of the neighbors. They want to be rezoned from I-1 to CMU. When they purchased the property back in February, the I-1 designation allowed for residential use. Back in May there was a text amendment that removed that usage. The Coke buildings' historic character, location and massive potential drew it to them years ago when they were taking their kids to Bruce Drysdale. They were finally able to purchase the building with the goal of converting it into mixed-use space that would be their dream home and also offer passive income and be a retirement plan someday. Their plan is to restore the façade. Chair stated this is a rezoning so they have to consider all the uses and not the specifics.

Mr. Huggins stated as they did with their Main Street property, they found images from the Baker Barber collection that show how the building was in 1926 and their plan is to restore, very close, to that for the façade to maintain the historical significance. They are excited about the 7th Avenue revitalization and excited to be part of that growth. They think the CMU designation will better reflect the recent changes to the area and better connect the historic Cold Springs and Hyman Heights neighborhood to the 7th Avenue district and Main Street. They believe having a full-time occupancy in the building that's been vacant for quite some time will be well lit and well maintained and it will improve the walkability and overall the neighborhood and surrounding areas and it fits better. A CMU designation fits better with the neighbors, being the elementary school and Episcopal church and the other retail businesses and adjoining neighborhoods. In the last 25 years that the building has been vacant, it's suffered from vandalism and neglect. Renovating it will improve surrounding property values and help promote economic growth in the area. They think that this is a chance to move forward with a vibrant, economically resilient future. Aligning with the city's long term goals as stated in the Gen H Comprehensive Plan.

Chair asked if there were any questions for the applicant. There were no questions. .

Chair opened public comment.

Kevin Rhea, 824 Locust Street, Suite 100 stated they are neighbors right next door. He stated they are still on the fence about doing CMU or not. He needs the Board to understand as a property owner, that's their nest egg, that building. It's their only source of income right now and they plan on holding onto it for ten more years and they want to keep it rented. They have had renters in there consistently for seven years and have owned it for 24 years. They had their business in there as a warehouse. They were hanging garments, they were shipping, they had 40-foot containers in and out all the time that would go past Mr. Miller's business and they had a thriving business that was eventually sold. He just needs the Board to understand that is why they are on the fence. They don't want to be hindered if somebody said a concrete company wants to come in and they have trucks they want to go in and out the front of the building. They don't want to limit themselves to who they can rent to. That is his main concern. There were others with similar concerns as theirs at the one meeting they had. He stated the thing with their property is it's an 11,000 square foot warehouse and it's not really suited for any other use. It is a big steel building, steel roof and steel on one side. It is very well heated and the person they rented to completely redid the offices and it has gorgeous offices and a little showroom but the back end of it, which is probably compromised is

like 10,000 square feet. It is just a big empty shell. You could put a car dealership in there if you wanted to. There's may uses for it but under CMU they would be limited to who they could rent to and potentially sell to. They discussed the easement behind the building.

Mr. Rhea discussed condos going up and not being able to use his property if a tenant needed to bring in 40-foot containers. He felt like this zoning change could potentially hurt them. It could cause them financial hardship. Ms. Rhea asked if there was any way they could leave their suite as I-1 since they are both located in the same building. Chair stated they would find out. Mr. Rhea asked about the damage and if there was damage to their building they could not build back. What amount of damage would cause him not to be able to build his building back? He discussed a car running into the building and stated if he had to take down the building he would lose a fortune. He would lose his entire value of that building, if you enforce that law. Chair stated he made a note of that as well. Mr. Rhea asked that they give him some time to figure this out. He has only known about it for a month.

Mr. Rhea stated he has a tenant in there that has a five year lease. They just resigned. The current tenant would conform with the CMU requirements. An eventual new tenant may not. That is what they are concerned about. If a condo development did go up while he had that tenant in there and he needs 40-foot containers delivered, it would hurt his business. They make specialized fabrics for the military. They cover jeeps, tanks, airplanes and make special high-tech fabrics to keep them from rusting. They have huge bolts of fabric that are very heavy.

Bonnie Likens, 744 N. Grove Street stated she walks her dog every day, sometimes twice a day past that building for the past seven or eight years. It has been empty and so she just wanted to make sure that the people who bought it are allowed to make it into something that's compatible with where she is located. She thinks that a residential use should be allowed there. She thinks the idea that it's industrial, you know, Coca-Cola might have considered it industrial but she doesn't really think that an industry nowadays would want a two-story big box building and she is not sure they would be able to find an industrial client to go in that space anyway. She felt like the historic nature of the building would suffer with industrial in it now. She supported the change to CMU.

Chair closed public comment.

Chair stated there was a question about having the same address but if my address is 723 Locust Street but I am Suite 100 and you are Suite 400, since we are both 723 and you change the zoning on my property, does that change the zoning on the other property? Mr. Manley stated according to Henderson County tax records, these are individual parcels. One is the Coke building, that's the subject property. That is its own fee-simple property. Next to it is a really tiny sliver of a building, that is its own property. Whether it was part of a building and a shared common wall was added, he does not know. They are their own properties. He discussed the parcels that had their own fee-simple property. This is multiple buildings that do similarly have different suite numbers but it is condominionized. The ground is owned in common so it is different from the other ones. These have suite numbers and don't have independent individual addresses and it is just the way addressing was handled a long time ago. He does not know why. It's kind of a legacy thing due to the age of the structure. Individual properties can be rezoned, ideally we try to avoid individual properties having a different zoning than an abutting neighbor or an enclave of one zoning district surrounded by a different zoning district. We work really hard to try and avoid that as well as split zoning of the same property but technically they can be rezoned if it is found reasonable to do so.

Chair stated if it is a legal nonconforming building and it is damaged more than 50%. Mr. Manley stated if the cost of the repairs exceed 50% of the building value, not the full taxable value but just the building value then you have to conform. This has nothing to do with the rezoning other than it is an existing fact that we are sharing to say, your nonconforming building, this rezoning would make you conforming. Chair stated if

he had a nonconforming building and the zoning changed and it became conforming, then the 50% rule goes away. Mr. Manley stated that is correct.

Discussion was make on nonconformities and rezonings.

Mr. Manley discussed the process and having to add the other properties on a public notice. They have given the other property owners one more week.

Chair reopened the public comment.

Ms. Liken asked if the property is nonconforming when they sell that property don't they have to say that the new owner, that this is nonconforming and that if something happens to the building. It just seems like a liability that you would have to pass on to the next owner to be nonconforming.

Mr. Rhea asked if you guys as a council do adopt CMU, are we forced into it or not? By law can we still opt out? Chair stated this is only going to be a recommendation to City Council. City Council still makes the final decision on the four properties that have consented.

Chair closed public comment.

Chair discussed the buffering requirements.

***Ms. Waters moved that the Planning Board recommend City Council adopt an ordinance amending the official zoning map of the City of Hendersonville changing the zoning designation of properties possessing PINs 9569-80-2471, 9569-80-4238, 9569-80-3335 and 9569-80-2395 from I-1 Industrial Zoning District to CMU, Central Mixed Use Zoning District based on the following: 1. The petition is found to be consistent with the City of Hendersonville Gen H Comprehensive Plan based on the information from staff analysis and because: The proposed zoning of CMU aligns with the Gen H 2045 Comprehensive Plan Future Land Use and Conservation Map and the Character Area Description for 'Downtown'. Furthermore, we find this petition to be reasonable and in the public interest based on the information from staff analysis and public hearing and because: 1. CMU zoning is more compatible than I-1 zoning due to the differences in dimensional standards and permitted uses. 2. CMU zoning would better protect the existing character of the built environment and support recent investments in the emerging economic future of the 7th Avenue/Locust Street district. 3. CMU would protect against incompatible industrial uses. 4. Other neighboring properties zoned I-1 were provided an opportunity to rezone their properties to CMU to avoid any appearance of spot zoning and to create a cohesive zoning district. However, due to new requirements under S.B 382, property owners must provide their consent for a rezoning of this nature. Though adjacent property owners were provided the information and opportunity to consent to the rezoning, only those included in the information have consented.*** *Ms. Waters amended her motion to include the correct PIN numbers****. Mr. Russell seconded the motion which passed unanimously.***

*Mr. Johnson moved the Planning Board to excuse Ms. Peacock as she needed to leave the meeting. Ms. Flores seconded the motion which passed unanimously.*

*The Board took a five minute recess to contact the City Attorney.*

**V(C) Conditional Zoning District – Compleat KiDZ (25-60-CZD).** Mr. Hayes gave the following background:

Mr. Hayes stated this project is called Compleat KiDZ and this is a conditional zoning district. There are two properties in question. They are located at 913 and 917 9th Avenue. The applicant is Kathryn Thomas who works for Kare Partners, the parent company of Compleat KiDZ. The property is owned by New Leaf

Sales. LLC. The current zoning is PID CZD or Planned Institutional Development Conditional Zoning District. The applicant is requesting to rezone the property to MIC CZD or Medical, Institutional and Cultural Conditional Zoning District. The subject properties are a combined .95 acres.

Mr. Hayes stated the applicant is proposing to use the existing building on the site as a space to assist children with things such as physical therapy, occupational therapy, speech therapy and behavioral therapy. The current zoning is PID CZD which only allows for the use of a child care center. When this went through the process back in 2023, it was approved by City Council with a site-specific site plan and the only use allowed was a child care center. When staff met with the applicant and they told staff what they were planning to do, staff determined that it was not a child care center and so they had to both change the zoning district and be classified as a different use. Staff suggested changing the zoning to MIC CZD which allows for office space, business, professional and public. That is all one usage classification and that is what we would classify what they have proposed as.

Site photos were shown and discussed and are included in the staff report and presentation. Mr. Hayes stated they do not propose to expand the building.

An aerial photo of the site was shown highlighted in blue. This is included in the staff report and presentation.

A Neighborhood Compatibility Meeting was held on July 24, 2025. There were two residents who attended in person and one online. The topics discussed were concerns with traffic, impacting the adjacent school and residential areas. Questions pertaining to the number of employees who would be working at the facility, questions about the hours of operation of the clinic and how that would interact with school drop-off and questions pertaining to if there was a traffic study that would be required for this project.

The site plan was shown and discussed and is included in the staff report and presentation.

The landscaping plan was shown and discussed and is included in the staff report and presentation.

The proposed conditions (agreed to by the developer) were shown and discussed and are included in the staff report and presentation.

Mr. Hayes stated this is a nonconforming structure It does not conform to the setback requirements so what one of the conditions is doing is basically making it conforming. Therefore if the structure was damaged over 50% of the value they could theoretically build it back.

The Future Land Use Map was shown and discussed and is included in the staff report and presentation.

General rezoning standards for Comp Plan Consistency were discussed and are included in the staff report and presentation.

The Current Land Use and Zoning map was shown and is included in the staff report and presentation.

General rezoning standards were discussed and are included in the staff report and presentation.

A draft Comprehensive Consistency statement was shown and is included in the staff report and presentation.

A draft reasonableness statement for approval and denial were included in the staff report and presentation.

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

Chair asked if the applicant would like to address the Board.

Jennifer Lahn stated she was the RVP for Real Estate and Facilities for Kare Partners. She stated the last time they attended a meeting a couple of people had concerns in regard to traffic and parking so she just wanted to make sure and address that a little bit. Within their staffing they will have two full time staff people on the property there for their services. All of their other service providers are fee-for-service basis so they will be coming and going. There will be an ebb and flow throughout the day so the 30 parking spots will accommodate their use. She does not foresee that there will be any issues. They have also been in contact with the schools, spoke with the principal, found out what their carpool schedule is and they can adjust their drop-off times to help ease some of the concerns of the neighborhood. They are excited to come to Hendersonville and they hope to be a really great, viable community partner with the City of Hendersonville.

Chair asked what age group are the children. Ms. Lahn stated two to eight year olds. Chair stated so your services are geared for two to eight year olds. Ms. Lahn stated yes, and the families, it's a drop-off most of the time. They do some parent training also which is when parents would stay but for the most part, parents, it's a carpool, they drop off and then services are provided. The parents come back and pick them up.

Chair asked what type of therapy do they provide. Ms. Lahn stated it is pediatric therapy. It is children with autism. They are going to get some ABA therapy, speech therapy, physical therapy, occupational therapy. Chair stated the one he was concerned about is behavioral therapy. Ms. Lahn stated they don't do behavioral therapy in that sense. They don't have behavioral issues. These are children that are diagnosed with autism, some aspect of it. In fact they will be working with the schools and have referrals from them. It is actually a great partnership.

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

Chair asked staff if the five foot wooden fence satisfied the buffer requirement or is that being offered as an alternative to satisfying the buffer. Mr. Hayes stated an alternative to satisfy the buffer partially because of the viability of actually planting things into that strip. Chair stated so we don't have an alternative. If you can't plant these plants because of this narrow space, you can put up a fence, but are there any standards for the fence? Where did we come up with five feet and made of wood. Mr. Hayes stated that was proposed by the applicant and not staff driven. Staff thought this would be better added as a condition.

Discussion was made about the fence.

The existing trees that will be preserved have been circled on the site plan. The city did not have any recommended conditions.

Chair opened public comment.

Ken Fitch, 1046 Patton Street stated the NCM and the discussions after were extensive and detailed regarding this very unique program with its special use that would be located there. The discussions were also about how the building would function and spaces utilized. There was support for the specific program that was presented however, the primary issue raised by the neighbors is the impact on traffic because we all know how that area functions. One question not answered was how the building and its access and egress function in relation to the school. He was concerned about this property getting rezoned for offices or medical offices and this causing problems in the future.

Chair closed public comment.

Discussion was made on the traffic pattern. Discussion was also made on the project not moving forward and the uses that would be permitted. Mr. Holloway explained why staff thought the MIC zoning would be appropriate for this project.

***Ms. Flores moved the 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 (PINs: 9569-40-2580 and 9569-40-3593) from PID-CZD (Planned Institutional Development – Conditional Zoning District) to MIC-CZD (Medical, Institutional, and Cultural – Conditional Zoning District) based on the site plan and list of conditions submitted by and agreed to by the applicant, and presented at this meeting and subject to the following: 1.The development shall be consistent with the site plan, including the list of applicable conditions contained therein, and the following permitted uses: Office, business, professional, and public. 2. The petition is found to be consistent with the City of Hendersonville Gen H 2045 Comprehensive Plan based on the information from the staff analysis and because: The petition is consistent with a range of Goals, Guiding Principles, and the Future Land Use Designation as defined in Chapter IV of the Gen H Comprehensive Plan. 3. We find this petition to be reasonable and in the public interest based on the information from the staff analysis, public hearing and because: 1.The petition utilizes an existing building and existing infrastructure. 2. The petition is in close proximity to schools, medical facilities, and existing neighborhoods making it an ideal location for the services offered. 3. The petition will improve pedestrian connectivity in the area. Ms. Waters seconded the motion which passed unanimously.***

**VI** **Other Business. Notice of Planning Board Regular Meetings Location Amendment.** Mr. Holloway explained the location for the months of October, November and December would be changed to the 305 Williams Street location as a larger room may be needed for future projects. ***Mr. Russell moved the Planning Board adopt the location change for the Planning Board meetings. Ms. Flores seconded the motion which passed unanimously.***

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

_____
Jim Robertson, Chair

DRAFT

CITY OF HENDERSONVILLE

# AGENDA ITEM SUMMARY
# PLANNING DIVISION

| | | | |
|---|---|---|---|
| **SUBMITTER:** | Matthew Manley | **MEETING DATE:** | October 9, 2025 |
| **AGENDA SECTION:** | New Business | **DEPARTMENT:** | Community Development |

**TITLE OF ITEM:** Rezoning: Standard Rezoning –Locust St Small Area Rezoning | 25-58-RZO – *Matthew Manley, AICP | Long-Range Planning Manager*

**SUGGESTED MOTION(S):**

**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 properties possessing PINS: 9569-80-4214 & 9569-80-2387 & 9569-80-4629, from I-1, Industrial Zoning District to CMU, Central Mixed Use Zoning District, based on the following:

**1. The petition is found to be Consistent with the City of Hendersonville Gen H Comprehensive Plan based on the information from the staff analysis and because:**

The proposed zoning of CMU aligns with the Gen H 2045 Comprehensive Plan Future Land Use & Conservation Map and the Character Area Description for 'Downtown'.

**2. Furthermore, we find this petition to be reasonable and in the public interest based on the information from the staff analysis, public hearing and because:**

1. CMU Zoning is more compatible than I-1 Zoning due to the differences in dimensional standards and permitted uses.
2. CMU Zoning better protects the existing character of the built environment and supports recent reinvestment in the economic vitality of the 7th Ave District
3. CMU Zoning will protect against incompatible Industrial uses.
4. Due to new requirements under S.B. 382, property owners must provide their consent for a rezoning of this nature. Though adjacent property owners were provided the information and opportunity to consent

**For Recommending Denial:**
I move Planning Board recommend City Council **deny** an ordinance amending the official zoning map of the City of Hendersonville changing the zoning designation of properties possessing PINS: 9569-80-4214 & 9569-80-2387 & 9569-80-4629, from I-1, Industrial Zoning District to CMU, Central Mixed Use Zoning District, based on the following:

1. **The petition is found to be Consistent with the City of Hendersonville Gen H Comprehensive Plan based on the information from the staff analysis and because:**

   The proposed zoning of CMU aligns with the Gen H 2045 Comprehensive Plan Future Land Use & Conservation Map and the Character Area Description for 'Downtown'.

2. **Furthermore, we do not find this petition to be reasonable and in the public interest based on the information from the staff analysis, public hearing and because:**

   1. CMU Zoning would reduce the number of permitted uses
   2. CMU Zoning would reduce the required dimensional standards (setbacks, min. lot size, etc.)
   3. CMU Zoning would further shift the area from its industrial roots

**[DISCUSS & VOTE]**

| | |
|---|---|
| to the rezoning only those included in the motion have consented.<br>**[DISCUSS & VOTE]** | |

***SUMMARY:*** *The City of Hendersonville is initiating a rezoning for consenting property owners in the Locust St Area to rezone properties from I-1, Industrial to CMU, Central Mixed Use. These owners and properties include multiple condo owners at 822 Locust St (PIN: 9569-80-4214), R Four Holdings at 824 Locust St Ste 300 (PIN: 9569-80-2387) and Scott & Dean Miller at 0 Lynn St (PIN: 9569-80-4629). Previously Daniel Huggins & Hailey Lamoreux (Applicants / Owners) at 824 Locust St Suite 400 (PIN: 9569-80-2471) along with Dennis Dunlap at 415 8th Ave E (PIN: 9569-80-4238), Kari Moer at 824 Locust St Suite 200 (PIN: 9569-80-2395), and Daniel Mock with AYD Partners at 0 Lynn St (PIN: 9569-80-3335) participated in a rezoning to CMU for this area. Additional property owner were given the opportunity to participate as well. The three additional properties before you represent those providing consent. Any future rezonings in this area will be by petition of the property owners.*

*Planning Staff initially identified the need for a rezoning of the I-1 properties in this area over 4 years ago. Though a 'small area rezoning' did not take place at that time, with the submittal of a rezoning application for CMU in August 2025, Planning Staff opened up the opportunity for select properties to join in on the rezoning. Per new state laws, property owners must consent to rezonings of this nature. Properties participating in the rezoning will benefit in the following ways:*

*1) CMU Zoning would make non-conforming buildings conforming;*

*2) CMU Zoning would permit current land uses to continue;*

*3) CMU Zoning would permit additional desired future land uses that I-1 zoning does not;*

*4) CMU Zoning would prevent incompatible uses.*

| | |
|---|---|
| **PROJECT/PETITIONER NUMBER:** | 25-07-RZO |
| **PETITIONER NAME:** | ○ Southern Appalachian Brewing (Cubbins), R Four Holdings (Tolles), Daniel Mock, & Hunting Creek Associates – Condo Owners of 822 Locust St (PIN: 9569-80-4214)<br>○ R Four Holdings (Tolles) – Owners of 824 Locust St Ste 300 (PIN: 9569-80-2387)<br>○ Scott & Dean Miller – Owners of 0 Lynn St (PIN: 9569-80-4629) |
| **ATTACHMENTS:** | 1. Staff Report<br>2. Zoning District Comparison<br>3. Comprehensive Plan Consistency & Criteria Evaluation Worksheet<br>4. Draft Ordinance<br>5. Consent Forms |

# STANDARD REZONING:
# LOCUST ST SMALL AREA REZONING - I-1 TO CMU
# (25-58-RZO)
# CITY OF HENDERSONVILLE - COMMUNITY DEVELOPMENT
# STAFF REPORT

PROJECT SUMMARY ..... 2
SITE IMAGES ..... 3
SITE IMAGES ..... 4
EXISTING ZONING & LAND USE ..... 6
FUTURE LAND USE ..... 9
REZONING STANDARDS (ARTICLE 11-4) ..... 10
REZONING STANDARDS ANALYSIS & CONDITIONS ..... 13
DRAFT COMPREHENSIVE PLAN CONSISTENCY AND REZONING REASONABLENESS STATEMENT ..... 14

## PROJECT SUMMARY

- Project Name & Case #:
  - Locust St Small Area Rezoning (I-1 to CMU)
  - 25-58-RZO
- Applicant & Property Owner:
  - Southern Appalachian Brewing (Cubbins), R Four Holdings (Tolles), Daniel Mock, & Hunting Creek Associates – Condo Owners
  - R Four Holdings (Tolles) – Owners
  - Scott & Dean Miller – Owners
- Property Address or PINS:
  - 822 100 Locust St (9569-80-4214)
  - 822 200 Locust St (9569-80-4214)
  - 822 300 Locust St (9569-80-4214)
  - 822 400 Locust St (9569-80-4214)
  - 824 Locust St Ste 300 (9569-80-2387)
  - 0 Lynn St (9569-80-4629)
- Project Acreage:
  - 3 Acres
- Current Parcel Zoning:
  - I-1 Industrial
- Proposed Zoning District:
  - CMU, Central Mixed Use
- Future Land Use Designation:
  - Downtown

SITE VICINITY MAP

*In addition to the properties rezoned last month, the City of Hendersonville is initiating a rezoning for consenting property owners in the Locust St Area to rezone the area from I-1, Industrial to CMU, Central Mixed Use. These additional owners and properties include multiple condo owners at 822 Locust St (PIN: 9569-80-4214), R Four Holdings at 824 Locust St Ste 300 (PIN: 9569-80-2387) and Scott & Dean Miller at 0 Lynn St (PIN: 9569-80-4629).*

*Planning Staff initially identified the need for a rezoning of the I-1 properties in this area over 4 years ago. Though a 'small area rezoning' did not take place at that time, with the submittal of a rezoning application for CMU, Planning Staff opened up the opportunity for select properties to join in on the rezoning. Per new state laws, property owners must consent to rezonings of this nature. Properties participating in the rezoning will benefit in the following ways:*

*1) CMU Zoning would make non-conforming buildings conforming;*

*2) CMU Zoning would permit current land uses to continue;*

*3) CMU Zoning would permit additional desired future land uses that I-1 zoning does not;*

*4) CMU Zoning would prevent incompatible uses.*

## SITE IMAGES

*View of subject properties along Locust St that have been identified for potential rezoning*

*View of Side / Rear of previously rezoned property*

## SITE IMAGES

*View of 415 8th Ave (previously rezoned property)*

*View of block of subject properties with buildings fronting Locust St that have been identified for potential rezoning*

## SITE IMAGES

*View of rear of vacant parcel on Lynn St potential rezoning candidate*

*View of cell tower in close vicinity. Property was considered but is NOT included in rezoning request due to non-conformity with CMU uses.*

## PROPOSED SMALL AREA REZONING BACKGROUND

The evolving nature of urban land uses, particularly within the 7th Ave District, requires that zoning be reevaluated on a recurring basis to determine if it aligns with the needs of today and provides for the visions of tomorrow. In consideration of the public and private investments made in recent years and the future economic opportunities this area presents, all indications are that the current zoning standards (Industrial) need to updated to better foster a mix of land uses while preserving a walkable, urban neighborhood form. This opportunity has been on Planning Staff's radar for a number of years. However, the submittal for a rezoning application in this block of Locust St has served as a catalyst for initiating a needed "small area rezoning".

**Impacts/Rationale**: There are three primary reasons why this potential rezoning would have a positive impact to property owners and the city:

1) **Bring Existing Structures into Conformity / Secure Character of Area.** The setbacks for I-1 are substantial (Front – 30', Sides – 20', Rear – 20'). Any structures that do not currently meet those setbacks are considered "*legal non-conforming structures*", making them subject to certain limitations. All of the structures identified for this rezoning are non-conforming structures. Should any of these non-conforming buildings become substantially damaged for any reason, they would have to be repaired/rebuilt in conformity with the I-1 setbacks. Many of the structures currently have 0' front and side setbacks. If substantially damaged, the buildings would have to be pushed back 30' from the sidewalk and 20' on sides and rear – drastically altering the character of the area. Furthermore, any new additions to these buildings would also be subject to the I-1 setbacks.

   Alternatively, the setbacks for CMU are much more relaxed and allow for buildings to utilize the full property with buildings allowed 12' from the curb /genrally the edge of the sidewalk and 0' setbacks/common walls on the sides and rear. Rezoning the properties from I-1 to CMU would eliminate the non-conformities and make the existing structures "conforming". This would go a long way towards helping to preserve the special character of the area.

2) **Better Alignment of Permitted Uses** – While the Industrial zoning allows for 26 more "permitted uses" than CMU, the CMU zoning allows for, amongst other important uses, 'multi-family residential' whereas I-1 zoning does not. Adding multi-family residential to the list of uses that are permitted on these properties creates a significant economic opportunity that better aligns with the emerging trends and desires of the 7th Ave area. In other words, multi-family residential is more likely to be a desired future land use than those currently permitted under I-1. In addition to multi-family, the following uses are allowed in CMU but not in I-1:

| | |
|---|---|
| 1 & 2-Family Residential | Cultural Art Buildings |
| Offices | Dance & Fitness Facilities |
| Theaters | Music & Art Studios |
| Coin-operated Laundries | |

Additionally, CMU zoning also allows: microbreweries, distilleries, cideries and wineries, food trucks, retail stores, restaurants, dry cleaning, construction trades, small-scale manufacturing, telecommunications antennas, and other uses that are already present in the 7th Ave / Locust St area.

Meanwhile, Industrial zoning permits any of the following uses:

| | |
|---|---|
| Freight terminals | Drive-thru restaurants |
| Storage Yards | Treatment Plants |
| Concrete Plants | Vehicle Repair with Outdoor Storage |

Vehicle & Heavy Equipment Storage Areas

And more…

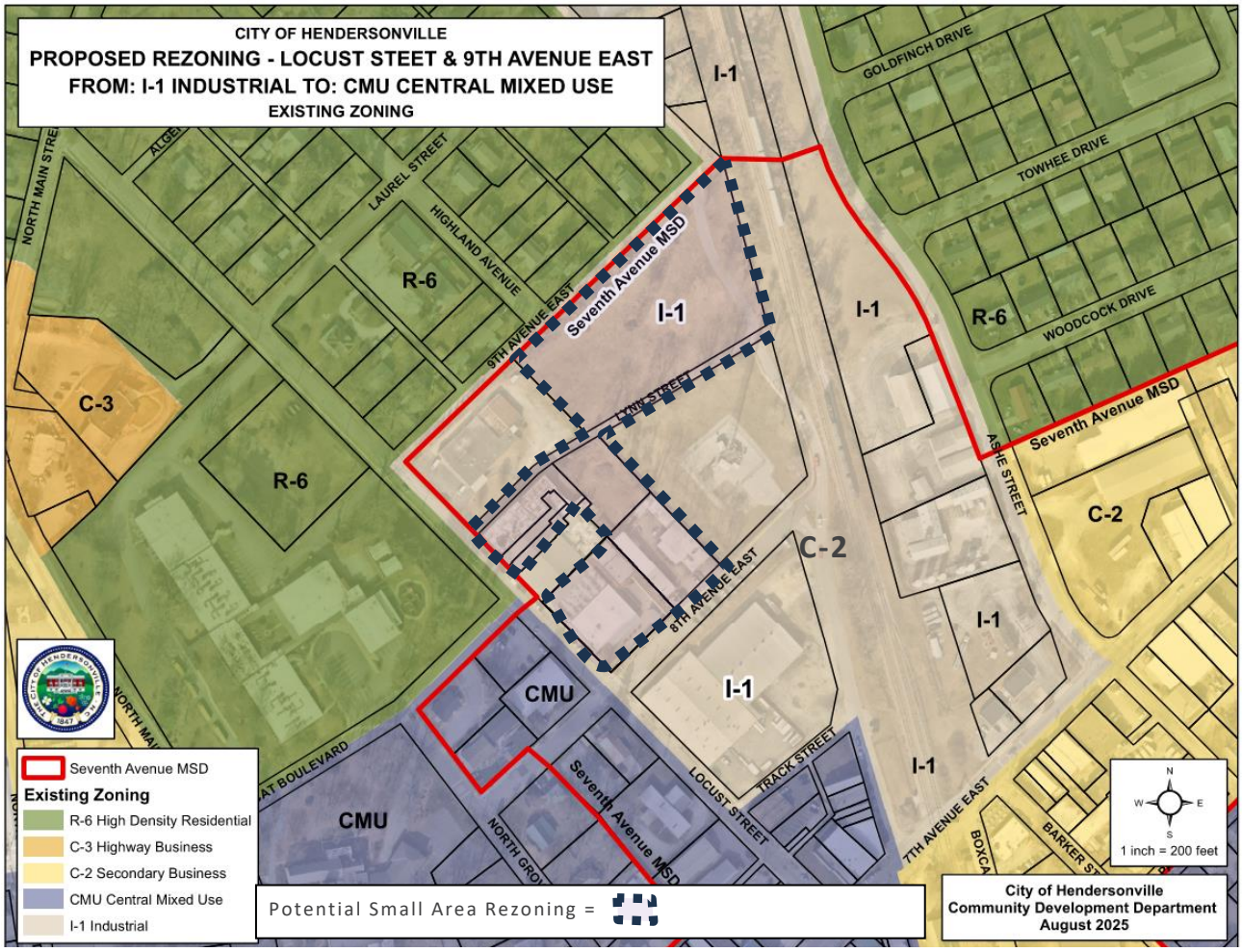
3) **Better Alignment with Adopted Vision** - CMU better aligns with the shared vision for this area as has been reflected in the recent investments made by both the public and private sectors. The City's *Gen H Comprehensive Plan* (adopted August 2024) designated this area as "Downtown" in the Future Land Use map. These properties are also located within the boundary of the 7th Ave MSD.

These distinctions point towards needing a zoning district that better aligns with urban growth trends and plans rather than towards industrial growth trends – which in today's market are more interstate oriented.

**Next Steps**: Under recent changes to state law, property owner consent is required for rezonings of this nature. Upon receipt of the initial application, City staff immediately collected contact information for each property owner that could potentially benefit from the "small area rezoning". Staff communicated via numerous emails, letters, phone calls and meetings to help present the rezoning opportunity to property owners and to give them the opportunity to consent to the rezoning.

A very well-attended property owners' meeting was held on August 26th at Southern Appalachian Brewery where questions were asked and discussions were held. Understandably, property owners were skeptical of any change. Staff has done our best to allay concerns and clearly communicate a balanced explanation of the implications of rezoning vs not rezoning. Staff anticipates that additional property owners will consent to rezoning prior to the City Council hearing. As such, staff has provided two motions for approval to Planning Board.

## EXISTING ZONING & LAND USE



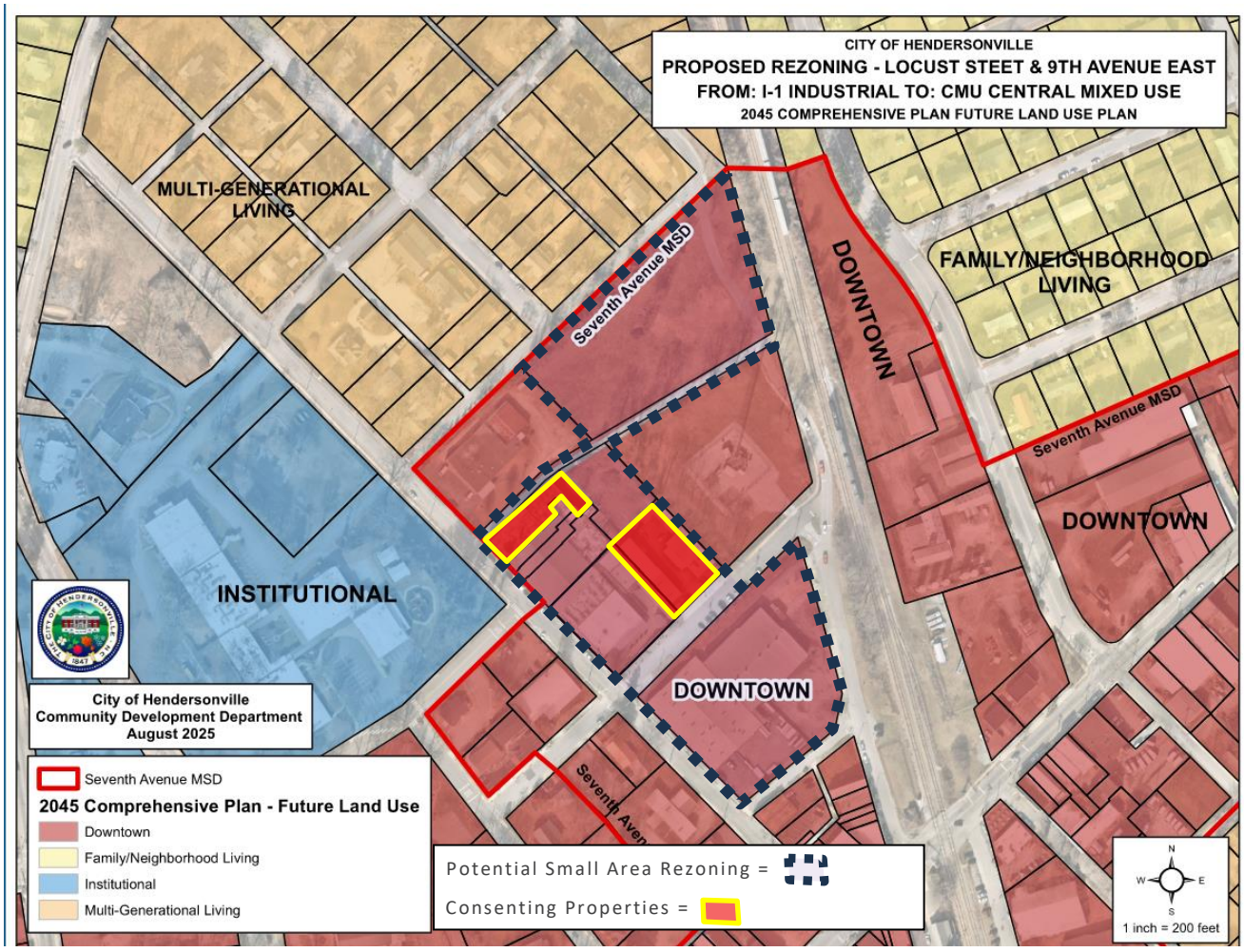

Existing Zoning & Current Land Use Map

*The subject properties and proposed properties are all in the corporate limits of the City of Hendersonville and currently zoned I-1, Industrial. Central Mixed Use (CMU) Zoning is located across the street and continues south towards Main St. The properties are located in 7th Ave Municipal Service District (MSD). The are situated in a historic part of town located between the 7th Ave Depot Historic National Register District and the Cold Springs Park National Register Historic District.*

*The principal property contains a two/three story brick building original constructed in 1926 as a Coca-Cola plant. The property at 415 8th Ave which has also consented to the rezoning is home to a micro-brewery. Other uses in the block of properties that have yet to consent include: microbrewery, retail, and small-scale manufacturing.*

*The land uses in this area are typical of an area transitioning from a mid-century railroad-oriented industrial district to a revitalized urban mixed-use node. The evolving character of the area has developed over the last 15 years due to a variety of public and private investments. The future economic opportunities for this area better align with the uses and standards permitted under CMU.*

## FUTURE LAND USE




Future Land Use & Conservation Map

*The City's Gen H 2045 Comprehensive Plan designates the subject property as "Downtown" in the Future Land Use & Conservation Map. The adjacent properties to the south and east are also designated Downtown. To the east, the properties containing Bruce Drysdale, County Veteran Services Building are designated as Institutional. MGL and FNL are in close proximity which makes this location ideal for a walkable, mixed use district. Downtown Character Area Description:*

> *This is the heart of the community and center of civic activities. In addition to governmental uses, it includes a mix of retail, restaurant, service, office, and civic uses. A variety of residential housing types complement the nonresidential uses and ensure a vibrant center with a 24/7 population. The mix of uses can be horizontal or vertical, with changes between floors of the same building. Buildings of two or more stories are common, and streets feature short block lengths and pedestrian facilities. Open spaces include plazas and formal greens.*

REZONING STANDARDS (ARTICLE 11-4)

| GENERAL REZONING STANDARDS: COMPREHENSIVE PLAN CONSISTENCY | |
|---|---|
| **1) COMPREHENSIVE PLAN CONSISTENCY** | **LAND SUPPLY, SUITABILITY & INTENSITY**<br>**Land Supply** - The applicant property was not identified as. Other properties in the potential rezoning area (primarily the vacant properties) were identified as ***Underutilized*** in the Land Supply Map.<br>**Suitability** – These underutilized properties were identified as ***Moderate to Highly Suitable*** for all three - Residential, Industrial and Commercial uses.<br>**Development Intensity** - The subject property is located in an area designated as ***Highest.***<br>**Focus Area** - The subject property is located in the ***7th Ave Focus Area*** and adjacent to the ***Downtown Edge Focus Area***. The existing buildings are shown to be preserved. The vacant lot on Lynn St is shown as townhomes. It states that new uses in the area should be "*…a mix of residential and commercial uses. New development should be sensitive to the character and form of the surrounding context*."<br>**Focused Intensity Node** – Downtown is its own Focused Intensity Node.<br>**Downtown Master Plan** – The properties are located in the Downtown Master Plan and designated in the ***7th Ave Downtown Character Area***. Locust St is designated as a ***Downtown*** street type.<br>**FUTURE LAND USE & CONSERVATION MAP**<br>**Character Area Designation:** Downtown<br>**Character Area Description:** Consistent with CMU<br>**Downtown Character Area Designation:** 7th Ave<br>**Downtown Character Area Description:** Consistent with CMU<br>**Zoning Crosswalk:** Consistent with CMU |
| **2) COMPATIBILITY** | **Whether and the extent to which the proposed amendment is compatible with existing and proposed uses surrounding the subject property**<br>*[In addition to a general analysis of the existing conditions, staff has utilized the **Gen H Comprehensive Plan** as a guide for further evaluating issues related to "compatibility". The analysis below includes an assessment of how the project aligns with the overall Goals and overarching Guiding Principles found in Chapter IV and Downtown Master Plan found in Chapter V of the Gen H Plan]*<br>**EXISTING CONDITIONS**<br>The subject property and each property proposed for the small area rezoning is currently zoned I-1, Industrial.<br>The subject property is part of a row of buildings fronting Locust St extending from Lynn St to 8th Ave. These buildings were constructed in 1926 and served as the Coca-Cola bottling plant. It was conveyed to staff that the buildings had a spur line connection to the railroad which ran under 8th Ave and was used to deliver and receive goods. The spur line is gone and the nearby railroad is currently only used for the storage of freight cars. This row of zero-lot line buildings is divided into separate units, each of which is owned individually or as part of a condominium association. Some units are vacant while the |

| | |
|---|---|
| | others are active with the following uses: small-scale manufacturing, office, retail, and microbrewery. Other neighboring properties considered for the rezoning including two vacant lots on Lynn St, the Guidon Brewing property on 8th Ave and the multi-tenant ProSource plumbing and hardware building at 806 Locust St.<br>Each of the known current land uses for these properties are permissible under CMU and I-1. However, each of the existing structures on these properties are considered "legal, non-conforming" structures because they are not compliant with the dimensional standards (setbacks, lot size, and min. lot width) for I-1 zoning. This makes these properties subject to the Non-conforming Standards in Chapter 6 of the Zoning Code.<br>Rezoning to CMU would reclassify the structures as conforming and these properties would no longer be subject to Non-conforming Standards. Furthermore, Rezoning to CMU would not create any Non-conforming Uses. The uses that are in place today would be permitted under CMU, including Small-Scale Manufacturing. Furthermore, many uses permitted under I-1 would be incompatible with these existing land uses. Meanwhile the uses in CMU that are not permitted in I-1 are compatible with the area. Examples of these CMU uses not allowed in I-1 include: Multi-Family Residential, Music & Art Studios, Offices (business, professional and public), Theatres, Dance & Fitness Facilities, Cultural Art Buildings, etc.<br>When considering both the differences between I-1 and CMU's dimensional standards and permitted uses, CMU is more compatible with the Locust St / 7th Ave area. |
| | **GEN H COMPREHENSIVE PLAN GOALS** (Chapter IV)<br>**Vibrant Neighborhoods**: Consistent<br>**Abundant Housing Choices**: Consistent<br>**Healthy and Accessible Natural Environment**: Consistent<br>**Authentic Community Character**: Consistent<br>**Safe Streets and Trails**: Consistent<br>**Reliable & Accessible Utility Services**: Consistent<br>**Satisfying Work Opportunities**: Consistent<br>**Welcoming & Inclusive Community**: Consistent<br>**Accessible & Available Community Uses and Services**: Consistent<br>**Resilient Community**: Consistent |
| | **GEN H COMPREHENSIVE PLAN GUIDING PRINCIPLES** (Chapter IV)<br>**Mix of Uses:** Consistent<br>**Compact Development:** Consistent<br>**Sense of Place:** Consistent<br>**Conserved & Integrated Open Spaces:** Consistent<br>**Desirable & Affordable Housing**: Consistent<br>**Connectivity**: Consistent<br>**Efficient & Accessible Infrastructure:** Consistent |
| | **DESIGN GUIDELINES ASSESSMENT** – The existing buildings on Locust St from Lynn St to 8th Ave are excellent example of historic |

| | |
|---|---|
| | buildings that reflect the type of traditional design that is promoted by the Downtown Design Guidelines. Because no new development is proposed, a full assessment of the building and site design was not performed. |
| 3) Changed Conditions | **Whether and the extent to which there are changed conditions, trends or facts that require an amendment -** |
| | The 7th Ave District, including Locust St, has been one of the most rapidly changing areas in Hendersonville over the last 5-10 years. Both public and private investments have stabilized and celebrated the historical integrity of the district while providing new life in the form of public infrastructure and vibrant economic opportunity.<br>The former industrial roots of the buildings along Locust St are evolving to house a mix of uses that serve a variety of urban needs and appetites. Recent updates to the I-1 Zoning District Standards requires that areas of the City that are no longer functioning as Industrial Districts update their zoning designation to accommodate appropriate and compatible uses and dimensional standards. |
| 4) Public Interest | **Whether and the extent to which the proposed amendment would result in a logical and orderly development pattern that benefits the surrounding neighborhood, is in the public interest and promotes public health, safety and general welfare -** |
| | Adoption of CMU zoning would have a range of positive impacts for the broader community. 1) CMU would make existing non-conforming buildings conforming. This would help to preserve the existing character of the area - allowing these buildings to be expanded in conformity with existing character and to be rebuilt in the case of a disaster, 2) CMU would prevent incompatible Industrial Land Uses such as: *adult entertainment, storage yards, body shops, video gambling, animal boarding, fast food, treatment plants,* etc. 3) CMU would allow for new uses that are compatible with the emerging character of the area such as the current uses on Locust St & 7th Ave and additional uses that are complimentary to those uses (see compatibility above). 4) CMU zoning aligns with the community-led, publicly-informed and Council-adopted growth management vision for the City. |
| 5) Public Facilities | **Whether and the extent to which adequate public facilities and services such as water supply, wastewater treatment, fire and police protection and transportation are available to support the proposed amendment** |
| | Rezoning to CMU allows new opportunities for reinvestment in the city core and greater utilization of existing infrastructure. |
| 6) Effect on Natural Environment | **Whether and the extent to which the proposed amendment would result in significantly adverse impacts on the natural environment including but not limited to water, air, noise, storm water management, streams, vegetation, wetlands and wildlife -** |

| | |
|---|---|
| | There is no immediate development proposed on the subject properties and no predicted impact on the natural environment as a result of this rezoning. |

## REZONING STANDARDS ANALYSIS & CONDITIONS

**Staff Analysis**

1) Comprehensive Plan Consistency - Staff finds CMU zoning to be clearly Consistent across the board with the *Gen H Comprehensive Plan* and the *Downtown* Character Area Description
2) Compatibility –CMU Zoning is found to be more compatible with the surrounding land uses than the current I-1 zoning due to differences in dimensional standards and permitted uses.
3) Changed Conditions – Changed conditions include the emerging mixed-use, downtown character of this area that has slowly transformed its industrial roots. Changes to Industrial zoning will induce areas of town to adopt modern zoning when they are no longer functioning as industrial districts.
4) Public Interest - Staff finds that the proposed rezoning would be in the public interest for the following reasons: 1) protection of character existing built environment, 2) protection from incompatible industrial uses, 3) opportunity for introduction of new complimentary land uses, and 4) supportive of adopted community vision.
5) Public Facilities - CMU zoning allows for more efficient use of existing infrastructure
6) Effect on Natural Environment - N/A

The petition is found to be **Consistent** with the City of Hendersonville Gen H Comprehensive Plan based on the information from the staff analysis and the public hearing, and because:

*The proposed zoning of CMU aligns with the Gen H 2045 Comprehensive Plan Future Land Use & Conservation Map and the Character Area Description for 'Downtown'.*

We **[find/do not find]** this petition to be reasonable and in the public interest based on the information from the staff analysis and the public hearing, and because:

*DRAFT [Rationale for Approval]*

- *CMU Zoning is more compatible than I-1 Zoning due to the differences in dimensional standards and permitted uses.*
- *CMU Zoning would better protect the existing character of the built environment and support recent investments in the emerging economic future of the 7th Ave / Locust St district*
- *CMU would protect against incompatible Industrial uses*

*DRAFT [Rational for Denial]*

- *CMU Zoning would reduce the number of permitted uses*
- *CMU Zoning would further shift the area from its industrial roots*

| PERMITTED & SPECIAL USES | |
|---|---|
| **I-1 Industrial (Current)**<br>*Green = Same in both districts*<br>*Red = Different from proposed district*<br>*Orange = Caveat on use* | **CMU, Central Mixed Use (Proposed)**<br>*Green = Same in both districts*<br>*Red = Different from proposed district*<br>*Orange = Caveat on use* |
| **Permitted Uses:**<br>Accessory dwelling units subject to SS<br>Accessory uses and structures<br>Agricultural supplies, bulk<br>Animal hospitals and clinics as long as they contain no outdoor kennels<br>Automobile car washes<br>Automobile sales and service<br>Automobile paint and body work<br>Bus stations<br>Business services<br>Cemeteries, mausoleums, columbariums, memorial gardens, and crematoriums<br>Civic centers<br>Concrete plants<br>Congregate care facilities, subject to supplementary standards<br>Construction trades facilities<br>Convenience stores with or without gasoline sales<br>Day care facilities<br>Dry cleaning and laundry<br>Exhibition buildings<br>Exterminators<br>Fairgrounds<br>Farm equipment sales and service<br>Feed and grain storage<br>Freight terminals (SIC Groups 40, 41, 42)<br>Funeral homes<br>Golf courses and related activities<br>Government facilities<br>Health clubs and athletic facilities<br>Heavy equipment, sales, rentals, leases, and service<br>Heavy equipment storage<br>Hospitals<br>Hotels<br>Laboratories with or without outdoor storage or operations<br>Merchandise gaming operations<br>Mini-warehouses | **Permitted Uses:**<br>Accessory dwelling units<br>Accessory uses & structures<br>Adult care centers registered with DHSS<br>Adult care homes<br>Animal hospitals so long as they are totally enclosed<br>Automobile car washes<br>Banks & other financial institutions<br>Bed & breakfast facilities<br>Bus stations<br>Business services<br>Child care homes<br>Congregate care facilities, subject to supplementary standards<br>Construction trades facilities<br>Convenience stores with or without gasoline sales<br>Cultural art buildings<br>Dance & fitness facilities<br>Dry cleaning & laundry establishments containing less than 2,000 sq ft of floor space<br>Funeral homes<br>Garage apartments<br>Home occupations<br>Hotels & motels<br>Laundries, coin-operated<br>Microbreweries, micro-distilleries, micro-cideries, and micro-wineries, SS<br>Mobile food vendors, subject to supplementary standards<br>Music & art studios<br>Newspapers and printing companies<br>Nursing homes, subject to supplementary standards<br>Offices, business, professional and public<br>Parking lots & parking garages<br>Parks<br>Personal services<br>Planned residential developments (minor), subject to the requirements of article VII, below |

Mobile food vendors, subject to supplementary standards
Motels
Motor freight terminals
Nursing homes, subject to supplementary standards
Parking lots and parking garages
Parks
Passenger transportation terminals
Personal services
Private clubs
Progressive care facilities, subject to supplementary standards
Public and semi-public structures
Publishing and printing establishments
Radio and television broadcasting studios
Recreational facilities, commercial, indoor
Recreational facilities, commercial, outdoor
Recycling centers
Religious institutions
Repair services, miscellaneous
Research and development with or without outdoor storage and operations
Rest homes, subject to supplementary standards contained in section 16-4, below
Restaurants
Restaurants, drive-in
Retail stores
Service stations
Signs, subject to the provisions of article XIII
Storage yards
Telecommunications antennas, subject to supplementary standards
Telecommunications towers, subject to supplementary standards
Travel trailer sales
Treatment plants, water and sewer
Vehicle repair shops with or without outdoor operations and storage
Vehicle storage areas, not to include junk yards and wrecking yards
Wholesaling establishments
Bottling plants
Breweries
Cideries
Cideries, hard
Private clubs
Progressive care facilities, subject to supplementary standards
Public & semi-public buildings
Recreational facilities, indoors
Religious institutions
Repair services, miscellaneous
Residential dwellings, single family
Residential dwellings, multi-family
Residential dwellings, two-family
Rest homes, subject to supplementary standards
Restaurants
Retail stores
Schools, post-secondary, business, technical and vocational
Schools, elementary & secondary
Signs, subject to the provisions of article XIII, below
Small scale manufacturing, subject to the supplementary standards
Telecommunications antennas, subject to supplementary standards
Theaters, indoors

**Special Uses**

Childcare centers
Civic clubs & fraternal organizations
Public utility facilities
Vehicle repair & service, without outdoor operations

| | |
|---|---|
| Distilleries<br>Food processing establishments, limited to dairy and bakery products, canneries, and beverage products<br>Greenhouses and commercial nurseries<br>Microbreweries, micro-distilleries, micro-cideries, and micro-wineries, subject to supplem. standards<br>Wineries<br>Manufacturing (selected industries)<br>**Special Uses**<br>Adult establishments<br>Animal boarding facilities<br>Civic clubs & fraternal organizations<br>Electronic gaming operations<br>Public utility facilities | |
| **DIMENSIONAL STANDARDS** | |
| **I-1 Industrial (Current)**<br>*Green = Same in both districts*<br>*Red = Different from proposed district*<br>*Orange = Caveat on standard* | **CMU Commercial Mixed Use (Proposed)**<br>*Green = Same in both districts*<br>*Red = Different from proposed district*<br>*Orange = Caveat on standard* |
| **Dimensional Requirements:**<br>Minimum Lot Area in Square Feet: 40,000<br><br>Minimum Lot Width at Building Line in Feet: 100'<br><br>Minimum Yard Requirements in Feet:<br>Front: 35'<br>Side: 20 '<br>Rear: 20'<br><br>Maximum Height in Feet: 35' (or no cap with increased side setbacks)<br><br>Max Density: N/A | **Dimensional Requirements:**<br>Minimum Lot Area in Square Feet: 0'<br><br>Minimum Lot Width at Building Line: 0'<br><br>Minimum Yard Requirements:<br>Front: 12' from curb<br>Side: 0'<br>Rear: 0'<br><br>Maximum Height in Feet: 36' or 64' (w/ 3 floors residential)<br><br>Max Density: No Cap |

| Locust St Rezoning (25-58-RZO) I-1 to CMU | | |
|---|---|---|
| **Chapter 4 - The Vision for the Future** | **Consistent** | **Inconsistent** |
| **GOALS** | | |
| **Vibrant Neighborhoods (Pg. 93)** | | |
| Promote lively neighborhoods that increase local safety. | Consistent | |
| Enable well-maintained homes, streets, and public spaces. | Consistent | |
| Promote diversity of ages (stage of life), income levels, and a range of interests. | Consistent | |
| The design allows people to connect to nearby destinations, amenities, and services. | Consistent | |
| **Abundant Housing Choices (Pg. 93)** | | |
| Housing provided meets the need of current and future residents. | Consistent | |
| Range of housing types provided to help maintain affordability in Hendersonville. | Consistent | |
| Housing condition/quality exceeds minimum standards citywide | Consistent | |
| **Healthy and Accessible Natural Environment (Pg. 94)** | | |
| Recreational (active and passive) open spaces are incorporated into the development. | Consistent | |
| Water quality is improved with the conservation of natural areas that serve as filters and soil stabilizers. | Somewhat Consistent | |
| Natural system capacity (floodplains for stormwater; habitats to support flora/fauna; tree canopy for air quality, stormwater management, and microclimate) is maintained. | Somewhat Consistent | |
| Development is compact (infill/redevelopment) to minimize the ecological footprint. | Consistent | |
| New development respects working landscapes (e.g., orchards, managed forests), minimizing encroachment. | Consistent | |
| **Authentic Community Character (Pg. 94)** | | |
| Downtown remains the heart of the community and the focal point of civic activity | Consistent | |
| A development near a gateway sets the tone, presenting the image/brand of the community. | Consistent | |
| Historic preservation is utilized to maintain the city's identity. | Consistent | |
| City Centers and neighborhoods are preserved through quality development. | Consistent | |
| **Safe Streets and Trails (Pg. 95)** | | |
| Interconnectivity is promoted between existing neighborhoods through the building out of street networks, including retrofits and interconnectivity of new developments. | Consistent | |
| Access is increased for all residents through the provision of facilities that promote safe walking, biking, transit, automobile, ride share, and bike share. | Consistent | |
| Design embraces the principles of walkable development. | Consistent | |
| **Reliable & Accessible Utility Services** | | |

| | | |
|---|---|---|
| Wastewater treatment (service and capacity) adequately serves existing and future development | Consistent | |
| A compact service area (infill, redevelopment) maximizes the utilization of existing infrastructure and feasible service delivery. | Consistent | |
| **Satisfying Work Opportunities (pg. 96)** | | |
| The development promotes quality job options. | Consistent | |
| The lives of residents are enriched with opportunities to learn, build skills, and grow professionally. | Consistent | |
| **Welcoming & Inclusive Community** | | |
| Accessibility exceeds minimum standards of ADA, fostering residents' and visitors' sense of belonging. | N/A | |
| An inviting public realm (i.e., parks, public buildings) reflects the attitudes of city residents and leaders, and helps residents develop a sense of place and attachment to Hendersonville. | Consistent | |
| **Accessible & Available Community Uses and Services (Pg. 97)** | | |
| Private development is plentiful, meeting the demands of current and future populations. | Consistent | N/A |
| **Resilient Community** | | |
| N/A | | |
| **GUIDING PRINCIPALS (pg. 98)** | | |
| Mix of Uses (Pg. 98) | | |
| Revitalization of Outdated Commercial Areas | Consistent | |
| New business and office space promotes creative hubs. | Consistent | |
| Compact Development (Pg. 100) | | |
| Development is consistent with efforts in the area to establish 15-minute neighborhoods. | Consistent | |
| The infill project is context sensitive [Small Infill Site]. | Consistent | |
| Sense of Place (Pg. 102) | | |
| The development contributes to Hendersonville's character and the creation of a sense of place through its architecture and landscape elements. [Placekeeping and Placemaking and 3rd Places] | Consistent | |
| Conserved & Integrated Open Spaces (Pg. 106) | | |
| A diverse range of open space elements are incorporated into the development. | Consistent | |
| Desirable & Affordable Housing (Pg. 108) | | |
| Missing middle housing concepts are used in the development. | Consistent | |
| Connectivity (Pg. 112) | | |
| The development encourages multimodal design solutions to enhance mobility. | Consistent | |
| Efficient & Accessible Infrastructure (Pg. 114) | | |
| The development utilizes existing infrastructure | Consistent | |

Ordinance #___-____

**AN ORDINANCE OF THE CITY OF HENDERSONVILLE CITY COUNCIL TO AMEND THE OFFICIAL ZONING MAP OF THE CITY OF HENDERSONVILLE FOR CERTAIN PARCELS (POSSESSING PIN NUMBERS: 9569-80-4214 & 9569-80-2387 & 9569-80-4629) BY CHANGING THE ZONING DESIGNATION FROM I-1 INDUSTRIAL ZONING DISTRICT TO CMU, CENTRAL MIXED USE ZONING DISTRICT**

IN RE: Parcel Numbers: 9569-80-4214 & 9569-80-2387 & 9569-80-4629
Locust St Small Area Rezoning | File # 25-58-RZO

**WHEREAS,** the Planning Board took up this application at its regular meeting on October 9, 2025; 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 6, 2025, and

**WHEREAS,** City Council has found that this zoning map amendment is consistent with the City's comprehensive plan, and that it is reasonable and in the public interest for the reasons stated, and

**WHEREAS,** City Council has conducted a public hearing as required by the North Carolina General Statutes on November 6, 2025,

**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: 9569-80-4214 & 9569-80-2387 & 9569-80-4629, by changing the zoning designation from I-1 Industrial Zoning District to CMU, Central Mixed Use Zoning District

2. Any development of this parcel shall occur in accordance with the Zoning Ordinance of the City of Hendersonville, North Carolina.

3. This ordinance shall be in full force and effect from and after the date of its adoption.

Adopted this 6th day of November 2025.

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

_____
Jill Murray, City Clerk

Approved as to form:

_____
Angela S. Beeker, City Attorney

**City-Initiated Rezoning Consent Form:**

I, Andrew Cubbin, formally acknowledge and consent to the rezoning of property located at
(owner name)
822 Locust St. Ste 100 (PIN: 9579 80 4214). The City of Hendersonville may
(street address)
proceed with the rezoning of this property from I-1, Industrial Zoning District to CMU, Central Mixed Use Zoning District. I understand that the rezoning of the property is entirely voluntary and that I am not required to agree to the rezoning. I further understand the impact of the rezoning will be to change the permissible land uses of the property as well as the dimensional standards and site development standards that are applied to new construction, shifting from those outlined in Section 5-12 of the City of Hendersonville Zoning Ordinance to those outlined in Section 5-19

Address of property to be rezoned:

Street: 822 Locust St. ste100
City: Hendersonville
State: NC
Or:
PIN: _____

Property Owner Printed Name:
Andrew Cubbin

Ownership Type (check appropriate box):
Individual ☐ Corporation ☑ LLC ☐ Trust ☐ Partnership ☐ Other _____

If not owned by "Individual", provide the printed name and title of person with legal authority to sign on behalf of owner below:

_____ Title: _____

Mailing Address of Property Owner: 822 Locust St, Ste 100

Owner Signature: Andrew Cubbin (Andrew Cubbin (Sep 11, 2025 11:39:15 EDT)) Date: 9/11/25

Owner Signature: Andrew Cubbin (Andrew Cubbin (Sep 11, 2025 11:39:15 EDT)) Date: _____

Owner Signature: Andrew Cubbin (Andrew Cubbin (Sep 11, 2025 11:39:15 EDT)) Date: _____

Owner Signature: Andrew Cubbin (Andrew Cubbin (Sep 11, 2025 11:39:15 EDT)) Date: _____

# Rezoning Consent Form

Final Audit Report 2025-09-11

| | |
|---|---|
| Created: | 2025-09-11 |
| By: | Matthew Manley (mmanley@hvlnc.gov) |
| Status: | Signed |
| Transaction ID: | CBJCHBCAABAAFnDXic0XlVIuyvWIqkext9A4eGKzDYgK |

## "Rezoning Consent Form" History

Document created by Matthew Manley (mmanley@hvlnc.gov)
2025-09-11 - 2:19:51 PM GMT

Document emailed to mail@sabrewery.com for signature
2025-09-11 - 2:20:43 PM GMT

Email viewed by mail@sabrewery.com
2025-09-11 - 3:27:42 PM GMT

Signer mail@sabrewery.com entered name at signing as Andrew Cubbin
2025-09-11 - 3:39:13 PM GMT

Document e-signed by Andrew Cubbin (mail@sabrewery.com)
Signature Date: 2025-09-11 - 3:39:15 PM GMT - Time Source: server

Agreement completed.
2025-09-11 - 3:39:15 PM GMT

**City-Initiated Rezoning Consent Form**:

I, The Mock Revocable Trust dated May 6, 2008 (owner name), formally acknowledge and consent to the rezoning of property located at 822 Locust St., Ste 400, Hendersonville, NC 28792 (street address) (PIN: 956-[illegible]-9804214). The City of Hendersonville may proceed with the rezoning of this property from I-1, Industrial Zoning District to CMU, Central Mixed Use Zoning District. I understand that the rezoning of the property is entirely voluntary and that I am not required to agree to the rezoning. I further understand the impact of the rezoning will be to change the permissible land uses of the property as well as the dimensional standards and site development standards that are applied to new construction, shifting from those outlined in Section 5-12 of the City of Hendersonville Zoning Ordinance to those outlined in Section 5-19

Address of property to be rezoned:

Street: 822 Locust St., Ste 400
City: Hendersonville
State: NC

Or:

PIN: 9569804214

Property Owner Printed Name:

The Mock Revocable Trust dated May 6, 2008

Ownership Type (check appropriate box):

Individual ☐ Corporation ☐ LLC ☐ Trust ☑ Partnership ☐ Other _____

If not owned by "Individual", provide the printed name and title of person with legal authority to sign on behalf of owner below:

Daniel Mock Title: Trustee

638 Spartanburg Hwy, Ste 70-338, Hendersonville, NC 28792
Mailing Address of Property Owner:

Owner Signature: The Mock Revocable Trust dated May 6, 2008 The Mock Revocable Trust dated May 6, 2008 (Sep 10, 2025 17:02:19 EDT) Date: 9/10/25

Owner Signature: The Mock Revocable Trust dated May 6, 2008 The Mock Revocable Trust dated May 6, 2008 (Sep 10, 2025 17:02:19 EDT) Date:

Owner Signature: The Mock Revocable Trust dated May 6, 2008 The Mock Revocable Trust dated May 6, 2008 (Sep 10, 2025 17:02:19 EDT) Date:

Owner Signature: The Mock Revocable Trust dated May 6, 2008 The Mock Revocable Trust dated May 6, 2008 (Sep 10, 2025 17:02:19 EDT) Date:

# Rezoning Consent Form

Final Audit Report 2025-09-10

| | |
|---|---|
| Created: | 2025-09-10 |
| By: | Matthew Manley (mmanley@hvlnc.gov) |
| Status: | Signed |
| Transaction ID: | CBJCHBCAABAALyD0sHMN4MXRdcazcnvwN88IVQeo8V3H |

## "Rezoning Consent Form" History

Document created by Matthew Manley (mmanley@hvlnc.gov)
2025-09-10 - 8:30:36 PM GMT

Document emailed to dan@rockwooddevelopment.com for signature
2025-09-10 - 8:31:07 PM GMT

Email viewed by dan@rockwooddevelopment.com
2025-09-10 - 8:47:37 PM GMT

Signer dan@rockwooddevelopment.com entered name at signing as The Mock Revocable Trust dated May 6, 2008
2025-09-10 - 9:02:17 PM GMT

Document e-signed by The Mock Revocable Trust dated May 6, 2008 (dan@rockwooddevelopment.com)
Signature Date: 2025-09-10 - 9:02:19 PM GMT - Time Source: server

Agreement completed.
2025-09-10 - 9:02:19 PM GMT

**City-Initiated Rezoning Consent Form**:

I, R Four Holdings (owner name), formally acknowledge and consent to the rezoning of property located at 822 Locust Street, Suite 200 (street address) (PIN: 9569 80 4214). The City of Hendersonville may proceed with the rezoning of this property from I-1, Industrial Zoning District to CMU, Central Mixed Use Zoning District. I understand that the rezoning of the property is entirely voluntary and that I am not required to agree to the rezoning. I further understand the impact of the rezoning will be to change the permissible land uses of the property as well as the dimensional standards and site development standards that are applied to new construction, shifting from those outlined in Section 5-12 of the City of Hendersonville Zoning Ordinance to those outlined in Section 5-19

Address of property to be rezoned:

Street: 822 Locust street, Suite 200-300

City: Hendersonville

State: NC

Or:

PIN: 9569804214

Property Owner Printed Name:

R Four Holdings

Ownership Type (check appropriate box):

Individual Corporation ☐ LLC ☑ Trust ☐ Partnership ☐ Other _____

If not owned by "Individual", provide the printed name and title of person with legal authority to sign on behalf of owner below:

Ilse Tolles Title: owner

Mailing Address of Property Owner: 822 Locust Street, Suite 200

Owner Signature: ilse tolles (Sep 17, 2025 17:06:16 EDT) Date: 09/17/2025

Owner Signature: _____ Date: _____

Owner Signature: _____ Date: _____

Owner Signature: _____ Date: _____

# Rezoning Consent Form

Final Audit Report 2025-09-17

| | |
|---|---|
| Created: | 2025-09-17 |
| By: | Matthew Manley (mmanley@hvlnc.gov) |
| Status: | Signed |
| Transaction ID: | CBJCHBCAABAADCheeYKyMfSH_FaRvphoYPo5AUnkP7id |

## "Rezoning Consent Form" History

Document created by Matthew Manley (mmanley@hvlnc.gov)
2025-09-17 - 6:05:49 PM GMT

Document emailed to ilse tolles (tollesilse@gmail.com) for signature
2025-09-17 - 6:06:32 PM GMT

Email viewed by ilse tolles (tollesilse@gmail.com)
2025-09-17 - 8:29:52 PM GMT

Document e-signed by ilse tolles (tollesilse@gmail.com)
Signature Date: 2025-09-17 - 9:06:16 PM GMT - Time Source: server

Agreement completed.
2025-09-17 - 9:06:16 PM GMT

**City-Initiated Rezoning Consent Form**:

I, R Four Holdings (owner name), formally acknowledge and consent to the rezoning of property located at 824 Locust street, Suite 300 (street address) (PIN: 9569 80 4214). The City of Hendersonville may proceed with the rezoning of this property from I-1, Industrial Zoning District to CMU, Central Mixed Use Zoning District. I understand that the rezoning of the property is entirely voluntary and that I am not required to agree to the rezoning. I further understand the impact of the rezoning will be to change the permissible land uses of the property as well as the dimensional standards and site development standards that are applied to new construction, shifting from those outlined in Section 5-12 of the City of Hendersonville Zoning Ordinance to those outlined in Section 5-19

Address of property to be rezoned:

Street: 824 Locust Street, Suite 300
City: Hendersonville
State: NC

Or:

PIN: 9569-80-4214

Property Owner Printed Name:
R Four Holdings

Ownership Type (check appropriate box):
Individual Corporation ☐ LLC ☑ Trust ☐ Partnership ☐ Other _____

If not owned by "Individual", provide the printed name and title of person with legal authority to sign on behalf of owner below:

Ilse P Tolles Title: Owner

Mailing Address of Property Owner: 822 Locust Street, Suite 200

Owner Signature: *ilse tolles* ilse tolles (Sep 22, 2025 16:06:44 EDT) Date: 09/22/2025

Owner Signature: _____ Date: _____

Owner Signature: _____ Date: _____

Owner Signature: _____ Date: _____

# Rezoning Consent Form

Final Audit Report 2025-09-22

| | |
|---|---|
| Created: | 2025-09-18 |
| By: | Matthew Manley (mmanley@hvlnc.gov) |
| Status: | Signed |
| Transaction ID: | CBJCHBCAABAAzQ0AfxLhbNf1ZqfIU_uBxyKxffgal3PJ |

## "Rezoning Consent Form" History

Document created by Matthew Manley (mmanley@hvlnc.gov)
2025-09-18 - 2:56:07 PM GMT

Document emailed to ilse tolles (tollesilse@gmail.com) for signature
2025-09-18 - 2:56:41 PM GMT

Email viewed by ilse tolles (tollesilse@gmail.com)
2025-09-22 - 8:01:25 PM GMT

Document e-signed by ilse tolles (tollesilse@gmail.com)
Signature Date: 2025-09-22 - 8:06:44 PM GMT - Time Source: server

Agreement completed.
2025-09-22 - 8:06:44 PM GMT

CITY OF HENDERSONVILLE

# AGENDA ITEM SUMMARY
## PLANNING DIVISION

**SUBMITTER:** Matthew Manley

**MEETING DATE:** October 9, 2025

**AGENDA SECTION:** New Business

**DEPARTMENT:** Community Development

**TITLE OF ITEM:** Rezoning: Standard Rezoning – 1207 Kanuga Rd Rezoning | R-15 to C-4 (25-59-RZO) – *Matthew Manley, AICP – Long-Range Planning Manager*

**SUGGESTED MOTION(S):**

| **For Recommending Approval:** | **For Recommending Denial:** |
|---|---|
| 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 (PINs: 9568-61-2215) from R-15, Medium Density Residential Zoning District to C-4, Neighborhood Commercial Zoning District based on the following:<br><br>**1. The petition is found to be Inconsistent with the City of Hendersonville Gen H Comprehensive Plan based on the information from the staff analysis and the public hearing, and because:**<br><br>The petition for C-4 zoning is inconsistent with the Future Land Use and Conservation Map Designation of 'Family Neighborhood Living'.<br><br>**2. We find this petition to be reasonable and in the public interest based on the information from the staff analysis, public hearing and because:**<br><br>1. The proposed zoning is compatible with surrounding non-residential land uses<br>2. The proposed zoning allows for a mix of uses at an intersection which experiences significant vehicular traffic<br>3. The proposed zoning allows for nodal development with non-residential uses in an area proximate to a major intersection, along a minor arterial roadway, and confined by floodplains.<br>4. The surrounding low density residential uses primarily front and gain access from local streets rather than fronting on arterial roadways. | I move Planning Board recommend City Council **deny** an ordinance amending the official zoning map of the City of Hendersonville changing the zoning designation of the subject (PINs: 9568-61-2215) from R-15, Medium Density Residential Zoning District to C-4, Neighborhood Commercial Zoning District based on the following:<br><br>**1. The petition is found to be Inconsistent with the City of Hendersonville Gen H Comprehensive Plan based on the information from the staff analysis and the public hearing, and because:**<br><br>The petition for C-4 zoning is inconsistent with the Future Land Use and Conservation Map Designation of 'Family Neighborhood Living'<br><br>**2. We do not find this petition to be reasonable and in the public interest based on the information from the staff analysis, public hearing and because:**<br><br>1. The proposed zoning is incompatible with the surrounding land uses<br>2. The proposed zoning would result in increased traffic congestion to the surrounding area<br>3. The proposed zoning would result in environmental degradation<br><br>**[DISCUSS & VOTE]** |

| | |
|---|---|
| **3. Furthermore, we propose to amend the Character Area of the subject property on the Gen H Comprehensive Plan Future Land Use & Conservation Map to that of '*Neighborhood Center'*.**<br>**[DISCUSS & VOTE]** | |

***SUMMARY:*** *Greg Grooms of Blue Pinnacle Homes is petitioning to rezone one parcel at 1207 Kanuga Rd from R-15, Medium Density Residential to C-4, Neighborhood Commercial. The 0.81 acre property is located at Drake St + Kanuga Rd and has PIN: 9568-61-2215. The property is located in the City's ETJ.*

*There are a number of existing commercial uses in vicinity of the property. Kanuga Rd and State St represent the intersection of an Arterial and a Collector (high traffic volume intersection). The confluence of Shepherd Creek and Mud Creek is also in close proximity though the subject property is primarily outside of the 100-yr floodplain.*

*The Future Land Use Character Area designation of the property is Family Neighborhood Living, however the properties in close proximity such as 1155 Kanuga Rd and the parcel across the street are designated as Neighborhood Center. Future Land Use Character Area designations are often painted with broad strokes, and it is customary for interpretations of appropriate future land use characteristics to continue to evolve on a parcel-by-parcel level over time.*

*If rezoned, there will <u>not</u> be a binding site plan, list of uses, nor conditions placed on the site. All permitted uses within the C-4 zoning district would be allowed on the site.*

| | |
|---|---|
| **PROJECT/PETITIONER NUMBER:** | 25-59-RZO |
| **PETITIONER NAME:** | • Greg Grooms, Blue Pinnacle Homes [Applicant + Owner] |
| **ATTACHMENTS:** | 1. Staff Report<br>2. Proposed Zoning Map<br>3. Draft Ordinance |

# STANDARD REZONING:

# 1207 KANUGA RD | R-15 to C-4

# (25-59-RZO)

# CITY OF HENDERSONVILLE - COMMUNITY DEVELOPMENT

# STAFF REPORT

PROJECT SUMMARY ..... 2
EXISTING ZONING & LAND USE ..... 3
SITE IMAGES ..... 4
FUTURE LAND USE ..... 7
DEVELOPER-PROPOSED CONDITIONS: ..... **Error! Bookmark not defined.**
OUTSTANDING ISSUES & CITY PROPOSED CONDITIONS: ..... **Error! Bookmark not defined.**
REZONING ANALYSIS – GENERAL REZONING STANDARDS (ARTICLE 11-4) ..... 8
DRAFT COMPREHENSIVE PLAN CONSISTENCY AND REZONING REASONABLENESS STATEMENT ..... 11

## PROJECT SUMMARY

- Project Name & Case #:
  - 25-59-RZO
- Applicant & Property Owner:
  - Greg Grooms, Blue Pinnacle Homes [Applicant & Owner]
- Property Address:
  - 1207 Kanuga Rd
- Project Acreage:
  - 0.81 Acres
- Parcel Identification (PIN):
  - 9568-61-2215
- Current Parcel Zoning:
  - R-15, "Medium Density Residential"
- Requested Zoning:
  - C-4 Neighborhood Business
- Future Land Use Designation:
  - Family Neighborhood Living

SITE VICINITY MAP

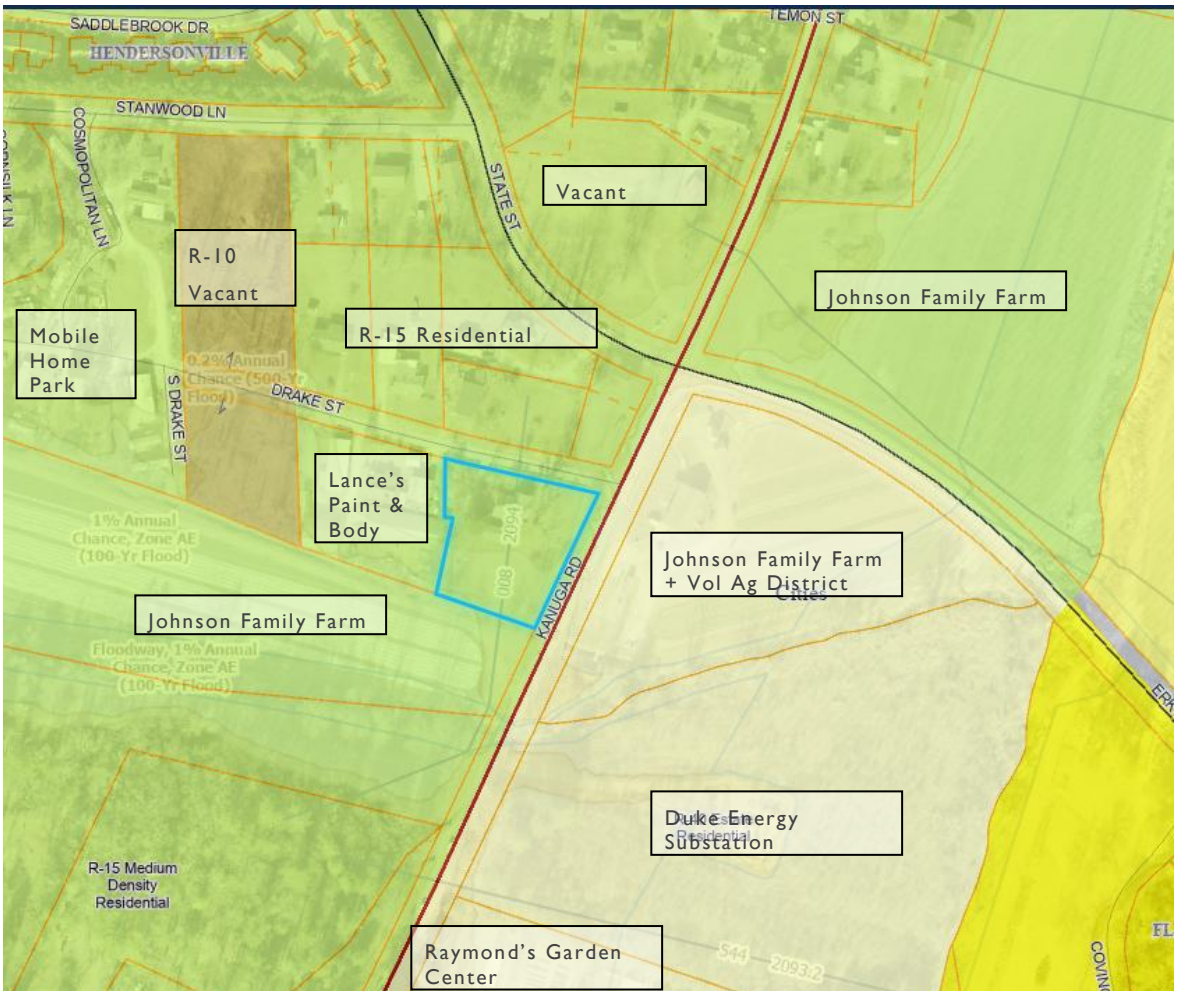
*The City of Hendersonville in receipt of a zoning map amendment petition from Greg Grooms of Blue Pinnacle Homes and Christopher & Lisa Juedeman, property owners, to rezone a 0.81 Acre parcel at 1207 Kanuga Rd (PIN: 9568-61-2215) from R-15, Medium Density Residential to C-4, Neighborhood Business.*

*The property is located near the intersection of Kanuga Rd and State St at the corner of Drake St. The confluence of Shepherd Creek and Mud Creek is in close proximity though the subject property is primarily outside of the 100-yr floodplain.*

*The Future Land Use Character Area designation of the property is Family Neighborhood Living, however it is located in close proximity to parcels designated as Neighborhood Center.*

*If rezoned, there will not be a binding site plan, list of uses, nor conditions placed on the site. All permitted uses within the C-4 zoning district would be allowed on the site.*

EXISTING ZONING & LAND USE




City of Hendersonville Current Zoning & Land Use Map

*The subject property is located in the City of Hendersonville Extra-Territorial Jurisdiction (ETJ) and is located in the R-15, Medium Density Residential zoning district. A majority of properties in the vicinity are also zoned R-15 however a parcel to the west was recently rezoned to R-10, Medium Density Residential. Across Kanuga Rd to the East, the properties are zoned R-40, Low Density Residential. The closest commercial zoning is near Kanuga Rd. at Hebron Rd.*

*Though this area is primarily residential in character there are agricultural, utility and commercial uses in close proximity to the subject property. Abutting the property to the south and across Kanuga Rd to the east, are parcels associated with the Johnson Family Farm. The Johnson Family Farm has status as a Bonafide farm (Vol. Ag District) and thus is exempt from Zoning. As a result of this, the farm operates agricultural related commercial uses (retail, food trucks, etc.) at corner of Kanuga Rd & State St. Duke Energy operates a substation to the south of the Johnson Family Farm. Adjacent to the Duke Energy parcel and further to the south is Raymond's Garden Center plant nursery. And behind the subject property is a Paint & Body shop.*

*It should also be noted that the Shepherd Creek and Mud Creek floodplains are a defining feature of this area. A very small portion of the subject property is in the 100 Yr Floodplain while all of the surrounding agricultural, commercial and utility uses are in the Floodway + Floodplain.*

SITE IMAGES

*View of Subject Property facing west. Front of structure faces Kanuga Rd but is substantially screened by a row of hedges.*

*View from the subject property facing north. Property has approx. 0.34 acres of undeveloped land in south side yard.*

SITE IMAGES

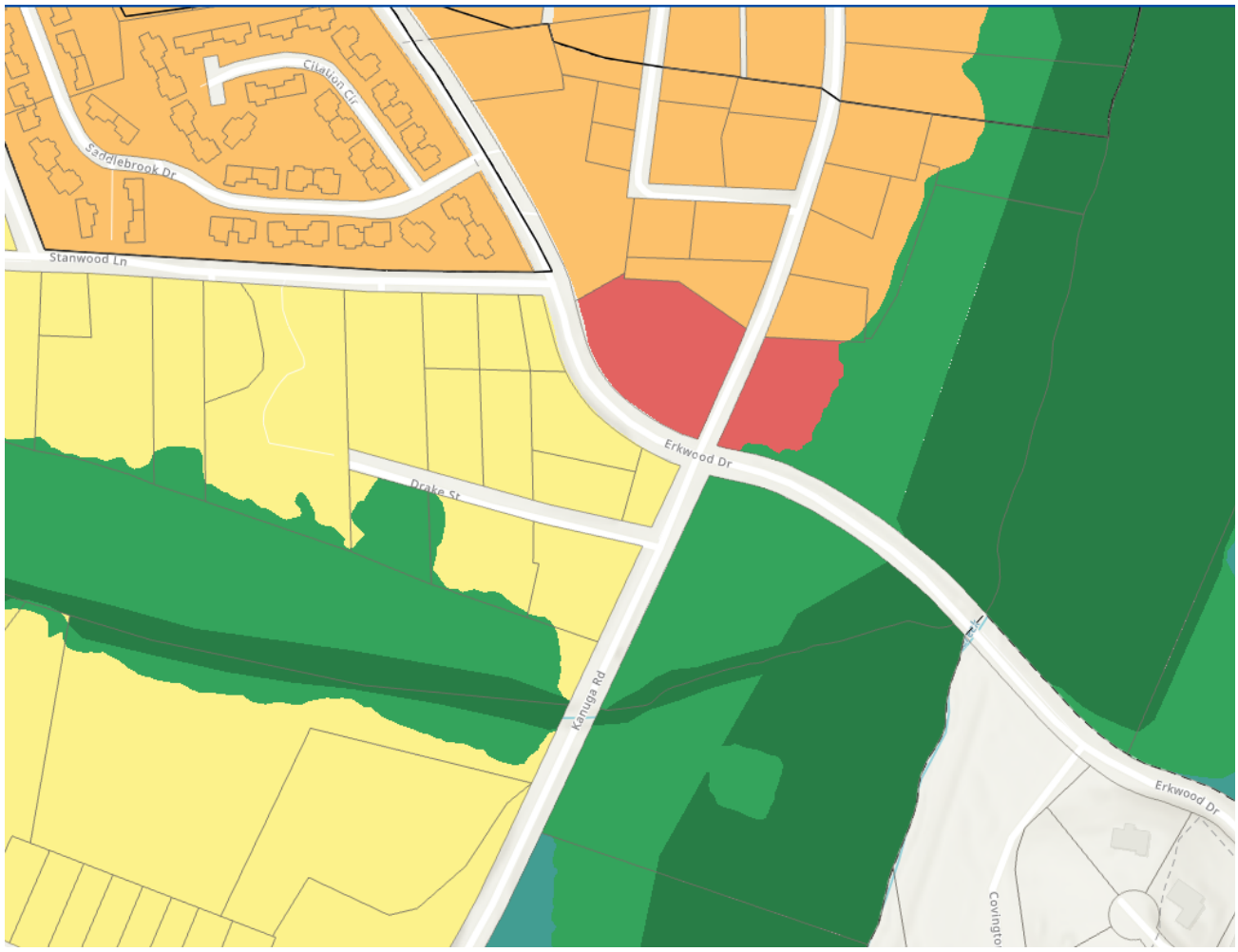
*View of Johnson Family Farm from Kanuga Rd facing west. This is the Shepherd Creek floodplain south of subject property.*

SITE IMAGES

*View of Johnson Family Farm commercial activities in Voluntary Agricultural District (Bonafide farm) at corner of Kanuga Rd & State St.*

*Commercial + Agricultural activities at Johnson Family Farm store.*

## FUTURE LAND USE




City of Hendersonville Future Land Use Map

*According to the City's Gen H Future Land Use & Conservation Map, the subject property is designated as Family Neighborhood Living (FNL) with a fraction of the parcel noted as Open Space – Conservation (OS-C). The parcels to the west are also characterized as FNL with OS designated along the Shepherd Creek floodplain. To the north of Stanwood Ln, properties shift to the Multi-Generational Living designation. Across Kanuga Rd, properties located in the Mud Creek floodplain are all designated as OS.*

*Most notably, a concentration of the "Neighborhood Center" character area is found at the intersection of State St and Kanuga Rd. This Neighborhood Center character was intended to identify the area around this intersection as a small node of neighborhood-scale business activities - reflecting both current and future economic opportunities. Neighborhood Center is described as encompassing: "…small centers (typically 100,000 sf of nonresidential space) with local-serving uses [and] may be located within walking distance of and complement surrounding residential uses. Typical uses include grocery & drug stores, coffee shops, dry cleaners, bank branches, restaurants, and a limited amount of residential." Markets, small offices and other similar uses would also be appropriate.*

REZONING ANALYSIS – GENERAL REZONING STANDARDS (ARTICLE 11-4)

| GENERAL REZONING STANDARDS | |
|---|---|
| 1) Comprehensive Plan Consistency | **Land Supply, Suitability & Intensity**<br>**Land Supply:** The subject property not classified as Un- or Underdeveloped.<br>**Land Suitability**: Therefore, the subject property was not evaluated for suitability. Adjacent suitability is moderate to suitable for commercial and residential uses and not suitable for industrial uses.<br>**Intensity Node**: The subject property is not located in a Intensity Node. The Intensity Node for the Southside of Hendersonville is in close proximity with "Busy Bend" located less than 1 mile away.<br>**Development Intensity:** Low. This area is not identified for Intense infill development.<br>**Focus Area:** The subject property is not located in a Focus Area. |
| | **Future Land Use & Conservation Map-**<br>**Designation:** Family Neighborhood Living<br>**Character Area Description:** Inconsistent<br>**Zoning Crosswalk:** Inconsistent – Character Area would need to be updated to Multi-Generational Living or Neighborhood Center for consistency. |
| 2) Compatibility | **Whether and the extent to which the proposed amendment is compatible with existing and proposed uses surrounding the subject property –** |
| | The subject property is a former residence that currently appears to be vacant and under rehabilitation. Directly to the south of the subject property is a portion of the Johnson Family Farm along Shepherd Creek. To the west of the subject property is a paint & body shop. To the north along Kanuga Rd is a vacant parcel with a former commercial building located on it. Across Kanuga Rd to the east are the various ag-related commercial activities of the Johnson Family Farm. Vacant land and floodplain is prevalent to the south and east. To the north, uses are generally detached single-family with a duplex development located north of Stanwood Ln. |
| | **GEN H COMPREHENSIVE PLAN GOALS** (Chapter IV)<br>**Vibrant Neighborhoods**: Consistent<br>**Abundant Housing Choices**: Consistent<br>**Healthy and Accessible Natural Environment**: Somewhat Consistent<br>**Authentic Community Character**: Somewhat Consistent<br>**Safe Streets and Trails**: Consistent<br>**Reliable & Accessible Utility Services**: Consistent<br>**Satisfying Work Opportunities**: Consistent<br>**Welcoming & Inclusive Community**: N/A<br>**Accessible & Available Community Uses and Services**: N/A<br>**Resilient Community**: N/A |

| | |
|---|---|
| | **GEN H COMPREHENSIVE PLAN GUIDING PRINCIPLES** (Chapter IV)<br>**Mix of Uses:** Consistent<br>**Compact Development:** Consistent<br>**Sense of Place:** Somewhat Consistent<br>**Conserved & Integrated Open Spaces:** Somewhat Consistent<br>**Desirable & Affordable Housing**: Consistent<br>**Connectivity**: Somewhat Consistent<br>**Efficient & Accessible Infrastructure:** Consistent |
| 3) Changed Conditions | **Whether and the extent to which there are changed conditions, trends or facts that require an amendment -**<br>The subject property was recently sold to a new owner.<br>Commercial activities located across the street from the Subject Property have been added in the last 10 years and have continued to grow and evolve in that time frame. This property at the corner of Kanuga Rd and State St/Erkwood Rd is a Bonafide Farm in a Voluntary Agricultural District which makes it exempt from Zoning per state law. According to state statute Chapter 106 – Article 61, Voluntary Agricultural Districts and Enhanced Voluntary Agricultural Districts, in exchange for the preservation of farmland, enjoy other special provisions including tax exemptions, waiver of utility assessments, priority consideration for grants, special noticing requirements, and allowances to sell up to 25% non-farm products. |
| 4) Public Interest | **Whether and the extent to which the proposed amendment would result in a logical and orderly development pattern that benefits the surrounding neighborhood, is in the public interest and promotes public health, safety and general welfare -**<br>The integration of mixed uses at various scales can reduce vehicular trips, combat automobile congestion, create jobs, and increase local spending. When applied at the neighborhood scale, a mix of uses can improve safety and vibrancy. When scale is maintained and new non-residential uses are concentrated around key intersections, negative impacts associated with commercial activity can be contained. |
| 5) Public Facilities | **Whether and the extent to which adequate public facilities and services such as water supply, wastewater treatment, fire and police protection and transportation are available to support the proposed amendment**<br>Kanuga Road, Drake St, and State St/Erkwood Dr are NCDOT maintained roads. Kanuga Rd is a Minor Arterial, Drake St is a Local Street and State St/Erkwood Dr is a Major Collector according to their NCDOT Functional Classifications. The Comprehensive Transportation Plan designates these roads as Minor Thoroughfares with Drake St as a Local Street.<br>There are high volumes of traffic at this location. The intersection of Kanuga Rd & State St is a "High Injury Intersection" and Kanuga Rd south of this intersection is a "High Injury Network" route according to the French Broad River MPO's "Safe Streets 4 All" Safety Action Plan. An improvement project for this portion of Kanuga Rd (to Price Rd) is currently unfunded, but is included in the SPOT Prioritization 8.0 (carried over from 7.0). There are no funded STIP projects in the |

| | |
|---|---|
| | immediate area though the White St/South Main St enhancements are in close proximity.<br>The subject property is served by City of Hendersonville water and City sewer services are available. |
| **6) Effect on Natural Environment** | **Whether and the extent to which the proposed amendment would result in significantly adverse impacts on the natural environment including but not limited to water, air, noise, storm water management, streams, vegetation, wetlands and wildlife -** |
| | No development is proposed at this time. Therefore, there are no known impacts on the natural environment as a result of this rezoning. Approximately 93% of the subject property (0.75 acres) is pervious greenspace. There are a few trees across the parcel with a row of hedges lining the eastern parcel boundary along Kanuga Rd.<br>A ditch along the southern parcel boundary is a blue line stream and would be required to meet the standards of the natural resource provisions of the zoning ordinance. Additionally, the parcel is located in the 500-Year Floodplain with a small portion of the southern boundary in the 100-Year Floodplain. |

## REZONING STANDARDS ANALYSIS & SUMMARY

1) Comprehensive Plan Consistency - Staff finds the petition to be Inconsistent with the Gen H Comprehensive Plan Future Land Use & Conservation Map due to the Character Area Description for Family Neighborhood Living. However, the property is in close proximity to and in the same general condition as parcels identified as Neighborhood Center in the Gen H Plan.
2) Compatibility – C-4 Zoning is found to be compatible with the surrounding land uses and aligns with the Goals & Guiding Principles of the Gen H Comprehensive Plan – especially as it relates to providing a mix of uses and preferred patterns of development around key nodes.
3) Changed Conditions – The presence of a Bonafide Farm and the increase of commercial activities in this area have increased opportunities for appropriate commercial uses around the intersection of Kanuga Rd and State St.
4) Public Interest - Staff finds that the introduction of a mix of uses at a compatible scale can provide a number of benefits.
5) Public Facilities - Staff finds that the street network in this area lends itself to non-residential uses on the major routes while residential uses should be confined to local streets. There are existing City utilities available to the subject property.
6) Effect on Natural Environment – No impacts proposed but subject property is located adjacent to a blue line stream and 100-Year Floodplain.

DRAFT COMPREHENSIVE PLAN CONSISTENCY AND REZONING REASONABLENESS STATEMENT

The petition is found to be **inconsistent** with the City of Hendersonville Gen H 2045 Comprehensive Plan based on the information from the staff analysis and the public hearing, and because:

*The petition for C-4 zoning is inconsistent with the Future Land Use and Conservation Map Designation of 'Family Neighborhood Living'.*

We **[find/do not find]** this petition to be reasonable and in the public interest based on the information from the staff analysis and the public hearing, and because:

*DRAFT [Rationale for Approval]*

- *The proposed zoning is compatible with surrounding non-residential land uses*
- *The proposed zoning allows for a mix of uses at an intersection which experiences significant vehicular traffic*
- *The proposed zoning allows for nodal development with non-residential uses confined by floodplains and located along the minor arterial roadway*
- *Surrounding low density residential uses primarily front and gain access from Local streets.*

*DRAFT [Rational for Denial]*

- *The proposed zoning is incompatible with the surrounding land uses*
- *The proposed zoning would result in increased traffic congestion to the surrounding area*
- *The proposed zoning would result in environmental degradation*

| 1207 Kanuga Rd (25-59-RZO) - C-4 | | |
|---|---|---|
| **Chapter 4 - The Vision for the Future** | **Consistent** | **Inconsistent** |
| **SUPPLY, SUITABILITY, & INTENSITY** | | |
| **LAND SUPPLY MAP (Pg. 81, Figure 4.4)** | N/A | |
| **LAND SUITABILITY MAP (Pg. 84-86, Figure 4.5-4.7)** | N/A | |
| **DEVELOPMENT INTENSITY MAP (Pg. 89, Figure 4.9)** | | Inconsistent |
| **FUTURE LAND USE & CONSERVATION MAP** | | |
| **Future Land Use and Conservation Map (Note classification here, Pg. 117, Figure 4.12)** | **Family Neighborhood Living** | |
| Character Area Description (Pg. 122-131) | | Inconsistent |
| Zoning Crosswalk (Pg. 132-133, Figure 4.18) | | Inconsistent |
| Focused Intensity Node (Pg. 119) | N/A | N/A |
| **Focus Area Map (Pg. 134-159)** | N/A | N/A |

| 1207 Kanuga Rd (25-59-RZO) - C-4 | | |
|---|---|---|
| **Chapter 4 - The Vision for the Future** | **Consistent** | **Inconsistent** |
| **GOALS** | | |
| **Vibrant Neighborhoods (Pg. 93)** | | |
| Promote lively neighborhoods that increase local safety. | Consistent | |
| Enable well-maintained homes, streets, and public spaces. | Somewhat Consistent | |
| Promote diversity of ages (stage of life), income levels, and a range of interests. | Consistent | |
| The design allows people to connect to nearby destinations, amenities, and services. | Consistent | |
| **Abundant Housing Choices (Pg. 93)** | | |
| Housing provided meets the need of current and future residents. | Consistent | |
| Range of housing types provided to help maintain affordability in Hendersonville. | Consistent | |
| Housing condition/quality exceeds minimum standards citywide | Consistent | |
| **Healthy and Accessible Natural Environment (Pg. 94)** | | |
| Recreational (active and passive) open spaces are incorporated into the development. | | Inconsistent |
| Water quality is improved with the conservation of natural areas that serve as filters and soil stabilizers. | Consistent | |
| Natural system capacity (floodplains for stormwater; habitats to support flora/fauna; tree canopy for air quality, stormwater management, and microclimate) is maintained. | Consistent | |
| Development is compact (infill/redevelopment) to minimize the ecological footprint. | Consistent | |
| New development respects working landscapes (e.g., orchards, managed forests), minimizing encroachment. | | Inconsistent |
| **Authentic Community Character (Pg. 94)** | | |
| Downtown remains the heart of the community and the focal point of civic activity | N/A | N/A |
| A development near a gateway sets the tone, presenting the image/brand of the community. | N/A | N/A |
| Historic preservation is utilized to maintain the city's identity. | Somewhat Consistent | N/A |
| City Centers and neighborhoods are preserved through quality development. | N/A | N/A |
| **Safe Streets and Trails (Pg. 95)** | | |
| Interconnectivity is promoted between existing neighborhoods through the building out of street networks, including retrofits and interconnectivity of new developments. | N/A | N/A |
| Access is increased for all residents through the provision of facilities that promote safe walking, biking, transit, automobile, ride share, and bike share. | Consistent | |
| Design embraces the principles of walkable development. | Consistent | |
| **Reliable & Accessible Utility Services** | | |

| | | |
|---|---|---|
| Wastewater treatment (service and capacity) adequately serves existing and future development | Consistent | |
| A compact service area (infill, redevelopment) maximizes the utilization of existing infrastructure and feasible service delivery. | Consistent | |
| **Satisfying Work Opportunities (pg. 96)** | | |
| The development promotes quality job options. | Consistent | |
| The lives of residents are enriched with opportunities to learn, build skills, and grow professionally. | Consistent | |
| **Welcoming & Inclusive Community** | | |
| Accessibility exceeds minimum standards of ADA, fostering residents' and visitors' sense of belonging. | N/A | N/A |
| An inviting public realm (i.e., parks, public buildings) reflects the attitudes of city residents and leaders, and helps residents develop a sense of place and attachment to Hendersonville. | N/A | N/A |
| **Accessible & Available Community Uses and Services (Pg. 97)** | | |
| Private development is plentiful, meeting the demands of current and future populations. | N/A | N/A |
| **Resilient Community** | | |
| N/A | | |
| **GUIDING PRINCIPALS (pg. 98)** | | |
| **Mix of Uses (Pg. 98)** | | |
| Revitalization of Outdated Commercial Areas | Consistent | |
| New business and office space promotes creative hubs. | Consistent | |
| **Compact Development (Pg. 100)** | | |
| Development is consistent with efforts in the area to establish 15-minute neighborhoods. | Consistent | |
| The infill project is context sensitive [Small Infill Site]. | Consistent | |
| **Sense of Place (Pg. 102)** | | |
| The development contributes to Hendersonville's character and the creation of a sense of place through its architecture and landscape elements. [Placekeeping and Placemaking and 3rd Places] | Somewhat Consistent | |
| **Conserved & Integrated Open Spaces (Pg. 106)** | | |
| A diverse range of open space elements are incorporated into the development. | Somewhat Consistent | |
| **Desirable & Affordable Housing (Pg. 108)** | | |
| Missing middle housing concepts are used in the development. | Consistent | |
| **Connectivity (Pg. 112)** | | |
| The development encourages multimodal design solutions to enhance mobility. | Somewhat Consistent | |
| **Efficient & Accessible Infrastructure (Pg. 114)** | | |
| The development utilizes existing infrastructure | Consistent | |

Ordinance #___-____

**AN ORDINANCE OF THE CITY OF HENDERSONVILLE CITY COUNCIL TO AMEND THE OFFICIAL ZONING MAP OF THE CITY OF HENDERSONVILLE, FOR CERTAIN PARCEL (POSSESSING PIN NUMBER 9568-61-2215), BY REASSIGNING THE ZONING DESIGNATION FROM R-15, MEDIUM DENSITY RESIDENTIAL TO C-4, NEIGHBORHOOD BUSINESS**

IN RE: Parcel Numbers: 9568-61-2215
1207 Kanuga Rd R-15 to C-4 | File # 25-59-RZO

**WHEREAS,** Planning Board took up this application at its regular meeting on October 9, 2025; 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 6, 2025, and

**WHEREAS,** City Council has found that this zoning map amendment is consistent with the City's comprehensive plan, and that it is reasonable and in the public interest for the reasons stated, and

**WHEREAS,** City Council has conducted a public hearing as required by the North Carolina General Statutes on November 6, 2025,

**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: 9568-61-2215 by changing the zoning designation from R-15, Medium Density Residential to C-4, Neighborhood Business

2. Any development of this parcel shall occur in accordance with the Zoning Ordinance of the City of Hendersonville, North Carolina.

3. This ordinance shall be in full force and effect from and after the date of its adoption.

Adopted this 6th day of November 2025.

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

_____
Jill Murray, City Clerk

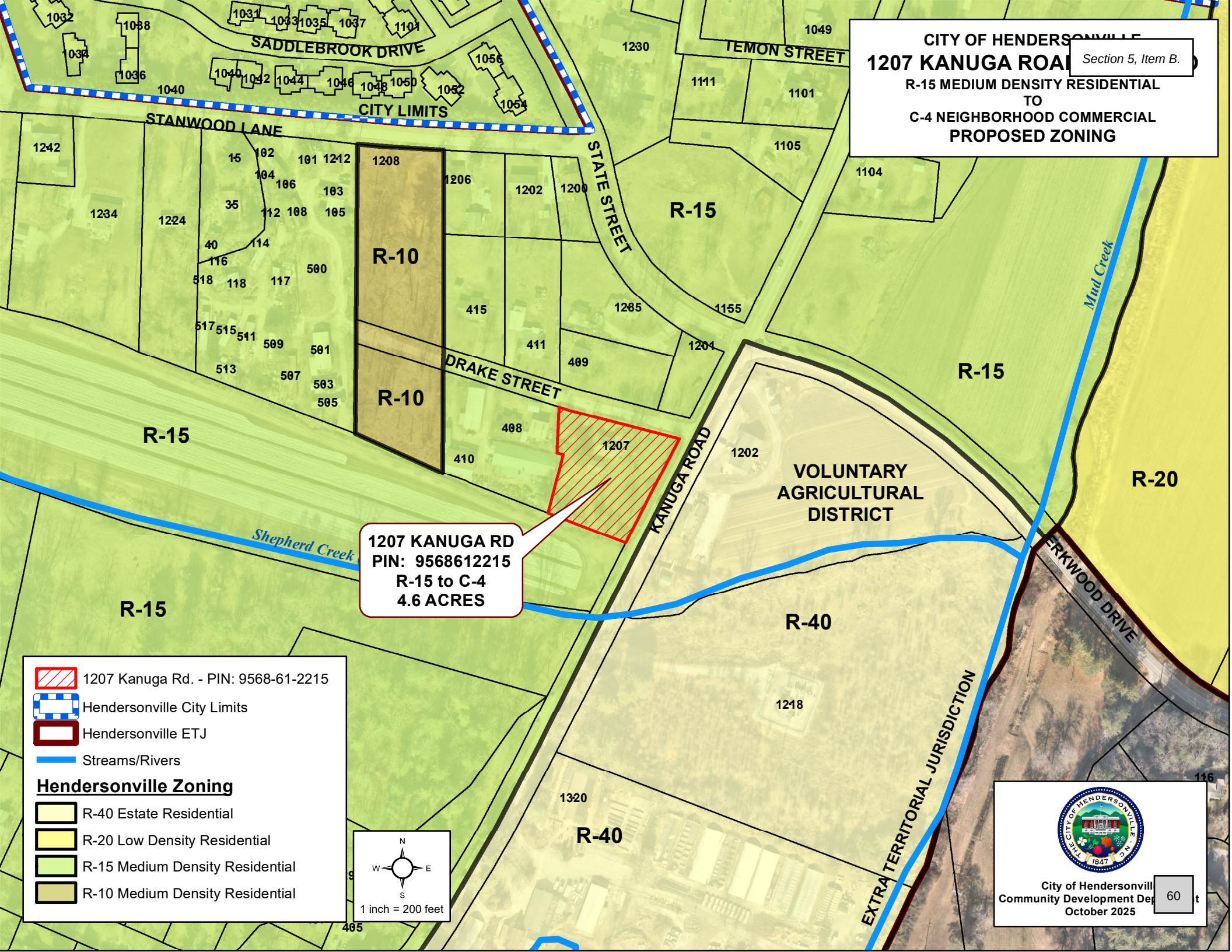
Approved as to form:

_____
Angela S. Beeker, City Attorney

CITY OF HENDERSONVILLE

# 1207 KANUGA ROAD

R-15 MEDIUM DENSITY RESIDENTIAL
TO
C-4 NEIGHBORHOOD COMMERCIAL
PROPOSED ZONING




1207 Kanuga Rd. - PIN: 9568-61-2215
Hendersonville City Limits
Hendersonville ETJ
Streams/Rivers

**Hendersonville Zoning**

R-40 Estate Residential
R-20 Low Density Residential
R-15 Medium Density Residential
R-10 Medium Density Residential

N
W E
S
1 inch = 200 feet

City of Hendersonville
Community Development Department
October 2025

| For use by Principal Authority / Para uso de la Autoridad Principal |
|---|
| Cloudpermit application number / Número de solicitud de Cloudpermit<br>US-NC30720-P-2025-151 |
| PIN / Número de rollo<br>2896 |
| Application submitted to / Solicitud presentada a<br>Hendersonville, NC, North Carolina / Hendersonville, NC, Carolina del Norte |

| Description of Subject Property |
|---|
| Address / Dirección<br>1207 KANUGA RD |
| Municipality / Municipio<br>Hendersonville, NC, North Carolina /<br>Hendersonville, NC, Carolina del Norte |
| PIN / Número de rollo<br>2896 |

| Purpose of Application |
|---|
| Application type / Tipo de solicitud<br>Standard Rezoning |

| Applicant | | |
|---|---|---|
| Last name / Apellido<br>Grooms | First name / Nombre de pila<br>Greg | Corporation or partnership / Corporación o sociedad |
| Street address / Dirección de la calle<br>1207 Kanuga Rd | Unit number / Número de unidad | Lot / Con. |
| Municipality / Municipio<br>Hendersonville | State / Provincia<br>NC | ZIP code / Código postal<br>28739 |
| Other phone / Otro teléfono | | Mobile phone / Teléfono móvil<br>[redacted] |
| Fax | | Email / Correo electrónico<br>[redacted] |

| **Property owner** | | |
|---|---|---|
| Last name / Apellido<br>JUEDEMANN, CHRISTOPHER E;JUEDEMANN, LISSA H | First name / Nombre de pila | Corporation or partners<br>Corporación o sociedad |
| Street address / Dirección de la calle<br>1207 KANUGA RD HENDERSONVLLE NC 28739 6128 | Unit number / Número de unidad | Lot / Con. |
| Municipality / Municipio | State / Provincia | ZIP code / Código postal |
| Other phone / Otro teléfono | Mobile phone / Teléfono móvil | |
| Fax | Email / Correo electrónico | |

| **Applicant-Company Information** | | |
|---|---|---|
| Applicant Name:<br>Greg Grooms | Company Name:<br>Blue Pinnacle Homes | Authorized Representative Title (if applicable) |

| **Property Owner-Company Information** | | |
|---|---|---|
| Property Owner Name: | Company Name (if applicable, check corresponding box below) | Authorized Representative Title (if applicable) |

## Declaration and Signatures

### Applicant

I, Greg Grooms (The Applicant), do hereby declare that the information contained in this application, the attached schedules and forms, the attached plans and specifications, and other attached documentation is true to the best of my knowledge. If a permit is granted, I agree to comply with Local Ordinances and the conditions of the permit. If the Applicant is a corporation or partnership, I have the authority to bind the corporation or partnership by signing off, I understand that it constitutes a legal signature confirming that I acknowledge and agree to the above declaration.

Signature of the applicant acknowledges that 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.

Digitally signed on 08/01/2025, 3:09:52 PM EDT by Greg Grooms. / Firmado digitalmente el 1/8/25 15:09:52 EDT por Greg Grooms.

### Property owner

I, JUEDEMANN, CHRISTOPHER E;JUEDEMANN, LISSA H (The Property owner), do hereby declare that the information contained in this application, the attached schedules and forms, the attached plans and specifications, and other attached documentation is true to the best of my knowledge. If a permit is granted, I agree to comply with Local Ordinances and the conditions of the permit. If the Property owner is a corporation or partnership, I have the authority to bind the corporation or partnership by signing off, I understand that it constitutes a legal signature confirming that I acknowledge and agree to the above declaration.

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.

Signature of the property owner acknowledges that 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.

Digitally signed on 08/04/2025, 11:42:26 AM EDT by Greg Grooms with an authorization letter from JUEDEMANN, CHRISTOPHER E;JUEDEMANN, LISSA H. / Firmado digitalmente el 4/8/25 11:42:26 EDT por Greg Grooms con una carta de autorización de JUEDEMANN, CHRISTOPHER E;JUEDEMANN, LISSA H.

| Property Information | |
|---|---|
| Current Zoning<br>R-15 | Proposed Zoning<br>C-4 |

| Adjacent Parcel Numbers and Uses | |
|---|---|
| PIN:<br>9568610312 | Use:<br>Appears to be a car repair shop |
| PIN:<br>9568512444 | Use:<br>Farm Land |
| PIN:<br>9568616333 | Use:<br>Commercial Farm Store |
| PIN:<br>9568613453 | Use:<br>Unused dilapidated. Appears to be an old commercial building |
| PIN:<br>9568612415 | Use:<br>Residential |

**Section 11-1 Standards**

The advisability of amending the text of this Zoning Ordinance or the Official Zoning Map

is a matter committed to the legislative discretion of the City Council and is not controlled

by any one factor. In determining whether to adopt or disapprove the proposed

amendment to the text of this Ordinance or the Official Zoning Map, the City Council shall

consider the following factors among others:

a) Comprehensive Plan Consistency – Consistency with the Comprehensive Plan and amendments thereto.

With expectations of minor modifications, there should be a perception of minimal impact to disrupting the comprehensive plan of consistency.

b) Compatibility with surrounding uses – Whether and the extent to which the proposed amendment is compatible with existing and proposed uses surrounding the subject property. (Also, see NCGS 160-601 (d) Down-Zoning

As identified in the above adjacent parcels, it can be perceived that business office at this location would not be misplaced or impactful to the residential properties to the west of the parcel. In addition, regarding the parcel, there is a defined separation by what appears to be a car repair shop directly to the west and the residential area.

c) Changed Conditions. Whether and the extent to which there are changed conditions, trends or facts that require an amendment. (Also, see NCGS 160D-601 (d) Down-Zoning)

There would be an effort to clean up the site as some vegetation has gotten overgrown. There will be an overgrown area west of the driveway that will be intended to be cleared for additional parking. The unused and old well house will be removed. It is currently in a state of disrepair.

d) Public Interest. Whether and the extent to which the proposed amendment would result in a logical and orderly development pattern that benefits the surrounding neighborhood, is in the public interest and promotes public heath, safety and general welfare. (Also, see NCGS 160D-601 (d) Down-Zoning)

Ingress and egress onto the site on a daily basis would be expected minimal as the business is not of high traffic intent. As a business atmosphere, cameras and security will be implemented thus providing a higher level of public health and safety to the nearby neighboring businesses and residential parcels. Additionally, being in the public eye as a business as well as being on a heavily traveled thoroughfare as Kanuga Rd., surrounding community cleanliness will have a great appeal as we intend to commit to beautifying the area any way we can.

e) Public Facilities. Whether and the extent to which adequate public facilities and services such as water supply, wastewater treatment, fire and police protection and transportation are available to support the proposed amendment. (Also, see NCGS 160D-601 (d) Down-Zoning)

I do not believe implementing this rezoning will have any seen, felt, or true impact on the public facilities.

f) Effect on Natural Environment. Whether and the extent to which the proposed amendment would result in significantly adverse impacts on the natural environment including but not limited to water, air, noise, storm water management, streams, vegetation, wetlands and wildlife

With no intent to modify this site minus vegetation cleaning, driveway/parking widening and removal of old well house, nominal to no significance or impact should be made regarding an effect to the natural environment.

**Applicant (Developer) Company Information**

| Authorized Representative Name: | Company Name (if applicable, check corresponding box below) |
|---|---|
| Greg Grooms | Blue Pinnacle Homes |

Company Type:

- ☐ Corporation:
- ☑ Limited Liability Company:
- ☐ Trust:
- ☐ Partnership:
- ☐ Other:

If other:

Authorized Representative Title (if applicable - i.e. Member/Manager, President, etc.)

**Property Owner Company Information (if different from Applicant)**

Authorized Representative Name:

Company Name (if applicable, check correspo

Company Type:

If other:

☐ Corporation:

☐ Limited Liability Company:

☐ Trust:

☐ Partnership:

☐ Other:

Authorized Representative Title (if applicable - i.e. Member/Manager, President, etc.)

CITY OF HENDERSONVILLE

# AGENDA ITEM SUMMARY
## PLANNING DIVISION

**SUBMITTER:** Sam Hayes

**MEETING DATE:** October 9th, 2025

**AGENDA SECTION:** New Business

**DEPARTMENT:** Community Development

**TITLE OF ITEM:** Rezoning: Conditional Zoning District – LEO at Hendersonville (25-48-CZD) – *Sam Hayes – Planner II*

**SUGGESTED MOTION(S):**

**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: 9569-22-9206) from R-15 to PRD-CZD, Planned Residential Development – Conditional Zoning District, for the construction of 180 duplexes and townhomes based on the master site plan and list of conditions submitted by and agreed to by the applicant, [dated 9/24/25] and presented at this meeting and subject to the following:

**1. The development shall be consistent with the site plan, including the list of applicable conditions contained therein, and the following permitted uses**

Permitted Uses:

1. 180 Residential dwellings – two, three, and four-family

***[for amendments to uses or conditions discussed and agreed upon in the Council meeting (between City & Developer) and not yet represented on the site plan, please use the following language**. Disregard #2 if not needed]*

**Permitted uses and applicable conditions presented on the site plan shall be amended to include:**

1. The developer shall construct a westbound left turn lane on Haywood Road at the site access with at least 50 feet of storage. The final design shall be done in coordination with NCDOT.
2. The developer shall construct an eastbound right turn lane on Haywood Road at the site access with at least 50 feet of storage. The

**For Recommending Denial:**

I move Planning Board recommend City Council **deny** an ordinance amending the official zoning map of the City of Hendersonville changing the zoning designation of the subject (PIN: 9569-22-9206) from R-15 to PRD-CZD, Planned Residential Development – Conditional Zoning District, based on the following:

1. **The petition is found to be inconsistent with the City of Hendersonville Gen H 2045 Comprehensive Plan based on the information from the staff analysis and the public hearing, and because:**

   The petition proposes duplexes, triplexes, and quadplexes, which does not align with the Future Land Use designation of Family/Neighborhood Living.

2. **We do not find this petition to be reasonable and in the public interest based on the information from the staff analysis, public hearing and because:**

   1. The proposed development does not provide adequate site access for emergency services and lacks interconnectivity.
   2. Common spaces are not adequately distributed throughout the site.
   3. The proposed development is incompatible with the surrounding developments.
   4. The grading of the proposed development will significantly alter the natural environment of the site and significantly impact some adjoining neighbors.

**[DISCUSS & VOTE]**

final design shall be done in coordination with NCDOT.

3. The developer shall dedicate a greenway easement to the city that is 50' wide for the location of future greenway development.

**3. The petition is found to be inconsistent with the City of Hendersonville Gen H 2045 Comprehensive Plan based on the information from the staff analysis and the public hearing, and because:**

The petition proposes duplexes, triplexes, and quadplexes, which does not align with the Future Land Use designation of Family/Neighborhood Living.

**4. We find this petition to be reasonable and in the public interest based on the information from the staff analysis, public hearing and because:**

1. The addition of 180 units supports the City's goal of increasing the overall housing supply.
2. The proposed development utilizes existing infrastructure and aligns with the City's objective to encourage infill development.
3. The project incorporates "missing middle housing" principles by offering a range of housing sizes, consistent with the City's goal to provide diverse housing options for a variety of residents.
4. The proposed development is in alignment with the surrounding developments.

**5. Furthermore, we propose to amend the Character Area of the subject property on the Gen H Comprehensive Plan Future Land Use and Conservation Map to that of 'Multi-Generational Living."**

**[DISCUSS & VOTE]**

***SUMMARY:*** *The City of Hendersonville has received an application for a Conditional Rezoning from Scott Weathers of Advenir Azora Development (Applicant) and Jeffrey Justus (Owner). The request is to rezone the property located at 1741 Haywood Road (PIN 9569-*

*22-9206) from R-15 Medium Density Residential to PRD-CZD (Planned Residential Development – Conditional Zoning District) to allow for the construction of a 180-unit residential project. The proposed development includes a mix of duplexes, triplexes, and quadplexes.*

*Planned amenities include a clubhouse and pool, and the applicant has proposed accommodating a public greenway through the center of the site along Brittain Creek.*

*The applicant does not intend to subdivide the property. As a result, the project is exempt from certain requirements of the City's subdivision ordinance, such as constructing all streets to public standards and dedicating them to the City. However, the applicant has agreed to build the main thoroughfare to public street standards. The subdivision ordinance also requires a secondary access for projects over 31 lots. This is not triggered in this instance.*

| | |
|---|---|
| **PROJECT/PETITIONER NUMBER:** | 25-48-CZD |
| **PETITIONER NAME:** | • Scott Weathers, Advenir Azora Development, applicant<br>• Jeffrey Justus, Property Owner |
| **ATTACHMENTS:** | 1. Staff Report<br>2. Traffic Impact Analysis (TIA)<br>3. TIA City Traffic Consultant Review<br>4. Comprehensive Plan Review<br>5. Neighborhood Compatibility Summary<br>6. Proposed Zoning Map<br>7. Proposed Future Land Use Map<br>8. Draft Ordinance<br>9. Application |

# REZONING: CONDITIONAL REZONING –LEO AT HENDERSONVILLE (25-48-CZD)

# CITY OF HENDERSONVILLE - COMMUNITY DEVELOPMENT STAFF REPORT

PROJECT SUMMARY ..... 2
EXISTING ZONING & LAND USE ..... 3
SITE IMAGES ..... 4
SITE IMAGES ..... 5
SITE IMAGES ..... 6
SITE IMAGES ..... 7
FUTURE LAND USE ..... 9
STAFF SITE PLAN REVIEW – SUMMARY COMMENTS ..... 10
DEVELOPER-PROPOSED CONDITIONS: ..... 12
OUTSTANDING ISSUES & CITY PROPOSED CONDITIONS: ..... 12
REZONING ANALYSIS – GENERAL REZONING STANDARDS (ARTICLE 11-4) ..... 15
DRAFT COMPREHENSIVE PLAN CONSISTENCY AND REZONING REASONABLENESS STATEMENT ..... 16

## PROJECT SUMMARY

- Project Name & Case #:
  - LEO at Hendersonville
  - 25-48-CZD
- Applicant & Property Owner:
  - Advenir Azora Development (Scott Weathers) [Applicant]
  - Jeffrey Justus [Owner]
- Property Address:
  - 1741 Haywood Road
- Project Acreage:
  - 20.95
- Parcel Identification (PIN):
  - 9569-22-9206
- Current Parcel Zoning:
  - R-15 Medium Density Residential
- Future Land Use Designation:
  - Family Neighborhood Living
- Requested Zoning:
  - PRD-CZD Planned Residential Development – Conditional Zoning District
- Requested Future Land Use Designation:
  - Multi-Generational Living
- Requested Uses:
  - Residential dwellings, two, three, and four-family
- Neighborhood Compatibility Meeting(s):
  - June 30th, 2025 – City Hall
  - August 19th, 2025 – Blue Ridge Community College

SITE VICINITY MAP

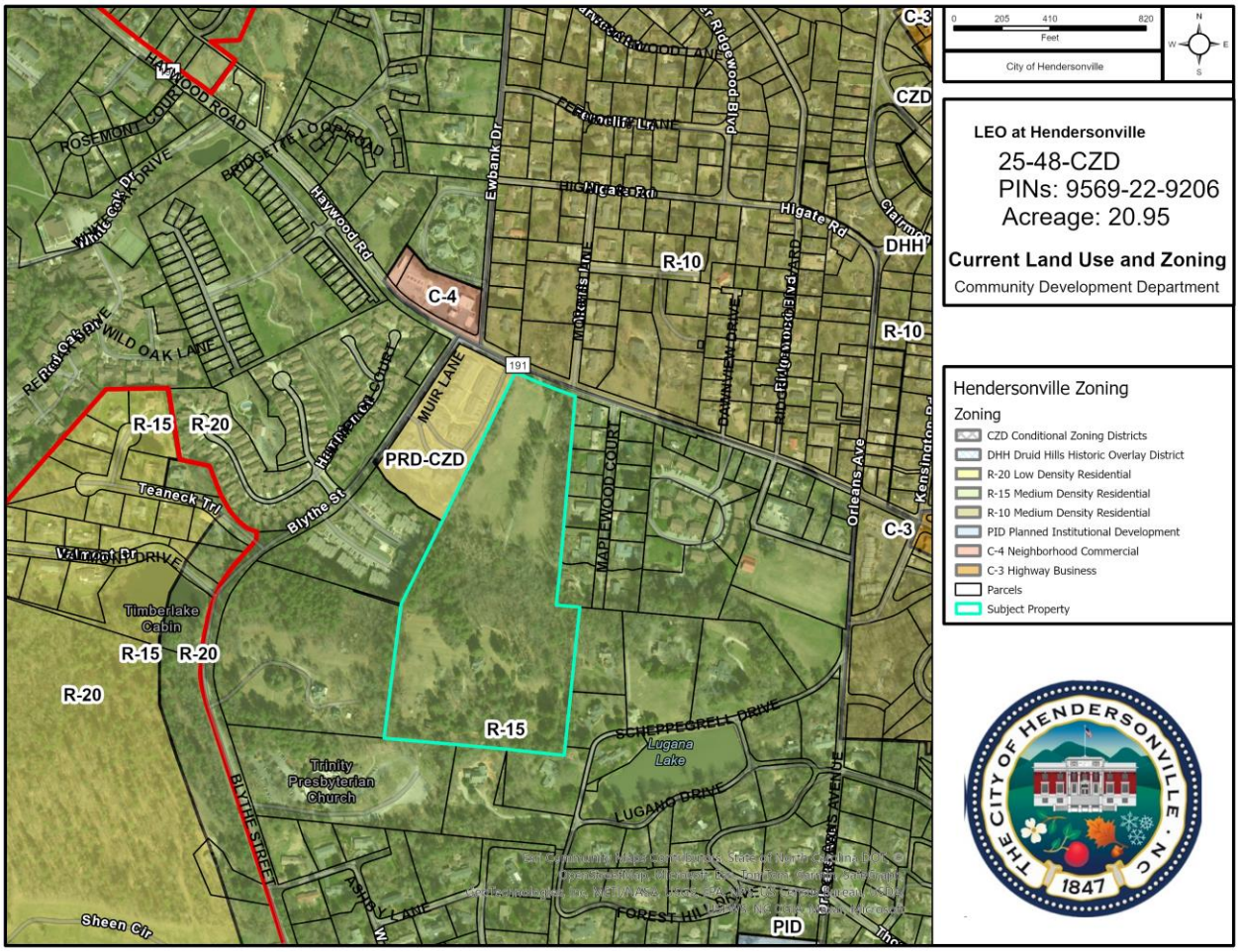
*The City of Hendersonville has received an application for a Conditional Rezoning from Scott Weathers of Advenir Azora Development (Applicant) and Jeffrey Justus (Owner). The request is to rezone the property located at 1741 Haywood Road (PIN 9569-22-9206) from R-15 Medium Density Residential to PRD-CZD (Planned Residential Development – Conditional Zoning District) to allow for the construction of a 180-unit residential project. The proposed development includes a mix of duplexes, triplexes, and quadplexes.*

*Planned amenities include a clubhouse and pool, and the applicant has proposed accommodating a public greenway through the center of the site along Brittain Creek.*

*The applicant does not intend to subdivide the property. As a result, the project is exempt from certain requirements of the City's subdivision ordinance, such as constructing all streets to public standards and dedicating them to the City. However, the applicant has agreed to build the main thoroughfare to public street standards. The subdivision ordinance also requires a secondary access for projects over 31 lots. This is not triggered in this instance.*

EXISTING ZONING & LAND USE

## City of Hendersonville Current Zoning & Land Use Map




*The subject property consists of 22 acres located off Haywood Road (NC-191). It is primarily open space, with a historic home and several outbuildings—dating back to the early 1900s—situated on the southern portion of the parcel. The property is surrounded on three sides by R-15 zoning.*

*Immediately to the east is a small neighborhood of ranch and split-level homes along Maplewood Court. The southeastern portion is bordered by large-lot single-family homes. To the southwest lies the property of Trinity Presbyterian Church. The western edge of the site includes another early 1900s single-family home and two townhome developments, one of which sits at the northwestern corner of the property and is zoned PRD-CZD.*

*To the north, the zoning shifts to R-10, which includes a mix of single-family homes and several townhome developments. As you travel further along Haywood Road, residential density increases with newer development patterns.*

*Many of the projects along Haywood Road are zoned R-15 but utilized a predecessor to PRD known as PUD (Planned Unit Development), which allowed the projects to be constructed by-right.*

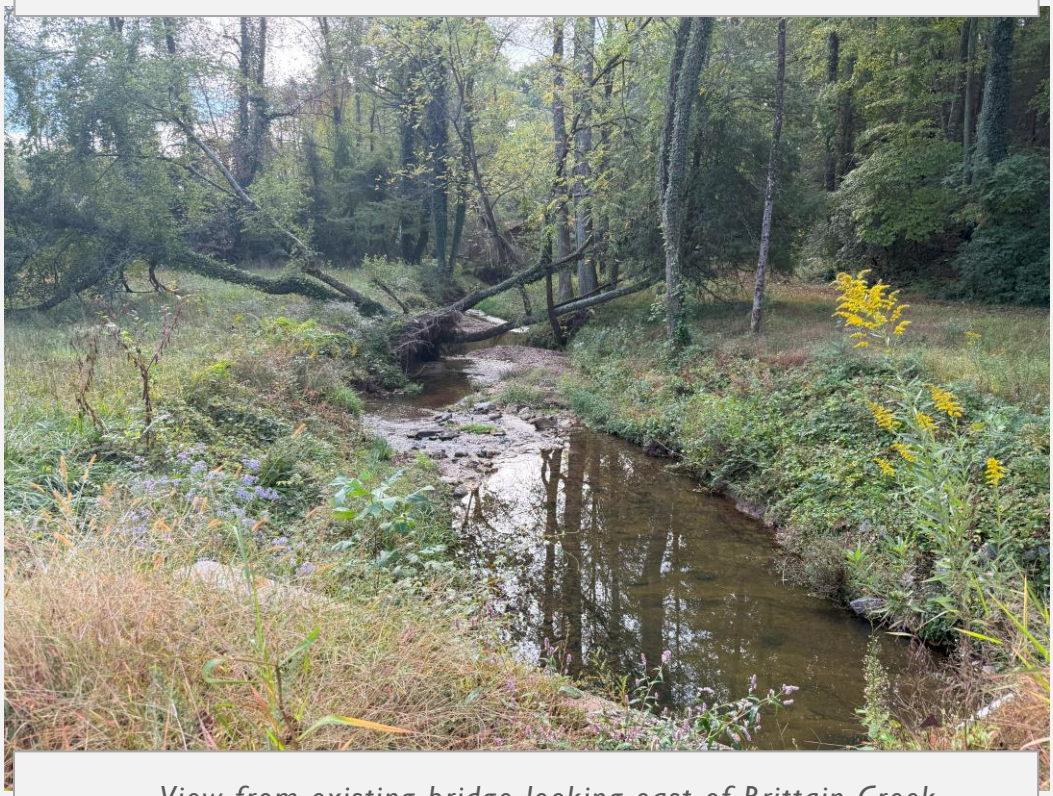
SITE IMAGES

*View looking west along frontage of property.*

*View looking into property from Haywood Road.*

SITE IMAGES

*Stream/ditch proposed to be piped by the developer. The stream runs along the eastern portion of the property.*



*View from existing bridge looking east of Brittain Creek.*

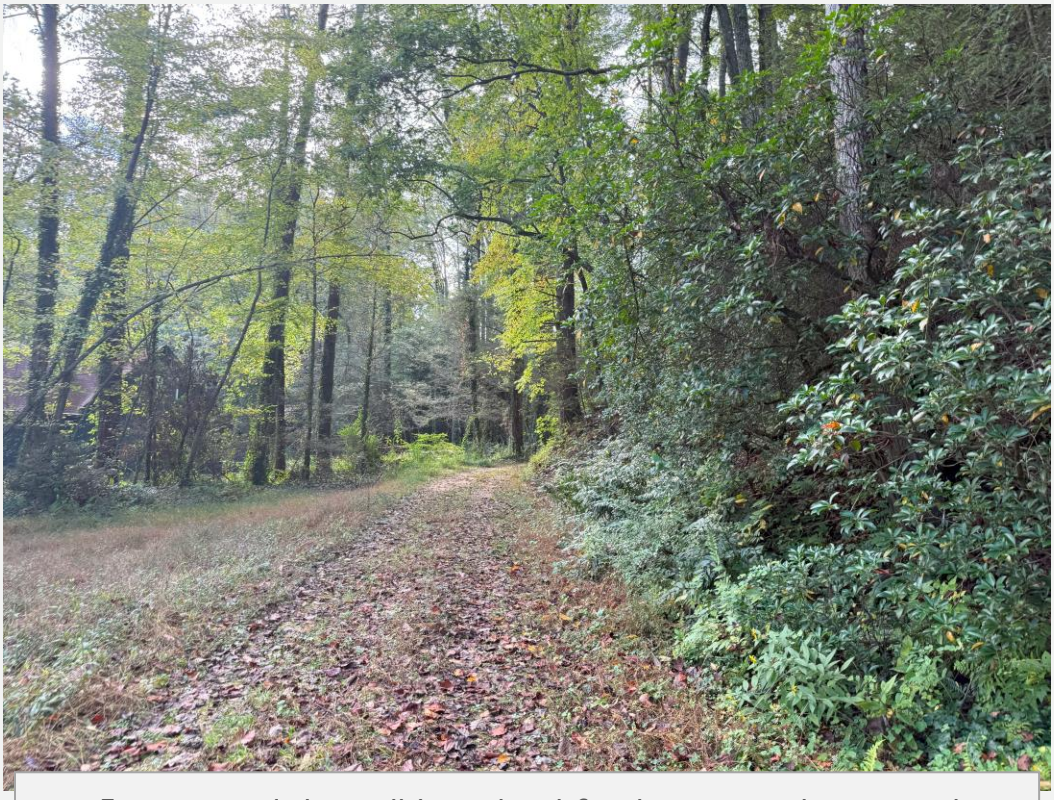
SITE IMAGES

*View from existing bridge looking west of Brittain Creek.*

*View south from Brittain Creek.*

.

SITE IMAGES



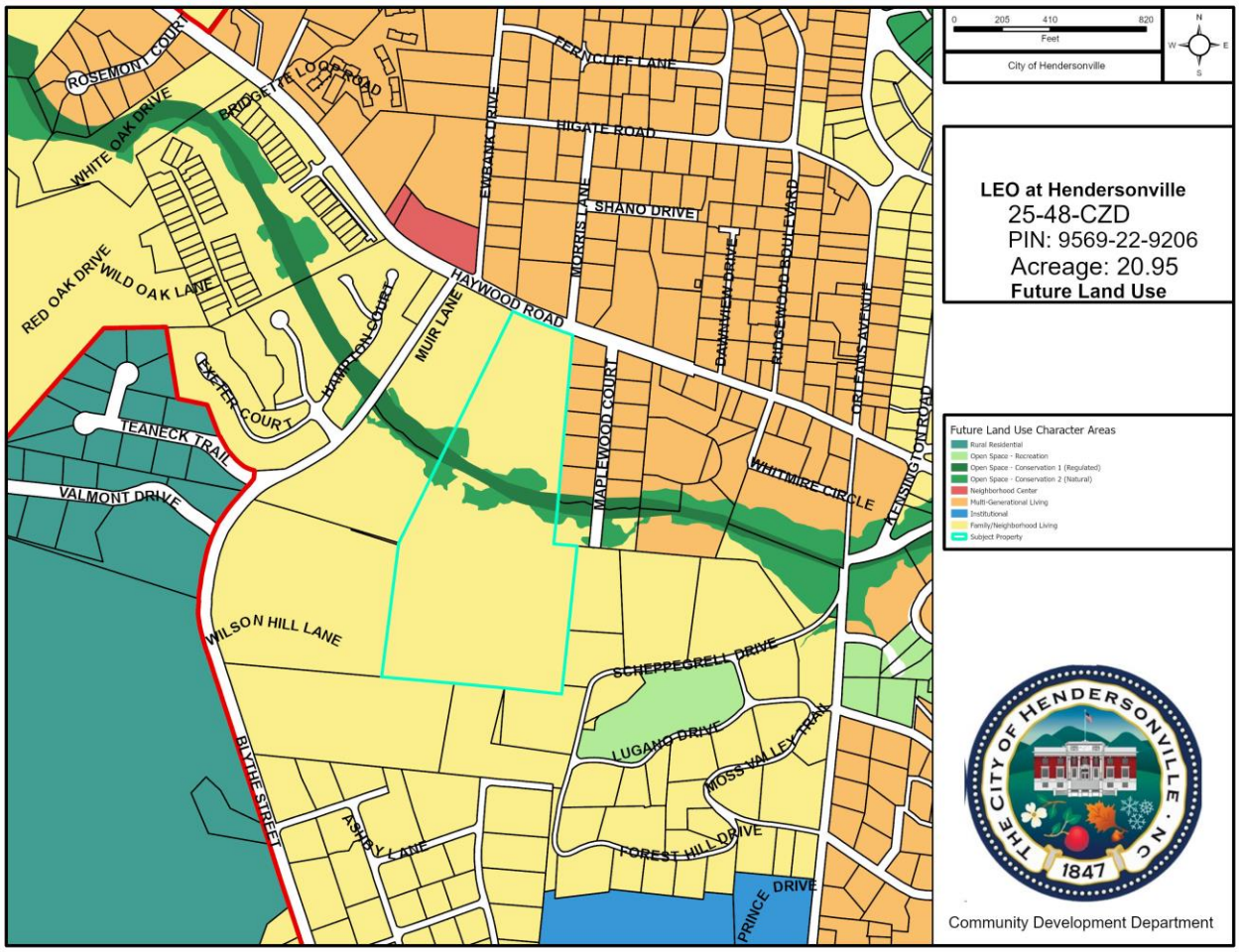
*Existing road that will be utilized for the new road running along the southeastern portion of the property.*

*View of adjacent property to the SE. A home sits beyond the tree line.*

*Historic home dating from 1906.*

*Field on southern portion of property. One of the proposed stub-outs is proposed to go to the property line at the edge of the tree line in this photo.*

## FUTURE LAND USE




City of Hendersonville Future Land Use Map

*The subject property is designated as Family/Neighborhood Living (FNL) on the Future Land Use Map. The developer is requesting a change to Multi-Generational Living (MGL). While the property is primarily surrounded by areas designated as FNL, there is a small area of MGL at its northeastern corner moving towards downtown. Properties on the opposite side of Haywood Road are also designated MGL beyond Blythe Street.*

*A stream runs through the property, and the Future Land Use map identifies this area as open space.*

*A comparison of the FNL and MGL land use categories is provided later in this packet.*

STAFF SITE PLAN REVIEW – SUMMARY COMMENTS

## PROPOSED REQUEST DETAILS

Site Plan Summary:

- Proposed Uses:
  - 180 Residential dwellings, two, three, and four-family
- Building:
  - 180 Units Total
    - Duplex (1 BR and 2BR) – 728 sf – 30
    - Stacked Duplex (1 BR) – 624 sf – 8 (4 below, 4 above)
    - Duplex (1 BR and 2 BR) – 1,064 sf – 30
    - Duplex (2 BR and 2 BR) – 1,064 sf – 4
    - Townhomes (2 BR) – 1,152 sf – 44
    - Townhomes (2 BR) – 1,365 sf – 20
    - Townhomes (3 BR) – 1,430 sf – 44
  - Building Coverage: 3.6 acres
  - 8.47 units per acre
  - 5.74 units per acre utilizing City's new ½ unit calculation for units under 1,200 sf
- Site Coverage:
  - Open space – 13.2 acres
  - Streets and Parking – 3.75 acres
  - Stormwater Detention - .7 acres
- Site Access
  - The site will have one access point off of Haywood Road. See TIA Analysis for more information on this.
  - Two stub-outs were provided on the southern and southwestern part of the property. These will be provided to the property line and will be designated for possible future connections.
  - All roads on the property will be private. However, the main access road is being constructed to public street standards.
- Sidewalk
  - There is an existing sidewalk on Haywood Road.
  - The developer will establish internal sidewalks throughout the site. The internal sidewalks will connect to the sidewalk on Haywood Road.
- Parking
  - The developer is required to provide 202 parking spaces. They have proposed 330 spaces, including in-garage spaces.
- Natural Resources
  - The developer has proposed providing a greenway trail easement through the property.
  - Subject property has both 100 year and 500 year floodplain running through

the middle of the property. No building is proposed within the floodplain with the exception of the construction of a bridge across the stream.
    - A portion of stream on the northeastern edge of the property will be piped.
    - Applicant has proposed a condition related to the transitional buffer requirements of the stream buffer ordinance for a portion of the stream on the eastern portion of the property. This is to allow for the placement of units.
    - The portion of the site plan on the southern side of the stream includes significant grading. The cut and fill to level the site for the proposed design includes a retaining wall exceeding 25' in height.
- Landscaping and Tree Preservation
    - Requirements:
        - Common and open space plantings
        - Bufferyard – 8' Type A Plantings
        - Vehicular Use Area Plantings
        - Street Trees
    - Tree Canopy Preservation
        - Total required for Tier I and II Tree Save – 105,070 sf
        - Total provided – 166,159 sf
        - Most of the tree canopy will be preserved in the center of the site along the stream corridor, as well as on the eastern edge of the property.

DEVELOPER-PROPOSED CONDITIONS:

- Minimum 25' building setback throughout the perimeter of the property.
- A minimum of 40% of the existing tree canopy will be preserved.
- The site will maintain a minimum of 55% open space.
- The site will maintain a minimum of 16% common open space.
- All exterior walls will have at least one window or doorway per floor. The garage bays are excluded from this requirement.
- All units will include a private fenced backyard.
- All open space and amenities will be professionally managed and maintained in perpetuity by the property owner.
- Transitional stream buffer shall be reduced to 0' for the area indicate below in the site plan.

OUTSTANDING ISSUES & CITY PROPOSED CONDITIONS:

**COMMUNITY DEVELOPMENT**

**Site Plan Comments:**

- The site plan accompanying this petition meets the standards established by the Zoning Ordinance for Planned Institutional Developments (5-21) (minus any developer proposed conditions).
    - No additional comments

**Proposed City-Initiated Conditions:**

- The developer shall construct a westbound left turn lane on Haywood Road at the site access with at least 50 feet of storage. The final design shall be done in coordination with NCDOT.
- The developer shall construct an eastbound right turn lane on Haywood Road at the site access with at least 50 feet of storage. The final design shall be done in coordination with NCDOT.
- The developer shall dedicate a greenway easement to the city that is 50' wide for the location of future greenway development.

DEVELOPMENT REVIEW COMMITTEE COMMENTS:

The Development Review Committee consists of the following Departments/Divisions and Agencies: Engineering, Water/Sewer, Fire Marshal, Stormwater Administration, Floodplain Administration, Public Works, NCDOT, Henderson County Soil & Erosion Control and the City's Traffic Consultant. While all pertinent members of the DRC reviewed this project, staff have provided only the relevant/outstanding comments / conditions below:

Public Works:

- Trash will need to be handled by City of Hendersonville. Concierge trash pickup proposed by developer is not allowed per-City ordinance. (To be resolved at Final Site Plan)
- Determination on whether the water/sewer lines need to be public and whether they can utilize a master meter. (To be resolved at Final Site Plan)

## TRANSPORTATION CONSULTANT (KIMLEY HORN)

### TIA Comments:

- The Traffic Impact Analysis for the development was submitted on September 15th, 2025. Below are the review comments from the City Traffic Consultant regarding the TIA. The primary feedback on the initial TIA focused on the necessity for turn lane warrants at unsignalized intersections. These comments have been forwarded to the development team and their transportation engineer, who is currently addressing them to prepare version 2 of the TIA. We are awaiting this revised version, which will undergo review by Kimley Horn.
- The expected **new** trip generation for the proposed development is as follows:
    - 1,321 Daily Trips
    - 88 AM Peak Hour Trips
    - 104 PM Peak Hour Trips

### TIA Proposed Mitigation:

- Right Turn Lane Warrant
    - The right-turn lane warrants note that the opposing right turn lane is default 100 vph, while the note in the top right corner of the warrants state that the right urn should be 100 vph as a MINIMUM, not the default. With this revision in place, it is expected that a right turn-lane with 50' storage would be warranted at the site access.
- Support of the Left Turn Lane
    - The consultant supported the following recommendation from the TIA, "Construct a westbound left turn lane on Haywood Road at the site access with at least 50 feet of storage. Final design to be coordinated with NCDOT."

## SECOND ACCESS REQUIREMENTS

### No Second Access Required:

- Because this project is not proposing to subdivide any of the property, the developer is not required to provide a second access. If the developer were proposing to subdivide, they would be required to provide a second vehicular access point per our subdivision ordinance Section 4.03 – Street, Table 4.03.C.3: Required Points of Access (31 or more residential lots requires a second access).
- With the revisions to our Planned Residential Development zoning ordinance, the developer is required to provide stub-outs, which is a continuation of the road to the property line to provide a potential connection point if the road was ever extended. The developer has proposed two stub-outs, one going to the south of the property and one going to the east.
- Staff did not recommend a condition requiring second access, however, it is within the purview of the Planning Board to recommend a condition to City Council for a second access.

### Fire and Emergency Vehicle Access

- The City's fire marshal reviewed the plans for the project and determined that one of two options would satisfy the fire requirements for this project. The developer could provide a second access onto the

site, or they could use sprinkler systems throughout all the buildings. The developer is currently proposing sprinkler systems.

REZONING ANALYSIS – GENERAL REZONING STANDARDS (ARTICLE 11-4)

| GENERAL REZONING STANDARDS | |
|---|---|
| 1) COMPREHENSIVE PLAN CONSISTENCY | **LAND SUPPLY, SUITABILITY & INTENSITY**<br>The subject property is noted as being "underdeveloped" on the Land Supply Map.<br>The subject property is "most suitable" on the Land Suitability Map.<br>The subject property is classified as being suitable for "low-intensity" development on the Development Intensity Map. |
| | **FUTURE LAND USE & CONSERVATION MAP**<br>**Character Area Designation:** Family/Neighborhood Living<br>**Character Area Description:** Somewhat Inconsistent<br>**Zoning Crosswalk:** Consistent<br>**Focus Area Map:** N/A<br>**Developer Requested Future Land Use Designation**<br>**Character Area Designation:** Multi-Generational Living<br>**Character Area Description:** Consistent<br>**Zoning Crosswalk:** Consistent |
| 2) COMPATIBILITY | **Whether and the extent to which the proposed amendment is compatible with existing and proposed uses surrounding the subject property** |
| | The proposed development is located in a transition area as you leave the City. Stretching along Haywood Road are a number of subdivision that were established at various period throughout history. To the east and north are primarily single family subdivisions, while to the west there are primarily duplexes and townhomes. This development primarily features duplexes and town homes, which is compatible with the developments to the west, however, the density is not compatible with the properties to the east. |
| 3) Changed Conditions | **Whether and the extent to which there are changed conditions, trends or facts that require an amendment -** |
| | The subject property was previously proposed for development as a multi-family apartment building project. The project was withdrawn, and no new project has been proposed. This is the latest iteration of the project. There have been some changes to the ordinance, and the City's comprehensive plan was updated. |
| 4) Public Interest | **Whether and the extent to which the proposed amendment would result in a logical and orderly development pattern that benefits the surrounding neighborhood, is in the public interest and promotes public health, safety and general welfare -** |
| | The proposed development does emulate surrounding developments along Haywood Road. The proposed transportation mitigation would decrease the negative impact on Haywood Road. The large amount of grading on the site does negatively impact the environmental health of the site overall, and impacts adjacent neighbors. |

| | |
|---|---|
| 5) Public Facilities | **Whether and the extent to which adequate public facilities and services such as water supply, wastewater treatment, fire and police protection and transportation are available to support the proposed amendment**<br>The site will be served by public utilities. The developer is currently proposing to have the water/sewer lines on the property be private. |
| 6) Effect on Natural Environment | **Whether and the extent to which the proposed amendment would result in significantly adverse impacts on the natural environment including but not limited to water, air, noise, storm water management, streams, vegetation, wetlands and wildlife -**<br>The site overall presents a moderate to high impact on the natural environment. As previously mentioned, significant grading is required, which necessitates the construction of several retaining walls throughout the property. While the developer is generally complying with the City's stream buffer protections, there is one exception: a condition has been included to reduce the 20-foot transitional buffer to 0 feet along a small portion of the stream on the eastern side of the site plan. |

DRAFT COMPREHENSIVE PLAN CONSISTENCY AND REZONING REASONABLENESS STATEMENT

The petition is found to be **inconsistent** with the City of Hendersonville Gen H 2045 Comprehensive Plan based on the information from the staff analysis and the public hearing, and because:

*The petition proposes duplexes, triplexes, and quadplexes, which does not align with the Future Land Use designation of Family/Neighborhood Living.*

We **[find/do not find]** this petition to be reasonable and in the public interest based on the information from the staff analysis and the public hearing, and because:

*DRAFT [Rationale for Approval]*

- *The addition of 180 units supports the City's goal of increasing the overall housing supply.*
- *The proposed development utilizes existing infrastructure and aligns with the City's objective to encourage infill development.*
- *The project incorporates "missing middle housing" principles by offering a range of housing sizes, consistent with the City's goal to provide diverse housing options for a variety of residents.*
- *The proposed development is in alignment with the surrounding developments.*

*DRAFT [Rational for Denial]*

- *The proposed development does not provide adequate site access for emergency services and lacks interconnectivity.*
- *Common spaces are not adequately distributed throughout the site.*
- *The proposed development is incompatible with the surrounding developments.*
- *The grading of the proposed development will significantly alter the natural environment of the site and significantly impact some adjoining neighbors.*

# TRAFFIC IMPACT ANALYSIS

## LEO Haywood Cottages

### Hendersonville, North Carolina

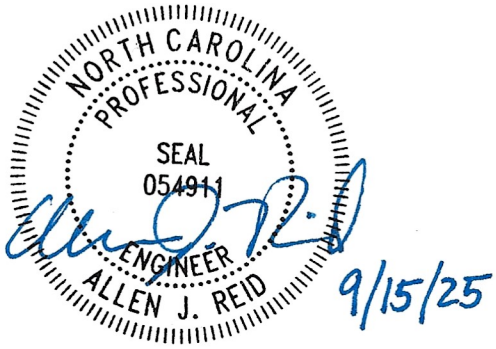
**SEPTEMBER 15, 2025**

**IMPACT DESIGNS, INC.**
**Prepared by: Allen J. Reid, PE**

# TRAFFIC IMPACT ANALYSIS

## *LEO Haywood Cottages*

***HENDERSONVILLE, NORTH CAROLINA***




**REPORT PREPARED FOR:**
SeamonWhiteside
701 Easley Bridge Road, Suite 6060
Greenville, SC 29611

**REPORT PREPARED BY**
Impact Designs, Inc.
PO Box 3728
Mooresville, NC 28117
nick@impactdesignsinc.com

# Table of Contents

**EXECUTIVE SUMMARY** ..... iii

**1. INTRODUCTION** ..... 1

**1.1. Project Summary** ..... **1**

**1.2. Existing Roadway Conditions** ..... **2**

**1.3. Driveway Location** ..... **2**

**2. TRAFFIC VOLUME DEVELOPMENT** ..... 6

**2.1. Existing Traffic Volumes** ..... **6**

**2.2. Projected Traffic Volumes** ..... **6**

**2.3. Proposed Development Traffic Volumes** ..... **6**

**2.4. Future Build Traffic Volumes** ..... **7**

**3. TRAFFIC IMPACT ANALYSIS** ..... 13

**3.1. Turn Lane Analysis** ..... **13**

**3.2. Intersection LOS Analysis** ..... **13**

**3.3. Mitigation Requirements** ..... **14**

**3.4. Capacity Analysis** ..... **15**

**3.5. Queuing Analysis** ..... **17**

**4. PEDESTRIAN LOS ANALYSIS** ..... 19

**5. SUMMARY OF FINDINGS AND RECOMMENDATIONS** ..... 22

# Tables

Table 1 – Study Area Summary ..... 2

Table 2 – Trip Generation ..... 6

Table 3 – *HCM 6th Edition* LOS Criteria for Signalized & Unsignalized Intersections ..... 13

Table 4 – Intersection Capacity Analysis Results ..... 15

Table 5 – Queuing Analysis ..... 17

Table 6 – Pedestrian LOS Analysis ..... 20

# Figures

Figure 1 – Project Location ..... 3

Figure 2 – Conceptual Site Plan ..... 4

Figure 3 – Existing Lane Configuration ..... 5

Figure 4 – Existing (2024) Traffic Volumes ..... 8

Figure 5 – No-Build (2028) Traffic Volumes ..... 9

Figure 6 – Site Trip Distribution ..... 10

Figure 7 – Site Trip Assignments ..... 11

Figure 8 – Build (2028) Traffic Volumes ..... 12

Figure 9 – Recommended Lane Configurations ..... 23

# Appendices

A) NCDOT TIA Scoping Checklist

B) Traffic Count Data

C) Turn Lane Warrant Analysis

D) Synchro Capacity Analysis Reports

E) SimTraffic Analysis Reports

F) Pedestrian Analysis Reports

G) Signal Information

# EXECUTIVE SUMMARY

A traffic impact study was conducted for the proposed LEO Haywood Cottages development in accordance with NCDOT guidelines. The proposed development is located on the south side of Haywood Road (NC 191), east of Blythe Street, in Hendersonville, North Carolina. The development is expected to consist of 180 single family attached homes and would be completed by the end of 2028. Access to the site is to be provided via a full movement access on Haywood Road.

The study was determined through coordination with NCDOT and the City of Hendersonville and consists of the following intersections:

- Asheville Highway (US 25 Business) and Haywood Road (NC 191)
- Haywood Road (NC 191) and Blythe Street
- Brevard Road/6$^{th}$ Avenue West (US 64) and Blythe Street
- Haywood Road (NC 191) and Ewbank Drive
- Haywood Road (NC 191) and Morris Lane
- Haywood Road (NC 191) and Ridgewood Boulevard / Whitmire Circle
- Haywood Road (NC 191) and Orleans Avenue
- Haywood Road (NC 191) and N. Justice Street
- Haywood Road (NC 191) and Site Access

For the purpose of this analysis, the study intersections listed above were analyzed under the following scenarios:

- Existing (2024) Conditions
- No-Build (2028) Conditions
- Build (2028) Conditions

Traffic operations during the AM and PM peak hours were modeled for each scenario. The results of each scenario were compared to determine impacts from background traffic growth and the proposed development.

*Recommendations:*

- Construct a westbound left turn lane on Haywood Road at the site access with at least 50 feet of storage. Final design to be coordinated with NCDOT.

# 1. INTRODUCTION

The purpose of this report is to summarize the traffic impact analysis that was completed for the proposed LEO Haywood Cottages development in Hendersonville, North Carolina. The study was developed in accordance with NCDOT guidelines. The purpose of the study is to determine the potential impact to the surrounding transportation system caused by the traffic generated by the development. This report summarizes the procedures and findings of the traffic impact study.

## 1.1. Project Summary

The proposed development is located on the south side of Haywood Road, east of Blythe Street, in Hendersonville, North Carolina. The development is expected to consist of 180 single family attached units and would be completed by the end of 2028. This traffic impact study analyzes the effects of the additional traffic associated with the proposed development during the weekday AM (7:00 AM - 9:00 AM) and the weekday PM (4:00 PM - 6:00 PM) peak periods. The study area for the purpose of the analysis includes:

- Asheville Highway (US 25 Business) and Haywood Road (NC 191)
- Haywood Road (NC 191) and Blythe Street
- Brevard Road/6$^{th}$ Avenue West (US 64) and Blythe Street
- Haywood Road (NC 191) and Ewbank Drive
- Haywood Road (NC 191) and Morris Lane
- Haywood Road (NC 191) and Ridgewood Boulevard / Whitmire Circle
- Haywood Road (NC 191) and Orleans Avenue
- Haywood Road (NC 191) and N. Justice Street
- Haywood Road (NC 191) and Site Access

Refer to Figures 1 and 2 for the site location and the conceptual site plan.

For the purpose of this analysis, the study intersections listed above were analyzed under the following scenarios:

- Existing (2024) Conditions
- No-Build (2028) Conditions
- Build (2028) Conditions

Refer to Appendix A for a copy of the NCDOT TIA Scoping Checklist Scoping Form.

## 1.2. Existing Roadway Conditions

The primary roadways within the study area are Asheville Highway, Haywood Road, US 64 and Blythe Street. A summary of the existing characteristics is shown in Table 1.

**Table 1 – Study Area Summary**

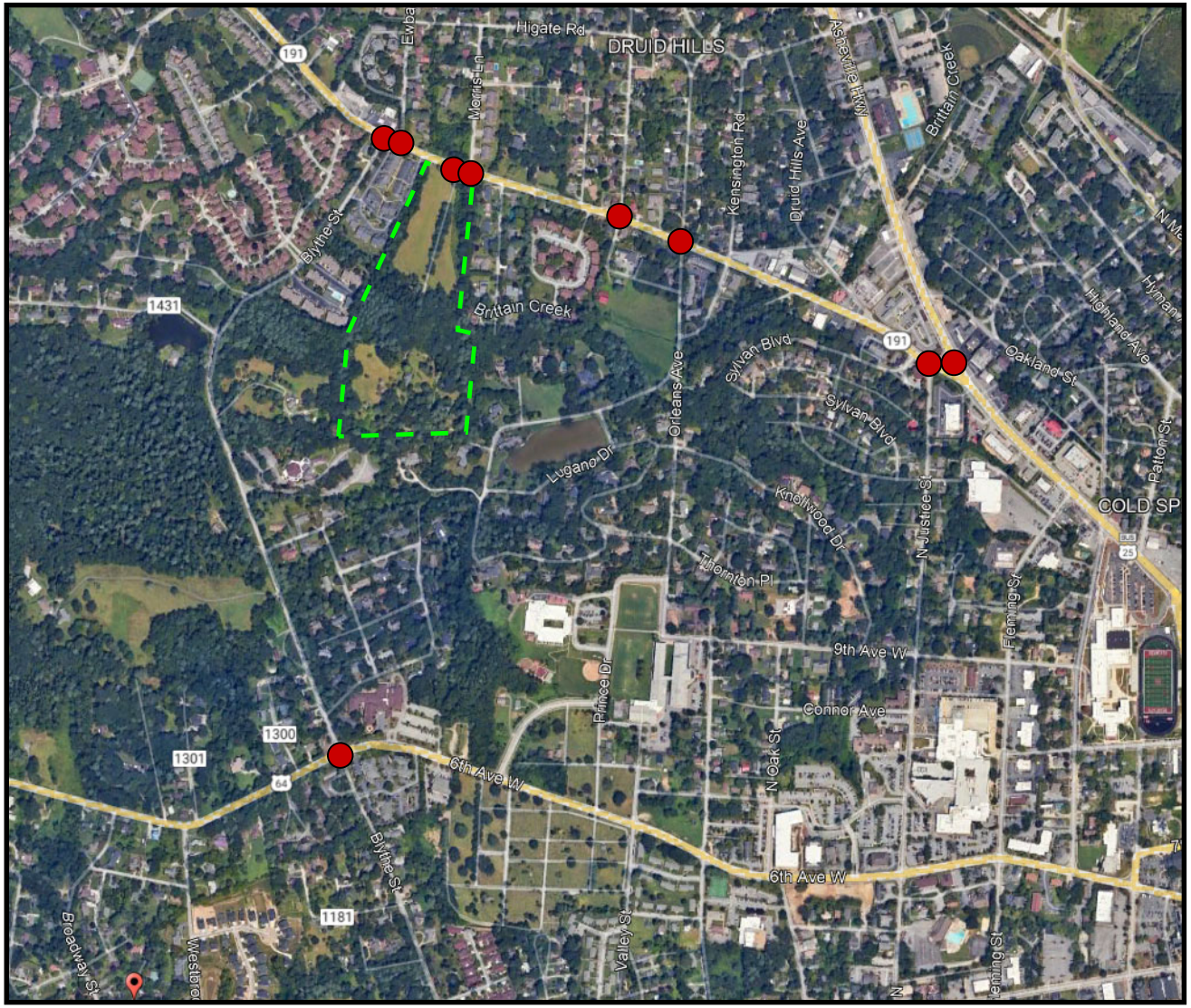
| Facility Name | Route # | Typical Cross Section | Posted Speed Limit | Maintained By | AADT |
|---|---|---|---|---|---|
| Asheville Highway | US 25 Business | 5-lane undivided | 35 MPH | NCDOT | 28,500 (2022) |
| Haywood Road | NC 191 | 2-lane undivided | 35 MPH | NCDOT | 11,000 (2022) |
| Brevard Road/ 6th Avenue West | US 64 | 2-/3-lane undivided | 35 MPH | NCDOT | 14,000 (2022) |
| Blythe Street | SR 2162 | 2-lane undivided | 35 MPH | NCDOT | 6,200 (2022) |

Refer to Figure 3 for an illustration of the existing lane geometry and traffic control at the study intersections.

## 1.3. Driveway Location

Direct access to the site is to be provided via a full movement access on Haywood Road.

NORTH




**LEGEND**

- Proposed Site Location
- Study Intersections

IMPACT
Designs, Inc.

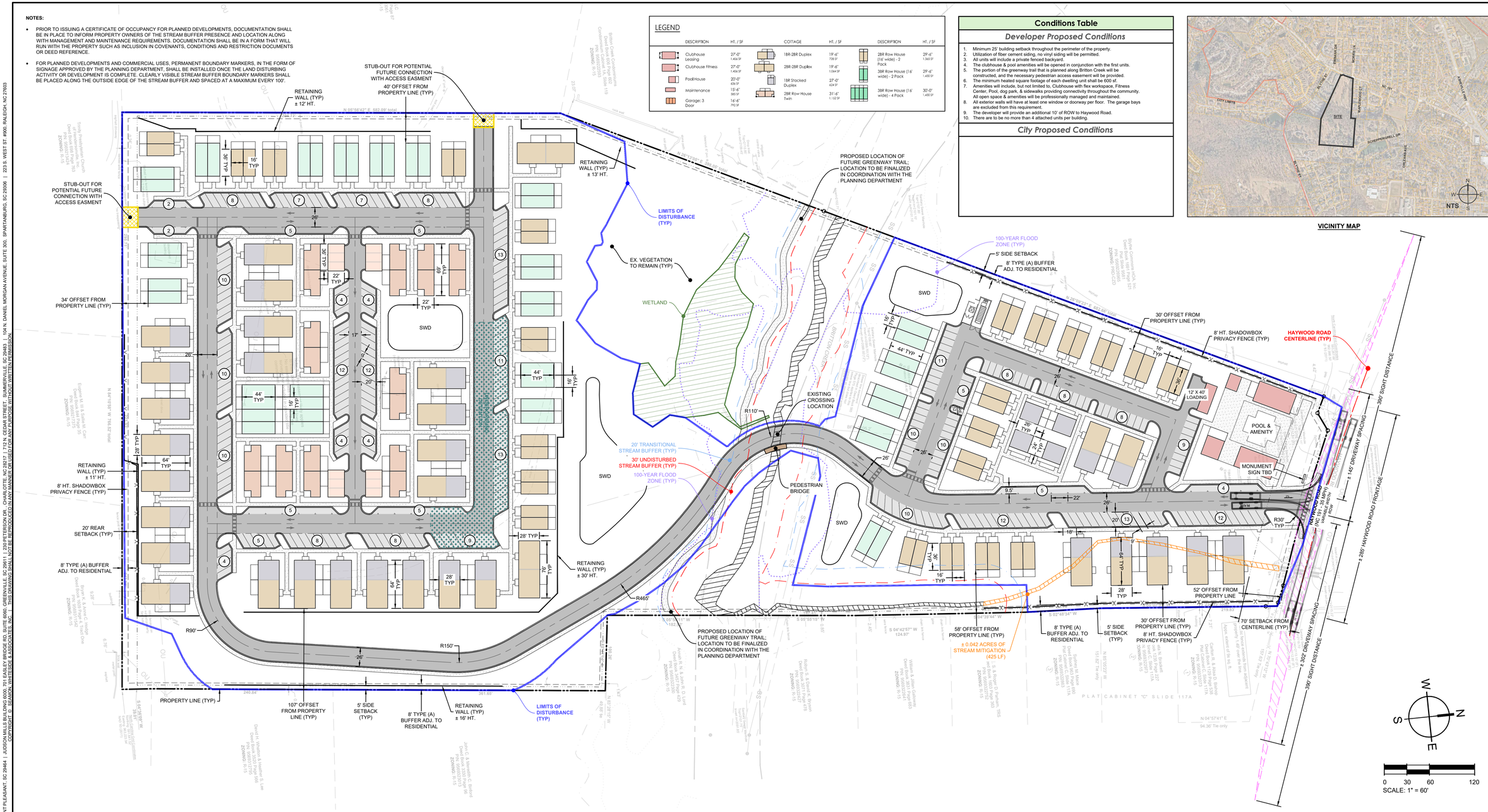
*LEO Haywood Cottages*
*Hendersonville, NC*

Site Location Map

| Scale: Not to Scale | Figure | 1 |
|---|---|---|

**NOTES:**

- PRIOR TO ISSUING A CERTIFICATE OF OCCUPANCY FOR PLANNED DEVELOPMENTS, DOCUMENTATION SHALL BE IN PLACE TO INFORM PROPERTY OWNERS OF THE STREAM BUFFER PRESENCE AND LOCATION ALONG WITH MANAGEMENT AND MAINTENANCE REQUIREMENTS. DOCUMENTATION SHALL BE IN A FORM THAT WILL RUN WITH THE PROPERTY SUCH AS INCLUSION IN COVENANTS, CONDITIONS AND RESTRICTION DOCUMENTS OR DEED REFERENCE.
- FOR PLANNED DEVELOPMENTS AND COMMERCIAL USES, PERMANENT BOUNDARY MARKERS, IN THE FORM OF SIGNAGE APPROVED BY THE PLANNING DEPARTMENT, SHALL BE INSTALLED ONCE THE LAND DISTURBING ACTIVITY OR DEVELOPMENT IS COMPLETE. CLEARLY VISIBLE STREAM BUFFER BOUNDARY MARKERS SHALL BE PLACED ALONG THE OUTSIDE EDGE OF THE STREAM BUFFER AND SPACED AT A MAXIMUM EVERY 100'.




| Project Information - August 19th, 2025 | |
|---|---|
| Project Title | LEO Hendersonville |
| Developer | Advenir Azora Development, LLC |
| Property Owner | Justus, Jeffrey |
| Design Team | Architect \| Nequette Architecture |
| | LA \| Lorberbaum McNair & Associates |
| | Civil Engineer \| SeamonWhiteside |
| Tax Map Number | 9569229206 (Primary Corporate City Limits) |
| Existing Zoning | R-15 |
| Proposed Zoning | PRD-CZD |
| Proposed Use | Residential Dwellings (2/3/4 Family) |
| Principle Structure Setbacks | Front: 40' \| Reduced to 0' - Parking Situated to Rear & Screened From ROW \| Front Facing Garages = 45' Min. SB Side: 5' Min. \| Rear: 20' Min. |
| Buffers | Buffer: 8' Type (A) Adjacent to Residential |
| Building Height | 35' Max. Height |
| Parking Required | 1 Space / Dwelling Unit **OR** 1.5 / Dwelling Unit ≥ 3 Bedrooms |
| Parking Provided | **180** Dwelling Units (44 ≥ 3 Bedrooms) - 202 Spaces Req. Provided: 330 spaces (Includes Garage Spaces) |

| Site Coverage | |
|---|---|
| Total Project Area | ± 21.25 AC |
| Buildings | ± 3.6 AC \| 17 % Site Coverage |
| Open Space | **Open Space** |
| | ± 13.2 AC \| 62 % Site Coverage |
| | **Common Open Space** |
| | ± 2.1 AC *Open Water / Wetland / Floodplain (50%)* |
| | ± 0.3 AC *Amenity* |
| | ± 2.15 AC *Unimproved Area (Natural Features)* |
| | **Total:** ± 3.1 AC (14.6 %) **N/I ± 0.4 AC ≥ 33% Slope** |
| Streets & Parking | ± 3.75 AC \| 17.6 % Site Coverage |
| Stormwater Detention | ± 0.7 AC \| 3.3 % Site Coverage |

**General Notes**

1) All streets shall be built to public street standards - See Cross Section 5-14-4.4
2) Property owner responsible for perpetual maintenance of common open space.
3) Proposed project to be constructed & completed as one phase.
4) Any removed frontage sidewalks will be replaced with current standards.

| Adjacent Properties | | |
|---|---|---|
| **Tax Map Number** | **Owner** | **Zoning Designation** |
| 9569226965 | BLYTHE COMMONS HOA, INC | PRD-CZD |
| 9569222593 | BRITTON CREEK CONDOMINIUMS | R-15 |
| 9569220061 | 917 BLYTHE LLC | R-15 |
| 9569213424 | TRINITY PRESBYTERIAN CHURCH OF HENDERSONVILLE | R-15 |
| 9569217375 | CARR, EUGENE M III + CARR, SALLIE M | R-15 |
| 9569311542 | HODGE, BRYAN K + HODGE, ANNE C | R-15 |
| 9569312795 | WHATTON, DAVID HERBERT + LEE, HEATHER SANGEUN | R-15 |
| 9569323013 | BINFORD, JOHN C. + BINFORD, MEREDITH C. | R-15 |
| 9569322300 | LORD, ANNAH RUTH NESBITT + LORD, JOHN ROBERT DAVIS | R-15 |
| 9569322427 | BRYSON, ROBYN S + BRYSON, DAVID K | R-15 |
| 9569322641 | GALLOWAY, WILLIAM B. + GALLOWAY, JILLIAN C. | R-15 |
| 9569322752 | ROGER DALE PARHAM & JUDITH ELAINE SMITH PARHAM REVOCABLE TRUST | R-15 |
| 9569322863 | MACE, SYDNEY M | R-15 |
| 9569322973 | BRACKETT, SERETA N | R-15 |
| 9569332073 | BISHOP, CARLTON REID + BISHOP, ALISA DAWN | R-15 |

| Preliminary Unit Mix | |
|---|---|
| **Type** | **Provided** |
| 1 BR - Duplex (1 BR & 2 BR) | 30 |
| 1 BR - Stacked Duplex (Lower) | 4 |
| 1 BR - Stacked Duplex (Upper) | 4 |
| 2 BR - Duplex (1 BR & 2 BR) | 30 |
| 2 BR - Duplex (2 BR & 2 BR) | 4 |
| 2 BR - Townhome (Twin) | 20 |
| 2 BR - Townhome (Mini) | 44 |
| 3 BR - Townhome (16' Wide) | 44 |
| | **180 Units Total** |

**SITE LEGEND**

- HEAVY DUTY ASPHALT PAVEMENT
- STANDARD DUTY ASPHALT PAVEMENT
- NCDOT ASPHALT PAVEMENT
- CONCRETE - SIDEWALK
- PROPERTY LINE
- BUILDING SETBACK
- ADJACENT PARCEL BUFFER
- RETAINING WALL
- PARKING COUNT (12)

SEAMONWHITESIDE
MOUNT PLEASANT, SC 843.884.1667
GREENVILLE, SC 864.298.0534
SUMMERVILLE, SC 843.972.0710
SPARTANBURG, SC 864.272.1272
CHARLOTTE, NC 980.312.5450
RALEIGH, NC 980.312.5450
WWW.SEAMONWHITESIDE.COM

SOUTH CAROLINA
SEAMON, WHITESIDE & ASSOCIATES, INC.
No. C00472
CERTIFICATE OF AUTHORIZATION

**NOT FOR CONSTRUCTION**

# LEO LIVING HENDERSONVILLE

1741 HAYWOOD RD | TMS: 9569-22-9206
HENDERSONVILLE, NORTH CAROLINA

**SD SET**
(NOT FOR CONSTRUCTION)

SW+ PROJECT: 11808
DATE: 7/4/2025
DRAWN BY: AC | NH
CHECKED BY: AD | DM

REVISION HISTORY

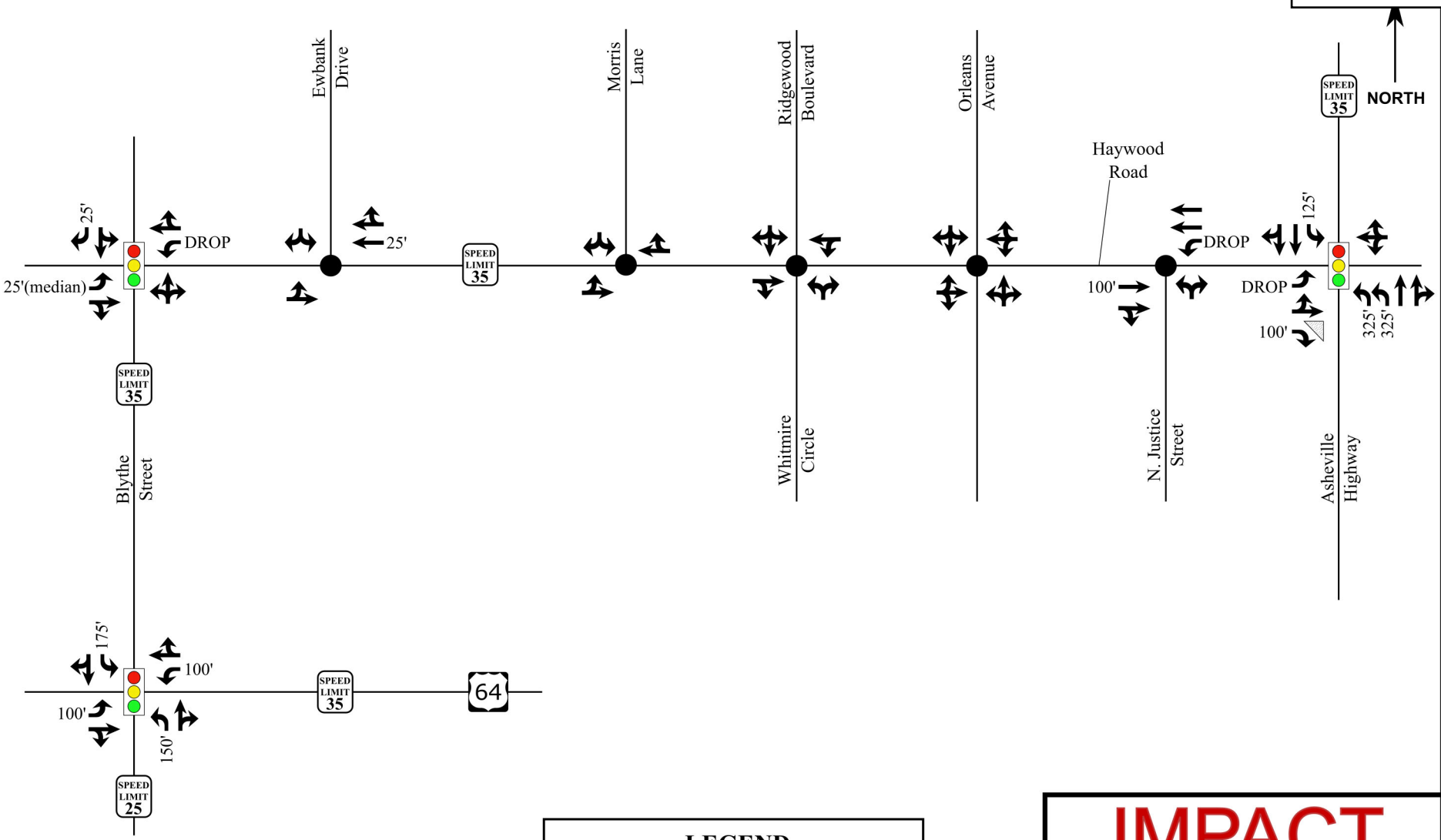
PRELIMINARY SITE PLAN

C5.0



501 WANDO PARK BOULEVARD, SUITE 200, MOUNT PLEASANT, SC 29464 | AUDSON MILLS BUILDING 6000, 70 F. EASLEY BRIDGE RD, SUITE 6000, GREENVILLE, SC 29611 | 200 PETERSON DR., CHARLOTTE, NC 28217 | 712 N. CEDAR STREET, SUMMERVILLE, SC 29483 | 104 N. DANIEL MORGAN AVENUE, SUITE 300, SPARTANBURG, SC 29306 | 223 S. WEST ST. #900, RALEIGH, NC 27603
COPYRIGHT © SEAMON, WHITESIDE & ASSOCIATES, INC. | THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WITHOUT WRITTEN PERMISSION. SHALL NOT BE REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WITHOUT WRITTEN PERMISSION

PLOTTED:8/5/2025 2:10 PM, BY Alex Davis P:\ACAD\2-R1\808\CAD Files\CD\2025-08-12 C5.0 Site Plan ALT.dwg




**LEGEND**

- Signalized Intersection
- Unsignalized Intersection
- Existing Lane
- X' Storage (In Feet)
- SPEED LIMIT XX Posted Speed Limit

IMPACT
Designs, Inc.

*LEO Haywood Cottages*
*Hendersonville, NC*

Existing Lane Configurations and Traffic Control

Scale: Not to Scale | Figure 3

# 2. TRAFFIC VOLUME DEVELOPMENT

## 2.1. Existing Traffic Volumes

Existing turning movement counts were conducted at the intersections during the weekday AM (7:00 AM to 9:00 AM) and weekday PM (4:00 PM to 6:00 PM) peak periods in December of 2024 and in September of 2025. To be conservative the Existing (2024) traffic volumes assumed all counts to be collected in 2024. The Existing (2024) traffic volumes are illustrated in Figure 4. Refer to Appendix B for a copy of the raw traffic count data.

## 2.2. Projected Traffic Volumes

Based on coordination with NCDOT, a 1% annual growth was applied to the 2024 counts to project traffic volumes for the future year (2028). This growth rate was applied to account for all background growth in the area without any adjacent and/or the proposed developments. Refer to Figure 5 for an illustration of the No-Build (2028) traffic volumes.

## 2.3. Proposed Development Traffic Volumes

As mentioned previously, the proposed development is expected to consist of 180 single family attached homes and would be completed by the end of 2028. The trip generation potential for the development was estimated utilizing methodology contained within the ITE's *Trip Generation Manual*, 11th Edition. Utilizing ITE equations for ITE Code 215 traffic volumes were generated for the weekday daily, the weekday AM peak hour, and the weekday PM peak hour. Refer to Table 2 for a summary of the trip generation potential of the proposed development.

**Table 2 – Trip Generation**

| ITE Land Use (Code) | Density | Independent Variable | Daily Traffic | AM Peak | | PM Peak | |
|---|---|---|---|---|---|---|---|
| | | | | Enter | Exit | Enter | Exit |
| Single Family Attached Housing (ITE Code 215) | 180 | Dwelling Units | 1,321 | 22 | 66 | 61 | 43 |

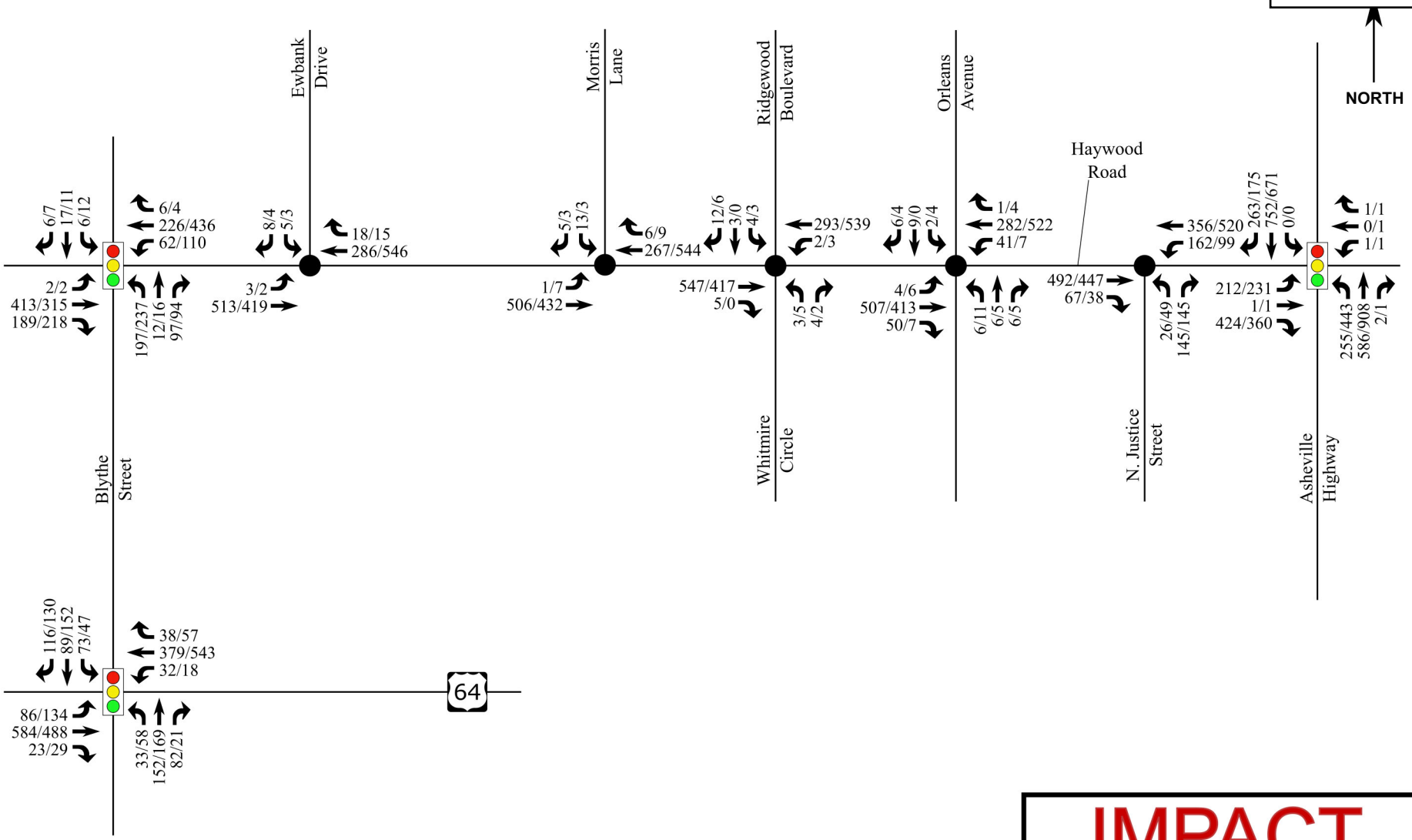
Site traffic associated with the proposed development was distributed and assigned to the roadway network based upon existing travel patterns and are summarized below:

- 20% to/from the north via Asheville Highway
- 25% to/from the south via Asheville Highway
- 10% to/from the west via Haywood Road
- 5% to/from the west via US 64
- 20% to & 30% from the east via US 64
- 5% to/from the south via Blythe Street
- 10% to the south via N. Justice Street

Refer to Figures 6 and 7 for illustrations of the site trip distributions and assignments.

## 2.4. Future Build Traffic Volumes

The site generated traffic volumes were added to the No-Build traffic volumes to determine the Build traffic volumes. The Build (2028) volumes are illustrated in Figure 8.




**LEGEND**

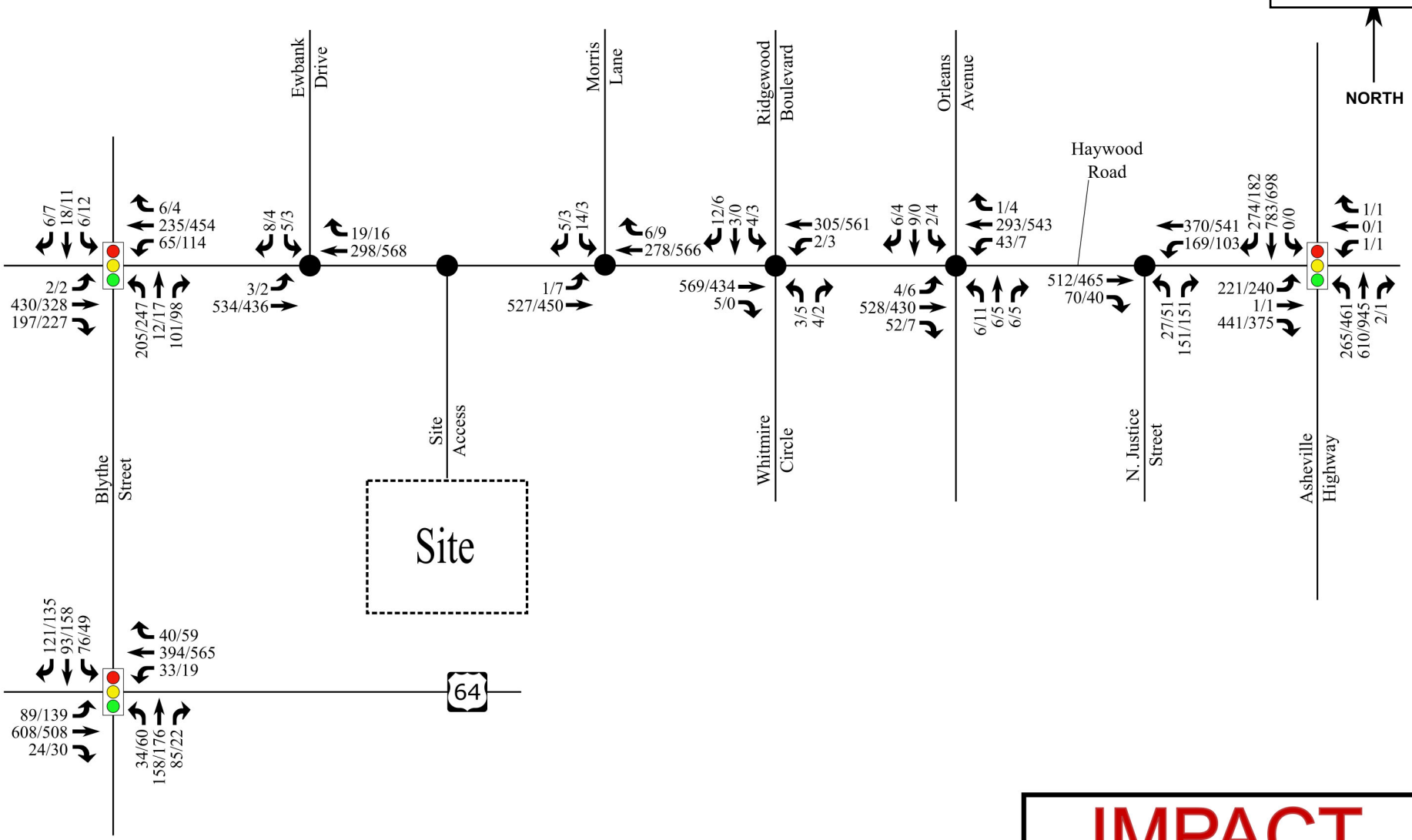
- Signalized Intersection
- Unsignalized Intersection
- X / Y → AM / PM Peak Hour Traffic

IMPACT
Designs, Inc.

*LEO Haywood Cottages*
*Hendersonville, NC*

Existing (2024)
Traffic Volumes

Scale: Not to Scale | Figure 4




**LEGEND**

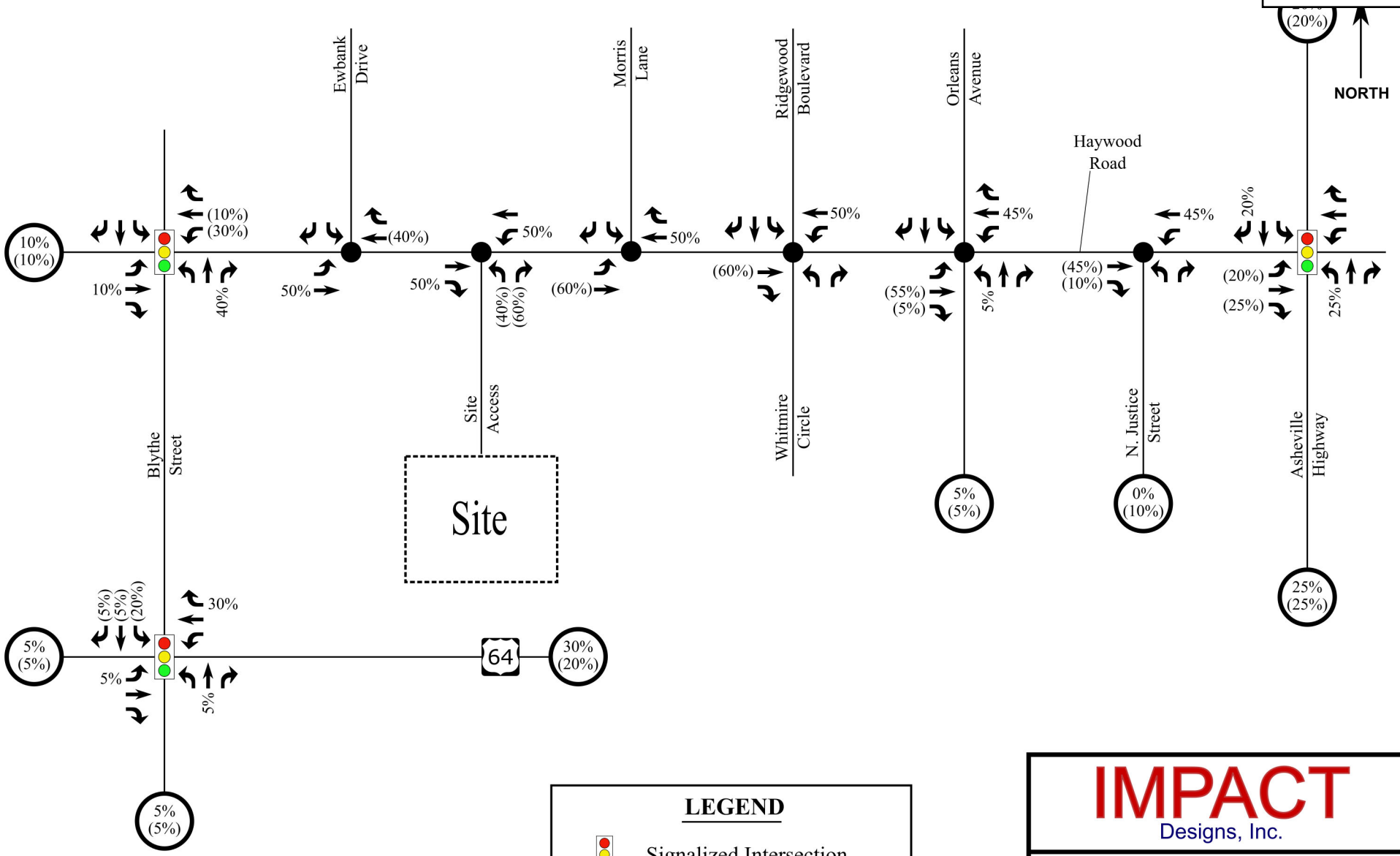
- Signalized Intersection
- Unsignalized Intersection
- X / Y → AM / PM Peak Hour Traffic

IMPACT
Designs, Inc.

*LEO Haywood Cottages*
*Hendersonville, NC*

No-Build (2028)
Traffic Volumes

Scale: Not to Scale | Figure




**LEGEND**

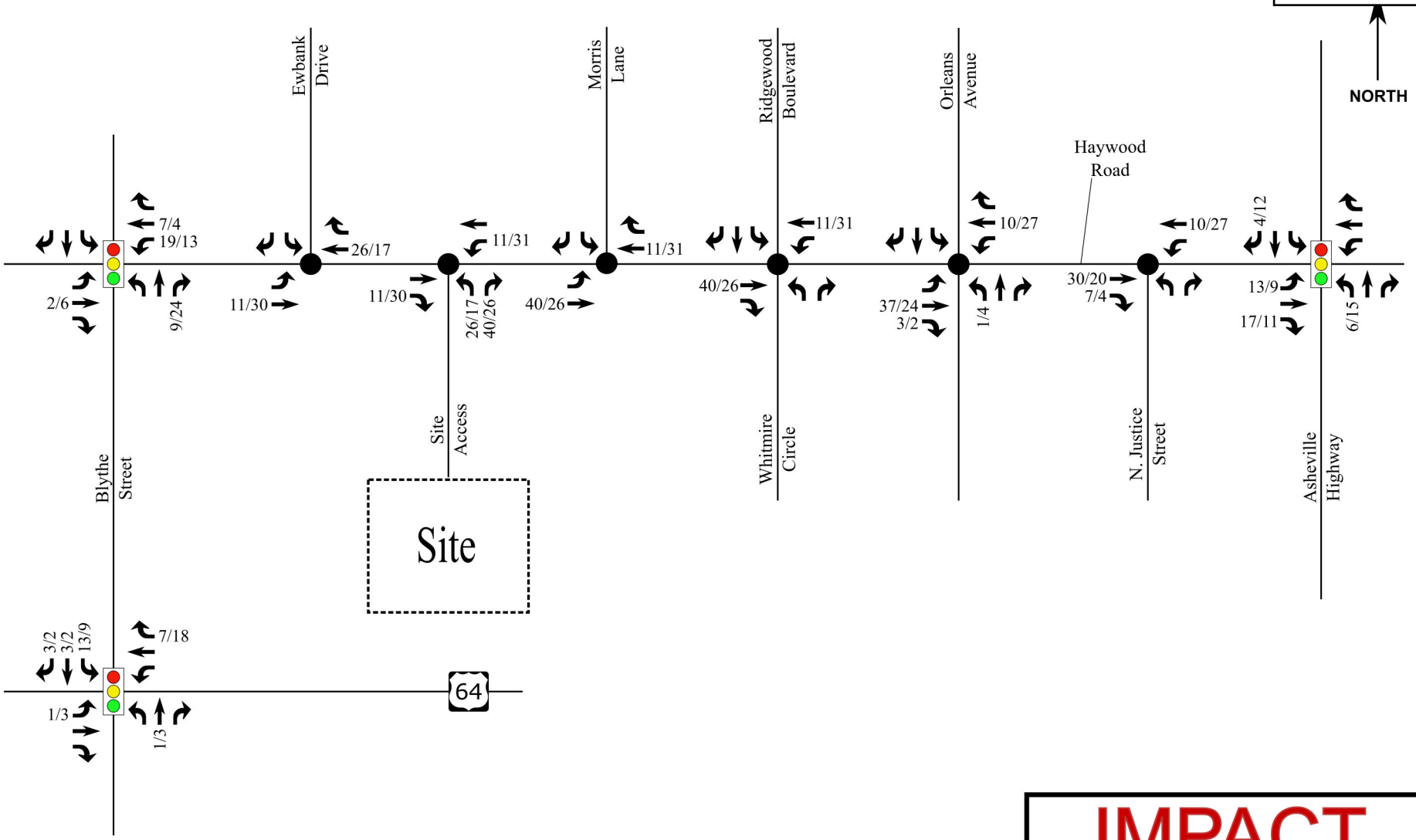
- Signalized Intersection
- Unsignalized Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- X% Regional Trip Distribution

IMPACT Designs, Inc.

*LEO Haywood Cottages*
*Hendersonville, NC*

Site Trip Distribution

Scale: Not to Scale | Figure




**LEGEND**

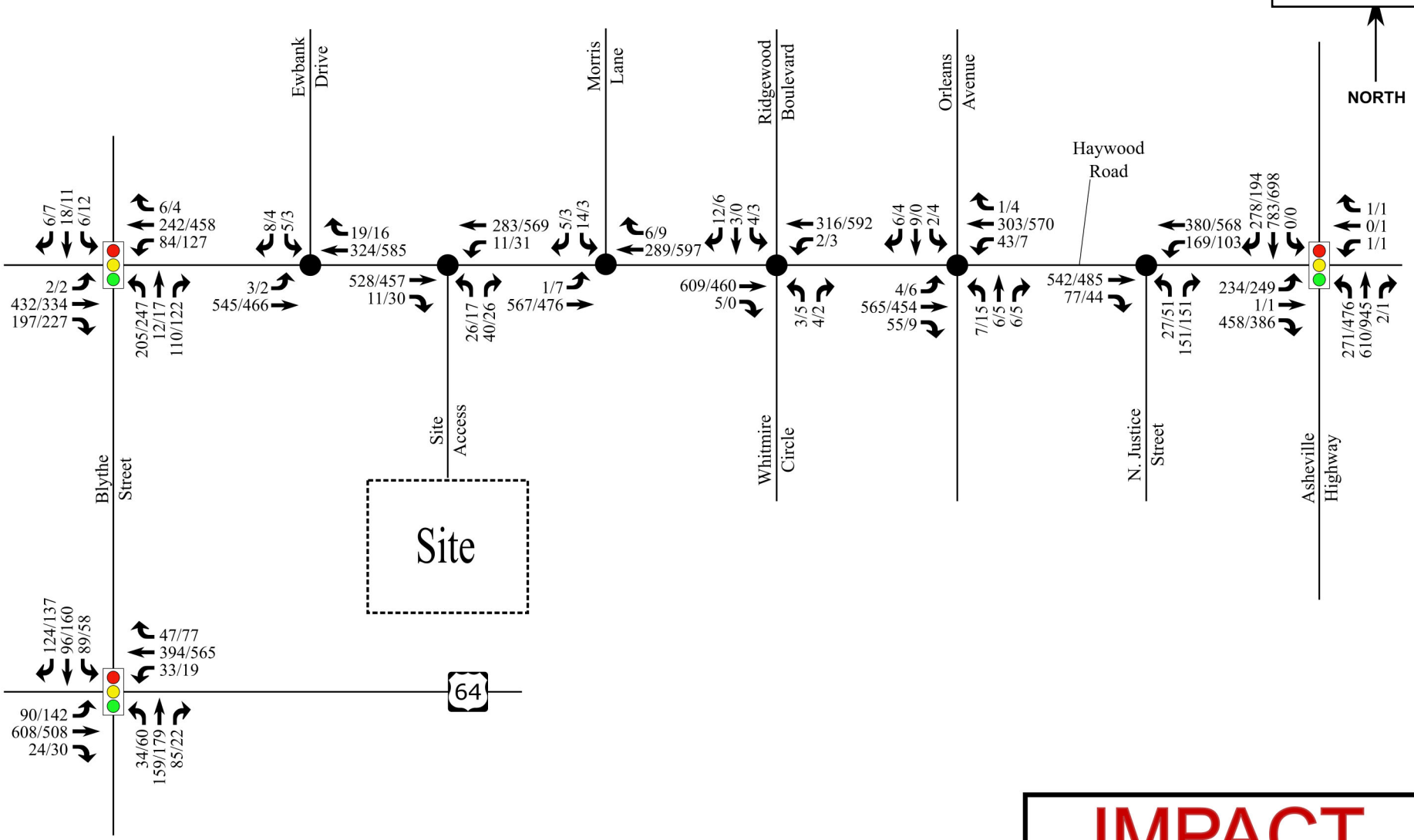
- Signalized Intersection
- Unsignalized Intersection
- X / Y → AM / PM Peak Hour Trips

IMPACT
Designs, Inc.

*LEO Haywood Cottages*
*Hendersonville, NC*

Trip Assignments

Scale: Not to Scale | Figure




**LEGEND**

- Signalized Intersection
- Unsignalized Intersection
- X / Y → AM / PM Peak Hour Traffic

IMPACT
Designs, Inc.

*LEO Haywood Cottages*
*Hendersonville, NC*

Build (2028)
Traffic Volumes

Scale: Not to Scale | Figure

# 3. TRAFFIC IMPACT ANALYSIS

## 3.1. Turn Lane Analysis

A turn lane analysis was conducted for the site access utilizing the Build (2028) volumes. Based on build-out volumes, a left turn lane is warranted on Haywood Road at the site access. Based on the NCDOT nomograph, the turn lane should be designed with at least 50 feet of storage. With the proximity of Morris Lane, constructing a left turn lane could present some geometric challenges. Final design of the improvement should be coordinated with NCDOT.

Refer to Appendix C for the turn lane warrant charts with the volumes graphed.

## 3.2. Intersection LOS Analysis

Using the existing, no-build, and build traffic volumes, intersection analyses were conducted for the study intersections under Existing (2024) conditions, No-Build (2028) conditions, and Build (2028) conditions. This analysis was conducted using the Transportation Research Board's *Highway Capacity Manual 6th Edition (HCM 6th Edition)* methodologies of the *Synchro*, Version 11 software.

Intersection level of service (LOS) grades range from LOS A to LOS F, which are directly related to the level of control delay at the intersection and characterize the operational conditions of the intersection traffic flow. LOS A operations typically represent ideal, free-flow conditions where vehicles experience little to no delays, and LOS F operations typically represent poor, forced-flow (bumper-to-bumper) conditions with high vehicular delays, and are generally considered undesirable. Table 3 summarizes the *HCM 6th Edition* control delay thresholds associated with each LOS grade for signalized and unsignalized intersections.

**Table 3 – *HCM 6th Edition* LOS Criteria for Signalized & Unsignalized Intersections**

| Signalized Intersections | | Unsignalized Intersections | |
|---|---|---|---|
| **LOS** | **Control Delay per Vehicle (seconds)** | **LOS** | **Control Delay per Vehicle (seconds)** |
| A | ≤ 10 | A | ≤ 10 |
| B | > 10 and ≤ 20 | B | > 10 and ≤ 15 |
| C | > 20 and ≤ 35 | C | > 15 and ≤ 25 |
| D | > 35 and ≤ 55 | D | > 25 and ≤ 35 |
| E | > 55 and ≤ 80 | E | > 35 and ≤ 50 |
| F | > 85 | F | > 50 |

A PHF of 0.90 was applied and a heavy vehicle percentage of 2% was utilized for the purpose of this analysis. Additionally, a conservative approach was taken in which no right turns on red were permitted, although right turns on red are permitted on all intersections in the field.

## 3.3. Mitigation Requirements

NCDOT typically requires mitigation to be identified when developments are expected to impact the traffic operations as described below:

- Overall intersection or intersection approach delay increases by 25%.
- LOS degrades by at least one level.
- LOS is F.
- Synchro 95$^{th}$ or SimTraffic maximum queue results are greater than the existing turn lane storage length.

## 3.4. Capacity Analysis

The results of the capacity analysis for the study intersections are summarized below in Table 4. Refer to Appendix D for the detailed capacity analysis reports.

**Table 4 – Intersection Capacity Analysis Results**

| Intersections | Approach | LOS (Delay in seconds per vehicle) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Existing (2024) | | No-Build (2028) | | Build (2028) | |
| | | AM | PM | AM | PM | AM | PM |
| Asheville Highway & Haywood Road | EB | C (20.8) | C (24.7) | C (21.6) | C (24.4) | C (21.6) | C (24.7) |
| | WB | D (53.5) | D (53.5) | D (53.5) | D (53.5) | D (53.5) | D (53.5) |
| | NB | C (23.0) | C (23.7) | C (23.0) | C (24.5) | C (22.8) | C (24.7) |
| | SB | B (19.3) | C (23.6) | B (19.6) | C (24.4) | C (21.1) | C (25.4) |
| | Overall | C (21.1) | C (24.0) | C (21.4) | C (24.6) | C (21.9) | C (25.0) |
| Haywood Road & Blythe Street | EB | D (39.1) | D (43.5) | D (42.9) | D (47.0) | D (45.6) | D (53.5) |
| | WB | B (18.0) | C (28.2) | B (18.7) | C (31.0) | B (19.8) | C (32.0) |
| | NB | E (58.7) | E (63.9) | E (61.4) | E (69.8) | E (72.9) | E (70.2) |
| | SB | C (25.7) | C (23.5) | C (25.8) | C (23.6) | C (26.6) | C (24.6) |
| | Overall | D (38.6) | D (42.2) | D (41.3) | D (45.9) | D (45.5) | D (49.0) |
| US 64 & Blythe Street | EB | D (37.9) | D (42.6) | D (39.8) | D (44.3) | D (40.1) | D (46.7) |
| | WB | C (34.7) | D (46.1) | D (35.7) | D (47.4) | D (36.3) | D (54.7) |
| | NB | E (72.4) | F (81.7) | E (75.1) | F (90.9) | E (75.5) | F (93.4) |
| | SB | E (71.9) | E (74.4) | E (74.6) | F (86.4) | E (75.7) | E (78.7) |
| | Overall | D (48.1) | D (54.7) | D (50.0) | E (59.1) | D (50.8) | E (61.4) |
| Haywood Road & Ewbank Drive | EB | A (8.0) | A (8.8) | A (8.0) | A (8.9) | A (8.1) | A (8.9) |
| | WB | - | - | - | - | - | - |
| | SB | B (12.6) | C (16.0) | B (12.9) | C (16.6) | B (13.3) | C (17.4) |
| Haywood Road & Morris Lane | EB | A (7.9) | A (8.8) | A (7.9) | A (8.8) | A (7.9) | A (9.0) |
| | WB | - | - | - | - | - | - |
| | SB | C (15.0) | C (16.8) | C (15.7) | C (17.5) | C (16.4) | C (18.4) |
| Haywood Road & Ridgewood Boulevard / Whitemire Circle | EB | - | - | - | - | - | - |
| | WB | A (8.7) | A (8.3) | A (8.8) | A (8.4) | A (9.0) | A (8.4) |
| | NB | C (16.8) | C (18.7) | C (17.5) | C (19.6) | C (18.5) | C (21.1) |
| | SB | B (14.3) | C (18.8) | B (14.7) | C (19.7) | C (15.4) | C (21.0) |
| Haywood Road & Orleans Avenue | EB | A (7.9) | A (8.7) | A (7.9) | A (8.7) | A (8.0) | A (8.8) |
| | WB | A (8.9) | A (8.3) | A (9.0) | A (8.4) | A (9.2) | A (8.8) |
| | NB | C (19.9) | C (22.2) | C (20.9) | C (23.4) | C (22.9) | D (31.2) |
| | SB | C (19.3) | C (20.2) | C (20.3) | C (21.1) | C (21.6) | D (25.3) |
| Haywood Road & N. Justice Street | EB | - | - | - | - | - | - |
| | WB | A (9.6) | A (8.9) | A (9.8) | A (9.0) | B (10.0) | A (9.1) |
| | NB | C (18.5) | C (20.6) | C (20.2) | C (22.6) | C (21.6) | C (24.4) |
| Haywood Road & Site Access | EB | *Analyzed under Build conditions only.* | | | | - | - |
| | WB | | | | | A (8.7) | A (8.6) |
| | NB | | | | | C (16.3) | C (18.4) |

The capacity analysis indicates that the operations at the signalized intersections are expected to be similar under Build conditions as compared to No-Build conditions. All approaches are expected to maintain their levels of service with one exception. In the AM peak hour, the Asheville Highway southbound approach at Haywood Road is expected to drop from LOS B under No-Build conditions to LOS C under Build conditions. However, because the delay is expected to increase by only 8% and would still operate acceptably, mitigation is not recommended.

At the intersection of Haywood Road and Orleans Avenue, the side street approaches are expected to drop from LOS C to LOS D in the PM peak hour. The delay is still expected to be reasonable for an unsignalized intersection during the peak hour. Some of the additional delay could be mitigated by an additional lane on each side street approach, but such an improvement would adversely impact the residences on the corners and would thus not be considered reasonable in this case.

The site egress at Haywood Road is anticipated to operate at LOS C in both peak hours. It should be noted that the site access intersection was modeled with the warranted westbound left turn lane. No additional mitigation is recommended.

## 3.5. Queuing Analysis

A queuing analysis was also completed for all No-Build and Build Improved traffic. Reported in Table 5 are the SimTraffic maximum queue for each turn lane at study intersections. Additional storage is recommended where the site traffic introduced in the Build scenario extends the queue beyond the available storage. Refer to Appendix D for detailed Synchro capacity analysis reports and Appendix E for detailed SimTraffic reports.

**Table 5 – Queuing Analysis**

| Intersections | Lane Group | Storage (feet) | Max Queue (feet) | | | |
|---|---|---|---|---|---|---|
| | | | AM Peak Hour | | PM Peak Hour | |
| | | | No-Build | Build Improved | No-Build | Build Improved |
| Asheville Highway & Haywood Road | EB-L | 200 | 165 | 210 | 243 | 201 |
| | EB-LT | Full | 280 | 391 | 332 | 287 |
| | EB-R | 100 | 145 | 150 | 142 | 147 |
| | WB-LTR | Full | 57 | 60 | 56 | 56 |
| | NB-L | 375 | 360 | 353 | 425 | 425 |
| | NB-L | 375 | 369 | 367 | 475 | 475 |
| | SB-L | 125 | 68 | 68 | 48 | 123 |
| Haywood Road & Blythe Street | EB-L | 25 | 73 | 110 | 93 | 91 |
| | WB-L | 100 | 124 | 146 | 193 | 217 |
| | NB-LTR | Full | 375 | 397 | 416 | 469 |
| | SB-LT | Full | 52 | 52 | 45 | 53 |
| | SB-R | 25 | 38 | 33 | 31 | 36 |
| US 64 & Blythe Street | EB-L | 100 | 200 | 200 | 255 | 263 |
| | WB-L | 100 | 184 | 187 | 185 | 187 |
| | NB-L | 150 | 249 | 214 | 250 | 250 |
| | SB-L | 175 | 248 | 274 | 275 | 275 |
| Haywood Road & Ewbank Drive | EB-LT | Full | 32 | 30 | 41 | 42 |
| | SB-LR | Full | 36 | 35 | 35 | 30 |
| Haywood Road & Morris Lane | EB-LT | Full | 6 | 23 | 49 | 55 |
| | SB-LR | Full | 42 | 43 | 33 | 34 |
| Haywood Road & Ridgewood Boulevard/ Whitemire Circle | WB-LT | Full | 35 | 21 | 30 | 22 |
| | NB-LR | Full | 32 | 31 | 32 | 36 |
| | SB-LTR | Full | 36 | 42 | 35 | 33 |
| Haywood Road & Orleans Avenue | EB-LTR | Full | 22 | 18 | 32 | 43 |
| | WB-LTR | Full | 82 | 113 | 42 | 36 |
| | NB-LTR | Full | 45 | 34 | 34 | 47 |
| | SB-LTR | Full | 43 | 40 | 32 | 36 |
| Haywood Road & N. Justice Street | WB-L | Full | 73 | 73 | 71 | 71 |
| | NB-LR | Full | 434 | 617 | 770 | 666 |
| Haywood Road & Site Access | WB-[L] | [50] | - | 31 | - | 40 |
| | NB-[LR] | [Full] | - | 84 | - | 59 |

The queuing analysis indicates that the addition of site traffic in the Build scenario does not create a new queuing issue. In the Build scenarios, the maximum observed queues at the signalized intersections are not expected to increase significantly over the No-Build condition. No mitigation is recommended based on the queuing analysis.

# 4. PEDESTRIAN LOS ANALYSIS

At the request of NCDOT, an additional analysis was performed at the study intersections to include a pedestrian level of service. A description of the pedestrian-related characteristics of each intersection is provided below, along with the pedestrian level of service, in Table 6. Detailed reports are provided in Appendix G.

**Table 6 – Pedestrian LOS Analysis**

| Unsignalized Intersections | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Intersection | Sidewalk | Pedestrian Crossing Features | Total Peak Hour Pedestrians | | Approach | Haywood Road Crossing Length (feet)* | Pedestrian Approach LOS (Delay [sec]) | | | |
| | | | | | | | No-Build | | Build | |
| | | | AM | PM | | | AM | PM | AM | PM |
| Haywood Road & Ewbank Drive | South side of Haywood Road | None | 0 | 0 | EB | 36 | F (75.64) | F (128.92) | F (84.92) | F (148.94) |
| | | | | | WB | 36 | F (75.64) | F (128.92) | F (84.92) | F (148.94) |
| Haywood Road & Morris Lane | South side of Haywood Road; NE quadrant of intersection | None | 2 | 0 | EB | NB: 27; BLD: 36 | E (33.90) | F (58.63) | F (81.54) | F (159.34) |
| | | | | | WB | NB: 24; BLD: 36 | D (26.20) | E (43.82) | F (81.54) | F (159.34) |
| Haywood Road & Ridgewood Boulevard/ Whitmire Cicle | South side of Haywood Road | Marked crosswalk across Whitmire Circle | 3 | 4 | EB | 26 | E (37.25) | F (50.56) | E (42.42) | F (58.22) |
| | | | | | WB | 25 | E (34.07) | F (45.94) | E (38.69) | F (52.74) |
| Haywood Road & Orleans Avenue | South side of Haywood Road | Faded marked crosswalk across NB approach | 4 | 6 | EB | 29 | E (41.84) | F (63.16) | F (47.60) | F (91.92) |
| | | | | | WB | 28 | E (38.50) | F (57.64) | E (43.69) | F (83.19) |
| Haywood Road & N. Justice Street | North side of Haywood Road; both SW and SE quadrants of intersection | Marked crosswalk across N. Justice Street | 0 | 2 | EB | 48 | C (18.89) | D (22.82) | D (20.28) | D (24.55) |
| | | | | | WB | 73 | F (1,382.28) | F (2,784.70) | F (1,730.75) | F (3,410.10) |
| Haywood Road & Site Access | SW and SE quadrants intersection | None | - | - | EB | 24 | - | - | B (6.19) | B (8.23) |
| | | | | | WB | 36 | - | - | F (70.81) | F (137.94) |

| Signalized Intersections | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Intersection | Sidewalk | Pedestrian Crossing Features | Total Peak Hour Pedestrians | | Approach | Haywood Road Crossing Length (feet)* | Pedestrian Crosswalk LOS (Score) | | | |
| | | | | | | | No-Build | | Build | |
| | | | AM | PM | | | AM | PM | AM | PM |
| Asheville Highway & Haywood Road | All four quadrants of intersection | Marked crosswalks and pedestrians signals for all four approaches | 2 | 0 | EB | 61.9 | C (2.63) | C (2.64) | C (2.64) | C (2.66) |
| | | | | | WB | 35.6 | B (1.75) | B (1.75) | B (1.75) | B (1.75) |
| | | | | | NB | 72.3 | C (2.92) | C (3.00) | C (2.92) | C (3.01) |
| | | | | | SB | 73.4 | C (2.80) | C (2.85) | C (2.80) | C (2.85) |
| Haywood Road & Blythe Street | South side of Haywood Road; east side of Blythe Street | Marked crosswalk across Blythe Street; ped signals on NB approach | 1 | 1 | EB | 42.4 | B (2.40) | B (2.48) | B (2.41) | B (2.49) |
| | | | | | WB | 36.2 | B (2.31) | B (2.38) | B (2.32) | B (2.40) |
| | | | | | NB | 36.0 | B (2.10) | B (2.18) | B (2.12) | B (2.20) |
| | | | | | SB | 54.1 | B (1.97) | B (1.97) | B (1.97) | B (1.97) |
| US 64 & Blythe Street | Both sides of US 64 to the east of Blythe Street | Marked crosswalk and ped signals on WB approach | 0 | 3 | EB | 36.0 | B (2.50) | C (2.57) | B (2.50) | C (2.57) |
| | | | | | WB | 36.0 | B (2.48) | B (2.48) | B (2.49) | B (2.49) |
| | | | | | NB | 35.9 | B (2.09) | B (2.10) | B (2.09) | B (2.10) |
| | | | | | SB | 36.2 | B (2.20) | B (2.26) | B (2.22) | B (2.28) |

*From Synchro for purposes of LOS calculation. Not actual crossing distances.

The pedestrian analysis indicates that most approaches along Haywood Road are expected to be LOS E or F during the peak hours. The count data shows little pedestrian traffic in this corridor, but most of the pedestrian activity was focused at the Ridgewood Boulevard and the Orleans Avenue intersections. Based on conversations with NCDOT and the City of Hendersonville, project HS-2414F will install a rapid rectangular flashing beacon crossing at this intersection to allow pedestrians to access the Haywood Road sidewalk from Ridgewood Boulevard. That project is expected to be completed in 2025.

The signalized intersections receive better LOS grades. All approaches with sidewalk crossings currently have pedestrian signals, although few pedestrians were counted at these locations.

# 5. SUMMARY OF FINDINGS AND RECOMMENDATIONS

A traffic impact study was conducted for the proposed LEO Haywood Cottages development in accordance with NCDOT guidelines. The proposed development is located on the south side of Haywood Road (NC 191), east of Blythe Street, in Hendersonville, North Carolina. The development is expected to consist of 180 single family attached homes and would be completed by the end of 2028. Access to the site is to be provided via a full movement access on Haywood Road.

The study was determined through coordination with NCDOT and the City of Hendersonville and consists of the following intersections:

- Asheville Highway (US 25 Business) and Haywood Road (NC 191)
- Haywood Road (NC 191) and Blythe Street
- Brevard Road/6$^{th}$ Avenue West (US 64) and Blythe Street
- Haywood Road (NC 191) and Ewbank Drive
- Haywood Road (NC 191) and Morris Lane
- Haywood Road (NC 191) and Ridgewood Boulevard / Whitmire Circle
- Haywood Road (NC 191) and Orleans Avenue
- Haywood Road (NC 191) and N. Justice Street
- Haywood Road (NC 191) and Site Access

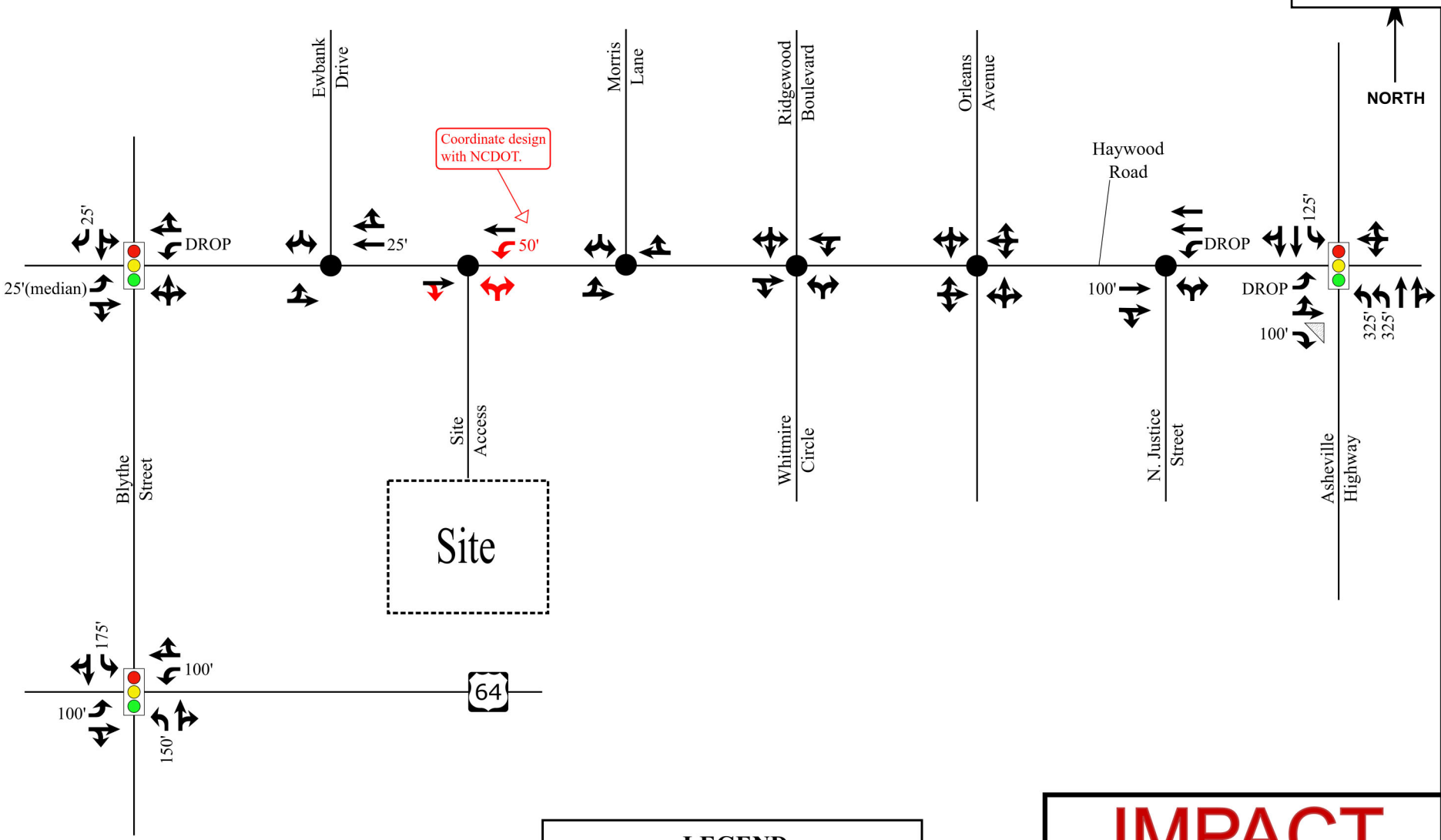
For the purpose of this analysis, the study intersections listed above were analyzed under the following scenarios:

- Existing (2024) Conditions
- No-Build (2028) Conditions
- Build (2028) Conditions

Traffic operations during the AM and PM peak hours were modeled for each scenario. The results of each scenario were compared to determine impacts from background traffic growth and the proposed development.

*Recommendations:*

- Construct a westbound left turn lane on Haywood Road at the site access with at least 50 feet of storage. Final design to be coordinated with NCDOT.




**LEGEND**

- Signalized Intersection
- Unsignalized Intersection
- Existing Lane
- Recommended Improvement
- X' Storage (In Feet)

IMPACT
Designs, Inc.

*LEO Haywood Cottages*
*Hendersonville, NC*

Proposed Lane Configurations and Traffic Control

Scale: Not to Scale | Figure

Kimley»Horn

October 1, 2025

Lew Holloway & Sam Hayes
City of Hendersonville
Community Development Department
160 6th Avenue E
Hendersonville, NC 28712

**RE: *LEO Haywood Cottages TIA Review***

Dear Lew & Sam,

At the request of the City of Hendersonville, Kimley-Horn has conducted a review of the traffic impact analysis (TIA) prepared for LEO Haywood Cottages dated September 15th, 2025 by Impact Designs, Inc. The proposed site is 180 single family attached homes located on the south side of Haywood Road east of Blythe Street. Access to the site is proposed via a full movement access on Haywood Road.

The analyses contained with the 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

The following observations are offered based on our technical review of the TIA as submitted and should be addressed as appropriate:

**NCDOT Scoping Checklist**

- Traffic Counts
  - It was noted in the NCDOT checklist that new counts would be collected at all intersections. Section 2.1 of the report noted that a mix of December 2024 and September 2025 counts were used, and the existing year was set at 2024 to be conservative. This should not have an impact on the results, just a discrepancy from the initial scoping agreement.

**Existing & Proposed Laneage Figures**

- Haywood Road at Asheville Highway
  - The NB left turn lanes are noted as 325’ of storage but are modelled in Synchro as 375’.

**Existing Volume Figure**

- Haywood Road at Ewbank Drive
  - The PM peak hour WB through volume is noted as 546 but is 520 in the traffic counts
- Haywood Road at Justice Street
  - The AM peak hour EB through volume is noted as 492 but is 469 in the traffic counts
  - The AM peak hour WB through volume is noted as 356 but is 322 in the traffic counts

- The PM peak hour EB through volume is noted as 447 but is 401 in the traffic counts
- The PM peak hour WB through volume is noted as 520 but is 491 in the traffic counts

- Haywood Road at Blythe Street
  - The AM peak hour EB through volume is noted as 413 but is 350 in the traffic counts
  - The AM peak hour WB through volume is noted as 226 but is 199 in the traffic counts
  - The PM peak hour EB through volume is noted as 315 but is 289 in the traffic counts

**Appendix**

- Pedestrian Analysis Reports
  - The Pedestrian Analysis Report is noted as Appendix G in the report but is Appendix F in the Appendix

## SYNCHRO

**All Scenarios**

- Node Numbers
  - Node numbers do not follow the order of the NCDOT checklist or any other logical number system. This makes reviewing synchro report print outs difficult.

## RECOMMENDATIONS

- Haywood Road at Asheville Highway
  - The southbound approach at this intersection experiences LOS degradation from B to C in the AM peak hour. However, as noted in the report, this is due to an increase of delay of just 8% and the Background LOS being on the cusp of two levels of service. The site is proposed to have minimum impact and the intersection still performs acceptably. Therefore, no improvements are necessary.
- Haywood Road at Orleans Avenue
  - The northbound and southbound approaches at this intersection experience LOS degradation from C to D in the PM peak hour. However, as noted in the report, the delay is still acceptable for an unsignalized minor street approach. The site is proposed to have minimum impact and the intersection still performs acceptably. Therefore, no improvements are necessary.
- Turn Lanes
  - Right Turn Lane Warrant
    - The right-turn lane warrants note that the opposing right turn lane is default 100 vph, while the note in the top right corner of the warrants state that the right turn should be 100 vph as a MINIMUM, not the default. With this revision in place, it is expected that a right turn-lane with 50’ of storage would be warranted at the site access.
  - Turn Lane Tapers
    - Due to the proximity of the Haywood Road and Blythe Street existing westbound left-turn lane to the proposed site access, coordination with NCDOT is needed to determine an appropriate cross-section for the recommended left-turn lane into the site.

## CONCLUSIONS

Based on a technical review of the TIA as submitted, the analysis as stated should be updated to address technical issues found in the report and clarification should be provided on traffic count discrepancies if not revised. All noted discrepancies, however, are minor and it is not expected that there would be any changes to the recommendations once revised with the exception of the right-turn lane.

Should you have any questions or comments, please do not hesitate to contact me at (864) 501-2730 or melissa.helbert@kimley-horn.com.

Sincerely,

Melissa Helbert-Pogoloff

Melissa Helbert-Pogoloff, P.E.
Project Manager

**LEO at Hendersonville**

| Chapter 4 - The Vision for the Future | Consistent | Inconsistent |
|---|---|---|
| **SUPPLY, SUITABILITY, & INTENSITY** | | |
| **LAND SUPPLY MAP (Pg. 81, Figure 4.4)** | Consistent | |
| **LAND SUITABILITY MAP (Pg. 84-86, Figure 4.5-4.7)** | Consistent | |
| **DEVELOPMENT INTENSITY MAP (Pg. 89, Figure 4.9)** | | Somewhat Inconsistent |
| **FUTURE LAND USE & CONSERVATION MAP** | | |
| Future Land Use and Conservation Map | **Family/Neighborhood Living (FNL)** | |
| Character Area Description (Pg. 122-131) | | Somewhat Inconsistent |
| Zoning Crosswalk | Consistent | |
| Requested Future Land Use Designation | **Multi-Generational Living (MGL)** | |

| | | |
|---|---|---|
| Requested Character Area Description | Consistent | |
| Zoning Crosswalk | Consistent | |

| Staff Notes |
| --- |
| |
| Noted as "underdeveloped" |
| Noted as "most suitable" |
| Noted as being in an area that should see "low intensity" development |
| |
| |
| This area is characterized by moderate-density residential development. It is comprised of single-family detached homes on lots typically ranging from 1/3 acre to 1/8 acre. Improved open spaces in the form of pocket and neighborhood parks are interspersed, and greenway trails within are located to connect such parks as well as provide links to trails and walkways in neighboring development. Conservation design, which includes more open space in exchange for smaller minimum lot sizes, may be a preferred approach to residential development, especially if higher gross densities can be achieved. |
| |
| |

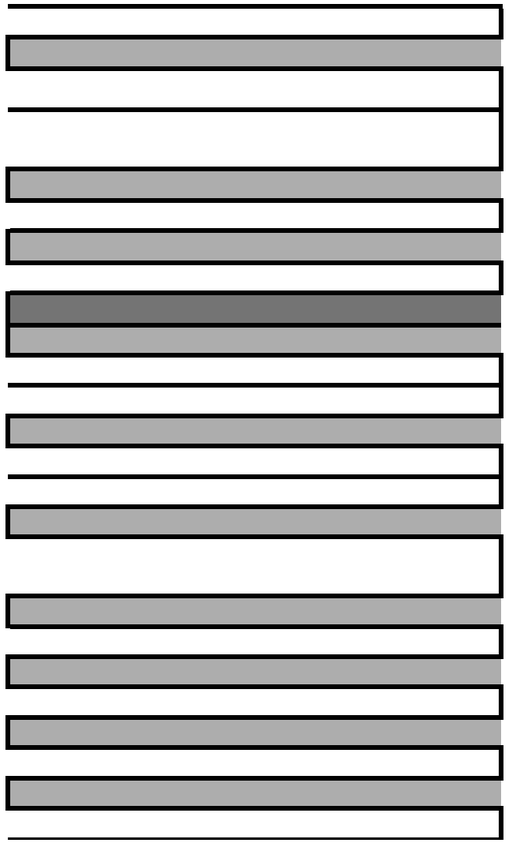
| |
|---|
| This area is characterized by mixed residential development and a limited amount of small scaled neighborhood-serving commercial. It is comprised of a variety of homes, mixing detached and attached (e.g., townhomes and duplexes) units with a lesser amount of multi-family units. The combination of housing types are intended to create intergenerational neighborhoods. Improved open spaces in the form of greens, pocket parks, and neighborhood parks are interspersed. Lot sizes are similar to those in FNL, but with increased densities. Attached units, typically up to 2.5 stories tall, should incorporate design elements reflecting traditional singlefamily homes and “missing middle” housing, such as front porches, balconies, stoops, recessed or detached garages, and pitched roofs. In bustling urban landscapes, the need for improved interconnectivity of streets has become paramount. Creating an interconnected street network isn’t just about convenience; it’s about relieving congestion, reducing travel times, and enhancing the provision of essential services. By weaving together a seamless web of roads and pathways, smoother traffic |
| Though currently showing as inconsistent in the Comprehensive Plan, the changes to Planned Residential Development that were recently made make MGL the ideal future land use for this zoning district. |

**Leo at Hendersonville**

| Chapter 4 - The Vision for the Future | Consistent | Inconsistent |
|---|---|---|
| **GOALS** | | |
| **Vibrant Neighborhoods (Pg. 93)** | | |
| Promote lively neighborhoods that increase local safety. | Consistent | |
| Enable well-maintained homes, streets, and public spaces. | Consistent | |
| Promote diversity of ages (stage of life), income levels, and a range of interests. | Consistent | |
| The design allows people to connect to nearby destinations, amenities, and services. | Somewhat Consistent | |
| **Abundant Housing Choices (Pg. 93)** | | |
| Housing provided meets the need of current and future residents. | Consistent | |
| Range of housing types provided to help maintain affordability in Hendersonville. | Consistent | |
| Housing condition/quality exceeds minimum standards citywide | Consistent | |
| **Healthy and Accessible Natural Environment (Pg. 94)** | | |
| Recreational (active and passive) open spaces are incorporated into the development. | Consistent | |
| Water quality is improved with the conservation of natural areas that serve as filters and soil stabilizers. | Consistent | |
| Natural system capacity (floodplains for stormwater; habitats to support flora/fauna; tree canopy for air quality, stormwater management, and microclimate) is maintained. | | Somewhat Inconsistent |
| Development is compact (infill/redevelopment) to minimize the ecological footprint. | | Inconsistent |
| New development respects working landscapes (e.g., orchards, managed forests), minimizing encroachment. | Consistent | |
| **Authentic Community Character (Pg. 94)** | | |
| Downtown remains the heart of the community and the focal point of civic activity | Consistent | |
| A development near a gateway sets the tone, presenting the image/brand of the community. | Consistent | |
| Historic preservation is utilized to maintain the city's identity. | | Inconsistent |
| City Centers and neighborhoods are preserved through quality development. | Consistent | |
| **Safe Streets and Trails (Pg. 95)** | | |
| Interconnectivity is promoted between existing neighborhoods through the building out of street networks, including retrofits and interconnectivity of new developments. | | Somewhat Inconsistent |
| Access is increased for all residents through the provision of facilities that promote safe walking, biking, transit, automobile, ride share, and bike share. | Consistent | |
| Design embraces the principles of walkable development. | Consistent | |
| **Reliable & Accessible Utility Services** | | |
| Wastewater treatment (service and capacity) adequately serves existing and future development | Consistent | |
| A compact service area (infill, redevelopment) maximizes the utilization of existing infrastructure and feasible service delivery. | Consistent | |
| **Satisfying Work Opportunities (pg. 96)** | | |
| The development promotes quality job options. | NA | NA |

| | | |
|---|---|---|
| The lives of residents are enriched with opportunities to learn, build skills, and grow professionally. | NA | NA |
| **Welcoming & Inclusive Community** | | |
| Accessibility exceeds minimum standards of ADA, fostering residents' and visitors' sense of belonging. | Consistent | |
| An inviting public realm (i.e., parks, public buildings) reflects the attitudes of city residents and leaders, and helps residents develop a sense of place and attachment to Hendersonville. | Somewhat Consistent | |
| **Accessible & Available Community Uses and Services (Pg. 97)** | | |
| Private development is plentiful, meeting the demands of current and future populations. | Consistent | |
| **Resilient Community** | | |
| N/A | | |
| **GUIDING PRINCIPALS (pg. 98)** | | |
| Mix of Uses (Pg. 98) | | |
| Revitalization of Outdated Commercial Areas | NA | NA |
| New business and office space promotes creative hubs. | NA | NA |
| Compact Development (Pg. 100) | | |
| Development is consistent with efforts in the area to establish 15-minute neighborhoods. | Consistent | |
| The infill project is context sensitive [Large Infill Site]. | Consistent | |
| Sense of Place (Pg. 102) | | |
| The development contributes to Hendersonville's character and the creation of a sense of place through its architecture and landscape elements. [Place keeping and Placemaking and 3rd Places] | Consistent | |
| Conserved & Integrated Open Spaces (Pg. 106) | | |
| A diverse range of open space elements are incorporated into the development. | | Somewhat Inconsistent |
| Desirable & Affordable Housing (Pg. 108) | | |
| Missing middle housing concepts are used in the development. | Consistent | |
| Connectivity (Pg. 112) | | |
| The development encourages multimodal design solutions to enhance mobility. | Somewhat Consistent | |
| Efficient & Accessible Infrastructure (Pg. 114) | | |
| The development utilizes existing infrastructure | Consistent | |

| Staff Notes |
| --- |
| While the development is proposing things like a greenway access and sidewalks along 191, the property is relatively unconnected to surrounding neighborhoods. |



# NEIGHBORHOOD COMPATIBILITY MEETING REPORT

## LEO AT HENDERSONVILLE (25-48-CZD)

## NCM MEETING DATES: JUNE 30TH, 2025 (CITY HALL)

## AUGUST 19TH, 2025 (BLUE RIDGE COMMUNITY COLLEGE)

PETITION REQUEST: Rezoning: Planned Residential Development- Conditional Zoning District (PRD-CZD)

APPLICANT/PETITIONER: Advenir Azora Development (Scott Weathers) [Applicant], Jeffrey Justus [Owner]

### NEIGHBORHOOD COMPATIBILITY MEETING SUMMARY:

*A Neighborhood Compatibility Meeting was held for this project on June 30th, 2025 at 2pm in the 2nd floor meeting room of City Hall, 160 6th Ave. E. and via Zoom. There was overflow space in the 3rd floor meeting room. The meeting was at capacity, and several people had to be turned away. A second meeting was scheduled at Blue Ridge Community College on August 19th, 2025 at 5:30 PM. Both meetings lasted approximately The meeting lasted approximately 1 hour and 45 minutes.*

The list of members of the public who attended both meetings is included in this staff report, along with full minutes from both of the meetings. At the first meeting, there were 115 citizens in attendance. At the second meeting, there were 135 citizens in attendance. The applicant and their development team were present as were 4 members of City staff at both of the meetings.

Staff gave the formal introduction and a brief overview of the request.

For the first meeting, there were 57 pre-submitted public comments. For the second meeting, there were 7 pre-submitted public comments. The comments were shared with the developers beforehand, but were not read at the meeting given time constraints and the large number of people in-person wishing to speak.

The development team presented their project proposal for the proposed development.

Concerns and questions from the public related to:

- Concern about increased traffic on Haywood Road (NC 191)
- Questions regarding the number of daily vehicle trips the development would generate
- Concerns about compatibility with surrounding neighborhoods
- Desire for increased tree canopy across the site to help mitigate heat
- Question about whether alternative locations were considered

- *Questions about the site's stormwater system and whether it can handle a major storm event*
- *Whether a study was conducted to determine the need for additional housing in Hendersonville*
- *Concerns about noise pollution from the development*
- *Concerns about the environmental impact of the project on the floodplain*
- *Concerns about potential impacts on adjacent neighborhoods, schools, and infrastructure*
- *Concern about the safety of people cycling into town along Haywood Road*
- *Noted need to widen NC 191, with no foreseeable plans from NCDOT*
- *Questions about the secondary fire access point*
- *Questions about whether the internal roads will be public or private*
- *Concern about whether the bridge over the stream will remain accessible during a major flooding event*
- *Questions about the traffic impact analysis process and its timeline*
- *Concerns about insufficient parking and the overall density of the project*
- *Questions about the rezoning process*
- *Concerns about housing affordability*
- *Questions and concerns about fencing, specifically that wood fencing may not be compatible with surrounding neighborhoods*
- *Questions about building setbacks from the property line*

*Full minutes from the Neighborhood Compatibility Meeting are included in this staff report. Pre-submitted public comments are available for review by request.*

Ordinance #___-____

**AN ORDINANCE OF THE CITY OF HENDERSONVILLE CITY COUNCIL TO AMEND THE OFFICIAL ZONING MAP OF THE CITY OF HENDERSONVILLE FOR A PARCEL POSSESSING PIN NUMBER: 9569-22-9206 BY CHANGING THE ZONING DESIGNATION FROM R-15 MEDIUM DENSITY RESIDENTIAL TO PRD-CZD, PLANNED RESIDENTIAL DEVELOPMENT CONDITIONAL ZONING DISTRICT**

IN RE: Parcel Number: 9569-22-9206
Address: 1741 Haywood Road
LEO at Hendersonville: (File # 25-48-CZD)

**WHEREAS**, the City is in receipt of a Conditional Rezoning application from applicant, Scott Weathers (Advenir Azora Development) and property owner Jeffrey Justus, for the construction of a of 180 duplexes, triplexes, and quadplexes on approximately 20.95 acres, and

**WHEREAS,** the Planning Board took up this application at its regular meeting on October 9th, 2025; voting 0-0 to recommend/not recommend City Council approve 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 6th, 2025, 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: 9569-22-9206, changing the zoning designation from R-15 Medium Density Residential to PRD-CZD, Planned Residential Development Conditional Zoning District.

2. Development of the parcel pursuant to this Ordinance is subject to the following.

    a. Development shall comply with the master site plan submitted by the applicant dated DATE, including the conditions listed therein, [and/or as modified and presented to City Council][and/or including modifications approved by City Council which shall be added to the site plan. The updated site shall be submitted to the City at or before the applicant's execution of this Ordinance].

    b. Permitted uses shall include:

        i. 180 Residential dwellings, two three, and four-family

    c. Additional conditions that shall be satisfied prior to final site plan approval include:
        i.

3. Except where modified by the terms of this Ordinance, development of the parcel(s) shall occur in accordance with the final site plan requirements of Article VII of the Zoning Ordinance of the City of Hendersonville, North Carolina.

4. Except where explicit relief is granted by the terms of this Ordinance, the development of the parcel(s) shall occur in accordance with all applicable standards within local ordinances and policies.

    This ordinance shall be not be effective until the 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 X day of Month, 2025.

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

_____

Jill Murray, 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 all conditions imposed pursuant to the terms of this Ordinance.

IN RE: Parcel Numbers: 9569-22-9206
Address: 1741 Haywood Road
Leo at Hendersonville: (File # 25-06-CZD)

Applicant/Developer: Scott Weathers, Advenir Azora Development

Signature:_____

Printed Name:_____

Title: _____

Date:_____

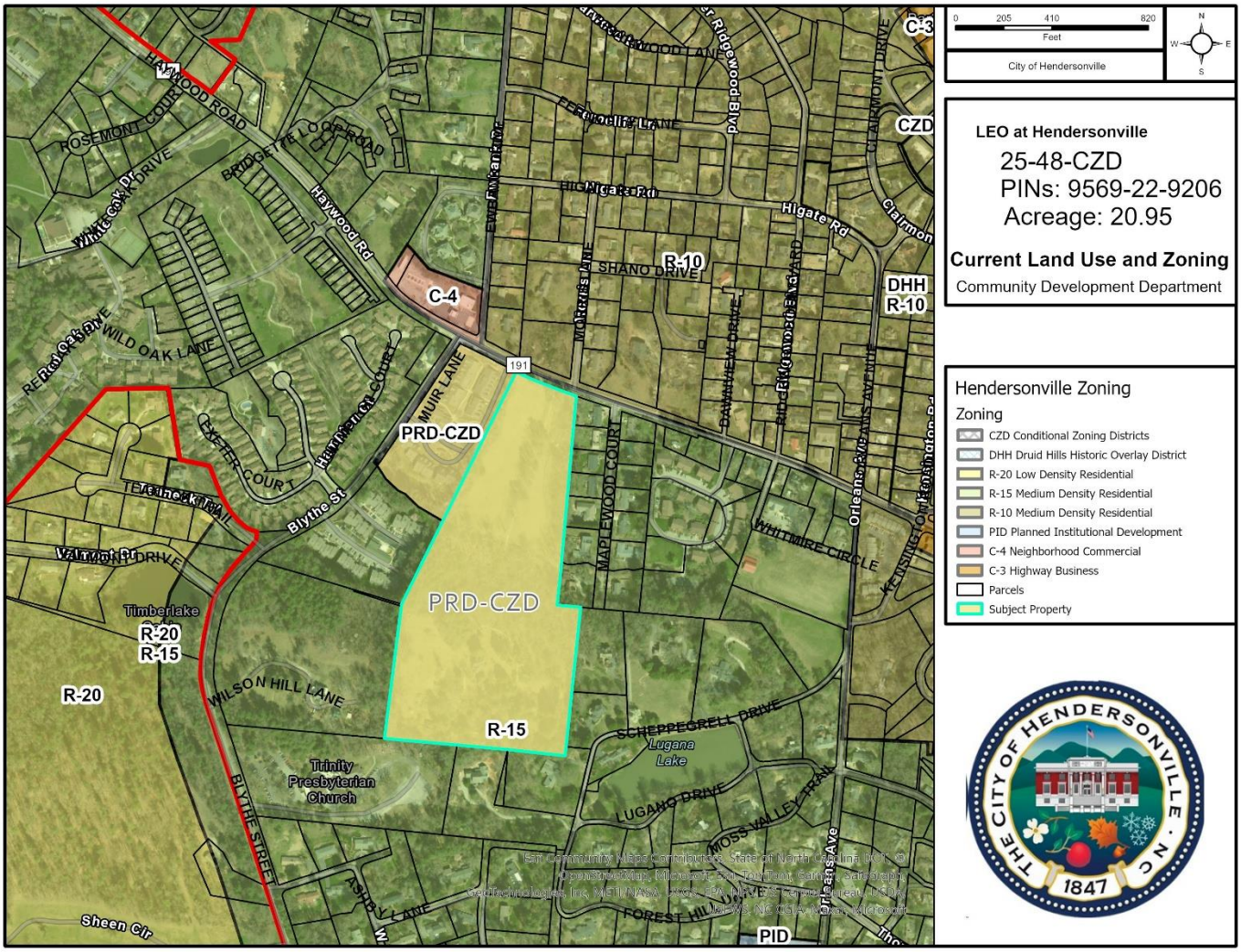
Property Owner: Jeffrey Justus

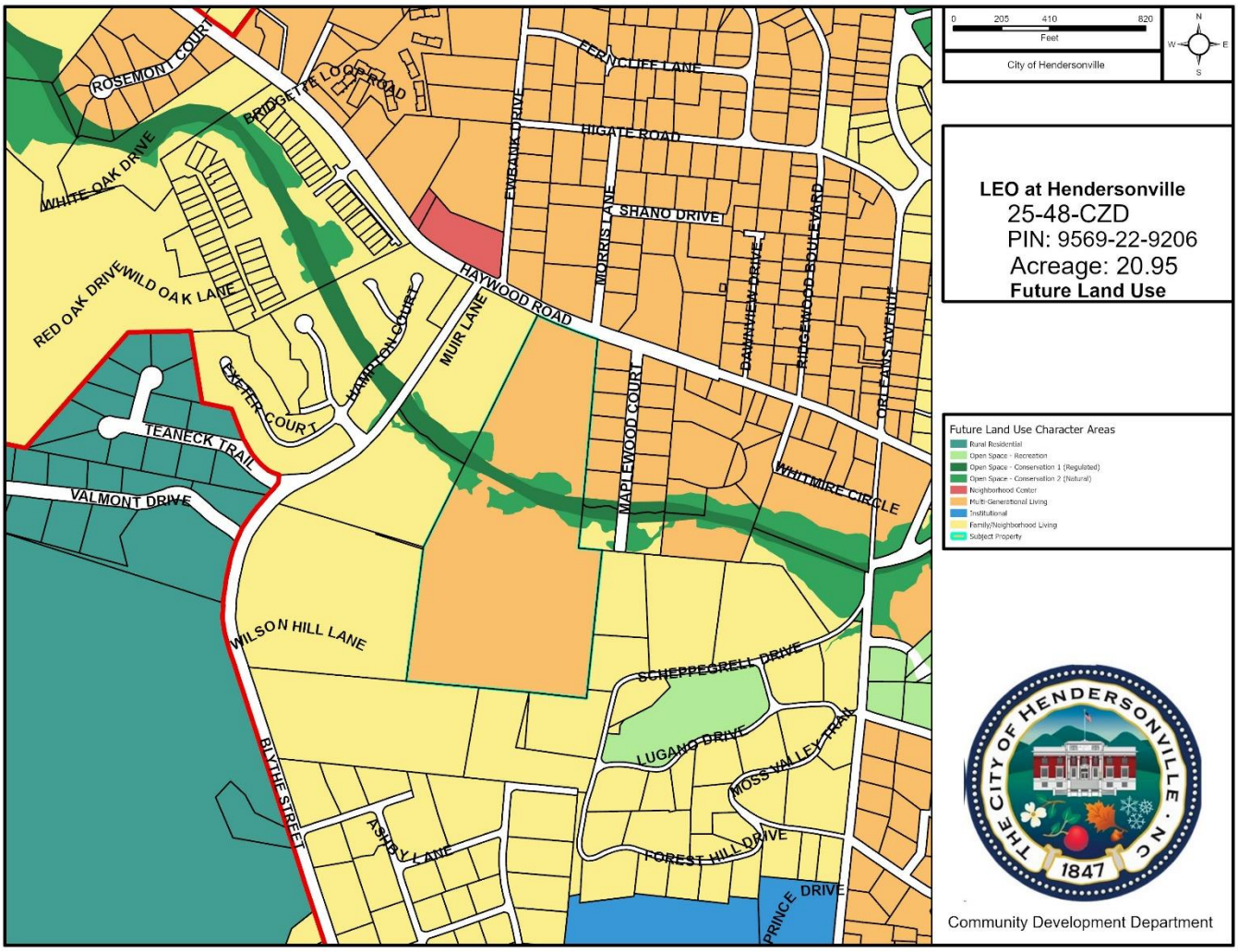
Signature:_____

Printed Name:_____

Title:_____

Date:_____


0 205 410 820
Feet
City of Hendersonville
N
W
E
S
LEO at Hendersonville
25-48-CZD
PINs: 9569-22-9206
Acreage: 20.95
Current Land Use and Zoning
Community Development Department
Hendersonville Zoning
Zoning
CZD Conditional Zoning Districts
DHH Druid Hills Historic Overlay District
R-20 Low Density Residential
R-15 Medium Density Residential
R-10 Medium Density Residential
PID Planned Institutional Development
C-4 Neighborhood Commercial
C-3 Highway Business
Parcels
Subject Property
PRD-CZD
C-4
R-10
DHH
R-10
CZD
C-3
R-20
R-15
R-20
R-15
PID
PRD-CZD
Haywood Rd
Higate Rd
SHANO DRIVE
MUIR LANE
EXETER COURT
Blythe St
WILSON HILL LANE
BLYTHE STREET
WHITMIRE CIRCLE
SCHEPPEGRELL DRIVE
LUGANO DRIVE
MOSS VALLEY TRAIL
Lugana Lake
Trinity Presbyterian Church
Timberlake
Sheen Cir
THE CITY OF HENDERSONVILLE · NC
1847


ROSEMONT COURT
BRIDGETTE LOOS ROAD
WHITE OAK DRIVE
RED OAK DRIVE
WILD OAK LANE
FERNCLIFF LANE
EWBANK DRIVE
HUGATE ROAD
MORRIS LANE
SHANO DRIVE
HAYWOOD ROAD
HAMPTON COURT
MUIR LANE
EXETER COURT
TEANECK TRAIL
VALMONT DRIVE
MAPLEWOOD COURT
DANNHEIM DRIVE
RIDGEWOOD BOULEVARD
ORLEANS AVENUE
WHITMIRE CIRCLE
WILSON HILL LANE
SCHEPPEGRELL DRIVE
LUGANO DRIVE
MOSS VALLEY TRAIL
BLYTHE STREET
ASHBY LANE
FOREST HILL DRIVE
PRINCE DRIVE
0 205 410 820
Feet
City of Hendersonville
N
W
E
S
LEO at Hendersonville
25-48-CZD
PIN: 9569-22-9206
Acreage: 20.95
Future Land Use
Future Land Use Character Areas
Rural Residential
Open Space - Recreation
Open Space - Conservation 1 (Regulated)
Open Space - Conservation 2 (Natural)
Neighborhood Center
Multi-Generational Living
Institutional
Family/Neighborhood Living
Subject Property
THE CITY OF HENDERSONVILLE · N.C.
1847
Community Development Department

**NOTES:**

- PRIOR TO ISSUING A CERTIFICATE OF OCCUPANCY FOR PLANNED DEVELOPMENTS, DOCUMENTATION SHALL BE IN PLACE TO INFORM PROPERTY OWNERS OF THE STREAM BUFFER PRESENCE AND LOCATION ALONG WITH MANAGEMENT AND MAINTENANCE REQUIREMENTS. DOCUMENTATION SHALL BE IN A FORM THAT WILL RUN WITH THE PROPERTY SUCH AS INCLUSION IN COVENANTS, CONDITIONS AND RESTRICTION DOCUMENTS OR DEED REFERENCE.
- FOR PLANNED DEVELOPMENTS AND COMMERCIAL USES, PERMANENT BOUNDARY MARKERS, IN THE FORM OF SIGNAGE APPROVED BY THE PLANNING DEPARTMENT, SHALL BE INSTALLED ONCE THE LAND DISTURBING ACTIVITY OR DEVELOPMENT IS COMPLETE. CLEARLY VISIBLE STREAM BUFFER BOUNDARY MARKERS SHALL BE PLACED ALONG THE OUTSIDE EDGE OF THE STREAM BUFFER AND SPACED AT A MAXIMUM EVERY 100'.

LEGEND

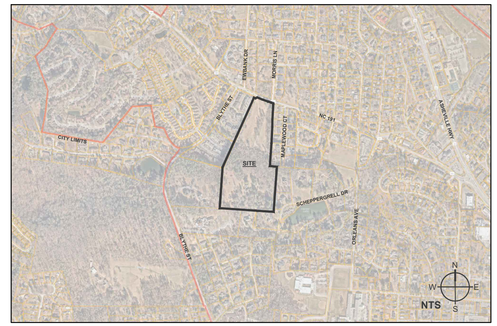
| DESCRIPTION | HT. / SF | COTTAGE | HT. / SF | DESCRIPTION | HT. / SF |
|---|---|---|---|---|---|
| Clubhouse Leasing | 27'-0" 1,454 SF | 1BR-2BR Duplex | 19'-6" 728 SF | 2BR Row House (16' wide) - 2 Pack | 29'-6" 1,152 SF |
| Clubhouse Fitness | 27'-0" 1,454 SF | 2BR-2BR Duplex | 19'-6" 1,044 SF | 3BR Row House (16' wide) - 2 Pack | 29'-6" 1,400 SF |
| PoolHouse | 20'-0" 634 SF | 1BR Stacked Duplex | 27'-0" 634 SF | 3BR Row House (16' wide) - 4 Pack | 30'-0" 1,400 SF |
| Maintenance | 15'-6" 580 SF | 2BR Row House Twin | 31'-6" 1,340 SF | | |
| Garage: 3 Door | 16'-6" 792 SF | | | | |

## Conditions Table

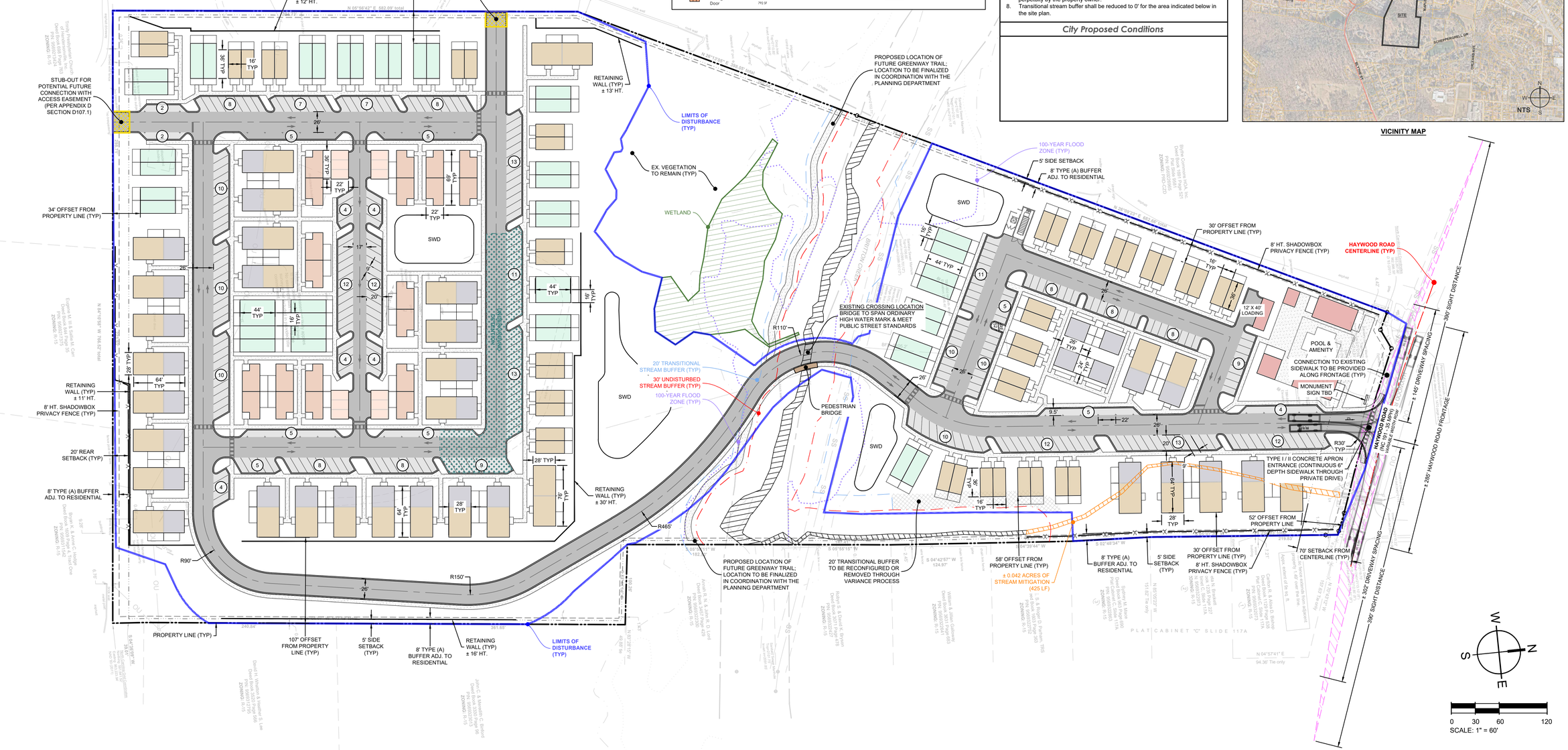
### Developer Proposed Conditions

1. Minimum 25' building setback throughout the perimeter of the property.
2. A minimum of 40% of the existing tree canopy will be preserved.
3. The site will maintain a minimum of 55% open space.
4. The site will maintain a minimum of 16% common open space.
5. All exterior walls will have at least one window or doorway per floor. The garage bays are excluded from this requirement.
6. All units will include a private fenced backyard.
7. All open space and amenities will be professionally managed and maintained in perpetuity by the property owner.
8. Transitional stream buffer shall be reduced to 0' for the area indicated below in the site plan.

### City Proposed Conditions




VICINITY MAP




| Project Information - August 19th, 2025 | |
|---|---|
| Project Title | LEO Hendersonville |
| Developer | Advenir Azora Development, LLC |
| Property Owner | Justus, Jeffrey |
| Design Team | Architect \| Nequette Architecture |
| | LA \| Lorberbaum McNair & Associates |
| | Civil Engineer \| SeamonWhiteside |
| Tax Map Number | 9569229206 (Primary Corporate City Limits) |
| Existing Zoning | R-15 |
| Proposed Zoning | PRD-CZD |
| Proposed Use | Residential Dwellings (2/3/4 Family) |
| Principle Structure Setbacks | Front: 40' \| Reduced to 0' - Parking Situated to Rear & Screened From ROW \| Front Facing Garages = 45' Min. SB Side: 5' Min. \| Rear: 20' Min. |
| Buffers | Buffer: 8' Type (A) Adjacent to Residential |
| Building Height | 35' Max. Height |
| Parking Required | 1 Space / Dwelling Unit **OR** 1.5 / Dwelling Unit ≥ 3 Bedrooms |
| Parking Provided | **180** Dwelling Units (44 ≥ 3 Bedrooms) - 202 Spaces Req. Provided: 330 spaces (Includes Garage Spaces) |

| Site Coverage | |
|---|---|
| Total Project Area | ± 21.25 AC |
| Buildings | ± 3.6 AC \| 17 % Site Coverage |
| Open Space | **Open Space** |
| | ± 13.2 AC \| 62 % Site Coverage |
| | **Common Open Space** |
| | *± 2.1 AC Open Water / Wetland / Floodplain (50%)* |
| | *± 0.3 AC Amenity \| 1.25 AC Sidewalks* |
| | *± 2.15 AC Unimproved Area (Natural Features)* |
| | **Total:** ± 4.35 AC (20.5 %) **N/I ± 0.4 AC ≥ 33% Slope** |
| Streets & Parking | ± 3.75 AC \| 17.6 % Site Coverage |
| Stormwater Detention | ± 0.7 AC \| 3.3 % Site Coverage |

**General Notes**

1) All streets shall be built to public street standards - See Cross Section 5-14-4.4
2) Property owner responsible for perpetual maintenance of common open space.
3) Proposed project to be constructed & completed as one phase.
4) Any removed frontage sidewalks will be replaced with current standards.
5) This property is located within the primary corporate city limits.

| Adjacent Properties | | |
|---|---|---|
| **Tax Map Number** | **Owner** | **Zoning Designation** |
| 9569226965 | BLYTHE COMMONS HOA, INC | PRD-CZD |
| 9569222593 | BRITTON CREEK CONDOMINIUMS | R-15 |
| 9569220061 | 917 BLYTHE LLC | R-15 |
| 9569213424 | TRINITY PRESBYTERIAN CHURCH OF HENDERSONVILLE | R-15 |
| 9569217375 | CARR, EUGENE M III + CARR, SALLIE M | R-15 |
| 9569311542 | HODGE, BRYAN K + HODGE, ANNE C | R-15 |
| 9569312795 | WHATTON, DAVID HERBERT + LEE, HEATHER SANGEUN | R-15 |
| 9569323013 | BINFORD, JOHN C. + BINFORD, MEREDITH C. | R-15 |
| 9569322300 | LORD, ANNAH RUTH NESBITT + LORD, JOHN ROBERT DAVIS | R-15 |
| 9569322427 | BRYSON, ROBYN S + BRYSON, DAVID K | R-15 |
| 9569322641 | GALLOWAY, WILLIAM B. + GALLOWAY, JILLIAN C. | R-15 |
| 9569322752 | ROGER DALE PARHAM & JUDITH ELAINE SMITH PARHAM REVOCABLE TRUST | R-15 |
| 9569322863 | MACE, SYDNEY M | R-15 |
| 9569322973 | BRACKETT, SERETA N | R-15 |
| 9569332073 | BISHOP, CARLTON REID + BISHOP, ALISA DAWN | R-15 |

| Preliminary Unit Mix | | |
|---|---|---|
| **Type** | **Area** | **Provided** |
| 1 BR - Duplex (1 BR & 2 BR)* | 728 sf | 30 |
| 1 BR - Stacked Duplex (Lower)* | 624 sf | 4 |
| 1 BR - Stacked Duplex (Upper)* | 624 sf | 4 |
| 2 BR - Duplex (1 BR & 2 BR)* | 1,064 sf | 30 |
| 2 BR - Duplex (2 BR & 2 BR)* | 1,064 sf | 4 |
| 2 BR - Townhome (Mini)* | 1,152 sf | 44 |
| 2 BR - Townhome (Twin) | 1,365 sf | 20 |
| 3 BR - Townhome (16' Wide) | 1,430 sf | 44 |
| | | **180 Units Total** |

*** Indicates Half-Units Under 1,200 sf**

**SITE LEGEND**

- HEAVY DUTY ASPHALT PAVEMENT
- STANDARD DUTY ASPHALT PAVEMENT
- NCDOT ASPHALT PAVEMENT
- CONCRETE - SIDEWALK
- PROPERTY LINE
- BUILDING SETBACK
- ADJACENT PARCEL BUFFER
- RETAINING WALL
- PARKING COUNT (12)

SEAMONWHITESIDE
MOUNT PLEASANT, SC
843.884.1667
GREENVILLE, SC
864.298.0534
SUMMERVILLE, SC
843.972.0710
SPARTANBURG, SC
864.272.1272
CHARLOTTE, NC
980.312.5450
RALEIGH, NC
980.312.5450
WWW.SEAMONWHITESIDE.COM

SOUTH CAROLINA SEAMON, WHITESIDE & ASSOCIATES, INC. No. C00472 CERTIFICATE OF AUTHORIZATION

**NOT FOR CONSTRUCTION**

# LEO LIVING HENDERSONVILLE

1741 HAYWOOD RD | TMS: 9569-22-9206
HENDERSONVILLE, NORTH CAROLINA

**SD SET**
(NOT FOR CONSTRUCTION)

SW+ PROJECT: 11808
DATE: 7/4/2025
DRAWN BY: AC | NH
CHECKED BY: AD | DM

REVISION HISTORY

PRELIMINARY SITE PLAN

C5.0 133

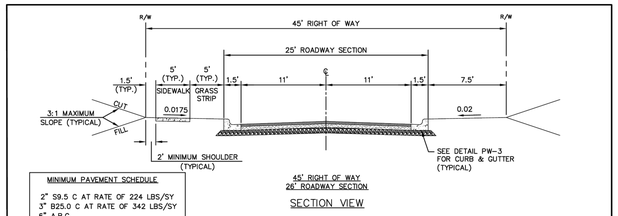
901 WANDO PARK BOULEVARD, SUITE 200, MOUNT PLEASANT, SC 29464 | JUDSON MILLS BUILDING 6000, 701 EASLEY BRIDGE RD, SUITE 6060, GREENVILLE, SC 29611 | 210 PETERSON DR., CHARLOTTE, NC 28217 | 712 N. CEDAR STREET, SUMMERVILLE, SC 29483 | 104 N. DANIEL MORGAN AVENUE, SUITE 300, SPARTANBURG, SC 29306 | 223 S. WEST ST. #900, RALEIGH, NC 27603
COPYRIGHT © SEAMON, WHITESIDE & ASSOCIATES, INC. | THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WITHOUT WRITTEN PERMISSION. SHALL NOT BE REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WITHOUT WRITTEN PERMISSION

PLOTTED 9/24/2025 2:47 PM, BY Alex Cate P:\ACAD-R1\BldCAD Files\D\2025-08-12 C3.0 Site Plan ALT.dwg

## NATURAL RESOURCE INVENTORY
SCALE: 1" = 100'

**LEGEND**

- STREAM
- STREAM MITIGATION (PIPED)
- WETLAND
- 20' TRANSITIONAL STREAM BUFFER
- 30' UNDISTURBED STREAM BUFFER
- 100-YEAR FLOOD ZONE
- 500-YEAR FLOOD ZONE
- FLOODWAY




SECTION VIEW

**MINIMUM PAVEMENT SCHEDULE**

2" S9.5 C AT RATE OF 224 LBS/SY
3" B25.0 C AT RATE OF 342 LBS/SY
6" A.B.C.

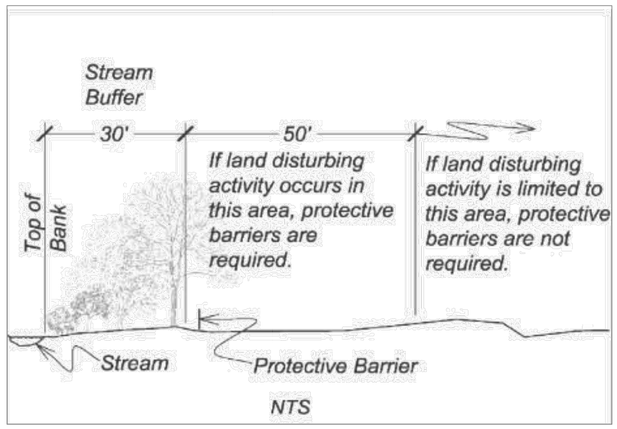
NOTES:

1. NORMAL CROWN OF 0.02' PER FOOT UNLESS OTHERWISE REQUIRED TO HAVE SUPERELEVATION.
2. PAVEMENT DESIGN SHALL BE REQUIRED AND APPROVED BY **NCDOT** (FOR NCDOT ROADS) AND/OR CITY OF HENDERSONVILLE PRIOR TO PLACEMENT OF ANY BASE MATERIAL.
3. PAVEMENT DESIGN SHALL BE AS SHOWN OR AS DESIGNED BY GEOTECHNICAL ENGINEER, WHICHEVER IS GREATER.
4. TACK COAT SHALL BE APPLIED BENEATH EACH LAYER OF ASPHALT MIX TO BE PLACED AT A RATE OF 0.04 GAL/SY
5. GRASS UTILITY STRIP REQUIRED UNLESS APPROVED BY PUBLIC WORKS DIRECTOR.
6. FINAL SURFACE COURSE TO BE APPLIED UPON CITY OF HENDERSONVILLE APPROVAL.

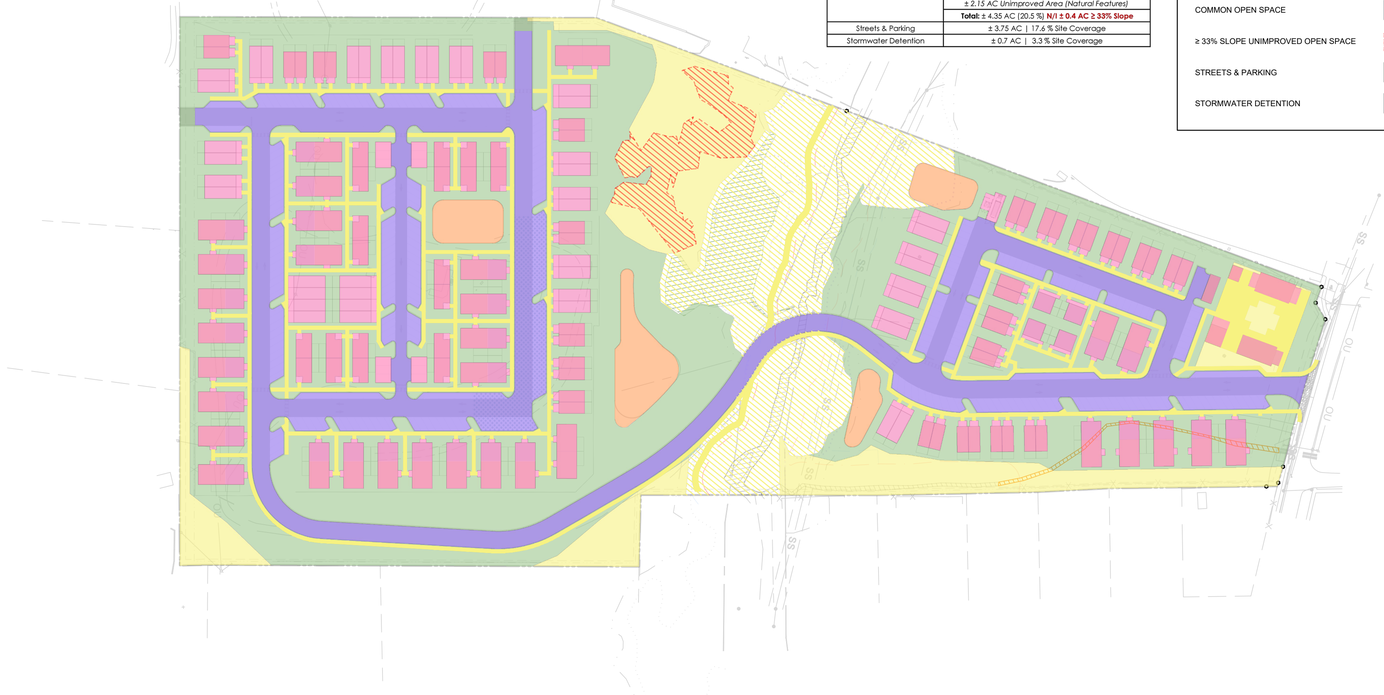
| | |
|---|---|
| DATE: 05/19/2023 | |
| SCALE: NOT TO SCALE — WD DWG. NO. 04 | STANDARD LOCAL STREET |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

H:\DETAILS\-Current Standard Details\PublicWorksDetails\COH_PW_Details.dwg, PW-04




## OPEN SPACE PLAN
SCALE: 1" = 100'



| Site Coverage | |
|---|---|
| Total Project Area | ± 21.25 AC |
| Buildings | ± 3.6 AC \| 17 % Site Coverage |
| Open Space | **Open Space** |
| | ± 13.2 AC \| 62 % Site Coverage |
| | **Common Open Space** |
| | *± 2.1 AC Open Water / Wetland / Floodplain (50%)* |
| | *± 0.3 AC Amenity \| 1.25 AC Sidewalks* |
| | *± 2.15 AC Unimproved Area (Natural Features)* |
| | **Total:** ± 4.35 AC (20.5 %) **N/I ± 0.4 AC ≥ 33% Slope** |
| Streets & Parking | ± 3.75 AC \| 17.6 % Site Coverage |
| Stormwater Detention | ± 0.7 AC \| 3.3 % Site Coverage |

**LEGEND**

- BUILDINGS
- OPEN SPACE
- COMMON OPEN SPACE
- ≥ 33% SLOPE UNIMPROVED OPEN SPACE
- STREETS & PARKING
- STORMWATER DETENTION

501 WANDO PARK BOULEVARD, SUITE 200, MOUNT PLEASANT, SC 29464 | JUDSON MILLS BUILDING 6000, 701 EASLEY BRIDGE RD, SUITE 6060, GREENVILLE, SC 29611 | 230 PETERSON DR., CHARLOTTE, NC 28217 | 712 N. CEDAR STREET, SUMMERVILLE, SC 29483 | 104 N. DANIEL MORGAN AVENUE, SUITE 300, SPARTANBURG, SC 29306 | 223 S. WEST ST. #900, RALEIGH, NC 27603
COPYRIGHT © SEAMON, WHITESIDE & ASSOCIATES, INC. | THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WITHOUT WRITTEN PERMISSION

SEAMON WHITESIDE
MOUNT PLEASANT, SC 843.884.1667
GREENVILLE, SC 864.298.0534
SUMMERVILLE, SC 843.972.0710
SPARTANBURG, SC 864.272.1272
CHARLOTTE, NC 980.312.5450
RALEIGH, NC 980.312.5450
WWW.SEAMONWHITESIDE.COM

SOUTH CAROLINA — SEAMON, WHITESIDE & ASSOCIATES, INC. — No. C00472 — CERTIFICATE OF AUTHORIZATION

**NOT FOR CONSTRUCTION**

# LEO LIVING HENDERSONVILLE
1741 HAYWOOD RD | TMS: 9569-22-9206
HENDERSONVILLE, NORTH CAROLINA

**SD SET**
(NOT FOR CONSTRUCTION)

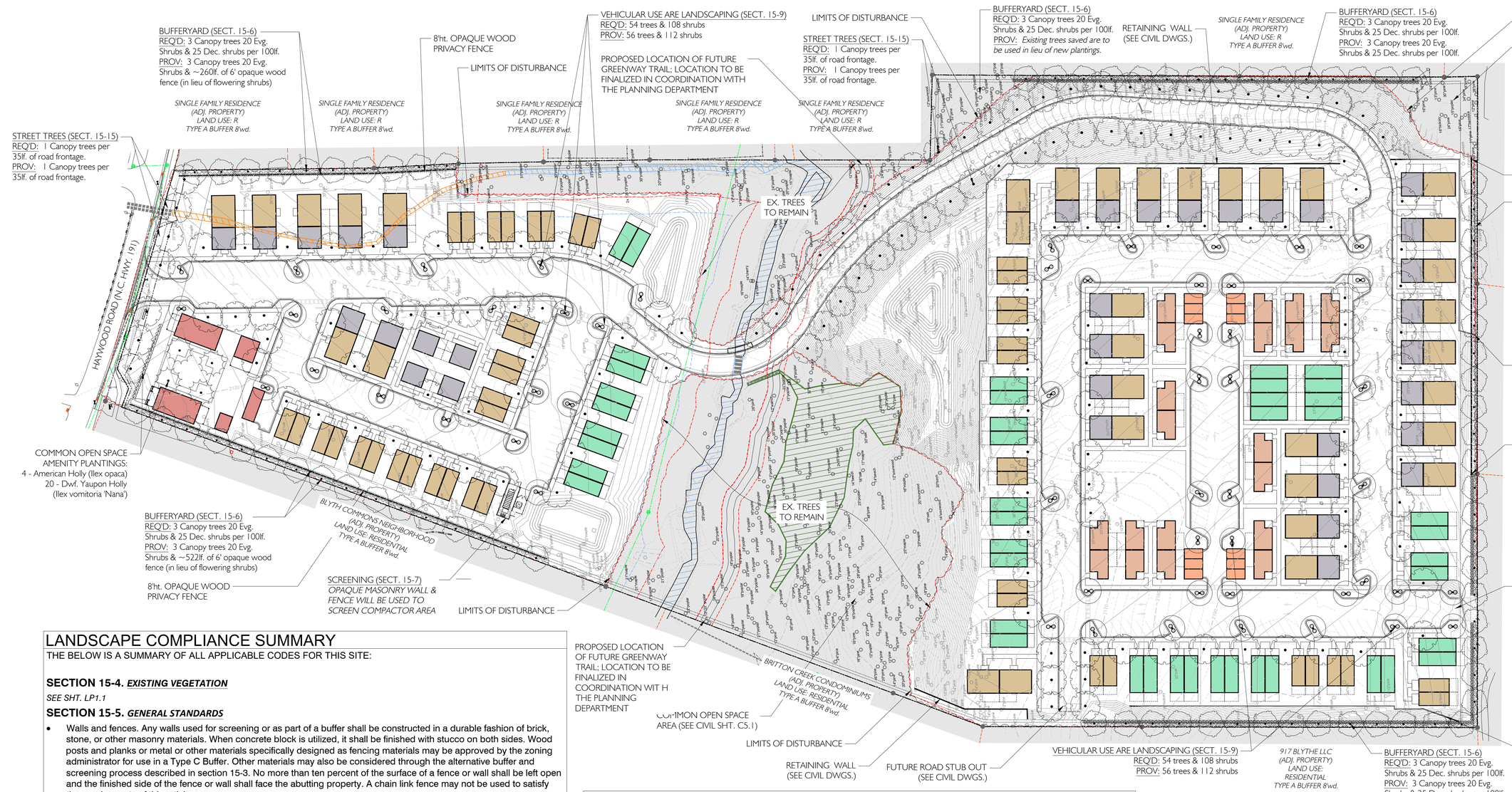
| | |
|---|---|
| SW+ PROJECT: | 11808 |
| DATE: | 7/4/2025 |
| DRAWN BY: | AC \| NH |
| CHECKED BY: | AD \| DM |

REVISION HISTORY

REQUIRED VISUALS



K:\11808\07-Drawings\Civil\Plan Sets\11808_Site Plan Set.dwg, 7/3/2025 2:47 PM, BY Alex Cable
P:\ACAD\Archive\11808\CAD Files\25-06-12 C3.0 Site Plan ALT.dwg, 7/3/2025 2:47 PM, BY Alex Cable




## LANDSCAPE COMPLIANCE SUMMARY

THE BELOW IS A SUMMARY OF ALL APPLICABLE CODES FOR THIS SITE:

### SECTION 15-4. *EXISTING VEGETATION*

*SEE SHT. LP1.1*

### SECTION 15-5. *GENERAL STANDARDS*

- Walls and fences. Any walls used for screening or as part of a buffer shall be constructed in a durable fashion of brick, stone, or other masonry materials. When concrete block is utilized, it shall be finished with stucco on both sides. Wood posts and planks or metal or other materials specifically designed as fencing materials may be approved by the zoning administrator for use in a Type C Buffer. Other materials may also be considered through the alternative buffer and screening process described in section 15-3. No more than ten percent of the surface of a fence or wall shall be left open and the finished side of the fence or wall shall face the abutting property. A chain link fence may not be used to satisfy the requirements of this article.
- Species diversity. When the total number of trees required under the provisions of this article equals 20 or more, then no single tree species shall comprise more than 25 percent of the trees planted on the development site.
- Native species. For each development site, at least 75 percent of the trees required to be planted under the provisions of this article shall be native species as listed on the recommended species list.

### SECTION 15-6. *BUFFERYARDS*

- Proposed Land Use: Residential dwellings - two, three, and four family (Zoning PRD-CZD)
- Adjacent Land Uses: Residential, institutional
- Buffer yard Type per Table in Sect. 15-6: Type A - 8'wd.

**Required:** 8'w. planting strip with 3 trees, 20 evergreen shrubs and 25 flowering shrubs every 100lf.

**Provided:** 8'w. planting strip with 3 trees, 20 evergreen shrubs and 25 flowering shrubs every 100lf. (see plan for locations)

### SECTION 15-7. *SCREENING*

Where practicable, the following uses must be screened from abutting property and from public view from a public right-of-way or a parking lot:

- Dumpsters or trash handling areas;
- Utility structures associated with a building;

As far as practicable, any screening used to comply with the provisions of this section shall consist of a planting area which is at least five feet wide. This area may contain any type screening materials sufficient to separate visually the land uses, provided such materials meet the requirements of this article. If only a wall or fence is used, then the area devoted to the screen need only be wide enough to accommodate the wall or fence and allow for its maintenance. Where practicable, screening shall be designed and maintained in such a manner as to conceal the use from view from the street, from vehicular use areas, and from adjoining properties.

### SECTION 15-9 *VEHICULAR USE AREA LANDSCAPING*

- Interiors of all parking areas with more than 6 spaces shall provide a 360sf min. planting island with 1 canopy tree and 2 shrubs for every 3,000sf of paved area. [160,765sf paving/ 3,000sf]

***Required:*** **54 trees**
**108 shrubs**
***Provided:*** **55 trees**
**110 shrubs**

### SECTION 15-13. *COMMON OPEN SPACE LANDSCAPING*

In addition to all other landscaping required by this zoning ordinance, each development parcel required to provide common open space pursuant to section 6-16 shall contain a minimum of one tree and five shrubs for every 1,200 square feet of common open space on such development parcel. A minimum of 50 percent of the trees shall be canopy trees.

***Required:***

- Open Water/Wetland/Floodplain: 91,476sf*
- Amenity Area: 13,068sf*/1,200 sf = **4 trees & 20 shrubs**
- Unimproved area (Natural Features): 93,654sf*/1,200sf = **78 trees & 390 shrubs**

***Provided***

- No plantings required per Sect. 6-16.
- **4 trees**
  **20 Shrubs**
- **78 existing trees (see existing trees within common space areas)**
  **390 existing vegetation (see existing vegetation within common space areas)**

** See Civil Sht. C5.1 for Common Open space calculations and locations.*

### Sec. 15-14. *OPEN SPACE LANDSCAPING*

In addition to all other landscaping required by this zoning ordinance, each development parcel required to provide open space shall contain a minimum of one tree and five shrubs for every 4,000 square feet of common open space on such development parcel. A minimum of 50 percent of the trees shall be canopy trees.

***Required***

574,992sf* / 4,000 sf = **144 trees & 720 shrubs**

***Provided***

**282 trees & 900 shrubs (see Plant Schedule)**

**See Civil Sht. C5.1 for Common Open space calculations and locations.*

### SECTION 15-15 *STREET TREES*

Street trees shall be required at the rate of one tree for every 35 linear feet of property abutting a street. At least 70 percent of the street trees planted shall be large-maturing trees (>50 feet in height). The remaining street trees shall be medium maturing trees (25--50 feet in height).

## CONCEPT PLANT SCHEDULE

| | | |
|---|---|---|
| VEHICULAR USE TREES | RED SUNSET® MAPLE / ACER RUBRUM 'FRANKSRED'<br>WHITE OAK / QUERCUS ALBA | 55 |
| BUFFER CANOPY TREES | SKYLINE HONEY LOCUST / GLEDITSIA TRIACANTHOS INERMIS 'SKYLINE'<br>TUPELO / NYSSA SYLVATICA | 75 |
| STREET TREES | PIN OAK / QUERCUS PALUSTRIS<br>GREENSPIRE LITTLELEAF LINDEN / TILIA CORDATA 'GREENSPIRE' | 152 |
| VEHICULAR USE SHRUBS | WHITE CLOUD MUHLY GRASS / MUHLENBERGIA CAPILLARIS 'WHITE CLOUD' | 110 |
| BUFFERYARD EVG SHRUBS | MOUNTAIN LAUREL / KALMIA LATIFOLIA | 490 |
| BUFFERYARD FLW SHRUBS | OAKLEAF HYDRANGEA / HYDRANGEA QUERCIFOLIA | 300 |

# CODE COMPLIANT LANDSCAPE PLAN

NORTH

0 60 120 180 feet

SCALE: 1" = 60'

THIS DRAWING IS THE PROPERTY OF LORBERBAUM McNAIR & ASSOCIATES, LLC AND IS NOT TO BE REPRODUCED, COPIED, OR ALTERED IN WHOLE OR IN PART WITHOUT THE APPROVAL OF LORBERBAUM McNAIR & ASSOCIATES. © LMA

LORBERBAUM • McNAIR ASSOCIATES
Site Planning • Landscape Architecture • Urban Design
www.lorberbaummcnair.com

A LANDSCAPE DEVELOPMENT PLAN FOR

# LEO - HENDERSONVILLE

Haywood Road
Hendersonville, North Carolina

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 3251 DAVID M. LORBERBAUM

| | |
|---|---|
| PROJ. CODE | 25-027 |
| DRAWN BY | DEM |
| REVIEWED BY | DML |

**ISSUED**

| DATE | DESCRIPTION |
|---|---|
| 7-3-25 | FOR SUBMITTAL |
| 8-5-25 | FOR RESUBMITTAL |

**REVISIONS**

CONSTRUCTION DOCUMENTS

SHEET
LP1.0



C:\Users\dml\7% LMA Dropbox\LMA Team Folder\Projects\2025\25-027 LEO Hendersonville\DRAWINGS\CAD\HENDERSONVILLE Landscape Working.dwg, LP1.0, 8/5/2025 1:28:21 PM

**1741 HAYWOOD RD**

PIN: 9569229206

Property Owner: JUSTUS, JEFFREY

Parcel Size: 912729.83 ft² (20.95 acres)

| | Percent Coverage | Square Footage |
|---|---|---|
| **2025** | 38.37% | 350238.56 ft² |
| **2023** | 70.21% | 640803.48 ft² |
| **2022** | 54.06% | 493460.72 ft² |

**Percent Change from 2022-2025**

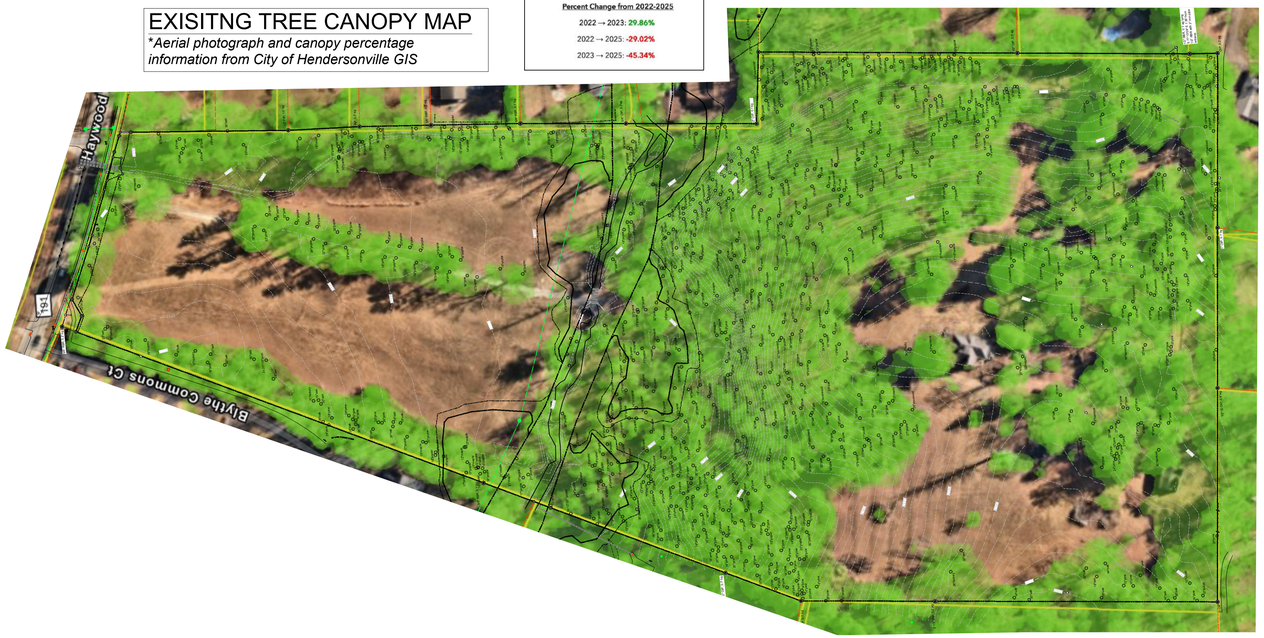
2022 → 2023: **29.86%**

2022 → 2025: **-29.02%**

2023 → 2025: **-45.34%**

## EXISITNG TREE CANOPY MAP

**Aerial photograph and canopy percentage information from City of Hendersonville GIS*




## TREE MITIGATION SUMMARY

**SECTION 15-4.** ***EXISTING VEGETATION***

***The developer has chosen to meet the Tier 1 tree requirements of preserving 20% of the existing canopy on site.***

*Existing Canopy Coverage (per 2025 map) : 350,239 sf*

*Proposed Canopy Coverage (after development): 166,159 sf*

**Tier One Requirements:** 20% of canopy (or) 70,047sf

**Tier Two Requirements:** 10% of canopy or 35,023 sf

**Total Required:** 105,070 sf or 30%

**Total Provided:** 166,159 sf or 47%

**New Tree Canopy Installation Required:** 0

## PROPOSED TREE CANOPY MAP

**Canopy based on limits of disturbance shown on Civil site plan.*

0 100 200 300 feet

SCALE: 1" = 100'

NORTH

# TREE MITIGATION PLAN

THIS DRAWING IS THE PROPERTY OF LORBERBAUM McNAIR & ASSOCIATES, LLC AND IS NOT TO BE REPRODUCED, COPIED, OR ALTERED IN WHOLE OR IN PART WITHOUT THE APPROVAL OF LORBERBAUM McNAIR & ASSOCIATES. © LMA

LORBERBAUM • McNAIR ASSOCIATES
Site Planning • Landscape Architecture • Engineering
www.lorberbaummcnair.com

A LANDSCAPE DEVELOPMENT PLAN FOR

LEO - HENDERSONVILLE

Haywood Road

Hendersonville, North Carolina

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT DAVID LORBERBAUM

| | |
|---|---|
| PROJ. CODE | 25-027 |
| DRAWN BY | DEM |
| REVIEWED BY | DML |

**ISSUED**

| DATE | DESCRIPTION |
|---|---|
| 7-3-25 | FOR SUBMITTAL |
| 8-5-25 | FOR RESUBMITTAL |

**REVISIONS**

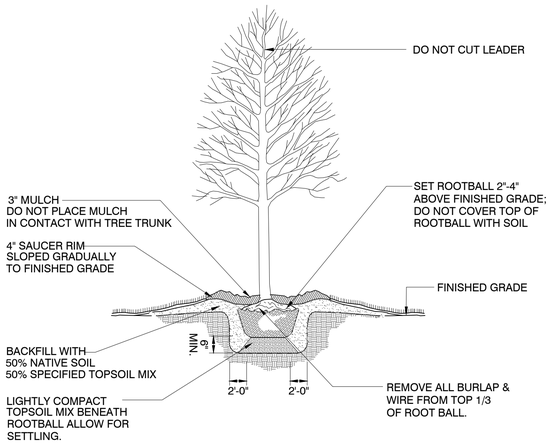
CONSTRUCTION DOCUMENTS

SHEET

LP1.1

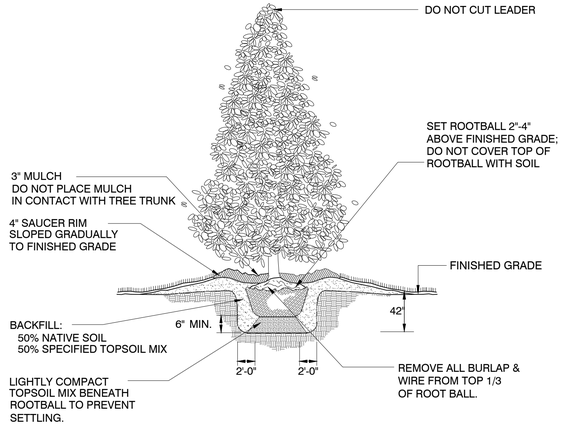


C:\Users\dem\3TU.MA Dropbox\LMA Team Folder\Projects\2025\25-027 LEO Hendersonville\LMA\MISC\C.4 EXHIBITS\EXHIBITS\LMA Landscape Working.dwg, LP1.1, 9/5/2025 1:28:47 PM



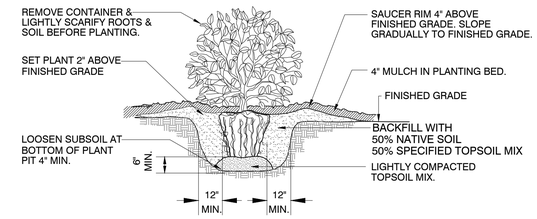

1 TYPICAL BALL & BURLAP TREE DETAIL

N.T.S.



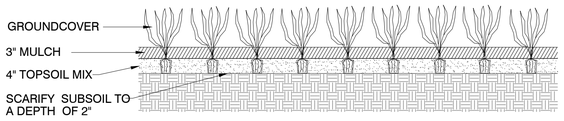

2 TYPICAL BALL & BURLAP EVERGREEN DETAIL

N.T.S.



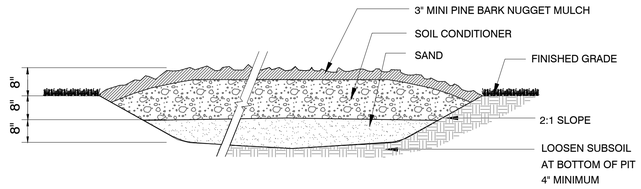

3 TYPICAL CONTAINER SHRUB DETAIL

N.T.S.



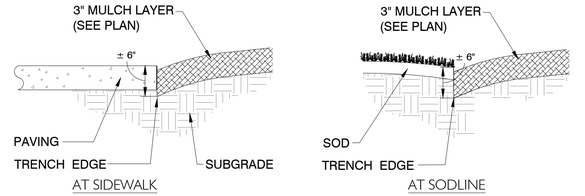

4 TYPICAL GROUNDCOVER DETAIL

N.T.S.



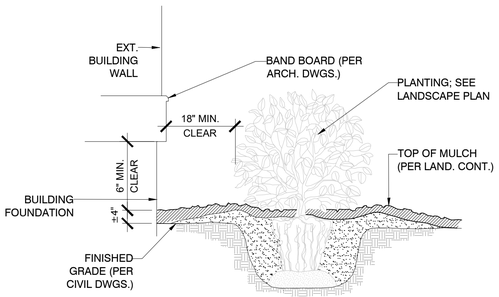

5 ANNUAL/PERENNIAL BED PREPARATION

N.T.S.




6 TYP. TRENCH EDGE AT BEDS DETAIL

N.T.S.




7 TYPICAL BLDG. FOUNDATION CLEARANCE

N.T.S.

## GENERAL PLANTING NOTES

1. VERIFY ALL UTILITY LOCATIONS IN THE FIELD BEFORE BEGINNING WORK. REPAIR DAMAGED UTILITIES TO OWNER'S SATISFACTION AT NO ADDITIONAL COST. ENSURE LANDSCAPING DOES NOT CONFLICT WITH DRAINAGE, UTILITIES, OR OVERHEAD WIRES.

2. VERIFY QUANTITIES ON PLAN BEFORE PRICING WORK. NOTIFY OWNER OF DISCREPANCIES IN QUANTITIES PRIOR TO SUBMITTING PRICING.

3. ALL MATERIALS ARE SUBJECT TO APPROVAL OF THE OWNER OR OWNERS REPRESENTATIVE AT ANY TIME. INSTALL ALL PLANT MATERIALS IN ACCORDANCE WITH LOCAL CODES AND ORDINANCES.

4. ALL PLANTS SHALL BE HEALTHY, VIGOROUS MATERIALS, FREE FROM DISEASE AND PESTS, AND MEET OR EXCEED FLORIDA No. 1 GRADE AS SET FORTH IN THE FLORIDA GRADES AND STANDARDS FOR NURSERY PLANTS, LATEST EDITION. MAIN LEADERS OF ALL TREES SHALL REMAIN INTACT. NO GRAFTED MAPLES WILL BE ACCEPTED.

5. MULCH ALL PLANTING BEDS WITH MULCH SPECIFIED ON PLAN TO A MINIMUM DEPTH OF 3". PROVIDE A 4' DIA. MULCH RING, 4" DEEP, AROUND ALL TREES LOCATED IN LAWN AREAS. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK.

6. PREPARE ALL SOIL USED IN TREE AND PLANT BEDS IN THE FOLLOWING PROPORTIONS: 4 PARTS NATIVE TOPSOIL, 2 PARTS SAND, AND 2 PARTS DECOMPOSED ORGANIC MATTER. ADD SLOW-RELEASE BALANCED FERTILIZER PER MANUFACTURER'S INSTRUCTIONS. PRE-MIX ALL SOIL BEFORE PLACING IN BED.

7. MAINTAIN PLANT MATERIAL UNTIL FINAL ACCEPTANCE UNLESS OTHERWISE SPECIFIED. MAINTENANCE INCLUDES WATERING, SPRAYING, WEEDING, MULCHING, STRAIGHTENING, PRUNING, MOWING, BLOWING, FERTILIZING, CLEAN-UP.

8. REPLACE ANY PLANT MATERIAL WHICH TURNS BROWN OR DEFOLIATES WITHIN FIVE (5) DAYS AFTER PLANTING. GUARANTEE ALL MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE BY OWNER.

9. IF AN AUTOMATIC IRRIGATION SYSTEM IS TO BE INSTALLED, CONTRACTOR SHALL PROVIDE OWNER WITH IRRIGATION PLAN AND SHOP DRAWINGS OF HEADS, VALVES, PIPE, WIRE & CLOCKS PROPOSED FOR INSTALLATION. IRRIGATION PLAN SHALL BE SUBMITTED TO OWNER FOR APPROVAL PRIOR TO INSTALLATION.

10. LANDSCAPE CONTRACTOR TO PROVIDE OWNER WITH AS-BUILT DRAWINGS FOR ALL SLEEVE LOCATIONS, IRRIGATION MAINLINE, VALVE AND CLOCK LOCATIONS; AND ALL LOW VOLTAGE LIGHTING CIRCUITS (IF PROVIDED) PRIOR TO FINAL ACCEPTANCE.

11. CERTAIN MATERIALS SPECIFIED BY LANDSCAPE ARCHITECT MAY HAVE LONG LEAD TIMES FOR ORDERING. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE MATERIALS ARE ORDERED IN APPROPRIATE TIME FRAME. LAND. ARCH. IS NOT OBLIGATED TO SUBSTITUTE MANUFACTURER OR MATERIALS BASED UPON IN INADEQUATE LEAD TIMES.

12. ALL CANOPY TREES MUST BE LOCATED 6' MIN. CLEAR FROM ANY BUILDING OR PAVING UNLESS PLANTED IN VEHICULAR TREE ISLANDS.

13. ALL DISTURBED AREAS ON SITE THAT ARE PROPOSED TO BE LANDSCAPED WILL RECEIVE MULCH (IN PLANT BEDS), SOD, OR SEED AS ALLOWED BY LOCAL MUNICIPALITIES.

14. INSTALL ALL PLANT MATERIALS IN ACCORDANCE WITH LOCAL CODES AND ORDINANCES.

# LANDSCAPE DETAILS

THIS DRAWING IS THE PROPERTY OF LORBERBAUM McNAIR & ASSOCIATES, LLC AND IS NOT TO BE REPRODUCED, COPIED, OR ALTERED IN WHOLE OR IN PART WITHOUT THE APPROVAL OF LORBERBAUM McNAIR & ASSOCIATES. © LMA

LORBERBAUM • McNAIR ASSOCIATES • Site Planning • Landscape Architecture • Graphics
www.lorberbaummcnair.com

A LANDSCAPE DEVELOPMENT PLAN FOR

LEO - HENDERSONVILLE

Haywood Road

Hendersonville, North Carolina

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 3324 DAVID LORBERBAUM

| | |
|---|---|
| PROJ. CODE | 25-027 |
| DRAWN BY | DEM |
| REVIEWED BY | DML |

**ISSUED**

| DATE | DESCRIPTION |
|---|---|
| 7-3-25 | FOR SUBMITTAL |
| 8-5-25 | FOR RESUBMITTAL |

**REVISIONS**

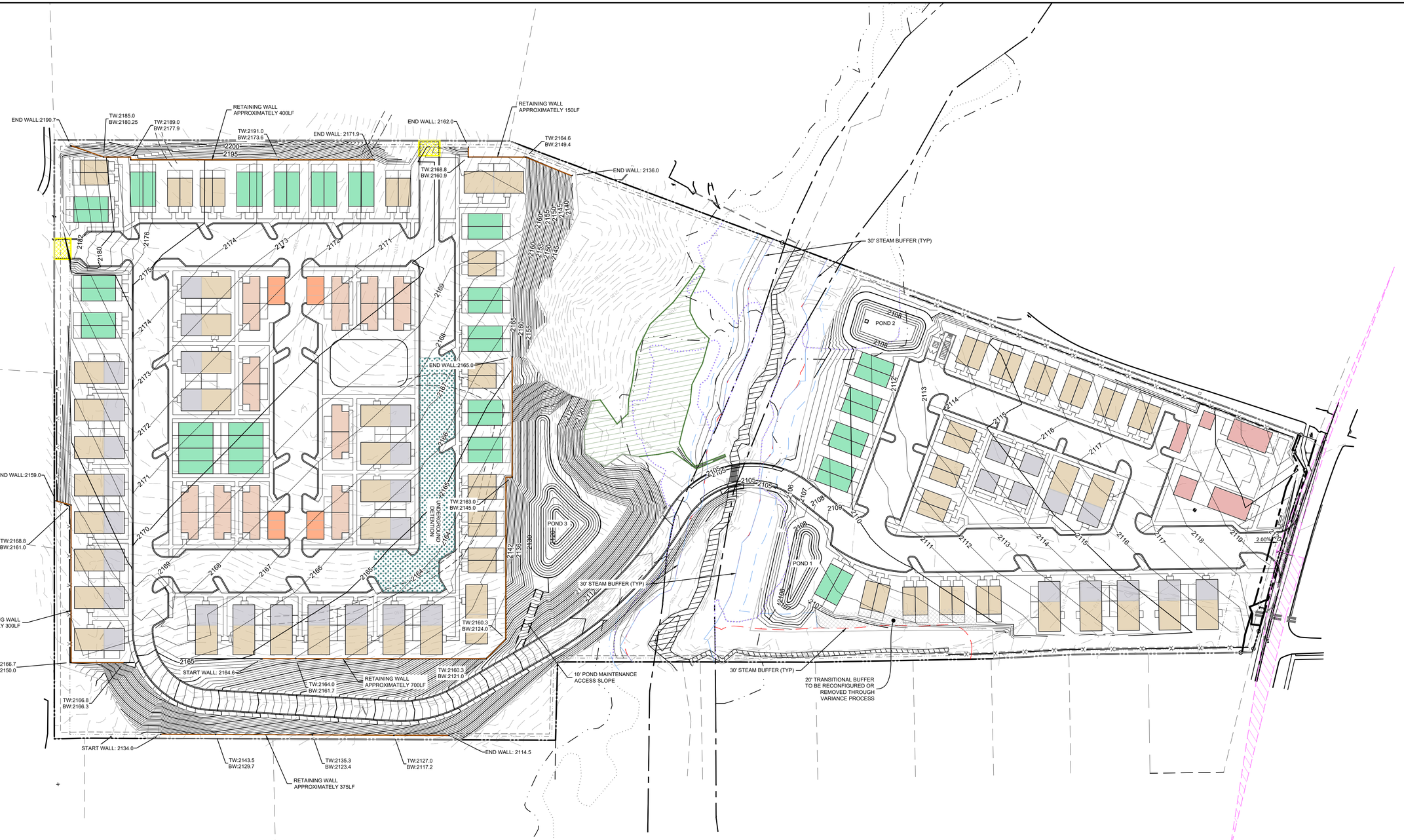
CONSTRUCTION DOCUMENTS

SHEET

LP1.2



C:\Users\dem\TLMA Dropbox\LMA Team Folder\Projects\2025\25-027 LEO Hendersonville\LMAWORK\25-027 LEO Landscape Working.dwg, LP1.2, 8/4/2025 2:17:29 PM




## SPOT ELEVATION KEY (FINISHED GRADING)

A - ASPHALT SURFACE OF FINISHED ASPHALT ROADWAY OR WALKING PATH
BC - BOTTOM OF CURB ELEVATION
BR - BOTTOM OF RAMP ELEVATION
BS - BOTTOM OF STAIRS ELEVATION
BW - FINISHED GRADE ELEVATION AT BOTTOM OF WALL
BW/TW - FINISHED GRADE ELEVATION AT START/END OF WALL
C - CONCRETE PAVING ELEVATION
D - (DIRT) FINISHED GROUND ELEVATION
F - (FLOW) ELEVATION AT WHICH SURFACE WATER FLOWS INTO DRAINAGE STRUCTURE
  - SURFACE OF ASPHALT ADJACENT TO THROAT OR GRATE AT CURB INLET
  - SURFACE OF ACCESS COVER FOR JUNCTION OR ISOLATION BOX
  - SURFACE OF GRATE AT OUTSIDE EDGE FOR CATCH BASIN, GUTTER INLET, OR GRATED POND STRUCTURE
FFE - FINISHED FLOOR ELEVATION
G - (GUTTER) SURFACE OF FINISHED GUTTER AT LOWEST POINT (ALONG WATER FLOW PATH)
HP - HIGH POINT
LP - LOW POINT
ME - MATCH EXISTING (INDICATES TO MATCH ELEVATION OF EXISTING SURFACE AT POINT OF CONNECTION)
PAD - FINISHED PAD ELEVATION
TC - TOP OF CURB ELEVATION
TR - TOP OR RAMP ELEVATION
TS - TOP OF STAIRS ELEVATION
TW - FINISHED GRADE ELEVATION AT TOP OF WALL
W - (WALK) SURFACE OF FINISHED CONCRETE OR INTERLOCKING PAVER SIDEWALK, PATIO, PLAZA, OR SLAB

EXAMPLE: A: 12.56 MEANS THAT THE SURFACE OF NEW ASPHALT IS TO BE AT ELEVATION 12.56

**STANDARD GRADING PLAN NOTES:**

1. FOR PROJECT SURVEY INFORMATION INCLUDING VERTICAL DATUM AND BENCHMARK LOCATIONS, SEE "PROJECT SURVEY INFORMATION AND CONTRACTOR VERIFICATION REQUIREMENTS" ON SHEET C1.0.
2. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS, INCLUDING BUT NOT LIMITED TO TOPOGRAPHIC, TREE, STORM DRAINAGE FACILITIES, AND ALL UTILITIES. EXISTING UTILITIES SHOWN ARE APPROXIMATE AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ENGINEER. THEREFORE, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT VERTICAL AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES. ANY DISCREPANCIES OR CONFLICTS IDENTIFIED DURING VERIFICATION OF EXISTING CONDITIONS AND UTILITIES SHALL BE REPORTED TO THE OWNER AND ENGINEER. ANY COSTS ASSOCIATED WITH CORRECTIVE WORK OR DAMAGES THAT ARE A RESULT OF THE CONTRACTOR NOT VERIFYING EXISTING CONDITIONS AND THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES WILL BE THE CONTRACTOR'S RESPONSIBILITY.
3. REFER TO ROADWAY PLAN & PROFILE SHEETS, DRAINAGE PLAN SHEETS, AND ROADWAY & DRAINAGE DETAIL SHEETS FOR ADDITIONAL DRAINAGE AND GRADING INFORMATION AND REQUIREMENTS.
4. REFER TO THE "SPOT ELEVATION KEY" FOR INFORMATION ON SPOT ELEVATIONS.
5. COORDINATE WITH THE OWNER AND THE PROJECT GEOTECHNICAL CONSULTANT FOR LOT FILL COMPACTION AND TESTING REQUIREMENTS.
6. CONTRACTOR TO SELF-VERIFY THAT SITE GRADES, PONDS, POND DIKES, DRAINAGE PIPES, AND DRAINAGE STRUCTURES ARE CONSTRUCTED PER THE PLANS PRIOR TO REQUESTING FINAL AS-BUILT SURVEY FROM SURVEYOR.

**EXISTING UTILITY NOTE:**

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING ANY WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

811 Know what's below. Call before you dig.

N W S E

0 30 60 120
SCALE: 1" = 60'

SEAMONWHITESIDE
MOUNT PLEASANT, SC
843.884.1667
GREENVILLE, SC
864.298.0534
SUMMERVILLE, SC
843.972.0710
SPARTANBURG, SC
864.272.1272
CHARLOTTE, NC
980.312.5450
RALEIGH, NC
980.312.5450
WWW.SEAMONWHITESIDE.COM

SOUTH CAROLINA
SEAMON, WHITESIDE & ASSOCIATES, INC.
CERTIFICATE OF AUTHORIZATION
No. C00472

**NOT FOR CONSTRUCTION**

# LEO LIVING HENDERSONVILLE

1741 HAYWOOD RD | TMS: 9569-22-9206
HENDERSONVILLE, NORTH CAROLINA

**SD SET**
(NOT FOR CONSTRUCTION)

| | |
|---|---|
| SW+ PROJECT: | 11808 |
| DATE: | 7/4/2025 |
| DRAWN BY: | AC \| NH |
| CHECKED BY: | AD \| DM |

REVISION HISTORY

GRADING PLAN

C6.0 138

501 WANDO PARK BOULEVARD, SUITE 200, MOUNT PLEASANT, SC 29464 | JUDSON MILLS BUILDING 6000, 701 EASLEY BRIDGE RD, SUITE 6000, GREENVILLE, SC 29611 | 230 PETERSON DR., CHARLOTTE, NC 28217 | 712 N. CEDAR STREET, SUMMERVILLE, SC 29483 | 104 N. DANIEL MORGAN AVENUE, SUITE 300, SPARTANBURG, SC 29306 | 223 S. WEST ST. #900, RALEIGH, NC 27603
COPYRIGHT © SEAMON, WHITESIDE & ASSOCIATES, INC. | THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WITHOUT WRITTEN PERMISSION

PLOTTED:6/26/2025 3:12 PM, BY Alex Clarke P:\ACAD\01-811BdlfCAD Files\25\C6.0 Grading Plan.dwg

**STANDARD SEWER PLAN NOTES:**

1. FOR PROJECT SURVEY INFORMATION INCLUDING VERTICAL DATUM AND BENCHMARK LOCATIONS, SEE "PROJECT SURVEY INFORMATION AND CONTRACTOR VERIFICATION REQUIREMENTS" ON SHEET C1.0.
2. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS, INCLUDING BUT NOT LIMITED TO TOPOGRAPHIC, TREE, STORM DRAINAGE FACILITIES, AND ALL UTILITIES. EXISTING UTILITIES SHOWN ARE APPROXIMATE AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ENGINEER. THEREFORE, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT VERTICAL AND HORIZONTAL LOCATIONS OF ALL EXISTING UTILITIES. ANY DISCREPANCIES OR CONFLICTS IDENTIFIED DURING VERIFICATION OF EXISTING CONDITIONS AND UTILITIES SHALL BE REPORTED TO THE OWNER AND ENGINEER. ANY COSTS ASSOCIATED WITH CORRECTIVE WORK OR DAMAGES THAT ARE A RESULT OF THE CONTRACTOR NOT VERIFYING EXISTING CONDITIONS AND THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES WILL BE THE CONTRACTOR'S RESPONSIBILITY.
3. MANHOLE COVERS ARE NOT ALLOWED WITHIN CURB AND GUTTER AND ARE TO BE INSTALLED COMPLETELY WITHIN OR COMPLETELY OUT OF PAVED AREAS (INCLUDING SIDEWALKS).
4. SEWER MANHOLE CONES ADJACENT TO CURB AND/OR SIDEWALK RAMPS SHALL BE ROTATED TO LOCATE MANHOLE FRAME AND COVER AWAY FROM THE SIDEWALK RAMPS AND CURBS.
5. REFER TO THE SEWER AUTHORITY'S STANDARD NOTES, DETAILS, AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND PROCEDURES, INCLUDING WATERTIGHT MANHOLE LOCATIONS.
6. REFER TO SEWER DETAIL SHEETS AND SEWER PROFILE SHEETS FOR DETAILS AND ANY ADDITIONAL SEWER SYSTEM INFORMATION.

**EXISTING UTILITY NOTE:**

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING ANY WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

811 Know what's Call before you dig.

N W S E

0 30 60 120
SCALE: 1" = 60'

SEAMONWHITESIDE
MOUNT PLEASANT, SC
843.884.1667
GREENVILLE, SC
864.298.0534
SUMMERVILLE, SC
843.972.0710
SPARTANBURG, SC
864.272.1272
CHARLOTTE, NC
980.312.5450
RALEIGH, NC
980.312.5450
WWW.SEAMONWHITESIDE.COM

SOUTH CAROLINA
SEAMON, WHITESIDE, & ASSOCIATES, INC.
No. C00472
CERTIFICATE OF AUTHORIZATION

**NOT FOR CONSTRUCTION**

# LEO LIVING HENDERSONVILLE

1741 HAYWOOD RD | TMS: 9569-22-9206
HENDERSONVILLE, NORTH CAROLINA

**SD SET**
(NOT FOR CONSTRUCTION)

| | |
|---|---|
| SW+ PROJECT: | 11808 |
| DATE: | 7/4/2025 |
| DRAWN BY: | AC \| NH |
| CHECKED BY: | AD \| DM |

REVISION HISTORY

UTILITY PLAN

C7.0



501 WANDO PARK BOULEVARD, SUITE 200, MOUNT PLEASANT, SC 29464 | JASPER MILLS BUILDING 6000, 701 EASLEY BRIDGE RD, SUITE 6060, GREENVILLE, SC 29611 | 210 PETERSON DR., CHARLOTTE, NC 28217 | 712 N. CEDAR STREET, SUMMERVILLE, SC 29483 | 104 N. DANIEL MORGAN AVENUE, SUITE 300, SPARTANBURG, SC 29306 | 223 S. WEST ST. #900, RALEIGH, NC 27603
COPYRIGHT © SEAMON, WHITESIDE & ASSOCIATES, INC. | THIS DRAWING SHALL NOT BE REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WITHOUT WRITTEN PERMISSION

PLOTTED:9/23/2025 10:36 AM, BY Alex Cecil P:\ACAD\11808\CAD Files\ECNCT 0 Utility Plan.dwg

PSI Project Number:
January 7, 2025

Professional Service Industries, Inc.
95 Chastain Road, Suite 301
Kennesaw, Georgia 30144
Phone: 770.424.6200

Advenir Azora Development, LLC
17501 Biscayne Blvd.
Aventura, FL 33160

Attention: Zak Swafford, Development Analyst
Zak@advenirdevelopment.com

**Re:** **Wetland Delineation Report**
LEO at Haywood
~20.95-acres Residential Land
1741 Haywood Road, Hendersonville, Henderson County, North Carolina

Dear Mr. Swafford:

Professional Service Industries, Inc. (PSI), an Intertek company, is pleased to inform you of our findings for the above-referenced project. The work was conducted in accordance with PSI Proposal 0517-439561 dated November 6, 2024. Our scope included a Wetland Delineation of the subject property, including site observations, online research, interpretations and a letter report.

**SITE DESCRIPTION AND PURPOSE**

The above referenced property is located south of the intersection of Haywood Road & Morris Lane, and consists of mostly wooded land and cleared pastureland, totaling ~20.95-acres, with multiple dilapidated single-family residences and sheds/barns in the south-central portion. One stream is located in the central portion of the subject property, flowing from west to east. A second stream is also located along the eastern boundary of the property, flowing from north to south. According to the Henderson County Parcel Viewer, the subject property consists of one land parcel (ID# 9973193) owned by Jeffrey Justus. The property boundary is shown on Figures 1-3.

The adjoining properties consist of single-family residential neighborhoods to the north, east, and south, and apartment complexes to the west.

Streams and wetlands were delineated so the client can determine potential land use and cost to impact Waters of the United States (WUS) as defined by the United States Army Corps of Engineers (USACE).

**DATA COLLECTION METHODOLOGY**

A records review and site reconnaissance were conducted to determine the presence of wetlands, state waters, or floodplains/floodways on the subject property. The wetland records review is intended to provide information on the potential occurrence of wetlands on the subject property. The review is not intended to establish the definitive presence or absence of wetlands. Research for potential wetland areas was performed by reviewing appropriate source documents, as available, for the property, including U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, Natural Resources Conservation Service (NRCS) maps, or information

available from the USACE.

Andrew Peiken, Certified Ecologist with PSI, conducted the site assessment on December 20, 2024. The weather was partly cloudy with temperatures in the 40's-50's. According to Wunderground.com, there was 0.54-inches of reportable rainfall within the previous 96-hours, with the most recent rainfall occurring on January 18, 2024 (0.02 inches) and January 19, 2024 (0.1 inches). PSI investigated the property for indications of wetlands and/or WUS.

Potential streams and other WUS including wetlands, if present, were delineated. PSI delineated the landward extent of the on-site WUS in the field with flagging tape and/or stakes in accordance with methodologies outlined in Chapter 62-340, F.A.C., *U.S. Army Corps of Engineers (USACE) Corps Wetland Delineation Manual* (1987), and the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual*: Atlantic and Gulf Coastal Plain Region *(Version 2.0).* This technique uses a multi-parameter approach which requires positive identification of three criteria:

- Hydrophytic vegetation
- Hydric soil
- Wetland hydrology

Areas exhibiting the above three wetland characteristics, as well as streams and tributary systems, were considered jurisdictional and were marked in the field with plastic survey flags by PSI personnel in preparation for USACE and appropriate local and state agency verification, if required. Please note that the wetland and waters boundary lines identified in the field are not an official jurisdictional delineation until verified by the USACE and/or the appropriate local and state agencies.

The distribution of distinctive vegetative communities, combined with topographic and hydrologic data, were used to determine if wetlands or streams were present within the study area limits. The subject property and suspect areas were photographed to provide the client, and potentially the USACE, with visual information regarding the wetland and stream characteristics, as necessary.

The specific methods used and the results of the assessment are presented in this report.

Suspect areas within the study area were examined in accordance with the procedures set forth in the 1987 Manual and regional supplement. The upper soil profile was probed, and samples were examined to determine the soil's consistency, color, and moisture content. The soil color, value and chroma, as well as consistency, were used to characterize sampled soils. The soil moisture condition was used to determine the potential saturation or other wetland hydrology characteristics. Random soil probe samples were taken to a depth of approximately 12-18 inches.

Detailed results of the delineation, including specific species of plants, hydrologic indicators and soil characteristics, can be found on the Wetland Determination Data Forms (attached). Two data forms were completed for the assessment. The vicinity of the data points was photographed. The location of the data points are shown on Figure 2.

After the field inspection was completed, the following sources were consulted to prepare the report:

- The List of Hydric Soils (National Resource Conservation Service (NRCS 2007)
- The National List of Plant Species that Occur in Wetlands: 1988 National Summary (Reed)

- USACE National Wetland Plant List – Eastern Mountains and Piedmont Region (USACE, 2022)
- The Soil Survey of Henderson County, NC (online NRCS Web Soil Survey)
- USDA/NRCS PLANTS database (http://plants.usda.gov/)
- FEMA FIRMette National Flood Hazard Map (#3700956900J effective 10/2/2008)

**Hydric Soils & NWI Map**
PSI reviewed soil maps provided by the USDA NRCS for the subject property. Five soils were mapped on the property:

- Bab: Bradson gravelly loam, 2 to 7 percent slopes; non-hydric.
- Co: Codorus loam (arkaqua); frequently flooded; found on floodplains; generally non-hydric (depth to water table 18-24"); however, includes ~5% hydric component (Toxaway, undrained soils).
- EdE: Edneyville (edneytown) fine sandy loam, 15 to 25 percent slopes; non-hydric.
- EwE: Evard soils, 15 to 25 percent slopes; non-hydric.
- HyC: Hayesville loam, 7 to 15 percent slopes; non-hydric.

One partially hydric soil type was mapped on the property by the USDA NRCS. It was located in the central portion of the subject property in the general vicinity of the stream that bisects the property. The soil maps can be found in **Appendix A.**

On-site soils probed by PSI generally matched the USDA NRCS description. The soils identified in the wetland area (WE1) were saturated with moisture and exhibited hydric features (see the attached Wetland Determination Data Forms).

The USFWS National Wetlands Inventory (NWI) map indicates one stream (Brittain Creek) in the central portion of the subject property, in the general vicinity of the stream PSI identified as Stream #1 (ST1). It was identified as R5UBH (Riverine-Unknown Perennial-Unconsolidated Bottom-Permanently Flooded). No wetlands were identified on the NWI map. It should be noted that the NWI map is generated based on historical aerial photography, and not based on ground-truthed investigation by the USFWS. The NWI map is appended as Figure 3.

**Topographical Maps and Aerial Photographs**
Based on historical Google Earth™ imagery (1985-2023), and historical 7.5-minute Series Quadrangle USGS Topographical Maps "Hendersonville, NC 2022", the subject property consisted of partially wooded and partially cleared pasture-land with a single family residence in the southern portion. These documents indicate two stream systems, in the general vicinity of streams identified by PSI as ST1 and Stream #2 (ST2). ST1 is in the central portion of the property, flowing from west to east. ST2 is located along the eastern property boundary, flowing from north to south. The 2022 topographical map indicates that the stream systems are perennial (solid blue lines).

See Appendix A for a Topographical Map and Site Location Map overlain an aerial photograph.

**FEMA Flood Maps**
PSI reviewed the FEMA FIRMette National Flood Hazard Map (#3700956900J effective 10/2/2008) to determine if the subject property is in a flood zone. According to the flood map, northern and southern portions of the subject property lay within Zone X (unshaded), which indicates it falls outside the 0.2-1.0 annual chance flood hazard, a low risk. The central portion of the property, in the general vicinity of ST1, lies within a Zone AE Regulatory

Floodway, a Zone AE Special Flood Hazard Area with Base Flood Elevation, and Zone X (shaded), which indicates 1% Annual Chance Flood Hazard. The FEMA FIRMette map is included in the figures section of the Appendix.

**Hydrologic Conditions**

Hydrology is a dynamic characteristic in wetlands and is often not present during periods of minimal seasonal precipitation. Indirect indicators are used to determine if wetland hydrology such as extended saturation or ponding has been present during the growing season. Examples of indirect hydrology indicators include water staining, flow patterns, buttressing of trees, and moss growth on trees near the ground surface. Water staining in leaves occurs when they are saturated or inundated for extended periods, causing the tannins or brown coloring in the leaves to leach out, leaving a grayish hue to the leaves. Mosses tend to colonize trees in wet, damp wooded areas.

PSI observed evidence of surface water, extended soil saturation, water-stained leaves, drainage patterns, moss trim lines on trees, and other hydrologic indicators within the suspected wetland area ("WE1") on the subject property (see the attached Wetland Determination Data Forms).

**Hydrophytic Vegetation**

The indicator status of each plant species, assigned by the United States Department of the Interior, Fish and Wildlife Service (USFWS), is a measure of how often a species is located in a wetland area. Obligate Wetland (OBL) plant species are found in a wetland >99% of the time. Facultative Wetland (FACW) plant species are found in a wetland 67-99% of the time. Facultative (FAC) plant species are found in a wetland 34-66% of the time. Facultative Upland (FACU) plant species are found in a wetland 1-33% of the time. Obligate Upland (UPL) plant species are found in a wetland <1% of the time. Modifiers ("+" and "-") are used to further modify the indicator status, so that a FAC+ species is more likely to occur in a wetland than a FAC- species.

The tree overstory in the upland areas was comprised of mostly Chestnuk Oak (*Quercus montana*, UPL), Tulip Poplar (*Liriodendron tuipifera*, FACU), Eastern White Pine (*Pinus strobus*, FACU), Southern Magnolia (*Magnolia grandiflora, FACU),* American Holly (*Ilex opaca*, FACU), and Southern Red Oak (*Quercus falcata*, FACU).

The upland thick understory (sapling/shrub stratum) was dominated by Chinese privet (*Ligustrum sinense, FAC*), Common Greenbrier (*Smilax rotundifolia, FAC*), American Holly, flowering dogwood (*Cornus florida*, FACU), Great Laurel (Rhododendron maximum, FAC), blackberry (*Rubus argutus*, FACU), Broomsedge (*Andropogon virginicus*, FACU), and saplings of the above-mentioned tree stratum species.

The upland ground cover (herbaceous stratum) was dominated by English ivy (*Hedera helix, FACU*), Christmas Fern (*Polystichum acrostichoides*, FACU), and all Fescue (*Schedonorus arundinaceus*, FACU).

The wetland area was comprised of Highland Doghobble (*Leucothoe fontanesiana*, FACW), Great Laurel (Rhododendron maximum, FAC), Green-Head Coneflower (*Rudbeckia laciniata*, FACW), and Golden Ragwort – (*Packera aurea*, FACW).

As can be seen above, the upland vegetation was dominated by FACU (facultative upland) designations. The wetland area was dominated by hydrophytic vegetation (FACW). The total estimated cover percentage of each species' indicator status is recorded and multiplied by a constant to determine the total prevalence index. If the sum of the prevalence indices is less than or equal to 3.0, the plot area is within a wetland community. The Prevalence Index Worksheet on the attached Wetland Determination Data Forms indicated that the vegetation observed was not considered to be hydrophytic in the upland areas but was considered hydrophytic in the wetland area.

**WETLAND DATA FORMS**

Two data points were established on the subject property. Data point #1 was advanced with within the low, Wetland 1 area, and Data Point #2 was advanced within the upland area adjoining east of Wetland 1. Routine Wetland Determination Data Forms were completed for these data points. As detailed on the data forms in the Appendix, the following criteria were identified:

| Data Point # | Soil Type | Vegetation Type | Wetland Hydrology | Conclusion |
|---|---|---|---|---|
| 1 | Non-Hydric | Non-Hydrophytic | No | Upland |
| 2 | Hydric | Hydrophytic | Yes | Wetland |

**OBSERVATIONS**

Based on our observations, hydric soils, hydrophytic vegetation, and hydrologic conditions were determined to be present. One wetland and two streams were observed. These three features were identified on the property as described below:

- Stream #1 (ST1) – ST1 entered the property from the western residential property boundary and flows west to east. The USGS topo maps and USFWS NWI maps identify it as “Brittain Creek” a blue-line perennial stream. It exits the eastern boundary of the property into a residential neighborhood. The stream is fed by one tributary stream system, identified by PSI as Stream #2 (ST2) as discussed below. The stream segment on the subject property is approximately 550-linear feet, and flows through a metal culvert under a gravel driveway. The stream is about 15-20 feet wide at the Ordinary High-Water Mark (or the point of wrested vegetation) and is approximately 4-12 inches deep. PSI observed fish in the stream. There was observable water flow, and the stream bed consisted of sand, gravel, cobble, and boulder. PSI observed hydric soils (gleyed soils) within the stream bank. The OHWM of ST1 was flagged with a total of 30 flags (north bank: ST1-1 through ST1-15, south bank: ST1-16 through ST1-30).

- Stream #2 (ST2) – ST2 entered the subject property from the north residential property via two metal culverts under Haywood Road and flows to the south. The USGS topo map identifies it as an unnamed, blue-line perennial stream. The USFWS NWI map does not identify it. It merges with the larger ST2, discussed above. The stream segment on the subject property is approximately 775-linear feet, and flows just east of the dirt driveway. The stream is about 3-5 feet wide at the OHWM and is approximately 1-4 inches deep. PSI observed hydric soils (gleyed soils) within the stream bank. PSI did not observe fish in the stream. There was observable water flow (although slight), and the in the stream bed consisted of mostly sand and gravel with some exposed bedrock. The OHWM of ST2 was flagged with a total of 40 flags (East bank: ST2-1E through ST2-20E, and West bank: ST2-1W through ST2-20W).

- Wetland #1 (WE1) – WE1, a forested wetland, is located in the central portion of the subject property. It lies between a steep slope and ST1. WE1 is hydrologically connected with ST1 via a black corrugated pipe. PSI observed a slight outflow of water from WE1 into ST1 via this pipe. PSI observed hydric soils, hydrophytic vegetation, and hydrologic conditions within this wetland area. It was delineated at the upland/wetland boundary with 34 pink flags. WE1 was determined to be approximately 0.4-acres in size. One data point was established within the wetland. Data forms can be found in the Appendix.

The estimated locations of the delineated streams and wetland are shown in Figure 2. The following table summarizes the waters identified.

**Table 1. Summary of Delineated Waters**

| Name | Size | Notes |
|---|---|---|
| Stream #1 (ST1) | ~550 linear feet | Perennial Stream (Jurisdictional) |
| Stream #2 (ST2) | ~775 linear feet | Intermittent or Perennial Stream (Jurisdictional) |
| Wetland #1 (WE1) | ~0.4-acres | Forested Wetland (Jurisdictional) |

See Appendix A, Figure 2, for an aerial photograph with site observations. See Appendix B for site photographs.

**CONCLUSIONS**

Two stream systems (ST1 and ST2) were identified on the subject property, totaling approximately 1,325-lf in length. PSI determined that both exhibited visual stream flow, with a defined bank/bed structure and distinct OHWM, indicating a relatively permanent flow of water. ST1 is likely perennial, while ST2 is either intermittent or perennial. The streams are hydrologically connected to another downstream jurisdictional water (Mud Creek) which ultimately discharges into the French Broad River, approximately 3.5-miles to the west, a navigable water. Based on this information, the two streams are likely to be considered jurisdictional to the USACE, which regulates both intermittent and perennial streams.

One wetland was observed on the central portion of the property (WE1). It was approximately 0.4-acres. It was hydrologically connected to ST1. WE1 exhibited all three components of a wetland required by the USACE: hydric soils, hydrophytic vegetation, and hydrologic conditions. Since WE1 is hydrologically connected to ST1, a presumed jurisdictional water, it too would be considered jurisdictional to the USACE.

The three jurisdictional WUS would require federal wetlands permit to impact or fill them. Requesting a permit from the federal government (if necessary) automatically triggers the Historic Preservation Act and the Endangered Species Act. Because of this, a cultural resources archeological investigation and an endangered species habitat evaluation may be necessary to be performed on the property in conjunction with an application for a USACE Federal Nationwide or Individual permit. These initial studies may lead to more extensive and more costly surveys regarding specific cultural resources if regulators determine that cultural resources are likely to be found on the property or if the USFWS determines that specific endangered species are likely to inhabit the property. PSI will coordinate with all appropriate parties in the event additional studies beyond those that have already been developed will be required.

Please note that the wetland and streams boundary lines identified in the field are not an official jurisdictional delineation until verified by the USACE and/or the appropriate local and state agencies. These agencies may require that the flags be professionally surveyed prior to their verification.

Permitting can take between 4 and 12 months to acquire from initial permit submittal depending on the permit needed. The above studies would require completion before the federal permit application is acceptable for

submittal. This would likely delay the project and securing the permit requested is never guaranteed.

**WARRANTY**

The information contained in this report is based upon the information furnished by the Client and observations and research provided by PSI. These observations and results are time dependent, are subject to changing site conditions, and revisions to Federal, State and local regulations. The findings are preliminary in nature, and include site observations conducted by qualified person(s).

PSI only warrants the information in this report to be correct at the time of completion of this report. PSI warrants that the findings and conclusions contained herein were accomplished in accordance with the methodologies set forth in the Corps of Engineers Wetland Delineation Manual. These methodologies are described by the manual and represent good commercial and customary practice for conducting a Wetland Assessment of a site for the purpose of identifying recognized wetland conditions. However, these findings and conclusions contain all of the limitations inherent in these methodologies which are referred to in the protocol and some of which are more specifically set forth below.

Regardless of the professional opinion and interpretation of the laws by PSI, the USACE reserves the right to make all final decisions regarding their jurisdiction over any potential wetland. PSI believes that the information obtained from the record reviews and site visits is reliable. However, PSI cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete. The methodologies of this assessment are not intended to produce all-inclusive or comprehensive results, but rather to provide the client with information regarding apparent suspicions of existing and potential wetland conditions relating to the study area.

This report was prepared pursuant to the contract PSI has with Advenir Azora Development, LLC. That contractual relationship included an exchange of information about the subject site that was unique and between PSI and its client and served as the basis upon which this report was prepared. Because of the importance of the communication between PSI and its client, reliance or any use of this report by anyone other than Advenir Azora Development, LLC, for whom it was prepared, is prohibited and therefore not foreseeable to PSI.

Reliance or use by any such third party without explicit authorization in the report does not make said third party a third-party beneficiary to PSI's contract with Advenir Azora Development, LLC. Any such unauthorized reliance on or use of this report, including any of its information or conclusions, will be at third party's risk. For the same reasons, no warranties or representations, expressed or implied in this report, are made to any such third party.

No other warranties are implied or expressed.

**UNIDENTIFIABLE CONDITIONS**

This report is necessarily limited to the conditions observed and to the information available at the time of the work. Due to the nature of the work, there is a possibility that there may exist conditions which could not be identified within the scope of work or which were not apparent at the time of our site work. This report is also limited to information available from the client at the time it was conducted. The report may not represent all conditions at the subject site as it only reflects the information gathered from specific locations.

PSI appreciates the opportunity to have been of service to you. If you have any questions regarding our findings, please do not hesitate to contact us at (770) 424-6200.

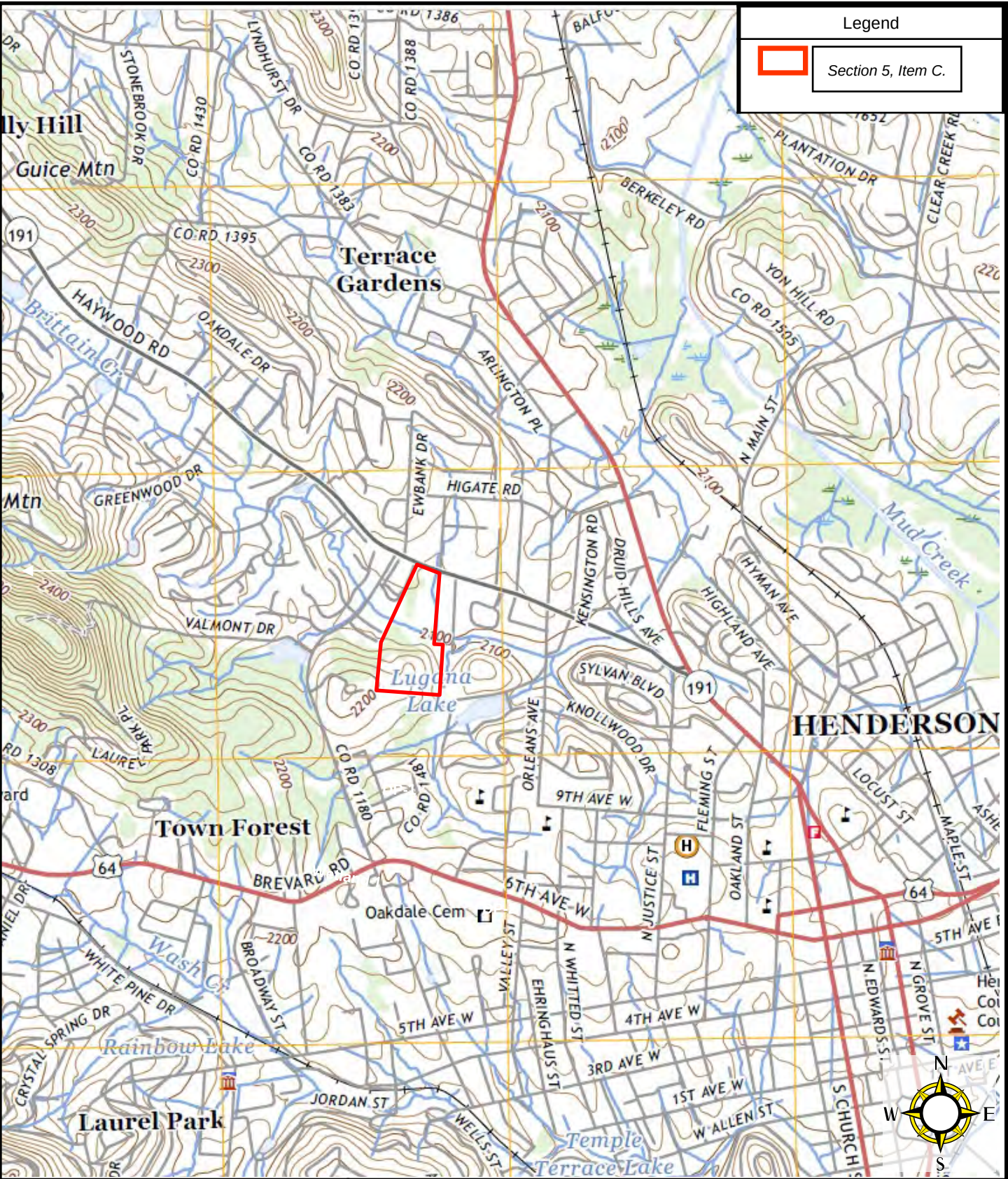
Sincerely,
**PROFESSIONAL SERVICE INDUSTRIES, INC.**

Eric Lowe
Department Manager

Andrew Peiken
Principal Consultant

Enclosures: Appendices

# APPENDIX A - FIGURES




intertek psi
95 Chastain Road, NW
Suite 301
Kennesaw, Georgia
30144
Tel +1 770.424.6200
Fax +1 770.424.0199
intertek.com/building

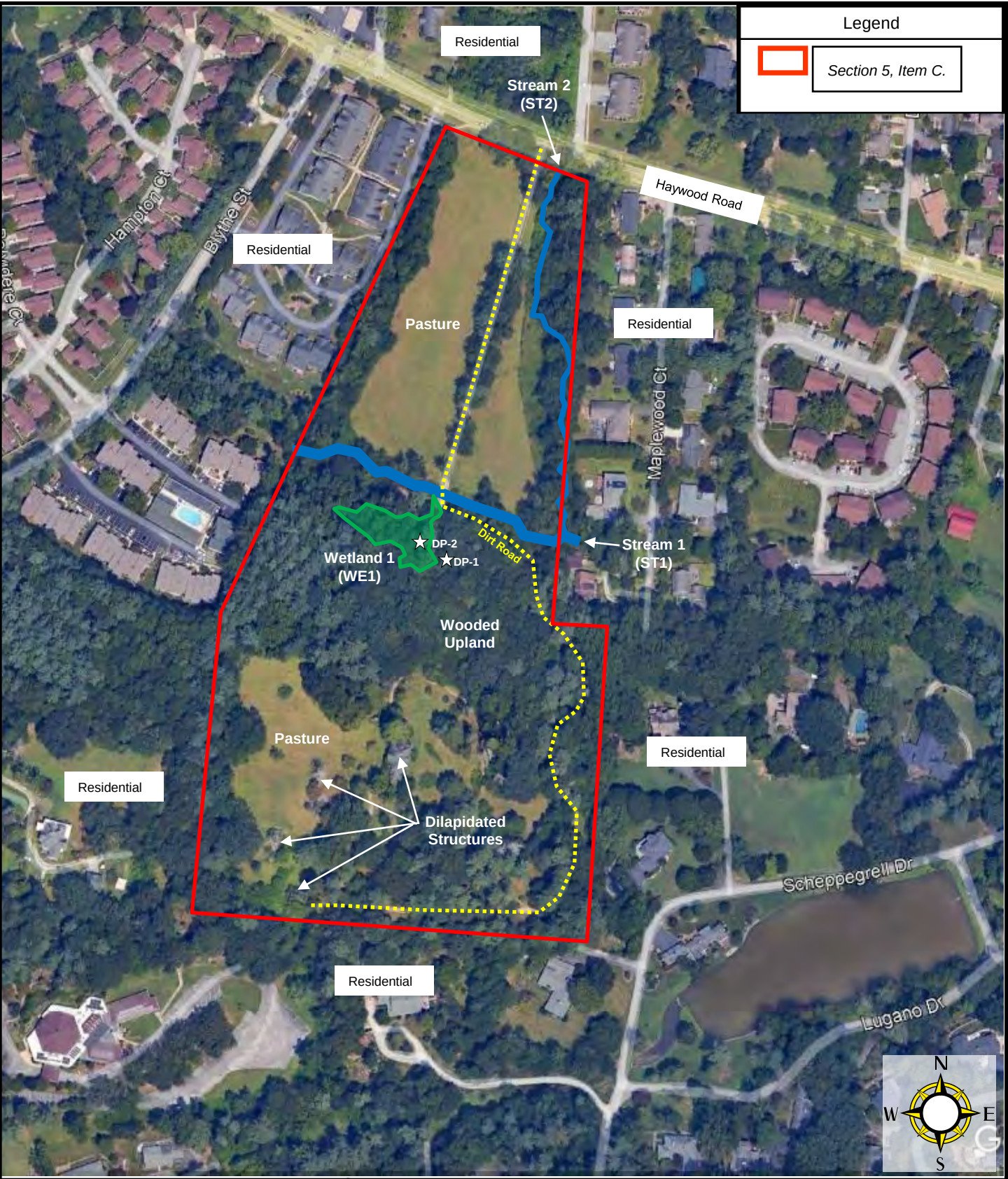
Topographical Map with Study Area

Advenir Azora Development, LLC
1741 Haywood Road
Hendersonville, NC

| Project No.: 05171863-1 | Date: 12/10/2024 |
|---|---|
| Drawn by: ASP<br>Checked by: EL | Source: USGS<br>Hender[illegible], NC<br>7.5-min Topo |



Figure 1




intertek psi
95 Chastain Road, NW
Suite 301
Kennesaw, Georgia
30144
Tel +1 770.424.6200
Fax +1 770.424.0199
intertek.com/building

Aerial Photo with Site Observations

Advenir Azora Development, LLC
1741 Haywood Road
Hendersonville, NC

| | |
|---|---|
| Project No.: 05171863-1 | Date: 1/6/2025 |
| Drawn by: ASP<br>Checked by: EL | Sourc gle |

150

Figure 2

Legend

Section 5, Item C.

U.S. Fish and Wildlife Service
National Wetlands Inventory

1741 Haywood Road, Hendersonville, N

December 10, 2024

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

N
W E
S

intertek psi
95 Chastain Road, NW
Suite 301
Kennesaw, Georgia
30144
Tel +1 770.424.6200
Fax +1 770.424.0199
intertek.com/building

National Wetland Inventory (NWI)

Advenir Azora Development, LLC
1741 Haywood Road
Hendersonville, NC

| Project No.: 05171863-1 | Date: 12/10/2024 |
|---|---|
| Drawn by: ASP<br>Checked by: EL | Sourc WS<br>NW er |



Figure 3

**Classification code: R5UBH**

System **Riverine (R)** : The Riverine System includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts of 0.5 ppt or greater. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.

Subsystem **Unknown Perennial (5)** : This Subsystem designation was created specifically for use when the distinction between lower perennial, upper perennial, and tidal cannot be made from aerial photography and no data is available.

Class **Unconsolidated Bottom (UB)** : Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.

Water Regime **Permanently Flooded (H)** : Water covers the substrate throughout the year in all years.

# National Flood Hazard Layer FIRMette

FEMA

82°28'59"W 35°19'51"N

82°28'22"W 35°19'22"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

*Basemap Imagery Source: USGS National Map 2023*

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND IN UT

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/10/2024 at 4:17 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community id FIRM panel number, and FIRM effective date. Map i unmapped and unmodernized areas cannot be use regulatory purposes.

Soil Map—Henderson County, North Carolina
(1741 Haywood Road)

Map Scale: 1:2,890 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

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

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Henderson County, North Carolina
Survey Area Data: Version 25, Sep 9, 2024

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

Date(s) aerial images were photographed: Apr 1, 2022—May 9, 2022

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

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| BaB | Bradson gravelly loam, 2 to 7 percent slopes | 3.5 | 16.2% |
| Co | Codorus loam (arkaqua) | 5.3 | 25.0% |
| EdE | Edneyville (edneytown) fine sandy loam, 15 to 25 percent slopes | 0.2 | 1.1% |
| EwE | Evard soils, 15 to 25 percent slopes | 4.4 | 20.5% |
| HyC | Hayesville loam, 7 to 15 percent slopes | 8.0 | 37.2% |
| **Totals for Area of Interest** | | **21.4** | **100.0%** |

Hydric Rating by Map Unit—Henderson County, North Carolina
(1741 Haywood Road)

Map Scale: 1:2,890 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

**Soil Rating Lines**
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

**Soil Rating Points**
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

**Water Features**
- Streams and Canals

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

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Henderson County, North Carolina
Survey Area Data: Version 25, Sep 9, 2024

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

Date(s) aerial images were photographed: Apr 1, 2022—May 9, 2022

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

# Hydric Rating by Map Unit

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| BaB | Bradson gravelly loam, 2 to 7 percent slopes | 0 | 3.5 | 16.2% |
| Co | Codorus loam (arkaqua) | 5 | 5.3 | 25.0% |
| EdE | Edneyville (edneytown) fine sandy loam, 15 to 25 percent slopes | 0 | 0.2 | 1.1% |
| EwE | Evard soils, 15 to 25 percent slopes | 0 | 4.4 | 20.5% |
| HyC | Hayesville loam, 7 to 15 percent slopes | 0 | 8.0 | 37.2% |
| **Totals for Area of Interest** | | | **21.4** | **100.0%** |

## Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

## Rating Options

*Aggregation Method:* Percent Present

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Lower

# Henderson County, North Carolina

## Co—Codorus loam (arkaqua)

### Map Unit Setting

*National map unit symbol:* lc18
*Elevation:* 1,200 to 2,000 feet
*Mean annual precipitation:* 45 to 70 inches
*Mean annual air temperature:* 46 to 57 degrees F
*Frost-free period:* 116 to 170 days
*Farmland classification:* Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

### Map Unit Composition

*Arkaqua, frequently flooded, and similar soils:* 90 percent
*Minor components:* 5 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Arkaqua, Frequently Flooded

#### Setting

*Landform:* Flood plains
*Down-slope shape:* Linear
*Across-slope shape:* Linear
*Parent material:* Loamy alluvium

#### Typical profile

*Ap - 0 to 9 inches:* loam
*Bw - 9 to 30 inches:* clay loam
*Bg - 30 to 46 inches:* sandy clay loam
*Cg - 46 to 80 inches:* loam

#### Properties and qualities

*Slope:* 0 to 2 percent
*Depth to restrictive feature:* 44 to 72 inches to strongly contrasting textural stratification
*Drainage class:* Somewhat poorly drained
*Runoff class:* Low
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
*Depth to water table:* About 18 to 24 inches
*Frequency of flooding:* Occasional
*Frequency of ponding:* None
*Available water supply, 0 to 60 inches:* Moderate (about 7.4 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 4w
*Hydrologic Soil Group:* B/D

*Ecological site:* F130BY011WV - Hydric Floodplains
*Hydric soil rating:* No

**Minor Components**

**Toxaway, undrained**
*Percent of map unit:* 5 percent
*Landform:* Depressions on flood plains
*Down-slope shape:* Concave, linear
*Across-slope shape:* Concave
*Hydric soil rating:* Yes

## Data Source Information

Soil Survey Area: Henderson County, North Carolina
Survey Area Data: Version 25, Sep 9, 2024

Building Footprint
Driveway
Sidewalks
Pocket Parks
Retention Ponds
Pool
Setbacks
100/500 Flood Zones
Floodway
Stream
2007 Flood Boundary
Slope 16-25%
Slope 25-60%
Slope 60% or greater
3.23 AC.
BRITTON CREEK HOMEOWNERS ASSOC.
1559/134
N 05°56'18"E 582.14'
N 56°17'53"E 591.80'
BAYWOOD ROAD
CARLTON REID BISHOP
1129/338
SERETA N. BRACKETT
1335/227
STONEY M. MAGE
963/880
ROGER DALE PARHAM AN
JUDITH ELAINE SMITH
REVOCABLE TRUST
1985/565
MITCHELL WAYNE EARL
1185/435
KATHLEEN ANN O'BRIEN
1565/698
JAMES C. MCNAIR
591/153
891.81'
581.46'
240.80'
243.30'
221.95'
Zone X
Zone AE
Floodway
By the Commission

# APPENDIX B – PROPERTY PHOTOGRAPHS

**Photo 1:** Subject property (northern portion) off Haywood Road.

**Photo 2:** Subject property (southern portion, dilapidated structures).

**Photo 3:** Dirt road/driveway.

**Photo 4:** Typical wooded areas

**Photo 5:** ST1 – enters property from the west

**Photo 6:** ST1 – culvert and bridge for driveway

**Photo 7:** ST1 – exits the property at the eastern boundary

**Photo 8:** ST2 entering the property at Haywood Road via 2 metal culverts

**Photo 9:** ST2

**Photo 10:** ST2 stream bottom and stream flow

**Photo 11:** ST2 hydric soils in the bank

**Photo 12:** ST2 discharges into ST1

**Photo 13:** WE1

**Photo 14:** WE1 outflow

**Photo 15:** WE1 outflow into ST1 via black pipe

**Photo 16:** Data Point #1 (DP1) in upland

**Photo 17:** DP1 soil pit

**Photo 18:** DP1 non-hydric soils

**Photo 19:** Data Point #2 (DP2) in wetland.

**Photo 20:** DP2 soil pit (note water in bottom)

**Photo 21:** DP2 hydric soil

# APPENDIX C – WETLAND/UPLAND DETERMINATION DATA FORMS

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: Proposed 20.95-acre Residential Site City/County: Hendersonville/Henderson Sampling Date: 12/19/2024

Applicant/Owner: Advenir Azora Development, LLC State: NC Sampling Point: DP-1

Investigator(s): Andrew Peiken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Sloped Slope (%): 20

Subregion (LRR or MLRA): LRR N Lat: 35 19/40"N Long: 82 28'39"W Datum:

Soil Map Unit Name: Co - Codorus Loam (Arkaqua) NWI classification: Hydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes _____ | No X | **Is the Sampled Area within a Wetland?** Yes _____ No X |
| Hydric Soil Present? | Yes _____ | No X | |
| Wetland Hydrology Present? | Yes _____ | No X | |

Remarks:
Located east of Wetland 1.

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.** Sampling Point: _____

| Tree Stratum (Plot size: 30 ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Chestnuk Oak - Quercus montana | 30 | Y | UPL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 30 = Total Cover | | |
| 50% of total cover: 15 | 20% of total cover: 6 | | |
| **Sapling/Shrub Stratum** (Plot size: 30 ft) | | | |
| 1. Mountain Laurel - Kalmia latifolia | 15 | Y | FACU |
| 2. Great Laurel - Rhododendron maximum | 5 | Y | FAC |
| 3. Eastern Red Cedar - Juniperus virginiana | 5 | Y | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| | 25 = Total Cover | | |
| 50% of total cover: 12.5 | 20% of total cover: 5 | | |
| **Herb Stratum** (Plot size: 15 ft) | | | |
| 1. Christmas Fern - Polystichum acrostichoides | 20 | Y | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| | 20 = Total Cover | | |
| 50% of total cover: 10 | 20% of total cover: 4 | | |
| **Woody Vine Stratum** (Plot size: 15 ft) | | | |
| 1. NA | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | = Total Cover | | |
| 50% of total cover: | 20% of total cover: | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 1 | x 3 = | 3 |
| FACU species | 3 | x 4 = | 12 |
| UPL species | 1 | x 5 = | 5 |
| Column Totals: | 5 (A) | | 20 (B) |

Prevalence Index = B/A = 4

**Hydrophytic Vegetation Indicators:**

N 1 - Rapid Test for Hydrophytic Vegetation

N 2 - Dominance Test is >50%

N 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes _____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

**SOIL**

Sampling P

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 7.5YR 2.5/1 | 100 | NA | | | | Loam | Living roots |
| 2-5 | 7.5YR 4/3 | 100 | NA | | | | Clayey loam | Living roots |
| 5-12 | 7.5YR 5/6 | 100 | NA | | | | Clay | - |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** _____ **No** X

Remarks:

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Proposed 20.95-acre Residential Site City/County: Hendersonville/Henderson Sampling Date: 12/19/2024

Applicant/Owner: Advenir Azora Development, LLC State: NC Sampling Point: DP-2

Investigator(s): Andrew Peiken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR N Lat: 35 19' 40"N Long: 82 28'340"W Datum:

Soil Map Unit Name: Co - Codorus Loam (Arkaqua) NWI classification: Hydric

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes X No | **Is the Sampled Area within a Wetland?** **Yes** X **No** |
| Hydric Soil Present? | Yes X No | |
| Wetland Hydrology Present? | Yes X No | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- [✓] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [✓] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [✓] Sparsely Vegetated Concave Surface (B8)
- [✓] Drainage Patterns (B10)
- [✓] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [✓] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [✓] FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes X No _____ Depth (inches): 1"

Water Table Present? Yes X No _____ Depth (inches): 10"

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): surface

**Wetland Hydrology Present?** **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) – Use scientific names of plants.** Sampling Point: _____

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ft ) | | | |
| 1. NA | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| _____ = Total Cover | | | |
| 50% of total cover: _____ 20% of total cover: _____ | | | |
| **Sapling/Shrub Stratum** (Plot size: 30 ft ) | | | |
| 1. Highland Doghobble - Leucothoe fontanesiana | 50 | Y | FACW |
| 2. Great Laurel - Rhododendron maximum | 15 | Y | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 65 = Total Cover | | | |
| 50% of total cover: 32.5 20% of total cover: 13 | | | |
| **Herb Stratum** (Plot size: 15 ft ) | | | |
| 1. Green-Head Coneflower - Rudbeckia laciniata | 5 | Y | FACW |
| 2. Golden Ragwort - Packera aurea | 5 | Y | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 10 = Total Cover | | | |
| 50% of total cover: 5 20% of total cover: 2 | | | |
| **Woody Vine Stratum** (Plot size: 15 ft ) | | | |
| 1. NA | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| _____ = Total Cover | | | |
| 50% of total cover: _____ 20% of total cover: _____ | | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 3 | x 2 = | 6 |
| FAC species | 1 | x 3 = | 3 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 4 (A) | | 9 (B) |

Prevalence Index = B/A = 2.25

**Hydrophytic Vegetation Indicators:**

Y 1 - Rapid Test for Hydrophytic Vegetation

Y 2 - Dominance Test is >50%

Y 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** **Yes** X **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

**SOIL** Sampling P

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 7.5YR 2.5/2 | 100 | NA | | | | Loam | Saturated |
| 2-12 | 7.5YR 4/1 | 100 | NA | | | | Silty Sand | Saturated |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) **(LRR N)**
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 2 cm Muck (A10) **(MLRA 147)**
- ☐ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

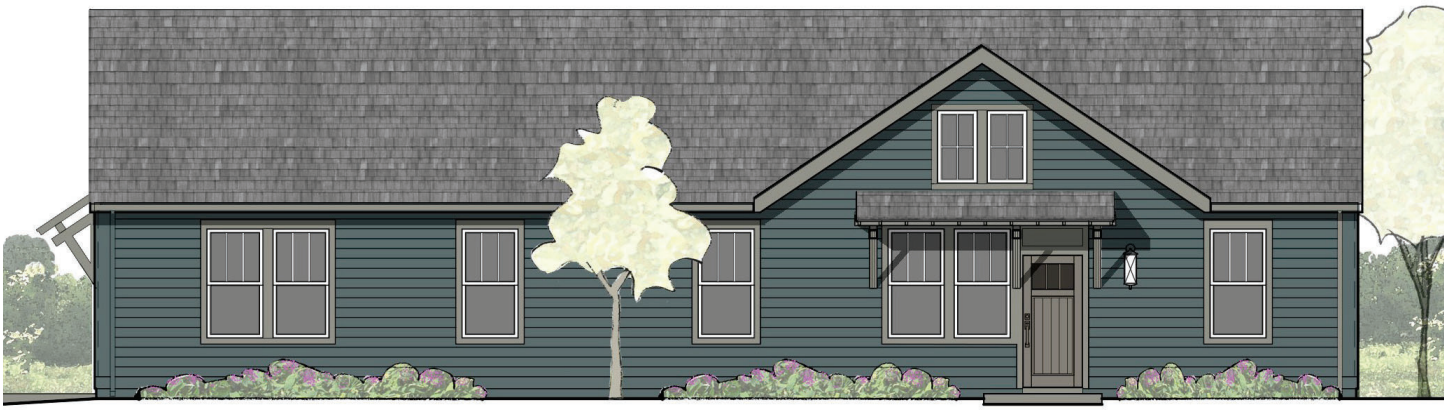
Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** _____

Remarks:

# Cottage Twin - 1/2 Bedroom



ELEVATION

FLOOR PLAN

728 SF 1BR / 1,064 SF 2BR

NEED NOT BE BU

13830 58th St North
#410
Clearwater, FL 33760

Advenir Azora Development

AdvenirDevelopment.com

Date: September 5, 2025

From: Scott Weathers, Development & Construction Manager
Advenir Azora Development

To: Community Development Department
City of Hendersonville, NC
160 6th Avenue East,
Hendersonville, NC, 28792

RE: LEO @ Hendersonville PRDCZ Submittal
Comprehensive Plan Compliance
For +/-21.25 acres at 1741 Haywood Road
Parcel ID: 9569229206

Dear Review Staff:

Advenir Azora Development LLC (AAD) is under contract to purchase +/-21.25 acres at 1741 Haywood Road (subject property). This property is within the City of Hendersonville and currently has a Zoning designation of R-15 and Future Land Use designation of Family Neighborhood Living. Accordingly, AAD requests a review of Comprehensive Plan Compliance.

Goals & Objectives

1. **Goal: Vibrant Neighborhoods**
    a. **Objectives:**
        i. Lively neighborhoods increase local safety.
        ii. Homes, streets, and public spaces are well-maintained.
        iii. The diversity of ages (stage of life), income levels, and range of interests builds the long-term vitality of the community.
        iv. Through design, the places where people live are connected to nearby destinations, amenities, and services.
    b. **Compliance:**
        i. Presently, the site is a vacant lot consisting of several dilapidated and deteriorating structures. Trespassers, which can be confirmed by the graffiti that covers the remaining structures, are reported as a consistent issue by the neighbors that surround the property. Construction of the LEO at Hendersonville community will bring Missing Middle Housing opportunities to new and existing residents through the development of new, craftsman style housing units that not only complement the existing neighborhood fabric but also incorporate CPTED principles of access control, territorial reinforcement, maintenance, natural surveillance and activity support will innately create a safer area.

13830 58th St North
#410
Clearwater, FL 33760

Advenir Azora Development

AdvenirDevelopment.com

ii. LEO at Hendersonville will employee 5-7 full time staff members, which will include a facilities maintenance team that is present on-site during work hours and on-call 24/7, ensuring the entire community is maintained to like-new condition. In addition to the maintenance team, the landscaping will be professionally maintained and manicured by a local landscaper. The highly maintained and manicured appearance of the property is critical to ensure the community is as attractive as possible to its existing residents and future residents, which helps ensure a sufficient level of occupancy is maintained.

iii. LEO at Hendersonville does not have an age restriction and promotes a diverse demographic of people averaging 26% young adults (under 30 years old), 18% Families (30-35 years), and 36% mature adults (55+ years old). It is proven that taking a multigenerational approach to securing a resident base creates a community that people want to live in longer term as it establishes friendships and relationships within our communities.

iv. LEO at Hendersonville incorporates a craftsman style architectural design that aligns with the design seen throughout the older historic homes of the broader Hendersonville. By design, LEO communities are meant to integrate the interior pedestrian network into the existing, exterior pedestrian network, contributing to walkability. It is these "spaces in between" the homes that encourages people to gather with their neighbors in the various park-like settings and natural spaces that will be featured at LEO at Hendersonville. At this location, neighbors would be a 15-minute walk or 10-minute bike ride from local retail and commercial uses, less than half a mile east on Haywood Road. Additionally, LEO will complete the portion of the greenway trail that is expected to connect along Britton Creek through the property.

v. The proposed development offers the exact diverse, Missing Middle Housing options the City leaders have consistently stated they need and included in their Comprehensive Plan to allow for the sustainable, generational growth of the City of Hendersonville. The proposed development supports walkable communities through additional developments, bridges the gap between low-density and higher density areas, offers a more attainable price-point for single-family homes while still being market rate and supports the continued expansion and enhancement of the employment drivers in and around downtown as well as the smaller, "mom and pop" businesses in downtown.

2. **<u>Goal: Abundant Housing Choices</u>**
   a. **Objectives:**
      i. The availability of housing types (options) meets the needs of current and future residents.
      ii. The range of housing types helps maintain the affordability of Hendersonville.
      iii. Housing condition/quality exceeds minimum standards citywide.
   b. **Compliance:**
      i. LEO Living specializes in providing "Missing Middle" housing offerings. The single-family-rental style development is a hybrid between fee simple and multi-family development, providing the "four walls of freedom" of a single-family home with all the benefits of a multi-family community. The community will include 1-Bedroom, 2-Bedroom, and 3-Bedroom homes in various layouts ranging from ~625 SF to ~1,500 SF provide a variety of housing options and styles and offers an abundance of on-site resident amenities including but not limited to resort style pool, fitness center, pickleball court and pocket parks. Providing the alternative form of housing with Class A amenities within walking distance of retail,

13830 58th St North
#410
Clearwater, FL 33760

Advenir Azora Development

AdvenirDevelopment.com

restaurants, and commercial uses will assist in making the broader Hendersonville community more age friendly.

ii. LEO at Hendersonville would provide strategic density which will assist in bolstering the stressed housing supply that is being experienced through the significant population growth, thus providing necessary competition to help stabilize the continued increasing housing costs currently being experienced in Hendersonville.

iii. As a new development built to the most recent IRC and North Carolina codes, all structures with the community will meet or exceed all minimal standards required in Chapter 21 of the Hendersonville Code of Ordinances.

iv. In addition, variations to the unit types, building facades, specific building placement off the internal street network and a highly varied color palate is utilized by the architectural team to create an "intentional randomness" that makes this new, high-quality community feel like an established neighborhood built over time, as soon as it is built.

v. LEO at Hendersonville will help support the abundant businesses moving to the region and the need to attract new employees by offering a diverse range of high quality, highly amenitized housing options for employees relocating to Hendersonville.

3. **<u>Goal: Healthy and Accessible Natural Environment</u>**

   a. **Objectives**

      i. Recreational (active and passive) open spaces are common elements in all forms of development.

      ii. Water quality is improved with the conservation of natural areas that serve as filters and soil stabilizers

      iii. Natural system capacity (floodplains for stormwater; habitats to support flora/fauna; tree canopy for air quality, stormwater management, and microclimate) is maintained.

      iv. Compact development form (infill/redevelopment) minimizes the ecological footprint.

      v. New development respects working landscapes (e.g., orchards, managed forests), minimizing encroachment.

   b. **Compliance:**

      i. The layout of the LEO community provides strategically placed pocket parks that will incorporate active open spaces, which will include pickleball courts and a dog park. In addition, we are building our portion of the proposed greenway trail along Britton creek to allow for a passive open space area and active walking path for community-wide residents and others to enjoy.

      ii. The site plan for the LEO community utilizes compacted densities to avoid the environmentally sensitive areas along the Britton Creek, as well as large swathes of heavily treed spaces along the perimeter of the project. In addition, we have modified our design to utilize the driveway that currently exists on the property to minimize unnecessary impact to the ecologically sensitive area along Britton Creek and maintain vertical construction in areas that are primarily open space in its current state. This will in turn help maintain the natural wetlands, floodplains and soil stabilizers that presently exist on the property.

      iii. Utilizing infill development, we are strategically adding desired density close to downtown Hendersonville, a paramount objective of typical planning and zoning theory, to preserve the outlying agricultural lands in the natural and rural zone planning transects that exist outside the urban and suburban portions of the City.

13830 58th St North
#410
Clearwater, FL 33760

Advenir Azora Development

AdvenirDevelopment.com

iv. As part of our discussions with the existing residents, we have modified our site layout to place only single-story buildings adjacent to the existing one-and two-story single-family homes in the neighborhood to the south and our two-story buildings internal to the site and adjacent to the multifamily buildings to the north of the project. Consistent with smart growth planning principles, this strategy takes into consideration the specific street layout and building placement of the project to ensure that the mass and scale of the buildings being proposed on site offer an appropriate transition between the multifamily neighbors to the north and the single-family neighbors to the south.
v. The development will save a minimum of 30% of the existing tree canopy, while planting a significant amount of new canopy trees along the perimeter and throughout the interior of the development that will replace the 25+% of non-viable trees that currently exist on the property.
vi. The development will incorporate the portion of the proposed Greenway trail that is to connect through the community.
vii. The stormwater retention capacity will exceed the minimum code requirement to help mitigate impacts of heavier than normal rainfall.
viii. The development is maintaining a minimum 25' building setback along the side and rear perimeters of the property exceeding the code minimum, allowing for a better transition between our development and the larger lots to the southeast.
ix. The developments open space exceed 60% of the total area with common open space nearing 20% of the total area.

4. **Goal: Authentic Community Character**
   a. **Objectives:**
      i. Downtown remains the heart of the community and gathering spaces like a central community park, are the focal point of civic activity and celebration.
      ii. Arts and cultural activities enhance the community while conveying its history and heritage.
      iii. City Centers and neighborhoods are preserved through quality development.
      iv. Local businesses and entrepreneurs are supported by the community
   b. **Compliance**:
      i. The development is situated within a 22-min walk or 10-min bike ride from downtown Hendersonville, providing an opportunity for motorless travel from the community to the heart of Hendersonville.
      ii. LEO's incorporation of the Apartment Life program into all of its communities provides monthly opportunities for the neighbors within the community to connect with broader Hendersonville through presentation and activities, centered around introducing broader opportunities in the area.
      iii. The LEO standard incorporates a classic craftsman style architectural design that does not fade with trends, will stand the test of time and seamlessly blends with the architectural style of existing housing stock. In addition, the development will utilize high quality materials, such as but not limited to, LVP flooring, Fiber Cement Siding, 25-year shingles, and energy star appliances. So, the structures will last without the need for constant maintenance/replacement. Coupled with our Class A amenities, that include resort style pool, fitness center, pocket parks and pickle balls court provide for an active community driven lifestyle.

13830 58th St North
#410
Clearwater, FL 33760

Advenir Azora Development

AdvenirDevelopment.com

iv. Providing strategic density, such as LEO at Hendersonville, in close proximity to a city center provides the opportunity for the 15-minute neighborhood, which will encourage the utilization of the abundant live, work and play opportunities that exist in and around downtown Hendersonville. It is also worth noting that the typical residents found within a single-family rental community tend to have more disposable income that will be utilized at the readily available retail, restaurants, and other downtown businesses.

5. **Goal: Safe Streets & Trails**
   a. **Objectives:**
      i. Increased interconnectivity between existing neighborhoods by building out the street network, including retrofits and interconnectivity of new developments. Promotion of this connectivity, even in retrofit cases.
      ii. Access is increased for all residents through the provision of facilities that promote safe walking, transit, automobiles, ride share, and bike in selected areas.
      iii. Design embraces the principles of walkable development.
      iv. An extensive network of pedestrian facilities connects places where people live, work, learn, shop, play, and worship, making active living possible.
   b. **Compliance:**
      **i.** The development is incorporating an interconnected, internal street network with pedestrian walkways on either side, interspersed with pocket parks (both constructed and natural) to encourage the interaction between the residents and natural environment. Furthermore, we have provided two additional roadway stubs to provide connection to future developments adjacent to the property.
      ii. The development embraces the notion of the 15-minutes neighborhood. With retail, grocery, and restaurants less than a 15-minute walk and downtown Hendersonville being a 22-minute walk, and 10-minute bike ride, the placement of this strategic density helps to promote and encourage motorless travel.
      iii. LEO will also incorporate its portion of the greenway trail that has been proposed along Britton Creek, promoting safe and connected pedestrian pathways upon its completion.
6. **Goal: RELIABLE & ACCESSIBLE UTILITY SERVICES**
   a. **Objectives:**
      i. Safe drinking water is a priority of the City.
      ii. Wastewater treatment (service and capacity) adequately serves existing and future development.
      iii. Broadband is expanded to all parts of the city, helping residents and business owners keep pace with an ever-changing world.
      iv. Renewable energy is made possible through public and private investments that work in concert with new development opportunities.
      v. A compact service area (infill, redevelopment) maximizes the utilization of existing infrastructure and feasible service delivery.
   b. **Compliance**:
      i. One of the overlapping objectives of the Comprehensive Plan is the promotion of a compact service area for the universal benefits it offers the community, which is precisely what the LEO at Hendersonville project helps the City achieve. Allowing a slightly greater density on this tract of underutilized land not only ensures a larger

13830 58th St North
#410
Clearwater, FL 33760

Advenir Azora Development

AdvenirDevelopment.com

population will have access to the abundant "live, work and play" opportunities of downtown but it does so by maximizing the fabric of the existing infrastructure and not requiring costly extensions to the outer regions of the City that undeniably promote urban sprawl and an inefficient pattern of growth and use of City resources.

ii. The proposed development would contribute quality and strategic density in close proximity to downtown Hendersonville, allowing for the utilization of the existing infrastructure that is currently available through the center of the property and off Haywood Road.

iii. LEO partners with specialized telecom consultants to ensure 1G internet speeds are available to our residents. With the density provided within the LEO community it helps to incentivize telecom providers to extend service if it is not already available.

7. **Satisfying Work Opportunities**
   a. **Objectives:**
      i. Quality job options increase with the attraction and retention of employers.
      ii. Vocation-/career-building activities serve to educate/train the workforce while bolstering business recruitment efforts.
      iii. The lives of residents are enriched with opportunities to learn, build skills, and grow professionally.
      iv. Community volunteer opportunities help residents to engage, learn, and contracture in a meaningful way to the quality of life
   b. **Compliance:**
      i. Strategically placed, high-quality housing in close proximity to employment centers is paramount in attracting new employers to a region. LEO provides necessary density to the limited housing supply currently available in the Hendersonville area, by providing high quality, market-rate housing alternatives that are attainable to residents of various economic income levels, which helps maintain Hendersonville's attainability.
      ii. LEO's incorporation of the Apartment Life program into all its communities provides monthly opportunities for the neighbors within the community to connect with the broader Hendersonville area, through presentation and activities centered around introducing a variety of opportunities in the area. This program would provide a great opportunity to introduce older and newer residents within LEO community to volunteer and enrichment opportunities throughout the city.

8. **<u>Goal: Welcoming & Inclusive Community</u>**
   a. **Objectives:**
      i. Respectful community dialogue is encouraged and modeled through leaders' behaviors.
      ii. An inviting public realm (i.e., parks, public buildings) reflects the attitudes of city residents and leaders, and helps residents develop a sense of place and attachment to Hendersonville.
      iii. Accessibility exceeds minimum standards of ADA, fostering residents' and visitors sense of belonging.

   **Compliance**:
      iv. Regardless of the community we look to place a development within, our overriding goal is to always be good neighbors and to engrain ourselves into the community. We do not develop a site, then sell it. We are long-term-hold developers who invest in the

13830 58th St North
#410
Clearwater, FL 33760

Advenir Azora Development

AdvenirDevelopment.com

community. We self-manage all our communities, so if there is ever an issue occurring at a property that we do not notice before one of our neighbors does, the same people you see here today are the people you can call to address an issue, if one were to arise.

v. In the majority of the communities we look to bring a development into, we conduct neighborhood meetings whether or not a neighborhood meeting is required. We do this because we sincerely want to hear from our neighbors, because more often than not, we learn a lot from this dialogue, and it helps us shape and revise our developments; similar to what we did here. In addition, while only one neighborhood meeting was required here in Hendersonville, we conducted three neighborhood meetings to make sure we fully understood the neighbor's concerns, and as much as possible, incorporated those into revised plans.

**9. <u>Goal: Accessible & Available Community Uses and Services</u>**

**a. Objectives:**

i. Private development is plentiful, meeting the demands of current and future populations

ii. Hendersonville ranks highly among peer communities by exceeding community expectations for public facilities and services pertaining to sound/efficient government and civic engagement; education; active recreation; health and well-being; and public safety.

b. **Compliance**:

i. The proposed development would contribute quality and strategic density at attainable rental price points to the City's forecasted population growth over the next 20 years. As stated in the Comprehensive Plan, residential growth could increase to ~31,000 new residents over the next 20 years, with 16,000 new homes needed for that forecasted population.

ii. The LEO community will assist in bolstering active recreation by incorporating our portion of the proposed greenway trail along Britton Creek, providing future pedestrian connectivity to all Hendersonville residents.

**10. Resilient Community**

**a. Objectives:**

i. Adaptation to a changing world (e.g., economic technological, social, environmental, etc.) is a priority of City Leaders.

ii. Readiness through adequate preparation to manage external impacts is routinely integrated into the City initiatives.

iii. Recovery from adverse events (e.g., extreme weather event, natural hazards, etc.) from the City's commitment to providing sufficient resources.

**b. Compliance:**

**i.** The LEO community is designing for a stormwater retention capacity that exceeds the minimum standard, helping to minimize impacts to an already strained stormwater system in the event of significant storm events. The addition of a controlled stormwater system will assist in controlling the impacts that are currently experienced on the existing unmaintained property.

**ii.** Utilizing compact design in strategic locations that are primarily open space. LEO at Hendersonville is conserving ~60% open space, exceeding the requirement by ~20%,

13830 58th St North
#410
Clearwater, FL 33760

Advenir Azora Development

AdvenirDevelopment.com

of which includes ~20% common open space, almost double the code requirement allowing us to protect the ecologically sensitive area within the Britton Creek corridor.

iii. As a new development built to the most recent IRC and North Carolina codes, all structures with the community will meet or exceed all minimal standards required in Chapter 21 of the Hendersonville Code of Ordinances.

Issues & Opportunities

1. **Housing**
    a. **Observation:**
        i. Hendersonville is experiencing unprecedented growth, and this is putting strain on the housing supply.
    b. **Compliance:**
        i. The proposed development would contribute ~180 homes - at highly attainable price points when compared to the typical single family for-sale homes offered in this market - to the City's housing supply to support the projected growth previously noted. This strategic density will also bolster alternative housing opportunities helping to stabilize the ever-increasing cost of living currently being experienced in the Hendersonville area.
        ii. Developing housing in close proximity to downtown shortens the drive time and provides the opportunity of motorless travel for residents working and frequenting downtown, when compared to a potential new development that would be built 10 or even 5 miles outside of downtown.

2. **Open Space**
    **a. Observation:**
        **i.** Developing more parks and recreational opportunities to support a healthy population.
    **b. Compliance:**
        **i.** LEO at Hendersonville will coordinate with the City to provide a portion of the proposed Greenway trail through the center of the subject parcel, creating the opportunity for additional recreational activities for the development's residents and public population.
        **ii.** The community will also feature pocket parks, through natural conservation and construction, as well as a fitness center to encourage and activate the residents within the community.

3. **Aging Population**
    a. **Observation:**
        i. A third of Hendersonville's population is 65+
        ii. Making the community more age-friendly is key to supporting the needs of all residents
    **b. Compliance:**
        i. LEO communities have an average mature adult demographic of 36%. With on-site maintenance, Class A amenity spaces, single story units and a sense of community, the proposed project appeals to the needs and values of an aging population.
        ii. LEO also encourages multi-generational living, believing that a diverse community provides the necessary support to encourage loving and community-based living.
        iii. With its diverse unit types and Class-A amenities the LEO single-family rental platform attracts a highly diverse resident profile that is attractive to both a more mature

13830 58th St North
#410
Clearwater, FL 33760

Advenir Azora Development

AdvenirDevelopment.com

demographic and also a young professional demographic, with and without young children, that have matured past apartment living and want to have a single-family style home so they don't have to share walls, have a fenced, private back yard and a front yard/porch.

**Future Land Use Compliance**

The proposed project highlights qualities that describe both the Family Neighborhood Living and Multi-Generational Living future land use designations. Based on the subject properties proximity to surrounding future land use designations, the proposed project presents an ideal opportunity to provide a logical transition from the Family Neighborhood Living designations to the west and the Multigenerational Living designations to the east. With these points in mind, AAD is requesting the subject property be reclassified as MGL, due to the utilization of attached units and the multi-family component of the community. However, our calculated density per Hendersonville code is 5.74du/ac, which sits below the FNL maximum density of 6 units per acre under the PRDCZ zoning classification. The entire foundation of the proposed development is based on sound land use planning and zoning techniques derived from the principles of smart growth planning and form-based code land use regulations to ensure definitive compliance with the City's Comprehensive Plan

1. **Family Neighborhood Living Description:** "This area is characterized by moderate-density residential development. It is comprised of single-family detached homes on lots typically ranging from 1/3 acre to 1/8 acre. Improved open spaces in the form of pocket and neighborhood parks that are interspersed, and greenway trails within are located to connect such parks as well as provide links to trails and walkways in neighboring development. Conservation design, which includes more open space in exchange for smaller minimum lot sizes, may be a preferred approach to residential development, especially if higher gross densities can be achieved."
    a. **Compliance:**
        i. Through the varying sizes and home styles provided within the LEO community, we will be providing 180 homes at a calculated density of 5.7 units/acre.
        ii. The proposed development provides site planning aimed at conserving the natural landscape within the property, while also aligning with the desired moderate density listed in the future land use description.
        iii. The proposed development will provide Open Space in the form of the City's proposed Greenway trail, wildlife corridor preservation, neighborhood pocket parks and a connected pedestrian network, and protected existing tree canopy area.
        iv. The development has a conservation design that uses compact density to preserve the natural environment in the center of the site, above what is required by Code.
        v. The proposed development would provide single-family rental homes at a scale that integrates into the surrounding community and adjacent properties. The specific placement of our unit types has been done to ensure the highest level of compatibility with our adjacent neighbors to the south by only placing single story buildings in close proximity to those residents and placing our two-story units internal to the site and adjacent to our denser multifamily neighbors to the north.

2. **Multi-Generational Living Description:** This area is characterized by mixed residential development and a limited amount of small-scaled neighborhood-serving commercial. It is comprised of a variety of homes,

13830 58th St North
#410
Clearwater, FL 33760

Advenir Azora Development

AdvenirDevelopment.com

mixing detached and attached (e.g., townhomes and duplexes) units with a lesser amount of multi-family units. The combination of housing types are intended to create intergenerational neighborhoods. Improved open spaces in the form of greens, pocket parks, and neighborhood parks are interspersed. Living Lot sizes are similar to those in FNL, but with increased densities. Attached units, typically up to 2.5 stories tall, should incorporate design elements reflecting traditional single-family homes and "missing middle" housing, such as front porches, balconies, stoops, recessed or detached garages, and pitched roofs.

a. **Compliance:**
   i. The proposed development would provide a mix of housing types, including single-family attached cottages, duplexes and townhomes, as well as detached garage bays for use across the site.
   ii. Open space on the proposed development is being provided in a proposed Greenway trail, active and passive, interspersed neighborhood pocket parks (both natural and constructed) and connected pedestrian network.
   iii. The proposed development's craftsmen style architecture and site design reflects the surrounding community's traditional single-family homes with pitched roofs, front porches and stoops, while also providing the City's desire for Missing Middle Housing types. The housing proposed by the LEO development is the very definition of Missing Middle Housing, which is integral to offering a diverse range of housing options but has unfortunately all but disappeared from the built environment.
   iv. The density of the proposed development provides transitioning density and building forms that align with both the Family Neighborhood Living and Multi-Generational Living designations in addition to aligning with the existing communities surrounding the property, with varying densities ranging from 1 home/acre+ to 10.5/homes per acre.

## D. Section 11-1 Standards

**The advisability of amending the text of this Zoning Ordinance or the Official Zoning Map is a matter committed to the legislative discretion of the City Council and is not controlled by any one factor. In determining whether to adopt or disapprove the proposed amendment to the text of this Ordinance or the Official Zoning Map, the City Council shall consider the following factors among others:**

a) **Comprehensive Plan Consistency –** Consistency with the Comprehensive Plan and amendments thereto.

Please see attached document providing detailed breakdown of comprehensive plan consistency.

b) **Compatibility with surrounding uses –** Whether and the extent to which the proposed amendment is compatible with existing and proposed uses surrounding the subject property. (Also, see NCGS 160-601 (d) Down-Zoning)

1. The proposed development provides site planning aimed at conserving the natural landscape within the property, while also aligning with the desired moderate density listed in the future land use description.
2. The proposed development will provide Open Space in the form of the City's proposed Greenway trail, wildlife corridor preservation, neighborhood pocket parks and a connected pedestrian network, and protected existing tree canopy area.
3. The development has a conservation design that uses compact density to preserve the natural environment in the center of the site, above what is required by Code.
4. The proposed development would provide single-family rental homes that integrate into the surrounding community within an underdeveloped site. The specific

c) **Changed Conditions.** Whether and the extent to which there are changed conditions, trends or facts that require an amendment. (Also, see NCGS 160D-601 (d) Down-Zoning)

Current zoning for the property is R-15 with a future land-use designation of Family Neighborhood Living (FNL). We are proposing a rezoning to PRDCZ and future land use adjustment to Multi-Generational Living (MGL).

As our development provides moderate density while modifying our site layout to place only single-story buildings adjacent to the existing one and two-story single family homes to the east and south and 2-story homes to the west, ensures the development mass and scale is compatible with the surrounding communities, while also providing a proper transition between the future land designations of MGL to the east and FNL to the west

**d) Public Interest.** Whether and the extent to which the proposed amendment would result in a logical and orderly development pattern that benefits the surrounding neighborhood, is in the public interest and promotes public heath, safety and general welfare. (Also, see NCGS 160D-601 (d) Down-Zoning)

As shown in the attached document, providing a detailed breakdown of compatibility and compliance to the Hendersonville comprehensive plan. Our development is providing the needed housing for both current and new residents of Hendersonville while preserving the natural environment.

**e) Public Facilities.** Whether and the extent to which adequate public facilities and services such as water supply, wastewater treatment, fire and police protection and transportation are available to support the proposed amendment. (Also, see NCGS 160D-601 (d) Down-Zoning)

Water/Sewer/Electrical utilities are readily available to the site, and the proximity to the city center provides the opportunity for the 15-minute neighborhood helping to reduce the reliance on vehicular transportation.

Advenir Azora Development (AAD) is working to secure a secondary emergency access point through Trinity Presbyterian Church, and should that not be provided, AAD will construct all necessary protection measures as required by the Fire Marshall and code

**f) Effect on Natural Environment.** Whether and the extent to which the proposed amendment would result in significantly adverse impacts on the natural environment including but not limited to water, air, noise, storm water management, streams, vegetation, wetlands and wildlife.

i. The site plan for the LEO community utilizes compacted densities to avoid the environmentally sensitive areas along Britton Creek, as well as large swathes of heavily treed spaces along the perimeter of the project.
ii. Utilizing infill development, we are strategically adding desired density close to downtown Hendersonville, to preserve the agricultural land that surrounds the city typically found in the natural and rural zone planning transects.
iii. As part of our discussions with the existing residents, we have modified our site layout to place only single-story buildings adjacent to the existing one-and two-story single family homes in the neighborhood to the south and our 2 story buildings internal to the site and adjacent to the multifamily buildings to the north of the project

# NORTH CAROLINA
## Department of the Secretary of State

**To all whom these presents shall come, Greetings:**

I, ELAINE F. MARSHALL, Secretary of State of the State of North Carolina, do hereby certify the following and hereto attached to be a true copy of

**APPLICATION FOR CERTIFICATE OF AUTHORITY**

**OF**

**ADVENIR AZORA DEVELOPMENT, LLC**

the original of which was filed in this office on the 10th day of July, 2025.

Scan to verify online.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at the City of Raleigh, this 10th day of July, 2025.

Elaine F. Marshall

**Secretary of State**

*State of North Carolina*
*Department of the Secretary of State*

**SOSID: 3[illegible]**
**Date Filed: 7/10/2[illegible]**
**Elaine F. [illegible]**
**North Carolina Secretary of State**
**C2025 191 00794**

# APPLICATION FOR CERTIFICATE OF AUTHORITY FOR LIMITED LIABILITY COMPANY

Pursuant to §57D-7-03 of the General Statutes of North Carolina, the undersigned limited liability company hereby applies for a Certificate of Authority to transact business in the State of North Carolina, and for that purpose submits the following:

1. The name of the limited liability company is ADVENIR AZORA DEVELOPMENT, LLC;

   and if the limited liability company name is unavailable for use in the State of North Carolina, the name the limited liability company wishes to use is _____.

2. The state or country under whose laws the limited liability company was formed is Delaware.

3. Principal office information: (*Select either a or b.*)

   a. ☒ The limited liability company has a principal office.

   The principal office telephone number: 202-904-5949.

   The street address and county of the principal office of the limited liability company is:

   Number and Street: 17501 Biscayne Blvd., Suite 300

   City: Aventura State: FL Zip Code: 33160 County: Miami-Dade

   The mailing address, ***if different from the street address***, of the principal office of the corporation is:

   Number and Street: _____

   City: _____ State: _____ Zip Code: _____ County: _____

   b. ☐ The limited liability company does not have a principal office.

4. The name of the registered agent in the State of North Carolina is: Corporate Creations Network Inc.

5. The street address and county of the registered agent's office in the State of North Carolina is:

   Number and Street: 15720 Brixham Hill Avenue #300

   City: Charlotte State: NC Zip Code: 28277 County: Mecklenburg

6. The North Carolina mailing address, ***if different from the street address,*** of the registered agent's office in the State of North Carolina is:

   Number and Street: _____

   City: _____ State: NC Zip Code: _____ County: _____

**APPLICATION FOR CERTIFICATE OF AUTHORITY**
**Page 2**

7. The names, titles, and usual business addresses of the current company officials of the limited liability company are:
*(use attachment if necessary) (This document must be signed by a person listed in item 7.)*

| ***Name and Title*** | ***Business Address*** |
|---|---|
| Advenir Azora, LLC, Manager | 17501 Biscayne Blvd., Suite 300, Aventura, FL 33160 |
| | |
| | |
| | |
| | |

8. Attached is a certificate of existence (or document of similar import), duly authenticated by the secretary of state or other official having custody of limited liability company records in the state or country of formation. **The Certificate of Existence must be less than six months old. A photocopy of the certification cannot be accepted.**

9. If the limited liability company is required to use a fictitious name in order to transact business in this State, a copy of the resolution of its managers adopting the fictitious name is attached.

10. (Optional): Please provide a business e-mail address: _____.
The Secretary of State's Office will e-mail the business automatically at the address provided above at no cost when a document is filed. The e-mail provided **will not** be viewable on the website. For more information on why this service is offered, please see the instructions for this document.

11. This application will be effective upon filing, unless a delayed date and/or time is specified: _____.

This the 10th day of July, 20 25

ADVENIR AZORA DEVELOPMENT, LLC
*Name of Limited Liability Company*

Kunning Chen
*Signature of Company Official*

Advenir Azora, LLC, Manager: By Kunning Chen, Special Manager
*Type or Print Name and Title*

Notes:
1. **Filing fee is $250**. This document must be filed with the Secretary of State.

# Delaware

## The First State

*I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "ADVENIR AZORA DEVELOPMENT, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TENTH DAY OF JULY, A.D. 2025.*

*AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "ADVENIR AZORA DEVELOPMENT, LLC" WAS FORMED ON THE EIGHTH DAY OF AUGUST, A.D. 2024.*

*AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN PAID TO DATE.*

C. B. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

4472492 8300

SR# 20253321298

Authentication: 204159789

Date: 07-10-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

City Council:
Barbara G. Volk
Mayor
Lyndsey Simpson
Mayor Pro Tem
Dr. Jennifer Hensley
Melinda Lowrance
Jeffery L. Miller

CITY OF HENDERSONVILLE
The City of Four Seasons
Community Development Department
Planning Division

Officers:
John F. Connet
City Manager
Angela S. Beeker
City Attorney
JILL MURRAY
City Clerk

25-48-CZD package

## WORKSPACE INFORMATION

**Application number**
25-48-CZD

**Category**
Conditional Rezoning

**Workspace state**
Application complete

**Workspace created**
05/15/2025, 4:40:28 PM EDT

**Application submitted**
07/03/2025, 10:18:30 AM EDT

**Assignee**

**Package generation date**
10/02/2025, 2:08:33 PM EDT

## LOCATION INFORMATION

**Address**
1741 HAYWOOD RD, Hendersonville, NC

**Property information**
4687,

## PARTIES

| NAME AND COMPANY | CONTACT DETAILS | ROLES |
|---|---|---|
| Zak Swafford<br>Advenir Azora Development | 13830 58th Street N 410 Clearwater<br>[redacted] | Applicant |
| Jeffrey JUSTUS | 640 CREST RD Flat Rock<br>[redacted] | Property owner |
| | [redacted] | Applicant |
| JUSTUS, JEFFREY | 640 CREST RD FLAT ROCK NC 28731 7731<br>[redacted] | Property owner |

# Conditional Zoning District Petition (CZD)

| Required Information | |
|---|---|
| Scheduled Neighborhood Compatibility Meeting - NCM Date<br>06/30/2025 | NCM Time<br>2:00 PM |
| Transportation Impact Analysis - (if applicable) Required for complete application but not due until 24 calendar days prior to Planning Board Meeting | |

| Information | | |
|---|---|---|
| Type of Development:<br>Residential | Current Zoning<br>R-15 Medium Density Residential | Proposed Zoning:<br>Planned Residential Development Conditional Zoning |
| Total Acerage<br>21.3 | Proposed Building Square Footage:<br>156816.0 sq.ft. | Number of Dwelling Units:<br>180 |
| List of Requested Uses:<br>Residential dwellings, two, three and four-family | | |

# Zoning-Applicant (Developer) Company Information

| Applicant (Developer) Company Information | |
|---|---|
| Authorized Representative Name:<br>Scott Weathers | Company Name (if applicable, check corresponding box below)<br>Advenir Azora Development |

Company Type:

- ☐ Corporation:
- ☑ Limited Liability Company:
- ☐ Trust:
- ☐ Partnership:
- ☐ Other:

If other:

Authorized Representative Title (if applicable - i.e. Member/Manager, President, etc.)
Development & Construction Manager

# Zoning-Property Owner Company Information

**Property Owner Company Information (if different from Applicant)**

Authorized Representative Name:
Jeffrey Justus

Company Name (if applicable, check corresponding box below)

Company Type:

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

If other:

Authorized Representative Title (if applicable - i.e. Member/Manager, President, etc.)

| Project Description | | |
|---|---|---|
| Project Description<br>Advenir Azora Development (AAD) is proposing the Rezoning of parcel 9569229206, located at 1741 Haywood Road, from R-15 Medium Density Residential to Planned Residential Development Conditional Zoning (PRDCZ), while adhering to the description of the current Future Land Use of Family Neighborhood Living. The Build-to-Rent development will consist of 180 single-family 1BR, 2BR, and 3BR attached cottages and townhome units, ranging in size from ~600 SF to ~1500 SF at approximately 8.47du/ac. | | |
| Total Project Area (acres)<br>21.25 | Total Lots/Units<br>180 | Current Zoning District<br>R-15 Medium Density Residential |
| Proposed Zoning District<br>Planned Residential Development Conditional Zoning | Proposed Meeting Date Option 1<br>06/02/2025 | Proposed Meeting Date Option 2<br>06/04/2025 |
| Proposed Meeting Time Option 1<br>1:00 PM | | Proposed Meeting Time Option 2<br>2:00 PM |

# PRE-CONSULTATION

**Application id**
US-NC30720-P-2025-91

**Category**
Conditional Rezoning

**Workspace status**
Application complete

**Requested date and time**
05/27/2025, 3:52:53 PM EDT

**Zoning**
-

**Pre-consultation status**
Completed

## PARTIES

| NAME AND COMPANY | CONTACT DETAILS | ROLES |
|---|---|---|
| Zak Swafford<br>Advenir Azora Development | 13830 58th Street N 410 Clearwater<br>[redacted] | Applicant |
| JUSTUS, JEFFREY | 640 CREST RD FLAT ROCK NC 28731 7731<br>[redacted] | Property owner |

## MEETINGS

| DATE OF THE MEETING | START TIME | END TIME | TOPIC | MEETING NOTES | RESULT |
|---|---|---|---|---|---|
| 06/10/2025 | 9:00 AM | 10:00 AM | Pre-Application Meeting | Staff present-Matt, Tyler and Sam. Topics Discussed- New PRD Standards and how they impact the proposed plans, the need for connectivity to other adjacent underdeveloped parcels, building the main street through the development to public street standards, comprehensive plan consistency and if MGL would be appropriate, mentioned that the site was identified for a potential national registered historic place back in the early 2000s.  | Held |

**CITY OF HENDERSONVILLE**

# AGENDA ITEM SUMMARY
## PLANNING DIVISION

**SUBMITTER:** Sam Hayes

**MEETING DATE:** October 9th, 2025

**AGENDA SECTION:** New Business

**DEPARTMENT:** Community Development

**TITLE OF ITEM:** Administrative Review: Preliminary Plat / Major Subdivision – Signal Hill Townhomes (25-57-SUB) – *Sam Hayes – Planner II*

**SUGGESTED MOTION(S):**

| **For Approval:** | **For Denial:** |
|---|---|
| I move that the Planning Board grant preliminary plat approval based on the requirements of the City of Hendersonville Subdivision Ordinance (with primary consideration of section 2.04 h Major Subdivision), for the Signal Hill Townhomes development subject to the following conditions:<br><br>**[DISCUSS & VOTE]** | I move that the Planning Board deny the application for preliminary plat approval for the Signal Hill Townhomes development because the applicant has failed to demonstrate compliance with the following provisions Subdivision Ordinance:<br><br>**[DISCUSS & VOTE]** |

***SUMMARY:***

*The City of Hendersonville is in receipt of an application for a Major Subdivision [preliminary plat] approval from Travis Fowler with First Victory Construction and Development (applicant).*

*The applicant is proposing to plat 50 single-family attached home lots on the subject property at 0 Signal Hill Road. (PINs 9579-07-6259, -06-7975, -06-5791, -06-8507, -06-8308, -06-8117). The rezoning for this property to R-15 was approved in 2023.*

*The preliminary plat consists of residential home lots, parkland dedication area, common spaces, and rights-of-way. Staff finds that the plat is compliant with the Subdivision Ordinance.*

*Since this development is proposed for fee simple single-family dwellings, the land must be subdivided in order to be built and sold in its current configuration. Due to this, the project must also go through the City's subdivision process. Projects involving the division of land into 8 or more lots and the dedication of a new street meet the criteria of a 'major subdivision' and therefore will be reviewed according to the standards of the Subdivision Ordinance. If approved, final site plans can be approved and the construction of public*

*infrastructure may begin. Once infrastructure is installed, the Final Plat can be recorded.*

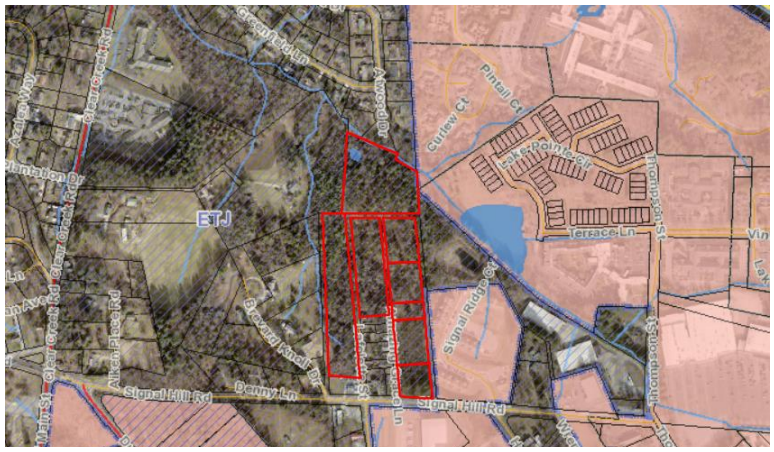
| | |
|---|---|
| **PROJECT/PETITIONER NUMBER:** | Signal Hill Townhomes (25-57-SUB) |
| **PETITIONER NAME:** | - First Victory Construction – Travis Fowler [Applicant]<br>- Herta G Suess Trust [Owner] |
| **ATTACHMENTS:** | 1. Staff Report<br>2. Preliminary Plat<br>3. Application / Owner Signature Addendum |

# PRELIMINARY PLAT REVIEW– SIGNAL HILL TOWNHOMES (25-57-SUB)
# CITY OF HENDERSONVILLE - PLANNING STAFF REPORT

PROJECT SUMMARY ..... 2
PRELIMINARY PLAT AND MAJOR SUBDIVISION GUIDELINES ..... 3
SITE IMAGES ..... 5
SITE IMAGES ..... 6
REZONING REQUEST ..... **Error! Bookmark not defined.**
PROPOSED DEVELOPMENT DETAILS ..... 7
OUTSTANDING PRELIMINARY PLAT COMMENTS ..... 7
STAFF ANALYSIS ..... 7

## PROJECT SUMMARY

- Project Name:
  - Signal Hill Townhomes
- Applicant & Property Owner:
  - First Victory Construction and Development [Applicant]
  - Herta G Suess Trustees [Owners]
- Property Address:
  - 0 Signal Hill Road
- Project Acreage:
  - 13.73 acres
- Parcel Identification (PIN):
  - 9579-07-6259
  - 9579-06-7975
  - 9579-06-5791
  - 9579-06-8507
  - 9579-06-8308
  - 9579-06-8117
- Parcel Zoning:
  - R-15, Medium Density Residential
- Requested Uses:
  - Planned Residential Development (minor)
- Type of Review:
  - **Administrative**- Decisions made in the implementation, administration, or enforcement of the Zoning and Subdivision Ordinances that involve the determination of facts and the application of objective standards set forth in the Zoning and Subdivision Ordinances.




SITE VICINITY MAP

*The City of Hendersonville is in receipt of an application for a Major Subdivision [preliminary plat] approval from Travis Fowler with First Victory Construction and Development (applicant).*

*The applicant is proposing to plat 50 single-family attached home lots on the subject property at 0 Signal Hill Road. (PINs 9579-07-6259, -06-7975, -06-5791, -06-8507, -06-8308, -06-8117). The rezoning for this property to R-15 was approved in 2023.*

*The preliminary plat consists of residential home lots, parkland dedication area, common spaces, and rights-of-way. Staff finds that the plat is compliant with the Subdivision Ordinance.*

*Since this development is proposed for fee simple single-family dwellings, the land must be subdivided in order to be built and sold in its current configuration. Due to this, the project must also go through the City's subdivision process. Projects involving the division of land into 8 or more lots and the dedication of a new street meet the criteria of a 'major subdivision' and therefore will be reviewed according to the standards of the Subdivision Ordinance. If approved, final site plans can be approved and the construction of public infrastructure may begin. Once infrastructure is installed, the Final Plat can be recorded.*

PRELIMINARY PLAT AND MAJOR SUBDIVISION GUIDELINES

**Preliminary Plat Standards of Review**

An application for a Major Subdivision shall be approved, if it complies with the following:

- The Major Subdivision is prepared and sealed by a licensed professional authorized by the state to prepare such documents.
- The Major Subdivision complies with the applicable standards in G.S. 47-30.
- The Major Subdivision includes all required certifications and other pertinent information as required by the city;
- All lots shall be served by a NCDOT-maintained roadway or a right-of-way constructed to and maintained in accordance with NCDOT or city standards, as appropriate.
- The name of the subdivision shall not duplicate or be similar to the name of an existing subdivision in Hendersonville or Henderson County.
- Street names used in the subdivision shall not duplicate or be similar to the names of streets in an existing subdivision in Hendersonville or Henderson County.
- All standards or conditions of any prior applicable permits and development approvals.
- The Major Subdivision complies with all other applicable requirements in this ordinance and the City Code of Ordinances.

**Major Subdivision**

Major Subdivisions include all divisions of land involving 8 or more lots; and/or involve the dedication of a new street or change in existing streets. Major Subdivisions must be reviewed by staff and must undergo an administrative review hearing by the Planning Board.

The Planning Board shall make an administrative decision after the conclusion of a public meeting. The procedure for a public meeting is as follows:

- Public meetings shall comply with the notice requirements of section 2.03.F.
- A public meeting shall be open to the public and shall be conducted in accordance with the planning board's adopted rules of procedure for administrative hearings.
- There is no requirement to allow general public comments during a public meeting,

though it may be allowed by the chair or other presiding officer. However public input and comment shall be allowed as required by applicable laws, the standards of this ordinance, and the Planning Board's adopted rules of procedure.

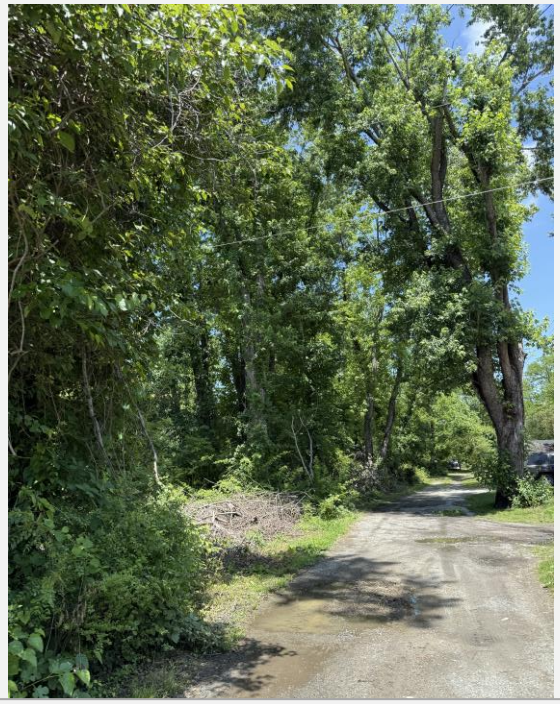
The Planning Board's decision shall be one of the following. All the following decisions are administrative in nature:

- Approval of the Major Subdivision as proposed.
- Approval of a revised Major Subdivision.
- Denial of the Major Subdivision.

The Planning Board shall render a decision on an application for a Major Subdivision within 32 days of the date of the first public meeting to consider the application unless a different review schedule is agreed to by the Planning Board, the City, and the Applicant.

Approval of a required Major Subdivision **shall not** constitute the approval for recording a subdivision with the Register of Deeds, or approval for the conveyance of lots. Approval of a required Major Subdivision authorizes the submittal of street and utility construction plans, and soil erosion and sedimentation control plan.

## SITE IMAGES



*View of Lafolette Street from entrance near Signal Hill Road.*

*View of portion of road that developer received variance for to only have a 30' ROW instead of 45'.*

## SITE IMAGES

*View of Amazing Grace Lane taken from near entrance from Signal Hill Road.*

*View of storage unit facility located south of the subject property across Signal Hill Road.*

PROPOSED DEVELOPMENT DETAILS

- **Units**
  - 50 Single-Family Attached Homes (Townhomes)

- **Proposed Use:**
  - R-15, Medium Density Residential Minor Planned Residential Development (R-15, Minor PRD)

- **Acres/Density**
  - 13.73 acres
  - Proposed density-3.64 units per acre or 50 units.
  - Allowed density (Previous zoning) - 3.75 units an acre or 51 units.
  - Allowed density (New zoning – if passed by City Council on 6/5/25) – 4 units an acre or 54 units.

- **Natural Resource**

  - The property has a natural slope of less than 15.1% which does not trigger any additional steep slop requirements.
  - The site has one stream that runs along the northern boundary of the property.
  - The site does not have any associated floodplains.

- **Streets**
  - All internal streets to the site will be built to public street standards and dedicated to the City for maintenance.
  - The applicant received a variance in 2023 to reduce a portion of the entrance road from the required 45' right of way to 30'.

- **Parking**
  - PRD requires -1 parking space per unit for 1–2-bedroom units and 1.5 parking spaces for 3+ bedroom units. The proposed development will be providing 2 parking spaces for all units (1 in garage, 1 in driveway).

- **Sidewalks**
  - The development shows sidewalks along all internal streets and provides sidewalks on the Signal Hill Road property frontage.
  - Sidewalks are not currently being extended to Signal Hill Drive on the eastern curve of the road. Staff has included a condition to have this issue resolved by final site plan approval.

- **Public Utilities**
  - The site will be served by City of Hendersonville Water and Sewer.
  - Provision of City Utilities requires that the property owner petition to annex.

- **Tree Canopy and Landscaping**
  - The site currently has approximately 531,923 square feet of tree canopy.

- The development is proposing to save 106,385 square feet of that canopy (20%)
- The development is also proposing the preservation of an additional 11.1% of the trees to satisfy the tier two requirements.
- The development is also providing the following landscaping:
  - Common Open Space
  - Open Space
  - Street Trees

## OUTSTANDING PRELIMINARY PLAT COMMENTS

### COMMUNITY DEVELOPMENT

**Site Plan Comments:**

The preliminary plat accompanying this petition meets the standards established by the Subdivision Ordinances with the following exceptions:

- Staff is waiting on the fee-in-lieu request to be submitted before determining if this fully meets the requirements of the subdivision ordinance.

### CITY ENGINEER

**Preliminary Site Plan Comments:**

- None

### WATER / SEWER

**Preliminary Site Plan Comments:**

- None

### FIRE MARSHAL

**Preliminary Site Plan Comments:**

- None

### STORMWATER ADMINISTRATOR

**Preliminary Site Plan Comments:**

- None

### FLOODPLAIN ADMINISTRATOR

**Preliminary Site Plan Comments:**

- None

### PUBLIC WORKS

**Preliminary Site Plan Comments:**

- None

### NCDOT

**Preliminary Site Plan Comments:**

- None

### TRANSPORTATION CONSULTANT

**Preliminary Site Plan Comments:**

- None.

## STAFF ANALYSIS

Subdivision Compliance:

Based on the review by staff, the submitted preliminary plat meets the Subdivision Ordinance standards established for Major Subdivisions (Section 2.04 H) with the exception that staff is waiting on the fee-in-lieu request.

FIND THE LINE
STUDIOS
LANDSCAPE ARCHITECTURE AND PLANNING

# SIGNAL HILL TOWNHOMES

## ZONING COMPLIANCE PLANS

### HENDERSONVILLE, NORTH CAROLINA

~~MARCH 20, 2025~~
~~MAY 15, 2025~~ – per COH comments
JUNE 2, 2025 – Added sidewalk extension

PROPERTY OWNER / DEVELOPER:
FIRST VICTORY INC
542 S. CALDWELL STREET
BREVARD, NC 28712
828.884.7934

PIN NUMBERS: 9579076259; 9579067975; 9579065791;
9579068507; 9579068308; 9579068117

PROPERTY ADDRESS:
99999 SIGNAL HILL ROAD
HENDERSONVILLE, NC

TOTAL SIZE OF PROPERTY:
13.73 ACRES (598,078.8 SF)

ZONING:
R-15 MINOR PRD
ALLOWABLE DENSITY = 3.75 UNITS PER ACRE (51)
PROPOSED DENSITY = 50 SINGLE FAMILY ATTACHED UNITS

SETBACKS:
40' FROM ADJOINING R.O.W.
30' FROM EXTERIOR PROPERTY LINE
10' STRUCTURE FROM EDGE OF PAVEMENT
35' STRUCTURE FROM CENTERLINE OF ROAD
6' OFFSET FROM STRUCTURE TO LOT LINE

OPEN SPACE:
60% OF TOTAL LOT REQUIRED = 358,848 SF
TOTAL OPEN SPACE PROPOSED = 397,938 SF (66.5%)

TOTAL FOOTPRINT ALLOWED: 20% (119,616 SF)
TOTAL FOOTPRINT PROPOSED = 12% (71,500 SF)

COMMON OPEN SPACE:
10% OF TOTAL LOT REQUIRED = 59,808 SF
TOTAL COMMON OPEN SPACE PROPOSED = 67,580 SF (11.3%)

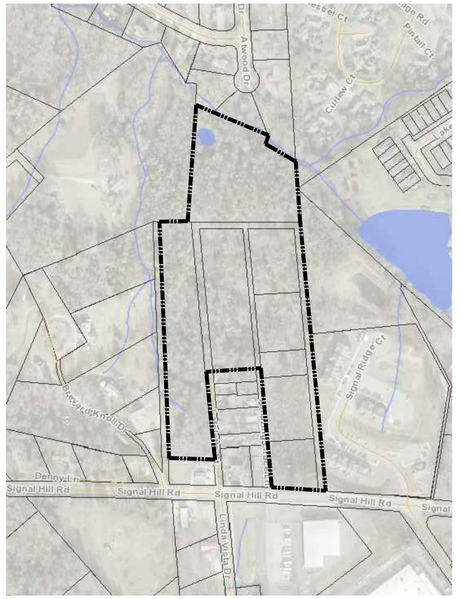
PARKLAND DEDICATION:
500 SF PER UNIT REQUIRED = 25,000 SF
PARKLAND DEDICATION PROPOSED AS PART OF GREENWAY
EASEMENT = 27,210 SF

GREENWAY DEDICATION:
50' WIDE EASEMENT WITH 10' PATH REQUIRED (OR FEE IN LIEU)
*FEE IN LIEU PROPOSED*

PARKING REQUIREMENTS:
1 PARKING SPACE PER 1 OR 2 BEDROOM UNIT REQUIRED = 50 SPACES MIN.
TOTAL PROPOSED PARKING: 100 SPACES (1 IN GARAGE, 1 IN DRIVEWAY)

CONTACT:
ROB DULL, PLA
362 DEPOT STREET, SUITE 107
ASHEVILLE, NC
828.674.5592
ROB@FINDTHELINESTUDIOS.COM

## VICINITY MAP




## DRAWING INDEX

| SHEET # | SHEET TITLE |
|---|---|
| L-100 | SITE ZONING COMPLIANCE PLAN |
| L-200 | LANDSCAPE COMPLIANCE PLAN |
| L-201 | LANDSCAPE NOTES AND DETAILS |
| L-400 | TREE CANOPY PROTECTION PLAN |

FIND THE LINE
STUDIOS
LANDSCAPE ARCHITECTURE AND PLANNING

CONSULTANTS

NORTH CAROLINA
REGISTERED LANDSCAPE ARCHITECT
No. 1585
ROBERT J DULL

MINIMUM 50' WIDE GREENWAY EASEMENT (27,210 SF)
*ALSO COUNTS FOR PARKLAND DEDICATION
*PROPOSED FEE-IN-LIEU*

COMMON OPEN SPACE (67,580 SF)
WITH TRAILS

OPEN SPACE (330,358 SF)

35' SETBACK FROM CENTERLINE OF ROAD (TYP.)

PERIMETER SETBACKS (TYP.)
*30 FROM EXTERNAL PROPERY LINE
*40' FROM ADJACENT R.O.W.

TOTAL AREA OF SURVEY
13.73 ACRES
(EXCLUDING RIGHTS OF WAY)

COMMUNAL MAILBOX WITH PARKING AND LOADING SPACES

SIGNAL HILL ROAD SR 1508
MAINTAINED BY NCDOT SUBJECT TO 60' R/W PER NCDOT OFFICIAL (ASPHALT)

LINDA VISTA DR
SR 1521
MAINTAINED BY NCDOT (ASPHALT)

# TOWNHOMES

SIGNAL HILL ROAD
HENDERSONVILLE, NC

PREPARED FOR:
FIRST VICTORY INC

ZONING COMPLIANCE PLAN

PLAN SET

| # | DATE | DESCRIPTION |
|---|---|---|
| 1 | 3.20.25 | ZONING COMPLIANCE |
| 2 | 5.15.25 | ZONING COMPLIANCE |
| 3 | 6.2.25 | ZONING COMPLIANCE |

SHEET NO.
L-100

0 30 60 120 180 240'

THIS DOCUMENT IS THE PROPERTY OF FIND THE LINE STUDIOS, PLLC. IT IS TO BE USED FOR THIS SPECIFIC PROJECT ONLY AND IS NOT TO BE USED OTHERWISE WITHOUT OBTAINING WRITTEN CONSENT FROM FIND THE LINE STUDIOS, PLLC.

VEHICLE USE AREA (VUA): NOT APPLICABLE

PLANTING STRIPS (PS): NOT APPLICABLE

STREET TREES (ST):
1 TREE PER 35 LF OF PROPERTY ABUTTING A STREET
TOTAL LF: 3,268 LF (INTERNAL ROAD) & 166 LF (SIGNAL HILL ROAD)
TREES REQUIRED: 98 (69 LARGE MATURING TREES / 29 MEDIUM MATURING)
TREES PROVIDED: 75 LARGE-MATURING TREES / 42 MEDIUM MATURING TREE

COMMON SPACE TREE PLANTINGS (CS):
1 TREE AND 5 SHRUBS PER 1,200 SF
TOTAL COMMON SPACE PROVIDED: 59,808 SF
TOTAL TREE PLANTINGS REQUIRED: 50 (70% LARGE MATURING SPECIES)
TOTAL TREE PLANTINGS PROPOSED: 37 LARGE / 15 MEDIUM
TOTAL SHRUB PLANTINGS REQUIRED: 250
TOTAL SHRUB PLANTINGS PROVIDED: 250

OPEN SPACE LANDSCAPING (OS):
1 TREE AND 5 SHRUBS PER 4,000 SF
TOTAL OPEN SPACE PROVIDED: 358,848 SF
TOTAL TREE PLANTINGS REQUIRED: 90
TOTAL TREE PLANTINGS PROPOSED: 91
TOTAL SHRUB PLANTINGS REQUIRED: 450
TOTAL SHRUB PLANTINGS PROVIDED: 485

LANDSCAPE BUFFER (LB):
TYPE A 8' REQUIRED
TOTAL TREES REQUIRED: 6
TOTAL TREES PROVIDED: 6
TOTAL EVG SHRUBS REQUIRED: 45
TOTAL EVG SHRUBS PROVIDED: 46
TOTAL FLW SHRUBS REQUIRED: 59
TOTAL FLW SHRUBS PROVIDED: 59

(57) Round-Lobed Sweet Gum (OS)
(OS/CS)(61) Swamp White Oak
(CS) (10) Fastigiate Maidenhair Tree
(CS) (15) Tupelo
(70) Village Green Japanese Zelkova (ST)
(42) Fort McNair Red Horsechestnut (ST)
(5) Swamp White Oak (ST)
(6) Legacy Sugar Maple (LB)
(46) Catawba Rhododendron (LB)
(59) Little Henry® Sweetspire (LB)
(CS)(125) Dwarf Fothergilla
(CS) (125) Arrowwood Viburnum
(OS)(150) Bottlebrush Buckeye
(OS)(185) Spicebush
(OS)(150) Common Witch Hazel

TOTAL AREA OF SURVEY
13.73 ACRES
(EXCLUDING RIGHTS OF WAY)

SIGNAL HILL ROAD SR 1508
MAINTAINED BY NCDOT SUBJECT TO 60' R/W PER NCDOT OFFICIAL (ASPHALT)

LINDA VISTA DR
SR 1521
MAINTAINED BY NCDOT (ASPHALT)

OVERLAPPING EASEMENTS

STREAMBANK MAINTENANCE EASEMENT PER PB 2018 SL 11488, AREA F DB 3284 PG 367 & DB 3273 PG 78

30' SEWER EASEMENT PER DB 838 PG 434

CSD CONTROL POINT #5 REBAR
NC GRID COORDINATES
N: 969,147.54 NAD 83/11
E: 970,567.47 NAD 83/11
-LOCALIZED POINT-

NC GRID COORDINATES
N: 969,178.67 NAD 83/11
E: 970,375.72 NAD 83/11

PLANTING LEGEND
ST = STREET TREE REQUIREMENT
CS = COMMON SPACE REQUIREMENT
OS = OPEN SPACE REQUIREMENT
LB = LANDSCAPE BUFFER REQUIREMENT

# OF PLANTS
3 — Plant Description
Large Deciduous Tree (ST)
ZONING USE ABBREVIATION
(SEE LEGEND)

0 30 60 120 180 240'

FIND THE LINE STUDIOS
LANDSCAPE ARCHITECTURE AND PLANNING

CONSULTANTS

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT
No. 1585
ROBERT J DULL

# SIGNAL HILL TOWNHOMES

SIGNAL HILL ROAD
HENDERSONVILLE, NC

PREPARED FOR:
FIRST VICTORY INC

LANDSCAPE COMPLIANCE PLAN

PLAN SET

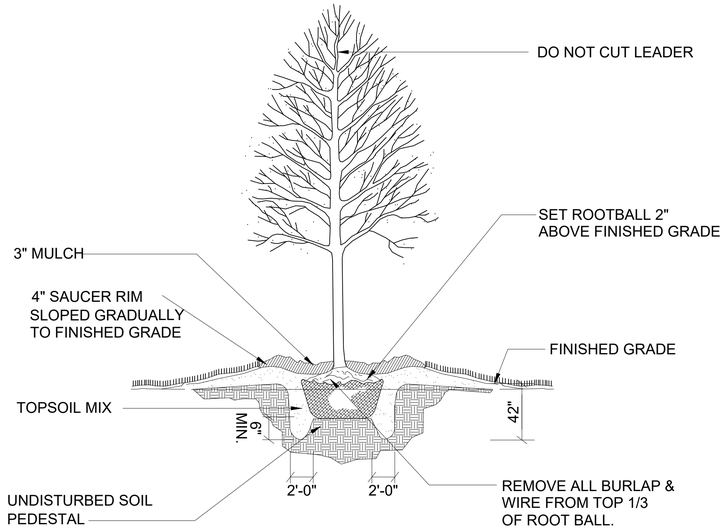
| # | DATE | DESCRIPTION |
|---|---|---|
| 1 | 3.20.25 | LS COMPLIANCE |
| 2 | 5.15.25 | LS COMPLIANCE |
| 3 | 6.2.25 | LS COMPLIANCE |

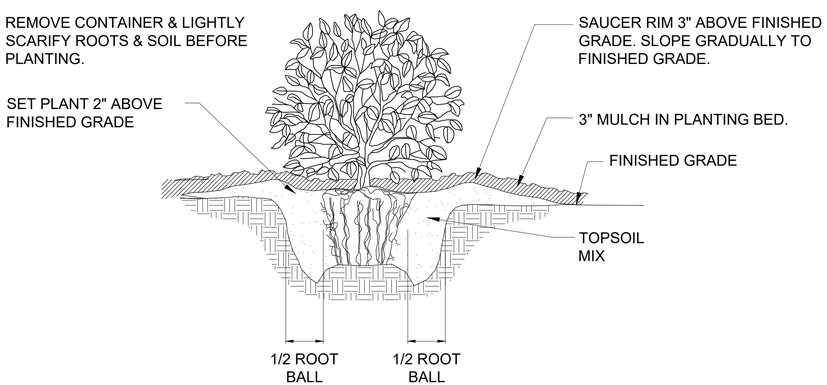
SHEET NO.
L-200

THIS DOCUMENT IS THE PROPERTY OF FIND THE LINE STUDIOS, PLLC. IT IS TO BE USED FOR THIS SPECIFIC PROJECT ONLY AND IS NOT TO BE USED OTHERWISE WITHOUT OBTAINING WRITTEN CONSENT FROM FIND THE LINE STUDIOS, PLLC.

# PLANT SCHEDULE

| SYMBOL | CODE | BOTANICAL / COMMON NAME | SIZE | CONTAINER | QTY | DETAIL | REMARKS |
|---|---|---|---|---|---|---|---|
| **TREES** | | | | | | | |
| | ACE LEG | Acer saccharum 'Legacy' / Legacy Sugar Maple | 3" Cal. | B&B | 6 | | |
| | AES FOR | Aesculus x carnea 'Fort McNair' / Fort McNair Red Horsechestnut | 3" Cal. | B&B | 42 | | |
| | GIN FAS | Ginkgo biloba 'Fastigiata' / Fastigiate Maidenhair Tree | 3" Cal. | B&B | 10 | | |
| | LIQ RO3 | Liquidambar styraciflua 'Rotundiloba' / Round-Lobed Sweet Gum | 2" Cal. | B&B | 57 | | |
| | NYS SYL | Nyssa sylvatica / Tupelo | 2" Cal. | B&B | 15 | | |
| | QUE NU2 | Quercus bicolor / Swamp White Oak | 3" Cal. | B&B | 66 | | |
| | ZEL VIL | Zelkova serrata 'Village Green' / Village Green Japanese Zelkova | 2" Cal. | B&B | 70 | | |
| **SHRUBS** | | | | | | | |
| | AES PVF | Aesculus parviflora / Bottlebrush Buckeye | 3 gal, 18-24" ht. | Pot | 150 | | |
| | FOT GAR | Fothergilla gardenii / Dwarf Fothergilla | 3 gal. | | 125 | | |
| | HAM VIR | Hamamelis virginiana / Common Witch Hazel | 3 gal, 18-24" ht. | Pot | 150 | | |
| | ITE SPR | Itea virginica 'Sprich' / Little Henry® Sweetspire | 3 gal, 18-24" ht. | Container | 59 | | |
| | LIN BEN | Lindera benzoin / Spicebush | 3 gal, 18-24" ht. | Pot | 185 | | |
| | RHO AN2 | Rhododendron catawbiense 'Anah Kruschke' / Catawba Rhododendron | 3 gal, 18-24" ht. | Container | 46 | | |
| | VIB DEN | Viburnum dentatum 'Arrowwood' / Arrowwood Viburnum | 3 gal. | | 125 | | |




## LANDSCAPE NOTES:

1. PROCEED WITH AND COMPLETE LANDSCAPE WORK AS RAPIDLY AS PORTIONS OF SITE BECOME AVAILABLE, WORKING WITHIN SEASONAL LIMITATIONS FOR EACH KIND OF LANDSCAPE WORK REQUIRED.

2. CONTRACTOR SHALL GUARANTEE ALL PLANTINGS FOR ONE YEAR FROM COMPLETION OF THE WORK. REPLACEMENT PLANTS AND LABOR SHALL BE PROVIDED AT THE CONTRACTOR'S EXPENSE.

3. DETERMINE LOCATION OF UNDERGROUND UTILITIES AND IRRIGATION OR DRAINAGE PIPING AND PERFORM WORK IN A MANNER WHICH WILL AVOID POSSIBLE DAMAGE. HAND EXCAVATE, AS REQUIRED. ANY DAMAGE TO UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S COST.

4. PROVIDE TREES, SHRUBS AND PLANTS OF QUANTITY, SIZE, GENUS, SPECIES AND VARIETY SHOWN AND SCHEDULE FOR LANDSCAPE WORK AND COMPLYING WITH RECOMMENDATIONS AND REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK". PROVIDE HEALTHY, VIGOROUS STOCK, GROWN IN RECOGNIZED NURSERY IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE . LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL, INCLUDING POOR BRANCHING STRUCTURE OR DAMAGED TRUNKS.

5. REPORT ANY POORLY DRAINED SOILS OR ANY DRAINAGE PROBLEMS TO LANDSCAPE ARCHITECT IMMEDIATELY. FAILURE TO REPORT SUCH CONDITIONS WILL RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR CORRECTING THE PROBLEM AND REPLACING DAMAGED OR LOST PLANTS.

6. BED PREPARATION:
REMOVE ALL DEBRIS, BRUSH, STUMPS, ROCKS, AND CONSTRUCTION TRASH.
SPRAY WEEDS WITH GLYPHOSATE TWO WEEKS BEFORE PLANTING. WHEN SOIL IS DRY, TILL EXISTING CLAY TO A DEPTH OF 8" AND RAKE OUT ALL CLODS AND DEBRIS. SPREAD TRIPLE SUPER PHOSPHATE AT RATE OF 5 LBS/1000 SF OR 1LB/100SF. SPREAD 3" OF SOIL MIX (SEE #7 BELOW). TILL MIX THOROUGHLY INTO NATIVE SOIL AND RAKE SMOOTH. WHERE SLOPES ARE TOO STEEP TO TILL, PLANT HOLE BY HOLE, DIGGING SOIL AMENDMENTS THOROUGHLY INTO NATIVE SOIL, AND DIGGING HOLES A MINIMUM OF 2 X THE SIZE OF ROOTBALL.

SOIL MIX IS A 60/40 BLEND OF WHICH 60% IS COMPOST AND 40% IS BLACK SCREENED TOPSOIL. ASHEVILLE MULCH YARD'S AEB MIX IS AN ACCEPTABLE SUBSTITUTE FOR COMPOST. LA TO APPROVE ANY SUBS. MUST BE CERTIFIED WEED FREE AND BLACK, WELL-ROTTED WITH NO CLUMPS OF PARTIALLY DECOMPOSED LEAVES.

7. PLANT AND WATER THOROUGHLY. CONFIRM THAT PERENNIAL AND GROUNDCOVER ROOT BALLS WILL BE COVERED WHEN SOIL HAS SETTLED AFTER WATERING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO RETURN TO THE SITE AND COVER WITH COMPOST ANY ROOT BALLS THAT ARE EXPOSED 1" OR MORE ABOVE GRADE DUE TO SETTLING OR FREEZE/THAW.

8. B&B TREES CAN BE PLANTED IN NATIVE SOIL, UNLESS THAT SOIL IS COMPACTED CONSTRUCTION CLAY( IF SO, USE40% NATIVE SOIL AND 60% SOIL MIX AS BACKFILL). DO NOT USE MUDDY SOIL FOR BACKFILLING.

9. INSTALLATION OF PLANT MATERIAL BELOW EXISTING TREES SHALL BE DONE WITHOUT TILLING TO PROTECT THE EXISTING ROOT STRUCTURES. HOLES FOR PLANT MATERIAL IN THESE AREAS SHALL BE DUG BY HAND. HAND DUG HOLES FOR SHRUBS AND CONTAINER TREES SHALL RECEIVE 60% SOIL MIX AS BACKFILL.

10. INSTALLATION OF PERENNIALS AND GROUND COVERS UNDER EXISTING TREES - BUILD UP SOIL (MAX HEIGHT 3") USING SOIL MIX AND SPREAD PLANT ROOTS OUT FOR SHALLOWER PLANTING.

11. MULCH: FOR TREES AND SHRUBS, MULCH SHALL BE 2" DOUBLE GROUND PINE, FREE FROM DELETERIOUS MATERIALS. PERENNIALS, GRASSES AND GROUND COVERS SHALL BE MULCHED WITH 2" ASHEVILLE MULCH YARDS AEB OR SIMILAR COMPOST.

FIND THE LINE STUDIOS
LANDSCAPE ARCHITECTURE AND PLANNING

CONSULTANTS

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. 1585 ROBERT J DULL

SIGNAL HILL TOWNHOMES
SIGNAL HILL ROAD
HENDERSONVILLE, NC

PREPARED FOR:
FIRST VICTORY INC

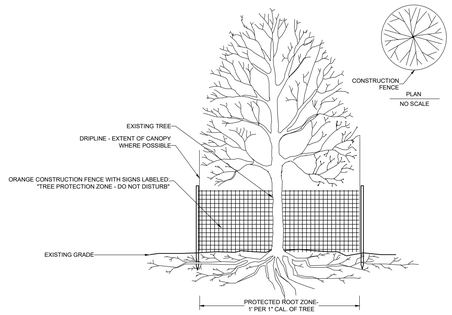
LANDSCAPE COMPLIANCE NOTES

PLAN SET

| # | DATE | DESCRIPTION |
|---|---|---|
| 1 | 3.20.25 | LS NOTES |
| 2 | 5.15.25 | LS NOTES |

SHEET NO.
L-201

THIS DOCUMENT IS THE PROPERTY OF FIND THE LINE STUDIOS, PLLC. IT IS TO BE USED FOR THIS SPECIFIC PROJECT ONLY AND IS NOT TO BE USED OTHERWISE WITHOUT OBTAINING WRITTEN CONSENT FROM FIND THE LINE STUDIOS, PLLC.




1 TREE PROTECTION
NTS

| TREE CANOPY PROTECTION DATA | | | |
|---|---|---|---|
| TOTAL LAND AREA: 553,647.6 SF (12.71 AC) | | | |
| EXISTING TREE CANOPY (FROM GIS TREE CANOPY MAP) 96.1 % (531,923 SF) | | | |
| TIER ONE CANOPY REQUIRED 20 % (106,385 sf) | TIER ONE CANOPY PROVIDED 20 % (106,385 SF) | | |
| TIER TWO CANOPY REQUIRED | TIER TWO PRESERVED | TIER TWO PLANTED | TIER TWO PAYMENT-IN-LIEU |
| 53,192 sf ( 10 %) | 59,052 sf (11.1%) | 0 sf ( 0 %) | 0 sf ( 0 %) |
| TIER ONE + TIER TWO TOTAL CANOPY PRESERVED 31.1 % (165,437 SF) | | | |
| NOTE: AREAS DESIGNATED AS TREE CANOPY PROTECTION AREAS SHALL REMAIN AS SUCH IN PERPETUITY. TREE REMOVAL SHALL BE PROHIBITED IN THESE AREAS UNLESS OTHERWISE PERMITTED. | | | |

0 30 60 120 180 240'

FIND THE LINE STUDIOS
LANDSCAPE ARCHITECTURE AND PLANNING

CONSULTANTS

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT No. 1565 ROBERT J DULL

# TOWNHOMES
## SIGNAL HILL ROAD HENDERSONVILLE, NC
PREPARED FOR: FIRST VICTORY INC
## TREE CANOPY PROTECTION PLAN

PLAN SET

| # | DATE | DESCRIPTION |
|---|---|---|
| 1 | 3.20.25 | TREE CANOPY PLAN |
| 2 | 5.15.25 | TREE CANOPY PLAN |
| 3 | 6.2.25 | TREE CANOPY PLAN |

SHEET NO.
L-400

THIS DOCUMENT IS THE PROPERTY OF FIND THE LINE STUDIOS, PLLC. IT IS TO BE USED FOR THIS SPECIFIC PROJECT ONLY AND IS NOT TO BE USED OTHERWISE WITHOUT OBTAINING WRITTEN CONSENT FROM FIND THE LINE STUDIOS, PLLC.

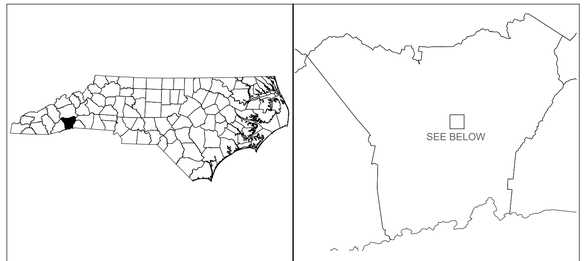
# CONSTRUCTION PLANS

## *FOR*

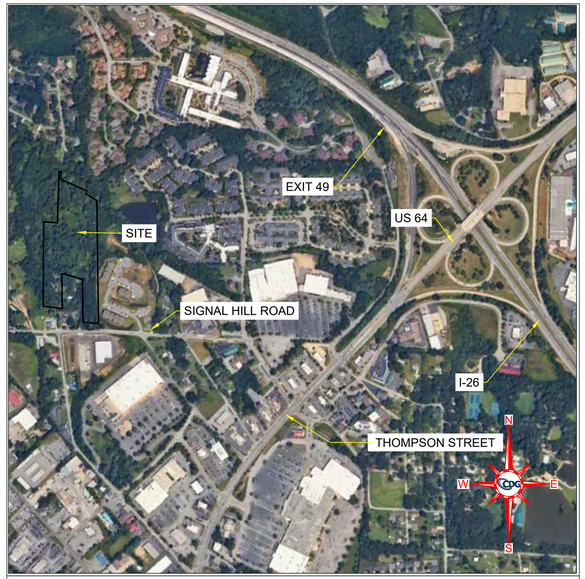
# *SIGNAL HILL*

## *HENDERSONVILLE, NORTH CAROLINA*

| Sheet List Table | |
|---|---|
| Sheet Number | Sheet Title |
| COVER | COVER SHEET |
| C-100 | EXISTING CONDITIONS PLAN |
| C-101 | SITE PLAN |
| C-102 | PRELIMINARY PLAT |
| C-103 | PARCEL TABLES |
| C-104 | ROAD PLAN & PROFILE 0+00 - 11+00 |
| C-105 | ROAD PLAN & PROFILE 11+00 - 21+93 |
| COVER | COVER SHEET - ENCROACHMENT |
| CE-100 | NC ENCROACHMENT PLAN & PROFILE |
| CE-101 | ROADWAY PLAN |
| CE-102 | STRIPING PLAN |
| CE-103 | STRIPING DETAILS |
| CE-104 | CROSS SECTIONS |
| CE-105 | SIGHT DISTANCE PLAN - LAFOLETTE STREET |
| CE-106 | SIGHT DISTANCE PLAN - AMAZING GRACE LANE |
| C-300 | EROSION CONTROL PH 1 PLAN |
| C-310 | EROSION CONTROL PH 2 PLAN |
| C-350 | ESC DETAILS-1 |
| C-351 | ESC DETAILS-2 |
| C-352 | ESC DETAILS-3 |
| C-353 | NCG01-1 |
| C-400 | GRADING & STORMWATER PLAN |
| C-410 | SCM DETAIL 1 |
| C-411 | SCM DETAIL 2 |
| C-412 | SCM DETAIL 3 |
| C-413 | ADS DETAILS |
| C-500 | STORM PLAN & PROFILE - 1 |
| C-501 | STORM PLAN & PROFILE - 2 |
| C-502 | STORM PLAN & PROFILE - 3 |
| C-550 | STORM DETAILS-1 |
| C-551 | STORM DETAILS-2 |
| C-600 | UTILITY PLAN |
| C-610 | SANITARY SEWER PLAN & PROFILE - 1 |
| C-611 | SANITARY SEWER PLAN & PROFILE - 2 |
| C-613 | SANITARY SEWER DETAILS |
| C-614 | SANITARY SEWER DETAILS |
| C-650 | WATERMAIN PLAN & PROFILE 0+00 - 11+00 |
| C-651 | WATERMAIN PLAN & PROFILE 11+00 - 22+00 |
| C-652 | WATERMAIN DETAILS - 1 |
| C-653 | WATERMAIN DETAILS - 2 |
| C-654 | MISCELLANEOUS DETAILS |
| C-700 | PRE DEVELOPMENT DRAINAGE AREA MAP |
| C-701 | POST DEVELOPMENT DRAINAGE AREA MAP |




VICINITY MAP SCALE: N.T.S.




VICINITY MAP SCALE: N.T.S.

| DEVELOPMENT DATA | | |
|---|---|---|
| SUBDIVISION CONFIGURATION | | |
| ZONING: | R-15 / R-20 | |
| PARCEL ID NUMBER: | 9579065791<br>9579068507<br>9579068308<br>9579068117<br>9579067975<br>9579076259 | |
| TYPE OF DEVELOPMENT: | RESIDENTIAL | |
| DISTURBED AREA: | DA | |
| TOTAL SITE AREA (Ac.) | 13.01 | |
| NO. OF LOTS: | 50 | |
| GROSS DENSITY (UNITS/Ac.): | | |
| BUILDING SETBACKS: | FRONT: | 30' |
| | SIDE: | 10' |
| | REAR: | 15' |
| MIMIMUM LOT SIZE: | 15,000 / 20,000 | |
| MIMIMUM LOT WIDTH: | 85 / 100 | |
| RIGHT-OF-WAY WIDTH | 45' MIN. | |
| UTILITY PROVIDERS | | |
| WATER PROVIDER: | | |
| HENDERSONVILLE WATER & SEWER | | |
| 10 6th AVENUE EAST | | |
| HENDERSONVILLE, NC 28792 | | |
| 828.697.3052 | | |
| SEWER PROVIDER: | | |
| HENDERSONVILLE WATER & SEWER | | |
| 160 6TH AVENUE EAST | | |
| HENDERSONVILLE, NC 28792 | | |
| 828.697.3052 | | |
| TELEPHONE AND CABLE PROVIDER: | | |
| SPECTRUM | | |
| 352 AIRPORT ROAD SUITE 70 | | |
| ARDEN, NC 28704 | | |
| 866.874.2389 | | |
| POWER PROVIDER: | | |
| DUKE ENERGY | | |
| 957 SPARTANBURG HWY | | |
| HENDERSONVILLE, NC 28792 | | |
| 828-698-2034 | | |

| CONTACT INFORMATION |
|---|
| OWNER/DEVELOPER |
| FIRST VICTORY |
| 542 S .CALDWELL ST. |
| BREVARD, NC 28712 |
| 828.884.7934 |
| SURVEYOR |
| COLE SURVEYING AND DESIGN |
| 549 ELK PARK DRIVE; SUITE 707 |
| ASHEVILLE, NC 28804 |
| 828.251.7025 |
| ENGINEER |
| THREE NOTCH GROUP |
| 4301 TAGGART CREEK ROAD |
| CHARLOTTE, NC 28208 |
| (704) 394-6913 |
| CLIENT CONTACT |
| TRAVIS FOWLER |
| 828.884.7934 |

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS

THREE NOTCH GROUP, INC. NORTH CAROLINA FIRM # C-4973

FIRST VICTORY
542 S .CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 3 | 02/18/2025 | ADDRESS CITY & COUNTY COMMENTS |
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |
| 6 | 09/09/2025 | ADDRESS UTILITY COMMENTS |

ENGINEER'S SEAL: 09/09/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: COVER SHEET

DRAWING NO: COVER

Y:\Stand2_ENGR\656605823\5_DESIGN\DWGS\SHEETS\COVER.dwg, 9/9/2025 12:33 PM, Toby Harris

## LEGEND:

- PROPOSED CONTOUR
- EXISTING CONTOUR
- PROPOSED BOUNDARY
- EXISTING PARCEL LINE (TBR)
- EXISTING ADJACENT PARCEL LINE
- PROPOSED RIGHT-OF-WAY
- EXISTING CREEK
- EXISTING BUFFER
- EXISTING WATERMAIN

TOTAL AREA OF SURVEY
13.73 ACRES
(EXCLUDING RIGHTS OF WAY)

HIGHLAND INVESTORS LIMITED PARTNERSHIP
DB 1262 PG 521
PIN 9579-16-5868

CAROLINA VILLAGE, INC
DB 1341 PG 582
PB 2017 SL 11014
PIN 9579-18-3554
ZONING: PRO-CZD

HOME DEPOT USA, INC
DB 992 PG 711
PB 1999 SL 3086
PIN 9579-16-0862
ZONING: R-20

SIGNAL RIDGE LP
DB 1680 PG 504
PB 2017 SL 10971
PIN 9579-16-1378
ZONING: PRO-CZD

SIGNAL HILL ROAD SR 1508
MAINTAINED BY NCDOT SUBJECT TO 60' R/W PER NCDOT OFFICIAL (ASPHALT)

AMAZING GRACE LN.
20' PRIVATE R/W

LAFOLETTE ST.
30' PRIVATE R/W

LINDA VISTA DR
SR 1521
MAINTAINED BY NCDOT (ASPHALT)

PROPOSED PROPERTY LINE

EX. PARCEL LINES TO BE ABANDONED

EX. GRAVEL DRIVE TO BE REMOVED

EX. GRAVEL DRIVE TO BE REMOVED

PERMANENT DRAINAGE EASEMENT
PER PB PB 1999 SL 3086 & DB 993 PG 360

STREAMBANK MAINTENANCE EASEMENT
PER PB 2018 SL 11488, AREA G
DB 3284 PG 387 & DB 3273 PG 78

30' SEWER EASEMENT
PER DB 838 PG 434

STREAMBANK MAINTENANCE EASEMENT
PER PB 2018 SL 11488, AREA F
DB 3284 PG 387 & DB 3273 PG 78

STREAMBANK MAINTENANCE EASEMENT
PER PB 2018 SL 11488, AREAD

HENRY GRONKI
PC C SL 285A
PIN 9579-07-8653
ZONING: R-20

STEVEN M. PRESSLEY
PC C SL 285A
PIN 9579-07-6740
ZONING: R-20

YURY SYSS
PC C SL 285A
PIN 9579-07-7529
ZONING: R-20

ANGELA M. LAMB ESTATE FILE 21E/973
(REF: DB 481 PG 483)
PIN 9579-07-1337
ZONING: R-20

HOMER F. HOWARD
DB 674 PG 3
PC A SL 214A, LOT 5
PIN 9579-06-1936
ZONING: R-20

SWAIN S. HAYNES
DB 901 PG 347
PC A SL 214A, LOT 6
PIN 9579-06-1764
ZONING: R-20

JEANETTE Q. MATHIS
DB 910 PG 68
PC A SL 214A, LOT 7
PIN 9579-06-1562
ZONING: R-20

KRISTINA SOFRONIE
DB 3866 PG 389
PB 2021 PG 13157, TR 2
PIN 9579-06-3404
ZONING: R-20

D & G ESTATE, LLC
DB 3876 PG 178
PB 2021 PG 13157, TR 1
PIN 9579-06-3217
ZONING: CHMU

ADJOINING LINES PER PB 2021 PG 13709

NANCY L. CONLEY
DB 3672 PG 5366
LOTS 79-80
PIN 9579-06-6187
ZONING: R-20

HENRY W. BRADLEY
DB 1177 PG 572
LOTS 81-84
PIN 9579-06-6107
ZONING: R-20

ASHLEY M. CLOUSE
BETTY B. MEAD
DB 3768 PG 310
LOTS 73-76
PIN 9579-06-6315
ZONING: R-20

ASHLEY M. CLOUSE
DB 3768 PG 314
LOTS 77-78
PIN 9579-06-6583
ZONING: R-20

SEAN GIVENS
DB 3083 PG 278
LOTS 86-88
PC B SL 189A
(AKA PB 2 PG 156)
PIN 9579-06-4126
ZONING: C-2

CSD CONTROL POINT #5 REBAR
NC GRID COORDINATES
N: 596,147.54 NAD 83/11
E: 970,567.47 NAD 83/11
-LOCALIZED POINT-

NC GRID COORDINATES
N: 596,176.67 NAD 83/11
E: 970,675.72 NAD 83/11

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1"=60'

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS
05/15/2025

| | |
|---|---|
| PROJECT #: | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: EXISTING CONDITIONS PLAN

DRAWING NO: C-100

Y:\Shared\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\EXISTING CONDITIONS.dwg, 9/9/2025 12:33 PM, Toby Harris

TOTAL AREA OF SURVEY
13.73 ACRES
(EXCLUDING RIGHTS OF WAY)

COMMON OPEN SPACE (67,580 SF) WITH TRAILS

OPEN SPACE (330,358 SF)

REFER TO PARCEL TABLES ON SHEET C-103 FOR DIMENSIONS

MINIMUM 50' WIDE GREENWAY EASEMENT (27,210 SF)
*ALSO COUNTS FOR PARKLAND DEDICATION
*PROPOSED FEE-IN-LIEU*

OVERLAPPING EASEMENTS

CONNECT TO EX. SIDEWALK

PROPOSED SCM ACCESS EASEMENT

RAISED CONCRETE ISLAND PER NCDOT DETAIL 846.01 - SHEET 31

PERMANENT DRAINAGE EASEMENT
PER PB 1999 SL 3086 & DB 993 PG 360

STREAMBANK MAINTENANCE EASEMENT
PER PB 2018 SL 11488, AREA G
DB 3284 PG 387 & DB 3273 PG 78

PROP. 12' GRAVEL UTILITY ACCESS EASEMENT

PROP. 40' SS EASEMENT

PROPOSED SCM ACCESS EASEMENT

PROP. 40' SS EASEMENT

PROP. 30' SS EASEMENT

PROPOSED SCM ACCESS EASEMENT

2 – 9.5' X 22' PARALLEL PARKING SPACES

MAIL KIOSK

5' SIDEWALK

12' x 40' LOADING SPACE

LAFOLETTE ST.
45' PUBLIC R/W

LINDA VISTA DR
SR 1521
MAINTAINED BY NCDOT (ASPHALT)

30' SEWER EASEMENT PER DB 838 PG 434

#5 EIR
ID-KEE

#5 EIR
ID-KEE (POL)

#5 EIR
ID-KEE

STREAMBANK MAINTENANCE EASEMENT
PER PB 2018 SL 11488, AREA F
DB 3284 PG 387 & DB 3273 PG 78

STREAMBANK MAINTENANCE EASEMENT
2018 SL 11488, AREA D

LOT 18
3219 SF.
0.07 AC.

LOT 17
3270 SF.
0.08 AC.

HIGHLAND INVESTORS LIMITED PARTNERSHIP
DB 1262 PG 621
PIN 9579-16-5868

CAROLINA VILLAGE, INC
DB 1341 PG 582
PB 2017 SL 11014
PIN 9579-18-3554
ZONING: PRD-CZD

HOME DEPOT USA, INC
DB 992 PG 711
PB 1999 SL 3086
PIN 9579-16-0862
ZONING: R-20

SIGNAL RIDGE, LP
DB 1680 PG 504
PB 2017 SL 10971
PIN 9579-16-1378
ZONING: PRD-CZD

HENRY GRONKI
PC C SL 285A
PIN 9579-07-8653
ZONING: R-20

YURIY SYSA
PC C SL 285A
PIN 9579-07-7529

ANGELA M. LAMB ESTATE FILE 21E973
(REF: DB 481 PG 483)
PIN 9579-07-1337
ZONING: R-20

HOMER F. HOWARD
DB 674 PG 3
PC A SL 214A, LOT 5
PIN 9579-06-1936
ZONING: R-20

SWAIN S. HAYNES
DB 901 PG 347
PC A SL 214A, LOT 6
PIN 9579-06-1764
ZONING: R-20

JEANETTE Q. MATHIS
DB 910 PG 68
PC A SL 214A, LOT 7
PIN 9579-06-1562
ZONING: R-20

KRISTINA SOFRONIE
DB 3866 PG 389
PB 2021 PG 13157, TR 2
PIN 9579-06-3404
ZONING: R-20

D & G ESTATE, LLC
DB 3876 PG 178
PB 2021 PG 13157, TR 1
PIN 9579-06-3217
ZONING: CHMU

SEAN GIVENS
DB 3083 PG 278
LOTS 86-88
PC B SL 180A
(AKA PB 2 PG 156)
PIN 9579-06-4126
ZONING: C-2

NANCY L. CONLEY
DB 3672 PG 5366
LOTS 79-80
PIN 9579-06-6187
ZONING: R-20

HENRY W. BRADLEY
DB 1177 PG 572
LOTS 81-84
PIN 9579-06-6107
ZONING: R-20

ASHLEY M. CLOUSE
BETTY B. MEAD
DB 3768 PG 310
LOTS 73-76
PIN 9579-06-6315
ZONING: R-20

ASHLEY M. CLOUSE
BETTY B. MEAD
DB 3768 PG 314
LOTS 77-78
PIN 9579-06-6383
ZONING: R-20

TILLIE MAE B. CARLISLE ET AL
DB 1564 PG 246
REF DB 799 PG 677
LOTS 71-72
PIN 9579-06-6412
ZONING: R-20

BONNIE BALDWIN
DB 1572 PG 20
PIN 9579-06-6457
ZONING: R-20

KRISTIE GILLIAM
DB 1421 PG 633
LOTS 67-68
PIN 9579-06-6502

DWELLING (P.A.I.)

SHED (ENCR.#1)

SHED

DWELLING

SHED

SHED

DWELLING

CHANG

COMMERCIAL BUILDING (P.A.I.)

20' R

45.0' R/W

60' R/W

30' R/W

INV.: 2162.4

INV.: 21

INV.: 21

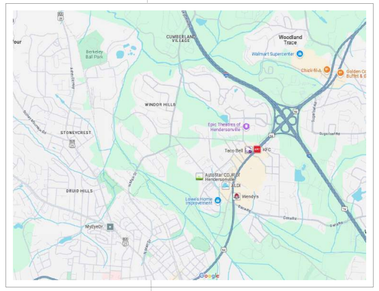
CI GRATE INV.: 2

DI GRATE INV.: 21

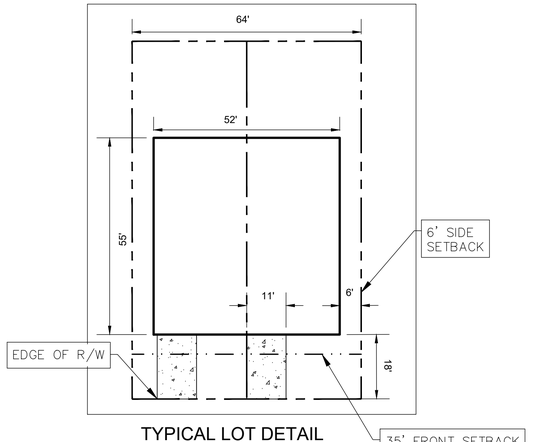
F-W1

CSD CONTROL POINT #5
NC GRID COORD
N: 596,147.54' N/A
E: 970,567.47' N/A
LOCALIZED

VICINITY MAP




GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1"=50'




TYPICAL LOT DETAIL
SCALE 1" = 20'

35' FRONT SETBACK FROM CENTERLINE

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS
07/18/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

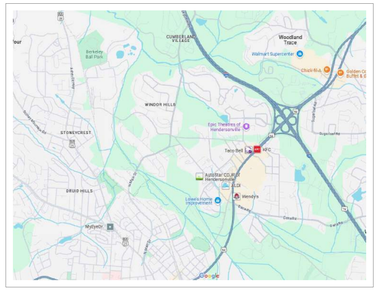
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: SITE PLAN

DRAWING NO: C-101

Y:\Shared\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\SITE.dwg 9/9/2025 12:33 PM Toby Harris

TOTAL AREA OF SURVEY
13.73 ACRES
(EXCLUDING RIGHTS OF WAY)




VICINITY MAP

REFER TO PARCEL TABLES ON SHEET C-103 FOR DIMENSIONS

#5 EIR
ID-KEE

344885 SF.
7.92 AC.

PROP. 40'
SS EASEMENT

PROPOSED SCM ACCESS
EASEMENT (TYP.)

PROP. 30'
SS EASEMENT

PROPOSED SCM LOCATION

LOT 22 3229 SF. 0.07 AC.
LOT 21 3263 SF. 0.07 AC.
LOT 20 3258 SF. 0.07 AC.
LOT 19 3244 SF. 0.07 AC.
LOT 18 3219 SF. 0.07 AC.
LOT 17 3270 SF. 0.08 AC.
LOT 16 3075 SF. 0.07 AC.
LOT 15 3074 SF. 0.07 AC.
3846 SF. 0.09 AC.
LOT 23 3199 SF. 0.07 AC.
LOT 24 3199 SF. 0.07 AC.
LOT 25 3200 SF. 0.07 AC.
LOT 26 3200 SF. 0.07 AC.
LOT 27 3200 SF. 0.07 AC.
LOT 28 3200 SF. 0.07 AC.
LOT 29 3200 SF. 0.07 AC.
LOT 30 3200 SF. 0.07 AC.
LOT 31 3200 SF. 0.07 AC.
LOT 32 3200 SF. 0.07 AC.
LOT 33 3336 SF. 0.08 AC.
LOT 34 3205 SF. 0.07 AC.
LOT 35 3200 SF. 0.07 AC.
LOT 36 3200 SF. 0.07 AC.
LOT 37 3200 SF. 0.07 AC.
LOT 38 3200 SF. 0.07 AC.
LOT 50 3181 SF. 0.07 AC.
LOT 49 3198 SF. 0.07 AC.
LOT 48 3202 SF. 0.07 AC.
LOT 47 3198 SF. 0.07 AC.
LOT 46 3200 SF. 0.07 AC.
LOT 45 3200 SF. 0.07 AC.
LOT 44 3186 SF. 0.07 AC.
LOT 43 3220 SF. 0.07 AC.
LOT 42 3200 SF. 0.07 AC.
LOT 41 3200 SF. 0.07 AC.
LOT 14 3200 SF. 0.07 AC.
LOT 13 3200 SF. 0.07 AC.
LOT 12 3200 SF. 0.07 AC.
LOT 11 3200 SF. 0.07 AC.
LOT 10 3171 SF. 0.07 AC.
LOT 9 3228 SF. 0.07 AC.
LOT 8 3255 SF. 0.07 AC.
LOT 7 3145 SF. 0.07 AC.
LOT 6 3168 SF. 0.07 AC.
LOT 5 3225 SF. 0.07 AC.
LOT 4 3216 SF. 0.07 AC.
LOT 3 3225 SF. 0.07 AC.
LOT 2 3200 SF. 0.07 AC.
LOT 1 3200 SF. 0.07 AC.

46912 SF.
1.08 AC.

LAFOLETTE ST.
45' PUBLIC R/W

94330 SF.
2.17 AC.

SIGNAL HILL ROAD SR 1508
MAINTAINED BY NCDOT, SUBJECT TO 60' R/W PER NCDOT OPTIONAL (ASPHALT)

RIGHT IN - RIGHT OUT ENTRANCE WITH CONCRETE ISLAND

RAISED CONCRETE ISLAND PER NCDOT DETAIL 846.01 - SHEET 31

60' R/W
45.0' R/W
30' R/W
20' R

LINDA VISTA DR
SR 1521
MAINTAINED BY
NCDOT (ASPHALT)

CSD CONTROL POINT #5 REBAR
NC GRID COORDINATES
N: 596,147.54' NAD 83/11
E: 970,567.47' NAD 83/11
-LOCALIZED POINT-

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1"=50'

*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 TOBIN M. HARRIS
07/18/2025

| | |
|---|---|
| PROJECT #: | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

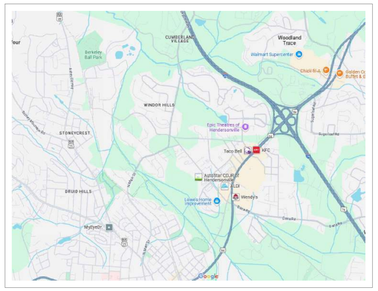
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: PRELIMINARY PLAT

DRAWING NO: C-102

Y:\Shared\2_ENG\R656605823\5_DESIGN\DWG\SHEETS\SITE.dwg 9/9/2025 12:34 PM, Toby Harris




VICINITY MAP

| Parcel Line and Curve Table | | | |
|---|---|---|---|
| Line #/Curve # | Length | Bearing/Delta | Radius |
| L1 | 101.39 | S11° 15' 36.21"E | |
| L3 | 106.71 | N11° 15' 07.91"W | |
| L4 | 32.00 | N78° 44' 22.75"E | |
| L5 | 32.00 | N78° 44' 22.75"E | |
| C1 | 32.44 | 14.03 | 132.50 |
| C2 | 32.44 | 14.03 | 132.50 |
| L6 | 103.48 | N22° 49' 06.54"E | |
| L8 | 32.00 | S67° 11' 00.32"E | |
| L9 | 32.00 | S67° 11' 00.32"E | |
| L10 | 104.95 | S22° 48' 54.92"W | |
| C3 | 32.33 | 13.98 | 132.50 |
| C4 | 32.33 | 13.98 | 132.50 |
| C5 | 32.37 | 14.00 | 132.50 |
| C6 | 32.37 | 14.00 | 132.50 |
| L11 | 102.28 | S66° 26' 37.49"W | |
| L13 | 105.86 | N66° 26' 39.79"E | |
| L14 | 32.00 | S23° 33' 25.67"E | |
| L15 | 32.00 | S23° 33' 25.67"E | |
| L29 | 31.98 | N0° 45' 26.71"W | |
| L30 | 31.98 | N0° 45' 26.71"W | |

| Parcel Line and Curve Table | | | |
|---|---|---|---|
| Line #/Curve # | Length | Bearing/Delta | Radius |
| L25 | 99.39 | S89° 14' 33.29"W | |
| L27 | 32.00 | S0° 45' 26.71"E | |
| L28 | 32.00 | S0° 45' 26.71"E | |
| L33 | 32.00 | N0° 45' 26.71"W | |
| L34 | 32.00 | N0° 45' 26.71"W | |
| L36 | 100.00 | S89° 14' 33.29"W | |
| L37 | 31.95 | S0° 45' 26.71"E | |
| L38 | 31.95 | S0° 45' 26.71"E | |
| L39 | 100.00 | N89° 14' 33.29"E | |
| L40 | 100.00 | N89° 14' 33.29"E | |
| L41 | 32.00 | S0° 45' 26.71"E | |
| L43 | 32.00 | N0° 45' 26.71"W | |
| L44 | 32.00 | N0° 45' 26.71"W | |
| L45 | 100.00 | S89° 14' 33.29"W | |
| L157 | 32.00 | S0° 45' 26.71"E | |
| L46 | 100.00 | N89° 14' 33.29"E | |
| L48 | 100.20 | S89° 14' 33.29"W | |
| L49 | 32.31 | S0° 55' 58.23"E | |
| L50 | 31.69 | S0° 55' 58.23"E | |
| L51 | 32.00 | S0° 45' 26.71"W | |

| Parcel Line and Curve Table | | | |
|---|---|---|---|
| Line #/Curve # | Length | Bearing/Delta | Radius |
| L52 | 32.00 | N0° 45' 26.71"W | |
| L53 | 100.00 | N89° 14' 33.29"E | |
| L55 | 100.00 | S89° 14' 33.29"W | |
| L56 | 32.00 | N0° 45' 26.71"W | |
| L57 | 32.00 | N0° 45' 26.71"W | |
| L58 | 32.00 | S0° 45' 26.71"E | |
| L59 | 32.00 | S0° 45' 26.71"E | |
| L2 | 100.11 | S11° 04' 06.89"E | |
| L7 | 100.29 | S22° 45' 56.21"W | |
| L12 | 100.14 | S66° 34' 11.53"W | |
| L16 | 98.05 | S0° 04' 14.61"W | |
| L26 | 99.39 | N89° 26' 27.55"E | |
| L35 | 100.00 | N89° 12' 54.12"E | |
| L42 | 100.00 | N89° 14' 33.29"E | |
| L47 | 100.10 | N89° 04' 01.77"E | |
| L54 | 100.00 | N89° 14' 33.29"E | |
| L140 | 100.00 | N89° 14' 33.29"E | |
| L83 | 100.00 | N89° 14' 33.29"E | |
| L75 | 100.00 | N89° 14' 33.29"E | |
| L63 | 100.00 | N89° 14' 33.29"E | |

| Parcel Line and Curve Table | | | |
|---|---|---|---|
| Line #/Curve # | Length | Bearing/Delta | Radius |
| L148 | 100.00 | N89° 14' 33.33"E | |
| L153 | 100.00 | N89° 14' 33.33"E | |
| L163 | 100.00 | N89° 14' 33.29"E | |
| L166 | 100.00 | N89° 13' 46.03"E | |
| L98 | 100.00 | S89° 14' 17.61"W | |
| L90 | 100.68 | N89° 14' 17.61"E | |
| L106 | 100.00 | N77° 55' 22.44"E | |
| L111 | 100.01 | N89° 48' 15.12"W | |
| L120 | 99.99 | N89° 14' 42.27"E | |
| L127 | 100.00 | N89° 34' 13.01"E | |
| L132 | 100.00 | N89° 34' 13.01"E | |

| Parcel Line and Curve Table | | | |
|---|---|---|---|
| Line #/Curve # | Length | Bearing/Delta | Radius |
| L150 | 32.00 | S0° 45' 26.71"E | |
| L151 | 32.00 | S0° 45' 26.71"E | |
| L60 | 32.00 | N0° 45' 26.71"W | |
| L61 | 32.00 | N0° 45' 26.71"W | |
| L62 | 100.00 | N89° 14' 33.29"E | |
| L64 | 100.00 | S89° 14' 33.29"W | |
| L65 | 32.00 | S0° 45' 26.71"E | |
| L66 | 32.00 | S0° 45' 26.71"E | |
| L74 | 100.00 | N89° 14' 33.40"E | |
| L76 | 100.00 | S89° 14' 33.38"W | |
| L77 | 32.00 | S0° 45' 26.71"E | |
| L78 | 32.00 | S0° 45' 26.71"E | |
| L79 | 32.00 | N0° 45' 25.50"W | |
| L80 | 32.00 | N0° 45' 25.50"W | |
| L81 | 32.00 | N0° 45' 25.50"W | |
| L82 | 100.00 | N89° 14' 33.31"E | |
| L84 | 100.00 | S89° 14' 33.29"W | |
| L85 | 32.00 | N0° 45' 25.50"W | |
| L86 | 32.00 | S0° 45' 26.71"E | |
| L87 | 32.00 | S0° 45' 26.71"E | |

| Parcel Line and Curve Table | | | |
|---|---|---|---|
| Line #/Curve # | Length | Bearing/Delta | Radius |
| L138 | 100.00 | N89° 14' 33.29"E | |
| L139 | 32.00 | N0° 45' 26.71"W | |
| L141 | 32.00 | S0° 45' 26.71"E | |
| L142 | 32.00 | S0° 45' 26.71"E | |
| L143 | 100.00 | S89° 14' 33.29"W | |
| L144 | 32.00 | N0° 45' 26.71"W | |
| L95 | 100.00 | N89° 14' 17.61"E | |
| L96 | 32.00 | N0° 45' 42.39"W | |
| L97 | 32.00 | N0° 45' 42.39"W | |
| L99 | 100.00 | S89° 14' 17.61"W | |
| L100 | 32.00 | S0° 45' 42.39"E | |
| L101 | 32.00 | S0° 45' 42.39"E | |
| L88 | 50.05 | N89° 15' 58.02"E | |
| C9 | 12.34 | 5.66 | 125.00 |
| L89 | 19.62 | S0° 45' 42.39"E | |
| L91 | 50.00 | N89° 16' 18.02"E | |
| L92 | 32.00 | N0° 43' 41.98"W | |
| L93 | 32.00 | N0° 43' 41.98"W | |
| L94 | 100.69 | S89° 16' 17.19"W | |
| L102 | 32.06 | S0° 45' 42.39"E | |

| Parcel Line and Curve Table | | | |
|---|---|---|---|
| Line #/Curve # | Length | Bearing/Delta | Radius |
| L103 | 32.50 | S12° 04' 37.56"E | |
| L104 | 21.01 | S12° 04' 37.56"E | |
| L105 | 100.09 | N78° 17' 12.04"E | |
| L107 | 100.00 | S78° 12' 34.17"W | |
| L108 | 32.00 | N12° 04' 51.41"W | |
| L109 | 32.00 | N12° 04' 51.41"W | |
| L110 | 100.00 | N89° 34' 13.01"E | |
| L112 | 100.00 | S89° 34' 13.01"W | |
| L113 | 32.00 | S0° 45' 17.73"E | |
| L114 | 32.00 | S0° 45' 17.73"E | |
| L115 | 30.91 | N0° 45' 17.73"W | |
| L116 | 19.07 | N0° 45' 17.73"W | |
| L117 | 32.57 | S0° 45' 17.73"E | |
| L118 | 26.76 | S0° 45' 17.73"E | |
| L119 | 100.00 | N89° 34' 13.01"E | |
| L121 | 100.00 | S89° 34' 13.01"W | |
| L122 | 32.00 | N0° 43' 52.97"W | |
| L123 | 32.00 | N0° 43' 52.97"W | |
| L124 | 32.00 | S0° 25' 46.99"E | |
| L125 | 32.00 | S0° 25' 46.99"E | |

| Parcel Line and Curve Table | | | |
|---|---|---|---|
| Line #/Curve # | Length | Bearing/Delta | Radius |
| L126 | 100.00 | S89° 34' 13.01"W | |
| L128 | 100.00 | N89° 34' 13.01"E | |
| L129 | 32.00 | N0° 25' 46.99"W | |
| L130 | 32.00 | N0° 25' 46.99"W | |
| L131 | 100.00 | N89° 34' 13.01"E | |
| L133 | 100.00 | S89° 34' 13.01"W | |
| L134 | 32.00 | S0° 25' 46.99"E | |
| L135 | 32.00 | S0° 25' 46.99"E | |
| L136 | 32.00 | N0° 25' 46.99"W | |
| L137 | 32.00 | N0° 25' 46.99"W | |
| C7 | 32.77 | 21.46 | 87.50 |
| C8 | 32.77 | 21.46 | 87.50 |
| L17 | 92.00 | S0° 04' 51.37"W | |
| L18 | 91.97 | N0° 04' 08.19"E | |
| L21 | 20.30 | N89° 55' 20.01"W | |
| L19 | 32.34 | N0° 45' 19.40"W | |
| L20 | 32.00 | S89° 55' 45.39"E | |
| L22 | 11.70 | S89° 55' 45.39"E | |
| L23 | 55.69 | N89° 18' 03.37"E | |
| L24 | 32.34 | N0° 45' 19.40"W | |

| Parcel Line and Curve Table | | | |
|---|---|---|---|
| Line #/Curve # | Length | Bearing/Delta | Radius |
| L165 | 100.00 | S89° 14' 33.29"W | |
| L167 | 100.00 | N89° 12' 58.77"E | |
| L168 | 32.00 | S0° 45' 26.71"E | |
| L169 | 32.00 | S0° 45' 26.71"E | |
| L31 | 32.00 | N0° 45' 26.71"W | |
| L32 | 32.00 | N0° 45' 26.71"W | |
| L160 | 32.00 | S0° 45' 26.71"E | |
| L161 | 32.00 | S0° 45' 26.71"E | |
| L162 | 100.00 | N89° 14' 33.29"E | |
| L164 | 100.00 | S89° 14' 33.29"W | |
| L152 | 100.00 | S89° 14' 33.29"W | |
| L154 | 100.00 | N89° 14' 33.37"E | |
| L155 | 32.00 | N0° 45' 25.88"W | |
| L156 | 32.00 | N0° 45' 25.88"W | |
| L158 | 32.00 | S0° 45' 26.71"E | |
| L159 | 32.00 | S0° 45' 26.71"E | |
| L145 | 32.00 | N0° 45' 26.36"W | |
| L146 | 32.00 | N0° 45' 26.36"W | |
| L147 | 100.00 | N89° 14' 33.36"E | |
| L149 | 100.00 | S89° 14' 33.29"W | |

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1"=50'

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030855 ROBIN M. HARRIS
07/18/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: PARCEL TABLES

DRAWING NO: C-103

Y:\Shared\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\SITE.dwg 9/9/2025 12:34 PM, Toby Harris

*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| | | |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030805 TOBIN M. HARRIS
09/16/2024

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

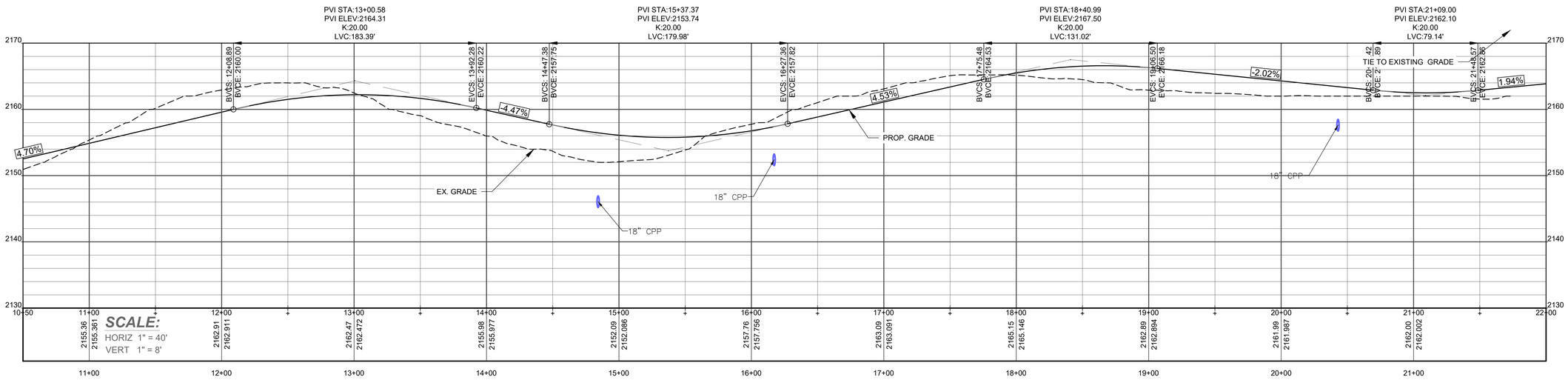
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-8913
www.3notch.com
License No. C-4973

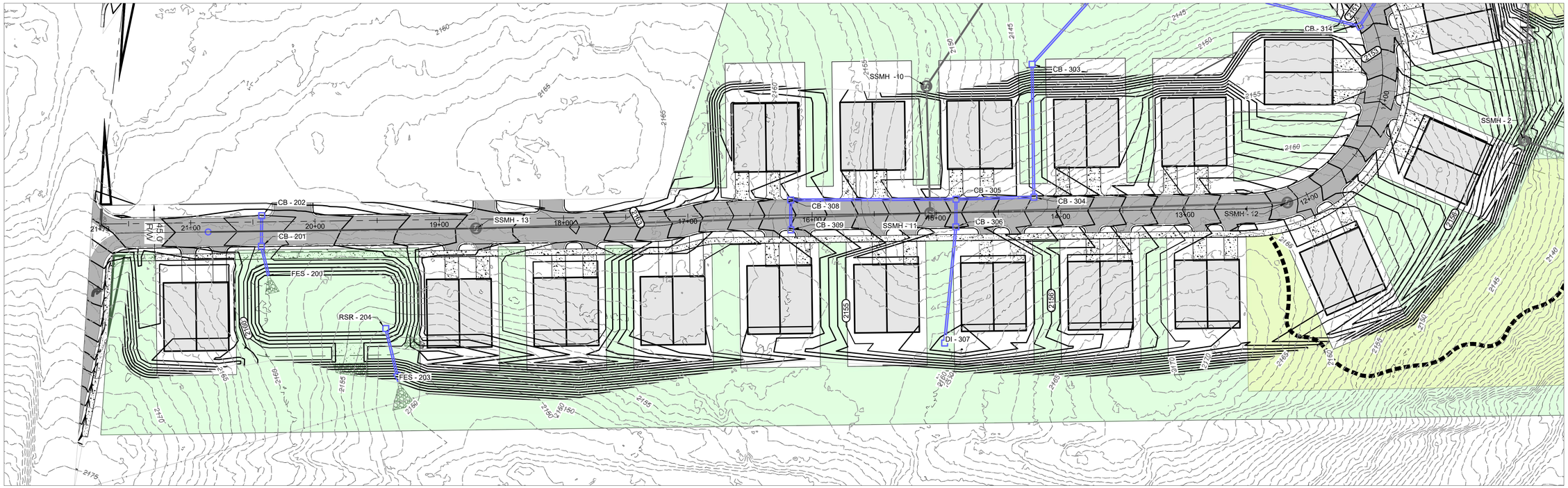
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: ROAD PLAN & PROFILE 0+00 - 11+00

DRAWING NO: C-104

Y:\Shared\2_ENG\656605823\5_DESIGN\DWG\SHEETS\PLAN PROFILE ROAD.dwg, 9/9/2025 12:34 PM, Toby Harris



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1"=40'

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| | | |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER ROBIN M. HARRIS
09/16/2024

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE:
ROAD PLAN & PROFILE
11+00 - 21+93

DRAWING NO:
C-105

Y:\Shared2_ENGR\656605823\5_DESIGN\DWG\SHEETS\PLAN PROFILE ROAD.dwg, 9/9/2025 12:34 PM, Toby Harris

# SIGNAL HILL

CREEKSTONE COMPANIES

# NCDOT ENCROACHMENT PLANS

**(Issue For Bid)**

**09/16/2024**

VICINITY MAP

1" = 500'

| INDEX TO SHEETS | |
|---|---|
| Sheet Number | Sheet Title |
| COVER | COVER SHEET – ENCROACHMENT |
| CE–100 | NC ENCROACHMENT PLAN & PROFILE |
| CE–101 | ROADWAY PLAN |
| CE–102 | STRIPING PLAN |
| CE–103 | STRIPING DETAILS |
| CE–104 | STRIPING DETAILS |
| CE–105 | STRIPTING DETAILS |
| CE–106 | CROSS SECTIONS |
| CE–107 | SIGHT DISTANCE – LAFOLETTE STREET |
| CE–108 | SIGHT DISTANCE – AMAZAING GRACE LANE |

## PROJECT DESIGN TEAM

THREE NOTCH GROUP

THREE NOTCH GROUP PROJECT NUMBER: R305524001
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
(704) 394-6913

PROJECT ENGINEER: TOBY M. HARRIS, PE
STREET ADDRESS: 4301 TAGGART CREEK ROAD
CITY, STATE, ZIP: CHARLOTTE, NC 28208
PHONE: (704) 394-6913
E-MAIL: TOBY.HARRIS@CDGE.COM

NORTH CAROLINA CORPORATION OF ENGINEERS & ASSOCIATES INC. CERTIFICATE OF AUTHORIZATION C-4973

06/06/2025

## CLIENT

**CREEKSTONE HOLDINGS HENDERSONSVILLE, LLC**
4545 POST OAK PLACE, SUITE 150
HOUSTON, TEXAS 77027
CONTACT: STEPHEN D. KELLER
EMAIL: SDKELLER@CREEKSTONECOMPANIES.COM
(O) 713-621-5300
(M) 832-256-1871

## LOCATION

**HENDERSONVILLE, NC**
**HENDERSON COUNTY**
LATITUDE: 35°20'27"N
LONGITUDE: 82°27'08"W

811 Know what's **below.** **Call** before you dig.
CALL 1-800-632-4949 OR 811
WWW.NC811.ORG
NC ONE-CALL CENTER
IT'S THE LAW!

*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |

ENGINEER'S SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 TOBY M. HARRIS
07/18/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3ncdch.com
License No. C-4973

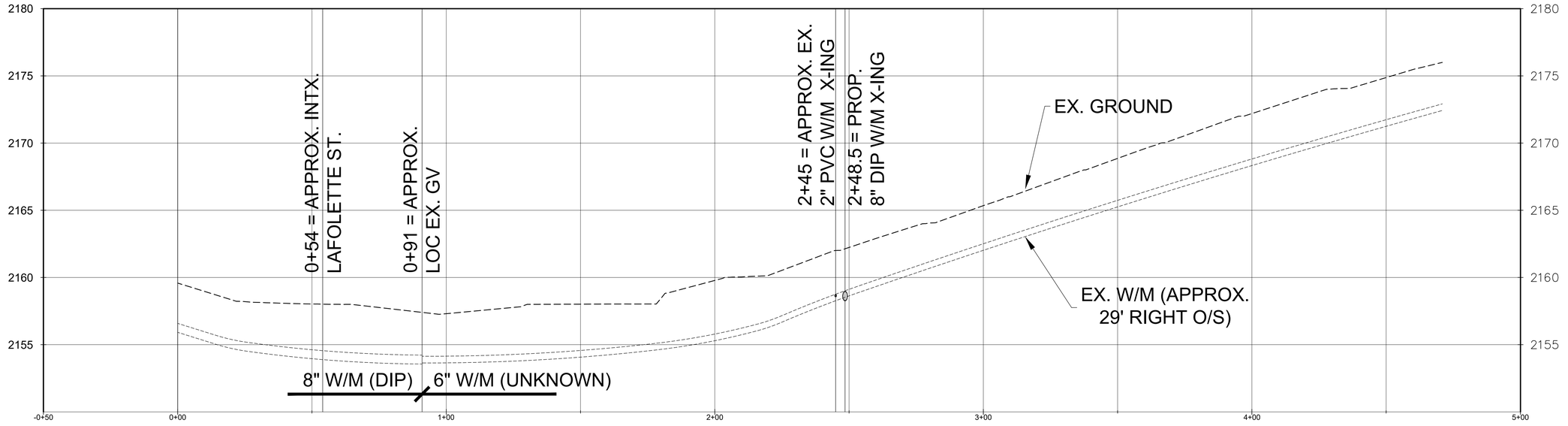
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

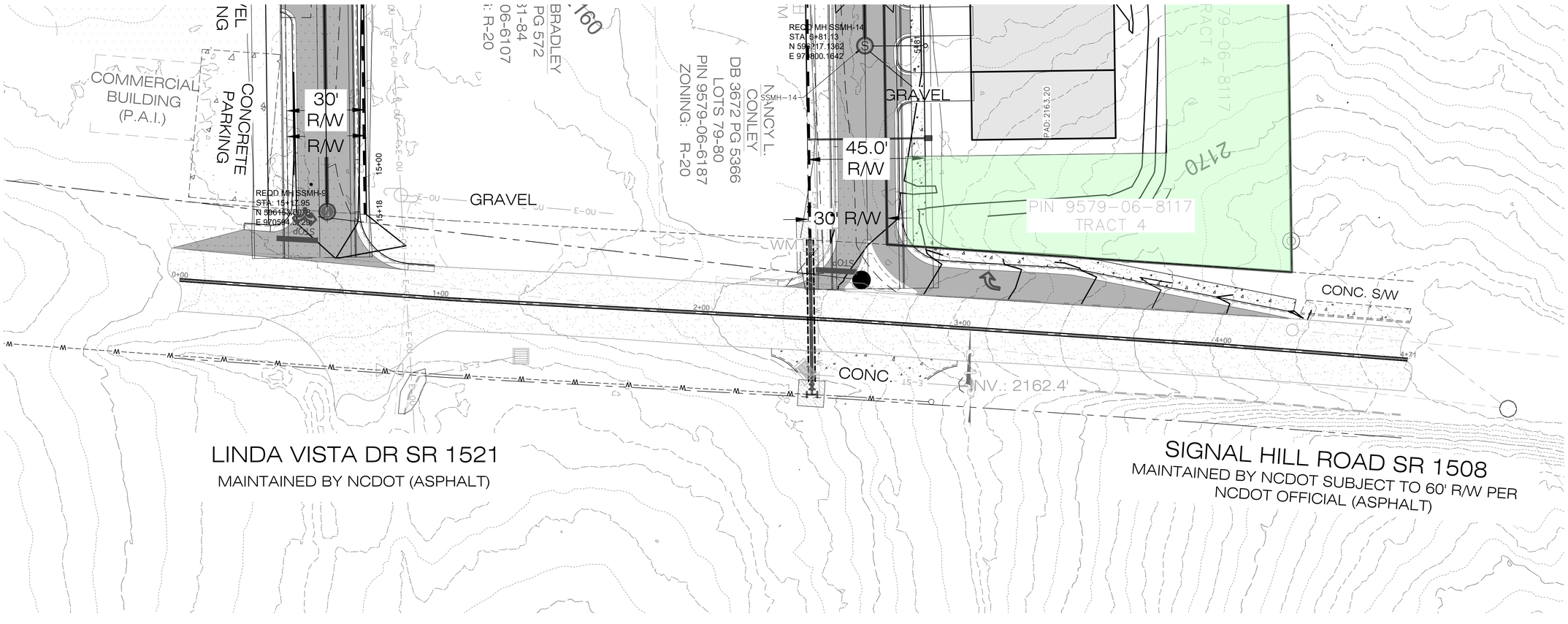
SHEET TITLE: SITE PLAN

DRAWING NO: C-101

Y:\Shared\2_ENG\R656605823\5_DESIGN\DWG\SHEETS\ENCROACHMENT EXHIBIT.dwg, 9/9/2025 12:34 PM, Toby Harris

This document and its contents are property of Three Notch Group, Inc. and may not be distributed, reused, or modified without permission.




FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS
07/18/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

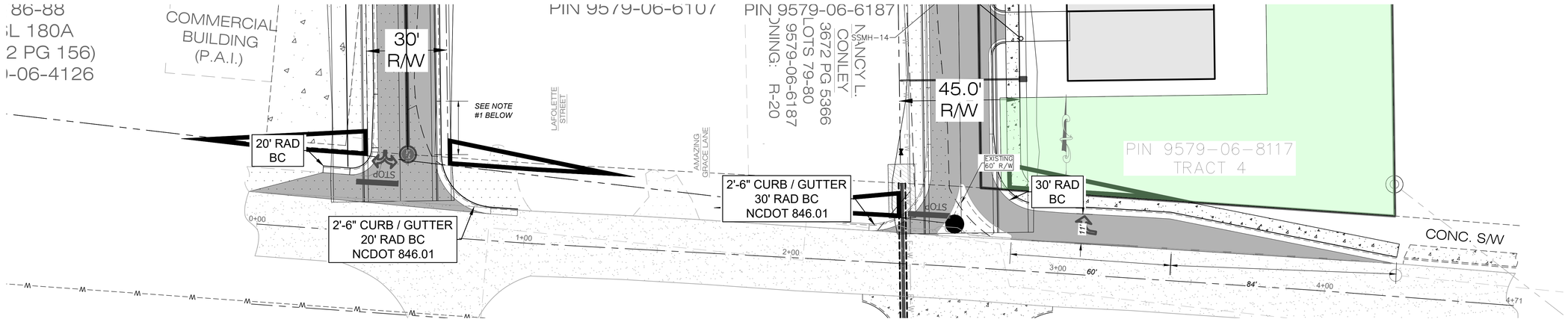
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: NC ENCROACHMENT PLAN & PROFILE

DRAWING NO: CE-100

This document and its contents are property of Three Notch Group, Inc. and may not be distributed, reused, or modified without permission.

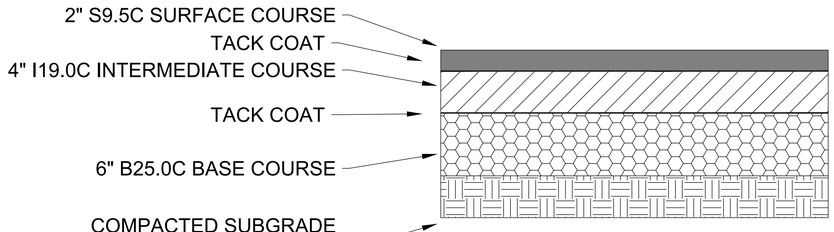



## LEGEND

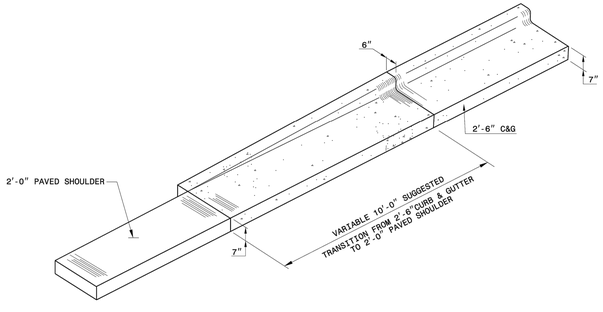
- WIDENING SECTION (PROPOSED FULL DEPTH PAVEMENT)
- EXISTING ROADWAY
- PROP. "PORK CHOP" TURN ISLAND (WITH MOUNTABLE MONOLITHIC CURB)

## NOTES:

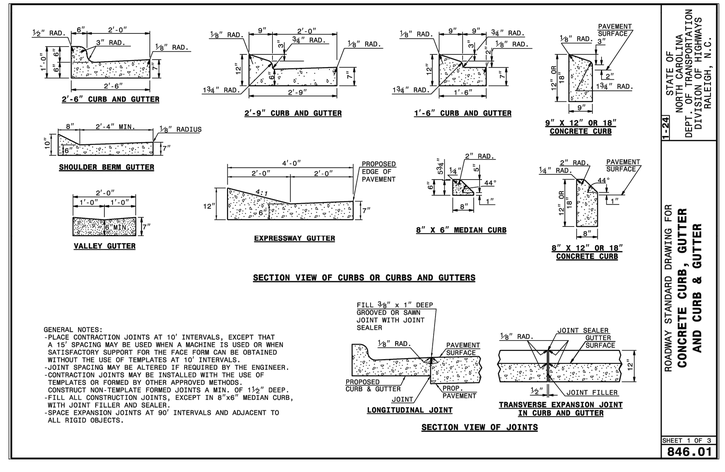
1. TYPICAL TRANSITION DISTANCES FROM 2' GUTTER AT CURB RETURN TO 1' CUTTER: 20'.




## TURN LANE PAVING DETAIL




## C/G TRANSITION DETAIL




## NCDOT 846.01

This document and its contents are property of Three Notch Group, Inc. and may not be distributed, reused, or modified without permission.

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |

ENGINEER'S SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 JOSEPH M. HARRIS
07/18/2025

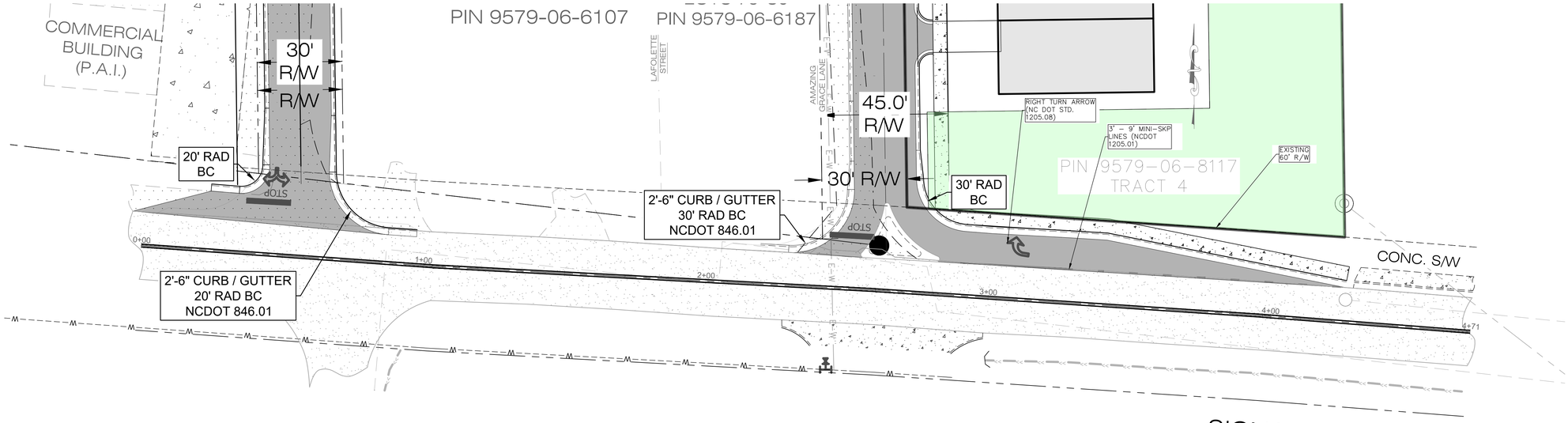
| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: ROADWAY PLAN

DRAWING NO: CE-101




LINDA VISTA DR SR 1521
MAINTAINED BY NCDOT (ASPHALT)

SIGNAL HILL ROAD SR 1508
MAINTAINED BY NCDOT SUBJECT TO 60' R/W P
NCDOT OFFICIAL (ASPHALT)

# LEGEND

WIDENING SECTION
(PROPOSED FULL DEPTH PAVEMENT)

EXISTING ROADWAY

PROP. "PORK CHOP" TURN ISLAND
(WITH MOUNTABLE MONOLITHIC CURB)

# NOTES:

1. TYPICAL TRANSITION DISTANCES FROM 2' GUTTER AT CURB RETURN TO 1' CUTTER: 20'.

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |

ENGINEER'S SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS
07/18/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28269
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

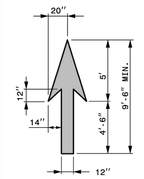
SHEET TITLE: STRIPING PLAN

DRAWING NO: CE-102

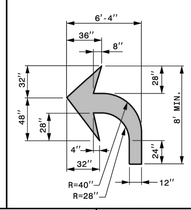
V:\Base\2_ENGR\CAD_LIB\BASE_TEMPLATES_Base11x17.dwg

This document and its contents are property of Three Notch Group, Inc. and may not be distributed, reused, or modified without permission.

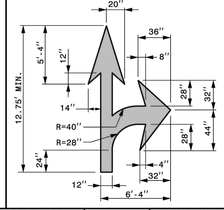
## STRAIGHT ARROW




## RIGHT OR LEFT TURN ARROW




## COMBINATION STRAIGHT AND LEFT OR RIGHT TURN ARROW



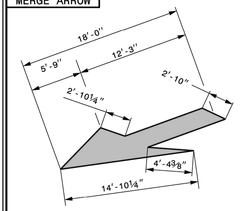

## COMBINATION LEFT AND RIGHT TURN ARROW

SAME DIMENSIONS APPLY AS FOR THE LEFT/RIGHT TURN ARROW

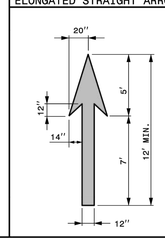
## COMBINATION LEFT AND STRAIGHT AND RIGHT TURN ARROW

SAME DIMENSIONS APPLY AS FOR THE COMBINATION STRAIGHT AND LEFT/RIGHT TURN ARROW

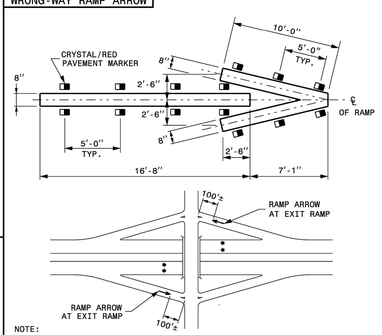
## MERGE ARROW




## ELONGATED STRAIGHT ARROW




## WRONG-WAY RAMP ARROW




NOTE:

1- WHEN INSTALLING COLD APPLIED PLASTIC ON CONCRETE, IT IS RECOMMENDED TO USE COLD APPLIED PLASTIC WITH A BLACK CONTRASTING BOLDER.

GENERAL NOTES:

1- USE THE COLOR WHITE FOR ALL PAVEMENT MARKING SYMBOLS.

2- DO NOT LOCATE PAVEMENT MARKING SYMBOLS AS TO ENCROACH INTO INTERSECTION AREAS.

3- DO NOT PLACE SYMBOLS ACROSS TRANSVERSE EXPANSION JOINTS ON PORTLAND CEMENT CONCRETE PAVEMENTS, UNLESS APPROVED BY THE ENGINEER.

4- CONFORM ALL SYMBOLS TO THE FHWA "STANDARD HIGHWAY SIGNS" MANUAL WHICH INCLUDES PAVEMENT MARKINGS AND STANDARD ALPHABETS (REFER TO SHEETS 6 THRU 9). DIMENSIONS CAN VARY AMONG MANUFACTURERS, THEREFORE SLIGHT VARIANCES ARE ACCEPTABLE. HOWEVER, ALL SYMBOLS ARE REQUIRED TO BE APPROVED BY THE DEPARTMENT.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
**PAVEMENT MARKINGS**
SYMBOLS AND WORD MESSAGES

SHEET 1 OF 9
**1205.08**

## CONTINUOUS LINES

EDGE LINE — YELLOW OR WHITE — 4"/6"

LANE LINE — WHITE — 4"/6"

CENTER LINE — YELLOW — 4"/6"

GORE LINE — WHITE — 8"/12"

DIAGONAL LINE — YELLOW OR WHITE — 12" 45 MPH OR HIGHER; 8" LESS THAN 45 MPH

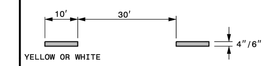
CROSSWALK LINE — WHITE — 8" TRANSVERSE; 24" LONGITUDINAL

RxR LINE — WHITE — 16"

STOP OR TRANSVERSE BAR — WHITE — 24"

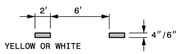
## 10'-30'/SP SKIP LINE

UNLESS OTHERWISED SHOWN, USE 10'-30'/SP SKIPS FOR SKIP LANE LINES AND SKIP CENTER LINES.



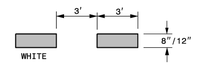

## 2'-6'/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 2'-6'/SP MINI-SKIPS FOR LANE LINE EXTENSIONS THROUGH INTERSECTIONS, EDGE LINE EXTENSIONS THROUGH INTERSECTIONS AND BICYCLE LANE EXTENSIONS.



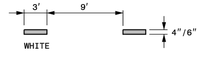

## 3'-3'/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 3'-3'/SP MINI-SKIPS FOR THE WHITE EDGE LINE EXTENSIONS AT ROUNDABOUTS.




## 3'-9'/SP MINI-SKIP LINE

UNLESS OTHERWISED SHOWN, USE 3'-9'/SP MINI-SKIPS FOR WINI-SKIP LANE LINES, LINE EXTENSIONS THROUGH TAPERS, AND MINI-SKIPS USED FOR BICYCLE LANE LINES.




GENERAL NOTES:

1- USE 6" LANE, EDGE, AND CENTER LINES ON ALL FULL CONTROL OF ACCESS FACILITIES AND OTHER ROUTES AS DIRECTED BY THE ENGINEER.

2- LANE LINES INDICATED AS "WIDE" ON THE ROADWAY STANDARD DRAWINGS SHALL BE AT LEAST TWICE THE WIDTH OF THE NORMAL LINE.

3- GORE LINES SHALL BE TWICE THE WIDTH OF THE NORMAL LINE.

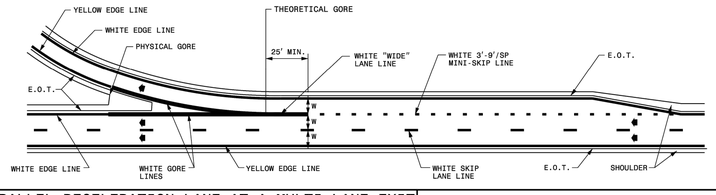
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

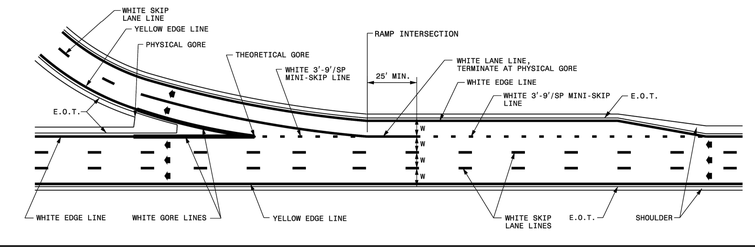
ROADWAY STANDARD DRAWING FOR
**PAVEMENT MARKINGS**
LINE TYPES AND OFFSETS

SHEET 1 OF 2
**1205.01**

## PARALLEL DECELERATION LANE




## PARALLEL DECELERATION LANE AT A MULTI-LANE EXIT




GENERAL NOTES:

1- LINE WIDTH ON ENTRANCE AND EXIT RAMPS SHALL MATCH THE LINE WIDTH ON THE MAINLINE.

2- GORE LINE MARKINGS TERMINATE AT THE PHYSICAL GORE.

3- LANE LINES INDICATED AS "WIDE" SHALL BE AT LEAST TWICE THE WIDTH OF THE NORMAL LINE.

4- GORE LINES SHALL BE TWICE THE WIDTH OF THE NORMAL LINE.

5- REFER TO ROADWAY STANDARD DRAWING 1205.01 FOR ADDITIONAL PAVEMENT MARKING GUIDANCE.

LEGEND

W = WIDTH OF TRAVEL LANE
E.O.T.= EDGE OF TRAVEL
DIRECTION OF TRAFFIC FLOW

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
**PAVEMENT MARKINGS**
EXIT AND ENTRANCE RAMPS

SHEET 2 OF 3
**1205.03**

*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS
07/18/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

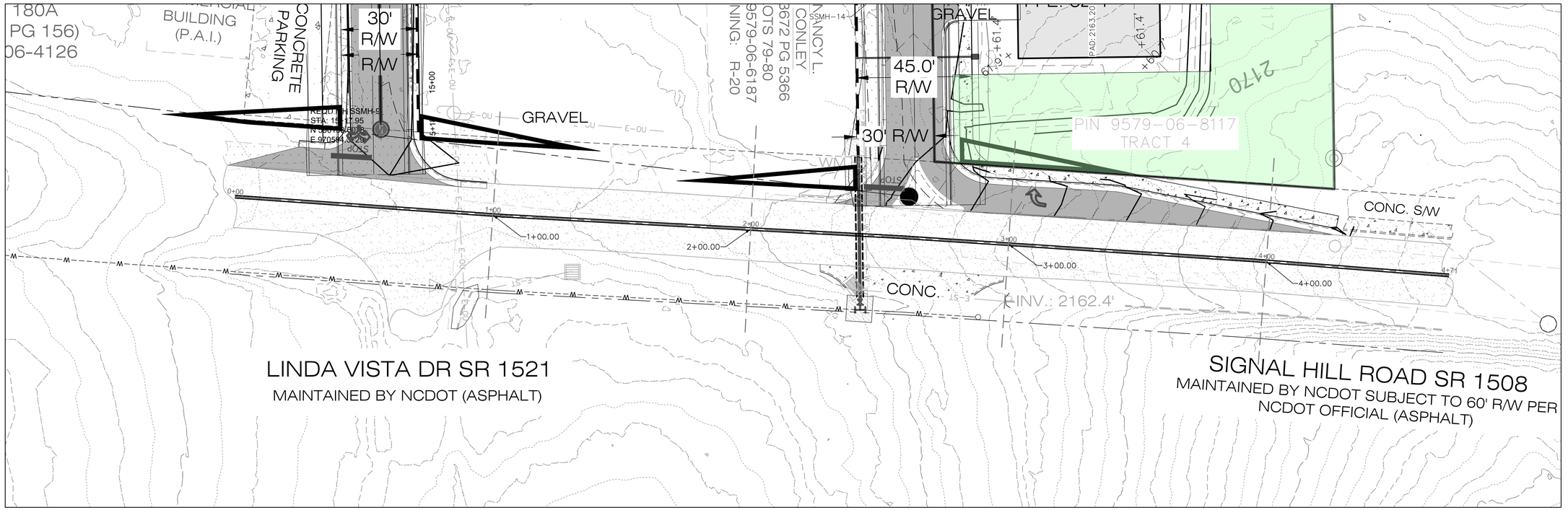
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

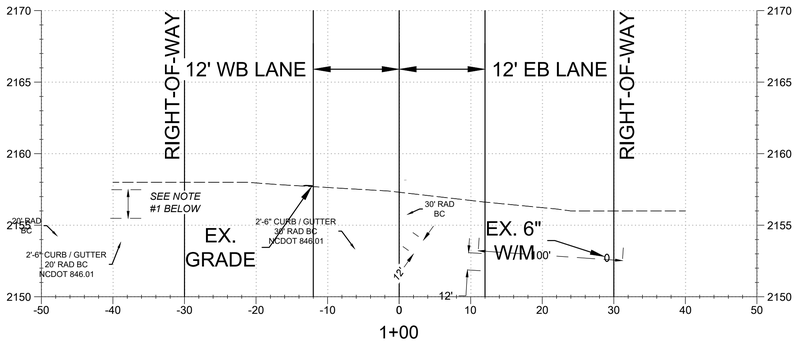
SHEET TITLE: STRIPING DETAILS

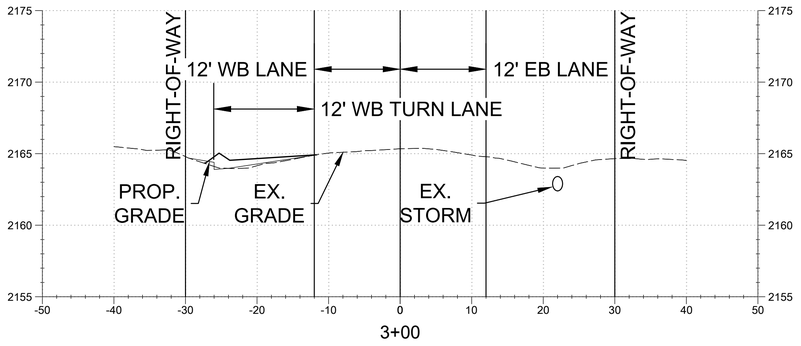
DRAWING NO: CE-103

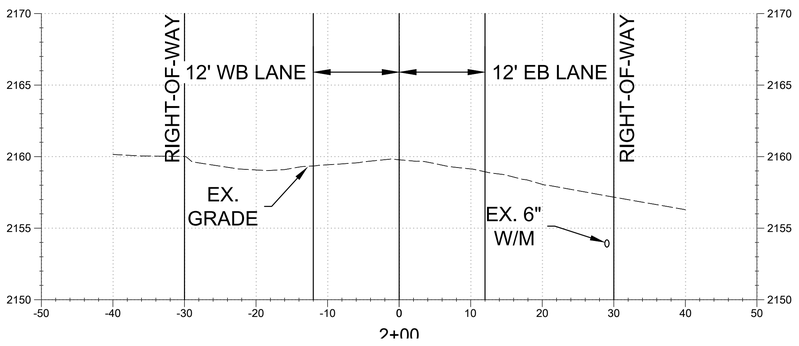
X:\Shared\3_ENGICAD_LIBRARIES_TEMPLATES_Standard 11x17.dwg

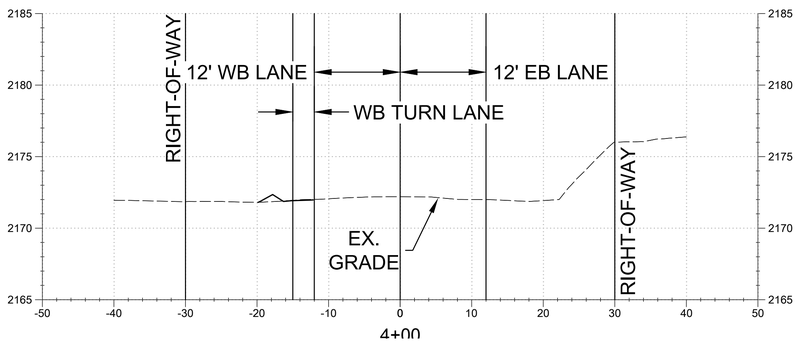
This document and its contents are property of Three Notch Group, Inc. and may not be distributed, reused, or modified without permission.




This document and its contents are property of Three Notch Group, Inc. and may not be distributed, reused, or modified without permission.

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER JUSTIN M. HARRIS
07/18/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TJH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
PHONE: 704.344.1213
www.3ntch.com
License No. C-4973

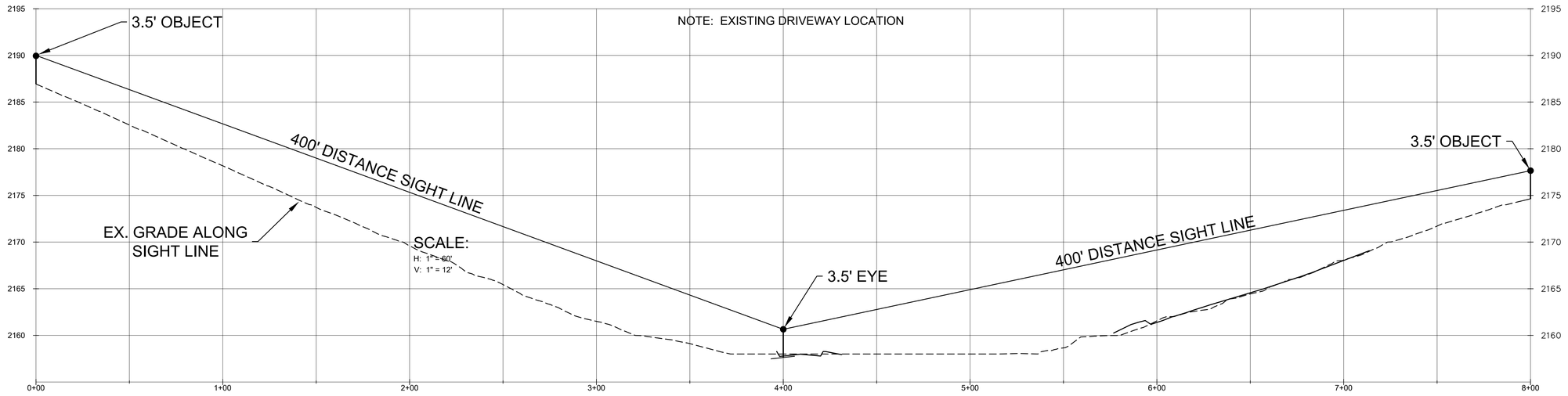
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

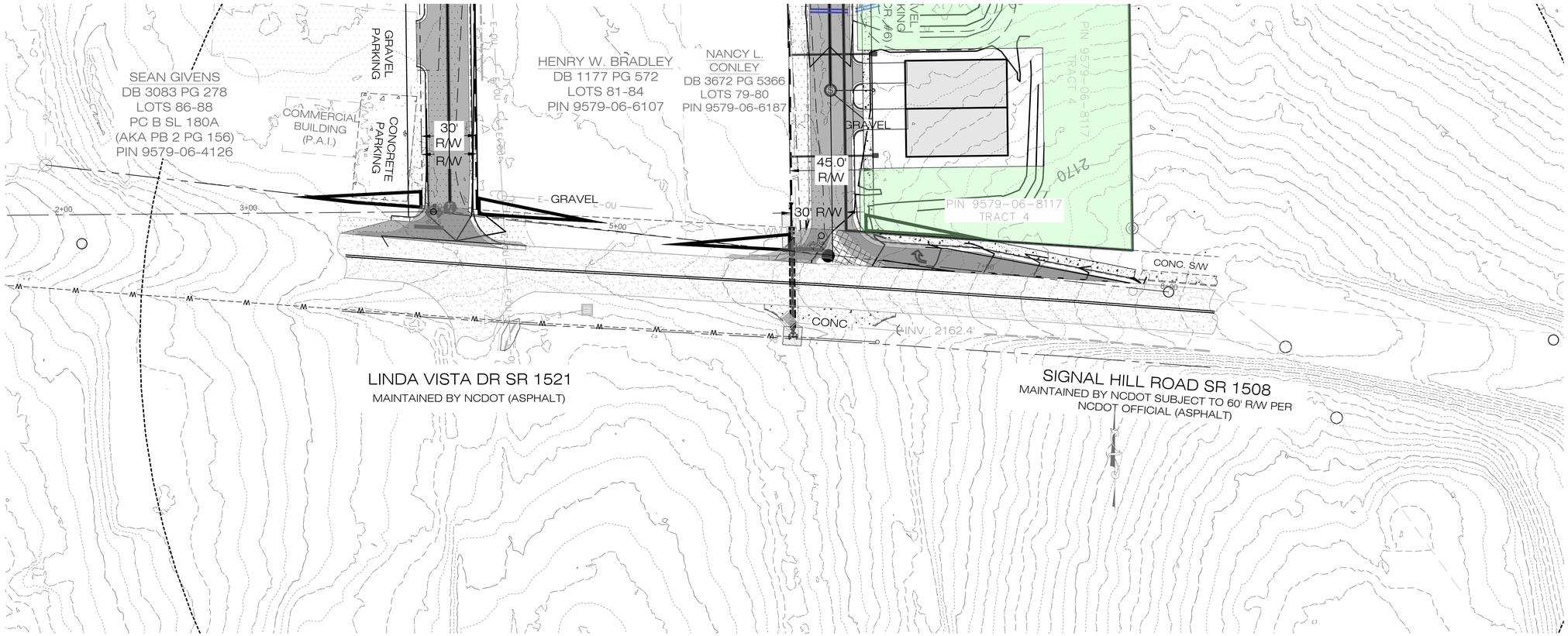
SHEET TITLE: CROSS SECTIONS

DRAWING NO: CE-104



Y:\Drawn\2_ENGR\2D_LIB\BASE_TEMPLATES_Border11x17.dwg




SCALE: 1" = 30'

This document and its contents are property of Three Notch Group, Inc. and may not be distributed, reused, or modified without permission.

Y:\Shared\2_ENGINEERING\656605823_DESIGN\DWG\SHEETS\ENCROACHMENT EXHIBIT SD.dwg, 9/9/2025 12:35 PM, Toby Harris

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |

ENGINEER'S SEAL: NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER TOBIN M. HARRIS
07/18/2025

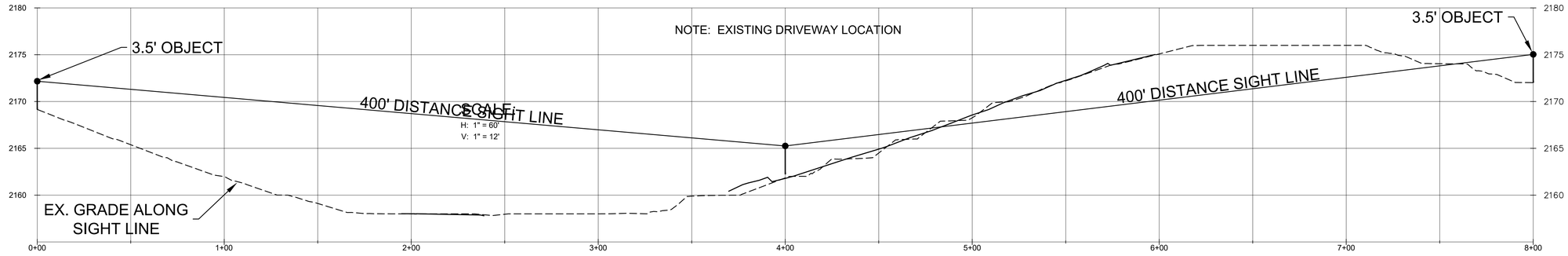
| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

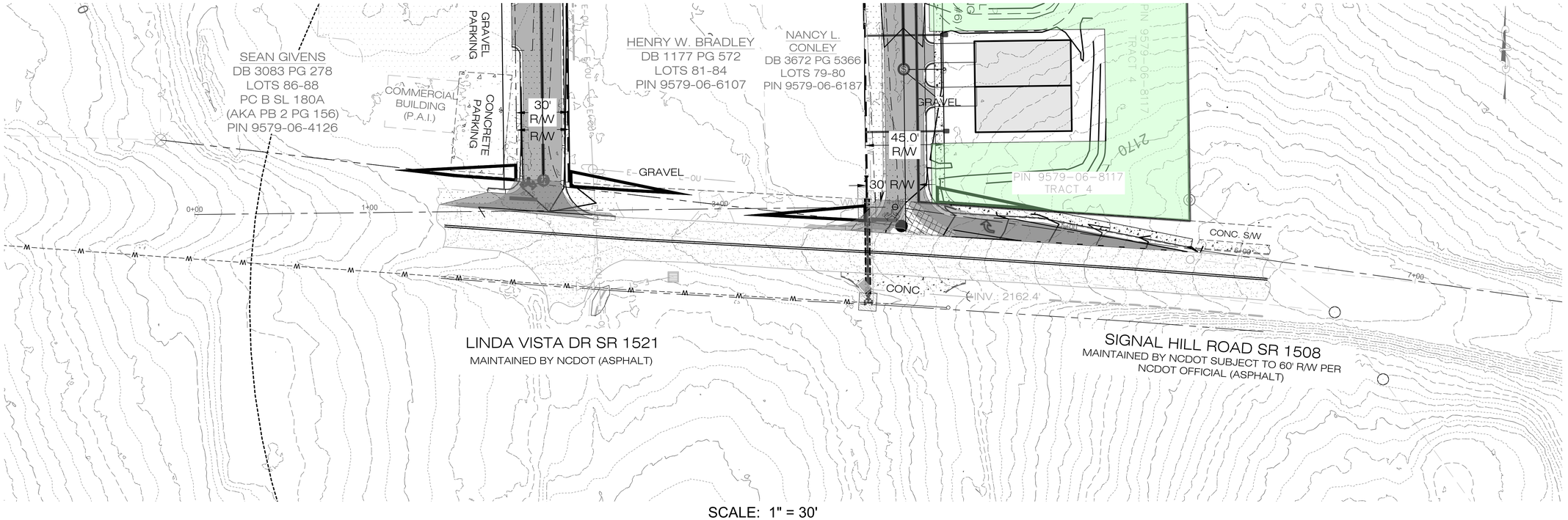
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: SIGHT DISTANCE PLAN - LAFOLETTE STREET

DRAWING NO: CE-105




SCALE: 1" = 30'

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 08/20/2024 | ADDRESS CLIENT COMMENTS |
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

ENGINEER'S SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 TOBY M. HARRIS

07/18/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-0913
www.threenotchgroup.com
License No: C-4073

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: SIGHT DISTANCE PLAN - AMAZING GRACE LANE

DRAWING NO: CE-106

Y:\Shared\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\ENCROACHMENT EXHIBIT SD.dwg, 9/9/2025 12:35 PM, Toby Harris

This document and its contents are property of Three Notch Group, Inc. and may not be distributed, reused, or modified without permission.

TOTAL DENUDED AREA = 11.47 AC.
SEE SHEET 6 FOR EROSION CONTROL NOTES AND CONSTRUCTION SEQUENCE

TOTAL AREA OF SURVEY
13.73 ACRES
(EXCLUDING RIGHTS OF WAY)

**SKIMMER BASIN #2**
(STD 03.08.02)
DRAINAGE AREA = 1.24 AC.
DISTURBED AREA = 1.00 AC.
$Q_{10}$ = 2.83 CFS
BASIN TOP ELEV = 2158.00
PRIMARY SPWY ELEV = 2156.50
BASIN BOTTOM ELEV = 2154.00
MIN. VOLUME REQUIRED = 1,800 CF
MIN. VOLUME DESIGNED = 2,487 CF
SURFACE AREA REQUIRED = 920 SF
SURFACE AREA DESIGNED = 1,740 SF

**SKIMMER BASIN #1**
(STD 03.08.02)
DRAINAGE AREA = 1.22 AC.
DISTURBED AREA = 1.22 AC.
$Q_{10}$ = 2.79 CFS
BASIN TOP ELEV = 2143.00
PRIMARY SPWY ELEV = 2142.00
BASIN BOTTOM ELEV = 2140.00
MIN. VOLUME REQUIRED = 2,196 CF
MIN. VOLUME DESIGNED = 3,000 CF
SURFACE AREA REQUIRED = 907 SF
SURFACE AREA DESIGNED = 1,800 SF

**SKIMMER BASIN #3**
(STD 03.08.02)
DRAINAGE AREA = 7.12 AC.
DISTURBED AREA = 6.17 AC.
$Q_{10}$ = 16.27 CFS
BASIN TOP ELEV = 2138.00
PRIMARY SPWY ELEV = 2137.00
BASIN BOTTOM ELEV = 2134.00
MIN. VOLUME REQUIRED = 11,106 CF
MIN. VOLUME DESIGNED = 23,165 CF
SURFACE AREA REQUIRED = 5,288 SF
SURFACE AREA DESIGNED = 9,285 SF

HIGHLAND INVESTORS LIMITED PARTNERSHIP
DB 1262 PG 521
PIN 9579-16-5868

CAROLINA VILLAGE, INC
DB 1341 PG 582
PB 2017 SL 11014
PIN 9579-18-3554
ZONING: PRD-CZD

HOME DEPOT USA, INC
DB 992 PG 711
PB 1999 SL 3086
PIN 9579-16-0862
ZONING: R-20

OVERLAPPING EASEMENTS

PERMANENT DRAINAGE EASEMENT PER PB 1999 SL 3086, & DB 993 PG 360

STREAMBANK MAINTENANCE EASEMENT PER PB 2018 SL 11488, AREA G DB 3284 PG 387 & DB 3273 PG 78

#5 EIR ID-KEE

30' SEWER EASEMENT PER DB 838 PG 434

ANGELA M. LAMB
ESTATE FILE 21E973
(REF: DB 481 PG 483)
PIN 9579-07-1337
ZONING: R-20

AMAZING GRACE LN.
20' PRIVATE R/W

LAFOLETTE ST.
30' PRIVATE R/W

SIGNAL HILL ROAD SR 1508
MAINTAINED BY NCDOT SUBJECT TO 60' R/W PER NCDOT OFFICIAL (ASPHALT)
60' R/W

LINDA VISTA DR
SR 1521
MAINTAINED BY NCDOT (ASPHALT)

CSD CONTROL POINT #5 REBAR
NC GRID COORDINATES
N: 596,147.54' NAD 83/11
E: 970,567.47' NAD 83/11
-LOCALIZED POINT-

LIMITS OF DISTURBANCE (TYP)
SILT FENCE (NCDEQ STD. 6.62)
SILT FENCE OUTLET (DETAIL DWG. 7)
ROCK CHECK DAM (NCDEQ STD. 6.63)
TEMP DIVERSION DITCH (NCDEQ STD. 6.20)
HDPE SLOPE DRAIN 2/ 6' x 6' CLASS B RIPRAP (NCDEQ STD. 6.32) INV IN = 2144.00 INV OUT = 2140.00
HDPE SLOPE DRAIN 2/ 6' x 6' CLASS B RIPRAP (NCDEQ STD. 6.32) INV IN = 2141.50 INV OUT = 2140.00
4" SKIMMER W/ 3/4" DIA. ORIFICE 6" PVC OUTLET W/ 6' x 6' CLASS B RIPRAP APRON SKIMMER INV. = 2140.00 6" INV OUT = 2135.00
8" SKIMMER W/ 1.5" DIA. ORIFICE 6" PVC OUTLET W/ 6' x 6' CLASS B RIPRAP APRON SKIMMER INV. = 2134.00 6" INV OUT = 2127.00
2.5" SKIMMER W/ 3/4" DIA. ORIFICE 6" PVC OUTLET W/ 6' x 6' CLASS B RIPRAP APRON SKIMMER INV. = 2152.00 6" INV OUT = 2151.00
HDPE SLOPE DRAIN 2/ 6' x 6' CLASS B RIPRAP (NCDEQ STD. 6.32) INV IN = 2158.00 INV OUT = 2153.00
HDPE SLOPE DRAIN W/ 6' x 6' CLASS B RIPRAP (NCDEQ STD. 6.32) INV IN = 2135.00 INV OUT = 2134.00
20' SPILLWAY ELEVATION = 2137.00. LINE WITH RIP RAP TO TOE OF SLOPE
CONSTRUCTION ENTRANCE (DETAIL DWG. 6)
EX. GRAVEL DRIVE TO BE REMOVED
POSSIBLE TEMPORARY STOCKPILE
CONCRETE WASHOUT (NCDEQ STD. 6.63)

SHED (ENCR.#1)
DWELLING (P.A.)
SHED
DWELLING
COMMERCIAL BUILDING (P.A.I.)

ASHLEY M. CLOUSE
BETTY B. MEAD
DB 3768 PG 310
LOTS 73-76
PIN 9579-06-6315
ZONING: R-20

NANCY L. CONLEY
DB 3672 PG 5366
LOTS 79-80
PIN 9579-06-6187
ZONING: R-20

HENRY W. BRADLEY
DB 1177 PG 572
LOTS 81-84
PIN 9579-06-6107
ZONING: R-20

SEAN GIVENS
DB 3083 PG 278
LOTS 86-88
PC B SL 180A
(AKA PB 2 PG 156)
PIN 9579-06-4126
ZONING: O-2

KRISTINA SOFRONIE
DB 3866 PG 389
PB 2021 PG 13157, TR 2
PIN 9579-06-3404
ZONING: R-20

D & G ESTATE, LLC
DB 3876 PG 178
PB 2021 PG 13157, TR 1
PIN 9579-06-3217
ZONING: CHMU

JEANETTE Q. MATHIS
DB 910 PG 68
PC A SL 214A, LOT 7
PIN 9579-06-1562
ZONING: R-20

SWAIN S. HAYNES
DB 901 PG 347
PC A SL 214A, LOT 6
PIN 9579-06-1764
ZONING: R-20

HOMER F. HOWARD
DB 674 PG 3
PC A SL 214A, LOT 5
PIN 9579-06-1936
ZONING: R-20

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1"=50'

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 2 | 01/31/2025 | ADDRESS CITY & COUNTY COMMENTS |

*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS
ENGINEER'S SEAL
01/31/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-384-6913
www.3ngtch.com
License No: C-0473

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: EROSION CONTROL PH 1 PLAN

DRAWING NO: C-300

Y:\Shared\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\EROSION CONTROL PH 1.dwg, 9/9/2025 12:35 PM, Toby Harris

TOTAL AREA OF SURVEY
13.73 ACRES
(EXCLUDING RIGHTS OF WAY)

TOTAL DENUDED AREA = 11.47 AC.
SEE SHEET 6 FOR EROSION CONTROL NOTES AND CONSTRUCTION SEQUENCE

**SKIMMER BASIN #2**
(STD 03.08.02)
DRAINAGE AREA = 1.24 AC.
DISTURBED AREA = 1.00 AC.
$Q_{10}$ = 2.83 CFS
BASIN TOP ELEV = 2158.00
PRIMARY SPWY ELEV = 2156.50
BASIN BOTTOM ELEV = 2154.00
MIN. VOLUME REQUIRED = 1,800 CF
MIN. VOLUME DESIGNED = 2,487 CF
SURFACE AREA REQUIRED = 920 SF
SURFACE AREA DESIGNED = 1,740 SF

**SKIMMER BASIN #1**
(STD 03.08.02)
DRAINAGE AREA = 1.22 AC.
DISTURBED AREA = 1.22 AC.
$Q_{10}$ = 2.79 CFS
BASIN TOP ELEV = 2143.00
PRIMARY SPWY ELEV = 2142.00
BASIN BOTTOM ELEV = 2140.00
MIN. VOLUME REQUIRED = 2,196 CF
MIN. VOLUME DESIGNED = 3,000 CF
SURFACE AREA REQUIRED = 907 SF
SURFACE AREA DESIGNED = 1,800 SF

**SKIMMER BASIN #3**
(STD 03.08.02)
DRAINAGE AREA = 7.12 AC.
DISTURBED AREA = 6.17 AC.
$Q_{10}$ = 16.27 CFS
BASIN TOP ELEV = 2138.00
PRIMARY SPWY ELEV = 2137.00
BASIN BOTTOM ELEV = 2134.00
MIN. VOLUME REQUIRED = 11,106 CF
MIN. VOLUME DESIGNED = 23,165 CF
SURFACE AREA REQUIRED = 5,288 SF
SURFACE AREA DESIGNED = 9,285 SF

HIGHLAND INVESTORS LIMITED PARTNERSHIP
DB 1262 PG 521
PIN 9579-16-5868

CAROLINA VILLAGE, INC
DB 1341 PG 582
PB 2017 SL 11014
PIN 9579-18-3554
ZONING: PRD-CZD

HOME DEPOT USA, INC
DB 992 PG 711
PB 1999 SL 3086
PIN 9579-16-0862
ZONING: R-20

SIGNAL RIDGE, LP
DB 1680 PG 504
PB 2017 SL 10971
PIN 9579-16-1378
ZONING: PRD-CZD

OVERLAPPING EASEMENTS

PERMANENT DRAINAGE EASEMENT
PER PB 1999 SL 3086, & DB 993 PG 360

STREAMBANK MAINTENANCE EASEMENT
#5 EIR ID-KEE
PER PB 2018 SL 11488, AREA G
DB 3284 PG 387 & DB 3273 PG 78

ALLEN ST.
NOT CURRENTLY IN USE
VARIABLE WIDTH PRIVATE R/W
PER PB 2 PG 10

AMAZING GRACE LN. N.
NOT CURRENTLY IN USE
20' PRIVATE R/W PER PB 2 PG 156

AMAZING GRACE LN. S.
20' PRIVATE R/W

LAFOLETTE ST.
30' PRIVATE R/W

SIGNAL HILL ROAD SR 1508
MAINTAINED BY NCDOT SUBJECT TO 60' R/W PER NCDOT OFFICIAL (ASPHALT)

LINDA VISTA DR
SR 1521
MAINTAINED BY NCDOT (ASPHALT)

INLET PROTECTION (SEE DETAIL DWG. 7)

CONSTRUCTION ENTRANCE (DETAIL DWG. 6)

SILT FENCE OUTLET (DETAIL DWG. 7)

CSD CONTROL POINT #5 REBAR
NC GRID COORDINATES
N: 596,147.54' NAD 83/11
E: 970,567.47' NAD 83/11
-LOCALIZED POINT-

NANCY L. CONLEY
DB 9672 PG 5366
LOTS 79-80
PIN 9579-06-6187
ZONING: R-20

HENRY W. BRADLEY
DB 1177 PG 572
LOTS 81-84
PIN 9579-06-6107
ZONING: R-20

ASHLEY M. CLOUSE
BETTY B. MEAD
DB 3768 PG 310
LOTS 73-76
PIN 9579-06-6315
ZONING: R-20

SEAN GIVENS
DB 3083 PG 278
LOTS 86-88
PC B SL 180A
(AKA PB 2 PG 156)
PIN 9579-06-4126
ZONING: O-2

KRISTINA SOFRONIE
DB 3866 PG 389
PB 2021 PG 13157, TR 2
PIN 9579-06-3404
ZONING: R-20

D & G ESTATE, LLC
DB 3876 PG 178
PB 2021 PG 13157, TR 1
PIN 9579-06-3217
ZONING: CHMU

JEANETTE Q. MATHIS
DB 910 PG 68
PC A SL 214A, LOT 7
PIN 9579-06-1562
ZONING: R-20

SWAIN S. HAYNES
DB 901 PG 347
PC A SL 214A, LOT 6
PIN 9579-06-1764
ZONING: R-20

HOMER F. HOWARD
DB 674 PG 3
PC A SL 214A, LOT 5
PIN 9579-06-1936
ZONING: R-20

ANGELA M. LAMB
ESTATE FILE 21E973
(REF: DB 481 PG 483)
PIN 9579-07-1337
ZONING: R-20

30' SEWER EASEMENT PER DB 838 PG 434

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1"=50'

| REVISIONS | | |
|---|---|---|
| REV. | DATE | COMMENTS |
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |
| 2 | 01/31/2025 | ADDRESS CITY & COUNTY COMMENTS |

*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

ENGINEER'S SEAL
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER TOBIN M. HARRIS
01/31/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-384-6913
www.3notch.com
License No. C-0473

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: EROSION CONTROL PH 2 PLAN

DRAWING NO: C-310

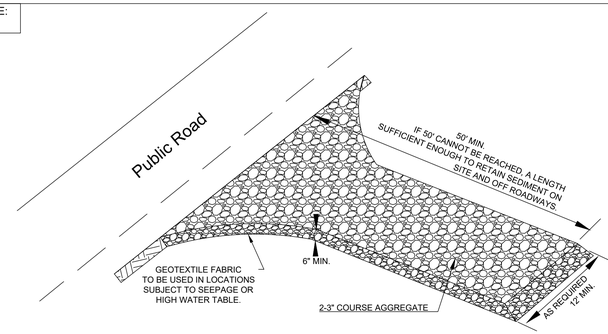
Y:\Shared\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\EROSION CONTROL PH 2.dwg, 9/9/2025 12:36 PM, Toby Harris

## CONSTRUCTION SEQUENCE:

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT EROSION IS MINIMIZED AND THAT COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, REGULATIONS, AND ORDINANCES IS MAINTAINED THROUGHOUT EXECUTION OF THIS PROJECT.

1. OBTAIN A LAND DISTURBING PERMIT. SCHEDULE A PRE-CONSTRUCTION MEETING.
2. CLEAR FOR AND INSTALL GRAVEL CONSTRUCTION ENTRANCES. CLEAR FOR AND INSTALL ONSITE PERIMETER SILT FENCE AS SHOWN ON THE APPROVED PLANS. ONCE IN PLACE, CONTRACTOR MAY THEN CLEAR FOR AND INSTALL SEDIMENT BASINS, FOLLOWED BY ANY TEMPORARY DIVERSIONS AS SHOWN ON THE APPROVED PLANS. PERMANENT BASIN / POND OUTFALL STRUCTURES AND PIPING WILL REQUIRE INSTALLATION DURING PHASE 1 EROSION CONTROL. ALL SEDIMENT BASINS AND TRAPS MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL ALL UPGRADIENT AREAS ARE STABILIZED.
3. ONCE EROSION CONTROL MEASURES HAVE BEEN APPROVED BY INSPECTOR, COMPLETE DEMOLITION OF ALL FEATURES ON SITE NOT ALREADY NECESSARY TO BE REMOVED FOR BASIN INSTALLATION.
4. EXCAVATION MAY BEGIN AT THIS TIME. ANY FILL OPERATIONS MUST BEGIN AT THE REAR / UPSTREAM SIDE OF THE SITE AND WORK THEIR WAY FORWARD / DOWNSTREAM. THIS WILL ENSURE POSITIVE DRAINAGE OF THE SITE TOWARDS THE SEDIMENT BASINS THROUGHOUT THE MASS GRADING PORTION OF CONSTRUCTION. CONTRACTOR TO ENSURE NO SUMPS ARE CREATED IN GRADED AREAS UNTIL STORM INLETS CAN BE PROVIDED FOR THOSE SUMPS.
5. BEGIN INSTALLATION OF STORM DRAIN, SEWER AND WATER UTILITIES. STORM DRAIN INSTALLATION MUST START AT MOST DOWN STREAM STRUCTURE AND MOVE UPSTREAM. AS INLETS ARE INSTALLED, PROVIDE INLET PROTECTION IMMEDIATELY. AFTER INLETS ARE INSTALLED, CURBING MAY BE INSTALLED WHERE NECESSARY AND WHEN EVER A TEMPORARY DITCH IS TO BE FILLED IN / RELOCATED, CONTRACTOR MUST CONTACT AN EROSION CONTROL INSPECTOR BEFORE AND AFTER THE RELOCATION HAS TAKEN PLACE WITH 48 HOURS NOTICE BEING GIVEN PRIOR TO RELOCATION. AS AREAS ARE BROUGHT UP TO GRADE, TEMPORARILY OR PERMANENTLY STABILIZE PER TIME FRAMES LISTED ON THIS SHEET.
   NOTE: ALL SEDIMENT BASINS AND TRAPS MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL ALL UPGRADIENT AREAS HAVE BEEN STABILIZED AND THE STORM DRAIN SYSTEM IS IN PLACE, DIVERTING DRAINAGE FROM THESE TEMPORARY TRAPS / BASINS TO THE PERMANENT BASINS. A NC DEMLR REPRESENTATIVE MUST APPROVE THE REMOVAL OF ANY SEDIMENT BASIN OR TRAP PRIOR TO IT TAKING PLACE.
6. PROVIDE PAVEMENT IN ROADWAY AND PARKING AREAS IN ORDER TO PERMANENTLY STABILIZE THESE AREAS. IF ALL BUILDING PERMITS HAVE BEEN ACQUIRED, CONSTRUCTION MAY ALSO BEGIN ON BUILDINGS AND RETAINING WALLS AT THIS TIME.
   NOTE: THE CONTRACTOR SHALL ENSURE THAT THE EROSION CONTROL DEVICES REMAIN UNDISTURBED DURING CONSTRUCTION OF THE BUILDING PADS AND ASSOCIATED PARKING/DRIVE AREAS ADJACENT TO THESE DEVICES UNTIL THE CONTRIBUTING UPSTREAM AREAS HAVE BEEN STABILIZED AND APPROVED.
7. ONCE SITE IS APPROVED BY INSPECTOR, SILT FENCING AND CONSTRUCTION ENTRANCE MAY BE REMOVED. SEDIMENT BASINS MAY BE CONVERTED TO THEIR FINAL WET POND CONDITIONS. PERMANENTLY STABILIZE ANY REMAINING AREAS WITH SOD, SEED AND MULCH, OR PAVING AS NECESSARY.

DATE: PAGE:



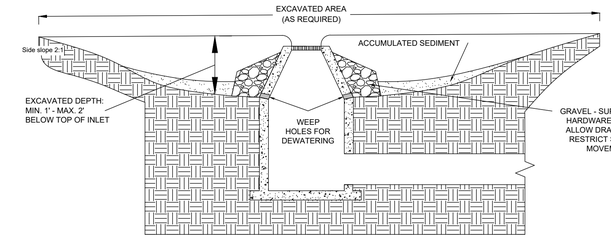

Construction:
1. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabrics in order to improve stability of the foundation in locations subject to seepage or high water table.

Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2-inch stone.
3. Sediment on roadways is to be removed immediately by broom and shovel, either by manual or mechanical means, and not to be washed off where it has the potential to enter a stream, drainage way or storm drain system.

**TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT**

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:




Notes:
1. Clear the area of all debris that might hinder excavation and disposal of spoil.
2. Grade the approach to the inlet uniformly.
3. Protect weep holes by gravel.
4. When the contributing drainage area has been permanently stabilized, seal weep holes, fill the basin with stable soil to final grading elevations, compact it properly and stabilize.

Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater.
2. Clean, and properly maintain the excavated basin after every storm until the contributing drainage area has been permanently stabilized.
3. remove sediment when the volume of the basin has been reduced by one-half.
4. Spread all excavated material evenly over the surrounding land area or stockpile and stabilize appropriately.

**EXCAVATED DROP INLET PROTECTION (TEMPORARY)**

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

**Seeding Mixture**

| Species | Rate (lb/acre) |
|---|---|
| Rye (grain) | 120 |
| Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains) | 50 |

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

**Seeding Dates**
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

**Mulch**
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

**Maintenance**
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

**Seeding Mixture**

| Species | Rate (lb/acre) |
|---|---|
| German millet | 40 |

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

**Seeding Dates**
Mountains — May 15 - Aug. 15
Piedmont — May 1 - Aug. 15
Coastal Plain — Apr. 15 - Aug. 15

**Mulch**
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

**Maintenance**
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

**Seeding Mixture**

| Species | Rate (lb/acre) |
|---|---|
| Rye (grain) | 120 |

**Seeding Dates**
Mountains — Aug. 15 - Dec. 15
Coastal Plain and Piedmont — Aug. 15 - Dec. 31

**Mulch**
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

**Maintenance**
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

**SEED BED PREPARATION:**

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1-1½ tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700 - 1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

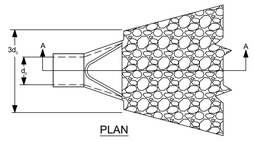
SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. The finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. All ridges and depressions shall be removed and filled to provide the approved surface drainage. Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

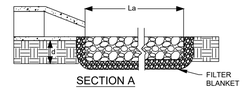
**TEMPORARY SEEDING**

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

PIPE OUTLET TO FLAT AREA NO WELL-DEFINED CHANNEL



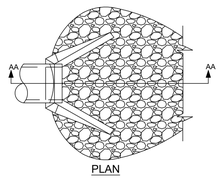



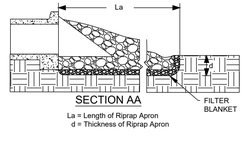

La = Length of Riprap Apron
d = Thickness of Riprap Apron

NOTES:
1. Compact any fill required in the subgrade to the density of the surrounding undisturbed material. Low areas in the subgrade on undisturbed soil may also be filled by increasing the riprap thickness.
2. The riprap and gravel filter must conform to the specified grading limits shown on the plans.
3. Filter cloth, when used, must meet design requirements, and be properly protected from punching or tearing during installation. Repair any damage by removing the riprap and placing another piece over the damaged area. If the damage is extensive, replace the entire filter cloth.
4. All connecting joints should overlap so the top layer is above the downstream layer a minimum of 1 foot.
5. The minimum thickness of the riprap should be 1.5 times the maximum stone diameter but not less than 6".
6. Riprap may be field stone or rough quarry stone. It should be hard, angular highly weather-resistant and well graded.
7. Construct the apron on zero grade with no overfill at the end. Make the top of the riprap at the downstream end level with the receiving area or slightly below it.
8. Ensure that the apron is properly aligned with the receiving stream and preferably straight throughout its length. If a curve is needed, place in the upper section of the apron.

MAINTENANCE:
1. Inspect outlet structures at least weekly and after each rainfall of 1.0 inch or greater.
2. Check outlets for erosion around or below riprap and for if stones have been dislodged. Make repairs immediately to prevent further damage.

PIPE OUTLET TO WELL-DEFINED CHANNEL




La = Length of Riprap Apron
d = Thickness of Riprap Apron

**OUTLET STABILIZATION STRUCTURE**

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

**SEEDING MIXTURE**

| Species | Rate |
|---|---|
| Centipede | 5 lbs/acre |
| Indian Woodoats | 1.5-2.5 lbs/acre* |
| Virginia Wild Rye | 4-6 lbs/acre |

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

**Seeding Dates**
Coastal or Eastern Piedmont for Centipede- Sept. 1 - May 1
Coastal and Piedmont for Indian Woodoats and Virginia Wild Rye- Feb 15 - April 1
Mountains for Indian Woodoats and Virginia Wild Rye- March 1 - May 15

**Maintenance:**
Significant maintenance may be required to obtain desired cover.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR SUMMER

**SEEDING MIXTURE**

| Species | Rate |
|---|---|
| Indian Woodoats | 1.5-2.5 lbs/acre* |
| Virginia Wild Rye | 4-6 lbs/acre* |

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

**Seeding Dates**
Mountains - July 15- Aug 15
Piedmont - Aug 15 - Oct 15

**Maintenance:**
Indian Woodoats and Virginia Wild Rye are both sun and shade tolerant.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR FALL

**SEEDING MIXTURE**

| Species | Rate |
|---|---|
| Hard Fescue | 15 lbs/acre |
| Switchgrass | 2.5-3.5 lbs/acre* |
| Indian Grass | 5-7 lbs/acre* |
| Big Bluestem | 5-7 lbs/acre* |
| Indian Woodoats | 1.5-2.5 lbs/acre* |
| Virginia Wild Rye | 4-6 lbs/acre* |

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

**Seeding Dates**
Mountains - Hard Fescue- Aug 1 - June 1
Mountains- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 15
Piedmont and Coastal- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 1
Coastal- Indian Woodoats and Virginia Wild Rye- Sept 1 - Nov 1

**Maintenance:**
Hard Fescue is not recommended for slopes > 5%. Prefers shade.

**SEED BED PREPARATION:**

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1½ tons/acre on coarse0textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. the finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. all ridges and depressions shall be removed and filled to provide the approved surface drainage . Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

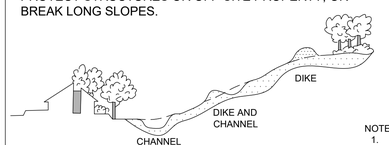
NOTES:
1. Permanent seeding, sodding or other means of stabilization are required when all construction work is completed according to the NPDES timeframes table.
2. A North Carolina Department of Agriculture soils test (or equal) is highly recommended to be obtained for all areas to be seeded, sprigged, sodded or planted.
3. Use a seeding mix that will produce fast0growing nurse crops and includes non-invasive species that will eventually provide a permanent groundcover. Soil blankets may be used in lieu of nurse crops. Mat, tack or crimp mulch, as needed to stabilize seeded areas until root establishment. Mulch must cover at leaser 80% of the soil surface.
4. Ground cover shall be maintained until permanent vegetation is established and stable against accelerated erosion.

**PERMANENT SEEDING**

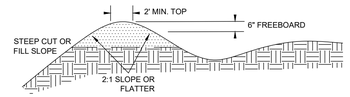
Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

USE OF DIVERSIONS TO PROTECT CUT OR FILL SLOPES, PROTECT STRUCTURES OR OFF-SITE PROPERTY, OR BREAK LONG SLOPES.




CROSS-SECTION FOR PERMANENT DIVERSION LOCATED ABOVE A SLOPE.




**Minimum Design Storm for Degrees of Hazard**

| Level of Protection | Area to Be Protected | Minimum Design Storm |
|---|---|---|
| Low | All erosion control facilities. Open areas, parking lots, minor recreation areas. | 10 year |
| Medium | Recreation development, low-capacity roads and minor structures. | 25 year, 24 hour<br>50 year, 24 hour |
| High | Major structures, homes, main school buildings, high-capacity roads. | 100 year, 24 hour |

NOTES:
1. Permanent Diversions can be installed as temporary diversions until the site is stabilized and then completed as a permanent measure, or they can be installed in final form during the initial construction operation, so long as they function properly and meet all temporary measure standards.
2. Remove and properly dispose of all trees, brush, stumps, or other objectionable material. Fill and compact all ditches, swales, or gullies that will be crossed to natural ground level or above.
3. Just before placement of fill, the base of the ridge should be disked by machinery.
4. Excavate, shape, and stabilize the diversion to line, grade, and cross section, as required in the design plan.
5. Compact the ridge to prevent unequal settlement, and to provide stability against seepage.
6. Stabilized the diversion with Permanent vegetation after installation.

MAINTENANCE:
1. Inspect permanent diversions at least weekly and after each rainfall of 1.0 inch or greater.
2. Immediately remove any obstructions from the flow area, and repair the diversion ridge.
3. Check outlets, and make timely repairs as needed.
4. Maintain the vegetation in a vigorous, healthy condition at all times.

**PERMANENT DIVERSIONS**

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

**Mulching Materials and Application Rates**

| Material Organic Mulches | Rate Per Acre | Quality | Notes |
|---|---|---|---|
| Straw | 1-2 tons | Dry, unchopped, unweathered; avoid weeds. | Should come from wheat or oats; spread by hand or machine; must be tacked down. |
| Wood Chips | 5-6 tons | Air dry | Treat with 12 lbs nitrogen/ton. Apply with mulch blower, chip handle, or by hand. Not for use in fine turf. |
| Wood Fiber | 0.5-1 tons | | Also referred to as wood cellulose. May be hydroseeded. Do not use in hot, dry weather. |
| Bark | 35 cubic yards | Air dry, shredded or hammer-milled, or chips. | Apply with mulch blower, chip handler, or by hand. Do not use asphalt tack. |
| Corn Stalks | 4-6 tons | Cut or shredded in 4-6 inch lengths. | Apply with mulch blower or by hand. Not for use in fine turf. |
| Sericea Lespedeza seed-bearing stems | 1-3 tons | Green or dry; should contain mature seed. | |
| **Nets and Mats*** | | | |
| Jute net | Cover area | Heavy, uniform; woven of single jute yarn. | Withstands waterflow. Best when used with organic mulch |
| Fiberglass net | Cover area | | Withstands waterflow. Best when used with organic mulch |
| Excelsior (wood fiber net) | Cover area | | Withstands waterflow. |
| Fiberglass roving | 0.5-1 tons | Continuous fibers of drawn glass bound together with a non-toxic agent. | Apply with a compressed air ejector. Tack with emulsified asphalt at a rate of 25-35 gal/1,000 sq. ft. |
| **Chemical Stabilizers**** | | | |
| Aquatain Aerospray Curasol AK Pertroset SB Terra Tack Crust 500 Genaqua 743 M-145 | Follow Manufacturer's specifications | | Not beneficial to plant growth |

*Refer to Practice No. 6.30, Grass Lined Channels in the NC DEQ E&SC Planning and Design Manual
**Use of trade names does not imply endorsement of product.

NOTES:
1. Select material based on site and practice requirements, availability of material, labor and equipment.
2. Before mulching, complete grading, install sediment control practices, and prepare the seedbed. Apply seed before mulching **except** when seed is applied as part of a hydroseeder slurry containing wood fiber mulch or a hydroseeder slurry is applied over straw.

**APPLICATION OF ORGANIC MULCH**
1. Spread mulch uniformly by hand, or with a mulch blower.
2. When spreading straw mulch by hand, divide the area to be mulched into sections of approximately 1,000 ft$^2$, and place 70-90 lb. of straw(1 1/2 to 2 bales) in each section to facilitate uniform distribution.
3. After Spreading, no more than 25% of the ground surface should be visible.
4. In hydroseeding operations a green dye, added to the slurry, assures a uniform application.

**ANCHORING ORGANIC MULCH**
1. Straw mulch must be anchored immediately after spreading.
2. A tractor-drawn implement designed to punch mulch into the soil or a mulch anchoring tool provides maximum erosion control with straw. A regular farm disk, weighted and set nearly straight, may substitute, but will not do a job comparable to the mulch anchoring tool. The disk should not be sharp enough to cut the straw. These methods are limited to slopes no steeper than 3:1, where equipment can operate safely.
3. Application of liquid mulch binders and tackifiers should be heaviest at the edges of areas and at crests of ridges and banks, to resist winds. Binder should be applied uniformly to the rest of the area. Binders may be applied after mulch is spread, or may be sprayed into the mulch as it is being blown onto the soil. Applying straw and binder together is the most effective method.
4. Emulsified asphalt should be applied at 0.10 gallons per square yard (10 gal/1,000 ft$^2$). Heavier applications cause straw to "perch" over rills. Use Rapid setting (RS or CRS) designated asphalt in traffic areas to prevent uncured asphalt from being picked up on shoes and causing damage to rugs, clothes, etc.
5. Synthetic binders may be used as recommended by the manufacturer.
6. Lightweight plastic, cotton, jute, wire or paper nets may be stapled over the mulch according to the manufacturer's recommendations.
7. For small areas where other methods cannot be used, peg and twine anchoring can be used. Drive 8-10 inch wooden pegs to within 3 inches of the soil surface, every 4 feet in all directions. Stakes can be driven before or after straw is spread. Secure mulch by stretching twine between pegs in a criss-cross-within-a-square pattern. Turn twine two or more times around each peg.
8. Rye Grain may be used to anchor mulch in fall plantings, and German Millet in spring. Broadcast at 15 lb/acre before applying mulch.

**CHEMICAL MULCHES**
1. May be effective for soil stabilization if used between May 1 and June 15, or Sept. 15 and Oct. 15, provided that they are used on slopes **no steeper** than 4:1, and that proper seedbed preparation has been accomplished, including surface roughening where required.
2. Chemical mulches cannot be used to bind other mulches, or with wood fiber in a hydroseeded slurry at any time. Follow the manufacturer's recommendations for application.

**FIBERGLASS ROVING**
1. Spread roving uniformly over the area at a rate of 0.25 to 0.35 lb/yd$^2$. Anchor with asphalt immediately after application, at a rate of 0.25-0.35 gal/yd$^2$
2. As a channel lining, and at other sites of concentrated flow, the roving mat must be further anchored to prevent undermining.
3. It may be secured with stakes placed at intervals no greater than 10 feet along the drainageway, and randomly throughout its width, but not more than 10 feet apart.
4. As an option to staking, the roving can be buried to a depth of 5 inches at the upgrade end and at intervals of 50 feet along the length of the channel.

**NETS AND MATS**
1. Nests alone generally provide little moisture conservation benefits and only limited erosion protection. Therefore, typically use in conjunction with an organic mulch such as straw.
2. Except when wood fiber slurry is used, netting should always be installed **over** the mulch. Wood fiber may be sprayed on top of an installed net.
3. Mats, including "excelsior" (wood fiber) blankets, are considered protective mulches and may be used alone.
4. Place the matting in firm contact with the soil, and staple securely.

**MULCHING**

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

**REVISIONS**

| REV. | DATE | COMMENTS |
|---|---|---|
| 2 | 01/31/2025 | ADDRESS CITY & COUNTY COMMENTS |

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER ROBIN M. HARRIS
01/31/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-0473

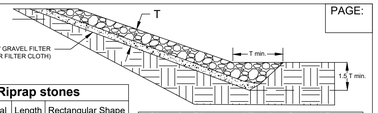
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: ESC DETAILS-1

DRAWING NO: C-350

Y:\Shared\2_ENGR\656605823\5_DESIGN\DWG\SHEET\ESC DETAILS.dwg, 9/9/2025 12:36 PM, Toby Harris

DATE: PAGE:




Subgrade Preparation:
1. Prepare the subgrade for riprap and filter to the required lines and grades shown on the plans.
2. Compact any fill required in the subgrade to a density approximating that of the surrounding undisturbed material or overfill depressions with riprap.
3. Remove brush, trees, stumps, and other objectionable material.

Sand and Gravel Filter Blanket:
1. Place the filter blanket immediately after the ground foundation is prepared.
2. When using gravel, spread filter stone in a uniform layer to the specified depth.
3. When more than one layer of filter material is used, spread the layers with minimal mixing.

Synthetic Filter Fabric:
1. Place the cloth filter directly on the prepared foundation.
2. Overlap the edges by at least 12 inches, and space anchor pins every 3 feet along the overlap.
3. Bury the upstream end of the cloth a minimum of 12 inches below ground and bury the lower end of the cloth or over lap with the next section as required.
4. If damage occurs while placing riprap, remove the riprap, and repair the sheet by adding another layer of filter material with a minimum overlap of 12 inches around the damaged area. If damage is extensive, remove and replace the entire sheet.
5. If placing large stones or machine placing is difficult, a 4 inch layer of fine gravel or sand may be needed to protect the filter cloth.

Maintenance:
In general, once a riprap installation has been properly designed and installed it requires very little maintenance. Riprap should be inspected periodically for scour or dislodged stones. Control of weed and brush growth may be needed in some locations.

**Size of Riprap stones**

| Weight (lb) | Mean Spherical Diameter (ft) | Length (ft) | Rectangular Shape Width/Height (ft) |
|---|---|---|---|
| 50 | 0.8 | 1.4 | 0.5 |
| 100 | 1.1 | 1.8 | 0.6 |
| 150 | 1.3 | 2.0 | 0.7 |
| 300 | 1.6 | 2.6 | 0.9 |
| 500 | 1.9 | 3.0 | 1.0 |
| 1000 | 2.2 | 3.7 | 1.3 |
| 1500 | 2.6 | 4.7 | 1.5 |
| 2000 | 2.8 | 5.4 | 1.8 |
| 4000 | 3.6 | 6.0 | 2.0 |
| 6000 | 4.0 | 6.9 | 2.3 |
| 8000 | 4.5 | 7.6 | 2.5 |
| 20,000 | 6.1 | 10.0 | 3.3 |

**Sizes for Riprap and Erosion Control Stone Specified by NCDOT**

| Riprap | | Erosion Control | |
|---|---|---|---|
| Class 1 | Class 2 | Class A | Class B |
| 5-200 lb | 25-250 lb | 2"-6" | 5"-15" |
| 30% shall weigh a minimum of 60 lbs each | 60% shall weigh a minimum of 100 lbs each | | |
| No more than 10% shall weigh less than 15 lbs each | No more than 5% shall weigh less than 50 lbs each | 10% tolerance top and bottom sizes | |
| | | Equally distributed, no gradation specified | Equally distributed, no gradation specified |

Riprap should be a well-graded mixture with 50% by weight larger than the specified design size.
Diameter of the largest stone size in the mix should be 1.5 times the $d_{50}$ size with smaller sizes grading down to 1 inch.

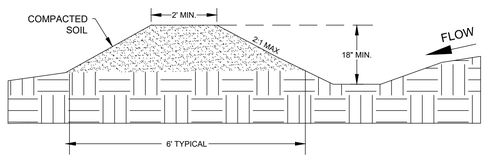
Stone Placement:
1. Placement of riprap should follow immediately after placement of the filter.
2. Place so that riprap forms a dense, well-graded mass of stone with a minimum of voids.
3. Place to its full thickness in one operation.
4. Do not place by dumping through chutes or other methods that cause segregation of stone sizes.
5. Take care not to dislodge underlying base or filter when placing stone.
6. The toe of the riprap slope should be keyed to a stable foundation at its base.
7. The toe should be excavated to a depth about 1.5 times the design thickness of the riprap and extend horizontally from the slope, as shown above.
8. Hand placing may be necessary to achieve the proper distribution of stone sizes to produce a relatively smooth, uniform surface.

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

# RIP RAP

DATE: PAGE:

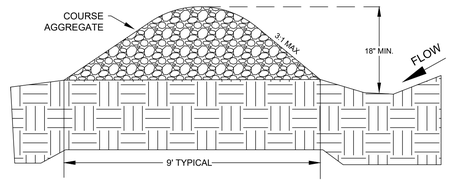
## TEMPORARY EARTHEN DIVERSION DIKE




NOTES:
1. Remove and properly dispose of all tree, brush, stumps, and other objectionable material.
2. Temporary diversions are to only be used for drainage areas of 5 acres or less.
3. Ridges will have a 2 feet minimum top width, 2:1 or flatter side slopes and a minimum of 0.3 feet freeboard.
4. Channels will have a parabolic, trapezoidal, or V shape with side slopes of 2:1 or flatter.
5. Any point where vehicles will be crossing should have 3:1 or flatter side slopes.
6. Ensure the top of the dike is not lower at any point than the design elevation plus the specified settlement.
7. Provide sufficient room around diversions to permit machine re-grading and cleanout.
8. Vegetate the ridge immediately after construction unless it will remain in place less than 30 working days.

MAINTENANCE:
1. Inspect all measures at least weekly and after every rainfall of 1.0 inch or greater.
2. Make all repairs immediately.
3. Immediately remove any sediment from the flow area and repair the diversion ridge.
4. Check outlets and make timely repairs as needed.

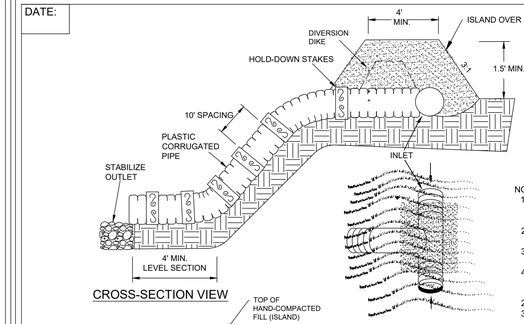
## TEMPORARY GRAVEL DIVERSION DIKE FOR VEHICLE CROSSING




Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

# TEMPORARY DIVERSIONS

DATE: PAGE:




**Size of Slope Drain**

| Max. Drainage Area per Pipe (Acres) | Pipe Diameter (Inches) |
|---|---|
| 0.50 | 12 |
| 0.75 | 15 |
| 1.00 | 18 |
| >1.00* | as designed |

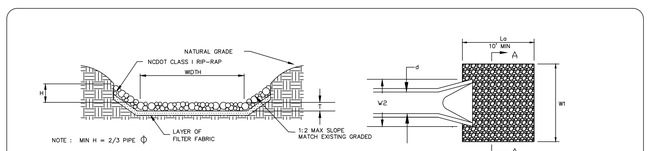
* Inlet design becomes more complex beyond this size.

NOTES:
1. Place slope drains on undisturbed soil or well compacted fill at locations and elevations shown on the plan.
2. Slightly slope the section of pipe under the dike toward its outlet.
3. Hand tamp the soil under and around the entrance section in lifts not to exceed 6 inches.
4. Fill over the drain at the top of the slope to a minimum of 1.5 feet depth, 4 feet top width and 3:1 side slopes.
2. Ensure all slope drain connections are watertight.
3. Compact fill material and securely fasten the exposed section of the drain with grommets or stakes spaced no more than 10 feet apart.
4. Extend the drain beyond the toe of the slope, and adequately protect the outlet from erosion.
5. Make the compacted, settled dike ridge no less than 1 foot above the top of the pipe at every point.
6. Immediately stabilize all disturbed areas following construction.

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater; repair immediately.

Effective Date: 9/1/2023

# TEMPORARY SLOPE DRAINS




CONSTRUCTION SPECIFICATIONS :

A. BOTTOM GRADE SHALL BE 0.0 %.
B. SIDE SLOPES 2:1 OR FLATTER.
C. SIDEWALLS SHALL EXTEND UP AS SHOWN ON THE PLANS BUT NOT LESS THAN TWO-THIRDS THE PIPE DIAMETER.
D. THERE SHALL BE NO OVERFALL FROM THE END OF THE APRON TO THE SURFACE OF THE RECEIVING CHANNEL. THE AREA TO BE PAVED OR RIP-RAPPED SHALL BE UNDERCUT SO THAT THE INVERT OF THE APRON SHALL BE AT THE SAME GRADE (FLUSH) WITH THE SURFACE OF THE RECEIVING CHANNEL. THE APRON SHALL HAVE A CUTOFF TO TOE WALL AT THE DOWNSTREAM END.
E. APRON DIMENSIONS AND RIP-RAP SIZE OR CONCRETE THICKNESS MUST BE AS SHOWN ON THE PLANS.
F. THE WIDTH OF THE END OF THE APRON SHALL BE EQUAL TO THE BOTTOM WIDTH OF THE RECEIVING CHANNEL AT THE OUTLET PIPE, WHICHEVER IS GREATER, OR 3 TIMES THE DIAMETER.
G. THE PLACING OF FILL, EITHER LOOSE OR COMPACTED IN THE RECEIVING CHANNEL SHALL NOT BE ALLOWED.
H. NO BENDS OR CURVES IN THE HORIZONAL ALIGNMENT OF THE APRON WILL BE PERMITTED.
I. FILTER FABRIC TO BE MIRAFI 500 OR APPROVED EQUAL
J. THICKNESS OF RIP-RAP TO BE 1' OR AS NOTED BY THE ENGINEER.

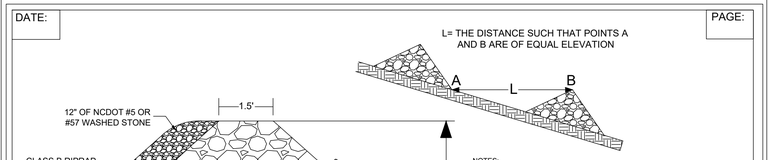
USE USDA NOMOGRAPH FROM NC SEDIMENT AND EROSION CONTROL MANUAL FOR DESIGN DATA.

| OUTLET | Q(CFS) | V(FPS) | La | W1 | W2 | *T | H |
|---|---|---|---|---|---|---|---|
| FES--200 | 10.5 | 5.9 | 16' | 17.5' | 4.5' | 14" | 20" |
| FES--204 | 23.7 | 13.4 | 16' | 17.5' | 4.5' | 14" | 20"** |
| FES--300 | 41.1 | 8.4 | 8' | 10.5' | 7.5' | 14" | 20" |
| FES--316 | 7.8 | 4.4 | 14' | 15.5' | 4.5' | 14" | 20" |
| FES--320 | 40.1 | 12.8 | 12' | 14' | 6' | 14" | 20" |
| FES--322 | 14.4 | 8.2 | 12' | 13.5' | 6' | 14" | 20" |

* d50 (see fig. 8.06 a&b "NC SEDIMENT AND EROSION CONTROL MANUAL"
d=no. = 1.5 x d50
T = 1.5 X d=no.
** 1' MIN. DEPTH OF RIP RAP APRON. 4=d
W1 = END OF APRON, 3=d
W2 = END OF FLARED SECTION

RIP-RAP APRON
FOR FLARED END SECTION

DATE: PAGE:




NOTES:
1. Place stone on a filter fabric foundation.
2. The center stone section must be at least 9 inches below natural ground level where the dam abuts the channel banks.
3. Extend stone at least 1.5 feet beyond the ditch bank to keep water from cutting around the ends of the check dam.
4. Set spacing between dams to assure that the elevation at the top of the lower dam is the same as the toe elevation of the upper dam.
5. Protect the channel after the lowest check dam from heavy flow that could cause erosion.
6. Make sure the channel reach above the most upstream dam is stable.
7. Ensure that other areas of the channel, such as culvert entrances below the check dams, are not subject to damage or blockage from displaced stones.
8. Riprap and filter fabric should be keyed in to prevent under cutting.
9. Ends of check dams may need to be turned uphill to prevent bypass and better conform to site conditions.
10. Do not place check dams in intermittent or perennial streams.

MAINTENANCE:
1. Inspect check dams and channels at least weekly and after each rainfall of 1.0 inch or greater. Clean out sediment, straw, limbs or other debris that could clog the channel when needed.
2. Anticipate submergence and deposition above the check dam and erosion from high flows around the edges of the dam. Correct all damage immediately. If significant erosion occurs between dams, additional measures can be taken such as, installing a protective riprap liner in that portion of the channel.
3. Remove sediment accumulated behind the dams as needed to prevent damage to channel vegetation, allow the channel to drain through the stone check dam, and prevent large flows from carrying sediment over the dam. Add stones to the dams as needed to maintain design height and cross section.

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

# CHECK DAM

DATE: PAGE:

**Temporary Seeding Recommendations**

| Common Name | Scientific Name | Rate per Acre | Optimal Planting Date |
|---|---|---|---|
| Rye Grain | Secale Cereale | 30 lbs | Aug. 15 - May 15 |
| Wheat | Triticum Aestivum | 30 lbs | Aug. 15 - May 15 |
| German Millet | Setaria Italica | 10 lbs | May 15 - Aug. 15 |
| Browntop Millet | Urochloa Ramosa | 10 lbs | May 15 - Aug. 15 |

**Temporary Seeding Recommendations:**
- Temporary annual seed selection should be based on season of project installation.
- A single species selection for temporary cover is acceptable.
- In some cases where seasons overlap, a mixture of two or more temporary species may be necessary; however, application rates should not exceed the total recommended rate per acre.
- Temporary seed should be mixed and applied simultaneously with the permanent seed mix if optimal planting dates allow.

**Permanent Seeding Recommendations: Optimal Planting: Mar. 1 - May 15, July 15 - Aug. 15**

| Common Name | Scientific Name | Type* | % of Mix | Soil Drainage Adaptation | Shade Tolerance | Height |
|---|---|---|---|---|---|---|
| Indian Woodoats | Chasmanthium latifolium | Cold Season | 1-10% | Well-drained to Droughty | Moderate | 4 |
| Virginia Wildrye | Elymus virginicus | Cold Season | 5-25% | Well-drained to Droughty | Moderate | 3 |
| Eastern Bottle-brush Grass | Elymus hystrix | Cold Season | 5-10% | Well-drained to Droughty | Moderate | 3 |
| Winter Bentgrass | Argostis hyemalis | Cold Season | 10-20% | Well-drained | Moderate | 3 |
| Rough Bentgrass | Agrostis scabra | Cold Season | 10-20% | Poorly-drained | Poor | 2.5 |

**Permanent Seeding Recommendations: Optimal Planting: Dec. 15 - May 15, Aug. 15 - May 15**

| Common Name | Scientific Name | Type* | % of Mix | Soil Drainage Adaptation | Shade Tolerance | Height |
|---|---|---|---|---|---|---|
| Soft Rush | Juncus effusus | Wetland | 1-10% | Poorly-drained | Poor | 4 |
| Shallow Sedge | Carex lurida | Wetland | 1-10% | Poorly-drained | Poor | 3 |
| Fox Sedge | Carex vulpinoidea | Wetland | 1-10% | Poorly-drained | Poor | 3 |
| Leathery Rush | Juncus coriaceus | Wetland | 2-5% | Poorly-drained | Poor | 2 |

**Permanent Seeding Recommendations: Optimal Planting Dec. 1 - Apr. 15**

| Common Name | Scientific Name | Cultivars | Type* | % of Mix | Soil Drainage Adaptation | Shade Tolerance | Height |
|---|---|---|---|---|---|---|---|
| Switchgrass | Panicum virgatum | Cave-in-rock -- well drained<br>Blackwell -- well drained<br>Shelter -- well drained<br>Kanlow -- poorly drained<br>Carthage -- well drained | Warm Season | 10-15% | Cultivar Dependent | Poor | 6 |
| Indiangrass | Sorghastrum nutans | Rumsey, Osage, Cheyenne | Warm Season | 10-30% | Well-drained to Droughty | Poor | 6 |
| Deertongue | Dichanthelium clandestinum | Tioga | Warm Season | 5-25% | Poorly-drained to Droughty | Moderate | 6 |
| Big Bluestem | Andropogon gerardii | Roundtree, Kaw, Earl | Warm Season | 10-30% | Well-drained to Droughty | Poor | 6 |
| Little Bluestem | Schizachyrium scoparium | Aldous, Cimarron | Warm Season | 10-30% | Well-drained to Droughty | Poor | 4 |
| Sweet Woodreed | Cinna arundinacea | | Warm Season | 1-10% | Poorly-drained to Well-drained | Moderate | 5 |
| Rice Cutgrass | Leersia oryzoides | | Warm Season | 5-25% | Poorly-drained | Poor | 5 |
| Redtop Panic Grass | Panicum rigidulum | | Warm Season | 10-20% | Well-drained | Poor | 3.5 |
| Eastern Gammagrass | Tripsacum dactyloides | | Warm Season | 10-20% | Well-drained to Poorly-drained | Poor | 4.5 |
| Purple Top | Tridens flavus | | Warm Season | 5-10% | Well-drained to Droughty | Poor | 2.5 |

- No specific seeding rate is given in order to allow for custom seed mixes based on site characteristics and season. However, permanent seed inclusion in the mix should total 15 pounds of pure live seed (PLS) per acre drilled or 15-20 pounds PLS per acre broadcast applied.
- At least 4 species should be selected for the mixture, including one species from each type(warm and cold season and wetland); selection of more than four species is recommended for increasing chances of successful vegetation establishment.
- If other species such as wildflowers are added to the mix, they should not be counted in the minimum seeding rate for grasses.

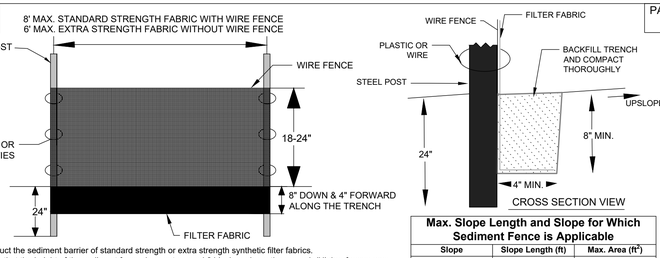
**Permanent Seeding:**
- Soil analysis should be performed to determine nutrient and lime needs of each site.
- Riparian buffers regulated for nutrient management may be limited to a single application of fertilizer.
- Apply seed uniformly with a cyclone seeder, drop-type spreader, drill or hydroseeder on a firm, friable seedbed.
- When using a drill, equipment should be calibrated in the field for the desired seeding rate.
- Mulch all plantings immediately after seeding (see 6.14, Mulching).If planting on stream banks steeper than 10% or areas subject to flooding, a biodegradable RECP (6.17, Rolled Erosion Control Products) is recommended to hold seed and soil in place.

**Maintenance:**
- Many of the recommended permanent grass species may require two years of establishment, depending on site conditions.
- Inspect seeded areas for failure and make necessary repairs, soil amendments, and reseedings.
- If weedy exotic species have overtaken the area after the first growing season, the invading species must be eradicated to allow native species to grow.
- Monitor the site until long term stability has been established.

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

# RIPARIAN AREA SEEDING (MOUNTAIN REGION)

DATE: PAGE:




Notes:
1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 24 inches above the ground. (Higher fences may impound volumes of water sufficient to cause failure of the structure)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with 4 feet minimum overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip ties should have a minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches. Wire mesh should be a minimum 14-gauge with 6 inch mesh spacing.
6. Extra strength filter fabric with 6 foot post spacing does not require a wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
7. Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
8. Place 12 inches of fabric along the bottom and side of the trench.
9. Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
10. Do not attach filter fabric to existing trees.
11. Do not place across ditches, streams, or any other areas of concentrated flow.

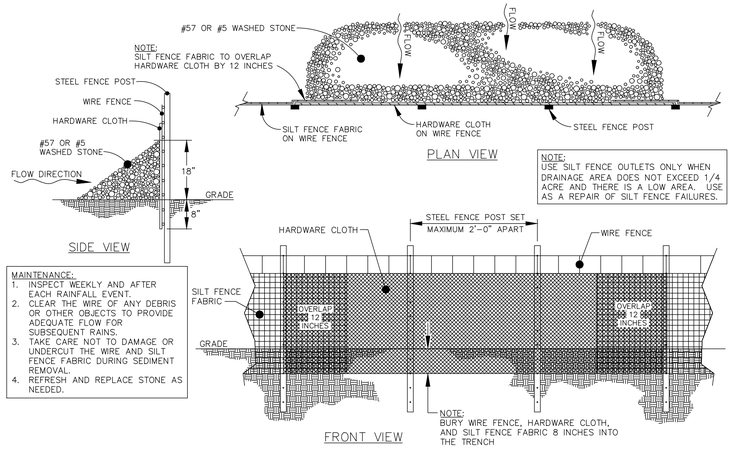
**Max. Slope Length and Slope for Which Sediment Fence is Applicable**

| Slope | Slope Length (ft) | Max. Area (ft²) |
|---|---|---|
| <2% | 100 | 10,000 |
| 2 to 5% | 75 | 7,500 |
| 5 to 10% | 50 | 5,000 |
| 10 to 20% | 25 | 2,500 |
| >20% | 15 | 1,500 |

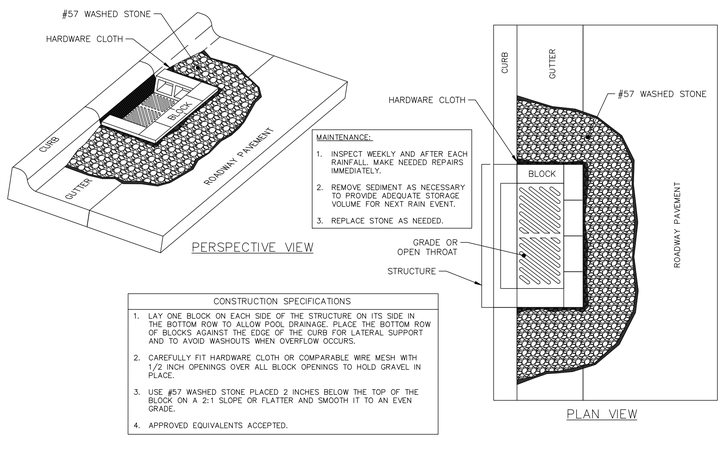
Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and reduce pressure on the fence. Take care to avoid undermining the fence during cleanouts.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

# SEDIMENT FENCE




STANDARD SILT FENCE OUTLET




STANDARD BLOCK & GRAVEL PROTECTION

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| | | |

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

ENGINEER'S SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 JOSHUA M. HARRIS
09/16/2024

| PROJECT # | 656605823 |
|---|---|
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-0473

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: ESC DETAILS-2

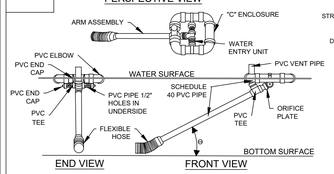
DRAWING NO: C-351

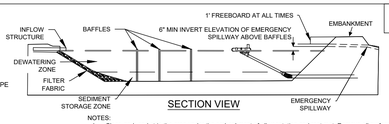
Y:\Shane\2_ENGR\656605823\24_DESIGN\DWG\SHEETS\ESC DETAILS.dwg, 9/9/2025 12:36 PM, Toby Harris

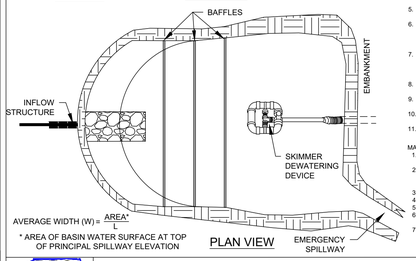
DATE:

PAGE:

PERSPECTIVE VIEW




NOTES:
1. Clear, grub and strip the area under the embankment of all vegetation and root mat. Remove all surface soil containing high amounts of organic matter and stockpile or dispose of it properly. Haul all objectionable material to the designated disposal area. Place temporary sediment control measures below basin as needed.
2. Place the fill in lifts not to exceed 9 inches, and machine compact it. Over fill the embankment 6 inches to allow for settlement.
3. Place the barrel on a firm, smooth foundation of impervious soil. Do not use pervious material such as sand, gravel, or crushed stone as backfill around the pipe. Place the fill around the pipe spillway in 4-inch layers and compact it under and around the pipe to at least the same density as the adjacent embankment.
4. Place a minimum depth of 2 feet compacted backfill over the pipe spillway before crossing with construction equipment.
5. Ensure that the flow length to basin width ratio is at least 2:1 to improve trapping efficiency. Length is measured at the elevation of the principal spillway.
6. Assemble the skimmer following manufacturers instructions or as designed and lay on the bottom of the basin with the flexible joint at the inlet of the barrel pipe. Attach the flexible joint to the barrel pipe and position the skimmer over the excavated pit or support. Be sure to attach a rope and anchor it to the side of the basin.This will be used to pull the skimmer to the side for maintenance.
7. Install the spillway in undisturbed soil to the greatest extent possible. The spillway should be lined with laminated plastic or impermeable geotextile fabric. The fabric must be wide and long enough to cover the bottom and sides and extend onto the top of the dam for anchoring in a trench. The edges may be secured with 8-inch staples or pins.
8. Filter fabric must be long enough to extend down the slope and exit onto stable ground. The width of the fabric must be one piece, not joined or spliced; otherwise water can get under the fabric.
9. The upper section(s) should overlap the lower section(s) so that water cannot flow under the fabric. Secure the upper edge and sides of the fabric in a trench with staples or pins.
10. Discharge water into the basin in a manner to prevent erosion. Use temporary slope drains or diversions with outlet protection to divert sediment-laden water to the upper end of the pool area to improve basin trap efficiency.
11. Stabilize the emergency spillway embankment and all other disturbed areas above the crest of the principal spillway immediately after construction.

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make necessary repairs immediately.
2. Remove sediment and restore the basin to its original dimensions when sediment accumulates to one-half the height of the first baffle. Pull the skimmer to one side so that the sediment underneath can be excavated. Excavate the sediment from the entire basin, not just around the skimmer or within the first cell.
3. Make sure any vegetation growing in the bottom of the basin does not hold down the skimmer.
4. Repair baffles if they are damaged. Re-anchor the baffles if water is flowing underneath or around them.
5. Ensure the skimmer is not clogged with trash or debris.
6. If the skimmer arm or barrel pipe is clogged, remove orifice and clear debris with a plumber's snake or by flushing with clean water. Be sure to replace the orifice before repositioning the skimmer.
7. Check fabric lined spillway for damage and make any required repairs with fabric that spans the full width of the spillway. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement.

## SKIMMER SEDIMENT BASIN

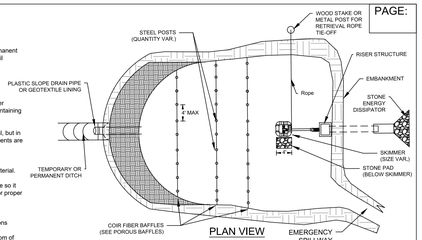
Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

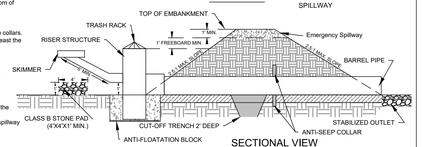
DATE:

PAGE:

NOTES:
1. Install temporary sediment basins to the approved design. If the basin will eventually be converted to a permanent SCM device, the basin must function as a temporary sediment basin and meet the following parameters until completion of the project:
   - Maximum Drainage Area: 100 acres
   - Minimum Sediment Storage Volume: 1800 cubic feet per acre of disturbed area
   - Minimum Surface Area: 435 square feet per cfs of $Q_{10}$ peak inflow
   - Minimum dewatering time: 48 hours
2. Clear, grub, and strip topsoil from areas under the embankment to remove trees, vegetation, roots, and other objectionable material. Delay clearing the pool area until the dam is complete. Stockpile all topsoil or soil containing organic matter for use on the outer shell of the embankment to facilitate vegetative establishment.
3. Place temporary sediment control measures below the basin and stockpile as needed.
4. Excavate a cut-off trench along the center line of the earth fill embankment. Cut trench to stable soil material, but in no case make it less than 2 feet deep with maximum side slopes no steeper than 1:1. Compaction requirements are the same as those for the embankment.
5. Extend the cut-off trench into both abutments to at least the elevation of the riser crest.
6. Keep the trench dry during backfilling and compaction operations.
7. Fill material should be clean mineral soil, free of roots, woody vegetation, rocks, and other objectionable material. Areas of approved fill should be shown on the plans.
8. Scarify areas on which fill is to be placed prior to placing. Ensure that fill material contains sufficient moisture so it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction.
9. Place fill material in 6 to 8 inch continuous layers over the entire length of fill area and compact.
10. Construct the embankment to an elevation 10% higher than the design height to allow for settling.
11. Securely attach the riser to the barrel or barrel stub to make a watertight structural connection. All connections should be made using approved watertight assemblies.
12. If no riser structure is to be used, couple the skimmer arm directly into the embankment 1 foot from the bottom of the basin.
13. The arm pipe connecting the skimmer to the riser shall have a minimum length of 6 feet.
14. Place barrel and riser on a firm, smooth foundation of impervious soil.
15. Do not use pervious material such as sand, gravel, or crushed stone as backfill around the pipe or anti-seep collars.
16. Place fill material around the pipe spillway in 4-inch layers, and compact it under and around the pipe to at least the same density as the adjacent embankment.
17. Place a minimum depth of 2 feet of compacted backfill over the pipe spillway before crossing it with any construction equipment.
18. Anchor riser in place by concrete or other satisfactory means to prevent floatation.
19. In no case should the pipe conduit be installed by cutting a trench through the dam after the embankment is complete.
20. Install the emergency spillway in undisturbed soil.
21. Discharge water into the basin in a manner to prevent erosion.
22. Construct basin so that the disturbed area is minimized, divert surface water from bare areas and complete the embankment before the area is cleared.
23. Stabilize the emergency spillway embankment and all other disturbed area above the crest of the principal spillway immediately after construction.
24. Seed and place matting for erosion control on interior and exterior side slopes.
25. Install Porous Baffles as specified on following sheets.

MAINTENANCE:
1. Inspect sediment basins at least weekly and after each rainfall of 1.0 inch or greater. Make any repairs immediately.
2. Remove sediment and restore basin to its original dimensions when it accumulates to one-half the design depth.
3. Place removed sediment in an area with sediment control measures to ensure no loss of sediment off-site.
4. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement.
5. Remove all trash and other debris from the riser and pool area.




**Acceptable Dimensions for Basin Embankment**

| Fill Height | Minimum Top Width |
|---|---|
| Less than 10.0 ft | 8.0 ft |
| 10.0 ft to 15.0 ft | 10.0 ft |

## SEDIMENT BASIN

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE:

PAGE:

SPACING GUIDE FOR SLOPE BREAKS

| | SLOPE | SPACING (FT) |
|---|---|---|
| Steep Slopes | 2:1 | 20 |
| | 3:1 | 35 |
| | 4:1 | 45 |
| Long Slopes | 15-25% | 50 |
| | 10-15% | 80 |
| | 6-10% | 125 |
| | 3-6% | 200 |
| | <3% | 300 |

Use slope breaks, such as diversions, wattles, or benches, as appropriate, to reduce the length of cut-and-fill slope to limit sheet and rill erosion and prevent gullying.

MAINTENANCE:
1. Periodically check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls.
2. Promptly remove all sediment from diversions and other water-disposal practices.
3. If washouts or breaks occur, repair immediately.
4. Prompt maintenance of small eroded areas before they become significant gullies is an essential part of an effective erosion and sedimentation control plan.

NOTES:
1. Construct and maintain all erosion and sediment control practices and measures in accordance with the approved sedimentation control plan and construction schedule.
2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.
3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil.
4. Clear and grub areas to be filled by removing trees, vegetation, roots, or other objectionable material that would affect the planned stability of the fill.
5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.
6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.
7. Do not incorporate frozen, soft, mucky, or highly compressible materials into fill slopes.
8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.
9. Keep diversions and other water conveyance measures free of sediment during all phases of development.
10. Handle seeps or springs encountered during construction in accordance with approved methods (subsurface drain).
11. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 30 days or longer.
12. Show topsoil, stockpiles, borrow areas, and spoil areas on the plans, and make sure they are adequately protected from erosion. Include final stabilization of these areas in the plan.

## LAND GRADING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE:

PAGE:




NOTES:
1. Use matting made of 100% coconut fiber(coir) twine woven into high strength matrix.
2. Staples should be made of 0.125 inch diameter, new steel wire formed into a 'U' shape not less than 12 inches in length with a throat of 1 inch in width. The staples anchor the porous baffles into the sides and bottom of the basin.
3. Grade the basin so that the bottom is level front to back and side to side.
4. Install the coir fiber baffles immediately upon excavation of the basins.
5. Install posts across the width of the sediment trap.
6. Steel posts should be driven to a depth of 24 inches and spaced in a maximum of 4 feet apart. The top of the fabric should be a minimum of 6 inches higher than the invert of the spillway. Tops of the baffles should be a minimum of 2 inches lower than the top of the earthen embankment.
7. Install 3 coir fiber baffles in basins at drainage outlets with a spacing of 1/4 the basin length. 2 coir fiber baffles can be installed in the basins less than 20 feet in length with a spacing of 1/3 the basin length.
8. Attach a 9-gauge high tension wire strand to the steel posts at a height of 6 inches above the spillway elevation with plastic ties or wire fasteners to prevent sagging. If the temporary sediment basin will be converted to a permanent stormwater basin of a greater depth, the baffle height should be based on the pool depth during use as a temporary sediment basin.

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater and repair immediately.
2. Maintain access to baffles. If the fabric collapses, tears, decomposes, or becomes ineffective, replace immediately.
3. Remove sediment deposits when it reaches half full. Replace if baffle fabric is damaged during clean-out operations. Sediment depth should never exceed half the designed storage depth.

## POROUS BAFFLES

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| | | |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS
09/16/2024

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-0973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: ESC DETAILS-3

DRAWING NO: C-352

Y:\Sheets\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\ESC-DETAILS.dwg, 8/9/2025 12:38 PM, Toby Harris

Y:\Shared\2_ENG\R656605823\5_DESIGN\DWG\SHEETS\ESC DETAILS1.dwg, 9/9/2025 12:36 PM, Toby Harris



**GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT**

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

**SECTION E: GROUND STABILIZATION**

**Required Ground Stabilization Timeframes**

| Site Area Description | Stabilize within this many calendar days after ceasing land disturbance | Timeframe variations |
|---|---|---|
| (a) Perimeter dikes, swales, ditches, and perimeter slopes | 7 | None |
| (b) High Quality Water (HQW) Zones | 7 | None |
| (c) Slopes steeper than 3:1 | 7 | If slopes are 10 feet or less in length and are not steeper than 2:1, 14 days are allowed |
| (d) Slopes 3:1 to 4:1 | 14 | -7 days for slopes greater than 50' in length and with slopes steeper than 4:1<br>-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones<br>-10 days for Falls Lake Watershed |
| (e) Areas with slopes flatter than 4:1 | 14 | -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones<br>-10 days for Falls Lake Watershed unless there is zero slope |

**Note:** After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

**GROUND STABILIZATION SPECIFICATION**

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

| Temporary Stabilization | Permanent Stabilization |
|---|---|
| • Temporary grass seed covered with straw or other mulches and tackifiers.<br>• Hydroseeding<br>• Rolled erosion control products with or without temporary grass seed<br>• Appropriately applied straw or other mulch<br>• Plastic sheeting | • Permanent grass seed covered with straw or other mulches and tackifiers<br>• Geotextile fabrics such as permanent soil reinforcement matting<br>• Hydroseeding<br>• Shrubs or other permanent plantings covered with mulch<br>• Uniform and evenly distributed ground cover sufficient to restrain erosion<br>• Structural methods such as concrete, asphalt or retaining walls<br>• Rolled erosion control products with grass seed |

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

**EQUIPMENT AND VEHICLE MAINTENANCE**

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

**LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE**

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

**PAINT AND OTHER LIQUID WASTE**

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

**PORTABLE TOILETS**

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

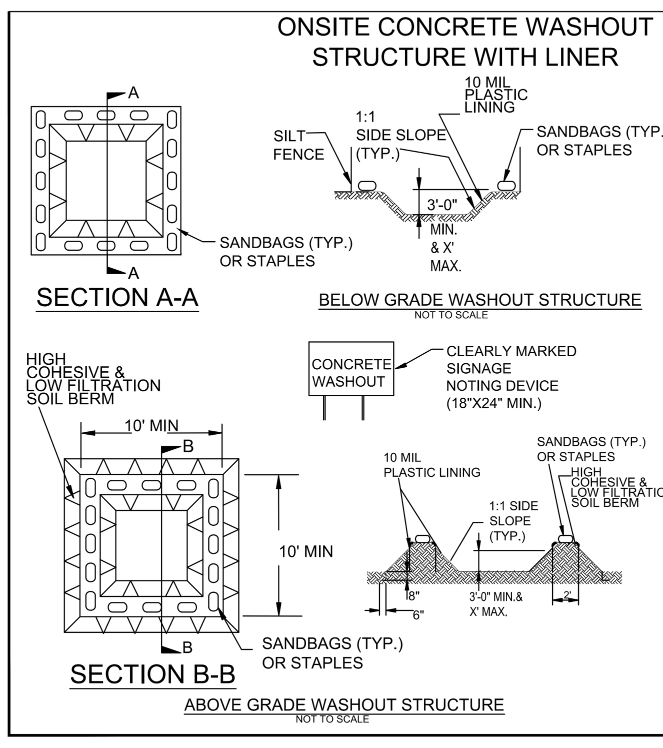
**EARTHEN STOCKPILE MANAGEMENT**

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

**HAZARDOUS AND TOXIC WASTE**

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER




NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

**CONCRETE WASHOUTS**

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

**HERBICIDES, PESTICIDES AND RODENTICIDES**

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

DEQ NORTH CAROLINA Department of Environmental Quality

EFFECTIVE DATE: 11/12/2020

# NCG-01 GROUND COVER & MATERIALS HANDLING

**PART II, SECTION G, ITEM (4)**

**DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT**

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

**PART III**

**SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION A: SELF-INSPECTION**

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

| Inspect | Frequency (during normal business hours) | Inspection records must include: |
|---|---|---|
| (1) Rain gauge maintained in good working order | Daily | Daily rainfall amounts.<br>If no daily rain gauge observations are made during weekend on holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "Zero." The permittee may use another rain-monitoring device approved by the Division. |
| (2) E&SC Measures | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours. | 1. Identification of the measures inspected<br>2. Date and Time of the inspection<br>3. Name of the person performing the inspection<br>4. Indication of whether the measures were operating properly<br>5. Description of maintenance needs for the measure<br>6. Description, Evidence, and date of corrective actions taken |
| (3) Stormwater discharge outfalls(SDOs) | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours. | 1. Identification of the discharge outfalls inspected<br>2. Date and Time of the inspection<br>3. Name of the person performing the inspection<br>4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration<br>5. Indication of visible sediment leaving the site<br>6. Description, Evidence, and date corrective actions taken |
| (4) Perimeter of Site | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours. | If visible Sedimentation is found outside site limits, then record of the following shall be made:<br>1) Actions taken to clean up or stabilize sediment that has left the site limits<br>2) Description, Evidence and date of corrective actions taken<br>3) An explanation as to the actions taken to control future releases |
| (5) Streams or wetlands onsite or offsite (where accessible) | At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours. | If the stream or wetland has increased visible sedimentation or has visible increased turbidity from the construction activity, then a record of the following shall be made:<br>1)Description, Evidence and date of corrective actions taken<br>2)Records of required reports to the appropriate Division Regional Office per Part III, Section C, Item(2)(a) of this permit |
| (6) Ground Stabilization Measures | After each phase of grading. | 1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover).<br>2. Documentation that the required ground stabilization measures have been provided within the required timeframe or assurance that they will be provided as soon as possible. |

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

**PART III**

**SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION B: RECORDKEEPING**

**1. E&SC Plan Documentation**

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

| Item to Document | Document Requirements |
|---|---|
| (a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan. | Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures are modified after initial installation. |
| (b) A phase of grading has been completed. | Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase. |
| (c) Ground cover is located and installed in accordance with the approved E&SC plan. | Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications. |
| (d) The maintenance and repair requirements for all E&SC measures have been performed. | Complete, date and sign an inspection report. |
| (e) Corrective actions have been taken to E&SC measures. | Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action. |

**2. Additional Documentation to be Kept on Site**

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

**3. Documentation to be Retained for Three Years**

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**PART III**

**SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION C: REPORTING**

**1. Occurrences that Must be Reported**

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.
(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
(d) Anticipated bypasses and unanticipated bypasses.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

**2. Reporting Timeframes and Other Requirements**

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

| Occurrence | Reporting Timeframe (After Discovery) and Other Requirements |
|---|---|
| (a) Visible sediment deposition in a stream or wetland | • Within 24 hours, an oral or electronic notification.<br>• Within 7 Calendar Days, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.<br>• If the stream is named on the NC 303(d) list as impaired for sediment-related caused, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions. |
| (b) Oil spills and release of hazardous substances per item 1(b)-(c) above | • Within 24 Hours, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release. |
| (c) Anticipated bypasses [40 CFR 122.41(m)(3)] | • *A report at least ten days before the date of the bypass, if possible.* The report shall include an evaluation of the anticipated quality and effect of the bypass. |
| (d) Unanticipated bypasses [40 CFR 122.41(m)(3)] | • Within 24 Hours, an oral or electronic notification<br>• Within 7 calendar days, a report that includes an evaluation of the quality and effect of the bypass. |
| (e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)] | • Within 24 Hours, an oral or electronic notification<br>• Within 7 calendar days, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6).<br>• Division staff may waive the requirement for a written report on a case-by-case basis. |

DEQ NORTH CAROLINA Department of Environmental Quality

EFFECTIVE DATE: 11/12/2020

# NCG01- SELF INSPECTION

| | | | |
|---|---|---|---|
| SIGNAL HILL<br>SIGNAL HILL ROAD<br>HENDERSONVILLE, NORTH CAROLINA | THREE NOTCH GROUP<br>4301 TAGGART CREEK ROAD<br>CHARLOTTE, NC 28208<br>Phone: 704-394-6913<br>www.3notch.com<br>License No. C-4973 | PROJECT # 656605823<br>DATE: 09/16/2024<br>DESIGN BY: DW<br>DRAWN BY: DW<br>APPROVED: TMH<br>SCALE: AS SHOWN | ENGINEER'S SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 TOBIN M. HARRIS 05/15/2025 |
| DRAWING NO: C-353 | SHEET TITLE: NCG01-1 | | |

**REVISIONS**

| REV. | DATE | COMMENTS |
|---|---|---|
| 4 | 05/15/2025 | ADDRESS ZONING COMMENTS |
| | | |
| | | |
| | | |

**FIRST VICTORY**
**542 S.CALDWELL ST.**
**BREVARD**
**828.884.7934**

TOTAL AREA OF SURVEY
13.73 ACRES
(EXCLUDING RIGHTS OF WAY)

HIGHLAND INVESTORS LIMITED PARTNERSHIP
DB 1262 PG 521
PIN 9579-16-5868

CAROLINA VILLAGE, INC
DB 1341 PG 582
PB 2017 SL 11014
PIN 9579-18-3554
ZONING: PRD-CZD

HOME DEPOT USA, INC
DB 992 PG 711
PB 1999 SL 3086
PIN 9579-16-0862
ZONING: R-20

SIGNAL RIDGE, LP
DB 1680 PG 504
PB 2017 SL 10971
PIN 9579-16-1378
ZONING: PRD-CZD

OVERLAPPING EASEMENTS

PERMANENT DRAINAGE EASEMENT
PER PB 1999 SL 3086, & DB 993 PG 360

STREAMBANK MAINTENANCE EASEMENT
#5 EIR ID-KEE PER PB 2018 SL 11488, AREA G
DB 3284 PG 387 & DB 3273 PG 78

30' SEWER EASEMENT
PER DB 838 PG 434

10' MAINTENANCE & ACCESS PATH AT TOP OF DAM
TOP ELEV = 136.00

LAFOLETTE ST.
45' PUBLIC R/W

CONCRETE OUTLET CONTROL STRUCTURE
SEE DETAIL ON SHEET NO. C-412

EARTHEN BERM
TOP ELEV: 2140.00
SPW ELEV: 2138.15
REF. DETAIL ON SHEET NO. C-412

20' CONCRETE EMERGENCY SPILLWAY ELEV=2138.50
LINE W/ CLASS B RIPRAP TO TOE OF SLOPE
REF. DETAIL ON SHEET NO. C-412

PROP. FENCE (STYLE TO BE DETERMINED BY DEVELOPER)

RIPRAP APRON (TYP)
SEE DETAIL ON SHEET C-351 FOR DIMENSIONS

CSD CONTROL POINT #5 REBAR
NC GRID COORDINATES
N: 596,147.54' NAD 83/11
E: 970,567.47' NAD 83/11
-LOCALIZED POINT-

ANGELA M. LAMB ESTATE FILE 21E973
(REF: DB 481 PG 483)
PIN 9579-07-1337
ZONING: R-20

HOMER F. HOWARD
DB 674 PG 3
PC A SL 214A, LOT 5
PIN 9579-06-1936
ZONING: R-20

SWAIN S. HAYNES
DB 901 PG 347
PC A SL 214A, LOT 6
PIN 9579-06-1764
ZONING: R-20

JEANETTE Q. MATHIS
DB 910 PG 68
PC A SL 214A, LOT 7
PIN 9579-06-1562
ZONING: R-20

KRISTINA SOFRONIE
DB 3866 PG 389
PB 2021 PG 13157, TR 2
PIN 9579-06-3404
ZONING: R-20

D & G ESTATE, LLC
DB 3876 PG 178
PB 2021 PG 13157, TR 1
PIN 9579-06-3217
ZONING: CHMU

SEAN GIVENS
DB 3083 PG 278
LOTS 86-88
PC B SL 180A
(AKA PB 2 PG 156)
PIN 9579-06-4126
ZONING: C-2

NANCY L. CONLEY
DB 3572 PG 5366
LOTS 79-80
PIN 9579-06-6187
ZONING: R-20

HENRY W. BRADLEY
DB 1177 PG 572
LOTS 81-84
PIN 9579-06-6107
ZONING: R-20

ASHLEY M. CLOUSE
BETTY B. MEAD
DB 3768 PG 310
LOTS 73-76
PIN 9579-06-6315
ZONING: R-20

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1"=50'

Y:\Shared\2_ENGR\656605823\5_DESIGN\DGN\SHEETS\GRADING & STORMWATER.dwg, 9/9/2025 12:36 PM, Toby Harris

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |
| 2 | 01/31/2025 | ADDRESS CITY & COUNTY COMMENTS |
| 3 | 02/18/2025 | ADDRESS CITY & COUNTY COMMENTS |

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 TOBIN M. HARRIS
ENGINEER'S SEAL
02/18/2025

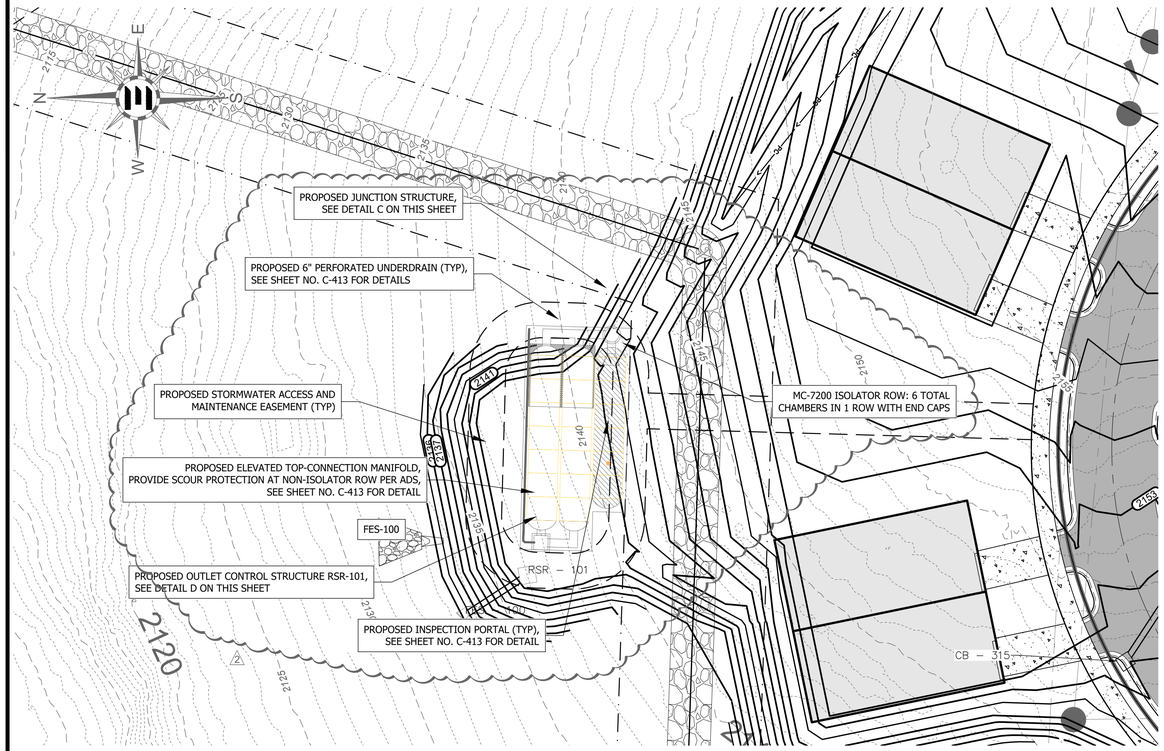
| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-384-6913
www.3ngtch.com
License No. C-4673

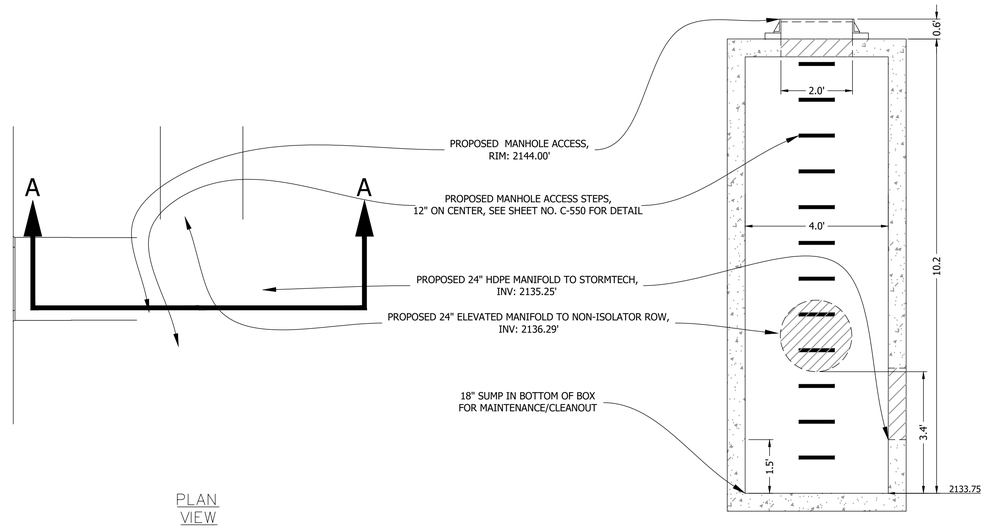
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: GRADING & STORMWATER PLAN

DRAWING NO: C-400




A STORMWATER SCM SYSTEM B4 - PLAN VIEW
SCALE= 1" = 20'




C ST-81: JUNCTION MANHOLE TO ISOLATOR ROW
SCALE= 1" = 2'

| *STORMWATER WETLAND PLANT RECOMMENDATIONS (FROM NC DEQ MANUAL)* | |
|---|---|
| *BOTANICAL NAME* | *COMMON NAME* |
| *ASCLEPIAS INCARNATA* | *SWAMP MILKWEED* |
| *CAREX TENERA* | *QUILL SEDGE* |
| *CHELONE GLABRA* | *WHITE TURTLEHEAD* |
| *EUPATORIADELPHUS DUBIUS* | *DWARF JOE PYE WEED* |
| *EUPATORIADELPHUS FISTULOSUS* | *JOE PYE WEED* |
| *EUPATORIADELPHUS MACULATUS* | *SPOTTED TRUMPETWEED* |
| *HIBISCUS COCCINEUS* | *SCARLET ROSE MALLOW* |
| *HIBISCUS LAEVIS* | *HALBERDLEAF ROSE MALLOW* |
| *KOSTELETZKYA VIRGINICA* | *SEASHORE MALLOW* |
| *LOBELIA CARDINALIS* | *CARDINAL FLOWER* |
| *LOBELIA ELONGATA* | *LONGLEAF LOBELIA* |
| *LOBELIA SIPHILITICA* | *GREAT BLUE LOBELIA* |
| *RHYNCHOSPORA COLORATA* | *STARRUSH WHITETOP* |
| *SACCHARUM BALDWINII* | *NARROW PLUMEGRASS* |

| *SCM-1* | |
|---|---|
| *WATER QUALITY VOL. (CF)* | *362* |
| *SCM TYPE)* | *STORMTECH MC-7200* |
| *TOTAL STORAGE (CF)* | *2135.00* |
| *BOTTOM OF STORAGE (')* | *2135.25* |
| *BOTTOM OF STORMTECH (')* | *2136.00* |
| *TOP OF STORMTECH (')* | *2141.00* |
| *TOP OF STORAGE (')* | *2142.00* |
| *MIN. FINISHED GRADE* | *2143.00* |
| *MAX FINISHED GRADE* | *2148.00* |
| *WQ ORIFICE SIZE (")* | *0.5* |
| *ELEVATED MANHOLE ELEV. (')* | *2144.00* |
| *FIRST OVERFLOW INV. (')* | *2135.00* |
| *SECOND OVERFLOW INV. (')* | *2135.00* |
| *THIRD OVERFLOW INV. (')* | *2135.00* |
| *WQV STAGE (UNROUTED)(')* | *2135.00* |
| *WQV STAGE (ROUTED)(')* | *2135.00* |
| *2-YR STAGE (')* | *2137.26* |
| *10-YR STAGE (')* | *2138.28* |
| *25-YR STAGE (')* | *2139.16* |
| *50-YR STAGE (')* | *2139.98* |

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

7 Chambers/Row x 6.59' Long +2.73' Cap Length x 2 = 51.61' Row Length +12.0" End Stone x 2 = 53.61' Base Length

3 Rows x 100.0" Wide + 9.0" Spacing x 2 + 12.0" Side Stone x 2 = 28.50' Base Width

12.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 7.00' Field Height

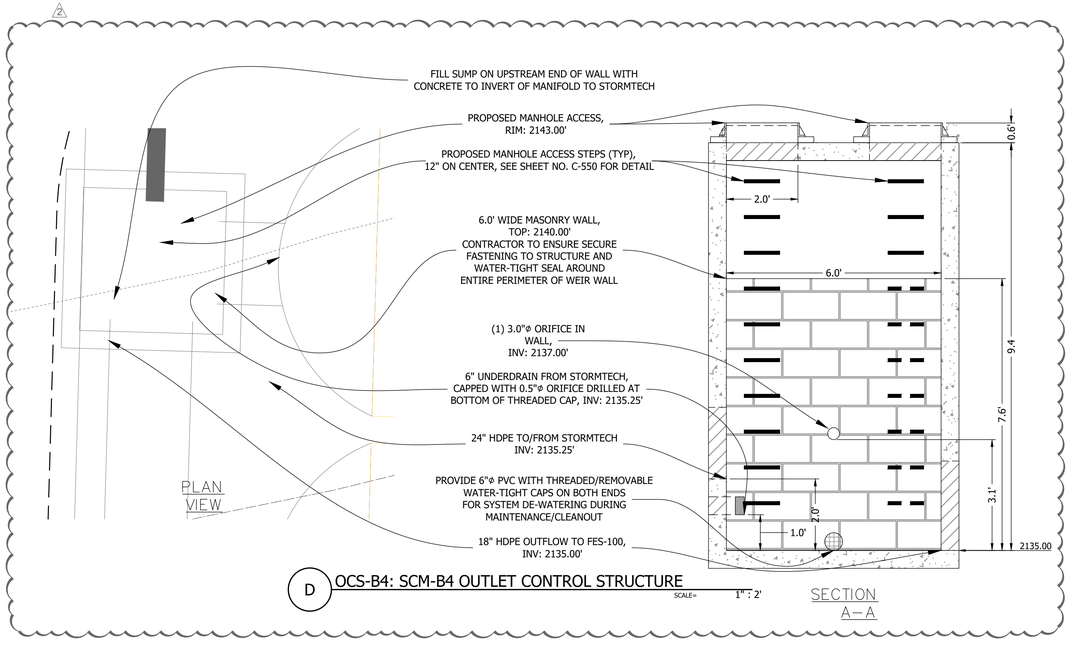
21 Chambers x 175.9 cf + 39.5 cf Cap Volume x 2 x 3 Rows = 3,930.4 cf Chamber Storage

10,694.9 cf Field - 3,930.4 cf Chambers = 6,764.5 cf Stone x 40.0% Voids = 2,705.8 cf Stone Storage

Chamber Storage + Stone Storage = 6,636.2 cf = 0.152 af
Overall Storage Efficiency = 62.1%
Overall System Size = 53.61' x 28.50' x 7.00'

21 Chambers
396.1 cy Field
250.5 cy Stone

B SCM-B2: STORMTECH MC-7200 SYSTEM SUMMARY
SCALE= NTS




D OCS-B4: SCM-B4 OUTLET CONTROL STRUCTURE
SCALE= 1" = 2'

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 2 | 01/31/2025 | ADDRESS CITY & COUNTY COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER TOBIN M. HARRIS
01/31/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | 1" = 50' |

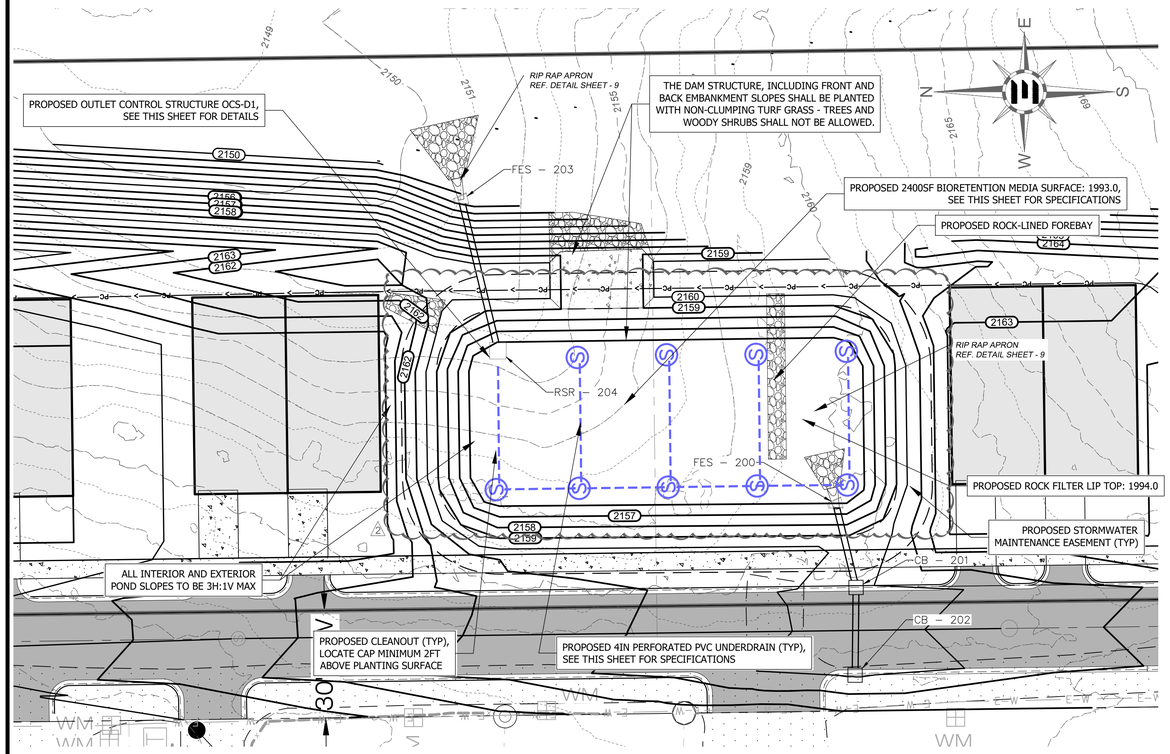
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No: C-4873

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: SCM DETAIL 1

DRAWING NO: C-410

Y:\Shared\2_ENGINEERING\656605823\5_DESIGN\DWG\SHEETS\SCM DETAILS.dwg, 9/9/2025 12:37 PM, Toby Harris



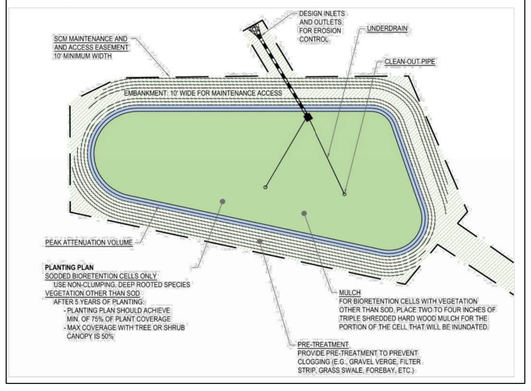

**STORMWATER WETLAND PLANT RECOMMENDATIONS**
**(FROM NC DEQ MANUAL)**

| BOTANICAL NAME | COMMON NAME |
|---|---|
| ASCLEPIAS INCARNATA | SWAMP MILKWEED |
| CAREX TENERA | QUILL SEDGE |
| CHELONE GLABRA | WHITE TURTLEHEAD |
| EUPATORIADELPHUS DUBIUS | DWARF JOE PYE WEED |
| EUPATORIADELPHUS FISTULOSUS | JOE PYE WEED |
| EUPATORIADELPHUS MACULATUS | SPOTTED TRUMPETWEED |
| HIBISCUS COCCINEUS | SCARLET ROSE MALLOW |
| HIBISCUS LAEVIS | HALBERDLEAF ROSE MALLOW |
| KOSTELETZKYA VIRGINICA | SEASHORE MALLOW |
| LOBELIA CARDINALIS | CARDINAL FLOWER |
| LOBELIA ELONGATA | LONGLEAF LOBELIA |
| LOBELIA SIPHILITICA | GREAT BLUE LOBELIA |
| RHYNCHOSPORA COLORATA | STARRUSH WHITETOP |
| SACCHARUM BALDWINII | NARROW PLUMEGRASS |

**UNDERDRAIN NOTES:**

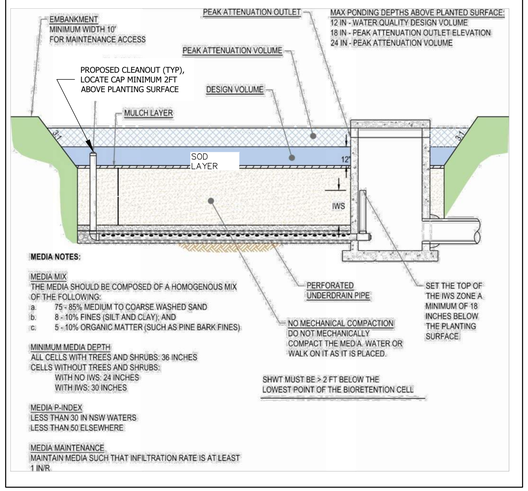
1) ALL PIPING IN THE UNDERDRAIN SYSTEM SHOULD HAVE A MINIMUM SLOPE OF 0.5% AND SHOULD BE CONSTRUCTED OF SCHEDULE 40 OR SDR-35 SMOOTH WALL PVC PIPE
2) A MINIMUM OF 4 ROWS OF PERFORATIONS SHOULD BE PROVIDED AROUND THE DIAMETER OF THE PIPE. THE PERFORATIONS SHOULD BE PLACED 6IN ON CENTER WITHIN EACH ROW FOR THE ENTIRE LENGTH OF THE DRAINAGE LATERAL. PERFORATIONS SHOULD BE 3/8IN DIAMETER.
3) UNDERDRAIN PIPES SHOULD HAVE A MINIMUM OF 3IN OF WASHED #57 STONE ABOVE AND ON EACH SIDE OF THE PIPE (NOT REQUIRED BELOW THE PIPE). ABOVE THE STONE, EITHER FILTER FABRIC OR 2IN OF CHOKING STONE SHOULD BE INSTALLED TO PROTECT THE UNDERDRAIN FROM BLOCKAGE (FILTER FABRIC SHOULD BE AVOIDED IF THERE IS ANY QUESTION ABOUT THE FUTURE STABILITY OF THE DRAINAGE AREA). ABOVE THE FILTERING DEVICE, A MINIMUM OF 2IN OF WASHED SAND SHOULD BE INSTALLED. CHOKING STONE (#8 OR #89) IN LIEU OF FILTER FABRIC IS RECOMMENDED IF THERE IS POTENTIAL FOR HIGHER SEDIMENT LOADS THAT WOULD LEAD TO CLOGGING. PIPE SOCKS ARE ALSO NOT RECOMMENDED

**Figure 1: Bioretention Example: Plan View**



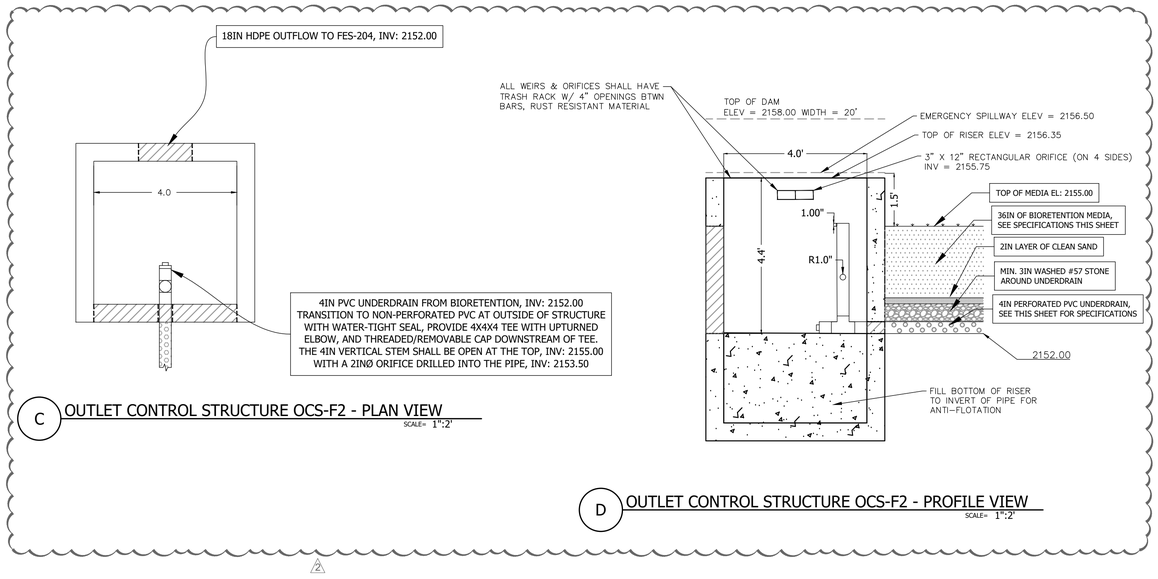

B BIORETENTION DETAILS
SCALE= NTS

**Figure 2: Bioretention Example: Cross-Section**




MEDIUM TO COARSE WASHED SAND SHALL BE ASTM C33, AASHTO M 6/M 80, ASTM C330, AASHTO M195, OR EQUIVALENT

THE ENTIRE SURFACE OF THE CELL WILL BE VEGETATED. SOD SHOULD BE INSTALLED WHEN GRASS IS USED FOR BIORETENTION CELLS AS SEEDING IS TYPICALLY NOT A VIABLE OPTION.




C OUTLET CONTROL STRUCTURE OCS-F2 - PLAN VIEW
SCALE= 1":2'

D OUTLET CONTROL STRUCTURE OCS-F2 - PROFILE VIEW
SCALE= 1":2'

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 2 | 01/31/2025 | ADDRESS CITY & COUNTY COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER TOBIN M. HARRIS
01/31/2025

| | |
|---|---|
| PROJECT #: | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | 1" = 50' |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-0973

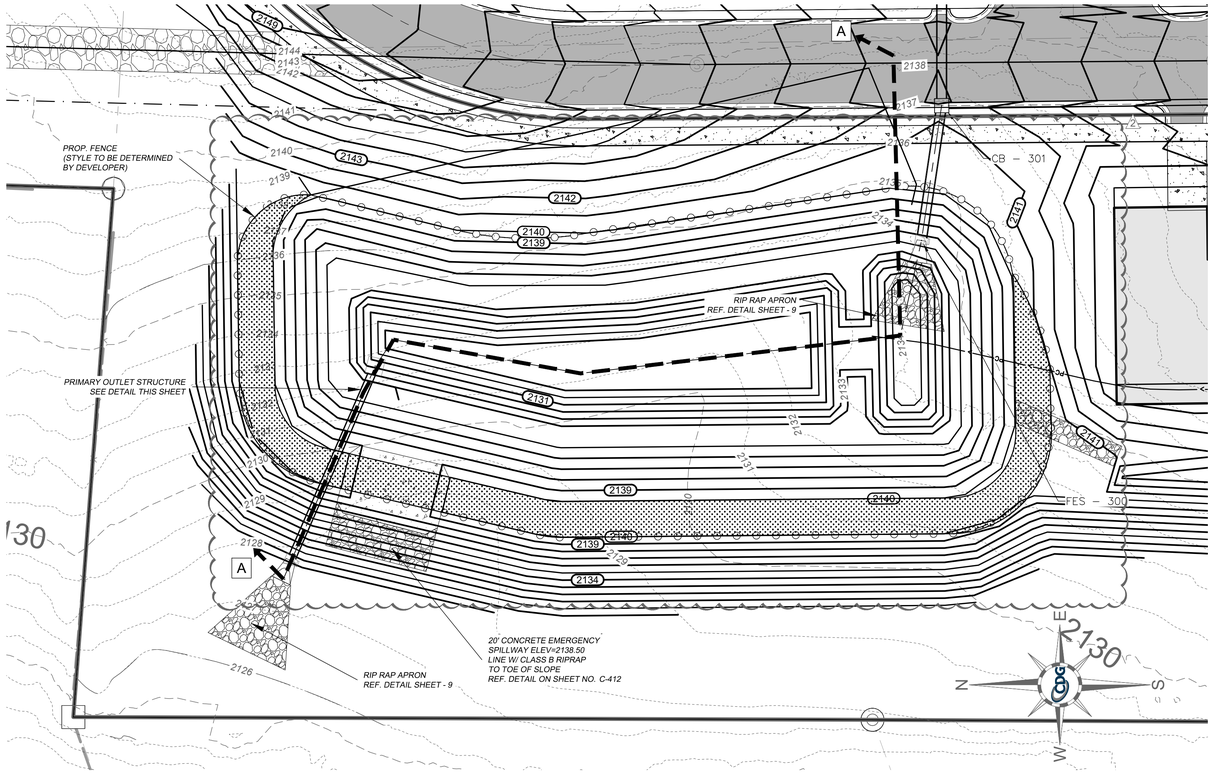
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: SCM DETAIL 2

DRAWING NO: C-411

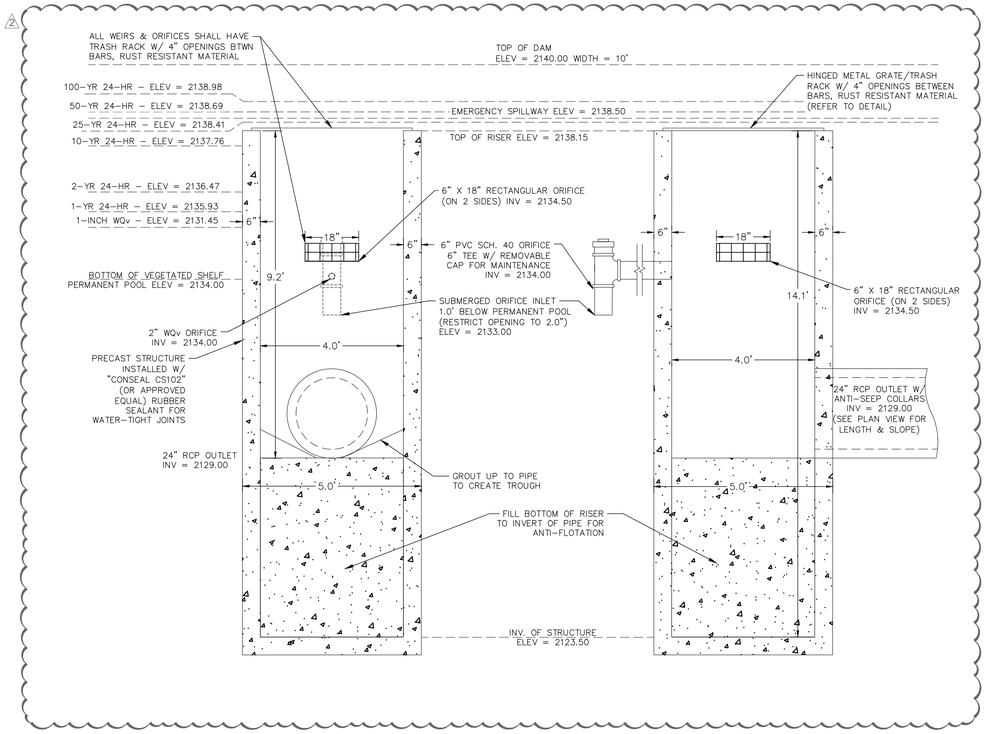


Y:\Shared\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\SCM DETAILS.dwg, 8/9/2025 12:37 PM, Toby Harris



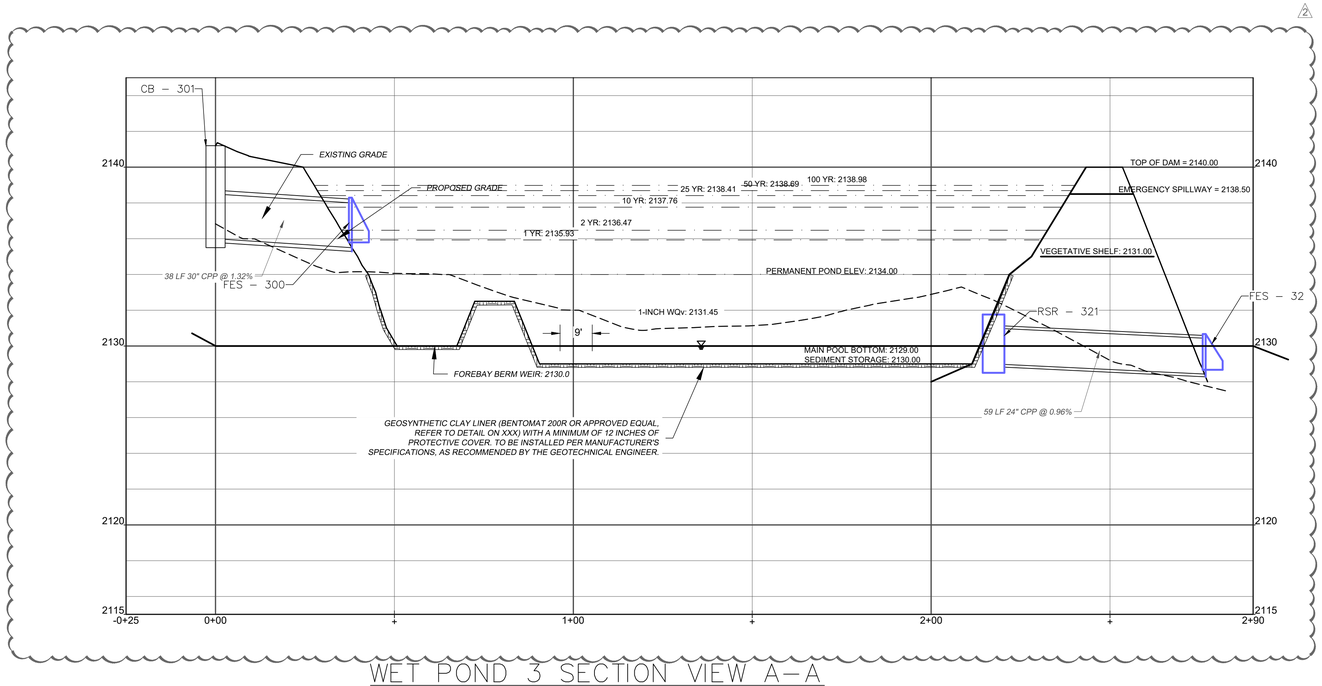

## WET POND 3 PLAN VIEW

SCALE : 1" = 20'




## WET POND 3
## OUTLET STRUCTURE DETAIL

1" = 2'




## WET POND 3 SECTION VIEW A-A

HORIZONTAL SCALE : 1" = 20'
VERTICAL SCALE: 1" = 2'

VEGETATED SHELF
0"-18" ABOVE NORMAL POOL
PLANT REQ. 50 PLANTS/200 S.F.

INTERIOR SLOPES ABOVE THE VEGETATED SHELF AND EXTERIOR EMBANKMENT SLOPES SHALL BE VEGETATED WITH NON-CLUMPING TURF GRASS. TREES & WOODY SHRUBS SHALL NOT BE ALLOWED.

*MINIMUM PLANTING REQUIREMENTS (PER NCDEQ BMP MANUAL)*
*50 PLANTS PER 200 SF OF VEGETATED SHELF REQUIRED*

*AREA OF VEGETATED (LITTORAL) SHELF:* *3,290 SF*

*MINIMUM NUMBER OF PLANTS:* *823 PLANTS*

*USE THREE SPECIES EACH OF SHALLOW LAND HERBACEOUS PLANTS:*
*3-4 OF EA. SPECIES*

*PLANTS SHOULD BE SPACED APPROXIMATELY 24" - 36" ON CENTER AND SHOULD YIELD COVER IN APPROXIMATELY 1 - 2 YEARS.*

*STORMWATER WETLAND PLANT RECOMMENDATIONS (FROM NC DEQ MANUAL)*

| BOTANICAL NAME | COMMON NAME |
|---|---|
| ASCLEPIAS INCARNATA | SWAMP MILKWEED |
| CAREX TENERA | QUILL SEDGE |
| CHELONE GLABRA | WHITE TURTLEHEAD |
| EUPATORIADELPHUS DUBIUS | DWARF JOE PYE WEED |
| EUPATORIADELPHUS FISTULOSUS | JOE PYE WEED |
| EUPATORIADELPHUS MACULATUS | SPOTTED TRUMPETWEED |
| HIBISCUS COCCINEUS | SCARLET ROSE MALLOW |
| HIBISCUS LAEVIS | HALBERDLEAF ROSE MALLOW |
| KOSTELETZKYA VIRGINICA | SEASHORE MALLOW |
| LOBELIA CARDINALIS | CARDINAL FLOWER |
| LOBELIA ELONGATA | LONGLEAF LOBELIA |
| LOBELIA SIPHILITICA | GREAT BLUE LOBELIA |
| RHYNCHOSPORA COLORATA | STARRUSH WHITETOP |
| SACCHARUM BALDWINII | NARROW PLUMEGRASS |

*NOTE: DURING EROSION CONTROL PHASES, THE 6" WATER QUALITY ORIFICE SHALL BE USED TO CONNECT THE SKIMMER TO THE OUTLET STRUCTURE. ALL OTHER WEIRS & ORIFICES, INCLUDING THE TOP GRATE, SHALL BE TEMPORARILY BLOCKED IN ORDER TO FORCE WATER FROM THE SEDIMENT BASIN THROUGH THE SKIMMER. THE EMERGENCY SPILLWAY IN THE DAM SHALL REMAIN ACTIVE THROUGH ALL STAGES OF EROSION CONTROL. ONCE EROSION CONTROL MEASURES ARE REMOVED, THE SEDIMENT BASIN SHALL BE CONVERTED TO A PERMANENT WET DETENTION POND. THE SKIMMER SHAL BE DISCONNECTED, THE WATER QUALITY DEVICE SHALL BE INSTALLED & WEIRS SHALL BE UNCOVERED. REFER TO DETAIL SHEET FOR EROSION CONTROL DETAILS REGARDING THE SKIMMER.*

*WET DETENTION POND DESIGN CRITERIA*
*DRAINAGE AREA = 8.79 AC*
*IMPERVIOUS AREA = 2.18 AC (24.80%)*
*WATER QUALITY VOLUME = 11,245 CF*

*TOP OF DAM ELEV = 2140.00*
*TOP OF VEGETATED SHELF = 2135.00*
*PERMANENT POOL ELEVATION = 2134.00*
*BOTTOM OF FOREBAY = 2130.00*
*BOTTOM OF MAIN POOL = 2129.00*

*MAIN POOL VOLUME = 17,819 CF*
*FOREBAY VOLUME = 3,207 CF (18.0%)*

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1"=50'

| REVISIONS | | | |
|---|---|---|---|
| REV. | DATE | COMMENTS | |
| 2 | 01/31/2025 | ADDRESS CITY & COUNTY COMMENTS | |

*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS
01/31/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | 1" = 50' |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-0973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: SCM DETAIL 3

DRAWING NO: C-412

Y:\Shared\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\SCM DETAILS.dwg, 9/8/2025 12:37 PM, Toby Harris

| PROJECT INFORMATION | |
|---|---|
| ENGINEERED PRODUCT MANAGER: | |
| ADS SALES REP: | |
| PROJECT NO. | |

Advanced Drainage Systems, Inc.

SiteAssist
FOR INSTALLATION INSTRUCTIONS VISIT OUR APP

# SIGNAL HILL

## HENDERSONVILLE, NC, USA

## MC-7200 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-7200.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (+1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75 YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/IN. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR THE LOAD AND LOAD COMBINATIONS SPECIFIED IN SECTION 12.12 OF ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
10. MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER, SEE TECH NOTE #6.33 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
11. ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTEXTILE PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

## IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-7200 CHAMBER SYSTEM

1. STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONE AND ROW BY ROW BACKFILL WITH AN EXCAVATOR ON THE STONE OR SUBGRADE.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM -9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
9. STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
10. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
11. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
12. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

## NOTES FOR CONSTRUCTION EQUIPMENT

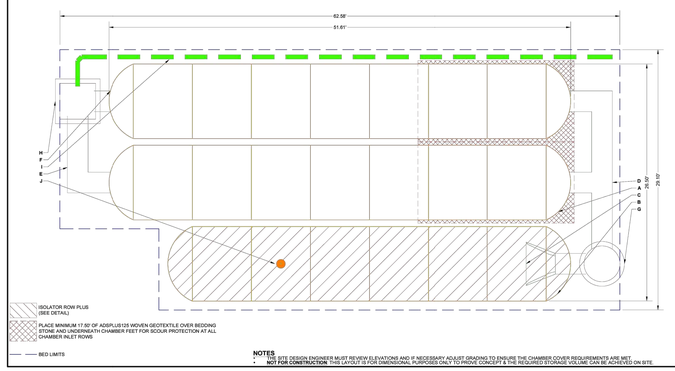
1. STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-7200 CHAMBERS IS LIMITED:
   - NO EXCAVATOR OR DUMP TRUCK SHALL OPERATE OR DRIVE OVER CHAMBERS UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-7200 CONSTRUCTION GUIDE".
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-7200 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

**USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.**

CONTACT STORMTECH AT 1-800-821-6710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



| PROPOSED LAYOUT: BED 4 | | PROPOSED ELEVATIONS | | *INVERT ABOVE BASE OF CHAMBER | | | |
|---|---|---|---|---|---|---|---|
| | | | | PART TYPE | ITEM OR LAYOUT | DESCRIPTION | INVERT* | MAX FLOW |
| AC | STORMTECH MC-7200 CHAMBERS | MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED) | 2148.00 | | | | |
| C | 1 CHAMBER (MC-7200 END CAPS) | MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC) | 2143.50 | PREFABRICATED END CAP | A | 24" TOP PARTIAL CUT END CAP, PART#: MC7200EPP24T / TYP OF ALL 24" TOP CONNECTIONS | 23.09" | |
| X | 1 STONE BELOW | MINIMUM ALLOWABLE GRADE (UNPAVED WITH FLEXIBLE PAVEMENT) | 2143.00 | PREFABRICATED END CAP | B | 24" BOTTOM PARTIAL CUT END CAP, PART#: MC7200EPP24B / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS | 2.39" | |
| Y | 1 STONE ABOVE | MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT) | 2142.50 | | E | 24" x 24" TOP MANIFOLD, ADS N-12 | 23.09" | |
| XC | 1 STONE VOID | | 2142.00 | FLAMP | | FLAMP, MCFLAMP | | |
| | INSTALLED SYSTEM VOLUME (CF) | TOP OF STONE | 2142.00 | MANIFOLD | D | 24" CAP TOP MANIFOLD, ADS N-12 | 23.09" | |
| 6899 | OPPORTUNITY STONE VOLUME (CY) | TOP OF MC-7200 CHAMBER | 2141.50 | | C | 24" x 24" BOTTOM MANIFOLD, ADS N-12 | 2.26" | |
| | STONE VOID | BOTTOM OF MC-7200 CHAMBER | 2139.50 | | F | 24" BOTTOM CONNECTION | 2.26" | |
| 1721 | SYSTEM AREA (SF) | 24" ISOLATOR ROW PLUS INVERT | 2139.50 | CONCRETE STRUCTURE | G | DESIGN BY ENGINEER / PROVIDED BY OTHERS) | | 6.5 CFS IN |
| 1614 | SYSTEM PERIMETER (ft) | 24" ISOLATOR ROW PLUS INVERT | 2139.50 | CONCRETE STRUCTURE | H | DESIGN BY ENGINEER / PROVIDED BY OTHERS) | | 14.2 CFS OUT |
| | | BOTTOM OF ADS PLUS CHAMBER | 2139.50 | | I | 6" ADS DUAL WALL PERFORATED HDPE UNDERDRAIN | | |
| | | FOUNDATION INVERT | 2139.00 | INSPECTION PORT | J | 312" SEE DETAIL | | |
| | | BOTTOM OF STONE | 2138.66 | | | | | |



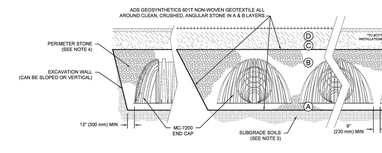

**NOTES**
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- **NOT FOR CONSTRUCTION** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

SHEET 2 OF 6

## ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

| | MATERIAL LOCATION | DESCRIPTION | AASHTO MATERIAL CLASSIFICATIONS | COMPACTION / DENSITY REQUIREMENT |
|---|---|---|---|---|
| D | **FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER | ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS. | N/A | PREPARE PER SITE DESIGN ENGINEERS PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS. |
| C | **INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (9" LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER. | GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.<br>MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER. | AASHTO M145[2]<br>A-1, A-2-4, A-3<br>OR<br>AASHTO M43[3]<br>3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10 | BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO 95% RELATIVE DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. |
| B | **EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A' LAYER) TO THE 'C' LAYER ABOVE. | CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[1] | AASHTO M43[3]<br>3, 357, 4, 467, 5, 56, 57 | NO COMPACTION REQUIRED. |
| A | **FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER. | CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[1] | AASHTO M43[3]<br>3, 357, 4, 467, 5, 56, 57 | PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3] |

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'H' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".

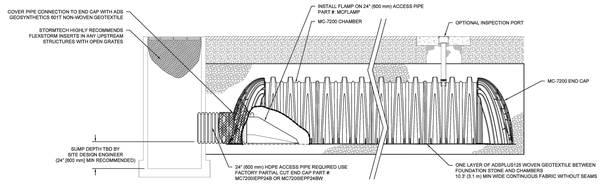



****THIS CROSS SECTION DETAIL REPRESENTS MINIMUM REQUIREMENTS FOR INSTALLATION. PLEASE SEE THE LAYOUT SHEET(S) FOR PROJECT SPECIFIC REQUIREMENTS.**

## NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
2. MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/IN. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

SHEET 4 OF 6




**MC-7200 ISOLATOR ROW PLUS DETAIL**
NTS

### INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED.
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i. MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii. FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

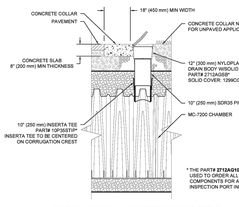
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY WATER FROM THE JETVAC PROCESS UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

### NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

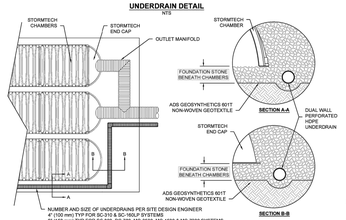



* THE PART# **2712AG10PWT** CAN BE USED TO ORDER ALL NECESSARY COMPONENTS FOR A SOLID LID INSPECTION PORT INSTALLATION

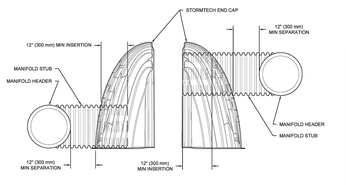
**MC-7200 10" (250 mm) INSPECTION PORT DETAIL**
NTS

SHEET 5 OF 6

### UNDERDRAIN DETAIL
NTS

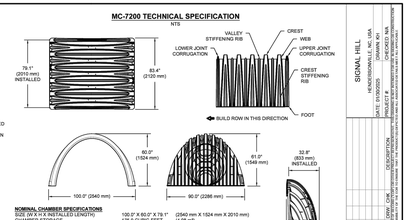



### MC-SERIES END CAP INSERTION DETAIL
NTS




NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

### MC-7200 TECHNICAL SPECIFICATION
NTS




**NOMINAL CHAMBER SPECIFICATIONS**

| | | |
|---|---|---|
| SIZE (W X H X INSTALLED LENGTH) | 100.3" X 60.0" X 79.1" | (2540 mm X 1524 mm X 2010 mm) |
| CHAMBER STORAGE | 175.5 CUBIC FEET | (4.96 m³) |
| MINIMUM INSTALLED STORAGE* | 357.3 CUBIC FEET | (7.58 m³) |
| WEIGHT (NOMINAL) | 209 lbs. | (92.9 kg) |

**NOMINAL END CAP SPECIFICATIONS**

| | | |
|---|---|---|
| SIZE (W X H X INSTALLED LENGTH) | 90.0" X 61.0" X 32.8" | (2286 mm X 1549 mm X 833 mm) |
| END CAP STORAGE | 39.5 CUBIC FEET | (1.12 m³) |
| MINIMUM INSTALLED STORAGE* | 115.5 CUBIC FEET | (3.28 m³) |
| WEIGHT (NOMINAL) | 90 lbs. | (40.8 kg) |

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "06"

| PART # | STUB | B | C |
|---|---|---|---|
| MC7200EPP06T | 6" (150 mm) | 42.54" (1081 mm) | --- |
| MC7200EPP06B | | --- | 0.86" (22 mm) |
| MC7200EPP08T | 8" (200 mm) | 40.50" (1029 mm) | --- |
| MC7200EPP08B | | --- | 1.01" (26 mm) |
| MC7200EPP10T | 10" (250 mm) | 38.37" (975 mm) | --- |
| MC7200EPP10B | | --- | 1.33" (34 mm) |
| MC7200EPP12T | 12" (300 mm) | 35.89" (907 mm) | --- |
| MC7200EPP12B | | --- | 1.55" (39 mm) |
| MC7200EPP15T | 15" (375 mm) | 32.72" (831 mm) | --- |
| MC7200EPP15B | | --- | 1.70" (43 mm) |
| MC7200EPP18T | 18" (450 mm) | 29.36" (746 mm) | --- |
| MC7200EPP18W | | --- | 1.97" (50 mm) |
| MC7200EPP18B | | --- | |
| MC7200EPP24T | 24" (600 mm) | 23.05" (585 mm) | --- |
| MC7200EPP24W | | --- | 2.26" (57 mm) |
| MC7200EPP24B | | | |
| MC7200EPP30W | 30" (750 mm) | --- | 2.90" (73 mm) |
| MC7200EPP36W | 36" (900 mm) | --- | 3.29" (83 mm) |
| MC7200EPP42W | 42" (1050 mm) | --- | 3.56" (90 mm) |



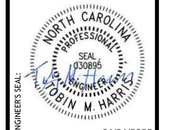

CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) x 12" (300 mm) INVERTS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 12" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

NOTE: ALL DIMENSIONS ARE NOMINAL

SHEET 6 OF 6

| REV. | DATE | DESCRIPTION |
|---|---|---|
| 2 | 01/31/2025 | ADDRESS CITY & COUNTY COMMENTS |

ENGINEER'S SEAL:




01/31/2025

| | |
|---|---|
| PROJECT #: | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

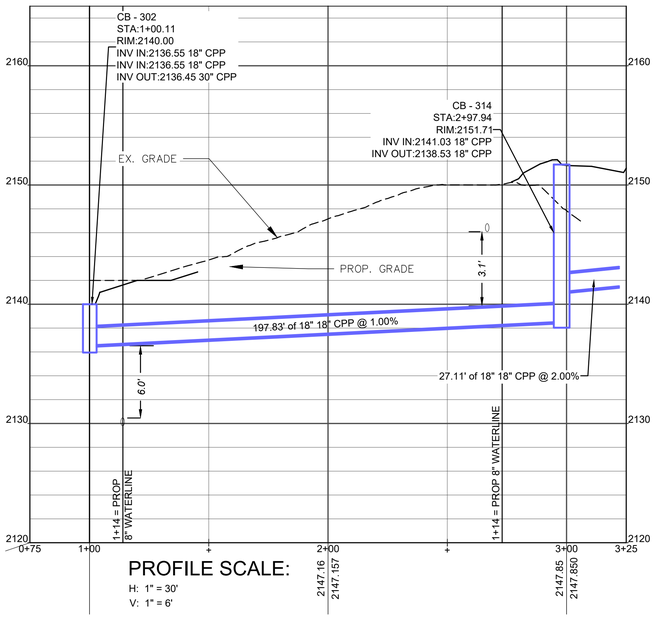
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
Licensed No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

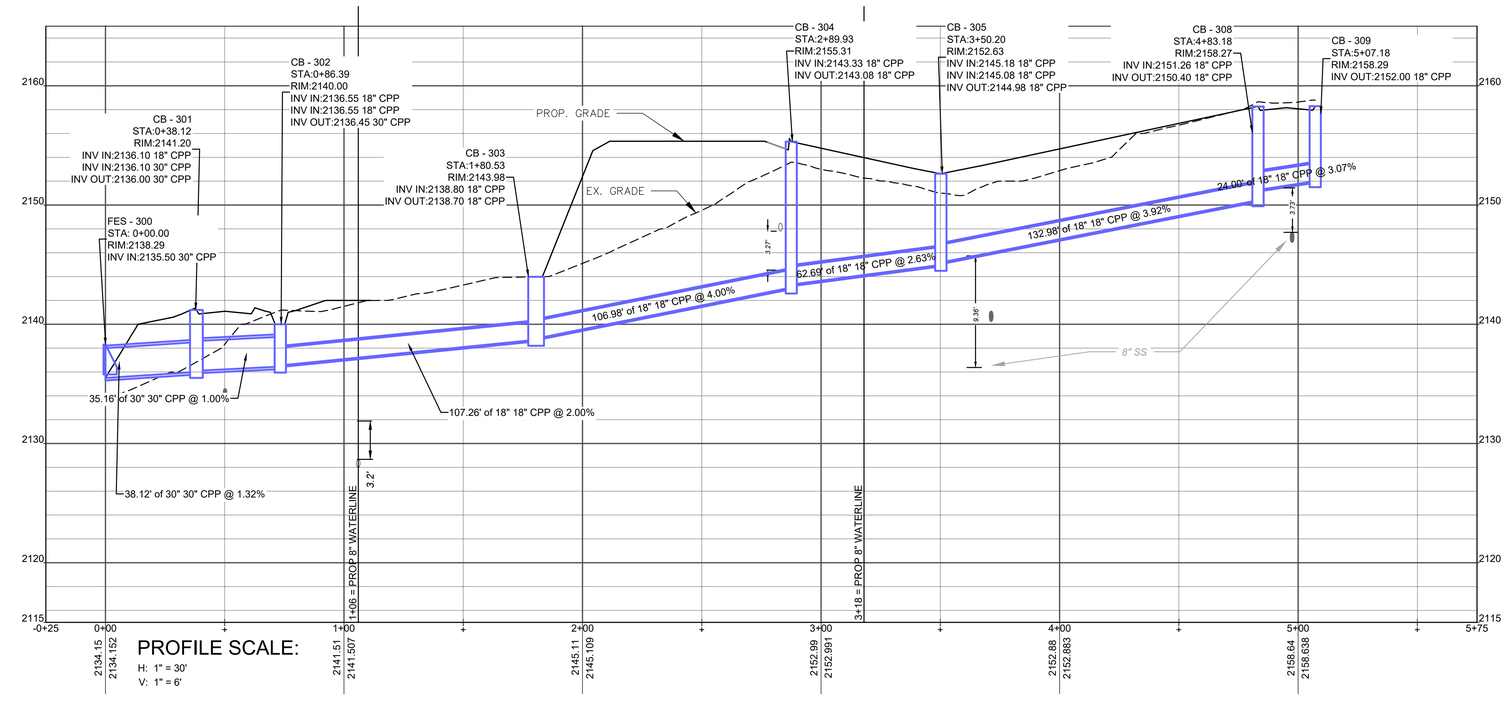
SHEET TITLE: ADS DETAILS

DRAWING NO: C-413

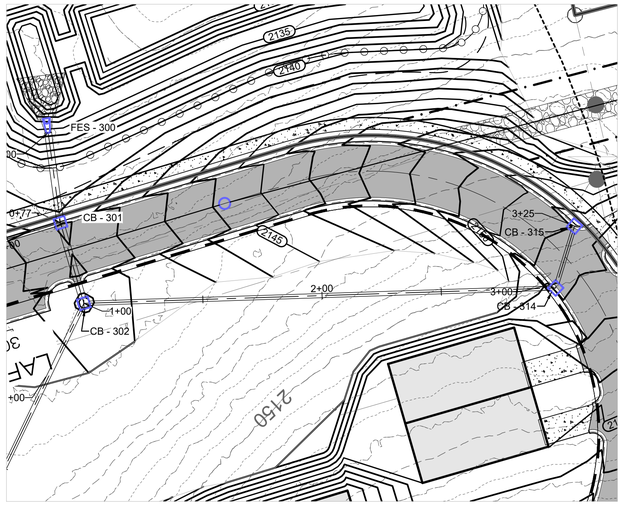
Y:\Shared\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\SCH DETAILS.dwg, 8/9/2025 12:37 PM, Toby Harris




PROFILE SCALE:
H: 1" = 30'
V: 1" = 6'




PROFILE SCALE:
H: 1" = 30'
V: 1" = 6'



GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1"=30'

N
W E
S

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1"=30'

N
W E
S

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| | | |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS
09/16/2024

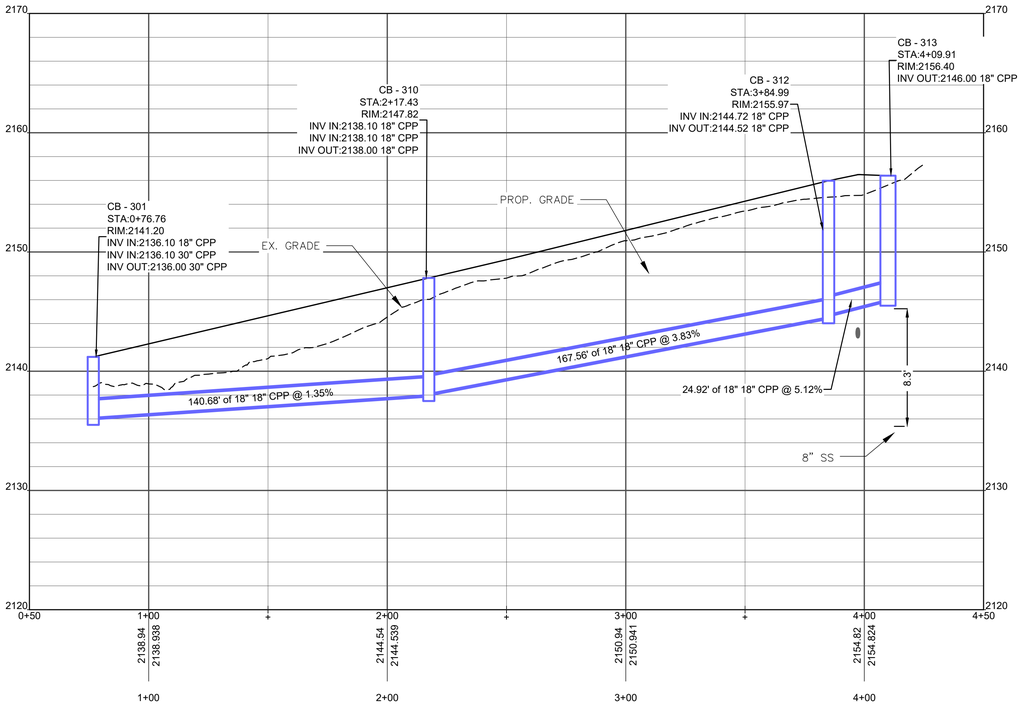
| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No: C-4973

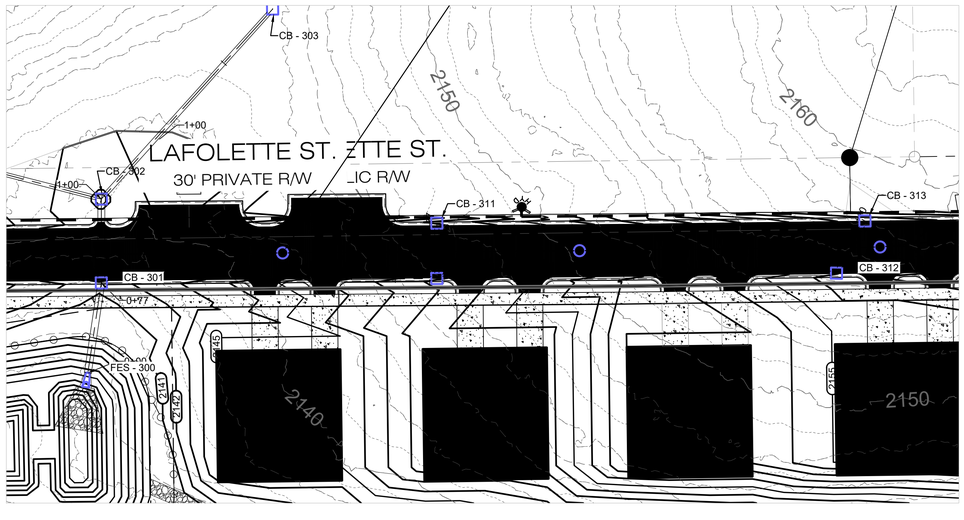
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

DRAWING NO: C-500
SHEET TITLE: STORM PLAN & PROFILE - 1

Y:\Shared\2_ENGINEERING\656605823\5_DESIGN\DWG\SHEETS\PLAN PROFILE STM.dwg, 9/9/2025 12:37 PM, Toby Harris



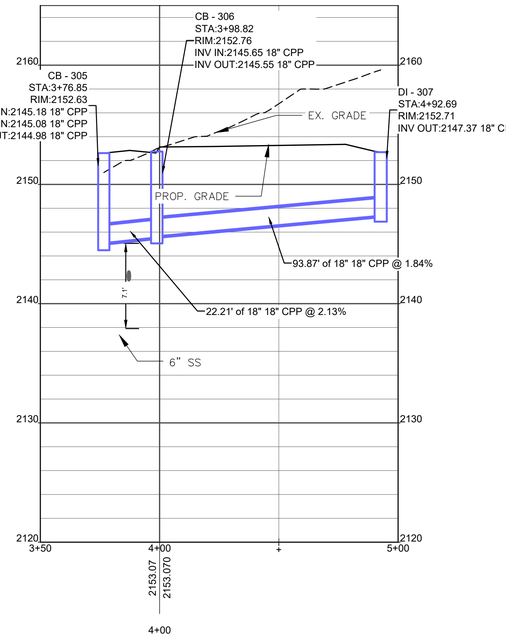

PROFILE SCALE:
H: 1" = 30'
V: 1" = 6'



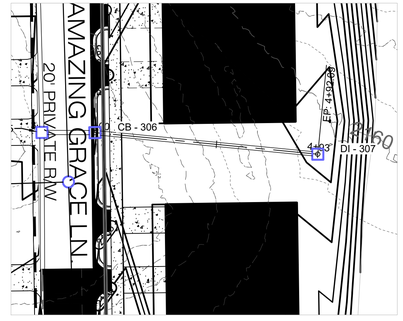

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1"=30'



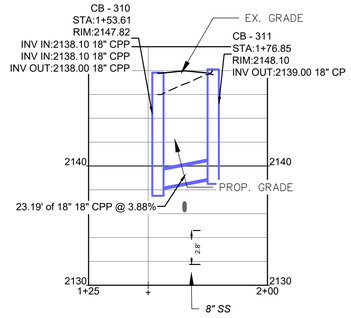

PROFILE SCALE:
H: 1" = 30'
V: 1" = 6'



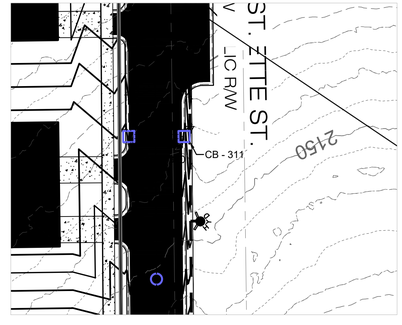

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1"=30'



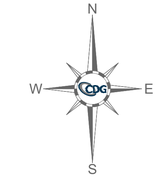

PROFILE SCALE:
H: 1" = 30'
V: 1" = 6'




GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1"=30'




*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| | | |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER ROBIN M. HARRIS
09/16/2024

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

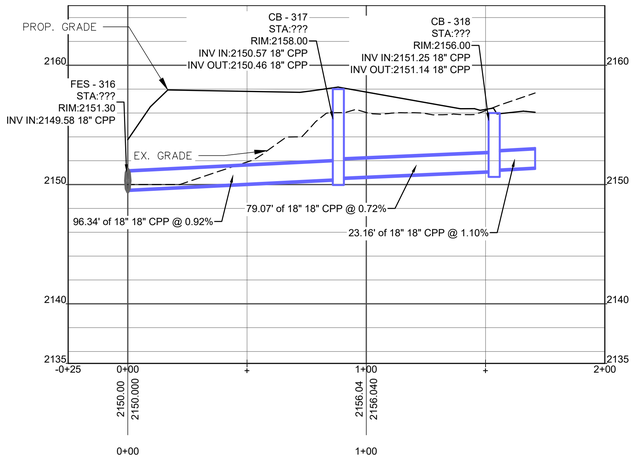
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: STORM PLAN & PROFILE - 2

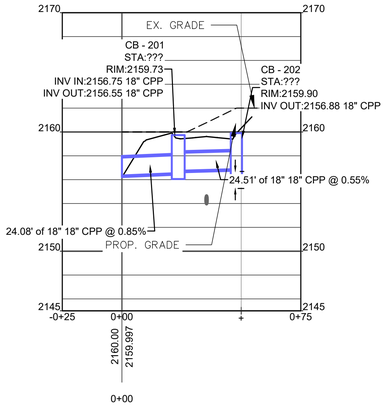
DRAWING NO: C-501

Y:\Shared\2_ENGINEERING\656605823_DESIGN\DWG\SHEETS\PLAN PROFILE STM.dwg, 9/9/2025 12:38 PM, Toby Harris



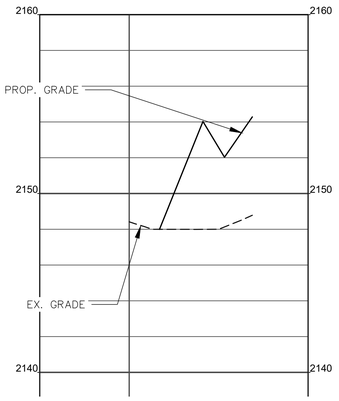

## PROFILE SCALE:

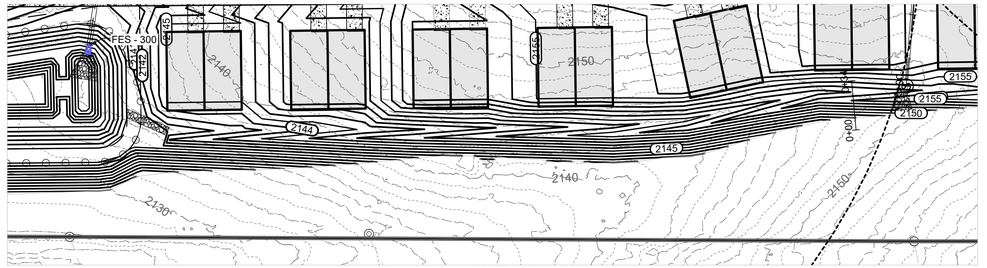
H: 1" = 30'
V: 1" = 6'




## PROFILE SCALE:

H: 1" = 30'
V: 1" = 6'

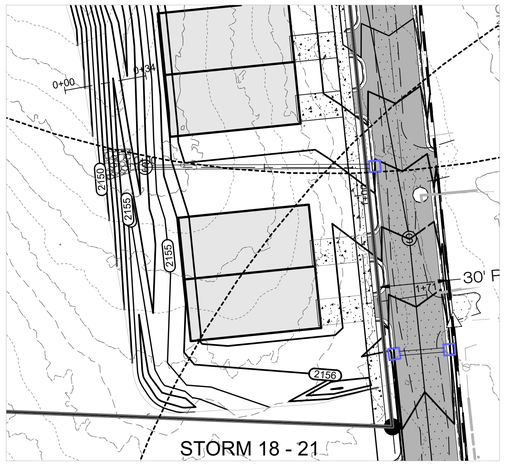



GRAPHIC SCALE

50 0 25 50 100 200

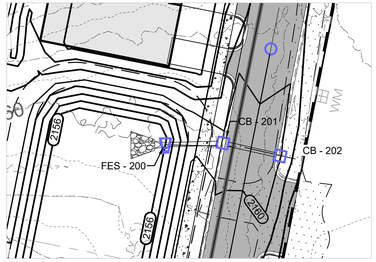
(IN FEET)
1"=50'




GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1"=30'




GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1"=30'

## STORM CALCULATIONS

### 100 - NETWORK

| Line No. | Line ID | Drng Area (ac) | Line Size (in) | Line Length (ft) | Line Slope (%) | Line Type | Invert Dn (ft) | Invert Up (ft) | Incr Q (cfs) | Vel Dn (ft/s) | Vel Up (ft/s) | HGL Dn (ft) | HGL Up (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RSR-101 - FES-100 | 0.01 | 18 | 37.326 | 0.99 | Cir | 2134.63 | 2135.00 | 0.04 | 0.04 | 1.22 | 2135.41 | 2135.07 |

### 200 - NETWORK

| Line No. | Line ID | Drng Area (ac) | Line Size (in) | Line Length (ft) | Line Slope (%) | Line Type | Invert Dn (ft) | Invert Up (ft) | Incr Q (cfs) | Vel Dn (ft/s) | Vel Up (ft/s) | HGL Dn (ft) | HGL Up (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CB-201 - FES-200 | 0.34 | 18 | 37.085 | 0.54 | Cir | 2156.35 | 2156.55 | 1.23 | 4.13 | 3.81 | 2156.92 | 2157.15 |
| 2 | CB-202 - CB-201 | 0.37 | 18 | 24.500 | 0.53 | Cir | 2156.75 | 2156.88 | 1.34 | 3.44 | 3.17 | 2157.16 | 2157.31 |
| 3 | RSR-204 - FES-203 | 0.01 | 18 | 41.349 | 1.21 | Cir | 2151.50 | 2152.00 | 0.04 | 1.52 | 1.22 | 2151.56 | 2152.07 |

### 300 - NETWORK

| Line No. | Line ID | Drng Area (ac) | Line Size (in) | Line Length (ft) | Line Slope (%) | Line Type | Invert Dn (ft) | Invert Up (ft) | Incr Q (cfs) | Vel Dn (ft/s) | Vel Up (ft/s) | HGL Dn (ft) | HGL Up (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CB-301 - FES-300 | 0.21 | 30 | 62.678 | 1.00 | Cir | 2129.00 | 2129.63 | 1.06 | 3.83 | 3.83 | 2133.73 | 2133.84 |
| 2 | CB-302 - CB-301 | 0.99 | 30 | 23.359 | 2.01 | Cir | 2129.73 | 2130.20 | 5.02 | 2.95 | 2.95 | 2134.19 | 2134.21 |
| 3 | CB-303 - CB-302 | 0.59 | 18 | 94.448 | 4.83 | Cir | 2130.73 | 2135.29 | 2.99 | 4.91 | 6.02 | 2134.50 | 2136.43 j |
| 4 | CB-304 - CB-303 | 0.14 | 18 | 162.565 | 3.00 | Cir | 2137.00 | 2141.88 | 0.71 | 9.96 | 5.25 | 2137.59 | 2142.86 |
| 5 | CB-305 - CB-304 | 0.06 | 18 | 55.000 | 3.00 | Cir | 2143.33 | 2144.98 | 0.30 | 9.72 | 5.07 | 2143.89 | 2145.91 |
| 6 | CB-308 - CB-305 | 0.05 | 18 | 130.469 | 4.00 | Cir | 2145.18 | 2150.40 | 0.25 | 1.02 | 2.81 | 2145.91 | 2150.75 j |
| 7 | CB-309 - CB-308 | 0.13 | 18 | 24.532 | 3.02 | Cir | 2151.26 | 2152.00 | 0.66 | 5.16 | 2.61 | 2151.45 | 2152.30 |
| 8 | CB-306 - CB-305 | 0.32 | 18 | 23.671 | 1.99 | Cir | 2145.08 | 2145.55 | 1.62 | 5.69 | 5.03 | 2145.91 | 2146.47 |
| 9 | DI-307 - CB-306 | 0.84 | 18 | 86.197 | 2.00 | Cir | 2145.65 | 2147.37 | 4.26 | 4.28 | 4.51 | 2146.47 | 2148.16 j |
| 10 | CB-310 - CB-301 | 0.11 | 18 | 154.064 | 2.00 | Cir | 2131.26 | 2134.34 | 0.56 | 2.16 | 4.35 | 2134.19 | 2135.09 j |
| 11 | CB-312 - CB-310 | 0.16 | 18 | 168.026 | 6.00 | Cir | 2134.44 | 2144.52 | 0.81 | 1.55 | 3.02 | 2135.09 | 2144.92 j |
| 12 | CB-313 - CB-312 | 0.08 | 18 | 25.529 | 5.01 | Cir | 2144.72 | 2146.00 | 0.41 | 2.95 | 2.29 | 2144.92 | 2146.24 |
| 13 | CB-314 - CB-302 | 0.20 | 18 | 178.583 | 5.71 | Cir | 2130.73 | 2140.93 | 1.01 | 1.32 | 3.72 | 2134.50 | 2141.51 j |
| 14 | CB-315 - CB-314 | 0.27 | 18 | 27.156 | 1.99 | Cir | 2141.03 | 2141.57 | 1.37 | 2.84 | 3.19 | 2141.51 | 2142.01 j |
| 15 | CB-311 - CB-310 | 0.58 | 18 | 23.342 | 2.01 | Cir | 2134.44 | 2134.91 | 2.94 | 4.03 | 3.99 | 2135.09 | 2135.56 |
| 16 | CB-317 - FES-316 | 0.04 | 18 | 88.172 | 0.54 | Cir | 2148.10 | 2148.58 | 0.20 | 1.45 | 3.47 | 2149.10 | 2149.09 j |
| 17 | CB-318 - CB-317 | 0.21 | 18 | 57.179 | 0.54 | Cir | 2148.69 | 2149.00 | 1.06 | 3.71 | 3.39 | 2149.15 | 2149.49 |
| 18 | CB-319 - CB-318 | 0.14 | 18 | 25.421 | 0.59 | Cir | 2149.10 | 2149.25 | 0.71 | 1.94 | 2.66 | 2149.49 | 2149.56 j |
| 19 | RSR-321 - FES-320 | 0.01 | 24 | 56.616 | 1.01 | Cir | 2125.43 | 2126.00 | 0.05 | 0.03 | 1.29 | 2126.47 | 2126.08 |

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 1 | 09/20/2024 | ADDRESS CLIENT COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER TOBIN M. HARRIS
09/20/2024

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-0973

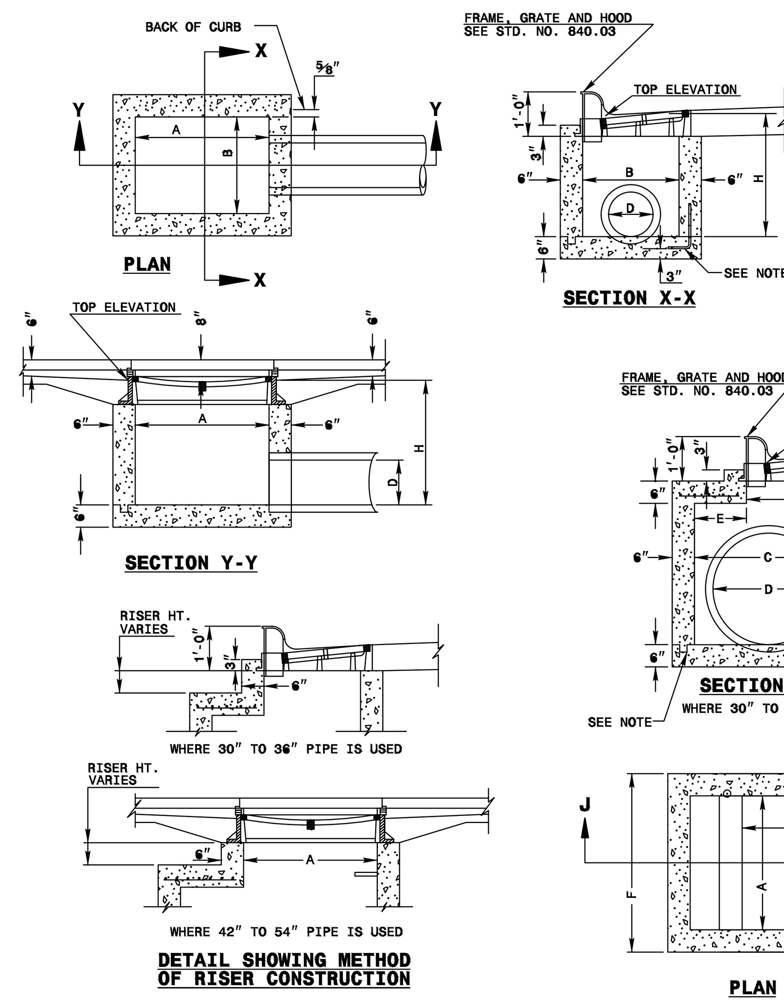
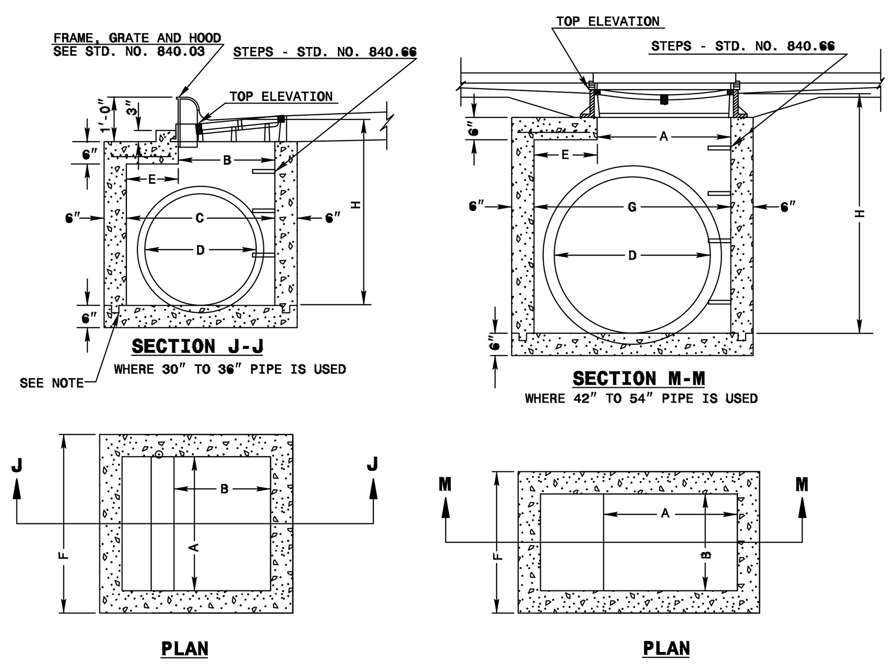
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: STORM PLAN & PROFILE - 3

DRAWING NO: C-502

Y:\Sheet\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\PLAN PROFILE STM.dwg, 9/9/2025 12:38 PM, Toby Harris

## ROADWAY STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE (840.02, SHEET 1 OF 2)

GENERAL NOTES:

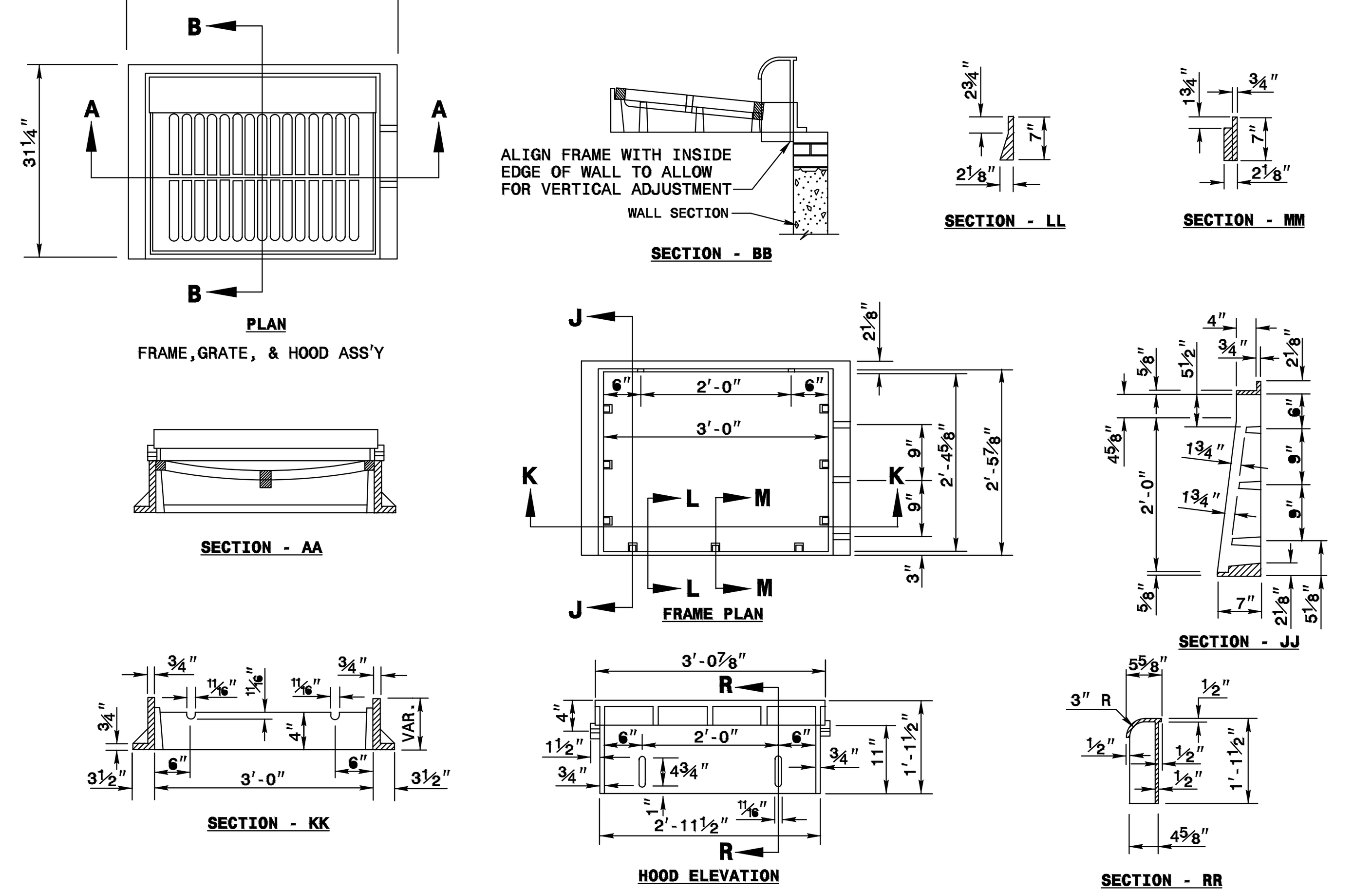
- USE CLASS "B" CONCRETE THROUGHOUT.
- PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
- OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
- USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
- IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
- USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
- FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
- MAXIMUM DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 16'-0". STD. NO. 840.45 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.
- CONSTRUCT WITH PIPE CROWNS MATCHING.
- CHAMFER ALL EXPOSED CORNERS 1".
- DRAWING NOT TO SCALE.

1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

SHEET 1 OF 2 **840.02**

## ROADWAY STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN (840.03, SHEET 1 OF 2)

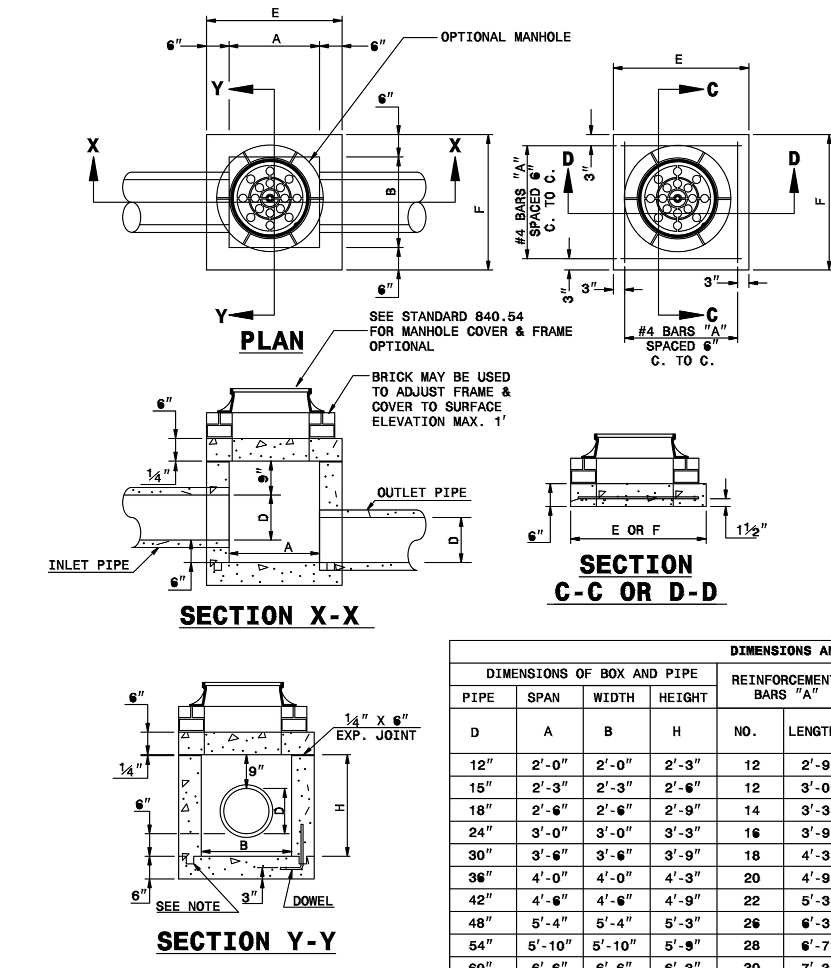
NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.



1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

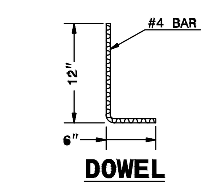
SHEET 1 OF 2 **840.03**

## ROADWAY STANDARD DRAWING FOR CONCRETE JUNCTION BOX 12" THRU 66" PIPE (840.31, SHEET 1 OF 1)



GENERAL NOTES:

- CHAMFER ALL EXPOSED CORNERS 1".
- USE CLASS "B" CONCRETE THROUGHOUT.
- OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
- USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
- IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.
- PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
- ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.)
- MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12'-0". STANDARD DRAWING 840.45 OR 840.46 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.



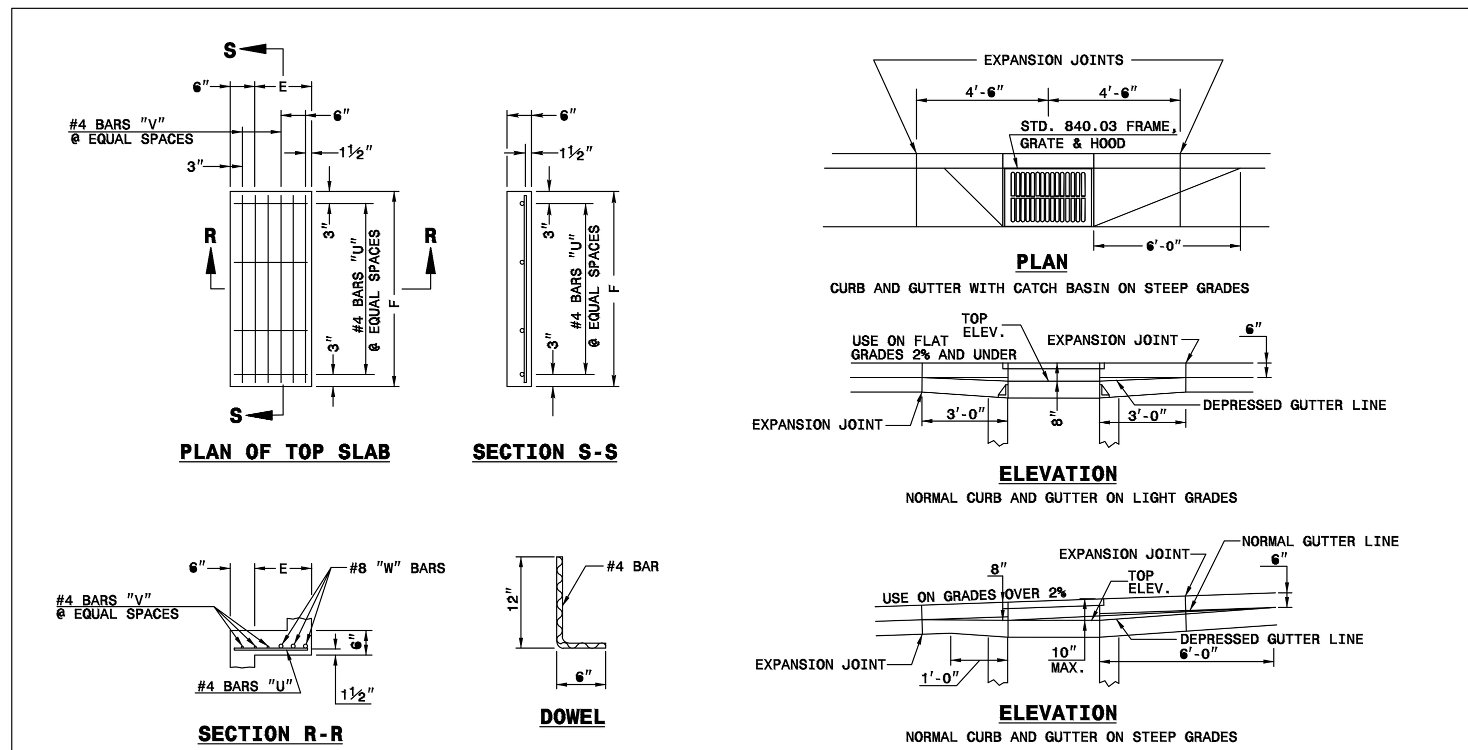
DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES

| DIMENSIONS OF BOX AND PIPE | | | | REINFORCEMENT BARS "A" | | TOP SLAB DIMENSIONS | | CUBIC YARDS IN BOX | | | TOTAL QUANTITIES BOX AND SLABS | | DEDUCTIONS FOR ONE PIPE CU.YDS. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PIPE D | SPAN A | WIDTH B | HEIGHT H | NO. | LENGTH | E | F | TOP SLAB | BOTTOM SLAB | WALL/ FT. OF HT. | LBS. REINF | CU. YDS. MIN. "H" | C.S. | R.C. |
| 12" | 2'-0" | 2'-0" | 2'-3" | 12 | 2'-9" | 3'-0" | 3'-0" | 0.167 | 0.167 | 0.185 | 22 | 0.750 | 0.015 | 0.024 |
| 15" | 2'-3" | 2'-3" | 2'-6" | 12 | 3'-0" | 3'-3" | 3'-3" | 0.196 | 0.196 | 0.204 | 24 | 0.902 | 0.023 | 0.036 |
| 18" | 2'-6" | 2'-6" | 2'-9" | 14 | 3'-3" | 3'-6" | 3'-6" | 0.227 | 0.227 | 0.222 | 30 | 1.065 | 0.033 | 0.049 |
| 24" | 3'-0" | 3'-0" | 3'-3" | 16 | 3'-9" | 4'-0" | 4'-0" | 0.296 | 0.296 | 0.259 | 40 | 1.434 | 0.059 | 0.085 |
| 30" | 3'-6" | 3'-6" | 3'-9" | 18 | 4'-3" | 4'-6" | 4'-6" | 0.375 | 0.375 | 0.296 | 51 | 1.860 | 0.092 | 0.127 |
| 36" | 4'-0" | 4'-0" | 4'-3" | 20 | 4'-9" | 5'-0" | 5'-0" | 0.463 | 0.463 | 0.333 | 64 | 2.341 | 0.132 | 0.178 |
| 42" | 4'-6" | 4'-6" | 4'-9" | 22 | 5'-3" | 5'-6" | 5'-6" | 0.560 | 0.560 | 0.370 | 77 | 2.878 | 0.180 | 0.243 |
| 48" | 5'-4" | 5'-4" | 5'-3" | 26 | 6'-3" | 6'-4" | 6'-4" | 0.743 | 0.743 | 0.407 | 111 | 3.623 | 0.235 | 0.317 |
| 54" | 5'-10" | 5'-10" | 5'-9" | 28 | 6'-7" | 6'-10" | 6'-10" | 0.865 | 0.865 | 0.444 | 126 | 4.283 | 0.297 | 0.401 |
| 60" | 6'-6" | 6'-6" | 6'-3" | 30 | 7'-3" | 7'-6" | 7'-6" | 1.042 | 1.042 | 0.481 | 145 | 5.090 | 0.367 | 0.495 |
| 66" | 7'-1" | 7'-1" | 6'-9" | 32 | 7'-10" | 8'-1" | 8'-1" | 1.210 | 1.210 | 0.518 | 169 | 5.917 | 0.444 | 0.589 |

1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

SHEET 1 OF 1 **840.31**

## ROADWAY STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE (840.02, SHEET 2 OF 2)



MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

| DIMENSIONS OF BOX AND PIPE | | | | | | COVER DIMENSION | | BARS-U | | BARS-V | | BARS-W | | TOTAL LBS. | CU.YDS. CONC. IN BOX | | | DEDUCTIONS ONE PIPE | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PIPE D | SPAN A | WIDTH B | WIDTH C | SPAN G | MIN. HEIGHT H | E | F | NO. | LENGTH | NO. | LENGTH | NO. | LENGTH | | TOP SLAB | BOTTOM SLAB | TOT. CONC. FOR MINIMUM HEIGHT, H | C.M. | R.C. |
| 12" | 3'-0" | 2'-2" | -- | -- | 2'-9" | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.235 | 0.772 | 0.015 | 0.026 |
| 15" | 3'-0" | 2'-2" | | | 3'-0" | | | | | | | | | | | 0.235 | 0.829 | 0.023 | 0.036 |
| 18" | 3'-0" | 2'-2" | | | 3'-3" | | | | | | | | | | | 0.235 | 0.887 | 0.033 | 0.049 |
| 24" | 3'-0" | 2'-2" | | | 3'-9" | | | | | | | | | | | 0.235 | 1.001 | 0.059 | 0.085 |
| 30" | 3'-0" | 2'-2" | 3'-4" | | 4'-3" | 1'-2" | 4'-0" | 4 | 1'-5" | 2 | 3'-9" | 3 | 3'-9" | 39 | 0.123 | 0.321 | 1.433 | 0.092 | 0.127 |
| 36" | 3'-0" | 2'-2" | 3'-10" | | 4'-9" | 1'-8" | 4'-0" | 4 | 1'-11" | 3 | 3'-9" | 3 | 3'-9" | 43 | 0.161 | 0.358 | 1.714 | 0.132 | 0.178 |
| 42" | 3'-0" | 2'-2" | | 4'-5" | 5'-3" | 1'-5" | 3'-2" | 4 | 1'-8" | 2 | 2'-11" | 3 | 2'-11" | 32 | 0.112 | 0.318 | 1.738 | 0.180 | 0.243 |
| 48" | 3'-0" | 2'-2" | | 5'-0" | 5'-9" | 2'-0" | 3'-2" | 4 | 2'-3" | 3 | 2'-11" | 3 | 2'-11" | 35 | 0.145 | 0.352 | 2.052 | 0.235 | 0.317 |
| 54" | 3'-0" | 2'-2" | | 5'-7" | 6'-3" | 2'-7" | 3'-2" | 4 | 2'-10" | 5 | 2'-11" | 3 | 2'-11" | 41 | 0.180 | 0.386 | 2.387 | 0.297 | 0.401 |

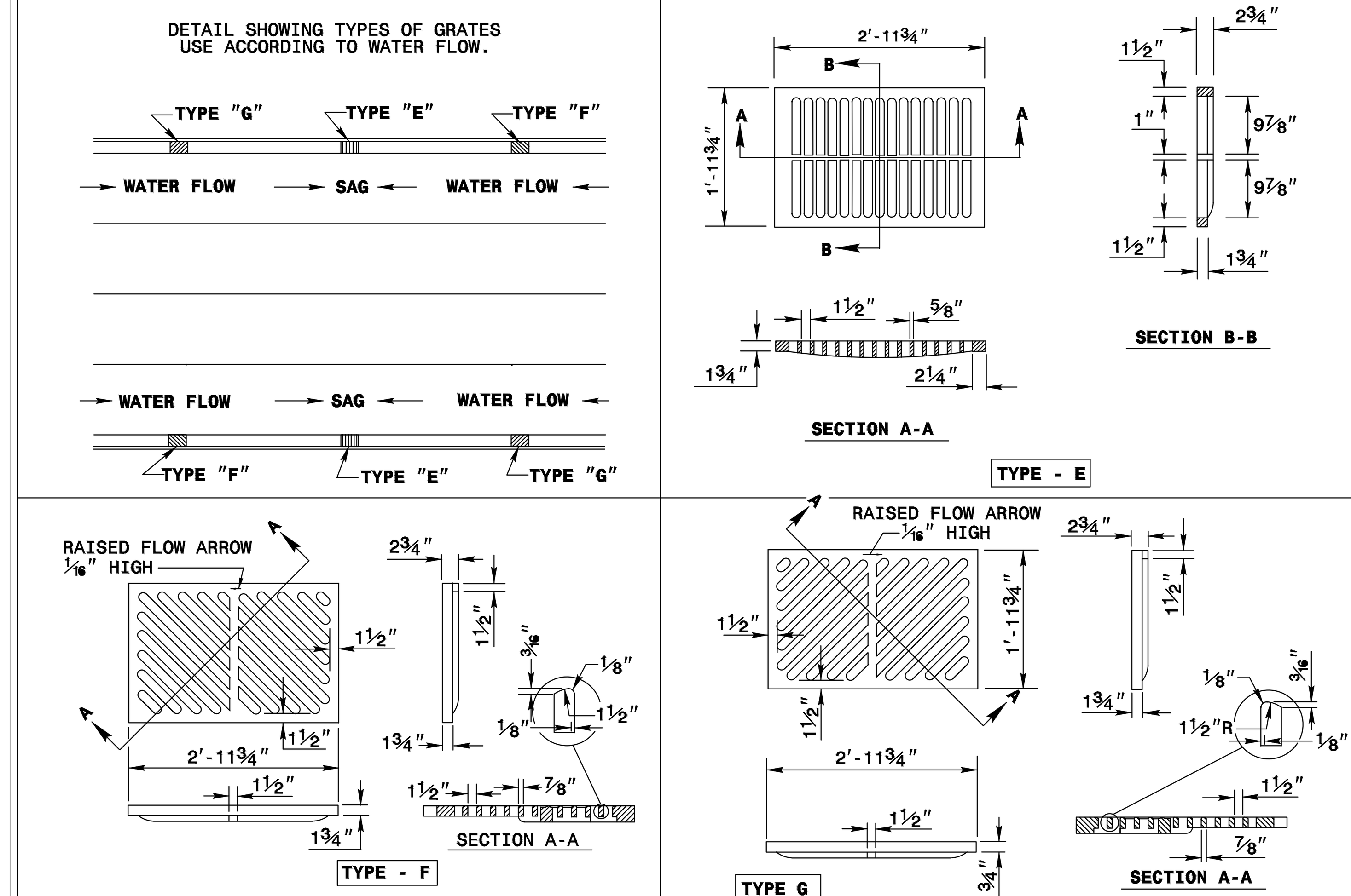
* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

SHEET 2 OF 2 **840.02**

## ROADWAY STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN (840.03, SHEET 2 OF 2)

DETAIL SHOWING TYPES OF GRATES USE ACCORDING TO WATER FLOW.



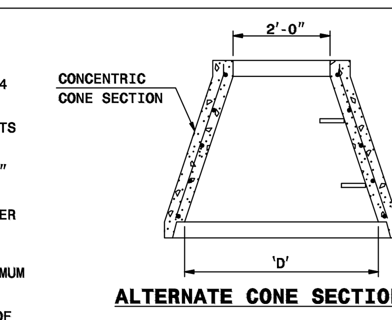
1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

SHEET 2 OF 2 **840.03**

## ROADWAY STANDARD DRAWING FOR PRECAST MANHOLE 4',5' AND 6' DIAMETER 12" THRU 48" PIPE (840.52, SHEET 1 OF 1)

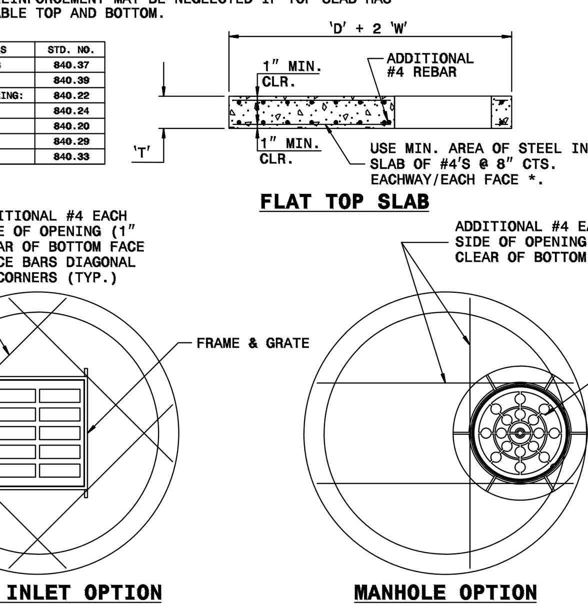
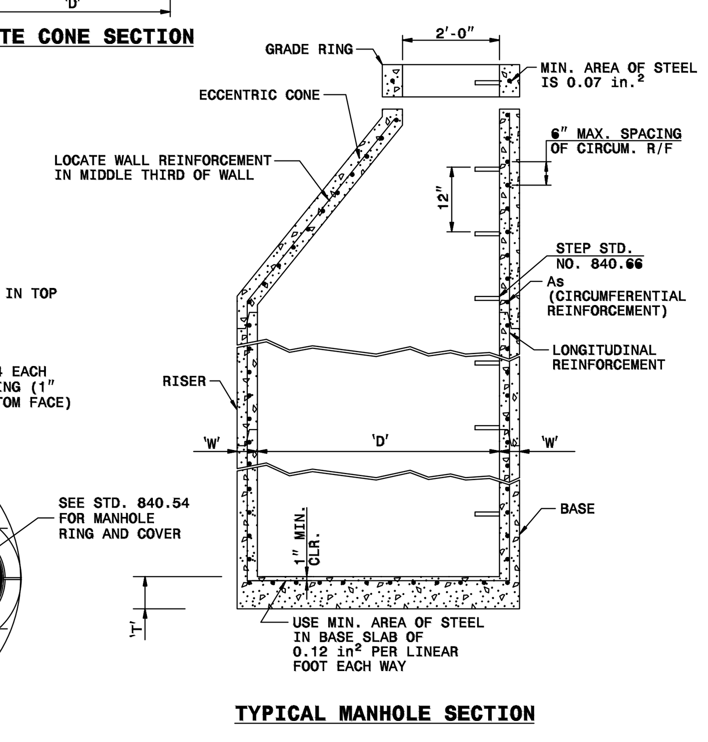
GENERAL NOTES

- USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.
- USE ASTM A615 GRADE 60 REINFORCING STEEL. USE ASTM A1064 WELDED WIRE FABRIC (WWF).
- FABRICATE, ASSEMBLE AND DESIGN PRECAST MANHOLE COMPONENTS ACCORDANCE WITH AASHTO M199.
- ASSEMBLE RISER AND GRADE RINGS WITH THE STEPS SPACED 12" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.
- THE HEIGHT OF GRADE ADJUSTMENT RINGS PLUS FRAME AND COVER SHALL NOT EXCEED 24".
- WHERE THE MANHOLE IS EXPOSED TO ROAD TRAFFIC, CONSTRUCT THE TOP OF THE MANHOLE FLUSH WITH THE GROUND AND A MINIMUM OF 9" ABOVE THE GROUND AT OTHER LOCATIONS.
- LIMIT DEPTH OF FILL TO 30'-0" FROM FINISH GRADE TO TOP OF BOTTOM SLAB.
- THE MIN. SLAB THICKNESS 'T' IS THE DIMENSION OF THE THINNEST PORTION OF THE TOP/BOTTOM SLAB.
- * TOP MAT OF REINFORCEMENT MAY BE NEGLECTED IF TOP SLAB HAS A DISTINGUISHABLE TOP AND BOTTOM.



| D | W | T | As |
|---|---|---|---|
| INTERNAL DIAMETER (FT.) | MIN. WALL THICKNESS (IN.) | MIN. TOP/BOTTOM SLAB THICKNESS (IN.) | MIN. CIRCUMFERENTIAL AREA OF STEEL PER VERTICAL FT. (SQ. IN.) |
| 4 | 4 | 6 | 0.12 |
| 5 | 5 | 8 | 0.15 |
| 6 | 6 | 8 | 0.18 |

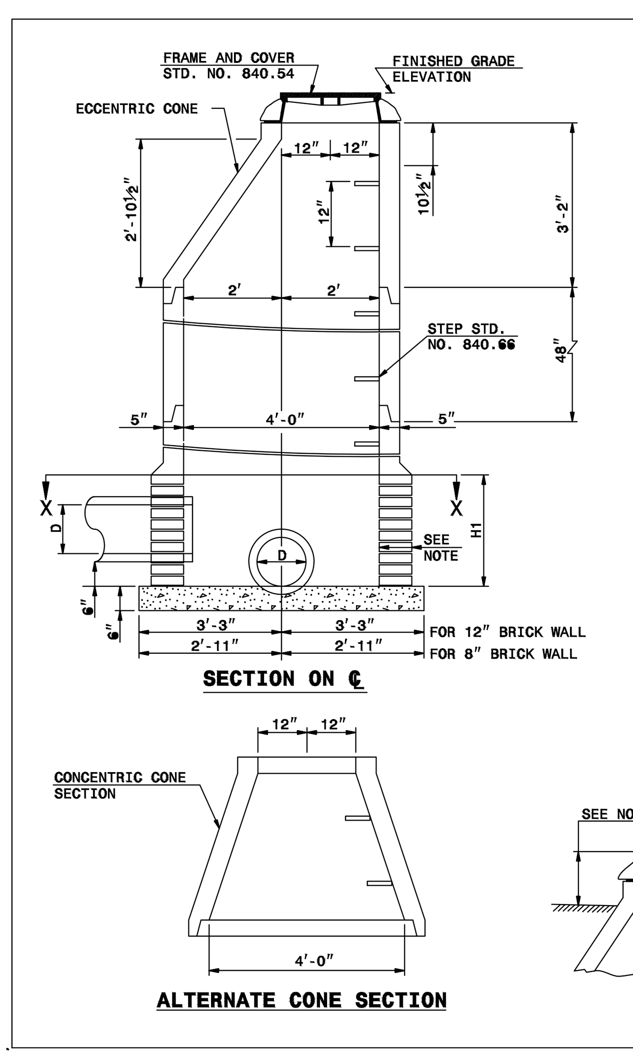
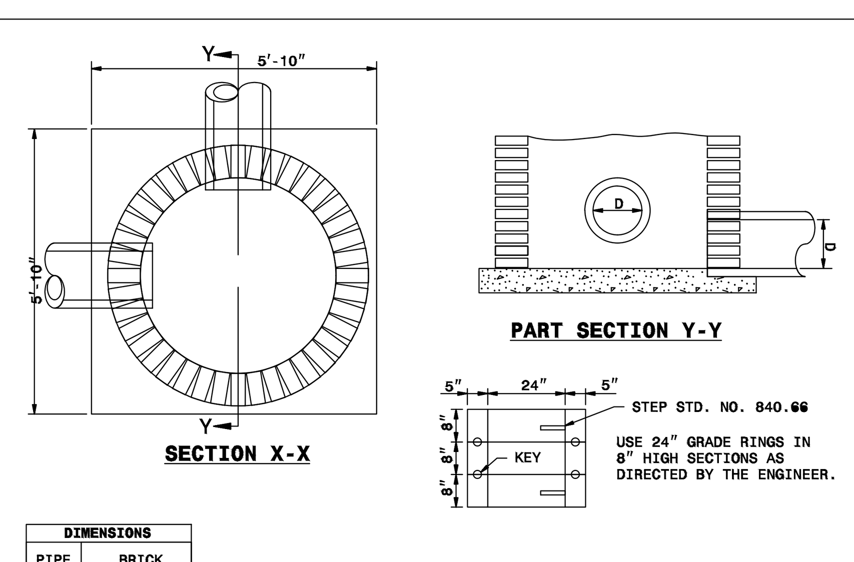
| FRAME AND GRATES | STD. NO. |
|---|---|
| TRAFFIC BEARING | 840.37 |
| | 840.39 |
| NONTRAFFIC BEARING: | 840.22 |
| | 840.24 |
| | 840.20 |
| | 840.29 |
| | 840.33 |

1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

SHEET 1 OF 1 **840.52**

## ROADWAY STANDARD DRAWING FOR PRECAST MANHOLE WITH MASONRY BASE 12" THRU 42" PIPE (840.53, SHEET 1 OF 1)

DIMENSIONS

| PIPE DIM. | BRICK HEIGHT |
|---|---|
| D | H1 (MIN) |
| 12" | 1'-5" |
| 15" | 1'-8" |
| 18" | 1'-11" |
| 24" | 2'-6" |
| 30" | 3'-0" |
| 36" | 3'-7" |
| 42" | 4'-2" |

GENERAL NOTES:

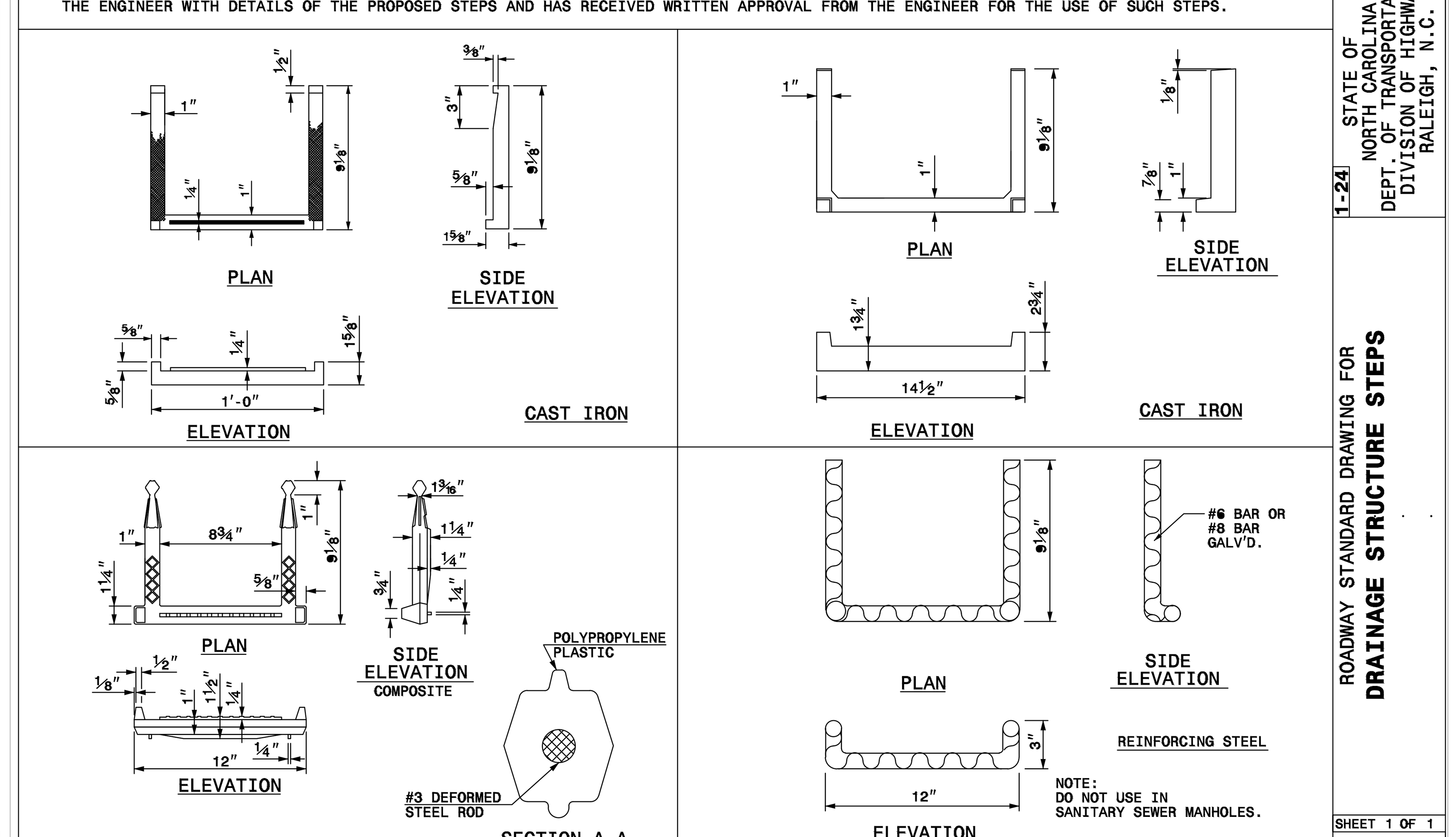
- MORTAR JOINTS $\frac{1}{2}$" ± $\frac{1}{8}$" THICK.
- USE CLASS "B" CONCRETE THROUGHOUT.
- USE FORMS TO CONSTRUCT THE BASE SLAB.
- JUMBO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCK WILL BE USED IN LIEU OF CLAY BRICK.
- USE PRECAST MANHOLE COMPONENTS MEETING REQUIREMENTS OF STD.NO.840.52 AND AASHTO M199.
- FOR MANHOLE OVER 12' VERTICAL WALL DEPTH, CONSTRUCT BRICK MASONRY WALL 12" THICK. FOR MANHOLES WITH A VERTICAL WALL DEPTH LESS THAN 12', CONSTRUCT BRICK MASONRY WALL 8" THICK.
- ASSEMBLE RISERS AND GRADE RINGS WITH THE STEPS SPACED 12" FROM THE TOP TO THE BOTTOM OF THE MANHOLE.
- THE HEIGHT OF GRADE ADJUSTMENT RINGS PLUS FRAME AND COVER SHALL NOT EXCEED 24".
- WHERE THE MANHOLE IS EXPOSED TO ROAD TRAFFIC, CONSTRUCT THE TOP OF THE MANHOLE FLUSH WITH THE GROUND AND A MINIMUM OF 9" ABOVE THE GROUND AT OTHER LOCATIONS.
- IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN IN STD. NO. 840.00.

1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

SHEET 1 OF 1 **840.53**

## ROADWAY STANDARD DRAWING FOR DRAINAGE STRUCTURE STEPS (840.66, SHEET 1 OF 1)

NOTES:
INSTALL ALL STEPS PROTRUDING 4" FROM INSIDE FACE OF STRUCTURE WALL.
STEPS DIFFERING IN DIMENSIONS, CONFIGURATION, OR MATERIALS FROM THOSE SHOWN MAY ALSO BE USED PROVIDED THE CONTRACTOR HAS FURNISHED THE ENGINEER WITH DETAILS OF THE PROPOSED STEPS AND HAS RECEIVED WRITTEN APPROVAL FROM THE ENGINEER FOR THE USE OF SUCH STEPS.



1-24 STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

SHEET 1 OF 1 **840.66**

---

*FIRST VICTORY*
*542 S.CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| | | |

ENGINEER'S SEAL:

09/16/2024

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

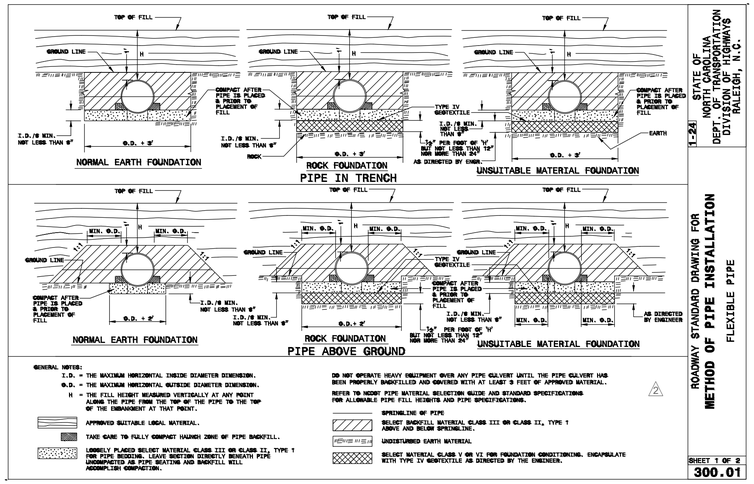
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: STORM DETAILS-1 (SHEET 1 OF 2)

DRAWING NO: C-550

Y:\Shared\2_ENG\R656\656058235_DESIGN\DWG\SHEETS\STORM DETAILS.dwg, 9/9/2025 12:38 PM, Toby Harris




GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE BEDDING DIRECTLY BENEATH PIPE UNDISTURBED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINKLING OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINKLING.

UNDISTURBED EARTH MATERIAL

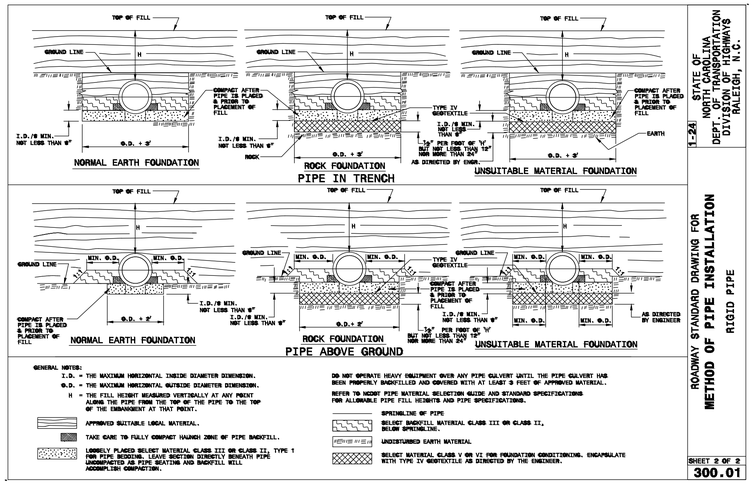
SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

STATE OF NORTH CAROLINA DEPT. TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
METHOD OF PIPE INSTALLATION
FLEXIBLE PIPE

SHEET 1 OF 2
300.01




GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE BEDDING DIRECTLY BENEATH PIPE UNDISTURBED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

SPRINKLING OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINKLING.

UNDISTURBED EARTH MATERIAL

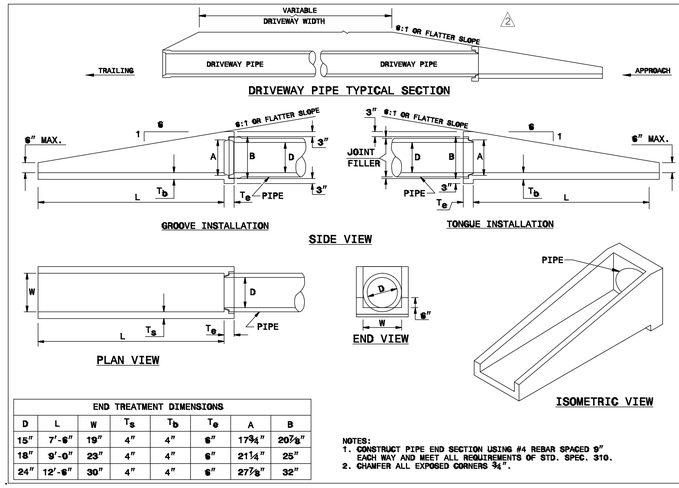
SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

STATE OF NORTH CAROLINA DEPT. TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

SHEET 2 OF 2
300.01




| END TREATMENT DIMENSIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| D | L | W | $T_S$ | $T_b$ | $T_e$ | A | B |
| 15" | 7'-6" | 19" | 4" | 4" | 6" | 17¾" | 20⅞" |
| 18" | 9'-0" | 23" | 4" | 4" | 6" | 21¼" | 25" |
| 24" | 12'-6" | 30" | 4" | 4" | 6" | 27⅞" | 32" |

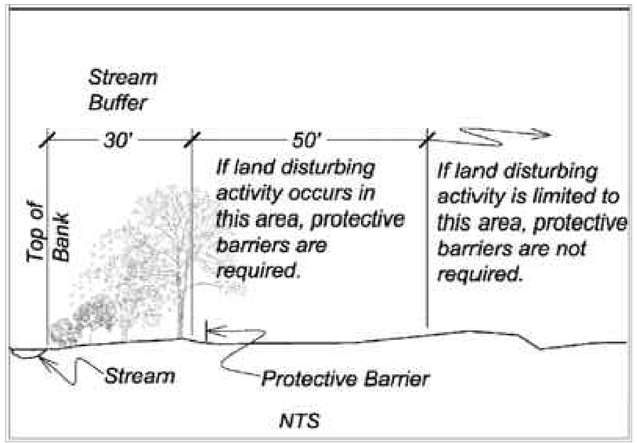
NOTES:
1. CONSTRUCT PIPE END SECTION USING #4 REBAR SPACED 9" EACH WAY AND MEET ALL REQUIREMENTS OF STD. SPEC. 310.
2. CHAMFER ALL EXPOSED CORNERS ¾".

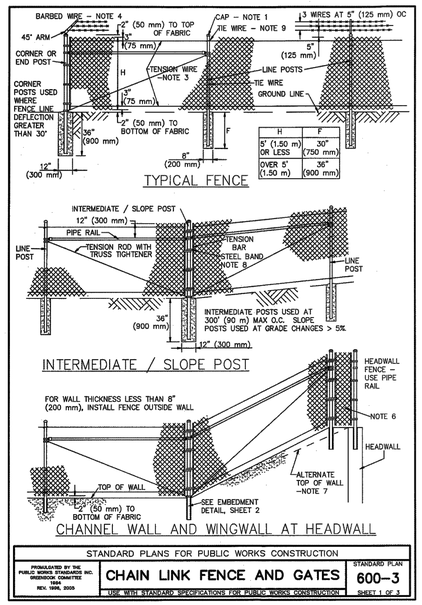
STATE OF NORTH CAROLINA DEPT. TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24

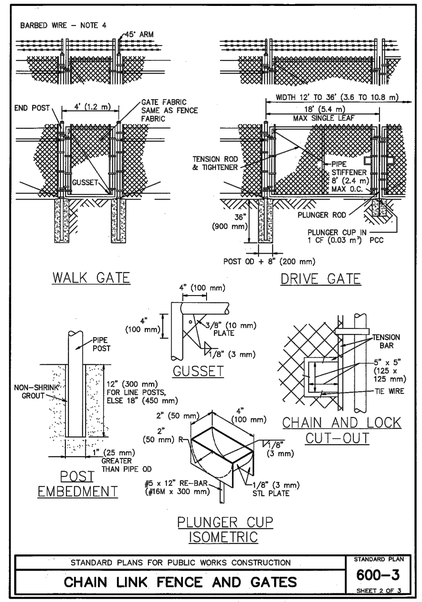
ROADWAY STANDARD DRAWING FOR
PARALLEL PIPE END SECTION
PRECAST CONCRETE SECTION FOR 15" TO 24" PIPE

SHEET 1 OF 1
310.02




| STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION | | |
|---|---|---|
| PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. SPECIFICATION COMMITTEE 1966 REV. 1998, 2009 | CHAIN LINK FENCE AND GATES | STANDARD PLAN 600–3 |
| USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION | | SHEET 1 OF 3 |




| STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION | | |
|---|---|---|
| CHAIN LINK FENCE AND GATES | | STANDARD PLAN 600–3 |
| | | SHEET 2 OF 3 |

NOTES:

1. SECURE DRIVE–FIT GALVANIZED CAP TO POST WITH 1/4" (6 mm) ROUND–HEAD RIVET.
2. H DENOTES FABRIC WIDTH AND NOMINAL FENCE HEIGHT. H = 5' (1.5 m) UNLESS OTHERWISE NOTED.
3. IF FENCE WITH TOP RAIL IS SPECIFIED, DELETE STEEL TENSION WIRE AT TOP, AND PIPE RAILS AT INTERMEDIATE, SLOPE, END AND CORNER POSTS. EXTEND TENSION ROD TO TOP RAIL.
4. BARBED WIRE SHALL BE USED ONLY WHEN SPECIFIED.
5. POST SPACING IS MAXIMUM 10' (3.0 m).
6. FILL CLEAR OPENINGS GREATER THAN 3" (75 mm) WITH FABRIC. FOR OPENINGS LESS THAN 18" (450 mm), TIE FABRIC TO POSTS.
7. USE ONE POST FOR COMBINED SLOPE AND CORNER POST IF TOP OF CHANNEL WALL IS CONSTRUCTED AS SHOWN FOR "ALTERNATE".
8. STEEL BANDS AT TENSION BARS SHALL BE 1/8" x 1" (3 x 25 mm), MINIMUM, SPACED AT MAXIMUM 18" (400 mm).
9. SECURE TENSION WIRES TO EACH LINE POST WITH TIE WIRES.

| STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION | | |
|---|---|---|
| CHAIN LINK FENCE AND GATES | | STANDARD PLAN 600–3 |
| | | SHEET 3 OF 3 |

2

*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 2 | 01/31/2025 | ADDRESS CITY & COUNTY COMMENTS |

NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER JOSEPH M HARRIS

ENGINEER'S SEAL: 01/31/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: STORM DETAILS-2 (SHEET 2 OF 2)

DRAWING NO: C-551

Y:\Shared\2_ENGINEERING\656605823_DESIGN\DWG\SHEETS\STORM DETAILS.dwg, 9/9/2025 12:38 PM, Toby Harris

## ENGINEER'S NOTES:

1. A CITY OF HENDERSONVILLE PLANNING AND ZONING APPROVAL IS REQUIRED BEFORE A CITY OF HENDERSONVILLE UTILITY PLAN APPROVAL CAN BE ISSUED.
2. THE SPECIFICATIONS AND REQUIREMENTS OF THE CITY OF HENDERSONVILLE (COH) WATER AND SEWER DEPARTMENT SUPERSEDE ALL OTHERS IN THE INSTALLATION OF THE PROPOSED WATER EXTENSION.
3. FOR PROPOSED PUBLIC UTILITIES ON PROPERTY NOT OWNED BY THE DEVELOPER, EASEMENT FROM THE PRIVATE PROPERTY OWNER MUST BE PROVIDED PRIOR TO PLAN APPROVAL.
4. THE COH WATER AND SEWER DEPARTMENT MAINTENANCE OF WATER SYSTEMS ENDS AT THE METERS FOR THE SERVICES (ALL FIRE HYDRANTS SHALL BE MAINTAINED/ OWNED BY THE COH WATER AND SEWER DEPARTMENT). ALL WATER METERS SHALL BE LOCATED INSIDE THE ROAD RIGHT-OF-WAY.
5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION, SIZE, AND MATERIAL OF ALL EXISTING UTILITIES.
6. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE TAPS, CONNECTIONS, SHUTDOWNS AND METER REQUEST WITH THE COH WATER AND SEWER DEPARTMENT.
7. THE CONSTRUCTION SITE MUST BE PROPERLY SIGNED AND SECURED TO LIMIT ACCESS FOR NON-CONSTRUCTION PERSONNEL.
8. DURING NON-WORKING HOURS, THE SITE SHOULD BE SECURED SO THAT NO OPEN TRENCHES OR OTHERS HAZARDS ARE ACCESSIBLE.
9. ANYWHERE "RESTRAINED JOINT" PIPING IS SHOWN OR REQUIRED BY THE COH WATER AND SEWER DEPARTMENT, THE CONTRACTOR HAS THE OPTION TO USE MEGA-LUGS, FIELD LOCK GASKETS OR ACTUAL RESTRAINED JOINT PIPE.
10. THE COH WATER AND SEWER DEPARTMENT SHALL HAVE THE RIGHT TO ACCESS ALL PUBLICLY OWNED WATER METERS.
11. ALL BACKFLOW PREVENTION DEVICES MAKE AND MODEL SHALL BE USC APPROVED, LEAD FREE, AND ARE TO BE REVIEWED AND APPROVED BY THE CITY ENVIRONMENTAL COMPLIANCE COORDINATOR (EERWIN@HVLNC.GOV).
12. 10 FT OF EASEMENT ON BOTH SIDES OF THE PROPOSED MAIN IS REQUIRED. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO ACQUIRE AND DEDICATE ALL REQUIRED UTILITY EASEMENTS.
13. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING COH INSPECTIONS WHEN WORK IS BEING PERFORMED AND THE SCHEDULING OF ALL INSPECTIONS.
14. ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE PUBLISHED STANDARDS OF THE RESPONSIBLE JURISDICTION.
15. UNLESS OTHERWISE NOTED ON THESE PLANS OR APPROVED BY THE COH WATER & SEWER DEPARTMENT, ALL PROPOSED PUBLIC WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 3FT OF COVER.
16. ALL WATER TESTING SHOULD BE SCHEDULED USING THE CITY OF HENDERSONVILLE ONLINE FORM.
17. ALL NEW PUBLIC WATER MAINS FOR THIS PROJECT SHALL BE EQUIPPED WITH WITH RESTRAINED JOINTS UNLESS OTHERWISE APPROVED BY THE CITY OF HENDERSONVILLE WATER INSPECTOR.
18. THE CITY OF HENDERSONVILLE'S OWNERSHIP OF THE WATER SYSTEM ENDS IMMEDIATELY BEHIND EACH SERVICE METER.
19. THE CITY OF HENDERSONVILLE'S OWNERSHIP OF THE SEWER SYSTEM ENDS IMMEDIATELY AT THE SERVICE LATERAL CLEAN OUT.
20. THE JUMPER CANNOT BE INSTALLED UNTIL THE WATER LINE IS READY FOR TESTING.
21. NO MORE THAN A TOTAL OF THREE (3) INCOMING LINES AND ONE OUTGOING LINE WILL BE ALLOWED IN ANY MANHOLE INCLUDING SERVICE LINES.
22. ALL EXISTING SUB-SURFACE UTILITIES IDENTIFIED ON THE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION GATHERED FROM FIELD INSPECTION AND/OR ANY OTHER APPLICABLE RECORD DRAWINGS WHICH MAY BE AVAILABLE. DEPTHS OF EXISTING UTILITIES SHOWN IN PROFILE VIEWS ARE BASED ON STANDARD ASSUMPTIONS. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION, DEPTH, SIZE AND MATERIAL OF ANY AND ALL SUB-SURFACE CONDITIONS REFERENCED IN THESE PLANS PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
23. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK INSIDE THE PUBLIC RIGHT OF WAY PRIOR TO RECEIPT AND COMPLIANCE WITH ALL APPLICABLE NCDOT PERMITS. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY FLAGGERS AND TRAFFIC CONTROL DURING ALL WORK INSIDE THE PUBLIC RIGHTS OF WAY.
24. ELEVATIONS OF UTILITIES ARE GIVEN TO THE EXTENT OF INFORMATION AVAILABLE. WHERE ELEVATIONS ARE NOT GIVEN AT POINTS OF EXISTING UTILITY CROSSINGS, SUCH ELEVATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND REPORTED TO THE ENGINEER. WHEN UNKNOWN LINES ARE EXPOSED, THEIR LOCATIONS AND ELEVATIONS SHALL ALSO BE REPORTED TO THE ENGINEER.
25. CONTRACTOR IS RESPONSIBLE FOR RELOCATING ANY APPLICABLE CONFLICTING UTILITIES NECESSARY TO COMPLETE SERVICE INSTALLATIONS.
26. AS-BUILT DOCUMENTATION REQUIREMENTS: PRIOR TO APPROVAL FROM LOCAL JURISDICTION OR ENGINEER THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS (IN BOTH PAPER AND ELECTRONIC FORMAT (CAD / PDF) PREPARED AND SEALED BY A PROFESSIONAL LAND SURVEYOR SHOWING ALL UTILITY INSTALLATION. HORIZONTAL AND VERTICAL INFORMATION SHALL BE PROVIDED FOR WATER, SEWER, STORM INCLUDING ALL STRUCTURES, VALVES, HYDRANTS, AND OTHER APPURTENANCES.

## MATERIAL SUMMARY

| | |
|---|---|
| 8" WATER (DIP) | 2,003 LF |
| PROP. FIRE HYDRANTS | 1 |
| 8" SEWER (SDR-35 PVC) | 2,150 LF |
| 8" SEWER (DIP) | 389 LF |
| PUBLIC SEWER MANHOLES | 13 |

TOTAL AREA OF SURVEY
13.73 ACRES
(EXCLUDING RIGHTS OF WAY)

400' RADIUS AT FIRE HYDRANTS, TYP.

PROP. FIRE HYDRANT
SEE DETAIL SHEET C-653

PROP. 40' SS EASEMENT

PROP. 30' SS EASEMENT

12' GRAVEL SS ACCESS DRIVE

LAFOLETTE STREET
(45' PUBLIC R/W)

SIGNAL HILL ROAD
(60' PUBLIC R/W)

MATCH LINE SEE BELOW

MATCH LINE SEE ABOVE

PROP. 8" DIP WATER MAIN

PROP. 8" PVC SS MAIN

PROP. 6"x12" TS&V

PROP. 10' x 20' x 8'D BORING PIT

PROP. 6" RJDIP WATER LINE INSIDE 45 LF OF 18" Ø 0.25"t STEEL CASING (CITY MAINTAINED)

PROP. 10' x 10' x 7'D RECEIVING PIT

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1"=20'

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1"=60'

*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

## REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 3 | 02/18/2025 | ADDRESS CITY & COUNTY COMMENTS |
| 5 | 07/18/2025 | ADDRESS ZONING COMMENTS |
| 6 | 09/09/2025 | ADDRESS UTILITY COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER ROBIN M. HARRIS
09/09/2025

| | |
|---|---|
| PROJECT #: | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: UTILITY PLAN

DRAWING NO: C-600

Y:\Shared\2_ENGR\656605823\2_DESIGN\DWG\SHEETS\UTILITY - OVERALL.dwg, 9/9/2025 12:39 PM, Toby Harris

NOTE: EXISTING SANITARY SEWER MANHOLE TO BE INCLUDED IN VACUUM TESTING.

EX. SSMH - 1
SSMH - 1
SSMH - 2
SSMH - 3
SSMH - 4
SSMH - 5
SSMH - 6
SSMH - 7
SSMH-8
SSMH-9

DROP MANHOLE. SEE DETAIL SHEET C-613

12' GRAVEL SS ACCESS DRIVE

30' SEWER EASEMENT PER DB 838 PG 434

PROP. 8" DIP WATER LINE

PROP. 8" PVC SS LINE

LAFOLETTE STREET (45' PUBLIC R/W)

SIGNAL HILL ROAD (60' PUBLIC R/W)

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1"=50'

SS 1-9

EX. SSMH - 1
STA:0+00.00
RIM:2103.12
INV IN:2099.40 8"

SSMH - 1
STA:0+50.00
RIM:2107.38
INV IN:2106.40 8"
INV OUT:2101.40 8"

SSMH - 2
STA:2+30.88
RIM:2148.28
INV IN:2130.23 8"
INV OUT:2130.00 8"

SSMH - 3
STA:3+89.13
RIM:2136.69
INV IN:2131.38 8"
INV OUT:2131.18 8"

SSMH - 4
STA:6+50.03
RIM:2144.25
INV IN:2133.16 8"
INV OUT:2132.95 8"

SSMH - 5
STA:7+94.43
RIM:2144.82
INV IN:2135.60 8"
INV IN:2135.42 8"
INV OUT:2134.60 8"

SSMH - 6
STA:9+18.90
RIM:2150.92
INV IN:2137.20 8"
INV OUT:2136.84 8"

SSMH - 7
STA:10+44.90
RIM:2156.74
INV IN:2145.06 8"
INV OUT:2143.50 8"

SSMH-8
STA:13+24.20
RIM:2157.01
INV IN:2148.06 8"
INV OUT:2147.85 8"

SSMH-9
STA:15+17.95
RIM:2157.94
INV OUT:2150.00 8"

180.88' of 8" @ 13.05%
50.00' of 8" @ 4.00%
158.25' of 8" @ 0.60%
260.90' of 8" @ 0.60%
144.40' of 8" @ 1.00%
124.47' of 8" @ 1.00%
126.00' of 8" @ 5.00%
279.30' of 8" @ 1.00%
193.75' of 8" @ 1.00%

18" RCP
18" CPP

DROP MANHOLE. SEE DETAIL SHEET C-613

PROFILE SCALE:
H: 1" = 50'
V: 1" = 10'

| 0+25 | 0+00 | 1+00 | 2+00 | 3+00 | 4+00 | 5+00 | 6+00 | 7+00 | 8+00 | 9+00 | 10+00 | 11+00 | 12+00 | 13+00 | 14+00 | 15+00 | 15+30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2103.12 | 2103.119 | 2127.90 | 2127.900 | 2141.54 | 2141.538 | 2144.00 | 2144.000 | 2137.46 | 2137.459 | 2143.55 | 2143.551 | 2142.56 | 2142.562 | 2138.19 | 2138.194 | 2141.99 | 2141.988 | 2149.27 | 2149.272 | 2155.52 | 2155.524 | 2158.04 | 2158.044 | 2158.14 | 2158.138 | 2157.68 | 2157.676 | 2157.63 | 2157.628 | 2158.00 | 2158.000 |

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 6 | 09/09/2025 | ADDRESS UTILITY COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER TOBIN M. HARRIS
09/09/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

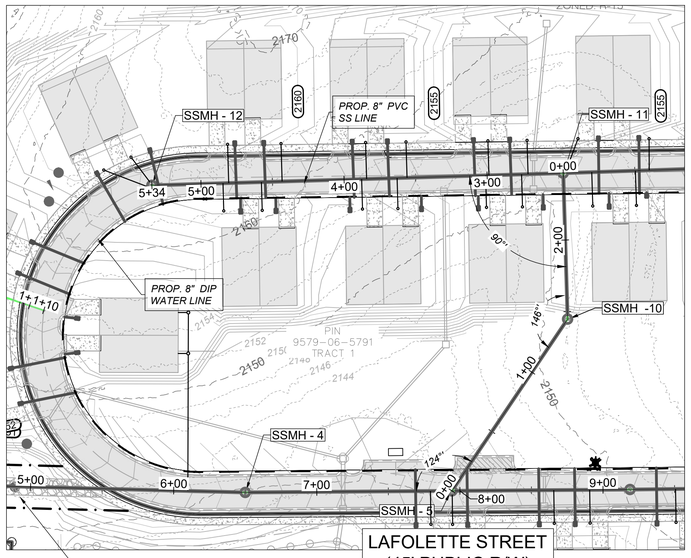
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-0473

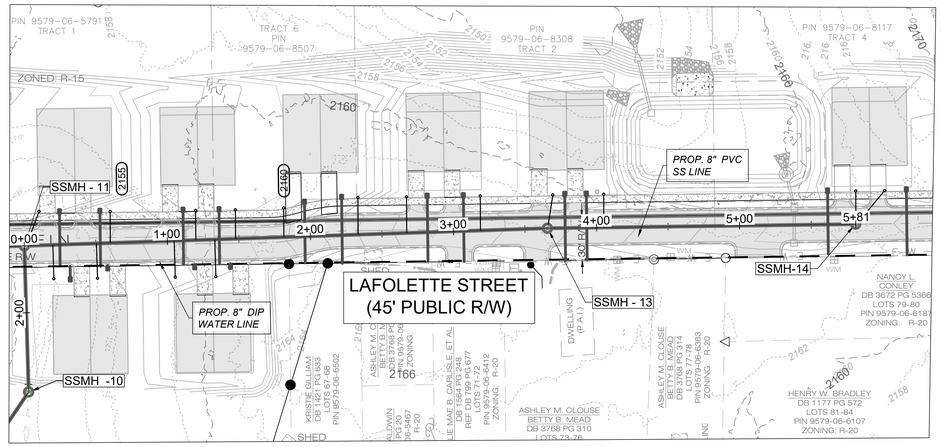
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: SANITARY SEWER PLAN & PROFILE - 1

DRAWING NO: C-610

Y:\Shared2_ENGR\656605823\0_DESIGN\DWG\SHEETS\PLAN PROFILE SAN.dwg, 9/9/2025 12:39 PM, Toby Harris

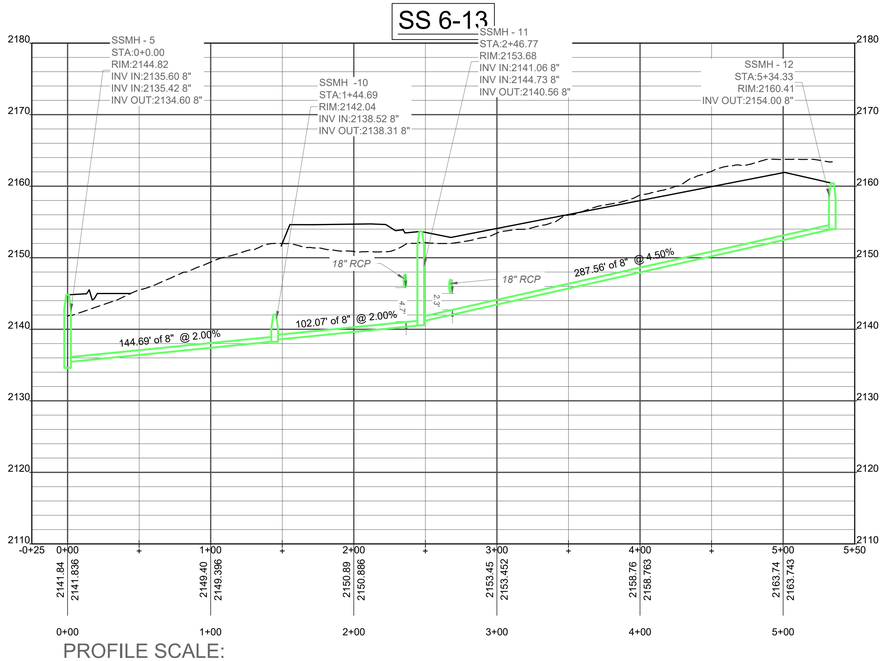


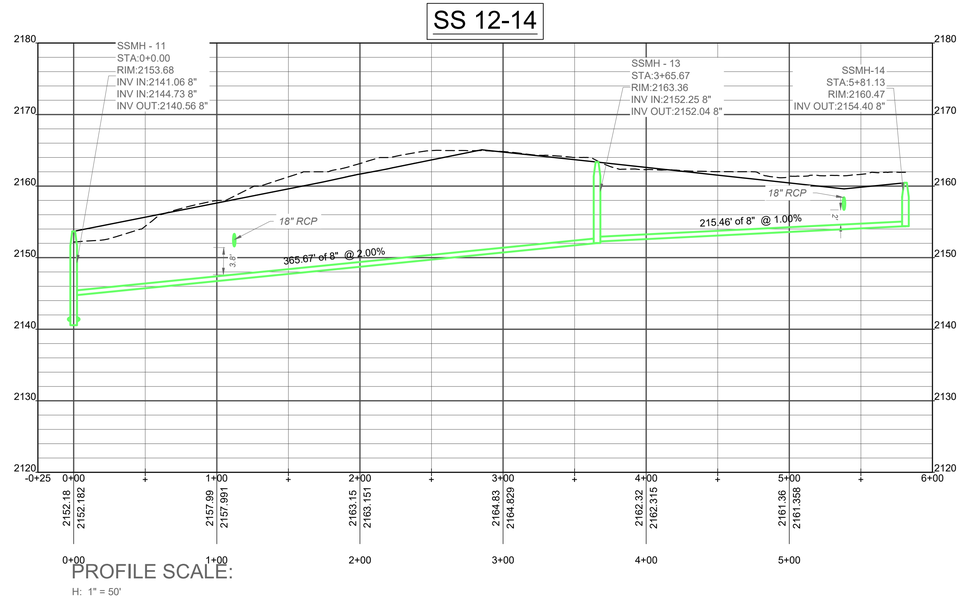

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1"=50'




PROFILE SCALE:
H: 1" = 50'
V: 1" = 10'




PROFILE SCALE:
H: 1" = 50'
V: 1" = 10'

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 2 | 01/31/2025 | ADDRESS CITY & COUNTY COMMENTS |
| 6 | 09/09/2025 | ADDRESS UTILITY COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS
09/09/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

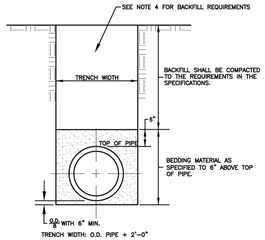
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: SANITARY SEWER PLAN & PROFILE - 2

DRAWING NO: C-611

Y:\Shared\2_ENG\R656605823\5_DESIGN\DWG\SHEETS\PLAN PROFILE SAN2.dwg, 9/9/2025 12:39 PM, Toby Harris




NOTES:

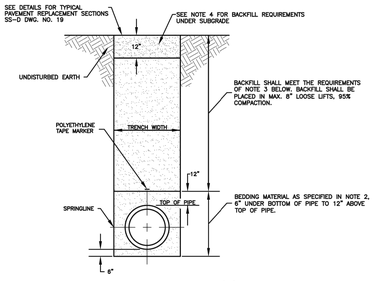
1. BEDDING CLASSIFICATION SHALL MEET OR EXCEED ASTM D2321 CLASS 1 BEDDING FOR FLEXIBLE PIPING, AND ASTM C12, CLASS 'B' BEDDING FOR RIGID PIPING.
2. IN ROCK OR WET SOIL, PIPE MUST BE BEDDED IN AT LEAST 6" OF #57 WASHED STONE.
3. FORCE MAIN BEDDING SHALL BE SELECT NATURAL SAND WELL COMPACTED IN 6" LIFTS.
4. TRENCHES EXCAVATED OUTSIDE EXISTING ROAD AND RAILWAY RIGHTS-OF-WAY SHALL BE BE BACKFILLED WITH COMMON BACKFILL MATERIAL CONSISTING OF EXCAVATED MATERIALS EXCEPT HIGHLY ORGANIC SILTS AND CLAYS AND TAMPED THOROUGHLY. FILL SHALL BE DEPOSITED IN SUCCESSIVE, UNIFORM, APPROXIMATELY HORIZONTAL LAYERS. MATERIAL SHALL BE FREE OF ROOTS, STONES, AND DEBRIS. ALL MATERIAL SHALL HAVE AN IN-PLACE DENSITY OF AT LEAST 85% OF MAXIMUM DRY DENSITY (STANDARD PROCTOR) OR AS APPROVED BY THE ENGINEER. COMMON BACKFILL SHALL NOT CONTAIN STONE BLOCKS, BROKEN CONCRETE, MASONRY RUBBLE, OR OTHER SIMILAR MATERIALS. IT SHALL HAVE PHYSICAL PROPERTIES SUCH THAT IT CAN BE READILY SPREAD AND COMPACTED DURING FILLING. SNOW, ICE, AND FROZEN SOIL WILL NOT BE PERMITTED.
5. WHERE EXCAVATED MATERIAL, AFTER REMOVAL OF ROCKS, STUMPS, PLANT MATERIAL, AND OTHER EXTRANEOUS MATERIAL AND PROPER DEWATERING, DRYING, PROTECTION, AND STORAGE OF THE EXCAVATION BY THE CONTRACTOR, CANNOT BE PREPARED TO MEET THE REQUIREMENTS FOR COMMON BACKFILL, DUE TO THE NATURE OF THE MATERIAL (E.G., EXCESSIVE ROCK, MUCK, ORGANICS, CLAY, SILT, OR OTHER MATERIAL), AND AS DETERMINED BY THE ENGINEER, THE UNACCEPTABLE EXCAVATION SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR AND REPLACED BY IMPORTED BACKFILL MEETING THE REQUIREMENTS OF STRUCTURAL BACKFILL. IMPORTED STRUCTURAL BACKFILL SHALL BE FREE OF ORGANICS, ROOTS OR OTHER DELETERIOUS MATERIALS AND SHALL NOT CONTAIN MORE THAN FIVE PERCENT (BY WEIGHT) ORGANIC MATERIAL, HAVE A PLASTICITY INDEX (PI) GREATER THAN 25, OR HAVE A MAXIMUM DRY DENSITY LESS THAN 90 POUNDS PER CUBIC FOOT. IMPORTED STRUCTURAL FILL SHOULD CONSIST OF MATERIAL CLASSIFIED AS ML, CL, SC, OR SM, OR BETTER PER ASTM D-2487 AND BE CAPABLE OF BEING COMPACTED TO 95% STANDARD PROCTOR.
6. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL COMPACTION REQUIREMENTS.

| | |
|---|---|
| DATE: 10/19/2023 | SS-D DWG. NO. 1 |
| SCALE: NOT TO SCALE | |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

GRAVITY SEWER
TRENCH CONSTRUCTION
OUTSIDE PAVEMENT

H:\DETAILS\-Current Standard Details\Sewer Only\COH-SEWER-DETAILS-102023.dwg, TRENCH-DETAIL OSP -1




NOTES:

1. THIS TRENCH BACKFILL DETAIL APPLIES TO AREAS UNDER PAVEMENT. CURB AND GUTTER, AND SIDEWALK.
2. BEDDING CLASSIFICATION SHALL MEET OR EXCEED ASTM D2321 CLASS 1 BEDDING FOR FLEXIBLE PIPING, AND ASTM C12, CLASS B BEDDING FOR RIGID PIPING.
3. COMMON BACKFILL MATERIAL SHALL CONSIST OF EXCAVATED MATERIALS EXCEPT HIGHLY ORGANIC SILTS AND CLAYS. FILL SHALL BE DEPOSITED IN SUCCESSIVE, UNIFORM APPROXIMATELY HORIZONTAL LAYERS NOT EXCEEDING EIGHT (8) INCHES IN DEPTH FOR THE FULL WIDTH. MATERIAL SHALL BE FREE OF ROOTS, STONES, AND DEBRIS AND CAPABLE OF BEING COMPACTED TO 95% STANDARD PROCTOR. COMMON BACKFILL SHALL NOT CONTAIN STONE BLOCKS, BROKEN CONCRETE, MASONRY RUBBLE, OR OTHER SIMILAR MATERIALS. IT SHALL HAVE PHYSICAL PROPERTIES SUCH THAT IT CAN BE READILY SPREAD AND COMPACTED DURING FILLING. SNOW, ICE, AND FROZEN SOIL WILL NOT BE PERMITTED.

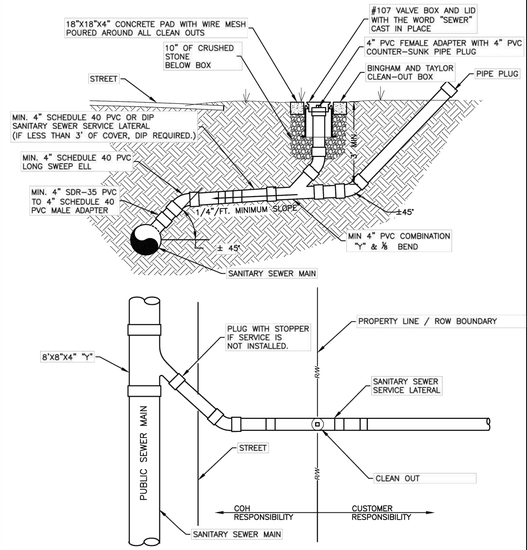
   WHERE EXCAVATED MATERIAL, AFTER REMOVAL OF ROCKS, STUMPS, PLANT MATERIAL, AND OTHER EXTRANEOUS MATERIAL AND PROPER DEWATERING, DRYING, PROTECTION, AND STORAGE OF THE EXCAVATION BY THE CONTRACTOR, CANNOT BE PREPARED TO MEET THE REQUIREMENTS FOR COMMON BACKFILL, DUE TO THE NATURE OF THE MATERIAL (E.G., EXCESSIVE ROCK, MUCK, ORGANICS, CLAY, SILT, OR OTHER MATERIAL), AND AS DETERMINED BY THE ENGINEER, THE UNACCEPTABLE EXCAVATION SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR AND REPLACED BY IMPORTED BACKFILL MEETING THE REQUIREMENTS OF STRUCTURAL BACKFILL. IMPORTED STRUCTURAL BACKFILL SHALL BE FREE OF ORGANICS, ROOTS OR OTHER DELETERIOUS MATERIALS AND SHALL NOT CONTAIN MORE THAN FIVE PERCENT (BY WEIGHT) ORGANIC MATERIAL, HAVE A PLASTICITY INDEX (PI) GREATER THAN 25, OR HAVE A MAXIMUM DRY DENSITY LESS THAN 90 POUNDS PER CUBIC FOOT. IMPORTED STRUCTURAL FILL SHOULD CONSIST OF MATERIAL CLASSIFIED AS ML, CL, SC, OR SM, OR BETTER PER ASTM D-2487 AND BE CAPABLE OF BEING COMPACTED TO 95% STANDARD PROCTOR.
4. THE TOP 12 INCHES OF FINAL BACKFILL FOR ROAD OR STREET SUBGRADE SHALL BE COMPACTED TO 98% STANDARD PROCTOR.
5. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL COMPACTION REQUIREMENTS.

| | |
|---|---|
| DATE: 10/19/2023 | SS-D DWG. NO. 2 |
| SCALE: NOT TO SCALE | |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

GRAVITY SEWER
TRENCH CONSTRUCTION
UNDER PAVEMENT

H:\DETAILS\-Current Standard Details\Sewer Only\COH-SEWER-DETAILS-102023.dwg, TRENCH-DETAIL UNP-2

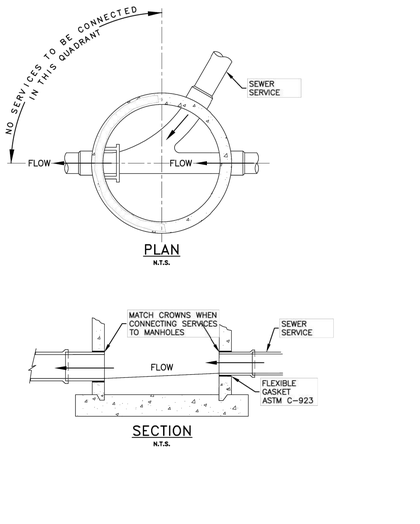



| | |
|---|---|
| DATE: 10/19/2023 | SS-D DWG. NO. 04 |
| SCALE: NOT TO SCALE | |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

STANDARD SERVICE CONNECTION
LATERAL AND CLEANOUT

H:\DETAILS\-Current Standard Details\Sewer Only\COH-SEWER-DETAILS-102023.dwg, STANDARD SERVICE CON-4

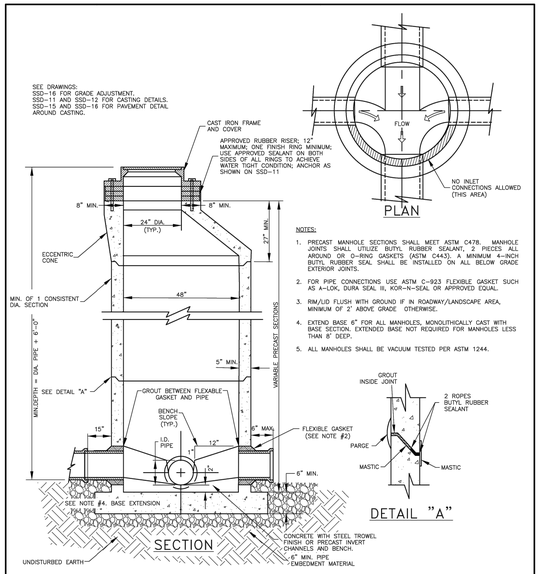



| | |
|---|---|
| DATE: 10/19/2023 | SS-D DWG. NO. 5 |
| SCALE: NOT TO SCALE | |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

SERVICE CONNECTIONS
AT MANHOLES

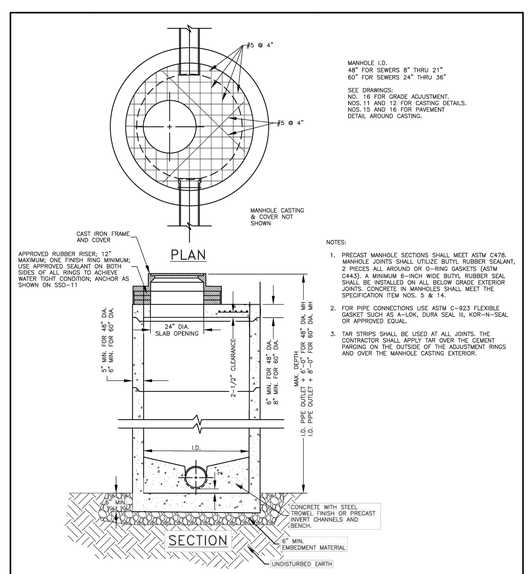
H:\DETAILS\-Current Standard Details\Sewer Only\COH-SEWER-DETAILS-102023.dwg, SERVICE CON AT MH-5




| | |
|---|---|
| DATE: 04/11/2025 | SS-D DWG. NO. 6 |
| SCALE: NOT TO SCALE | |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

PRECAST MANHOLE



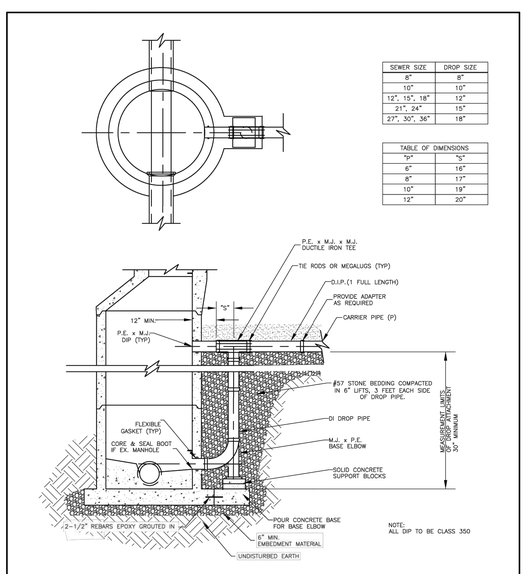

NOTES:

1. PRECAST MANHOLE SECTIONS SHALL MEET ASTM C478. MANHOLE JOINTS SHALL UTILIZE BUTYL RUBBER SEALANT, 2 PIECES ALL AROUND OR O-RING GASKETS (ASTM C443). A MINIMUM 6-INCH WIDE BUTYL RUBBER SEAL SHALL BE INSTALLED ON ALL BELOW GRADE EXTERIOR JOINTS. CONCRETE IN MANHOLES SHALL MEET THE SPECIFICATION ITEM NOS. 5 & 14.
2. FOR PIPE CONNECTIONS USE ASTM C-923 FLEXIBLE GASKET SUCH AS A-LOK, DURA SEAL III, KOR-N-SEAL OR APPROVED EQUAL.
3. TAR STRIPS SHALL BE USED AT ALL JOINTS. THE CONTRACTOR SHALL APPLY TAR OVER THE CEMENT PARGING ON THE OUTSIDE OF THE ADJUSTMENT RINGS AND OVER THE MANHOLE CASTING EXTERIOR.

| | |
|---|---|
| DATE: 09/23/2024 | SS-D DWG. NO. 8 |
| SCALE: NOT TO SCALE | |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

SHALLOW PRECAST MANHOLE




| SEWER SIZE | DROP SIZE |
|---|---|
| 8" | 8" |
| 10" | 10" |
| 12", 15", 18" | 12" |
| 21", 24" | 15" |
| 27", 30", 36" | 18" |

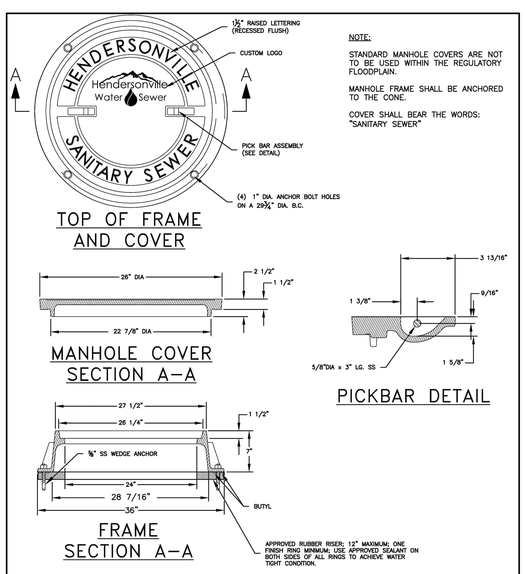
| TABLE OF DIMENSIONS | |
|---|---|
| "P" | "S" |
| 6" | 16" |
| 8" | 17" |
| 10" | 19" |
| 12" | 20" |

NOTE:
ALL DIP TO BE CLASS 350

| | |
|---|---|
| DATE: 09/23/2024 | SS-D DWG. NO. 9 |
| SCALE: NOT TO SCALE | |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

DROP MANHOLE




| | |
|---|---|
| DATE: 01/26/2024 | SS-D DWG. NO. 11 |
| SCALE: NOT TO SCALE | |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

STANDARD MANHOLE
FRAME AND COVER

H:\DETAILS\-Current Standard Details\Sewer Only\COH-SEWER-DETAILS-102023.dwg, 1/26/2024 11:52:52 AM

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 6 | 09/09/2025 | ADDRESS UTILITY COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER ROBIN M. HARRIS
09/09/2025

| | |
|---|---|
| PROJECT #: | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: SANITARY SEWER DETAILS

DRAWING NO: C-613

Y:\Shared2_ENGR\656605823\5_DESIGN\DWG\SHEETS\PLAN PROFILE SAN.dwg, 9/9/2025 12:40 PM, Toby Harris

**DATE: 10/19/2023** SS-D DWG. NO. 15

**SCALE: NOT TO SCALE**

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

MH CASTING IN NEW ASPHALT PAVEMENT
ROAD GRADES LESS THAN 1" PER FOOT

H:\DETAILS\-Current Standard Details\Sewer Only\COH-SEWER-DETAILS-102023.dwg, MH-CASTING-NEW-ASPHALT-15




**DATE: 10/19/2023** DETAIL DWG. NO. 16

**SCALE: NOT TO SCALE**

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

MH CASTING IN NEW ASPHALT PAVEMENT
ROAD GRADES GREATER THAN 1" PER FOOT

H:\DETAILS\-Current Standard Details\Sewer Only\COH-SEWER-DETAILS-102023.dwg, MH-CASTING-GREATER -16

*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 6 | 09/09/2025 | ADDRESS UTILITY COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER TIMOTHY ROBIN M. HARRIS
09/09/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

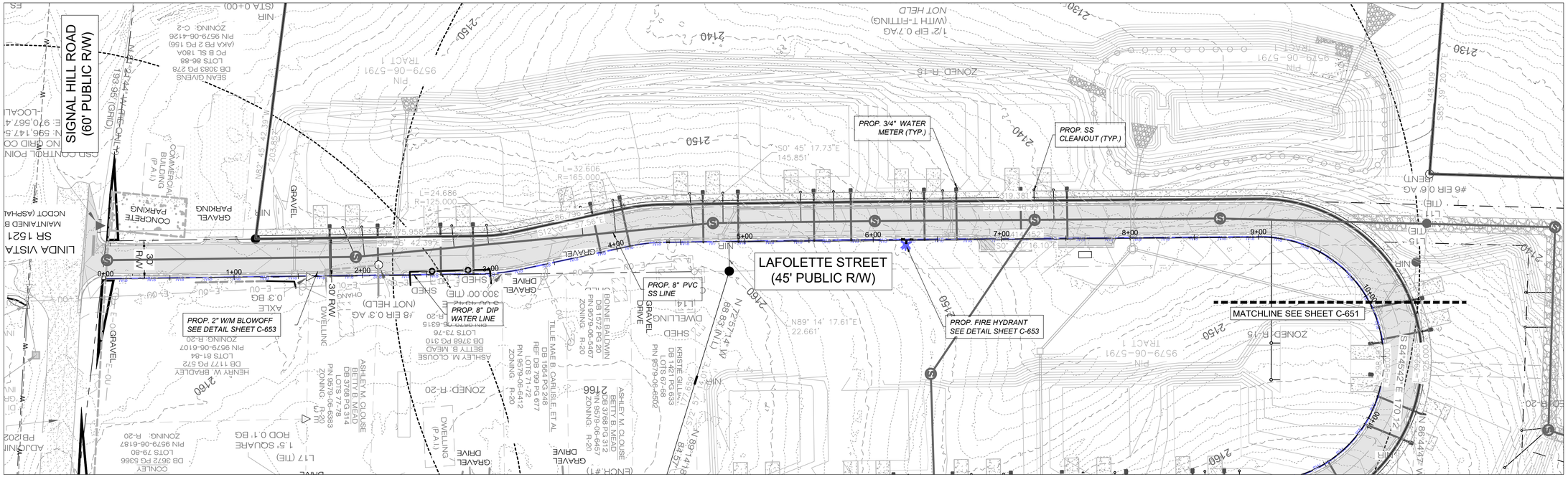
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

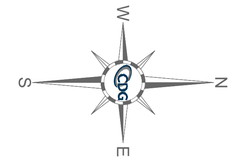
SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

DRAWING NO.: C-614

SHEET TITLE: SANITARY SEWER DETAILS

Y:\Shared\2_ENGR\656605823\5_DESIGN\DWG\SHEETS\PLAN PROFILE SAN.dwg, 9/9/2025 12:40 PM, Toby Harris

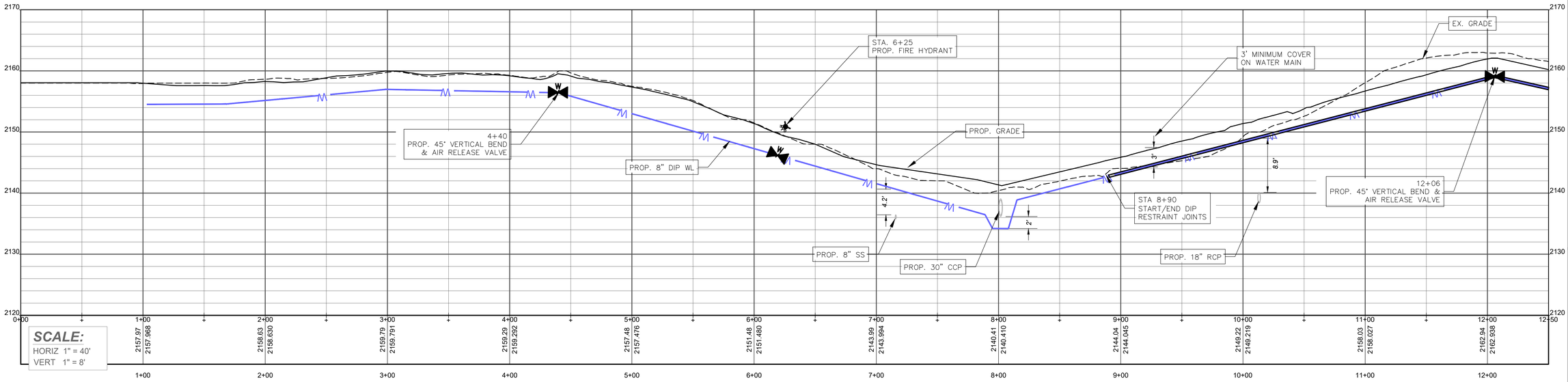



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1"=40'




**SCALE:**
HORIZ 1" = 40'
VERT 1" = 8'

## WATERMAIN2

SCALE: 1"=50' (h); 1"=10' (v)

| REVISIONS | | | |
|---|---|---|---|
| REV. | DATE | COMMENTS | |
| 6 | 09/09/2025 | ADDRESS UTILITY COMMENTS | |

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 TOBIN M. HARRIS
09/09/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

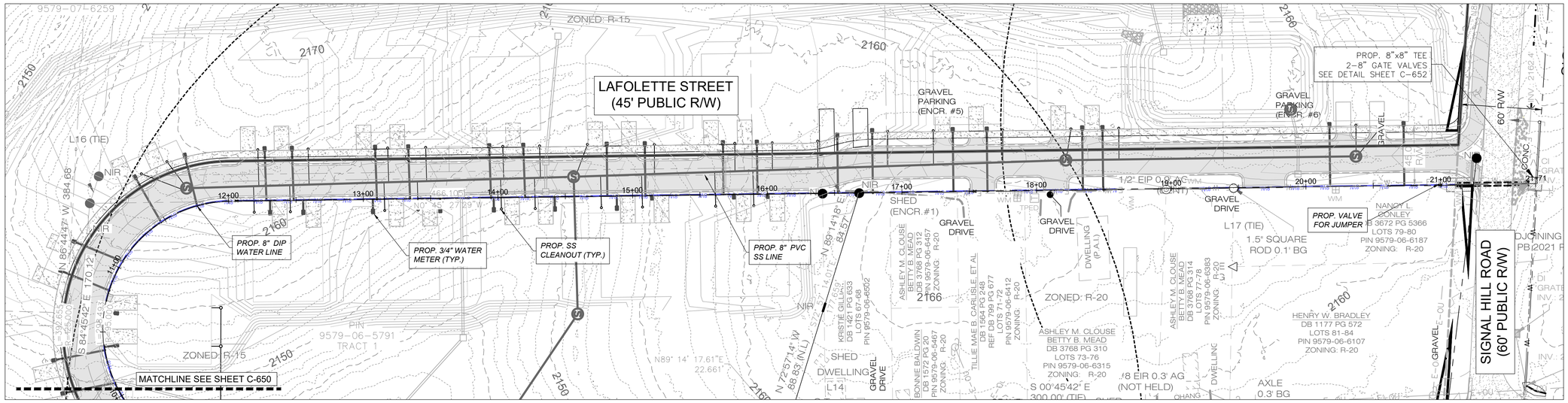
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3ncdn.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: WATERMAIN PLAN & PROFILE 0+00 - 11+00

DRAWING NO: C-650

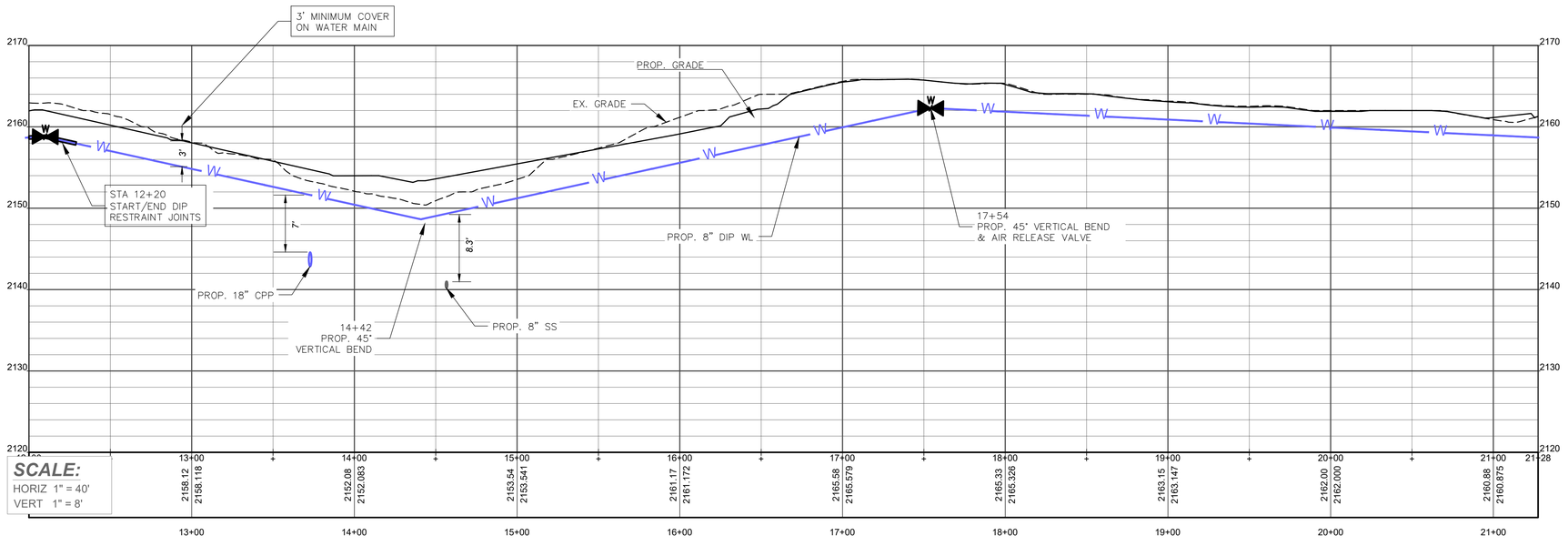
Y:\Shared2_ENGR\656605823\5_DESIGN\03SHEETS\WATER PLAN PROFILE.dwg, 9/9/2025 12:43 PM, Toby Harris



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1"=40'




**SCALE:**
HORIZ 1" = 40'
VERT 1" = 8'

WATERMAIN2
SCALE: 1"=50' (h); 1"=10' (v)

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 6 | 08/09/2025 | ADDRESS UTILITY COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER TIMOTHY M. HARRIS
09/09/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-8913
www.3notchgroup.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: WATERMAIN PLAN & PROFILE 11+00 - 22+00

DRAWING NO: C-651

Y:\Shared\2_ENGINEERING\656605823_DESIGN\DWG\SHEETS\WATER PLAN PROFILE.dwg, 9/9/2025 12:40 PM, Toby Harris

GENERAL NOTES:

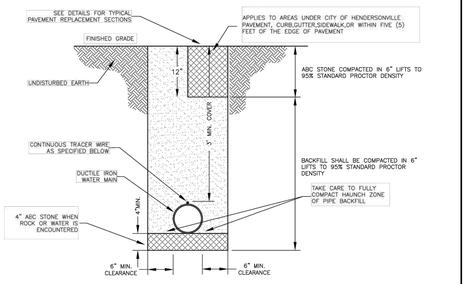
1. WATER CONSTRUCTION IS AUTHORIZED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (NCDEQ) AND THE CITY OF HENDERSONVILLE . THE WORK IS SUBJECT TO INSPECTIONS AT ALL TIMES BY REPRESENTATIVES OF NCDEQ, THE CITY OF HENDERSONVILLE, THE OWNER, OR THE ENGINEER. THE PERMITS REQUIRE CERTIFICATION OF COMPLETION OF THE WATER SYSTEMS BY THE ENGINEER AND THE APPLICANT BEFORE FINAL OPERATING APPROVAL IS ISSUED.
2. MATERIALS AND INSTALLATION FOR WATER CONSTRUCTION SHALL CONFORM TO THE LATEST VERSIONS OF CITY OF HENDERSONVILLE SPECIFICATIONS AND DETAILS, APPROVED MATERIALS LIST, AND AWWA STANDARDS AND REQUIREMENTS.
3. THE CONTRACTOR SHALL NOTIFY NC811 & APPROPRIATE UTILITIES AGENCIES PRIOR TO PERFORMING ANY WORK.
4. REGULAR WORKING HOURS SHALL BE FROM 7:00 AM TO 5:00 PM, MONDAY THROUGH FRIDAY, EXCEPT IN CASES OF EMERGENCY OR OTHERWISE APPROVED IN WRITING BY THE CITY OR AUTHORIZED REPRESENTATIVES. THE CONTRACTOR SHALL KEEP THE CONSTRUCTION SITE SAFE FOR ANY PERSONS WHO MAY BE ON SITE DURING NON-WORKING HOURS. AT TIMES, THE ENGINEER MAY DETERMINE THAT THESE HOURS SHALL BE MODIFIED TO ACCOMMODATE SPECIAL NEEDS OF IMPACTED CUSTOMERS.
5. ALL PERSONS SHALL BE COURTEOUS AND RESPECTFUL TO THE PUBLIC. CURSING OUR FOUL LANGUAGE IS NOT PERMITTED AND WILL NOT BE TOLERATED.
6. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TRAFFIC CONTROL ON ALL ROADWAYS DURING THE PROJECT. THE CONTRACTOR SHALL NOTIFY LOCAL EMERGENCY, SCHOOL AND OTHER NECESSARY AUTHORITIES PRIOR TO ANY STREET CLOSING OR TRAFFIC CHANGE.
7. THE CONTRACTOR, AT THEIR OWN EXPENSE, SHALL KEEP THE CONSTRUCTION SITE AND ADJACENT PUBLIC AND PRIVATE ROADWAYS CLEAN DURING THE PROJECT. THE CONTRACTOR IS ALSO RESPONSIBLE FOR CONTROLLING, SUPPRESSING, AND MITIGATING DUST WITHIN THE PROJECT AREA.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION IN ACCORDANCE WITH THE LINES, GRADES, AND ELEVATIONS SHOWN ON THE PLANS OR AS GIVEN BY THE ENGINEER IN THE FIELD.
9. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND ELEVATIONS FOR ALL UTILITIES, DRAINAGE, AND OTHER UNDERGROUND FACILITIES BOTH EXISTING AND PROPOSED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO CONSTRUCTION.
10. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION. REPAIRS TO CONTRACTOR DAMAGED UTILITIES SHALL BE MADE IN ACCORDANCE WITH APPLICABLE STANDARDS OF APPROPRIATE AGENCIES AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR SHALL MAINTAIN THE OPERATION OF EXISTING UTILITIES WITH THE LEAST AMOUNT OF SERVICE INTERRUPTION POSSIBLE. WATER AND SEWER INTERRUPTIONS SHALL BE MADE IN COORDINATION WITH THE CITY OF HENDERSONVILLE. CONTINUOUS SERVICE, PUBLIC HEALTH, AND SAFETY CONSIDERATIONS SHALL EXCEED ALL OTHERS. THE CONTRACTOR'S SCHEDULE, CONSTRUCTION METHODS, AND SEQUENCE ARE SUBJECT TO ALTERATION AND REVISION IF NECESSARY FOR THESE CONSIDERATIONS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY OR PERMANENT RELOCATION OF STRUCTURES AND UTILITIES, INCLUDING BUT NOT LIMITED TO POLES, SIGNS, FENCES, HYDRANTS, VALVES, PIPING, CONDUITS AND DRAINS THAT INTERFERE WITH THE POSITIONING OF THE WORK AS SHOWN ON THE DRAWINGS.
13. THE CONTRACTOR SHALL BE REQUIRED TO CONFORM AND COMPLY WITH ALL RESTRICTIONS AND EASEMENT CONDITIONS AND IS RESPONSIBLE FOR ALL RELATED INCIDENTAL COSTS INVOLVED.
14. EXISTING WATER SERVICES SHALL BE REPLACED TO THE EXISTING METER UNLESS OTHERWISE APPROVED OR DIRECTED IN WRITING BY THE CITY. SPLICING THE WATER SERVICE ON THE DOWNSTREAM SIDE OF THE METER IS NOT PERMITTED.
15. ALL DISTURBED AREAS, INCLUDING BUT NOT LIMITED TO ASPHALT, CONCRETE, DRIVEWAYS, ROADS, AND LANDSCAPING, SHALL BE REPAIRED TO A CONDITION EQUAL OR BETTER THAN THE ORIGINAL SITE. GRASS AND LANDSCAPED AREAS FILL MATERIAL MUST BE REPLACED IN TRENCH TO GRADE AS SOON AS WATERLINE CONSTRUCTION ALLOWS. ADEQUATE SEEDING AND STRAW OR MULCH SHALL THEN BE APPLIED TO THE DISTURBED TRENCH AREA. ADDITIONAL FILL AND SITE RESTORATION MAY BE REQUIRED WITHIN THE WARRANTY PERIOD AT THE CITY'S DISCRETION.
16. CONTRACTOR SHALL PROVIDE EROSION CONTROL DEVICES TO CONTROL RUNOFF AS REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES THAT MAY BE INCURRED DUE TO EROSION AND/OR SEDIMENTATION.
17. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW ALL APPLICABLE FEDERAL, STATE, AND LOCAL HEALTH AND SAFETY REGULATIONS PERTAINING TO CONSTRUCTION OPERATIONS.
18. ALL WATER MAINS SHALL HAVE 3 FEET MINIMUM COVER.
19. INSTALL FERROUS PIPING FOR BOTH WATER AND SEWER WITHIN 10 FT. OF A CROSSING IF:
    19.1. SEWER LINE CROSSES OVER WATER, OR
    19.2. VERTICAL CLEARANCE BETWEEN WATER AND SEWER IS LESS THAN 18 INCHES.
    19.3. MAINTAIN 10 FEET HORIZONTAL SEPARATION BETWEEN SEWER AND WATER MAINS UNLESS LAID IN SEPARATE TRENCHES WITH THE BOTTOM OF THE SEWER LINE AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER LINE OR USE FERROUS MATERIAL FOR BOTH WATER AND SEWER.
20. WHERE CONFLICT OF WATER AND SEWER MAIN OCCURS, MAINTAIN 10 FEET HORIZONTAL SEPARATION BETWEEN SEWER AND WATER MAINS UNLESS LAID IN SEPARATE TRENCHES WITH THE BOTTOM OF THE WATER LINE AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER LINE, OR ALTERNATIVELY, THE INSTALLATION MUST COMPLY WITH RULE .0904(C) AND .0906(7)"
21. MAINTAIN 18 INCHES VERTICAL SEPARATION BETWEEN STORM DRAIN AND WATER, OR INSTALL FERROUS MATERIAL WATER LINE WITHIN 10 FEET EACH SIDE OF CROSSING
22. TAPS GREATER THAN ONE-INCH IN DIAMETER ON EXISTING, ACTIVE WATER MAINS SHALL BE PERFORMED BY THE CITY UNLESS OTHERWISE APPROVED IN WRITING BY THE CITY. TAPS IN NEW CONSTRUCTION ARE TO BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH CITY REQUIREMENTS.
23. ALL WATER METERS WILL BE SET BY CITY STAFF UNLESS THE CONTRACTOR IS GRANTED WRITTEN PERMISSION BY THE CITY.
    23.1. THE CONTRACTOR WILL PROVIDE THE CITY NOTICE OF 10 WORKING DAYS MINIMUM PRIOR TO THE DATE OF METER INSTALLATION.
    23.2. THE CONTRACTOR WILL PROVIDE A LICENSED PLUMBER DURING THE METER INSTALLATION TO VERIFY LINE SERVICES IN ALL MULTI-METER BOXES.
24. ALL PUBLIC WATER MAIN CONSTRUCTION SHALL BE PERFORMED BY A NORTH CAROLINA LICENSED UTILITY CONTRACTOR.
25. ALL WATER APPURTENANCES ARE TO BE MADE USING LEAD-FREE MATERIALS. PIPE, FITTINGS, VALVES, HYDRANTS, PIPE CLAMPS, RESTRAINTS, FLANGES, CASTINGS, REBAR, MATCHES, INLETS, METER BOXES, AND ALL OTHER CAST IRON COMPONENTS SHALL BE MANUFACTURED IN THE USA.
26. RESTRAINED JOINTS BY AN APPROVED PIPE MANUFACTURER ARE TO BE USED FOR ALL PUBLIC WATER LINES WHERE THRUST RESTRAINING IS REQUIRED IN ACCORDANCE WITH THE PLANS AND MANUFACTURER'S SPECIFICATIONS. WHERE RESTRAINING GASKETS ARE UTILIZED, THE GASKET AND PIPE SHALL BE MADE BY THE SAME MANUFACTURER. CONCRETE THRUST BLOCKS ARE PERMITTED ONLY WHERE CONNECTIONS ARE MADE TO EXISTING WATER LINES OR WHERE THE USE OF MECHANICAL RESTRAINT IS NOT FEASIBLE.
27. ALL FIRE HYDRANTS, VAULTS, BACKFLOW PREVENTERS, HOT BOXES, AND WATER METERS ARE TO BE INSTALLED ON FLAT AREAS OUTSIDE OF PAVEMENT.
28. TAMPERING WITH OR ILLEGAL USE OF THE PUBLIC WATER SUPPLY WILL RESULT IN SUSPENSION OF WATER SERVICE, INCLUDING DOMESTIC AND COMMERCIAL UNTIL FINAL APPROVAL BY THE CITY IS ISSUED. A PERSON FOUND TO BE USING WATER ILLEGALLY SHALL BE SUBJECT TO PENALTIES OR FINES, AS PRESCRIBED AND APPROVED BY CITY COUNCIL.

TESTING & INSPECTION:

1. NOTIFY THE CITY OF HENDERSONVILLE AND ENGINEER AT LEAST 5 WORKING DAYS BEFORE STARTING CONSTRUCTION OF WATER FACILITIES AND AFTER ALL MATERIAL IS ON SITE TO SCHEDULE A FIELD PRE-CONSTRUCTION CONFERENCE. THE ENGINEER SHALL PERIODICALLY INSPECT THE PROGRESS OF INSTALLATION AT A MINIMUM AND SHALL COMPLETE A FINAL WATER CERTIFICATION.
2. THE BACKFLOW PREVENTION ASSEMBLY (JUMPER) SHALL BE INSPECTED BY A CITY INSPECTOR PRIOR TO INSTALLATION. THE JUMPER INSTALLATION SHALL BE APPROVED IN WRITING BY THE CITY INSPECTOR. THE JUMPER SHALL BE INSTALLED AND UTILIZED FOR TESTING AND VERIFICATION PURPOSES ONLY. ANY DELAY IN THE PLANNED VERIFICATION SCHEDULE MAY RESULT IN THE JUMPER BEING DISCONNECTED. ANY UNAUTHORIZED USE OF WATER WHILE THE JUMPER IS INSTALLED SHALL RESULT IN THE REMOVAL OF THE JUMPER UNTIL SUCH TIME AS THE CITY ENGINEER IS SATISFIED THAT THE CONTRACTOR SUITABLY UNDERSTANDS AND CAN CONTROL THE USE OF THE WATER. ALL CHANGES TO THE APPROVED CONSTRUCTION PLANS AND SUBMITTALS MUST BE APPROVED IN WRITING BY THE CITY PRIOR TO IMPLEMENTATION IN THE FIELD.
3. THE CONTRACTOR SHALL FURNISH SECURE AND PROVIDE ALL NECESSARY TESTING EQUIPMENT AND LABOR AS REQUIRED BY THE ENGINEER TO PROVIDE ALL REQUIRED VERIFICATIONS. THE CONTRACTOR SHALL PERFORM HYDROSTATIC TESTING, FLUSHING, DISINFECTION, AND BACTERIOLOGICAL SAMPLING WITH CITY INSPECTOR.
4. CITY CONSTRUCTION INSPECTORS SHALL BE NOTIFIED AT LEAST 72 HOURS PRIOR TO ANY TESTING OPERATIONS. CITY INSPECTORS SHALL VERIFY TAPPING PITS, FLUSHING, HYDROSTATIC TESTING, DISINFECTION, AND SAMPLING. REQUESTS SHOULD BE MADE USING THE CITY'S ONLINE INSPECTION REQUEST FORMS.
5. HYDROSTATIC PRESSURE TEST WATER MAINS TO 200 PSI MINIMUM FOR A MINIMUM OF TWO HOURS IN ACCORDANCE WITH AWWA C600 AS MODIFIED TO CITY REQUIREMENTS.
6. FLUSH WATER LINES IN ACCORDANCE WITH AWWA C600 (AT A MINIMUM FLUSHING VELOCITY OF 3.0 FEET PER SECOND) PRIOR TO DISINFECTION. THE FLOW RATE NEEDED TO ACHIEVE THE REQUIRED VELOCITY SHALL BE DETERMINED BY THE DESIGN ENGINEER AND VERIFIED BY THE CITY ENGINEER.
    6.1 DISINFECT WATER LINES AND PROVIDE ACCEPTABLE BACTERIOLOGICAL TEST FROM A CERTIFIED TESTING LABORATORY IN ACCORDANCE WITH CITY REQUIREMENTS AND AWWA C651. THE CONTRACTOR MAY ELECT TO USE THE CITY'S CERTIFIED TESTING LABORATORY.
7. PRIVATELY OWNED FIRE SYSTEMS SHALL BE APPROVED BY THE APPROPRIATE LOCAL PERMITTING AUTHORITY. THE CITY ENGINEERING OR WATER AND SEWER DEPARTMENTS ARE NOT RESPONSIBLE FOR ENSURING COMPLIANCE WITH APPROPRIATE FIRE PROTECTION REGULATIONS. THE CITY DOES NOT PROVIDE ANY GUARANTEE OF ITS WATER SYSTEM'S CAPABILITY TO DELIVER WATER FLOW AND RESIDUAL PRESSURE THE FIRE PERMITTING AUTHORITY MAY REQUIRE.
8. ALL PERMANENT BACKFLOW PREVENTION ASSEMBLIES SHALL BE USC APPROVED AND REVIEWED BY THE CITY'S ENVIRONMENTAL COMPLIANCE COORDINATOR. PROTECTION OF THE PUBLIC WATER DISTRIBUTION SYSTEM SHALL BE ASSURED BY INSTALLING THE APPROPRIATE BACKFLOW PREVENTION ASSEMBLY AT THE PROPER LOCATIONS IN ACCORDANCE WITH APPROPRIATE LOCAL, STATE, AND FEDERAL REGULATIONS.
9. CONSTRUCTION WATER SOURCING MUST BE APPROVED IN WRITING BY THE CITY. CONSTRUCTION WATER CONNECTIONS SHALL BE PAIRED WITH AN HYDRANT METER AND APPROVED BACKFLOW PREVENTION ASSEMBLY. THIS ASSEMBLY INSTALLATION MUST BE TESTED BY A LICENSED PLUMBER AND TEST RESULTS SUBMITTED TO THE CITY BEFORE USE OF CONSTRUCTION WATER.
10. SECURE FINAL WRITTEN ACCEPTANCE FROM THE CITY OF HENDERSONVILLE PRIOR TO ACTIVATION OF THE SYSTEM. WATER SERVICE WILL NOT BE PROVIDED UNTIL WRITTEN ACCEPTANCE OF THE SYSTEM IS ISSUED BY THE CITY.
11. THE ENGINEER SHALL SUPPLY THE CITY WITH FINAL AS-BUILT DRAWINGS AND COMPLETE ALL PROJECT CLOSE OUT REQUIREMENTS.

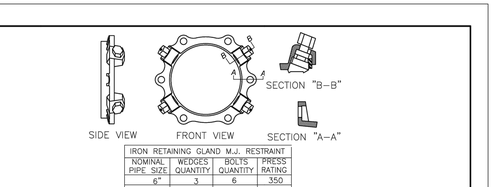
DISCLAIMER:

STANDARD WATER DETAILS ARE FOR THE SOLE USE OF PROJECTS THAT ARE OWNED BY, OR WILL BE TRANSFERRED TO, THE CITY OF HENDERSONVILLE. STANDARD WATER DETAILS ARE INTENDED TO SHOW THE CITY OF HENDERSONVILLE'S EXPECTATIONS FOR THE GENERAL LAYOUT AND ARRANGEMENT FOR WATER DISTRIBUTION SYSTEM ITEMS AND THEIR RELATED APPURTENANCES. IT REMAINS THE SOLE RESPONSIBILITY OF THE ENGINEER IN RESPONSIBLE CHARGE (ERC) OF EACH APPLICATION TO DETERMINE, DESIGN TO, AND CERTIFY TO, THE DESIGN PARAMETERS FOR EACH INSTALLATION. THE ERC MUST ALSO ENSURE THE DESIGN COMPLIES WITH THE MINIMUM DESIGN CRITERIA OF NC DIVISION OF ENVIRONMENTAL QUALITY AND ALL LOCAL AND STATE LAWS AND REGULATIONS.




NOTES:

1. COMPACTION OF BACKFILL SHALL BE ACHIEVED THROUGH THE USE OF AN APPROVED VIBRATORY PLATE TAMPER OR ROLLER.THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL COMPACTION REQUIREMENTS.
2. COORDINATE TESTING OF THE BACKFILL SHALL BE COORDINATED BY THE OWNER, WITH TESTING INTERVALS AT THE OWNER'S, DISCRETION AND SUBJECT TO CHANGE. IF A TEST FAILS, THE CONTRACTOR MUST REMOVE THE DEFECTIVE BACKFILL, REDO THE WORK AND RETEST THE AREA. THE CONTRACTOR IS RESPONSIBLE FOR MEETING THE REQUIRED LEVEL OF COMPACTION AND ENSURING THE PROPER WATER CONTENT IN THE BACKFILL MATERIAL IF THE WATER CONTENT IS DEEMED INSUFFICIENT FOR PROPER COMPACTION, THE CONTRACTOR SHALL REMOVE THE DEFECTIVE MATERIAL AND PERFORM CORRECTIVE WORK AS DIRECTED BY THE OWNER OR ENGINEER.
3. TRACER WIRE AND CONNECTORS SHALL BE TRACE-SAFE WATER BLOCKING TRACER WIRE OR EQUIVALENT AS SHOWN IN THE APPROVED PARTS LIST AND APPROVED BY THE ENGINEER. EQUIVALENT TRACER WIRE WILL BE A 19 GAUGE TIN COATED COPPER CONDUCTOR WITH POLYETHYLENE INSULATION, A HIGH-TENACITY WOVEN POLYESTER STRENGTH ELEMENT INCLUDING WATER BLOCKING YARN, AND AN ABRASION RESISTANT 30 MIL BLUE HDPE OUTER JACKET.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING A SAFE WORK ENVIRONMENT WHEN WORKING IN TRENCHES INCLUDING THE USE OF TRENCH BOXES, SHORING, OR BENCHING AS REQUIRED TO PREVENT COLLAPSE AND MAINTAIN STABILITY OF EXCAVATION. ALL TRENCHING OPERATIONS MUST COMPLY WITH THE LATEST OSHA STANDARDS FOR EXCAVATION SAFETY, INCLUDING BUT NOT LIMITED TO THE USE OF PROTECTIVE SYSTEMS IN ACCORDANCE WITH 29 CFR 1926 SUBPART P.

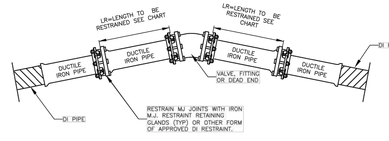


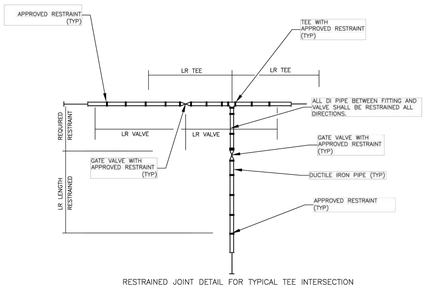

| IRON RETAINING GLAND M.J. RESTRAINT | | | | |
|---|---|---|---|---|
| NOMINAL PIPE SIZE | WEDGES QUANTITY | BOLTS QUANTITY | PRESS RATING | |
| 6" | 3 | 6 | 350 | |
| 8" | 4 | 6 | 350 | |
| 12" | 8 | 8 | 350 | |
| 16" | 12 | 12 | 350 | |

8" SIZE SHOWN 6" & 12" SIMILAR IRON RETAINING GLAND M.J. RESTRAINT

LR (MIN. LENGTH OF RESTRAINT EACH DIRECTION OF THRUST IN LINEAR FEET)
Based on 200 psig pressure, Safety Factor of 2.0:1, BARE DI PIPE AND ML Soil, 3.5' cover
Chart does not apply to pipes wrapped in polyethylene wrap

| PIPE SIZE | VALVES DEAD ENDS TEES | 90° ELBOWS | 45° ELBOW & CROSSES | 22-1/2° ELBOWS | REDUCER | |
|---|---|---|---|---|---|---|
| 6" | 55' | 31' | 13' | 7' | 6"X2" | 67' |
| 8" | 72' | 40' | 17' | 8' | 8"X6" | 30' |
| 12" | 102' | 57' | 24' | 12' | 12"X8" | 54' |
| 16" | 130' | 72' | 30' | 15' | 12"X8" | 54' |
| | | | | | 16"X8" | 95' |

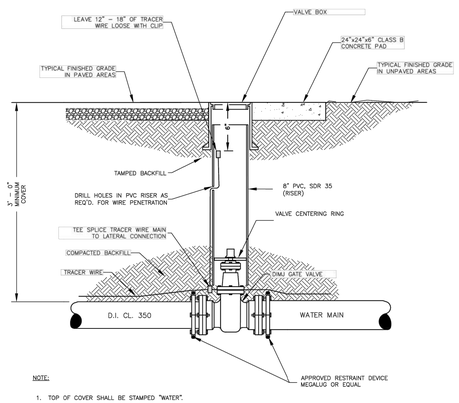



RESTRAINED JOINT DETAIL FOR TYPICAL TEE INTERSECTION
4 WAY INTERSECTION SIMILARLY RESTRAINED

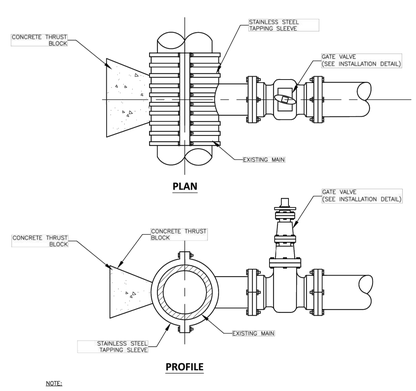
NOTES:

1. THE MINIMUM LENGTH OF RESTRAIN INDICATED SHALL REQUIRE ALL JOINTS WITHIN THE LR DISTANCE TO BE RESTRAINED.
2. THRUST RESTRAINT SHALL BE INSTALLED ON DUCTILE IRON WATER DISTRIBUTION LINES 6" THRU 14" DIAMETER IN THE MANNER SHOWN.
3. PIPE GREATER THAN 14" DIAMETER SHALL REQUIRE RESTRAINED JOINT PIPE FOR THE PROPER LENGTH.
4. COMPACT FITTINGS ARE ACCEPTABLE FOR USE WITH IRON RETAINING GLAND M.J. RESTRAINT AND OTHER FORMS OF DI RESTRAINT.
5. RESTRAINT SYSTEM SHALL BE INSPECTED AND APPROVED PRIOR TO BACKFILLING.
6. RESTRAINT SYSTEMS MAY VARY BASED UPON THE ENGINEER'S DESIGN AS SHOWN ON THE PLAN AND PROFILE SHEETS.
7. GRIPPER RING AND FIELD LOK GASKETS ARE AN ACCEPTABLE METHOD OF RESTRAINT ON DUCTILE IRON PIPE ONLY. GASKET MANUFACTURER MUST MATCH PIPE MANUFACTURER.




NOTE:

1. TOP OF COVER SHALL BE STAMPED "WATER".
2. VALVE PAD REQUIREMENTS SHALL NOT BE APPLICABLE FOR PAVED SURFACES.
3. PAVEMENT REPAIR SHALL MATCH THE EXISTING ROAD PAVING SECTION. SEE NCDOT ASPHALT REPAIR DETAIL #654.01.
4. A MINIMUM OF 24" OF WATER MAIN SHALL BE CONSTRUCTED BETWEEN VALVES AND OTHER FITTINGS OR APPURTENANCES.
5. WHEN OPERATING NUT DEPTH EXCEEDS 6'-0" BELOW FINISHED GRADE, PROVIDE A SURFACE EXTENSION KIT STEM FROM THE VALVE MANUFACTURER.
6. TRACER WIRE AND CONNECTORS SHALL BE TRACE-SAFE WATER-BLOCKING TRACER WIRE, OR AN EQUIVALENT, AS SHOWN IN THE APPROVED PARTS LIST AND APPROVED BY THE ENGINEER. EQUIVALENT TRACER WIRE SHALL BE A 19-GAUGE TIN-COATED COPPER CONDUCTOR WITH POLYETHYLENE INSULATION, A HIGH-TENACITY WOVEN POLYESTER STRENGTH ELEMENT INCLUDING WATER-BLOCKING YARNS, AND AN ABRASION-RESISTANT 30 MIL BLUE HDPE OUTER JACKET.




NOTE:

1. CONCRETE SHALL BE 3000 PSI.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS BY THE INSTALLATION OF POLYETHYLENE FILM PLACED BETWEEN THE FITTINGS AND POURED CONCRETE.
3. ENGINEER TO SIZE THE CONCRETE THRUST BLOCK BASED ON THE WATER MAIN SIZE AND SITE SPECIFIC SOIL-BEARING CAPACITY.
4. TAPPING SLEEVES SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.
5. SAME DIAMETER TAPS ARE NOT PERMITTED. IF THE MAINS ARE THE SAME DIAMETER THE CONTRACTOR SHALL INSTALL A TEE WITH RESTRAINED JOINTS.
6. CONTRACTOR SHALL SET THE TAPPING SLEEVE. CITY OF HENDERSONVILLE WATER AND SEWER DEPARTMENT SHALL PERFORM THE TAP.

| | | |
|---|---|---|
| DATE: 07/14/2025 WD DWG. NO. 1-1 | WATER DETAILS GENERAL NOTES | |
| SCALE: NOT TO SCALE | | |
| City of Hendersonville Engineering Department 305 Williams Street Hendersonville, NC 28792 (828) 697-3000 (office) www.cityofhendersonville.org | | |

| | | |
|---|---|---|
| DATE: 07/14/2025 WD DWG. NO. 1-2 | WATER DETAILS GENERAL NOTES | |
| SCALE: NOT TO SCALE | | |
| City of Hendersonville Engineering Department 305 Williams Street Hendersonville, NC 28792 (828) 697-3000 (office) www.cityofhendersonville.org | | |

| | | |
|---|---|---|
| DATE: 07/14/2025 WD DWG. NO.02 | TRENCH CONSTRUCTION | |
| SCALE: NOT TO SCALE | | |
| City of Hendersonville Engineering Department 305 Williams Street Hendersonville, NC 28792 (828) 697-3000 (office) www.cityofhendersonville.org | | |

| | | |
|---|---|---|
| DATE: 07/14/2025 WD DWG. NO. 03-1 | DUCTILE IRON PIPE RESTRAINT SHEET 1 OF 2 | |
| SCALE: NOT TO SCALE | | |
| City of Hendersonville Engineering Department 305 Williams Street Hendersonville, NC 28792 (828) 697-3000 (office) www.cityofhendersonville.org | | |

| | | |
|---|---|---|
| DATE: 07/14/2025 WD DWG. NO. 03-2 | DUCTILE IRON PIPE RESTRAINT SHEET 2 OF 2 | |
| SCALE: NOT TO SCALE | | |
| City of Hendersonville Engineering Department 305 Williams Street Hendersonville, NC 28792 (828) 697-3000 (office) www.cityofhendersonville.org | | |

| | | |
|---|---|---|
| DATE: 07/14/2025 WD DWG. NO. 04 | VALVE INSTALLATION | |
| SCALE: NOT TO SCALE | | |
| City of Hendersonville Engineering Department 305 Williams Street Hendersonville, NC 28792 (828) 697-3000 (office) www.cityofhendersonville.org | | |

| | | |
|---|---|---|
| DATE: 07/14/2025 WD DWG. NO. 05 | TAPPING SLEEVE AND VALVE ASSEMBLY | |
| SCALE: NOT TO SCALE | | |
| City of Hendersonville Engineering Department 305 Williams Street Hendersonville, NC 28792 (828) 697-3000 (office) www.cityofhendersonville.org | | |

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 6 | 09/09/2025 | ADDRESS UTILITY COMMENTS |

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

ENGINEER'S SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS
09/09/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

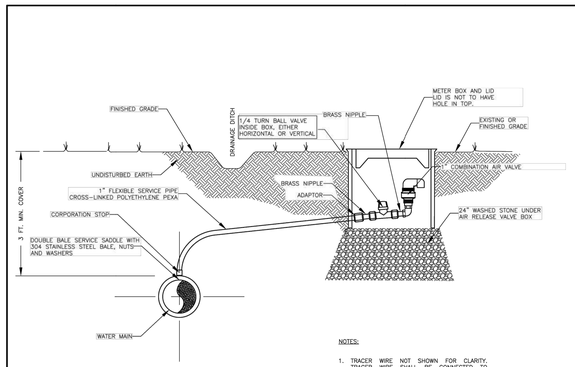
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: WATERMAIN DETAILS - 1 (SHEET 1 OF 2)

DRAWING NO: C-652

Y:\Shared\2_ENGR\656605823\05_DESIGN\DWG\SHEETS\WATER PLAN PROFILE.dwg, 9/9/2025 12:40 PM, Toby Harris




NOTES:

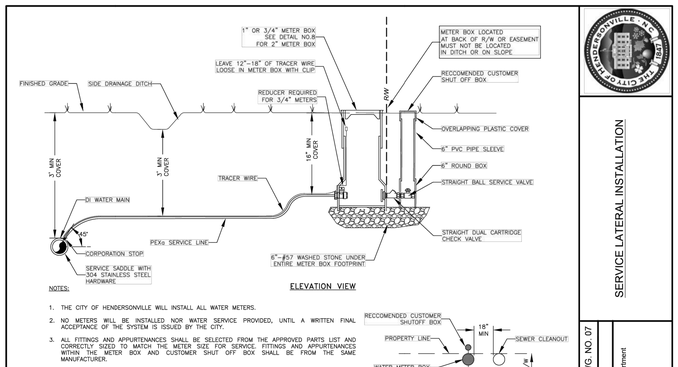
1. TRACER WIRE NOT SHOWN FOR CLARITY. TRACER WIRE SHALL BE CONNECTED TO WATER MAIN TRACER USING CONNECTORS APPROVED BY THE MANUFACTURERS. (SEE VALVE BOX INSTALLATION)
2. ACTUAL LOCATION OF AIR RELEASE VALVE SHALL BE COORDINATED WITH THE CITY AND PROPERTY OWNER.
3. LOCATION OF TAP SHALL OCCUR AT THE HIGH POINT OF THE WATER MAIN.

AIR RELEASE VALVE INSTALLATION

DATE: 07/14/2025 WD DWG. NO.06

SCALE: NOT TO SCALE

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org




NOTES:

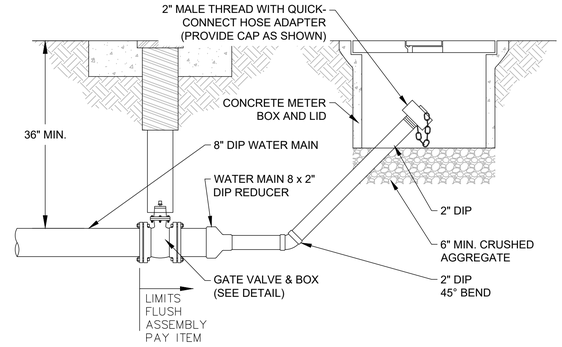
1. THE CITY OF HENDERSONVILLE WILL INSTALL ALL WATER METERS.
2. NO METERS WILL BE INSTALLED NOR WATER SERVICE PROVIDED, UNTIL A WRITTEN FINAL ACCEPTANCE OF THE SYSTEM IS ISSUED BY THE CITY.
3. ALL FITTINGS AND APPURTENANCES SHALL BE SELECTED FROM THE APPROVED PARTS LIST AND CORRECTLY SIZED TO MATCH THE METER SIZE FOR SERVICE. FITTINGS AND APPURTENANCES WITHIN THE METER BOX AND CUSTOMER SHUT OFF BOX SHALL BE FROM THE SAME MANUFACTURER.
4. METER BOX SHALL INCLUDE A BASE, INNER BARREL, OUTER BARREL, AND LID MADE OF BITUMINOUS COATED CAST IRON. METER BOX SHALL BE CORRECTLY SIZED TO MATCH THE METER SIZE FOR SERVICE. THE LID SHALL BE LOCKING AND INCLUDE A 2" PRECAST HOLE FOR ELECTRONIC METER READING. SEE THE APPROVED PARTS LIST FOR ACCEPTABLE MODELS AND MANUFACTURERS.
5. EXTEND TRACER WIRE FROM MAIN TO METER BOX. WHEN SPLICES AND LATERAL CONNECTIONS ARE MADE, ONLY GEL FILLED CONNECTORS DESIGNED FOR WIRE WITH WOVEN POLYESTER FIBER CORE ARE TO BE USED. TRACER WIRE SHALL BE TERMINATED IN METER BOX WITH 12"-18" OF TRACER WIRE LEFT LOOSE IN THE METER BOX.
6. TRACER WIRE AND CONNECTORS SHALL BE TRACE-SAFE WATER BLOCKING TRACER WIRE OR EQUIVALENT AS SHOWN IN THE APPROVED PARTS LIST AND APPROVED BY THE ENGINEER. EQUIVALENT TRACER WIRE WILL BE A 19 GAUGE TIN COATED COPPER CONDUCTOR WITH POLYETHYLENE INSULATION, A HIGH-TENACITY WOVEN POLYESTER STRENGTH ELEMENT INCLUDING WATER BLOCKING YARNS, AND AN ABRASION RESISTANT 30 MIL BLUE HDPE OUTER JACKET.
7. FOR 1" AND 3/4" METER BOX INSTALLATIONS RUN A 1" SERVICE LINE. FOR 1 1/2" AND 2" METER BOX INSTALLATIONS RUN A 2" SERVICE LINE.

SERVICE LATERAL INSTALLATION

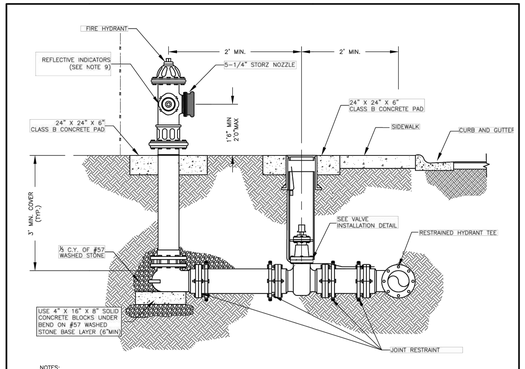
DATE: 07/14/2025 WD DWG. NO. 07

SCALE: NOT TO SCALE

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org




**TWO-INCH BLOWOFF ASSEMBLY DETAIL**




NOTES:

1. FIRE HYDRANTS SHALL BE RATED TO A MINIMUM 250 PSI WORKING PRESSURE IN ACCORDANCE WITH AWWA C-502 UNLESS SPECIFIED AS 350 PSI BY THE CITY. HYDRANTS SHALL HAVE A 5¼-INCH BARREL AND STORZ CONNECTION.
2. ALL VALVES AND HYDRANTS SHALL HAVE MECHANICAL JOINTS CONNECTIONS WITH IRON RETAINING GLAND MECHANICAL JOINTS RESTRAINT.
3. FIRE HYDRANT SHALL BE FACTORY PAINTED YELLOW, WITH FIELD PAINTED TOUCH-UP, BEFORE PROJECT IS ACCEPTED.
4. HYDRANT VALVE SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE MAIN, BUT DO NOT PLACE VALVE IN PROPOSED OR EXISTING CURB AND GUTTER. IF THE STREET IS SOIL AND NO PAVING IS TO BE DONE AT THIS TIME, THE LOCATION OF THE VALVE IS TO BE DETERMINED BY THE ENGINEER.
5. FIRE HYDRANTS SHALL BE PLACED AS DIRECTED BY THE ENGINEER.
6. HYDRANT LEG SHALL NOT BE BACK FILLED UNTIL INSPECTED AND APPROVED BY THE CITY OF HENDERSONVILLE ENGINEERING DEPARTMENT.
7. GATE VALVE AND BOX SHALL CONSTRUCTED BE IN ACCORDANCE WITH STANDARD DETAIL.
8. FIRE HYDRANTS WHICH HAVE BEEN INSTALLED, MUST BE TAGGED "OUT OF SERVICE" AND BAGGED, UTILIZING A RED CANVAS BAG WITH WHITE LETTERING, UNTIL SUCH TIME AS THE WATER MAIN TO WHICH CONNECTED IS DISINFECTED AND CONNECTED TO THE ACTIVE WATER SYSTEM.
9. FIRE HYDRANT SHALL HAVE REFLECTIVE INDICATORS INSTALLED BEHIND TWO-INCH CONNECTION CAPS. COLOR CODING SHALL MEET NFPA-291 STANDARDS AND AVAILABLE FIRE FLOW SHALL BE CONFIRMED BY ENGINEER.

FIRE HYDRANT STANDARD INSTALLATION

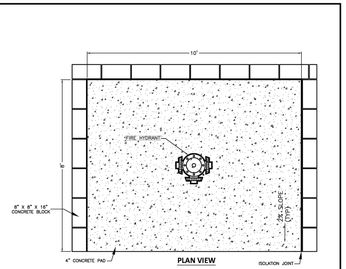
DATE: 07/14/2025 WD DWG. NO. 11

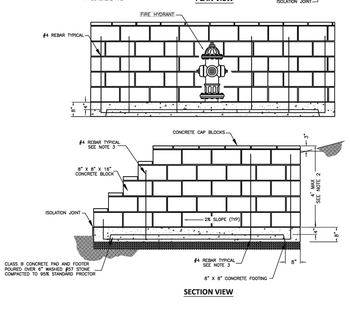
SCALE: NOT TO SCALE

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

NOTES:

1. RETAINING WALLS FOR USE IN CONJUNCTION WITH THE INSTALLATION OF FIRE HYDRANTS SHALL BE INSTALLED WHERE SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. FIGURES SHOWN REPRESENT MINIMUMS ONLY. ALL RETAINING WALLS ABOVE 4' SHALL BE DESIGNED BY AN ENGINEER AND PERMITTED BY HENDERSON COUNTY.
3. STEEL REBAR TO BE INSTALLED AT 16" ON CENTER. INSTALL MINIMUM 1-BAR IN THE CENTER OF THE FOOTING FOR WALL.
4. GRAVITY WALL MAY BE INSTALLED ONLY WITH PRIOR APPROVAL OF SUBMITTAL FOR INSTALLATION.
5. AN EASEMENT MAY BE REQUIRED DEPENDING ON THE LOCATION OF THE WALL.
6. RETAINING WALL SHALL NOT BE BUILT ABOVE WATER INFRASTRUCTURE.
7. HYDRANT VALVE TO BE LOCATED OUTSIDE OF CONCRETE PAD FOOTPRINT WHEN FEASIBLE.



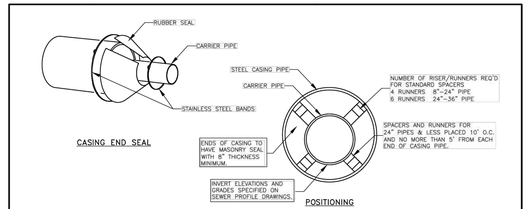




FIRE HYDRANT SLOPE INSTALLATION

DATE: 07/14/2025 WD DWG. NO. 13

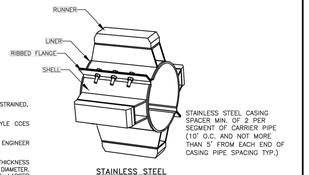
SCALE: NOT TO SCALE

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org




CASING END SEAL

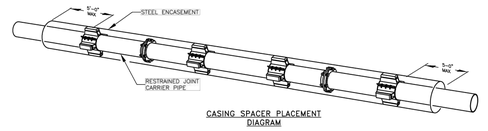
POSITIONING




NOTES:

1. CARRIER PIPE JOINTS SHALL BE MECHANICALLY RESTRAINED, DUCTILE IRON.
2. STAINLESS STEEL CASING SPACERS SHALL BE STYLE CCES OR ENGINEER APPROVED EQUIVALENT.
3. CASING END SEAL SHALL BE STYLE CCES OR ENGINEER APPROVED EQUIVALENT.
4. STEEL ENCASEMENT PIPE SHALL HAVE A WALL THICKNESS OF 1/4" FOR CARRIER PIPES UP TO 12" IN DIAMETER. ENGINEER TO DETERMINE WALL THICKNESS FOR LARGER CARRIER PIPES.

STAINLESS STEEL CASING SPACER



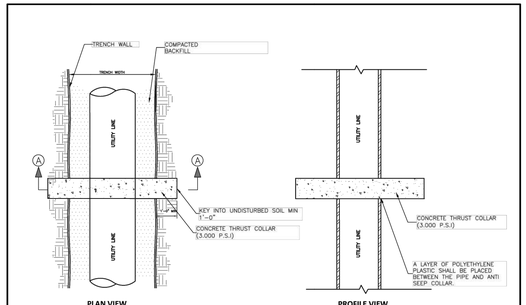

CASING SPACER PLACEMENT DIAGRAM

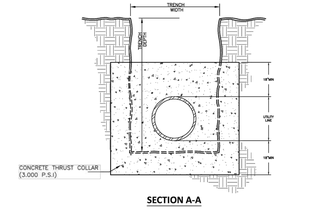
CARRIER PIPE IN STEEL ENCASEMENT

DATE: 07/14/2025 WD DWG. NO. 14

SCALE: NOT TO SCALE

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org




ANTI - SEEP COLLAR

DATE: 07/14/2025 WD DWG. NO. 16

SCALE: NOT TO SCALE

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 6 | 09/09/2025 | ADDRESS UTILITY COMMENTS |

ENGINEER'S SEAL: NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER JOHN M. HARRIS

09/09/2025

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

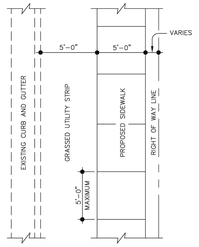
THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

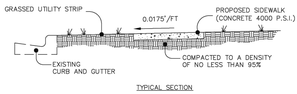
DRAWING NO: C-653

SHEET TITLE: WATERMAIN DETAILS - 2 (SHEET 2 OF 2)

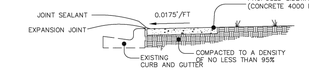
Y:\Shared\2_ENGINEERING\656605823\05_DESIGN\DWG\SHEETS\WATER PLAN PROFILE.dwg, 9/9/2025 12:40 PM, Toby Harris



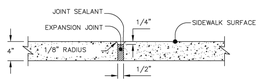

PLAN VIEW




TYPICAL SECTION




TYPICAL SECTION NO GRASS STRIP




TRANSVERSE EXPANSION JOINT

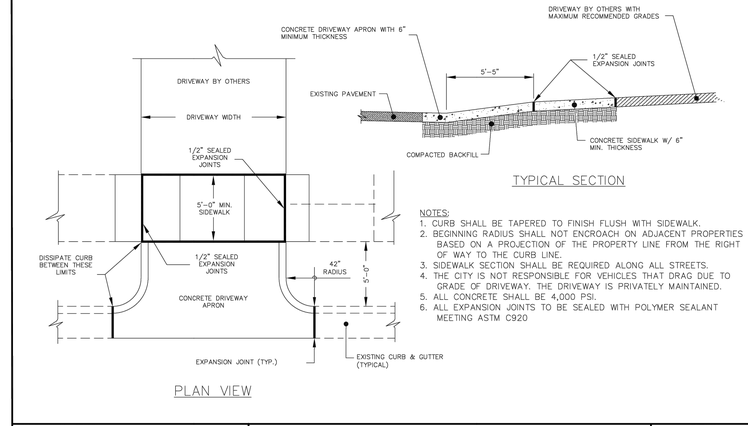
NOTES: .

1. TRANSVERSE EXPANSION JOINTS TO BE A MAXIMUM OF 50 FEET.
2. ALL CONCRETE TO BE FINISHED WITH CURING COMPOUND.
3. A 6 INCH DEPTH IS REQUIRED AT LOCATIONS OF DRIVEWAY CROSSINGS, AT STREET INTERSECTIONS (ALONG THE LENGTH OF RADIUS CURB RETURNS), AND IN THE HANDICAP RAMPS.
4. ALL SIDEWALK MUST BE INSPECTED BY CITY INSPECTOR PRIOR TO CONCRETE PLACEMENT.
5. SIDEWALK CROSS SLOPE WILL BE A MAXIMUM OF 0.02"/1" PER ADA REQUIREMENTS.
6. ALL SIDEWALK WILL BE LEFT IN A BROOM FINISH CONDITION.
7. CONTRACTOR MUST REPAIR ALL DAMAGE TO SIDEWALK PRIOR TO TRANSFER OF OWNERSHIP.
8. EXPANSION JOINT MATERIAL TO BE INSTALLED AT ALL LOCATIONS WHERE SIDEWALK ABUTS A RIGID STRUCTURE.
9. ALL EXPANSION JOINTS TO BE SEALED WITH POLYMER SEALANT MEETING ASTM C920

| | |
|---|---|
| **DATE: 05/19/2023** | |
| **SCALE: NOT TO SCALE** | WD DWG. NO. 22 |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

## STANDARD CONCRETE SIDEWALK




PLAN VIEW

TYPICAL SECTION

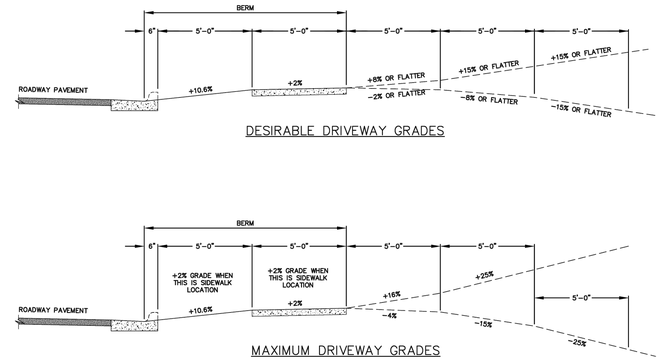
NOTES:

1. CURB SHALL BE TAPERED TO FINISH FLUSH WITH SIDEWALK.
2. BEGINNING RADIUS SHALL NOT ENCROACH ON ADJACENT PROPERTIES BASED ON A PROJECTION OF THE PROPERTY LINE FROM THE RIGHT OF WAY TO THE CURB LINE.
3. SIDEWALK SECTION SHALL BE REQUIRED ALONG ALL STREETS.
4. THE CITY IS NOT RESPONSIBLE FOR VEHICLES THAT DRAG DUE TO GRADE OF DRIVEWAY. THE DRIVEWAY IS PRIVATELY MAINTAINED.
5. ALL CONCRETE SHALL BE 4,000 PSI.
6. ALL EXPANSION JOINTS TO BE SEALED WITH POLYMER SEALANT MEETING ASTM C920

| | |
|---|---|
| **DATE: 05/19/2023** | |
| **SCALE: NOT TO SCALE** | WD DWG. NO. 02 |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

## DRIVEWAY APRON TYPE I & II



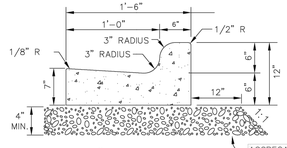

DESIRABLE DRIVEWAY GRADES

MAXIMUM DRIVEWAY GRADES

| | |
|---|---|
| **DATE: 05/19/2023** | |
| **SCALE: NOT TO SCALE** | WD DWG. NO. 02G |

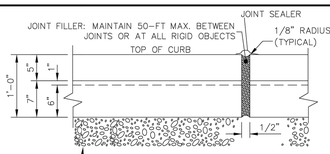
City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

## DRIVEWAY APRON TYPE I & II GRADES



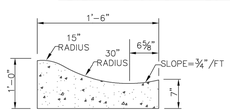

STANDARD 18" CURB & GUTTER
SIDE VIEW

AGGREGATE BASE COURSE (A.B.C.) UNDER THE CURB & GUTTER TYPICAL ALL C&G TYPES

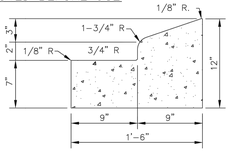



FRONT VIEW
TRANSVERSE EXPANSION JOINT

ALTERNATE CURB TYPES – MUST BE APPROVED BEFORE USE




ROLLED CURB
SIDE VIEW




MEDIAN CURB & GUTTER
SIDE VIEW

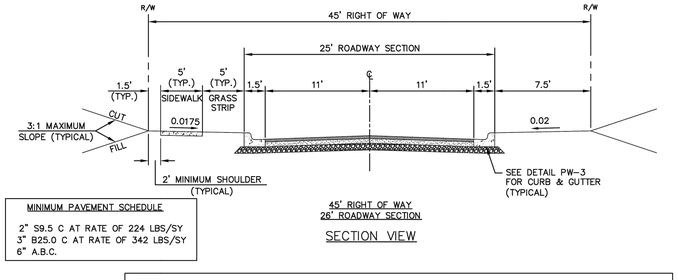
NOTES:

1. CONCRETE SHALL BE 4,000 P.S.I.
2. CONTRACTION JOINTS SHALL BE SPACED AT 10 FOOT INTERVALS. (A 15 FOOT SPACING WILL BE ALLOWED WHEN A MACHINE IS USED)
3. FINISH ALL CONCRETE WITH CURING COMPOUND.
4. REFER TO **NCDOT** DET. 846.01 FOR CURB & GUTTER SUPERELEVATION RATES.
5. ALL EXPANSION JOINTS WILL BE SEALED WITH JOINT SEALER.

| | |
|---|---|
| **DATE: 05/19/2023** | |
| **SCALE: NOT TO SCALE** | WD DWG. NO. 03 |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

## CONCRETE CURB AND GUTTER TYPES




45' RIGHT OF WAY
26' ROADWAY SECTION

SECTION VIEW

MINIMUM PAVEMENT SCHEDULE

2" S9.5 C AT RATE OF 224 LBS/SY
3" B25.0 C AT RATE OF 342 LBS/SY
6" A.B.C.

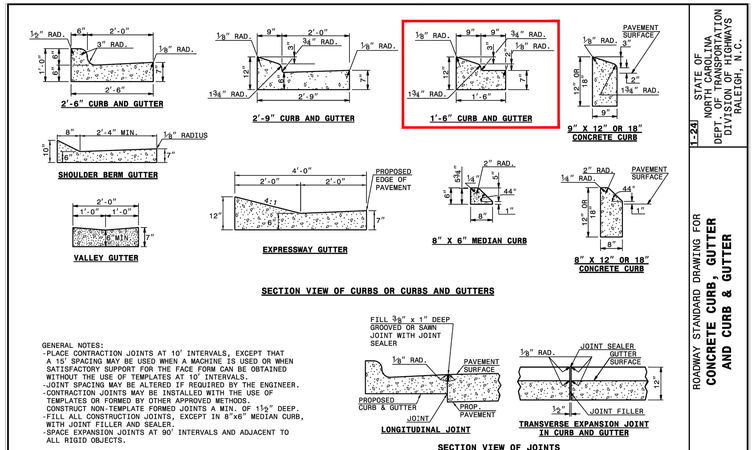
NOTES:

1. NORMAL CROWN OF 0.02' PER FOOT UNLESS OTHERWISE REQUIRED TO HAVE SUPERELEVATION.
2. PAVEMENT DESIGN SHALL BE REQUIRED AND APPROVED BY **NCDOT** (FOR NCDOT ROADS) AND/OR CITY OF HENDERSONVILLE PRIOR TO PLACEMENT OF ANY BASE MATERIAL.
3. PAVEMENT DESIGN SHALL BE AS SHOWN OR AS DESIGNED BY GEOTECHNICAL ENGINEER, WHICHEVER IS GREATER.
4. TACK COAT SHALL BE APPLIED BENEATH EACH LAYER OF ASPHALT MIX TO BE PLACED AT A RATE OF 0.04 GAL/SY
5. GRASS UTILITY STRIP REQUIRED UNLESS APPROVED BY PUBLIC WORKS DIRECTOR.
6. FINAL SURFACE COURSE TO BE APPLIED UPON CITY OF HENDERSONVILLE APPROVAL.

| | |
|---|---|
| **DATE: 05/19/2023** | |
| **SCALE: NOT TO SCALE** | WD DWG. NO. 04 |

City of Hendersonville Engineering Department
305 Williams Street
Hendersonville, NC 28792
(828) 697-3000 (office)
www.cityofhendersonville.org

## STANDARD LOCAL STREET




SECTION VIEW OF CURBS OR CURBS AND GUTTERS

GENERAL NOTES:
-PLACE CONTRACTION JOINTS AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
-JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
-CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. CONSTRUCT NON-TEMPLATE FORMED JOINTS A MIN. OF 1½" DEEP.
-FILL ALL CONSTRUCTION JOINTS, EXCEPT IN 8"x6" MEDIAN CURB, WITH JOINT FILLER AND SEALER.
-SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.




SECTION VIEW OF JOINTS

RAISED CONCRETE ISLAND DETAIL @ SIGNAL HILL ROAD ENTRANCE

*FIRST VICTORY*
*542 S. CALDWELL ST.*
*BREVARD, NC 28712*
*828.884.7934*

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| | | |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER ROBIN M. HARRIS SEAL 030895
09/16/2024

[1-26] STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
**CONCRETE CURB, GUTTER AND CURB & GUTTER**

SHEET 1 OF 3
**846.01**

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: MISCELLANEOUS DETAILS

DRAWING NO: C-654

Y:\Shared\2_ENGR\656605823_DESIGN\DWG\SHEETS\MISC DETAILS.dwg, 9/9/2025 12:41 PM, Toby Harris

TOTAL AREA OF SURVEY
13.73 ACRES
(EXCLUDING RIGHTS OF WAY)

B1 – C1
320 LF SHALLOW CONCENTRATED FLOW
(UNPAVED) @ 19.85%

A1 – B1
100 LF SHEET FLOW
(GRASS) @ 8.0%

B2 – C2
282 LF SHALLOW CONCENTRATED FLOW
(UNPAVED) @ 6.4%

A2 – B2
100 LF SHEET FLOW
(GRASS) @ 4.8%

A3 – B3
100 LF SHEET FLOW
(GRASS) @ 5%

B3 – C3
554 LF SHALLOW CONCENTRATED FLOW
(UNPAVED) @ 5%

PRE-DEVELOPED DRAINAGE AREA #1
2.22 AC
CN = 70
Tc = 14.10 MINUTES

PRE-DEVELOPED DRAINAGE AREA #2
2.99
AC
CN = 74
Tc = 14.70 MINUTES

PRE-DEVELOPED DRAINAGE AREA #3
11.36 AC
CN = 73
Tc = 18.70 MINUTES

C1 B1 A1 A3 B3 C3 C2 B2 A2

AMAZING GRACE LN.
20' PRIVATE R/W

30' SEWER EASEMENT
PER DB 838 PG 434

ZONED: R-20

HYDRAULIC SOIL GROUP
C (HyC, DeB)
W

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1"=50'

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| | | |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL SEAL 030895 ENGINEER TIMOTHY M. HARRIS
09/16/2024

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704-394-6913
www.3notch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: PRE DEVELOPMENT DRAINAGE AREA MAP

DRAWING NO: C-700

HyC

TOTAL AREA OF SURVEY
13.73 ACRES

POST-DEVELOPED DRAINAGE AREA #1
0.67 AC
CN = 77
Tc = 5.0 MINUTES

POST-DEVELOPED DRAINAGE AREA #1-BYPASS
1.33 AC
CN = 70
Tc = 12.0 MINUTES

POST-DEVELOPED DRAINAGE AREA #2
1.57 AC
CN = 82
Tc = 5.0 MINUTES

HyC

POST-DEVELOPED DRAINAGE AREA #2 - BYPASS
2.06 AC
CN = 70
Tc = 12.0 MINUTES

POST-DEVELOPED DRAINAGE AREA #3
8.11 AC
CN = 82
Tc = 5.0 MINUTES

POST-DEVELOPED DRAINAGE AREA #3-BYPASS
3.07 AC
CN = 70
Tc = 12.0 MINUTES

W

OVERLAPPING EASEMENTS

PERMANENT DRAINAGE EASEMENT
PER PB 1999 SL 3086 & DB 993 PG 360

STREAMBANK MAINTENANCE EASEMENT
PER PB 2018 SL 11488, AREA G
DB 3284 PG 387 & DB 3273 PG 78

ALLEN ST.
NOT CURRENTLY IN USE
VARIABLE WIDTH PRIVATE R/W
PER PB 2 PG 156

AMAZING GRACE LN.
NOT CURRENTLY IN USE
20' PRIVATE R/W PER PB 2 PG 156

AMAZING GRACE LN.
20' PRIVATE R/W

LAFOLETTE ST. / ETTE ST.
30' PRIVATE R/W / ...IC R/W

30' SEWER EASEMENT
PER DB 838 PG 434

STREAMBANK MAINTENANCE EASEMENT
PER PB 2018 SL 11488, AREA F
DB 3284 PG 387 & DB 3273 PG 78

ZONED: R-12

DI GRATE: 2161.6' INV.: 2158.4'

DI GRATE: 2157.7' INV.: 2154.2'

INV.: 2153.5'

INV.: 2162.4'

HYDRAULIC SOIL GROUP

C (HyC, DeB)

W

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1"=50'

FIRST VICTORY
542 S. CALDWELL ST.
BREVARD, NC 28712
828.884.7934

REVISIONS

| REV. | DATE | COMMENTS |
|---|---|---|
| 2 | 01/31/2025 | ADDRESS CITY & COUNTY COMMENTS |

ENGINEER'S SEAL:
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030895 ROBIN M. HARRIS

| | |
|---|---|
| PROJECT # | 656605823 |
| DATE: | 09/16/2024 |
| DESIGN BY: | DW |
| DRAWN BY: | DW |
| APPROVED: | TMH |
| SCALE: | AS SHOWN |

THREE NOTCH GROUP
4301 TAGGART CREEK ROAD
CHARLOTTE, NC 28208
Phone: 704.464.4503
www.3ntch.com
License No. C-4973

SIGNAL HILL
SIGNAL HILL ROAD
HENDERSONVILLE, NORTH CAROLINA

SHEET TITLE: C-701 - POST DEVELOPMENT DRAINAGE AREA MAP

DRAWING NO: C-701

City Council:
Barbara G. Volk
Mayor
Lyndsey Simpson
Mayor Pro Tem
Dr. Jennifer Hensley
Melinda Lowrance
Jeffery L. Miller

CITY OF HENDERSONVILLE
The City of Four Seasons
Community Development Department
Planning Division

Officers:
John F. Connet
City Manager
Angela S. Beeker
City Attorney
JILL MURRAY
City Clerk

25-57-SUB package

## WORKSPACE INFORMATION

**Application number**
25-57-SUB

**Category**
Subdivisions

**Workspace state**
Application complete

**Workspace created**
08/01/2025, 1:42:08 PM EDT

**Application submitted**
08/01/2025, 1:50:29 PM EDT

**Assignee**

**Package generation date**
10/02/2025, 2:39:34 PM EDT

## LOCATION INFORMATION

**Address**
0 NO ADDRESS ASSIGNED, Hendersonville, NC

**Property information**
8235,

## PARTIES

| NAME AND COMPANY | CONTACT DETAILS | ROLES |
|---|---|---|
| Catherine Sexton<br>First Victory Construction and Development | 542 S. Caldwell Street Brevard<br>[redacted] | Applicant |
| Toby Harris | 4301 Taggart Creek Road Charlotte<br>[redacted] | Applicant |
| SUESS, HERTA G TRUSTEE;HERTA G SUESS TRUST | 17187 GULF PINE CIR WELLINGTON FL 33414 6354 | Property owner |

| Property Details |
| --- |
| Type of Subdivision<br>Minor |
| Name of Subdivision<br>Signal Hill Townhomes |
| Proposed Lots<br>50 |
| Total Project Area (acres)<br>13.01 |

# Zoning-Applicant (Developer) Company Information

| Applicant (Developer) Company Information | |
|---|---|
| Authorized Representative Name:<br>Travis Fowler | Company Name (if applicable, check corresponding box below)<br>First Victory, LLC |

Company Type:

- ☐ Corporation:
- ☑ Limited Liability Company:
- ☐ Trust:
- ☐ Partnership:
- ☐ Other:

If other:

Authorized Representative Title (if applicable - i.e. Member/Manager, President, etc.)

# Zoning-Property Owner Company Information

| Property Owner Company Information (if different from Applicant) | |
|---|---|
| Authorized Representative Name:<br>Travis Fowler | Company Name (if applicable, check corresponding box below)<br>First Victory, LLC |

Company Type:

- ☐ Corporation:
- ☑ Limited Liability Company:
- ☐ Trust:
- ☐ Partnership:
- ☐ Other:

If other:

Authorized Representative Title (if applicable - i.e. Member/Manager, President, etc.)

# NOTICE

City of Hendersonville Planning Board 305 Williams Street, NC 28792

## PLANNING BOARD
## ANNUAL SCHEDULE OF REGULAR MEETINGS

**Regular Meetings** of the City of Hendersonville Planning Board are held **on the Second Thursday** beginning at **4:00 p.m.** in the Assembly Room of City Operations located at 305 Williams Street, Hendersonville NC. The following regular meetings have been scheduled for 2026:

**January 8, 2026**
**February 12, 2026**
**March 12, 2026**
**April 9, 2026**
**May 14, 2026**
**June 11, 2026**

**July 9, 2026**
**August 13, 2026**
**September 10, 2026**
**October 8, 2026**
**November 12, 2026**
**December 10, 2026**

_____
Jim Robertson
Chair

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 a particular accommodation for this meeting please contact the City Clerk no later than 24 hours prior to the meeting at 697-3005.

*Adopted:* _____
https://www.hendersonvillenc.gov