



Cabarrus County Government

Cabarrus County Planning and Zoning Commission
Tuesday, November 9, 2021 @ 6:30 p.m.
Board of Commissioners Meeting Room
Cabarrus County Governmental Center

Agenda

1. Roll Call
2. Oath of Office to Re-Appointed Member
3. Approval of September 14, 2021, PZ Meeting Minutes
4. Approval of the Granting Order with Finding of Facts for VARN2021-00001, Jerry and Cheryl Baxter – Request for relief from front setback for proposed residence in LDR district.
5. New Business Planning Board Function:
 - A. Petition RZON2021-00004 – Request to apply Mobile Home Overlay (MH-2) to CR zoned property. Bonnie Vivian is the owner and Amy Vivian is the applicant. The address is 2424 Buffalo Hills Dr (PIN: 5549-78-9030).
6. Old Business Board of Adjustment Function:
 - A. Petition CUSE2018-00004 - Close out documents for the amendment to CUSE2017-00001, Conditional Use Permit for Public Service Facility (Solar Farm). Applicant is Canadian Solar Solutions, Inc.
7. Legal Update
8. Director's Report
9. Adjourn



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Mr. Adam Dagenhart, Chair, called the meeting to order at 6:33 p.m. Members present, in addition to the Chair, were Mr. David Hudspeth, Mr. Andrew Nance, Ms. Ingrid Nurse, Mr. Charles Paxton, Mr. Chris Pinto, Mr. Brent Rockett, and Mr. Stephen Wise. Attending from the Planning and Zoning Division were, Ms. Susie Morris, Planning and Zoning Manager, Mr. Phillip Collins, Sr. Planner, Mr. Brett Hicks, Mr. Charles Bass, III, Ms. Arlena Roberts, Clerk to the Board, Mr. Richard Koch, County Attorney and Mr. David Goldberg, Deputy County Attorney.

The Oath of Office was administered to reappointed member, Mr. David Hudspeth

Roll Call

Approval of September 14, 2021 Planning and Zoning Commission Meeting Minutes

There being no corrections or additions to the minutes, Mr. Brent Rockett **MOTIONED, SECONDED** by Mr. Steve Wise to **APPROVE** the September 14, 2021, meeting minutes. The vote was unanimous.

Approval of Granting Order with Findings of Facts for VARN2021-00001, Jerry and Cheryl Baxter – Request for relief from front setback for proposed residence in LDR.

There being no corrections or additions to the Granting Order or Findings of Fact, Mr. Brent Rockett **MOTIONED, SECONDED** by Ms. Ingrid Nurse to **APPROVE** the Granting Order with Findings of Fact for VARN2021-00001. The vote was unanimous.

New Business – Planning Board Function:

The Chair introduced Petition RZON2021-00004 – Request to apply Mobile Home Overlay (MH-2) to CR zoned property. Bonnie Vivian is the owner and Amy Vivian is the applicant. The address is 2424 Buffalo Hills Dr (PIN:5549-78-9030).

Mr. Phillip Collins, Sr. Planner, addressed the Board presenting the Staff report for Petition RZON2021-00004, Request to apply Mobile Home Overlay (MH-2) to CR zoned property.

He said the subject property is approximately 1.15 acres in size and is currently vacant. However, there was a single-wide manufactured home located on the subject property until earlier this year. The adjacent land uses are residential and vacant, and the subject property is surrounded by CR Zoning on all sides except the north, which is zoned LDR.

The purpose of the MH-2 district is to provide for the principal use of land developed in harmony with the underlying zoning district regulations; however, permitting the substitution of a manufactured home as a principal building, provided the specific design and/or installation regulations appearing in section 4-28 are met.

The subject property is located within the boundary of the Central Area Land Use Plan and is planned for Very Low Density Residential (VLDR) uses. The Plan states that areas planned for VLDR uses are intended to remain predominately rural in character while allowing residential uses to occur at very low to low densities. The Plan further recommends that the density for these areas be at one unit per two acres or up to two units per acre provided additional development standards are met.

While the Plan recommends a certain density for VLDR areas, this request is intended to allow the applicant to place a manufactured home on an existing lot where it currently is not permitted. Therefore, this request would not have any effect on the application of the established densities in the Plan for this area. The area is already developed within the range that is recommended by the plan.

The subject property is an existing lot of record with CR zoning.

The proposed request does not allow for any further increases to density. The request is for the MH-2 overlay district to voluntarily be added to the subject property, which would allow a double wide manufactured home to be substituted on the property as the principal building versus a modular home or stick built home.

There are existing manufactured homes within the vicinity of this proposal. Manufactured homes have existed in this area for quite some time (at least since 1995).

A single-wide manufactured home was previously located on the subject property and could have been replaced with a like or larger manufactured home. However, it was removed from the property and the 6-month time frame for it to be replaced has expired.

Pursuant to Chapter 14, Section 14-8, manufactured homes on individual lots of record that do not have the Manufactured Home Overlay may be removed and replaced provided that the replacement manufactured home is equal to, or greater than, the size of the manufactured home being replaced and meets the design and installation standards for individual manufactured homes in Chapter 4.

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Pursuant to Chapter 14, Section 14-6, B, if the existing non-conforming use ceases for more than 6 months, subsequent use or development of the land must conform to district regulations. This is a conventional rezoning request; therefore, all uses permitted within the underlying CR zoning district and in the proposed MH-2 Overlay district would be allowed on the subject property if approved. The Planning and Zoning Commission should consider all the information provided and determine if the proposed rezoning is consistent with the Commission's vision for this area of Cabarrus County.

The Chair asked if there were any questions for Staff. There being none the Chair called on the Applicant.

Ms. Amy Vivian, 645 Lancashire Way Concord, NC addressed the Board stating she is here to answer any questions the Board may have.

The Chair asked if there were any questions for the applicant. There being none the Chair opened the Public Hearing.

The Chair has three cards for speakers, he assumes they are for the case. He asked if any of them wants to speak.

Ms. Sarah Wohltmann, 3603 Wilder Road, Concord, NC addressed the Board, stating that she is Amy Vivian's new neighbor. She said if you have ever been out that way, there are quite a few modular homes in that area. The residence that was there prior was a single wide and a little bit of an eyesore. But they make these modular homes nice now. She said if you look behind Ms. Vivian's property, they just put up a new modular home, another double wide. It looks nice; she thinks it will go well with a deck.

We are her neighbors and that whole area has modular homes, and she does not think it will through anything off. She said the Wohltmann family is for it.

The Chair asked if there was anyone else to speak for or against the case. There being no further comments the Chair closed the Public Hearing.

The Chair said the Board needs to discuss the request and come up with a motion to approve or deny the request. Please keep in mind this is a request to add an overlay district to allow a manufactured home to be used in a place of a stick built or modular, it is not to change the underlying CR zoning designation. We need to discuss the motion to establish findings to support the decision either way.

Mr. Charles Paxton said since there are other modular or mobile homes in the vicinity, and it does not change the underlying zoning district, he does not have problem with it.

The Chair asked if anyone else had anything to add, some things to consider is if it does or does not meet the land use plan. How does it meet it?

Mr. Paxton has already eluded that it matches what is already there, as far as existing structures. It is compatible with the surrounding area. As far as the infrastructure, there should be no impacts to water, sewer, roads, or access. They stated in their application that it is on well and septic.

This was a mobile home before and it looks like they had some issues with septic, and the manufacturer so, their timeframe kind of got thrown off on being the six months. They are also going to use the site as it was before, by the history that staff provided and looking at the aerials.

Mr. Brent Rockett said it was not the applicant's fault that they could not meet the six-month requirement. There were numerous factors that played into this. It sounds based on reading this and hearing from the speakers today, that what they are proposing to do is an improvement over what was there and matches the lots around. He is in favor of the plan as presented.

The Chair asked if there was a motion to approve or deny the request based upon the discussions.

There being no further comments, Mr. Brent Rockett **MOTIONED, SECONDED** by Mr. Andrew Nance to **APPROVE** RZON2021-00004 - Request to apply Mobile Home Overlay (MH-2) to CR zoned property. The vote was unanimous.

Consistency Statement:

Based upon the Staff presentation and the Staff report, and what was contained in there that came from the applicant, and the statement by the applicant tonight, this proposed rezoning to add the overlay is consistent with the Central Area Plan and is reasonable and in the public interest.

Mr. Brent Rockett **MOTIONED, SECONDED** by Mr. Stephen Wise to **APPROVE** the Consistency Statement as provided. The vote was unanimous.

The Chair asked those wishing to speak on the Board of Adjustment case or to testify during the public hearing to stand and be sworn in. He said if anyone wishes to speak, we need to have a completed blue card. The Chair administered the oath.

Old Business Board of Adjustment Function:

The Chair introduced Petition CUSE2018-00004 - Close out documents for the amendment to CUSE2017-00001, Conditional Use Permit for Public Service Facility (Solar Farm). Applicant is Canadian Solar Solutions, Inc.

The Chair called on Ms. Susie Morris, Planning and Zoning Manager, to give the update on Petition CUSE2018-00004.

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Ms. Morris said hopefully, the Board had a chance to look at the memo and the photos that were provided. If the Board remembers, at the November 10, 2020 meeting, the Board made a motion to table this case. Canadian Solar had submitted some documents as closeout documents based on site conditions. At that time, the Board decided that they wanted to form a committee and that committee has since visited the site.

If the Board remembers, a summary memo was provided to the applicant. The applicant, since that time, has been working on trying to resolve those comments that were submitted by the committee.

County Staff and NCDEQ Staff visited the site in October 2021, and the findings are provided in the new memo. County Staff made an additional visit back to the site, so you will see that some of the pictures are dated differently.

She said looking at the memo, Comment #1, the gap area on Joyner Road has been planted. If the Board remembers, one of the things that the Committee needed to decide on was the as-built landscape plan that Canadian Solar had provided. Some of that landscape was not installed, some of it was installed in different areas and some of it was also substituted.

The Committee decided they were good with the plan, and how it looked at that time. Which now, over a year and a half has passed. The memo that we are talking about specifically addresses those issues. That area has been planted with Leyland Cypress and hollies, as you can see in this photo from October 29, 2021.

The left side of the access road, where the house is adjacent to the fence, the first time that Staff went out there, there were no trees there. We let Canadian Solar know that, and they notified us that the trees had been installed. You can see that on October 27, 2021, those trees were installed in that area and they are located in the general area where the Committee wanted them to be located.

Comment #2 - As far as the Stream/Wetland and Floodplain Restoration areas, Mr. Charles Bass accompanied us on site. He works for the Soil and Water Conservation District which is a part of our department. He went out with us because the planting plan that was approved for the restoration in that area was through their division. Mr. Bass was in general pleased with the plantings that were there. We did see some areas where some of the small seedlings, it looked like they had gotten some bad seedlings. She said that is a thing. We did not know that was thing, but it is a thing. Some of them are dead.

But, in his opinion, the other trees that were there were meeting the plan and the intent of what the original staff member had worked out in that plan. The photos that you see are from October 12, 2021. In some of those, you can see where the small flags were; you also had the updated memo that Canadian Solar provided, that had additional pictures from back when those were originally installed. It has been quite some time, because we were trying to make one site visit and kind of be done with everything. Some of those flags were there and some of them were not.

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Comment #4 - The plantings located in the wetland restoration area were run over by some type of equipment. It looked like that area was growing back up and there was no evidence of disturbance.

Comment #5 – Landscape buffers located along Mount Pleasant Road South and Joyner Road should be maintained with mulch. The buffers along these roads are not being maintained and the Board will need to decide how to proceed with the buffers in those area.

Comment #6 – The entire site, including drainage basin areas, need to be seeded and stabilized. The main focus of these basins were the ones in South America. They hired a contractor, and the contractor went out there. Prior to that, if the Board remembers, there was a plan that they submitted, but the Board did not receive that plan because Staff did not have time to review it and the Engineer did not have time to review it.

Since that time, there was some back and forth on what needed to happen at the site. We all went to the site, Staff, the County Engineer and Kenny Llewellyn with the State, to make sure everybody was on the same page. Mr. Llewellyn did a report following up with that. He provided some additional guidance to their Engineer who was on site when we were there. He provided some additional guidance, some things that he wanted to see moving forward. If you looked at the report that he filed, the basins now are no longer basins, they are considered stormwater conveyance features.

Before, we were primarily focusing on stormwater and how does that stormwater get conveyed down to the stream. That is how moving forward the site will be handled. It will be put on a rotation for inspection and the expectation is that Canadian Solar, or whoever is responsible for operations and maintenance of the site, will be working closely with the State to make sure those conveyance features are working properly and also to minimize erosion and scouring on the site.

Some of that is back, it is a 750 something acre site, it is huge, it was trees, now it is solar panels. That is going to be an ongoing issue for them that they will need to address. But, for the most part, they do have a lot of it under control. There are still some areas that are steep and depending on how much water there is, it is going to be a continual issue that they will have to keep an eye on and maintain.

Overall, the status was considered non-compliant. But he was willing to, for a lack of a better term, release the site, but not really release it. It is going to be under the stormwater program, and it will have to be looked after. But he (Mr. Llewellyn) was okay with the current site condition, to say okay, if Cabarrus County is okay with moving forward with providing them with their close out documentation, then he is okay with that, as long as they hold up their end of the bargain with taking care of the site.

Comment # 7 was related to the strapping on the site. The strapping is still there, and it has served its intended purpose and it is no longer needed. It is now restricting growth, hindering translocation, and causing mortality.

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Ms. Morris said if there are any questions about that Mr. Charles Bass, Soil and Water Conservation District can speak to those issues better than she can.

Comment #8 Dead or Dying Plants were observed in the Joyner Road buffers, on either side of the road.

Ms. Morris said this time when we visited there was limited dead vegetation. But again, the longer that the strapping stays on, the more potential there is to have more dying or dead vegetation.

She said the requested action this evening; there are three things that the Board will need to consider. But before she starts that, the applicant sent an email yesterday. Mr. Jansen is here to address any questions, comments or concerns the Board may have. They provided an email yesterday saying that the contractor could go out and take care of the strapping.

One of the other outstanding issues that is not addressed in this memo, but that was an overall condition of approval, was the bond that we talked about a couple of times, and Mr. Koch let you know that they landed on \$350,000 dollar number. That bond was provided electronically today. It will have to be formally executed by the County.

Mr. Koch said that is true, but the County executing it is just an acknowledgment of having received it. The fact that Surety has signed the bond is what really matters. It is a big insurance company so there is no question about having enough assets to stand behind the bond. It is in regular form and we have a copy of it.

Ms. Morris said that was received this afternoon. She said moving forward there are three requested actions from the Board of Adjustment.

1. The Board of Adjustment will need to review all the evidence and information provided and decide if the applicant has satisfied the conditions of approval placed on the Public Service Facility (Solar Farm) project.
2. The Board of Adjustment will also need to review and consider accepting the as-built landscape plan as the approved landscape plan for the project. Should the Board decide to accept the as-built landscape plan, the Board will need to consider accepting the revised glare study as well since these two documents are directly related.

She said number three would be if number one and number two are in the affirmative.

3. If the Board of Adjustment finds that the applicant has met the conditions of approval and accepts the referenced documents, the Board of Adjustment will need to consider allowing the Zoning Certificate of Compliance (COC) to be issued for the overall site as it relates to terms of approval established by the Board of Adjustment as part of case CUSE2018-00004, NC102 Project, LLC. (Granting Order attached in the Board Packet)

The ZCOC document provides official verification that the project is complete and complies with the applicable standards of the Cabarrus County Development Ordinance.

Ms. Morris would be happy to answer any questions. She said Mr. Brett Hicks, Zoning Officer, was also on site with her. Mr. Bass has been to the site multiple times. The Committee members have been to the site, and Mr. Goldberg, Deputy County Attorney, also rode out the last time. We are happy to answer your questions.

She said the applicant and I did not really talk about whether there is a formal presentation. She believes he is just here to answer any questions or hear your concerns related to the site.

Mr. Brett Rockett said obviously, it sounds like the strapping could be a continuing issue. He asked if there was a specific timeline provided in the email you received saying when that would be completed.

Ms. Morris said it did not, it kind of said that they could start taking care of it next week.

Mr. Jansen from the audience said this week.

Ms. Morris repeated what Mr. Jansen said, this week. She said the applicant can answer those questions for you.

Mr. Charles Paxton said during the presentation, it was mentioned that the mulch was not being maintained along the buffer. He asked what the story is on that.

Ms. Morris said the areas where that is, it is the exterior buffers where the streets are, the Joyner Road buffer and Mount Pleasant Road South. There is a lot of growth in there, what would be considered weeds. Some of them are taller than she is, and it has not been maintained like a commercial buffer would be.

She thinks that is a point of discussion for the Board. We get back to what is the intent of that buffer being installed, what is the intent of the planting plan. She said that is probably a conversation that the Board needs to have. The applicant's company is responsible right now for the O and M on the site, but at this point, Canadian Solar no longer owns the project. There is a new project owner. If there are any expectations, that would need to be communicated to the new project owner.

Mr. Paxton said obviously, they are not here tonight. Has staff said anything to them about that?

Ms. Morris does not know if Mr. Jansen has had communications with them because they currently are the ones responsible for operations and maintenance of the site. Mr. Jansen will have to answer that.

Mr. Paxton said, and his answer is?

The Chair said let's wait to see if anyone else has any questions for Staff. He asked if there were any questions for Ms. Morris or any of the other staff.

The Chair asked Mr. Jansen to come up and address the questions.

Mr. Al Jansen, 65 Valley Road, Chatham ON, addressed the Board. He asked Mr. Paxton what his question was because he could not hear him.

Mr. Paxton said during the presentation they discussed that the mulch had not been maintained along the buffers.

The Chair guesses what Mr. Paxton is asking is what is the intent? Are you or the owner going to maintain what has grown up within what was planted?

Mr. Jansen said part of the rationale behind that, there is two factors. One, the buffer areas after we planted them and even as we were planting them and prior to, we had the understanding pretty much, a no-go area; do not touch the buffers. Another element there is after some of the public consultation that we had, a number of the neighboring landowners were very encouraged to consider that there be areas of naturalization and potential for pollinators to grow, basically to support bees and things like that. That is some of the considerations we have, in terms of those buffer areas.

Mr. Rocket said it sounds like it is really a discussion in his mind of vanity versus effectiveness from glare, sound, otherwise. It was obviously a natural site prior to this. Honestly, in reading these documents and looking at it, he fell somewhere in the middle initially, as to whether mulching those areas was of any value to the surrounding properties or not. Because ultimately, if they are going in and trying to clear the existing natural vegetation that has since grown, there is always that chance that additional damage is done or that glare, and sound becomes a greater issue for those surrounding it. From his own perspective, having been on the site, he is not sure that overgrowth is a bad thing on those buffers. The natural growth, in his opinion could be seen as a positive.

The Chair said before we discuss as a Board on that, he asked Mr. Jansen if he had any idea when the strapping will be completed. Obviously, if we move forward with approval, we will have to put a timeline on that.

Mr. Jansen has encouraged the contractor to have that done by the end of this week.

The Chair said okay, 30 days easily?

Mr. Jansen said yes.

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Mr. Pinto said who would check that?

The Chair assumes, that if we put a condition on the approval to close it, Staff would have to go out at the end of that time frame and physically check it.

The Chair said Mr. Koch is shaking his head yes; so yes.

Mr. Koch wanted to make sure that Ms. Morris was agreeing with him because she is the one who would have to go there.

Mr. Pinto said some of the places we walked were back in the sticks and all the straps were still strangling the trees. It is another long walk.

The Chair said let's clarify; was the strapping an issue on the entire site or just along the road frontages? Because he knows the road frontages, a lot of the natural buffer was completely gone. The perimeter has some existing buffers.

Ms. Morris said the committee's comment, to clarify, was specifically related to the road frontages, where it was not being maintained. The committee really did not have an issue with the other buffers not being maintained because those are closer to residential properties than the ones on the road.

The issue of the strapping is all over the site; it is Canada, it is South America, it is everywhere. In some cases, the overgrowth is so much that it would be difficult to get to them. Every time we go out there it is eight miles around the perimeter. To go out there and spend three or four days again, checking all of the strapping to see if it has been removed, is going to take some time.

Right now, everything is still green. It is very difficult to get around that site. She does not know if there is a better time of year where that would be dead, and it would be easier to get around? Maybe, if it was some time during the winter, it may be easier for us to get out there and look at it. But again, it was not just one area. It is the entire site.

Mr. Stephen Wise said isn't there some type of strapping that was made to naturally decay on plants like that.

Someone made a comment in the audience, but it was inaudible.

Mr. Brent Rockett asked Mr. Jansen to speak on what his intent is for the removal of the strapping for the property. What did he indicate to the company that he is asking to perform those duties?

Mr. Jansen said removal of all the strapping.

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The Chair said it sounds like the applicant is in agreeance to do it. We just need to determine something that is feasible for staff to be able to check, based upon weather and time.

He asked if there were anything else for Mr. Jansen at this time. There being nothing else he told Mr. Jansen to have seat and if they had any more questions, they would call him back up.

The Chair asked if anyone else had anything to say. He said correct him if he is wrong, but he thinks the strapping we have a hold of. It is just assuming that we will have to put on a condition based on the email from yesterday. The other item is the roadway buffers.

He said Mr. Rockett has spoken, does anyone else have anything to say?

Mr. Pinto would want to see if the wild, natural trees do their thing, then we should just let them run; red cedar is your friend.

The Chair said he travels Mount Pleasant Road three or four days per week. It is not trees, it is weeds, sea grass, brush; it is not trees. His concern would be what is it going to do to what is there? They are competing for the same space, same air, same water, and the same nutrients. Is it going to kill stuff off or what? He understands his point of don't touch, but he is concerned.

Another thing is, we have a glare study that is related to that buffer. So, if it is not maintained, what impact is it going to have to that glare study? Because if it takes out some planted landscaping, how does that impact the glare study. The glare study is dependent upon that vegetation being there. He understands that the vegetation has not reached its mature height per the study, but it may not get there if we have stuff competing for it.

The Chair said Section 9.9, Landscaping and Buffer, in our Development Ordinance states:

Required landscaping must be maintained in a healthy, growing condition at all times. The property owner is responsible for regular weeding, mowing of grass, irrigating, fertilizing, pruning, and other maintenance of all plantings as needed.

The Chair said obviously not all of that applies, he does not think anyone is asking that they irrigate, prune and fertilize, but it does say regular weeding. He feels like if the applicant cleaned it up now, and we could get this closed, if it came back, then it came back. It has not been maintained for almost three years. We need to make it where they are viable, where they can thrive to get to where we have that undergrowth. That is what this would be is undergrowth, but right now, it is not undergrowth it is competing for what is there.

Mr. Paxton asked if that is a question we need to ask of the applicant.

The Chair thinks so and he asked if anyone else had anything to say one way or another?

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Mr. Hudspeth thinks the glare study is really important. If it strangles out the trees or the plantings that are there you would have disruption of them being able to block the glare and someone could be injured. He is not sure how it was all designed, but he did see the study. He thinks they should be required to live up to the glare study.

The Chair said Comment #7 may address that with the strapping, if they are going to go in there and cut that strapping out. They are already there cutting strapping so, a weed eater with a bush blade will take care of most of it.

The Chair asked Mr. Jansen if he would like to speak to that.

Mr. Al Jansen said comments regarding the health of the plantings that are there. He took a tour around the site today and was quite encouraged with the health of the plantings that were there. Honestly, he saw a fair percentage of the original mulch still visible. You are talking about some grasses, a little bit of ragweed and the grasses themselves will be there and will naturalize themselves into that area.

He said your statement regarding going in and taking the strapping off, if they go in with some weed whackers and control it that way this one time, yes, he thinks we can do it: yes.

Mr. Stephen Wise asked if it was just on Joyner Road.

The Chair said the strapping is everywhere. But the buffers would be Joyner Road and Mount Pleasant Road. He said Highway 601 is okay, he rode by there today. He does not think Joyner Road is near as bad as Mount Pleasant Road.

Mr. Jansen said portions of Mount Pleasant are pretty good too.

Ms. Nurse asked if it would be the same type of timeline as it was before?

The Chair would think so. Obviously, we are adding to what Al committed to earlier, as far as a week. They are saying we cannot really check it. Do we need several weeks of frost or a good hard frost?

Mr. Charles Bass said you are probably going to need more than one.

The Chair said the end of December?

Mr. Bass thinks that would be adequate because you can get out and look around and with everything dormant you can find the green seedlings if it is evergreens.

The Chair said correct him if he is wrong, but the stuff along Mount Pleasant Road is big mature stuff. It is not seedlings, so it should be fairly easy for you guys to do that part, but as far as the strapping on the rest of the site that might be the challenge.

He asked if Mr. Bass was comfortable with the end of the year.

Mr. Bass said yes.

The Chair said that is not even 45 days really, or do we want to stick with 60 days? The Chair said Lynn cannot hear head shakes.

Mr. Charles Paxton said 60 days sounds fine with him.

The Chair asked Mr. Jansen if that is something, they are receptive too?

Mr. Jansen from the audience said that works; yes.

The Chair said note that Mr. Jansen said yes.

The Chair thinks we have worked it out and just need to work through the particulars. We have reviewed the evidence and decided that the conditions were met.

We had three things, Item 5 and 7 which was the strapping and the landscape on the roadway. The applicant has agreed to handle that within the next 60 days and then the bond which Mr. Koch says we have. That was the other outstanding issue.

Mr. Koch said that was mainly to cover the landscaping and the plantings.

The Chair said correct.

The Chair said Item 1, Site erosion, stabilization, and stormwater conveyance. Ms. Morris alluded that the State is good with the site erosion and that things have moved into stormwater and will be inspected on their timeline.

Item 2 - The strapping we have addressed and that it will be handled within the next 60 days and the buffers will be addressed in the next 60 days.

The Chair asked if there was any more discussion on these three items.

The Chair asked Mr. Jansen, for the record, if he was clear on his direction.

Mr. Jansen from the audience said yes, he was.

The Chair said the Board will need to consider accepting the as-built landscape plan as the approved landscape plan for the project. Should the Board decide to accept the as-built landscape plan, the Board will need to consider accepting the revised glare study as well since these two documents are directly related.

The Chair asked if there was a motion to accept the as-built landscape plan as the project landscape plan.

Ms. Morris said if the Board moves forward with this, we will need those to be added as conditions and as part of that she would like to request that the applicant be responsible for documenting those things on the site to try to help expedite Staff's visit.

The Chair said Mr. Jansen was shaking his head yes, that he will.

The Chair said based upon the two conditions that we have forth; the applicant will take care of the strapping, the buffers along the roadway, to clean those up within the next 60 days.

Mr. Charles Paxton **MOTIONED, SECONDED** by Mr. Stephen Wise to **APPROVE** the as-built landscape plan with the two conditions. The vote was unanimous.

The Chair said now we need a motion to accept or reject the revised glare study and the project landscape plan with the two conditions pertaining to the strapping and cleaning up the buffers along the roadway within the next 60 days.

Mr. Brent Rockett **MOTIONED, SECONDED** by Mr. Andrew Nance to **APPROVE** the revised glare study based on the as-built landscape plan. The vote was unanimous.

The Chair asked Ms. Morris if this one counts even though we are going to have a condition. Do we still need to do this one?

Ms. Morris said the Board could make a motion that issuing the Certificate of Compliance for the project is contingent on meeting those two conditions and providing that documentation along the way. But it would not be issued until Staff physically visits the site.

The Chair said the Board must determine if the applicant has met the conditions of approval and accepts the referenced documents. The Board of Adjustment will need to consider allowing the Zoning Certificate of Compliance (COC) to be issued for the overall site as it relates to terms of approval established by the Board of Adjustment as part of case CUSE2018-00004, NC102 Project, LLC. The ZCOC document provides official verification that the project is complete and complies with the applicable standards of Cabarrus County Development Ordinance.

The Chair asked if there was a motion to issue the Certificate of Compliance contingent on the two conditions previously stated, as well as the applicant documenting what they have done to meet those conditions.

Mr. Brent Rockett **MOTIONED, SECONDED** by Ms. Ingrid Nurse to **APPROVE** the issuing the Certificate of Compliance with the documentation and meeting both conditions. The vote was unanimous.

Legal Update

Mr. David Goldberg, Deputy County Attorney, addressed the Board giving an update on the McClain RV case on Joyner Road. He said the Court heard a motion for Default Judgment in August. We have been waiting for the Order to get signed. The Order has now been signed. The Judge has given Mr. McClain 15 days to abate the issue, or it may be abated for him. He also issued a monetary judgment of \$3500, plus court costs for the civil penalties that have been assessed so far. The order was served to Mr. McClain, the owner of the RV.

We will start talking about what we need to do to carry out that judgement and to follow through to get that property in compliance with the Zoning Ordinance.

Mr. Richard Koch, County Attorney, gave an update on the Shelly case. His third appeal to the Court of Appeals was denied within the past two weeks. There was an actual conference call with the Judge today, to setup the Expert to actually look at the wall that is at issue and to do the measurements on it that we have not be allowed to do up to this point in the case.

He said that is what the last appeal was on; was trying to keep us from doing that and it was denied. The Judge basically set it up so that we have to give Mr. Shelly some dates, and he has to pick one. Then our Inspector, that we have lined up, is going to go out there and do the measurements and we will see where we go from there. Then after that, hopefully, we are going to get out of the case on a Summary Judgement, part of it will depend on the results of the wall inspection.

He said we are making progress; very slow. Every time there is an issue we have prevailed. But he keeps bringing up more, and new issues. We will see where it goes.

Directors Report

Ms. Susie Morris said we have a new Planner that will be starting. She will be attending the next meeting so that she can get up to speed on what is happening and what is going on.


We finally heard back from the State about the floodplain issue, and our review that is being held hostage because of the Model ordinance that North Carolina put out. Our legal Counsel kind of went toe to toe with them, because the language that they are putting into the Model Ordinance really does not follow the CFR. We will see where that lands. We are trying to move that forward hopefully for January or February so that we can get our Certificate. We have been told that we will receive a new rating of a seven, from the eight that we currently have. It is all contingent on this language however, and the current reviewer.

We have been in a holding pattern with that, while the State, FEMA, and ISO were trying to figure out what they were going to do with that language. It is not just us; it is all the CRS communities across North Carolina. Hopefully, it will be presented to the Board soon so that we can move that along and get our certificate and start gearing up for our next FEMA review.

Planning and Zoning Commission
Minutes
November 9, 2021


There being no further discussion, Mr. Brent Rockett **MOTIONED, SECONDED** by Mr. Andrew Nance, to adjourn the meeting at 7:35 p.m. The vote was unanimous.

APPROVED BY:



Mr. Adam Dagenhart

SUBMITTED BY:



Arlena B. Roberts

ATTEST BY:



Susie Morris, Planning and Zoning Manager

Petition: RZON2021-00004 Rezoning

Applicant Information: Amy Vivian
646 Lancashire Way
Concord, NC 28025

Owner Information: Bonnie Vivian
646 Lancashire Way
Concord, NC 28025

Existing Zoning: CR (Countryside Residential)

Proposed Zoning: CR with Mobile Home 2 Overlay (MH-2)

Permitted Uses: Double-wide manufactured homes and all uses permitted in the underlying CR zoning district would be permitted on the subject property.

Parcel ID Numbers: 5549-78-9030

Property Addresses: 2424 Buffalo Hills Drive

Area in Acres: ± 1.15 ac

Site Description: The subject property is currently vacant. There was a single-wide manufactured home located on the subject property until earlier this year.

Adjacent Land Use: North: Residential & Vacant
East: Residential
South: Residential
West: Residential & Vacant

Surrounding Zoning: North: LDR
East: CR
South: CR
West: CR

Utility Service Provider: Currently, the subject property is served by private well and septic.

Exhibits

- A. Staff Report

- B. Application
- C. Staff Maps
- D. Adjacent Property Owner & Property Owner Letters
- E. Neighborhood Meeting Minutes
- F. Cabarrus Health Alliance Letter

Intent of Zoning Districts

PROPOSED DISTRICT: Mobile Home Overlay 2 District (MH-2)

The purpose of the MH-2 district is to provide for the principal use of land developed in harmony with the Underlying Zoning District regulations; however, permitting the substitution of a Manufactured Home as a Principal Building, provided the specific design and/or installation regulations appearing in section 4-28 are met.

EXISTING DISTRICT: COUNTRYSIDE RESIDENTIAL

Lands in this district have a strong rural, pastoral feel. Natural environmental elements such as tree lines, small ponds, rock formations, and manmade elements such as pasture fencing are to be retained, if possible. Although the area is capable of handling higher densities of development, development is kept at very low overall densities. Development includes only the standard single family detached dwelling.

RATIONALE

This land use district was created as a direct result of the County's systematic area planning process. As a reaction to the growth of the past decade (as much as 80% in some townships) many residents are anxious to see their areas retain the appeal that inspired the resident to make his or her original investment. This district helps implement a growth management philosophy before the fact, rather than after. In summary, the principal purpose of this district is to provide some land area in the County for a permanent country, rural residential lifestyle.

Agency Review Comments

Planning Review:

Staff Report, Phillip Collins, Senior Planner Cabarrus County

NCDOT Review:

No comments, Marc Morgan, District Engineer NCDOT

NCDEQ Review:

No comments, Christopher Graybeal, Assistant Regional Engineer NCDEQ

Fire Marshal Review:

No comments, Jacob Thompson, County Fire Marshal

EMS Review:

No comments. Justin Brines, Cabarrus County Assistant EMS Director

Sheriff's Office Review:

No comments. Lieutenant Ray Gilleland, Cabarrus County Sheriff's Department

Soil and Water Review:

No comments. Tammi Remsburg, Cabarrus County Resource Conservation Manager

Cabarrus Health Alliance:

Approved – but must be a two bedroom mobile home. Chrystal Swinger, CHA Environmental Health Program Director

Land Use Plan Analysis

The subject property is located within the boundary of the Central Area Future Land Use Plan (Plan) and is planned for Very Low Density Residential (VLDR) uses. The Plan states that areas planned for VLDR uses are intended to remain predominately rural in character while allowing residential uses to occur at very low to low densities. The Plan further recommends that the density for these areas be at one unit per two acres up to two units per acre provided additional development standards are met.

While the Plan recommends a certain density for VLDR areas, this request is intended to allow the applicant to place a manufactured home on an existing lot where it currently is not permitted. Therefore, this request would not have any effect on the application of the established densities in the Plan for this area. The area is already developed within the range that is recommended by the plan.

Conclusions

- The subject property is an existing lot of record with CR zoning.
- The proposed request does not allow for any further increases to density. The request is for the MH-2 overlay district to voluntarily be added to the subject property, which allows a double wide manufactured home to be substituted on the property as the principal building versus a modular home or stick built home.
- There are existing manufactured homes within the vicinity of this proposal. Manufactured homes have existed in this area for quite some time (at least since 1995).
- A single-wide manufactured home was previously located on the subject property and could have been replaced with a like or larger manufactured home. However, it was removed from the property and the 6-month time frame for it to be replaced has expired.

- Pursuant to Chapter 14, Section 14-8 Manufactured homes on individual lots of record that do not have the Manufactured Home Overlay may be removed and replaced provided that the replacement manufactured home is equal to, or greater than, the size of the manufactured home being replaced and meets the design and installation standards for individual manufactured homes in Chapter 4.
- Pursuant to Chapter 14, Section 14-6, B, if the existing non-conforming use ceases for more than 6 months, subsequent use or development of the land must conform to district regulations.

This is a conventional rezoning request; therefore, all uses permitted within the underlying CR zoning district and in the proposed MH-2 Overlay district would be allowed on the subject property if approved. The Planning and Zoning Commission should consider all the information provided and determine if the proposed rezoning is consistent with the Commission's vision for this area of Cabarrus County.



CABARRUS COUNTY REZONING APPLICATION

STAFF USE ONLY:

Application/Accela#: _____
Reviewed by: _____
Date: _____
Amount Paid: _____

INSTRUCTIONS/PROCEDURES:

1. Schedule a pre-application meeting with Staff to discuss the procedures and requirements for a zoning map amendment request.
2. Submit a complete application for an amendment to the official zoning map to the Planning Division. All applications must include the following:
 - Cabarrus County Land Records printout of all adjacent property owners. This includes properties located across the right-of-way and all on-site easement holders. The list must include owner name, address, and Parcel Identification Number.
 - A recent survey or legal description of the property or area of the property to be considered for rezoning.
 - Any additional documents essential for the application to be considered complete. (Determined as part of the pre-application meeting)
3. Submit cash, check, or money order made payable to Cabarrus County.
 - Fees: Residential rezoning request 1 acre or less = \$400.00
 - Residential rezoning request greater than 1 acre = \$400.00 plus \$15 per acre
 - Non-residential rezoning request = \$650.00 plus \$15 acre
 - (Plus, cost of advertising and engineering fees if applicable)
 - (if a 3rd submittal is required, an additional review fee will be assessed)

The deadline for submittal is always the same day as the Planning and Zoning Commission Meeting which is the second Tuesday of the month. Applications must be submitted before 2:00 PM that day for consideration on the next available agenda.

Incomplete applications will be returned to the applicant and will not be processed.

PROCESS SUMMARY:

1. Hold a pre-application meeting with Staff to discuss your rezoning request and the map amendment process.
2. Submit a complete application with the appropriate fees to the Cabarrus County Planning Division.

Staff will review your complete application, prepare a staff report, schedule a public meeting date and notify adjacent property owners of the public meeting/public hearing date. A sign advertising the public hearing will also be placed on the property being considered for rezoning.

Meeting Information: Meetings are held the second Tuesday of each month at 6:30 PM in the Cabarrus County Governmental Center located in downtown Concord at 65 Church Street, SE.

Expedited Vote: A vote of ¾ or more of the members of the Planning and Zoning Commission is considered an Expedited Vote and will constitute a final decision. If approval or denial of a rezoning request is by a vote of less than ¾ of the members, or if an appeal of the decision is filed within 15 days of the date of the decision, the application will automatically be forwarded to the Board of Commissioners for final consideration at a *de novo* hearing.

Questions: Any questions related to rezoning your property or to the rezoning process may be directed to the Planning Division at 704-920-2141, between 8 AM and 5 PM, Monday through Friday.

SUBJECT PROPERTY INFORMATION:

Street Address 2424 Buffalo Hills Drive Concord, NC 28025

PIN(s) (10 digit #) 5549 -- 78 -- 9030 ; _____ -- _____ -- _____

Deed Reference Book 14074 Page 111

Township # 11

DESCRIPTION OF SUBJECT PROPERTY:

Size (square feet or acres) 1.15 AC

Street Frontage (feet) 440 FT

Current Land Use of Property Vacant

Surrounding Land Use North Residential and Vacant

South Residential

East Residential

West Residential

REQUEST:

Change Zoning From Countryside Residential To Countryside Residential WMH-2 Overlay

Purpose for Request:

I Purchased this property March 23rd, 2020 there was a singlewide already on the property
and was part of the sale. I purchased this property to become my primary residence and to replace
the single wide with a newer double wide. In order to place the new doublewide on the
property, the MH-2 Overlay is required.

LAND USE PLAN CONSISTENCY STATEMENT

Describe how the proposed rezoning meets the land use plan(s) for the subject parcel(s):

I am requesting to place a mobile home(double wide) on an existing lot of record where a mobile home existed previously. This request is not inconsistent with the land use plan which calls for the area to remain rural and be developed as very low density residential. Our neighbors behind us and beside them all have mobile homes, as well. Our new neighbors at the bottom of Buffalo Hills drive is actually in the process of putting a double wide, as well.

UTILITY SERVICE:

Water Supply Well or Service Provider _____

Wastewater Treatment Septic Tank(s) or Service Provider _____

PROPERTY OWNER/AGENT/APPLICANT INFORMATION:

It is understood by all parties hereto including owner, petitioner, and/or agents that while this application will be carefully considered and reviewed, the burden of proving its need rests with the below named petitioner(s)

I do hereby certify that the information that I have provided for this application is, to the best of my knowledge, true and correct.

PROPERTY OWNER

AGENT/APPLICANT

Bonnie Vivian/Amy Vivian

Amy Vivian

NAME

NAME

646 Lancashire Way

646 Lancashire Way

ADDRESS

ADDRESS

Concord, NC 28025

Concord, NC 28025

CITY, STATE, ZIP CODE

CITY, STATE, ZIP CODE

802-279-9761

802-505-8375

PHONE NUMBER

PHONE NUMBER

FAX NUMBER

FAX NUMBER

Bonnievivian@aol.com

Smiley37984@aol.com

E-MAIL ADDRESS

E-MAIL ADDRESS

Signature of Property Owner: Bonnie Vivian
Amy Vivian Date: 10/15/2021

Signature of Property Agent/Applicant: Amy Vivian Date: 10/15/2021

10/14/2021

Re-Zoning Request

To whom it may concern;

We purchased this property with a closing date of 03/23/2020, the septic company we were working with unfortunately was not reputable and the septic company never returned our calls, so the process was very delayed right off. We started working with Factory Select homes on 03/13/2020 to look at homes and to get things going. We signed a contract on 3/18/2020 for a double wide through Factory Select homes, then COVID happened. They were closed down and not allowing anyone in their office, and the contractor we selected from the list they gave us ended up very ill with COVID, and some other major health issues and in the hospital for several months. During this time I had worked diligently with Tyler Robertson at Cabarrus County health & Environmental trying to get the septic permit issued, and it was quite delayed because the soil scientist was booking 3 months out due to the demand & how COVID had put him behind. After Factory Select opened back up, and we were trying to get the permit still, our sales rep from there had informed us that the price for the home we signed the contract on had increased significantly to the point of not being able to afford it. So, we ultimately had to back out of that contract in December of 2020. Around that time I had posted an ad on Craigslist & Facebook for someone to come and tear down the singlewide or just remove it(they were required to obtain the permits and whatever else was required) At the beginning of the year(Jan 2021) We went back to VT to visit and unfortunately had given the address out without my mom(Bonnie) or anyone being there to meet the people who were interested and when we got back we went up to check on the property, etc and the single wide was gone. We were blown away at first but just kind of said well one less thing we have to deal with!

In the interim, we ended up finding another mobile home retailer in Lexington (Clayton homes of Lexington). I still was working with Tyler in Health & Environmental whom lost our file and wasn't able to find it for some time, he finally issued the septic permit which was required to order our home and that permit was issued on 05/19/2021.

We are trying to make sure that after our home is delivered and here we will not have ANY issues. While expressing my concerns with running into any more issues with Jordan Wagner (Our Sales Rep at Clayton homes of Lexington) we came across this bump in the road and must get it taken care of as soon as possible, as our closing for our new home is set for December 15th 2021.

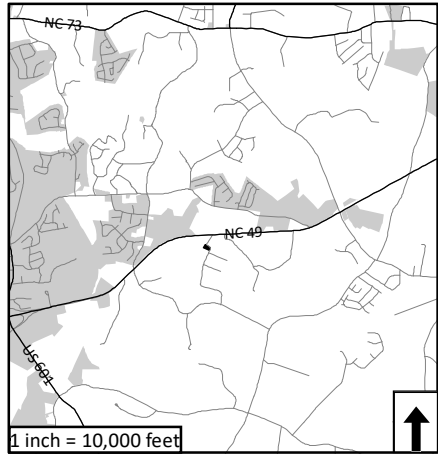
Thank you for your time & consideration.

Amy & Bonnie Vivian

Central Planning Area Existing Zoning

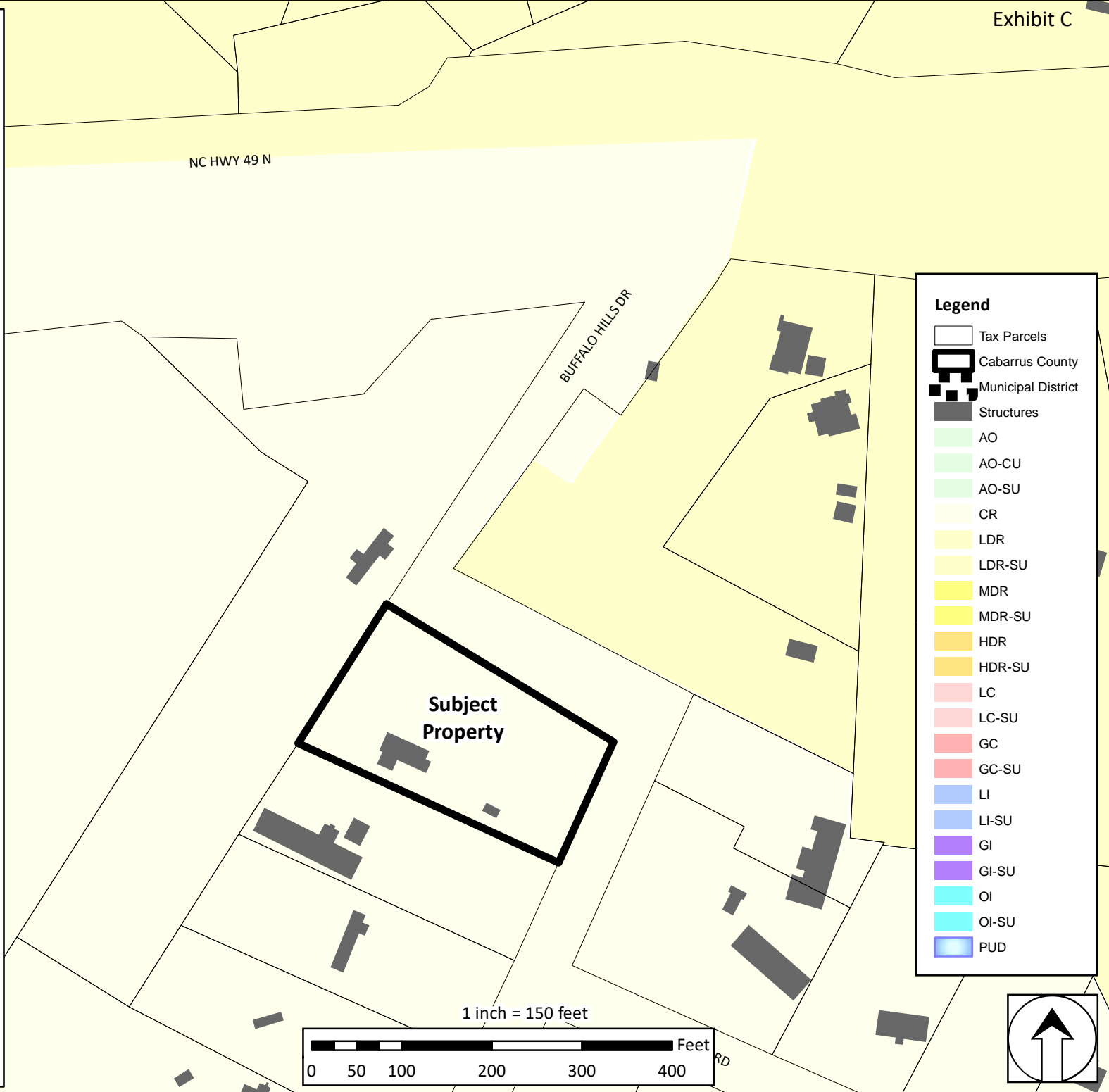


Applicant: Amy Vivian
Owner: Bonnie Vivian
Case: RZON2021-00004
Address: 2424 Buffalo Hills Drive
Purpose: Rezone to apply MH-2
Overlay to current CR zoning
PIN: 5549-78-9030



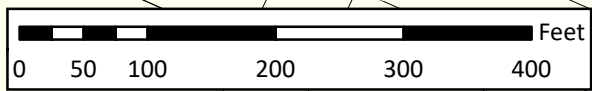
Cabarrus County shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. These data cannot be construed to be a legal document. Primary sources from which these data were compiled must be consulted for verification of information contained within the data.

Map Prepared by Cabarrus County Planning & Development - November 2021



Legend

- Tax Parcels
- Cabarrus County
- Municipal District
- Structures
- AO
- AO-CU
- AO-SU
- CR
- LDR
- LDR-SU
- MDR
- MDR-SU
- HDR
- HDR-SU
- LC
- LC-SU
- GC
- GC-SU
- LI
- LI-SU
- GI
- GI-SU
- OI
- OI-SU
- PUD

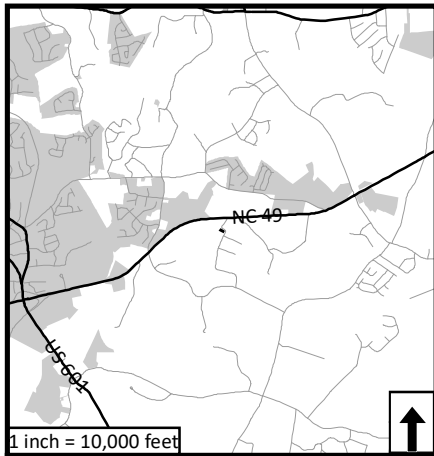


Central Planning Area Aerial Map



Applicant: Amy Vivian
Owner: Bonnie Vivian
Case: RZON2021-00004
Address: 2424 Buffalo Hills Drive
Purpose: Rezone to apply MH-2
Overlay to current CR zoning
PIN: 5549-78-9030

- Cabarrus County
- Municipal District
- Tax Parcels



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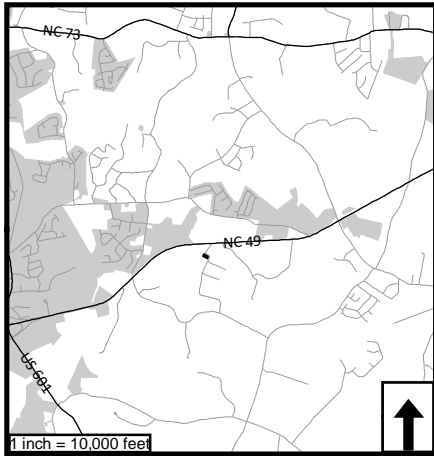
Map Prepared by Cabarrus County Planning & Development - November 2021



**Central Planning Area
Future Land Use**

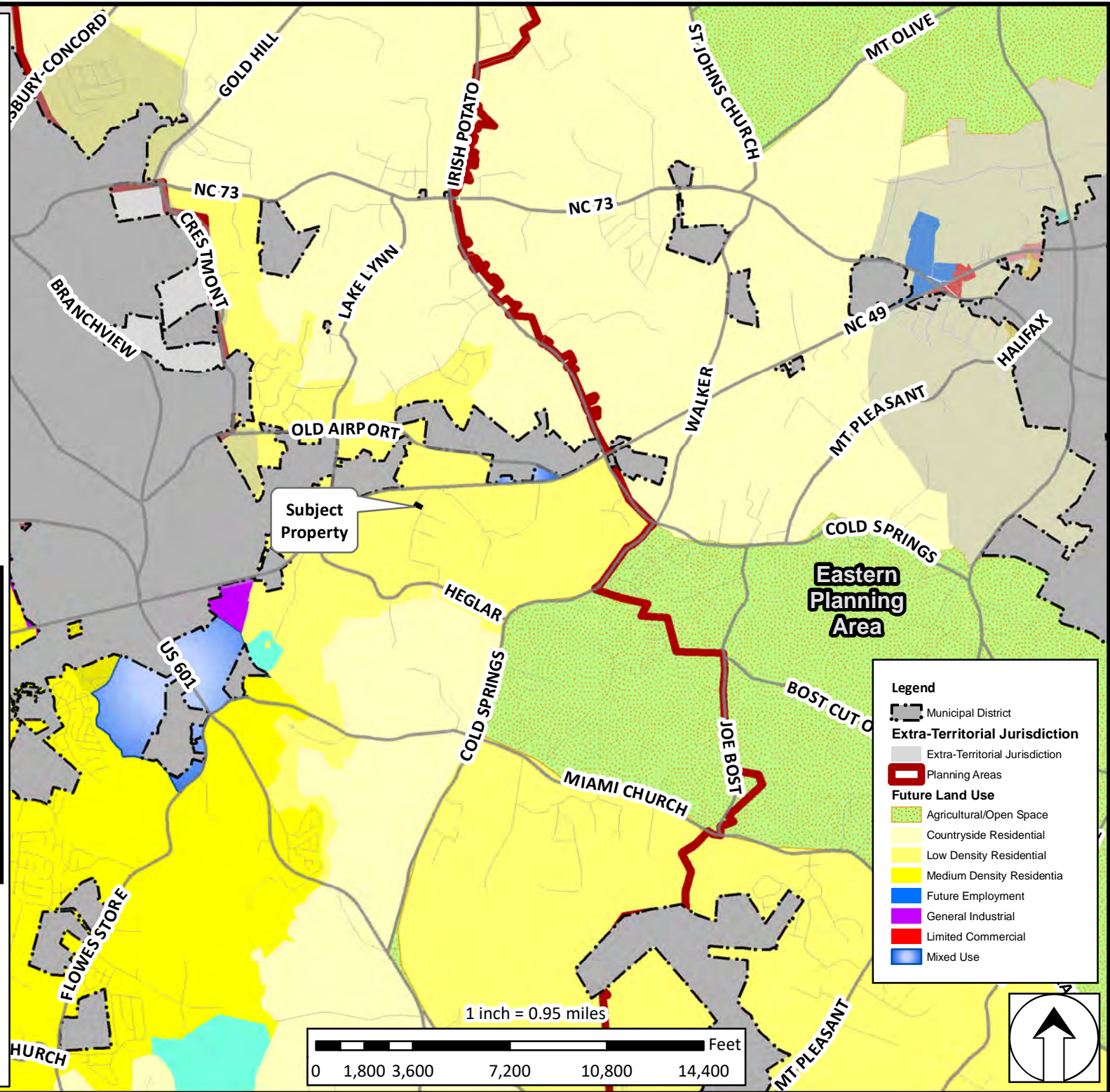


Applicant: Amy Vivian
 Owner: Bonnie Vivian
 Case: RZON2021-00004
 Address: 2424 Buffalo Hills Drive
 Purpose: Rezone to apply MH-2
 Overlay to current CR zoning
 PIN: 5549-78-9030



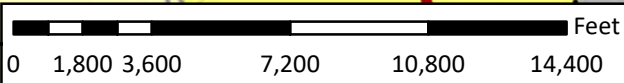
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Map Prepared by Cabarrus County Planning & Development - November 2021



Legend

- Municipal District
- Extra-Territorial Jurisdiction**
- Extra-Territorial Jurisdiction
- Planning Areas
- Future Land Use**
- Agricultural/Open Space
- Countryside Residential
- Low Density Residential
- Medium Density Residential
- Future Employment
- General Industrial
- Limited Commercial
- Mixed Use



PROPERTY OWNER
 5549-78-9030
 Bonnie Vivian
 646 Lancashire Way
 CONCORD, NC 28025

5549-78-8955 RAMON A MERCEDES 2400 BUFFALO HILLS DR CONCORD, NC 28025	5549-88-1173 SCOTT & ASHLEIGH ROBERTSON 113 CABARRUS AVE E CONCORD, NC 28025	5549-87-2994 & 5549-87-2841 MARK & TAMARA WOHLTMANN 2423 BUFFALO HILLS DR CONCORD, NC 28025
5549-77-8887 MARK CAIN 2446 BUFFALO HILLS DR CONCORD, NC 28025		



Cabarrus County Government – Planning and Development Department

October 18, 2021

Dear Property Owner:

A Zoning Map Amendment Petition has been filed in our office for property **adjacent** to yours. The specifics of the request are listed below. The Cabarrus County Planning and Zoning Board will consider this petition on Tuesday, November 9, 2021 at 6:30 PM in the 2nd floor Commissioner’s Chambers of the Cabarrus County Governmental Center, located at 65 Church Street S Concord, NC 28025. A Public Hearing will be conducted and public input will be allowed during that time. If you have any comments about the rezoning, I encourage you to attend this meeting.

Petitioner	Amy Vivian
Petition Number	RZON2021-00004
Property Location	2424 Buffalo Hills Drive
Parcel ID Number	5549-78-9030
Existing Zoning	Countryside Residential (CR)
Proposed Zoning Map Change	CR with MH-2 Overlay

If you have any questions regarding this petition, or the hearing process, please contact me at Cabarrus County Planning and Development at 704.920.2181.

Sincerely,

A handwritten signature in cursive script that reads "Phillip Collins".

Phillip Collins, AICP
Senior Planner
Cabarrus County Planning and Development
704.920.2181



Cabarrus County Government – Planning and Development Department

October 18, 2021

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• Petitioner	Amy Vivian
• Petition Number	RZON2021-00004
• Property Location	2424 Buffalo Hills Drive
• Parcel ID Number	5549-78-9030
• Existing Zoning	Countryside Residential (CR)
• Proposed Zoning Map Change	CR with MH-2 Overlay

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Sincerely,

A handwritten signature in cursive script that reads "Phillip Collins".

Phillip Collins, AICP
Senior Planner
Cabarrus County Planning and Development
704.920.2181

Oct 18, 2021 at 10:06:31 AM
2424 Buffalo Hills Dr
Cabarrus County

CABARRUS COUNTY
ZONING
NOTICE
RZON2021-00004
FOR DETAILS CALL
704-920-2141



11/01/2021

10/22/2021 – Spoke to Mark Cain via Text/Phone. He doesn't have any questions/Comments/Concerns. He is ok with the re-zoning and he advised he will try and be at the meeting however, work hours may interfere with his ability to attend.

10/22/2021 spoke to Ramon & Jackie at 2400 Buffalo Hills via phone call – The only question Jackie had was if the Re-zoning applied to ALL of Buffalo hills Drive, I advised no just for our property. She had no other questions, no concerns. She commented about how she didn't understand why we have to go through this as there are nothing but mobile homes and double wides all around our property. She stated she is all for the re-zoning and she will be at the meeting.

10/30/2021 – Stopped and spoke to Josh & Sara which ends up their address is actually "Wilder Road" however they are directly across from our property. I had a good conversation with Sara, she was wondering what the Zoning sign was for and was happy that I stopped and talked to her about it. She has no questions or concerns. She also commented on the fact that there are nothing but mobile homes in the area so she didn't understand why we were having to go through all of this. She also advised she will be at the meeting.

10/30/2021 – Stopped and spoke to Mark at 2423 Buffalo Hills Dr, his wife Tamara(Tammy) was not home at the time, she was at work. I had a very good conversation with Mark. He advised he was planning on going to the meeting before even talking to me, he said because he thought they were looking to re-zone the area for a mobile home park as he thought our property and the other property (2400 Buffalo hills) both sold together, he would have fought it tooth and nail if it were for a mobile home park. Now he understands its only to allow our double wide there he has absolutely no problem with it and is excited to have someone living across the way now again. He did ask why it was Re-zoned in the first place to not allow mobile homes there, since this area is full of mobile homes. I wasn't able to answer that for him, so he may ask this question at the meeting or call. However, he has no problem with this re-zoning to allow our double wide there. Mark had no other questions, and no other concerns. He did make the comment about the grass being a bit out of control at times, which I reassured him it would be better maintained once we get this settled and can hopefully get moved in, as I work full time and have my current home to maintain, etc. He also just wanted to make sure the double wide isn't like the single wide that was there before (Trashy) He just requested that it has a nice skirting around it to make it look nice. Mark also stated that Scott & Ashley Robertson own the 2 lots below him and he doesn't believe they live there they rent out the buildings, he then thought maybe they own one and rent the other but he was not certain. Mark is planning on coming to the meeting.

I was not able to connect with Scott & Ashleigh Robertson. I do not feel comfortable calling Scott at his place of work to talk about this.



CABARRUS
HEALTH
ALLIANCE

at NC Research Campus

Date: 5/19/21

File # 21-176

Bonnie Vivian

2424 Buffalo Hills Dr.

Concord, NC 28025

Dear Ms. Vivian

On May 19, 2021 an existing septic inspection was performed at 2424 Buffalo Hills Dr. The proposed 2 bedroom residence appears to meet 15A NCAC 18A .1950. And permission is granted to construct 2 bedroom residence and use the 2 bedroom existing system.

The structure must be located a minimum of five feet away from any part of the existing septic tank system and twenty five feet away from the well.

You may call or write the local health department if you need any additional information or assistance.
7049201261

Sincerely,

Tyler W. Robertson, R.E.H.S.

Memo

To: Planning and Zoning Commission, Acting as Board of Adjustment

From: Susie Morris, Planning and Zoning Manager

cc: File

Date: October 27, 2021

Re: NC102 Project, LLC Close Out Update

At the November 10, 2020 meeting of the Planning and Zoning Commission, the Commission, acting as Board of Adjustment, voted to table consideration of the NC102 Project, LLC close-out documents pending a site visit by a member committee to view the landscape installation and overall site conditions.

Staff and the Committee visited the site on December 2, 2020. The resultant observations, comments and concerns expressed by the Committee were shared with the applicant and with the Planning and Zoning Commission, acting as Board of Adjustment. Since that time, the applicant has been working to address the items outlined in the memo.

County and NCDEQ Staff visited the site in October. This memo provides a status update on the items outlined in the original memo. The original communication text is black, updates are in blue.

Comment #1: The gap area along Joyner Road needs to be planted. The Committee is willing to allow plantings that are consistent with the existing Loblolly Pine buffer to be substituted for the plantings shown on the plan. CCSWCD Staff recommends these be planted at 8 x 10 spacing.



Status: This item has been addressed. The applicant planted this area with Leyland Cypress and additional Hollies.

Photos of area from October 29, 2021



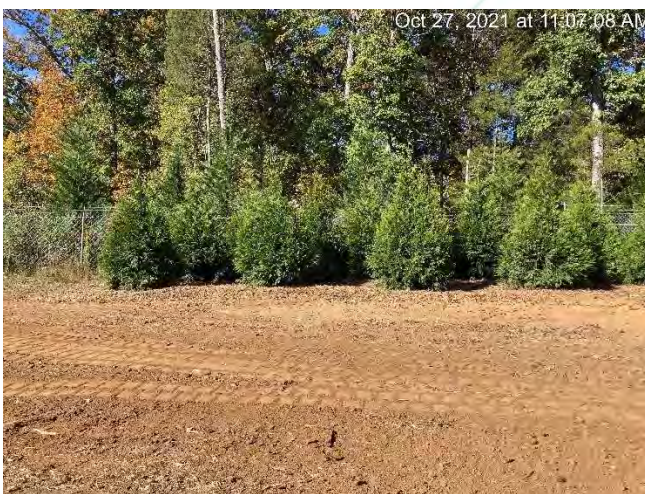
Left side of access road where house is adjacent to fence



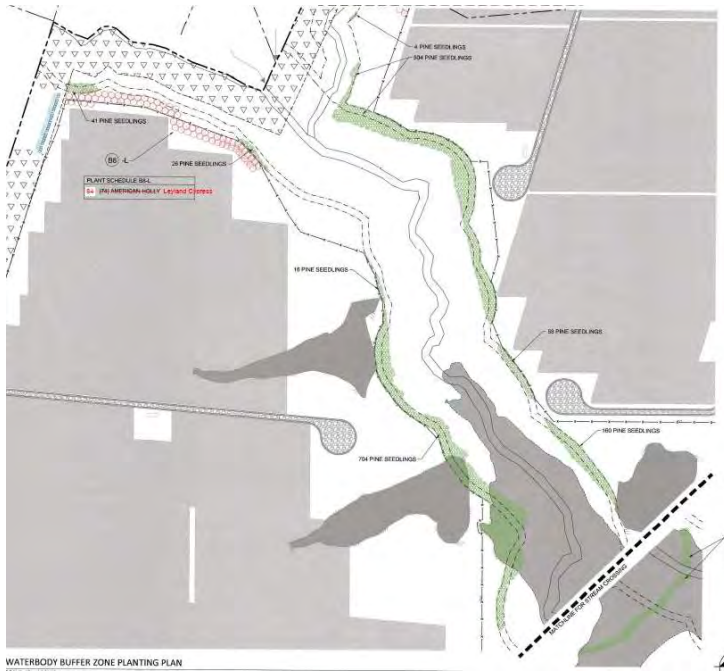
Comment #2: This area needs to be planted a minimum of 60 feet on either side of the corner post. The Committee is willing to allow additional Leyland Cypress to be used in this area to create an evergreen buffer for the residential property. Plantings should be installed interior to the fence on the solar farm side to allow appropriate room for growth.

Status: Leyland Cypress have been installed in this area.

Photos from October 27, 2021



Stream/Wetland and Floodplain Restoration Areas – Green areas shown on plan below



Comment #3: Additional evidence needs to be provided that the pine seedlings were planted in accordance with the planting schedule throughout the entire restoration area. Plantings should be flagged, and a series of photos provided for the green areas shown on the plan above. The Committee would like for county staff members to visit the site once the plants are flagged in all the stream/floodplain restoration areas to confirm planting at the proper density and per the approved CCSWCD Restoration Plan.

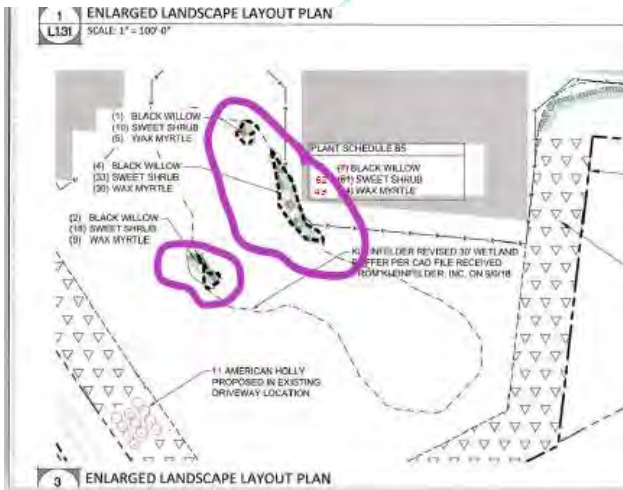
Status: Cabarrus SWCD Staff confirmed during the site visit that the pine seedlings have generally been installed per the remediation plan.

Photos from October 12, 2021





Comment #4: The plantings located in the wetland restoration areas have been run over by some type of equipment. Several of them are dead or dying due to damage. Applicant should limit vehicular access in this area. Areas near the wetlands should be undisturbed areas.



Status: There was no evidence of disturbance in this area during this site visit. The landscape appears to be growing.

Comment #5: Landscape buffers located along Mount Pleasant Road South and Joyner Road should be maintained with mulch.

Status: The buffers along these roads are not being maintained.

Comment #6: The entire site, including drainage basin areas, need to be seeded and stabilized. Pictures below are of the basin in South America where excessive mulch has been installed. CCSWCD Staff suggests using Kentucky 31 Fescue covered with straw to prevent washout. Mulch needs to be removed from these areas prior to seeding.





Status: The basin areas have been reworked and the State provided a report related to the most recent site inspection for Stormwater Permit #SW3170403 (see attached). The basins will be considered stormwater features because they are conveying water and will be inspected periodically by the State. The site, overall, was considered non-compliant. The repaired area and other areas throughout the site will need to be maintained and monitored until the area is fully stabilized and vegetation is established.

Photos from October 12 and October 27







Comment #7: Strapping connecting plants to the stakes (like the ones shown below) should be removed as they may now be hindering growth and health of established plants.



Status: The strapping has served its intended purpose and is no longer needed. It must be removed as it is now restricting growth, hindering translocation and causing mortality.

Comment #8: Dead or dying plants were observed in the Joyner Road buffers (either side of the road).

Status: There was limited dead vegetation during this site visit.

Requested action:

- The Board of Adjustment will need to review all the evidence and information provided and decide if the applicant has satisfied the conditions of approval placed on the Public Service Facility (Solar Farm) project.
- The Board of Adjustment will also need to review and consider accepting the as-built landscape plan as the approved landscape plan for the project. Should the Board decide to accept the as-built landscape plan, the Board will need to consider accepting the revised glare study as well as since these two documents are directly related.
- If the Board of Adjustment finds that the applicant has met the conditions of approval and accepts the referenced documents, the Board of Adjustment will need to consider allowing the Zoning Certificate of Compliance (COC) to be issued for the overall site as it relates to terms of approval established by the Board of Adjustment as part of case CUSE2018-00004, NC102 Project, LLC (See attached Granting Order). The ZCOC document provides official verification that the project is complete and complies with the applicable standards of the Cabarrus County Development Ordinance.

The Chair asked if the Board had any of other questions for staff or any other questions on this case before opening the floor for discussion.

There being no other comments, the Chair said the Board will need to discuss the factors that will lead us down the road of approval or denial here.

We have heard some things already; that there are no collocations that are available to serve this area, which is why they are pursuing another tower. It appears that based on the site plan, egress and ingress to the site is appropriate. They are proposing some landscape buffer around the site using the existing vegetation. It does not appear to detract from the neighboring properties.

There being no further comments, Mr. Brent Rockett **MOTIONED, SECONDED** by Mr. Andrew Lance to **APPROVE** CUSE2020-00004, Conditional Use Permit for Wireless Telecommunications Tower with the conditions proposed by Staff. The vote was unanimous.

BREAK TO CLEAR OUT THE ROOM AND CLEAN

The Chair introduced Petition CUSE2018-00004 - Close out documents for the amendment to CUSE2017-00001, Conditional Use Permit for Public Service Facility (Solar Farm). Applicant is Canadian Solar Solutions, Inc.

The Chair asked if any of the Board members had a conflict or any information that needs to be shared at this time related to the case. There being none, the Chair called on Ms. Susie Morris, Planning and Zoning Manager to present staff report.

Ms. Susie Morris addressed the Board stating that before the Board this evening are the closeout documents for Canadian Solar. The Board may recall there was an amendment to the conditional use permit that was issued from McBride Solar. They were before the Board several times before they negotiated a plan that was amenable to the Board and to the Applicant. That plan was finally approved in May 2019, and if the Board remembers there was a laundry list of conditions that went along with that approval.

The Applicant now feels like they have completed those conditions of approval, and they submitted documents stating such. They finally have their approval from the Fire Marshal's Office. They have their closeout documents from NCDEQ, the sedimentation basins have been removed, graded and reseeded. They have their information from NCDOT for all the driveways that had to be put in. They finally straighten that out with them, pipes are in like they are supposed to be, width is appropriate; all of that has been taken care of.

The majority of our time is going to be spent on the landscape plan and the glare study they submitted. The last site visit was July 2020. Ms. Morris and Mr. Brett Hicks have been to the site two different times since the Board last looked at the plans.

She is going to walk through some of these pictures to show how our comments came about and then the photos that the applicant provided to say that they feel like they have addressed the last set of comments that we gave them and how they feel like they are addressing them.

The applicant is not here this evening because the border is closed and if they flew in, they would have to quarantine for 14 days when returning to Canada. Mr. Jansen who has been participating in the meetings with us, in his region, there are only 12 cases of Covid so, like the rest of us he would prefer to stay put.

She showed where they walked around the site. If the Board remembers, when you are down on Highway 601 coming into South America, this is that area that was directly to the right. You can see that it has been planted, it is kind of hard to see, but here is the row of pines that have been installed. That was the lay down yard that you saw.

This is the buffer on the left side coming in on the entrance road moving towards where the house was with the horses. Essentially, the fence was installed and some of the landscape is back behind this fence. If you remember there was some discussion about them installing interior to the fence.

This is the area right in front of the house. This is one of the areas that staff gave back to them and is somewhere that needs to be addressed because landscape is not visible to staff like it should have been.

This is an example of a buffer next to the stream. Staff was unable to find the pine seedlings that were supposed to be planted there. That was another comment that they received back from staff.

This is an example of a stream buffer; this was in South America. Those of you that were on the visit where we walked, if you remember, we came in off Highway 601, and went way to the back where the cul-de-sac was and then we exited the van. This is that particular area, so you can see there are still some bare spots, and some of this was related to erosion control occurring on the site.

This is an example of looking back towards South America. This is the first row of the arrays. This was the condition of the basins at the time that we visited the site. As you can see, they were not mowing the site because they were trying to let the weeds stabilize the site.

This an example of the condition of the basin that we saw, and their erosion control measures.

This kind of shows you what the natural grow pattern is on the site. We had Soil and Water Conservation staff go with us on our visit, because the first day we were out there we could not find the pine seedlings, so we wanted them to confirm.

All of this green vegetation is invasive, it is something called Dog Fennel, and something else called Sea Myrtle, all of that will die off. They are just weeds that pop up in the summer time.

This is another example of the stream buffer; it is all green now, but these are weeds.

This is an example of the growth inside the fence. This is the Dog Fennel and it was taller than me and Brent.

This is an example of again, the street buffer and the sediment to where it still had not been stabilized, partially stabilized, but not all of it.

Again, this is stabilization efforts, all of this is South America, and she showed more stabilization efforts.

This is an example of the buffer, if you remember the cul-de-sac area where the houses were next to in South America. The Board had some concerns about that area. It is planted like it should be but there is also this undergrowth.

This is some of the natural growth occurring on the site. It is starting to see some habitat reforming on the site now.

This is the buffer southside of South America coming up toward the wetland. That area was planted, and all this green is temporary, but they did put the buffer in this area like it was supposed to be.

This is the wetland areas. This is one of the comments that we sent back to them; we could not find the plantings here.

This is another picture of the wetlands area; we could not find the pine seedlings that were supposed to be here and again, all of this is temporary, invasive plants that came up on their own. She showed another example of that area.

This is by where the construction trailer was looking towards Mount Pleasant Road South.

This is in Mexico; this is the stream buffer; this is where the area that was not to be graded was graded. It is starting to grow back.

This is the natural growth along the trail coming down the west side of the property to Bost Creek.

This is an example of the Sea Myrtle; you can see that it is very green, and it is not part of the required plantings.

This is the area where the road was, they flagged the small seedlings for us in that area.

This is Bost Creek, looking North and you see the water looks a little clearer. But this was not a rain condition site visit. This is looking South of Bost Creek and this is the crossing area.

This is the area right next to where the construction trailer was.

This is an example of the pine that we were supposed to be able to determine through the other growth.

This is looking out toward the site from the entrance road. This is the buffer coming down the western side of the property and along Joyner. This is near the corner of Joyner and Mount Pleasant Road. You can see they have had some issues with erosion and plantings not staying.

This is the northern area, Canada, this area on the plan was shown to be planted but it was not. This is that same area, this is the primary entrance.

This is the buffer interior to the west side of the property, and you cannot see this from the road.

This is the buffer at Canada, this is the property to the east that has been logged and this is looking south on to Mount Pleasant. That gives you an idea of what is out there.

Ms. Morris said essentially, we went out there and we gave them the comments back to address. We told them it was the burden of the applicant to show that they had met the Ordinance. The pictures that are further along in your packet are the photos that they submitted saying that they had met the standards.

For example, this is there landscape contractor showing where the pines were. This is the plantings by the house we were talking about. They are saying that the plantings were there and then these are in South American, this was that area around the wetlands.

They contend that they have met all the requirements that staff gave back to them related to the landscape. One of the things that you will see in your packet is that the landscape plan that they negotiated with the Board is not what is exactly on site. You have an as built plan that is marked up with red text. (She will get to that in a minute)

As we walked the site, there were areas that were under planted, areas that were over planted and there were areas where they did not plant it at all. There were also a lot of substitutions that were made on the site. The Board talked a lot about Leyland Cypress and not using Leyland Cypress and Leyland Cypress is now all over the site. They did substitutions for the American Hollies.

As part of the discussion that we had with them, where we provided the comments back, we wanted to know what kind of impact those substitutions had on the glare study. So, in the Board packet you had initially, a letter from Burns McDonald, that letter was addressing the plant substitutions. Then you had an addendum to the glare study; that was addressing the vantage points in relation to the property to the east, up in Canada that have now been logged. It is visible now from Mount Pleasant Road, South.

It looked like the logging company went into their buffer because the buffer on the eastern side is very scant after that happened. In those two exhibits they are contending that the substitutions did not do anything to impact the glare study, and the conclusion is that the removal of the trees on the east side of Canada had no impact as far as glare

Ms. Morris said what they are asking the Board to decide this evening is to accept the documents. The Fire Marshal and NCDOT, those things are pretty cut and dry. They are asking the Board to accept the marked-up landscape plan, the as-built plan as the new plan for this project and to also accept the revised glare studies as official documents for the conditional use permit.

She will be happy to answer any questions the Board may have. Mr. Brett Hicks is also here if there are any questions about what we saw on site or what we observed.

She said this kind of took you in a trip around the site starting in South America, making your way north and then coming back down Mount Pleasant Road South.

The Chair said do we know when the second set of photos were taken.

Ms. Morris said they submitted that information to her Monday or Tuesday, she assumes that is when they were out there.

The Chair said staff has not responded to that information?

Ms. Morris said we have not been back to the site since receiving these photos.

She said this is the overall landscape plan. This is South America, and this is the wetland area where we could not identify the plantings. This is the cul-de-sac that she talked about where the river stream buffer was; this is the cu-de-sac where the houses are.

She said it is almost like when they went out there, there were different crews, because some of them immediately picked up on the patterns and they were there like they were supposed to be; others were not. This area right here is the area where they just did not install but they showed it on the plan.

If the Board remembers, we had multiple conversations with Kimley-Horn about not showing something on the plan if they could not install it. In this area there just is no room, in this area they went through the woods and put in trees. This is the area that the new glare study informs. This was the area with gaps, that the picture was taken of, and where nothing was planted. This is the area that I said you cannot see. This is everything that is visible from Mount Pleasant Road South. This is the Stewart property which we are not addressing as part of this, they negotiated a deal with Canadian Solar. This is where those rows of trees were, and this is the big open area that is now green mainly due to the evasive weeds.

Mr. Paxton said if you were a teacher grading this, they have not done what you told them to do. On a scale of one to ten what have they done, is it a five or an eight?

Ms. Morris does not know, because in some places they did what they were supposed to do and some places they did not. They made the substitutions, which were not preapproved. It was a surprise with the changes, when we went to the site the first time, we could not match the plan up with what was on the ground. We were like what is going on and then we figured out they substituted XYZ for ABC. They get an E for effort.

She does not know how many times they have been out there at this point.

They hired Metrolina, and one of the things you see in your packet is an eighteen-month maintenance contract. Each time we went out we would say you have all this stuff that is dead, they did come back and replace it. That is also part of the reasons why we had to do multiple site inspections.

You can see here, where they start talking about where they substituted and then in this area this is what is actually there. One of the comments we gave them back was that this was supposed to be planted and it is not; these trees were not here. There were some things that we could pick up on very easily based on the initial plan; but it just was not there.

The second iteration, this is the plan that we used when we went out to try to verify the as-built. This is the as-built plan, this is what is on the ground and then that study corresponds to that.

The last time we went out, we were focusing on the areas adjacent to residential properties, the wetlands, the stream buffers and the areas that were visible from the road. That is what we were really focusing on to see is anything close, do they still need to put plants in; what do they need to do.

She said the spreadsheet that is on the front there, the first iteration of that, is what staff did. They hired three different consultants to go out and check what was out there because those consultants could not even come up with the same numbers that staff did based on what was on the approved plan.

The last information that you have in these numbers were done by Stantec. Kimley-Horn was back out there, DEPCOM was back out there. This is what corresponds to that Stantec memo.

Ms. Holly Grimsley does not see where they gave reasons why they made the substitutions.

Ms. Morris said they really have not. It is kind of pointing the finger at the contractor and saying it is on your list, so it is fine. The other thing that we heard, not so much as it is on your list, is due to the size of the project they were having trouble sourcing things; the different plantings.

Ms. Grimsley said that is the reasoning? Do you feel like that is legitimate?

Ms. Morris feels like the contractor had a plan and they did not follow the plan. But they were consistent with the substitutions that they did make. So, where we see the Leyland Cypress now, is where the American Hollies were supposed to be. That is the most egregious substitution that they made was the Leyland Cypress for the American Hollies.

Ms. Grimsley said what percentage would you say that they made that substitution with?

Ms. Morris said they are all over the site. If you drive past you will see, they are everywhere; she does not know. The only thing that we kind of came to a number on was the first time when we were out there, we thought at least ten percent of it was dead. The second time when we went out it was about one percent. The maintenance and the health of the plantings increased; it was better, but as far as the plantings; they are where they are at this point.

Ms. Grimsley asked if Ms. Morris had direct contact with the contractor?

Ms. Morris said we have talked to the contractor, but we did not ask that question of the contractor.

Mr. Grimsley thinks we need to know what his reasoning is; he is ultimately responsible for the explanation.

Ms. Morris said when we went out there the first time, Canadian Solar was not even aware that those substitutions had been done. DEPCOM is in charge of the contractor, and they have the contract with them. The maintenance agreement was actually executed by DEPCOM.

Mr. Andrew Nance asked if they planted any American Holly or has it all substituted?

Ms. Morris said there are some American Hollies. She showed the areas that have hollies. We started at Canada first and this is where we first noticed the cypress. She showed where the hollies were supposed to be and said a lot of that now is cypress. In the woods they planted hollies. She said along the road; the cypress is everywhere; the hollies are there. There was an American holly plus there was another holly (she does not remember what it was). The American Holly was supposed to function sort of like a small tree. There are hollies, but they are not American Hollies.

This pattern that is here, these were hollies and black spruce. There was not a lot of substitutions for the shrubs. There were some substitutions on the trees but if it was supposed to be like a white birch, it was another tree that was on their list that they had already set.

Mr. Paxton asked why is it so bad that they put Leyland's instead of the hollies? Is it because of the height the width?

Ms. Morris said they did the substitution and it is on the list. They were not following the plan that the Board approved. Typically, if a contractor needs to do a substitution, they will talk to us first. In this case they did not talk with us.

The Board had conversations about not wanting to have Leyland Cypress out there because they do not do well; but that was never made a condition of the approval. The cypress is on the list and they said it is on the list, so they substituted like for like. Some people may think they are similar, some people may not, which is why we asked them to check in on the glare-study.

The glare-study was looking at the approved landscape plan and how it functioned in relation to those panels and where they were at during a specific time of the day.

Mr. Nance said just to make sure that he understands, staff has not had a chance to confirm that this as-built is correct. We are currently just trusting the three outside consultants.

Ms. Morris said no, we used this plan the last time that we did a site visit, but those areas that I pointed out that we were not able to identify as planted, those are the pictures that they provided in their information to say no, it is planted; the pine trees are there, here are the plantings around the wetlands.

Ms. Morris said you can see we are trying to walk through stuff that is this tall, to find something is difficult at best.

The Chair asked Mr. Richard Koch, County Attorney, if we deny this, their course of action is to comply? Is there any enforcement?

Mr. Koch said you have already approved the amendment to the permit. He supposes we would have to approach it from the point of view as getting them to comply with what was approved, and that would become an enforcement action. He thinks a couple of things that bear on this is, there is a warranty concerning the landscape that they have. We also negotiated a bond for anything that is dead or needs to be replaced. There are those issues that help to make sure that we still have a buffer out there.

When she talks about the width, she is talking about the Cabarrus County Ordinance width. They did do substitutions without the County's knowledge. He said what was talked about in the meeting was never made a requirement of the permit. He guesses they felt like they could be successful choosing from our list without asking because it was kind of approved in the Ordinance. It was not discussed and is what they found when they went out there and looked at it.

Where we are right now, we have a couple of problems to deal with; one is that they could not come here tonight to defend what they have done and to say what is actually out there, because the last time staff was out there was July, right?

Ms. Morris said the staff pictures are from July and they were working to try to address staff's comments since July.

Mr. Koch said from the point of view of just enforcement it would be a nightmare to deal with. Then you have to decide whether it is really worth it; whether the substitutions make that much difference and whether you believe that they have filled in those areas where there was no landscaping in those areas that Ms. Morris pointed out.

He said they are not here to able to defend what they have done since. Ms. Morris and I and other staff have been dealing with this every month since it was last before the Board, trying to get this thing in a shape where we can just be finished with it.

He said if the Board does not feel that we are finished with it, if that is not the way you look at it, as it has been presented to you. What he would say and what you might want to do is, continue this matter until we can get them down here to defend what they have done. He thinks that might be the most appropriate and fair thing for them.

He is not trying to take their side in this. He is trying to look at it from the point of view of the County. Do we really want to take on some substitutions on the landscape plan, particularly things that are actually on our approved list? Whether they really made a difference out there or not he cannot tell you. Whether they affected the glare-study in a way that makes a problem out there, he cannot tell you that either. He said that comes back to this Board for you to decide.

He said if the Board's feelings are that they have not complied well enough with the permit amendment that you did, then you may want to deal with those issues. He thinks the appropriate thing to do is to continue it and let them come in and defend it. He does not think the County is in a position to do that and that is not our job to do that. He thinks that would be the only fair thing, plus he thinks it would be better for the County to see where that is rather than staff having to take this thing on as an enforcement matter on these issues.

He said some of the stuff that we were really concerned about it looks like they have done. He said like the roads, the driveway permit, the stuff in the stream, a lot of those things which were issues, it seems like they have come through on most of that, at least from what he can see and from what Ms. Morris is describing.

Obviously, the landscape plan is not exactly what they presented to you and how that affects the glare is the other part of the issue. As Ms. Morris pointed out, the original permit dealt with the Stewart's because of the way their property cuts into the site and of course they went out and negotiated their own deal as Ms. Morris pointed out. He does not think we need to be worried about that. He thinks they have taken care of their own issues, so it is just what is left in the other areas.

Mr. Koch said to sum it all up, we do not want to have this thing become a big enforcement problem for the County. We have already invested plenty of time in it from the staff point of view. We would like to see it come to an end. But, if the Board does not think that you can do that tonight, the thing to do would be to continue it until we can get Mr. Al Jansen in here or whoever else that is needed in order to be able to deal with the issues that you still feel exist on this.

Mr. Stephen Wise said Mr. Koch mentioned a bond, is that a maintenance bond or do they have performance bond where they are trying to get their money back.

Mr. Koch negotiated that with their attorney. It is a bond concerning the landscape, basically to make sure that it catches, and that it grows. What we negotiated was 10 percent of the original price of doing all the landscaping which is \$350,000.00. It is a like a performance bond, it would work like that.

That is on the other side of the maintenance contract they have. It was to make sure that we have some sort of a way to deal with making sure we still had the buffer and the plantings that we are supposed to. We have that for the future that we have worked out; but now, we are dealing really with the present.

Mr. Wise said they still have some skin in the game in the future to get that bond back. Right now, they do not need what he calls a CO from the County. They are selling energy right now so, there really is no heat for them to get this resolved is it?

Ms. Morris said because of the way that this was permitted through Building Inspections, they were able to get power. If the Board remembers, we put a hold on Canada, and it was not electrified until the Board approved the conditional use permit. The rest of the site was up and running, if you remember when we were out there, you could hear the inverters running. It was up and running and one small section in Canada was not. They have not to this point, been able to satisfy the conditions of the conditional use permit or obtain a certificate of compliance from zoning.

Like Mr. Koch said, the maintenance contract goes through September 2021. That is what is left on the maintenance contract. There are two conditions of approval that are proposed, one is that staff can visit the site to check for landscaping. The second is that they get that bond to us within 30 days of the Board saying that the closeout documents are fine.

If the Board remembers, back last May, they were supposed to have a bond in place. We still have not seen that bond. Their bond expired in February, the million-dollar bond that they gave us, and they never gave us anything else. The bond was supposed to be in place for the duration of the project to make sure it was installed.

Because we never received that, Mr. Koch has negotiated for that to happen at the end. When the closeout documents happen, they have to provide it within 30 days, and they have agreed that it will be good for two years. The bond will extend a little bit past the maintenance agreement.

Mr. Wise said that is \$350,000?

Mr. Koch said it is ten percent of the total cost of the plantings which seemed like a fair amount at this point. Obviously, the bond would not need to be for the full amount.

Mr. Paxton said if we defer any action tonight what happens in the interim, it just sits there, and nothing happens?

Ms. Morris said there is no staff action required at this point unless we want to go and verify the pictures that they sent. But knowing the site as well as we do, we know where the pictures were taken. She feels like those pictures are an adequate representation at that point in time when they submitted them. She that is one of the owners of Metrolina that is out there on that site and who is in that picture.

Ms. Holly Grimsley asked Mr. Koch if it is okay that the bond has expired. She understands that they are going to reinforce it, but she is thinking that is a problem.

Mr. Koch said that bond was actually a part of a stop gap interim thing that they proposed when the Board still had not approved anything. They came in after and sort of volunteered to give that to us. That is where that came from and as Ms. Morris said, it did expire. He said it really does not matter until we get the things to a point where we are going to be dealing with it as an approved project, then we do need to have a new bond in place. Until we get to that point, he does not think it really matters because they do not have the final approvals.

He said the bond that Mr. James Gittens, their attorney, and I have been talking about would go into place at the same time as the final approval.

Ms. Morris does not know if the Board remembers us talking about it before, but one day Phil and I got in the mail a bond for a million dollars, and we said what is this for? They said that is a good faith effort to show that we intend to complete the project. We did not ask for that bond, it just showed up, but then it did expire. So, that is the bond that we were talking about as part of CUP conditions of approval

The Chair asked if we continue this tonight, do we still need to go through the public hearing?

Mr. Koch said yes.

The Chair opened the public hearing for Petition CUSE2018-00004 - Close out documents for the amendment to CUSE2017-00001, Conditional Use Permit for Public Service Facility (Solar Farm). There being no one present to speak for or against the petition, the Chair closed the public hearing and opened the floor for open discussion.

The Chair feels like we cared about one thing on this site and that was the landscaping. We talked about existing vegetation and then within a short period of time we bulldozed the existing vegetation and then we negotiated this seemingly comparable plan to put this replacement vegetation in and it feels like now, we still are not there.

It troubles him that indeed some of these areas that are missing, right; we can talk about replacement and he thinks we will, but some of these areas that are apparently still missing. He thinks the Board, multiple times sent a message loud and clear on what we expected. He thinks the Board was more than accommodating under the situation that we were put in as well as alarming, to allow those repairs to occur and the idea that here we are potentially; they are asking us to say it is all good.

What do we think about replacements and substitutions, is that a big deal to you as well?

Mr. Pinto said does not know about their placements, he was just thinking about Adam would say. He knows that he cannot stand the cypress, that they do fail, they grow too fast, they are weak. He does not like then either and he would rather stick with the holly.

He does not know what you do about the stuff that has not been planted, but it needs to be taken care of; that is his opinion. How do you ask somebody else to do something, and you do not ask the person who is supposed to do it and has not done it? How do you expect that somebody else will; they have to finish.

Mr. Koch said usually, in these situations there is a direct connection between the landscaper and the person who owns the property so that you do not run into any issues about who is supposed to be doing what.

He is not trying to defend them, but here we had a situation where Canadian Solar bought this project from McBride. McBride already had the contract to build the thing with DEPCOM, and so, it was DEPCOM who took down the landscaping around the Stewart property that kind of brought this thing to a head in the early days. They are the ones who messed that up, and of course they are blaming it on everybody else.

He said Kimley Horn and Metrolina work for DEPCOM. They do not work for Canadian Solar, so they have very little control over what they do. That is not what we usually run into and he thinks is part of what has created some of the problems on this project, is that there wasn't a straight contractual relationship to get all this stuff down and done.

We ran into that in a number of situations where we were trying to get Kimley Horn to do this or that or trying to get other things done. We would go to Canadian Solar and say why can't this be done, and they would say we do not have any control over them, and Kimberly Horn and DEPCOM would not do anything. So, they did have some of those issues.

He said DEPCOM and Canadian Solar are in litigation over this project. We are not involved in that and he does not know all of the details and really does not want to know. Part of it comes from what happened in the course of the history of the project and what DEPCOM did particularly in the very beginning, when they did not pay any attention to the original conditional use permit, which had the provisions in it to look out for the Stewart property, if you recall. He said that was specifically mentioned in the original permit, and they just kind of ignored it and just moved out all that buffer that was supposed to be there.

Mr. Koch is not trying to take a side, but it is a factor in this situation that does affect just being able to get stuff done. The bottom line is, maybe it has not been done. Ms. Morris looked at the pictures and she knows this project much better on the ground than he does. Whether those pictures really show what they have done or what they were supposed to do, he has no idea.

Ms. Morris said just for the record we did re-advertise and re-notice this. We had three people call. One was a new adjacent property owner, adjacent to South America and was not even aware that there was solar farm located behind her property.

The other one was part of Vanderbilt Estates, and his question was more about whether the property could be used for anything else. When Ms. Morris said there was a 20-year contract, he wanted to know if there was any chance that something could potentially happen to the contract. Ms. Morris told him based on the financial investment, probably not and that solar may be around and it may not be around. Currently, in other countries they maintain the arrays and replace it with the most updated technology at the time and that it could be there longer than 20 years.

The other call was from Tal McBride, who is the property owner and one of the original applicants; Five M's. He wanted to know what was going on. This goes back to what Mr. Koch was talking about. As the property owner, he did not even know that anything was going on with the property until he got the letter from us and then he wanted to know what was going on.

She said there does not seem to be a lot of communication, there seems to be a lot of moving parts, a lot of different owners/representatives. He also mentioned ongoing litigation with multiple parties related to this site.

Mr. Paxton said if we do not want it to be an enforcement issue for the County, then we really have no choice but to wait; to defer the answer tonight and see how long it takes.

The Chair said what would it take to get to the point where you could stand up and say, Staff feels that what they have done is complete? What would it take to get there? Do you think one more site visit to verify what they sent us?

He personally would feel much more comfortable, with all that we have been through to know that Staff is comfortable that they are close enough.

Ms. Morris said based on our visits and being at the site, yes, they did the substitutions but, in the areas where there is residential, if the cypress remains healthy, right now it is providing some screening for the residential properties.

Initially, she does know if the Board remembers driving by the site. They put down wood chips, so it looked much more like a commercial site. If they do not maintain those exterior buffers, there are going to be volunteer plants and trees and different things that come up, and eventually it will go back to be a wooded buffer.

She said based on the condition of the property when we were out there, she does not think they intend to maintain those exterior buffers. They have O&M, but they are mainly mowing interior to the site.

It is kind of a double edge sword; they follow the ordinance they do the pretty patterns because they had a landscape architect. If you drive down Mount Pleasant Road South, you cannot see a bit of it. The only thing you see is what is sticking up above all those weeds that are out there.

As far as, are they compliant, she thinks it gets back to or not they are meeting the intent, even though they did the substitutions. This is a 700-acre site; when we get out there, we have to get our bearings, then we have to figure out which plants are which.

The one area on the west side where they did not plant the plants, it is woods. But, Kimley Horn showed plantings on the edge of the woods and they just did not install them because they said this does not make sense. We asked repeatedly for them to go back and fix the plan to say where it was installed and where it was not.

It is like Mr. Koch said, we get the we cannot do that, we do not have the contract with Kimley Horn. That is when they got Stantec and Kimley Horn to go out to count; after we counted and told them what was missing, to go back and count what was there. Because the first attempt to go back, we thought from the get-go it was not right.

Ms. Morris said she does not know; short of the Board telling them to do the substitutions, to go plant trees in the woods, what else happens?

The Canada piece, where they planted them in the woods, that made sense because there were adjacent property owners very close, including someone that had a swimming pool. On the western side it is woods, there is nobody right there; it is not impacting anybody but that is what Kimley Horn shows on the plan.

We do not have any plan that represents where those areas were not planted. They just provided that Table. You see on that table, there are some notes that says plantings not in this area. But it is like the whole entire western buffer; not saying in this specific area. That is something we have to figure out on site. She does not know if that answers the question or not.

The Chair said it does, he is just frustrated of the length of time they have made this last; presumably could get them off the hook because everything they cleared is now six-foot weeds; that is his heartburn. But, does it meet the intent, that is a valid question.

Ms. Morris said if the Board wants to put eyes on it, we could always ask to do a site visit or something like that if that is something the Board would want to do. Or, if you want to have a conversation with Canadian Solar about how or what happened.

From a staff level, short of going out to verify the pictures, she does not know that there is much more that we can do because we are bumping up against this DEPCOM owns the plan and control the plans and I am going to fix the plans. This is it; this is what is there, this is what we have and this is what they want to be considered as the drawings and plans for the project.

Mr. Wise said you mentioned there is a part that has no COC, right? They cannot use the arrays at this time.

Ms. Morris said no, they have CO's from building, they have final inspections and power on everything. What they do not have is their Zoning Certificate of Compliance. They cannot get that until all this is worked out.

Mr. Wise said they are using the all the arrays and everything.

Ms. Morris said absolutely, and they have been.

Mr. Wise said 750 acres is in full operation, what skin in the game do they have that is hurting them right now? Everything is good except for the maintenance bond. They do not really have to have anything from the County at this time; like a business would have to have a CO to open up. They are open in my mind, so this could go on even if we do make a field trip

Ms. Morris said they have been open per se, and they were open last year.

Mr. Wise said it is a little different situation than a business, where plants were planted in an easier fashion and handicap spaces; that is the world he lives in. You all are counting 700 acres of plants, it is almost impossible if you are relying on consultants to say that it has been done, but nobody is giving you the full story.

Ms. Morris said no we are not. She said we counted all plants.

Mr. Wise said you counted all 750 acres.

Ms. Morris said we counted all these plants. She said they did not even know that there was substitutes. They called us for their final, we gave them comments back; that it was not planted per the plan and there is stuff that is not planted. Canadian Solar did not even know that, and Canadian Solar has been working since that visit, December of last year, to try to figure out what is out there and make corrections as needed. They did go back and do some plantings, since our visit in December, but all of the plantings are not there.

She said we physically spent over three days out there counting trees. She cannot begin to tell how much time we have spent in the field, at the project, on the phone, in meetings on this project. This has been going on for five years now.

Ms. Grimsley feels like they deal with this world a lot with building inspections. If they truly are, as Mr. Wise said open, there is nothing that is impacting them in a negative capacity because they are operating, they are moving, they are doing what they need to do.

If we are moving toward final documents, she feels like we need to say you are in final documents, and this is what you need to do to comply now. If you know how many or a percentage or whatever piece of that landscape; they are either there or they are not there. If they are there, they either there in the number or they are not. If they made substitutions and they are acceptable then fine, if they are not then we need to tell them what that is.

Her thought would be if the wooded area is okay, then fine, if it is not, then we will have to say so. The areas that are not in compliance that are bare or needs some plants, we just need to tell them that. She feels like we have to make a pick list and say this is where you are, and this is where you need to be, and this is what you have to have, and that bond is one of them. Normally, they do not let bonds expire; people just do not do that. That bothers her just with the statement being made. Is that a priority now Mr. Koch, probably not? She said them making a statement that they have done that and not thinking to renew it.

She said so, where are we? We just need to make a pick list that says this is where you comply, this is where you don't, this is what we expect and here is where you are in your final documents; because they are in operation, and usually we do not get to do that.

Ms. Morris said we have done that seven or eight times.

Ms. Grimsley thinks we are at a lull here of what we need to say. This is a mess, really.

Ms. Morris said they are asking for the Board to approve this as built document, that shows the plantings that are out there. But for the ones that are on the west side that are not there, she has shown the area on Joyner where it is not there. She does not know if they are going to do anything else.

Ms. Grimsley thinks it is time for this Board to decide if we are okay with that.

The Chair said if we continue this, is there a subset of us that would be willing to go out there with the idea of not counting plants (because he does not have three days) but looking at it from an intent standpoint. We know what we were trying to do, and we know exactly what we were out to get

He wants this done too, but at the same time he feels like they agreed to play by the rules and then they rewrote the rules, so we agreed to change the rules and here again, we are being asked to change the rules again. Are they really going to do anything, do they have too; to them this all over?

As stupid as this may sound, he thinks the integrity of this Board is what we are talking about. Do we really mean what we said? He knows there is a lot of ramifications to that, but it just really troubles him. Maybe the intent is that, but he does not think a picture pointing in one direction of a guy pointing to a tree necessarily satisfies the intent.

Mr. Stephen Wise said when was our last trip out there.

Ms. Morris said it was January 2019. The Fire Marshal's office had not been back to this site until September 2020, from our initial visit.

She said Canadian Solar has already flipped this project. They do not own this project anymore. They are simply trying to do what they need to do to close out the project. They will be taking over O & M which was supposed to happen in October. DEPCOM will not be on site anymore. There is a new company called NEK.

Mr. Andrew Nance said to Mr. Pinto and Mr. Corley's point early, he thinks it is going to be tough for us to enforce this in the future on other projects, if we do not hold their feet to the fire on this.

Mr. Paxton said how are we going to hold their feet to the fire.

Mr. Nance said that is a great question.

The Chair said if this had been a five-acre site they would have planted the bushes and they would have been done. He gets the challenges of this scale, from a staff standpoint and a contract and the complexities of who owns what and who is doing what, he gets that, but he frankly does not know that he cares. He does not care what the challenges were. We told them what they had to do, and they agreed to what they had to do in order for this Board to issue a permit for them to even build this thing.

He feels much better about his vote, just me, if he could go and see some of those spots and know in his mind that the intent of what we voted on last time was indeed met. That is his personal feeling and where is at.

Mr. Brett Rockett understands the complexity of this project and he understand it adds to the difficulty, but it is not a reasonable enough excuse to him because ultimately, anybody who is the owner or operator of a property, it is ultimately your responsibility who you let on that site. So, to say that so and so hired so and so that hired so and so, it is still your property, your project, your responsibility, and your name on the line.

He said the specificity of this plan was intentional because of the hardiness and density of those things that were chosen. So, that is frustrating, but maybe there is some potential for leeway there. But to just

totally back off of areas because they made an internal decision or a vendor of a vendor of a vendor made a decision that it was not necessary, he thinks is falling short of the intent of what was decided from this Board.

At this point the excuses of the difficulty of the site, they bit it off and so now they have to chew it. It is their responsibility to get this to a point that suffices. He will understand the decision of the Board either way, but it would be awfully difficult with as little as we see and know right now.

He agrees with the comment that Mr. Koch made earlier about this little problem that we are facing called COVID, and how quickly they would be able to come here to present to us and talk to us.

He hates to keep kicking this can down the preverbal road here, but he thinks at some point it would be worthwhile to have their representative standing in front of us again, explaining why they have made changes to the plan that they made changes to, that they changed to begin with, because they did not comply from the very beginning.

One hiccup is one thing but for this to continually go on over and over again and for us to stand here again with the specificity that was provide to them. He said hire a contractor that can meet it or go find someone else. He does not know another way to say that, and he does not know all the parties involved and he does not intend to hurt anyone's feelings, but if you cannot do the work do not take it.

Ms. Grimsley said as a person who has to comply with a lot of permits and the State and requirements here, she agrees with Mr. Corley. She thinks some of us or whoever feels comfortable need to go out there and put our eyes on this. She trusts the staff when they say that there are parts and pieces that are not in the plan; that is just not acceptable. What we do with that may be different but just to hear staff say that there are some pieces that are not even acceptable, that is a problem.

The Chair agrees with what Ms. Grimsley said earlier, about getting to a tangible list. Should it be up to us to get to that list, probably not. But he thinks that for some of us, if not all of us, we are at the point where we are willing to put in a little work to get to that list. It may be just one little stretch that we may be concerned about and it may not be a big deal or maybe that it is all good.

Ms. Grimsley said them having a representative here is not going to happen for a while, that is not going to take place, with their location, that is not going to be. She is not so sure it will make a whole lot of difference; they are either in compliance or they are not, and their excuses are going to be what they are; fix it. She has to fix stuff that is not in compliance when it happens. If they cannot fix it then what their substitution may be, if that is acceptable to us that is great, but we need to know what that is and if we are okay with it.

She does not want to set a precedence here that we treated them one way and let something happen and that get out there and then all of a sudden, we have everybody out there going you don't comply with this one and you don't comply with that one and now we have all these substitutions. She does not like to start that, and she feels like that list was pretty vast on movement that we made for them.

She is more than willing to go out there and look at it, to at least get the ball rolling because she does not feel like they are going to be able to come any time soon.

Mr. Nance does site plans all the time where the owner does not necessarily want to do the required landscaping, but that does not alleviate them from having to do so. He thinks Ms. Grimsley makes a good point to where we are probably beyond trying to gather quantitative data and just qualitative at this point. He would also be comfortable with going out there to look.

Ms. Holly asked if the Chair could assign a portion of us or all of us and set a time frame with Staff for us to do that?

The Chair what we are talking about then is continuing until the Board, or a subset there of, can have a chance to visit the site.

He said to Mr. Rockett that he would love to have them standing here too, but maybe this is a good first step, knowing the challenges that they have right now, maybe we make a good faith effort on our own to try to get us to a manageable set of things or maybe it is all good; that is certainly out there, and then reconsider maybe in January and hopefully that visit has taken place.

Ms. Morris said some of that growth that we experienced in July may not be there now. We do have Canadian Solar and the new company; we have representatives, we can still access the site. She is sure if the Board wants to do a site visit, they would accommodate that.

Canadian Solar has other representatives in the states, it just is not the people that have been working on this particular project. Mr. Jansen can enter the US if he fly's in. He currently just cannot drive across the border into Michigan to fly in and then when he goes back, he would have to quarantine. But, with the current circumstances, if that is what the Board chooses to do, then it is their choice whether they have a representative here for that site visit.

She feels like Staff can get the Board around on the site and show you the particular areas where it wasn't installed and where the plan is different or where the plantings and the as-built is different from what you actually see in front of you, because that is not necessarily representative of what is in ground.

The Chair said what he is hearing is a general willingness of a handful of us to do that. He thinks that will get us a little further down the road and closer to something. He said that may be all that we need, is to get that comfort level.

He said not to state the obvious, but he feels they put us in this situation, to where we doubt a lot and we question a lot. So, we will go out there and look at it and see for ourselves and if we are happy, then let's move forward.

The Chair asked if they were any other discussion or comments. There being none he asked Mr. Koch if the motion would be to continue until January?

Mr. Koch said yes, continue to the January meeting and the other part would be if you are going to have the whole Board go out there or maybe just a committee. He said you would need to have that on the record also.

The Chair asked if everyone was interested. We can do four without any trouble, right?

Ms. Morris said remember last time we had to advertise and notice and all of that; so, four or less volunteers.

The Chair asked the Board what they thought about four. Do we want to try multiple groups of four? The complexity of organizing that is a little heavier. He asked who was interested in going.

All Board members raised their hands.

He said Mr. Pinto you are going no matter what.

Ms. Grimsley said she will back out if you want to leave it at four.

The Chair assumes Mr. Dagenhart would want to go. He said maybe two groups of four; that would give us eight. He said let's plan on that and we will coordinate who will go on which day.

The Chair said the motion would be to continue this case until the January 2021, pending a site visit by the Board.

Mr. Chris Pinto **MOTIONED, SECONDED** by Andrew Nance to **CONTINUE** the meeting for CUSE2018-00004 – Close out documents for amendment to CUSE2017-00001, Conditional Use Permit for Public Service Facility (Solar Farm) until January 2021, pending a site visit by the Board. The vote was unanimous.

New Business – Planning Board Function:

The Chair introduced TEXT2020-00001 – Proposed text amendments to comply with the Statutory requirements of 160D.

Ms. Morris said she knows that this looks like a lot if you look at the number of pages; there are 273 pages. That does not mean that we are not amending 273 pages of the text. She put together a memo to walk the Board through this and we will go through the memo.

The majority of these changes are required by 160D, which we have been discussing for probably the last year. But there was a surprise thrown our way in the last session with the legislators. Initially, the original deadline for local governments to implement the changes was January 1, 2021; then it was amended to July 2020. At that time, the legislation extended the implementation date to July 1, 2021, due to the pandemic, but then they also made it effective immediately.

She said if that sounds a little confusing, that is because it is. They gave us a directive to update our ordinances, make sure we are meeting the statutory changes, update land use plans by 2022, everything that had to happen, and then they decided to go ahead and make it effective now.

She said 160D is in effective now, so if somebody were to come in and wanted to do something that was in 160D that was not addressed in our Ordinance we would have the statute to look back to. However, we are required to go through an update our ordinance.

She will explain what is happening with the chapters. Again, most of it is related to 106D; it looks like a lot, it is not really a lot because we keep up with court cases and decisions and react to them as the

Compliance Inspection Report

Permit: SW3170403 **Effective:** 07/25/18 **Expiration:**

Project: NC 102 Project LLC Solar Farm

Owner: NC 102 Project LLC

County: Cabarrus

Address: 9375 US Hwy 601 S

Region: Mooresville

City/State/Zip: Midland NC 28107

Contact Person: Greg Patzer

Title:

Phone: 602-739-0590

Directions to Project:

entrance to breaker station (entrance #2) is on mt. pleasant rd, 2.12 miles north of its intersection with route 601 and 0.70 miles south of its intersection with route 1190, joyner road, entrance #1 is on route 601, opposite its intersection

Type of Project: State Stormwater - Low Density

Drain Areas:

On-Site Representative(s):

Related Permits:

Inspection Date: 10/12/2021

Entry Time: 01:00PM

Exit Time: 02:30PM

Primary Inspector: Kenny Llywelyn

Phone:

Secondary Inspector(s):

Reason for Inspection: Other

Inspection Type: Compliance Evaluation

Permit Inspection Type: State Stormwater

Facility Status: Compliant Not Compliant

Question Areas:

State Stormwater

(See attachment summary)

Permit: SW3170403

Owner - Project: NC 102 Project LLC

Inspection Date: 10/12/2021

Inspection Type: Compliance Evaluation

Reason for Visit: Other

Inspection Summary:

Site inspection performed per the request of Cabarrus County. The site has recently repaired some outfalls located to the south of the site that discharges into a perennial stream. The areas have been seeded and mulched with straw. This repaired area and other areas throughout the site will need to be maintained and monitored until the area is fully stabilized and vegetation is established.

SW Measures

Yes No NA NE

Are the SW measures constructed as per the approved plans?

Are the inlets located per the approved plans?

Are the outlet structures located per the approved plans?

Comment: Vegetated channels are not stabilized per the approved plan.

File Review

Yes No NA NE

Is the permit active?

Signed copy of the Engineer’s certification is in the file?

Signed copy of the Operation & Maintenance Agreement is in the file?

Copy of the recorded deed restrictions is in the file?

Comment:

Built Upon Area

Yes No NA NE

Is the site BUA constructed as per the permit and approval plans?

Is the drainage area as per the permit and approved plans?

Is the BUA (as permitted) graded such that the runoff drains to the system?

Comment:

Other WQ Issues

Yes No NA NE

Is the site compliant with other water quality issues as noted during the inspection?

Comment:

Operation and Maintenance

Yes No NA NE

Are the SW measures being maintained and operated as per the permit requirements?

Are the SW BMP inspection and maintenance records complete and available for review or provided to DWQ upon request?

Comment: There are many areas throughout the site that are bare with little no vegetation. Vegetation is to be maintained per the approved plan.

Other Permit Conditions

Yes No NA NE

Is the site compliant with other conditions of the permit?

Comment:

NC 102 Solar Facility Update Report

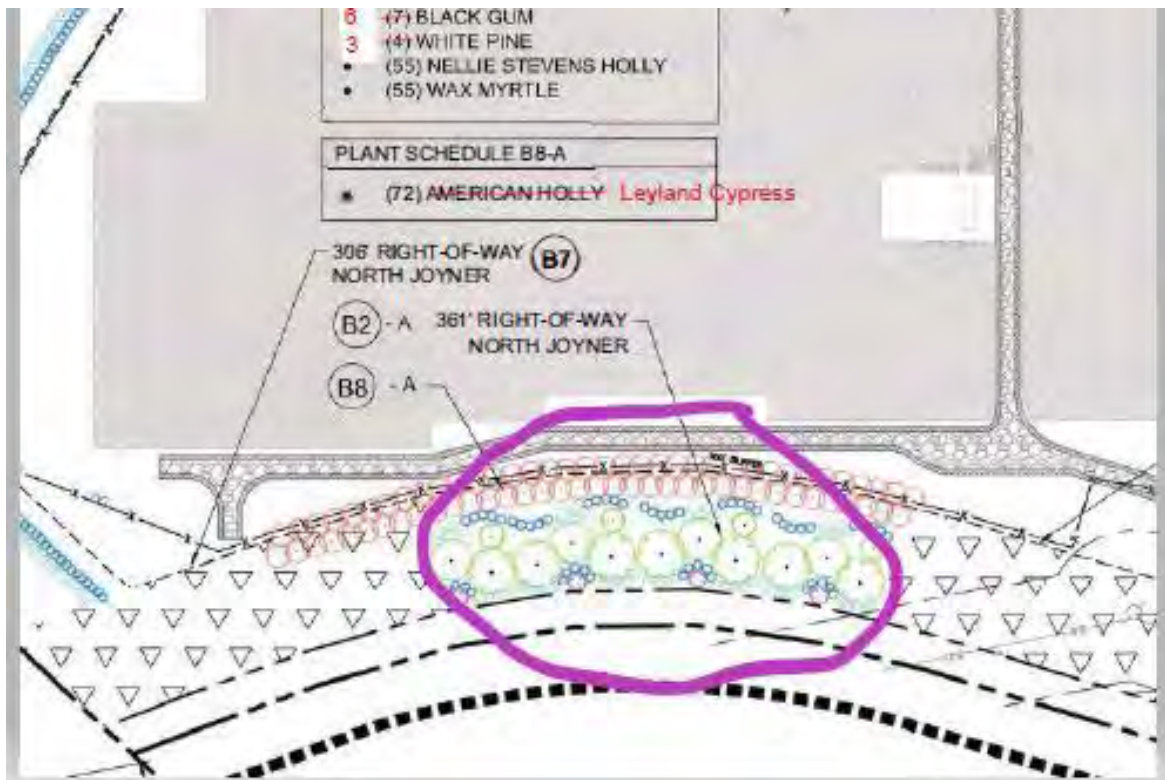
May 29, 2021

At this time the NC 102 Solar Facility continues to work towards closing out the remaining Landscaping and site stabilization items which were presented in a memo dated December 14, 2020, titled "Planning and Zoning Commission Committee Member Site Visit- December 2, 2020". The project has completed the replanting and flagging of seedlings within the Stream/Wetland Body Buffers. The additional planting along Joyner Road and at the Horse Corral will be completed in the week of June 7, 2021. The site stabilization work is scheduled to be completed the week of June 21, 2021.

This memo suggested the following action items:

1. B2-A Supplemental Buffer

The gap area along Joyner Road needs to be planted. The Committee is willing to allow plantings that are consistent with the existing Loblolly Pine buffer to be substituted for the plantings shown on the plan. CCSWCD Staff recommends these be planted at 8 x 10 spacing.



NC 102 will plant 30 additional American Holly at a height of 10 feet in this gap area. This will supplement the previous planting done against the fence line. To be completed week of June 7, 2021

2. B8-J Elective Understory Tree Buffer

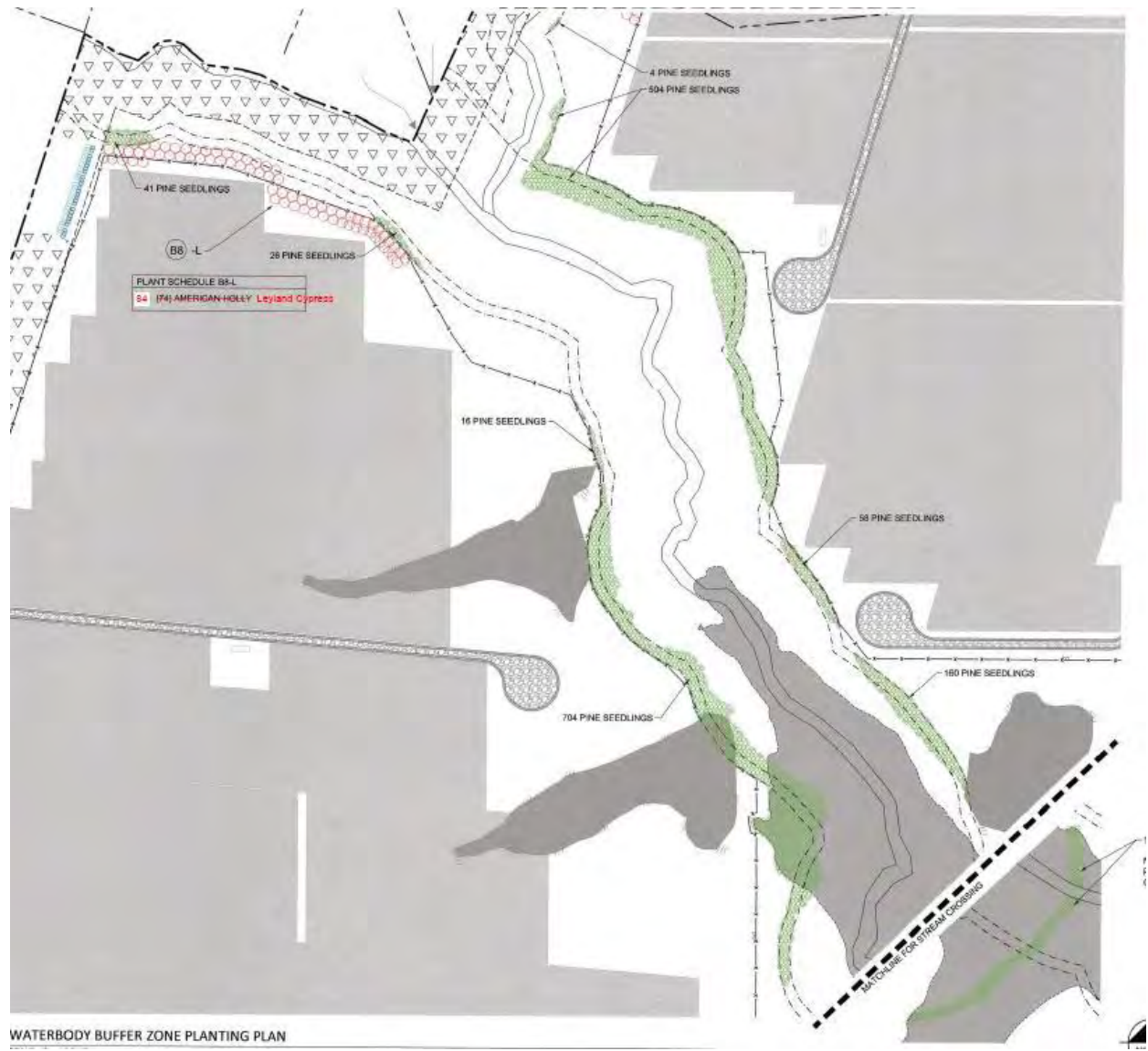
Left side of access road where house is adjacent to fence. This area needs to be planted a minimum of 60 feet on either side of the corner post. The Committee is willing to allow additional Leyland Cypress to be used in this area to create an evergreen buffer for the residential property. Plantings should be installed interior to the fence on the solar farm side to allow appropriate room for growth.



NC 102 will plant 32 additional Leyland Cypress at a height of 8 to 10 feet along the interior of the fence line. To be completed week of June 7, 2021.

3. Stream/Wetland and Floodplain Restoration Areas – Green areas on plan

Additional evidence needs to be provided that the pine seedlings were planted in accordance with the planting schedule throughout the entire restoration area. Plantings should be flagged, and a series of photos provided for the green areas shown on the plan above. The Committee would like for county staff members to visit the site once the plants are flagged in all the stream/floodplain restoration areas to confirm planting at the proper density and per the approved CCSWCD Restoration Plan.



NC 102 has replanted 1725 Loblolly Seedlings these areas and has flagged all replanted trees plus added flags to previously planted seedlings. In total approximately 2500 flags have been deployed. Evidence of this work is provided in the series of photographs attached.

Stream/Wetland Buffer Restoration.









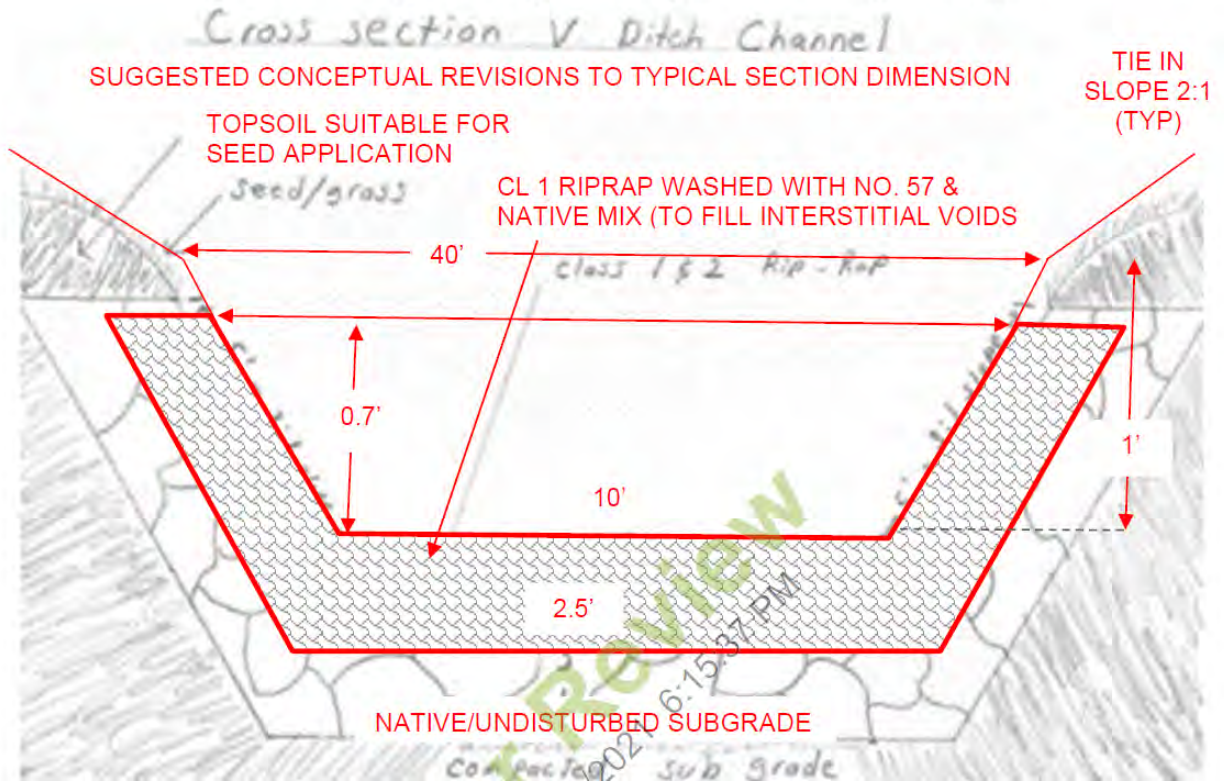
4. South America Drainage Basins

Drainage basin areas, need to be seeded and stabilized. Pictures below are of the basin in South America where excessive mulch has been installed. CCSWCD Staff suggests using Kentucky 31 Fescue covered with straw to prevent washout. Mulch needs to be removed from these areas prior to seeding.



In follow up dialogue it was indicated that there were 2 primary areas of concern. The NC 102 project intends to clean up these areas and install RipRap lined V Ditch Channels in these locations, see detail below. Additionally, a Technical Memorandum has been provided by Stantec to further detail this work.

Figure 2 – Suggested design considerations (dimension)



To: Al Jansen
Canadian Solar Solutions Inc.
545 Speedvale Ave. West
Guelph, ON N1K 1E6

From: Joshua B. Gilman, PE, D.WRE
2127 Ayrley Town Boulevard, Ste. 300
Charlotte, NC 28273

File: 172610032 NC102 ADM 3 - Technical Closeout Assistance
Date: May 28, 2021

Reference: Technical Memorandum – Design Review Summary

J. Gilman (Stantec engineer) attended the project site to collect existing conditions data (topographic, alignment, slope, etc.) Using this data, Stantec then developed an approximate existing conditions surface, Stantec then reviewed the currently proposed concept design (by others, refer to Attachment A), herein referred to as “modified conveyances”, specifically those carrying flows into and out of former sediment basins “#11” and “#12”, per previous Grading and EC Plan Sheet C5.9 (also by others).

Stantec performed **hydrology calculations** of peak flow events of interest (2-, 10-, 25-, 50-, and 100-yr) using the standard Rational Method (Attachment C). Results are summarized in Table 1 and are consistent with that performed by others (Blackwell Engineering dated February 27, 2018).

Table 1 - Calculated Peak Flow

Q (cfs) = C _r IA	SB11	SB12
Q _{2-year}	82	105
Q _{5-year}	107	137
Q _{10-year}	122	159
Q _{25-year}	157	204
Q _{50-year}	188	245
Q _{100-year}	216	280

Stantec then evaluated **hydraulic performance** of the provided modified conveyances using Manning’s equation and assumed normal depth of flow for the proposed concept for the range of calculated peak flows. Based on sketched planform data (horizontal alignment) provided in Attachment A and collected field data, Stantec approximated the proposed profile (vertical alignment) from which corresponding slopes were estimated, ranging up to 12%. Based on experience, it is probable that the proposed conveyance will not require armor (riprap) for slopes less than 2.5%. Stantec evaluated the hydraulic performance of the provided typical section only for slopes between 5% - 12% (Attachment D).

Following review of the results, Stantec offers the following evaluation of appropriateness (hydraulic stability) of the proposed modified conveyances:

- Overall, the dimension of **the proposed modified conveyance is oversized**. The range of peak flows remains confined within the channel and overtopping of the banks is not likely. That said, the depth of the proposed modified conveyance (currently 5’) **could be reduced** to less than 2’, pending other modifications to geometry, and the **depth of the placed material could be reduced from 3’ down to 2.5’**.
- For conveyance slopes of < 3% **natural channel functions can be introduced/restored, and the use of rip rap eliminated**.
- For slopes of 5% or less, the hydraulic performance output indicates an average shear stress between 2.25 lbs/ft² and 3.65 lbs/ft². Based on the Grain Diameter vs. Shear Stress curve

(Attachment D, Rosgen 1996), the Shields' data (flume studies, uniform gradation) predicts larger material than the Rosgen data (empirical field data, varying/diverse gradation). This difference is

- largely due to "hiding" function associated with a good bed matrix (more evenly graded). Based on the non-uniform nature of Rip Rap and construction experience, **the proposed modified conveyance bed material (CL 1 RIPRAP WASHED WITH NO. 57 & NATIVE MIX TO FILL INTERSTITIAL VOIDS) is acceptable for slopes < 5%.**
- For slopes up to 12%, the hydraulic performance output indicates an average shear stress between 4.12 lbs/ft² to 7.11 lbs/ft². Because only data are available from the Rosgen data set, we can only predict stone size without considering Shields' data. Again, based on the non-uniform nature of Rip Rap and construction experience, **the suggested modified conveyance bed material (CL 1 RIPRAP WASHED WITH NO. 57 & NATIVE MIX TO FILL INTERSTITIAL VOIDS) is acceptable for slopes between 5% - 12%, but additional measures, such as boulder sills may be considered for location specific placement.**

Suggested revisions to the currently proposed modified conveyance include the above suggestions (modify section, modify extent of placement, introduce natural channel functions) and the below schematic (Figures 1A, 1B, and 2). If elected, some or all of these suggestions could be implemented in the field, possibly reducing stone/earthwork costs.

Figure 1A – SB11 Suggested design considerations (planform)

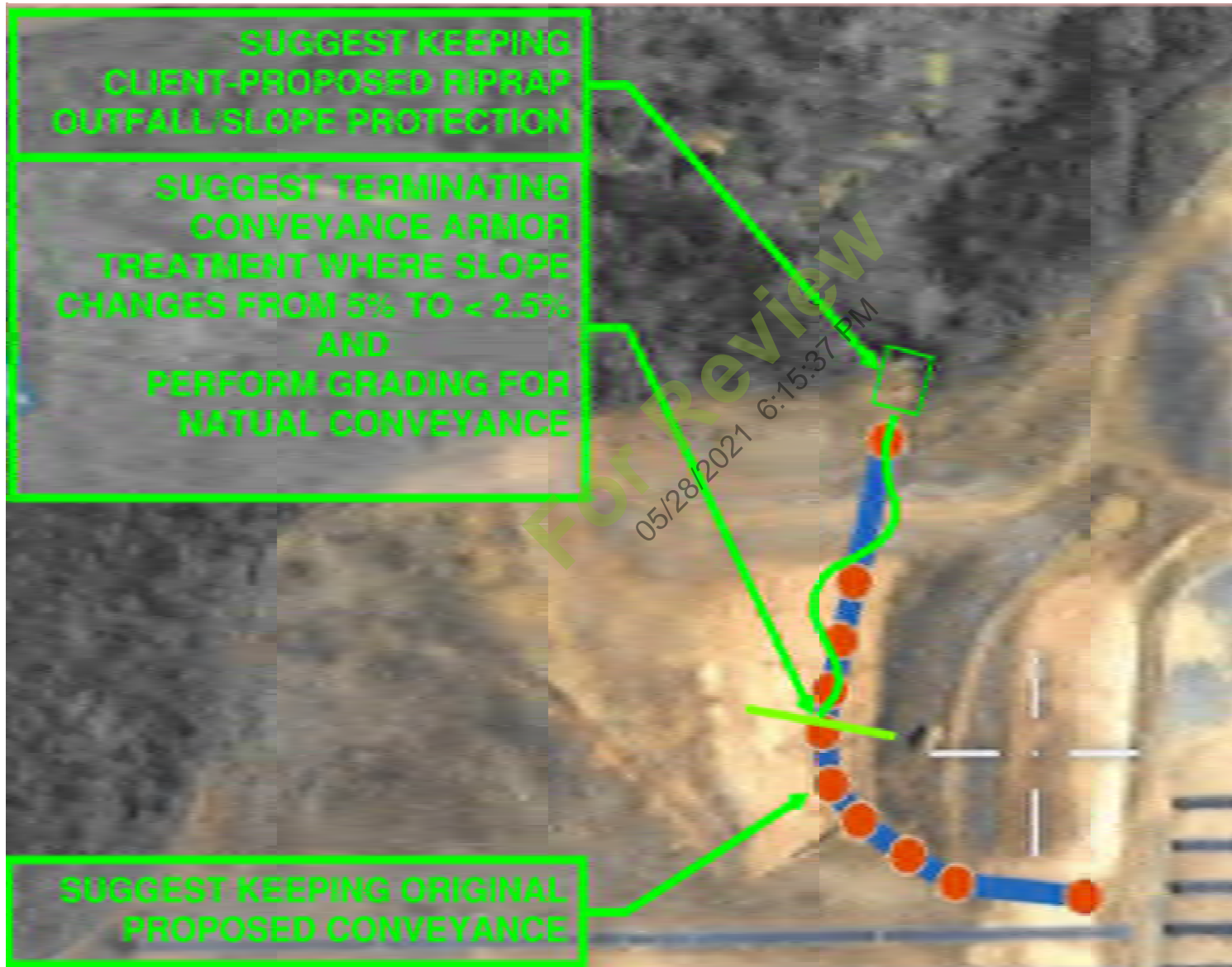


Figure 1B – SB12Suggested design considerations (planform)

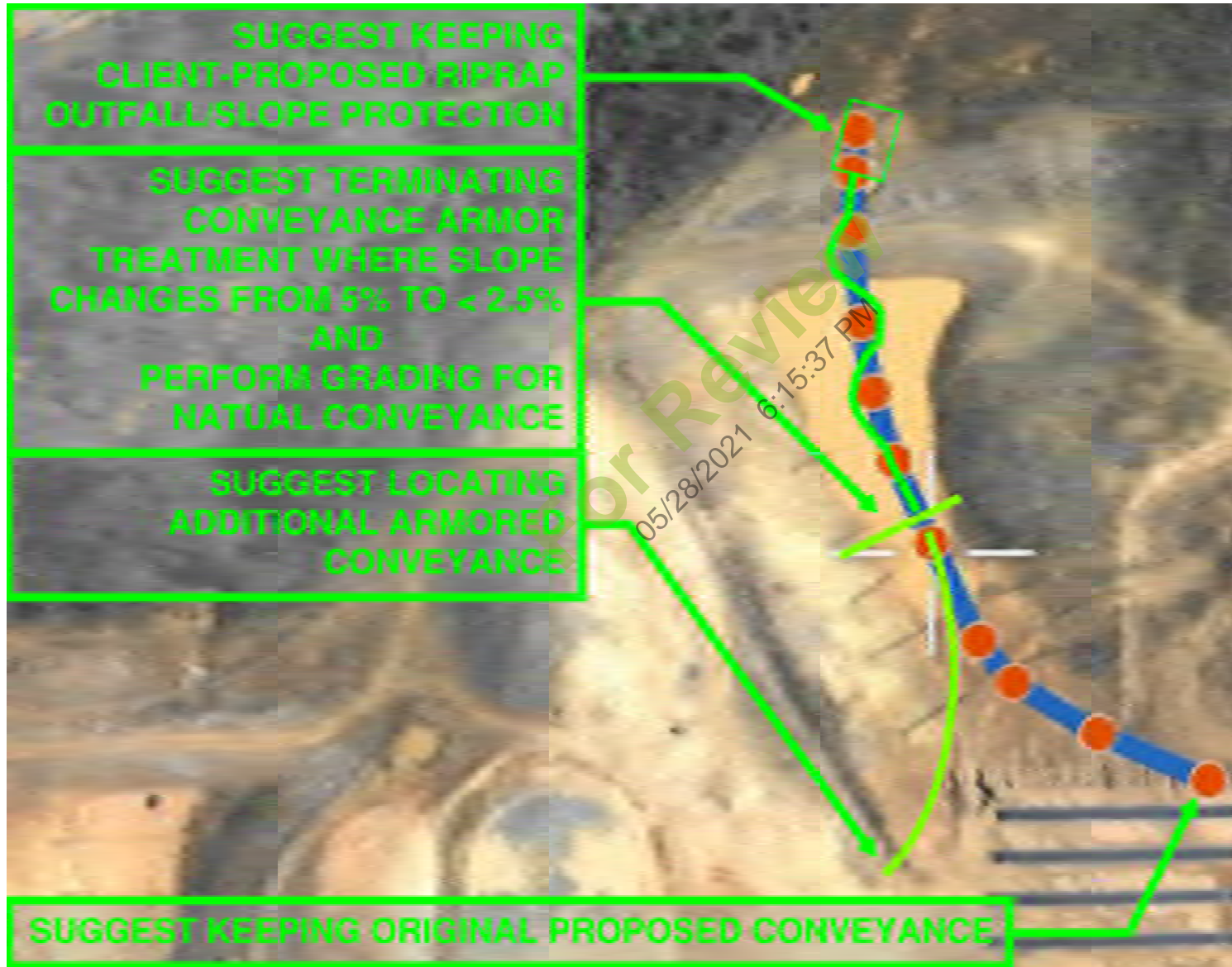
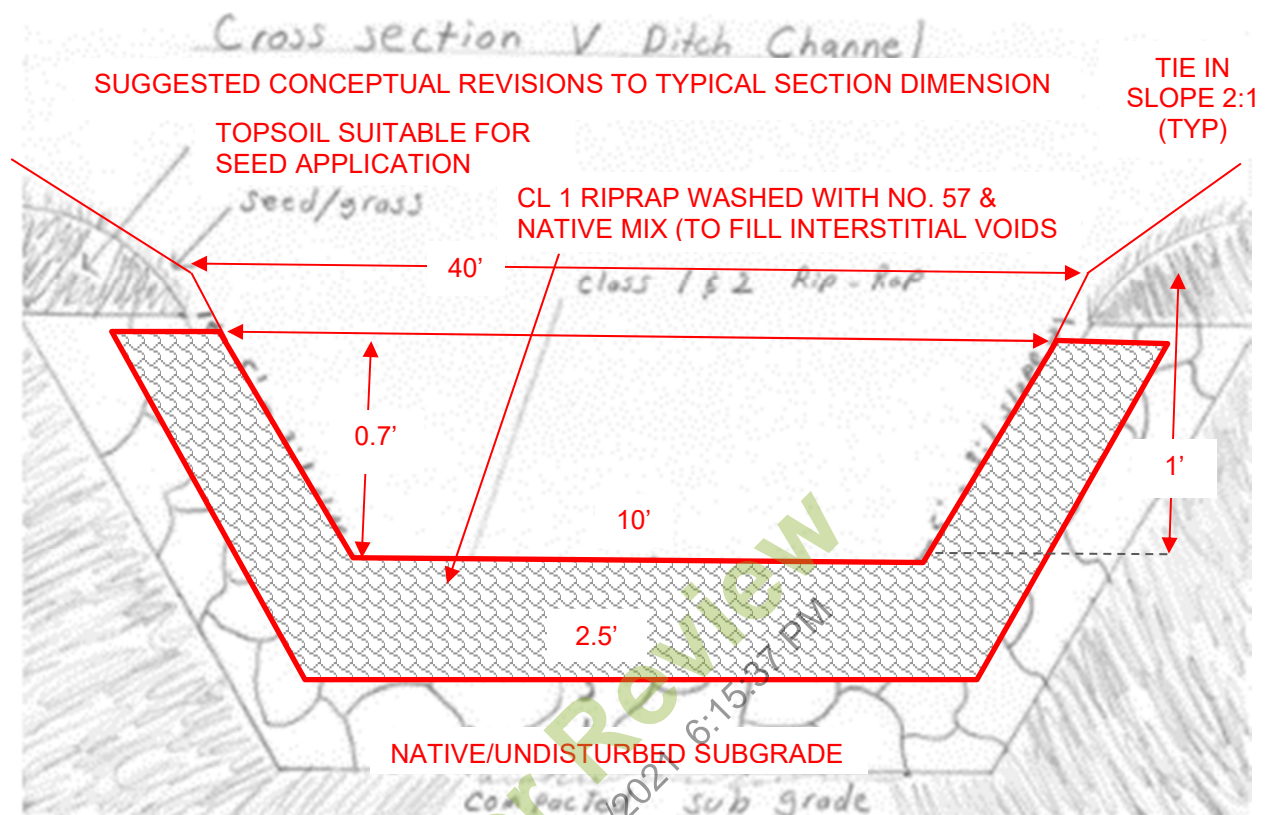


Figure 2 – Suggested design considerations (dimension)



The next steps include:

1. Owner to evaluate the suggested design considerations (contacting Stantec as needed), coordinate desired changes between the owner and the contractor, and establish an agreement between the owner and the contractor of work elected to be performed.
2. Stantec to attend a site preconstruction meeting to discuss directly with the owner and contractor scope of work to be performed.
3. During construction, Stantec to: 1) intermittently (up to 4 site visits) attend the site, 2) provide technical support of field adjustments, as determined by the owner (refer to step 1.), and 3) provide closeout communication, following completion/approval of work by owner.

As always, please feel free to contact us anytime for any reason.

Stantec Consulting Services

Joshua B. Gilman PE, D.WRE

Email: josh.gilman@stantec.com

Phone: 704 808 0116

Attachment: Attachments A – D (18 pages)

c. Amber Coleman, PWS & Nick Ronan, PE (Stantec)

ATTACHMENT A - PROPOSED
CONCEPT CONVEYANCE DESIGN (BY
OTHERS)

For Review
05/28/2021 6:15:37 PM

Gilman, Josh

From: Al Jansen <Al.Jansen@canadiansolar.com>
Sent: Wednesday, March 10, 2021 11:26 AM
To: Gilman, Josh; Coleman, Amber
Subject: RE: NC102 Close out tracking
Attachments: NC 102 V DITCH.pdf

Amber,

In regard to the NC102 project – do you have any funds remaining in the task order? If so are you able to support a small civil engineering exercise? We have 2 locations in the South America portion of the project where the Count is still requiring some work. In discussion with Bost Contracting we have come up with a stabilized “V” ditch approach, we are seeking an opinion and some high level design support.

Al Jansen
Senior Construction Manager, Construction Management, EPC



Canadian Solar Solutions Inc.
545 Speedvale Ave. West, Guelph, ON, N1K 1E6
Tel: +1 519 837 1881 | Mobile: +1 925 394 6564

This message is directed in confidence solely to the addressee(s) named above. This message contains privileged and/or confidential information, which is not to be disclosed to any third party. If you are not an intended recipient of this message or an authorized representative thereof, please contact the undersigned and then destroy this message as well as all existing copies. Any utilization of this message by a person other than an intended recipient hereof is strictly forbidden.

From: Gilman, Josh <Josh.Gilman@stantec.com>
Sent: October 9, 2020 10:50 AM
To: Don Ling <don.ling@canadiansolar.com>; Al Jansen <Al.Jansen@canadiansolar.com>
Cc: Coleman, Amber <amber.coleman@stantec.com>; Ebner, Derek <Derek.Ebner@stantec.com>
Subject: RE: NC102 Close out tracking - 09/22/2020 ESC observation (NCDEQ)

Caution: External Mail

This email originated from outside the organization. Do not click on links or open attachments unless you recognize the sender and know the content is safe

Don and Al,

I'm VERY glad to “see” that we're out of the woods. Keep us posted with any **follow-up actions**, as needed. I hope that we can **stay in touch** regarding this and any other potential **current/future opportunities** to serve.

Stay well,

Josh Gilman, PE, D.WRE
Associate
Senior Water Resources Engineer

NOTE: THE FOLLOWING FIGURES (WITHIN ATTACHMENT A) WERE SOURCED FROM ATTACHMENTS TO THE ORIGINAL ABOVE-REFERENCED EMAIL, AND ARE INCLUDED HEREIN, AS BASIS FOR REVIEW .

NC 102 V DITCH CHANNEL CONSTRUCTION

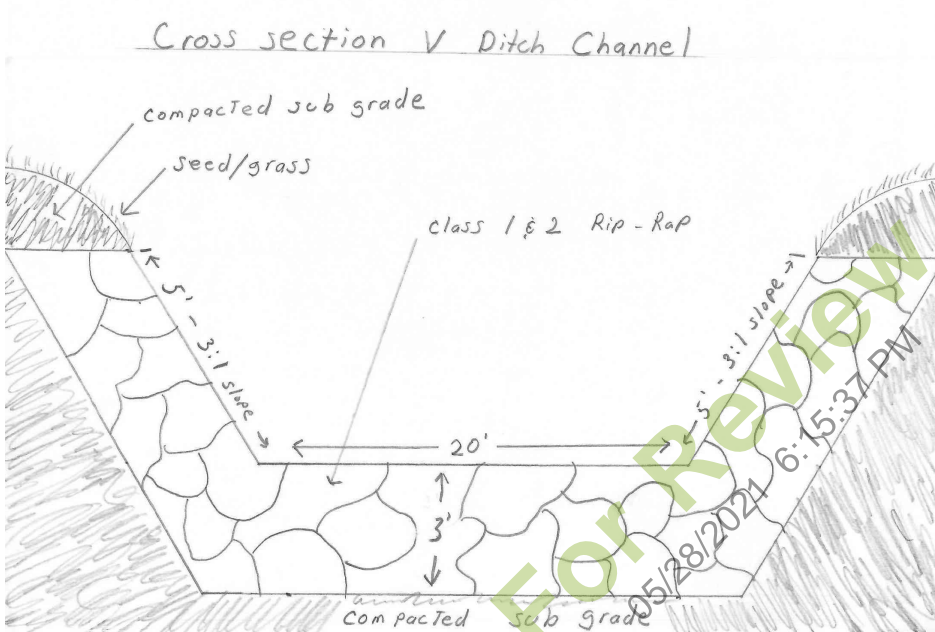
CONFIRM ORIGINAL DESIGN
WITH CLIENT/CONTRACTOR

JOB DESCRIPTION

ESTIMATED 1'000 LF X 20' W DEFINED CHANNEL
EXCAVATE WELL DEFINED CHANNEL TO MINUM 5' DEPTH
INSTALL CLASS 2 RIP-RAP (150lb 200lb) MIXED WITH CLASS B
RIP-RAP (football size) TO FILL VOIDS
FINE GRADE EARTH WORK TO BEST FIT EXSITING CONTOURS
SEED AND MULCH DISTURBED AREAS WITHIN CONSTRUCTION AREAS

TOTAL JOB

\$273,000.00



ATTACHMENT B - ORIGINAL DESIGN
HYDROLOGY (BY OTHERS)

For Review
05/28/2021 6:15:37 PM

Carabbus County North Carolina

Engineering Manual
For
McBride Place Energy, LLC Solar Farm
Erosion Control & Drainage Calcs

Revised February 22, 2018

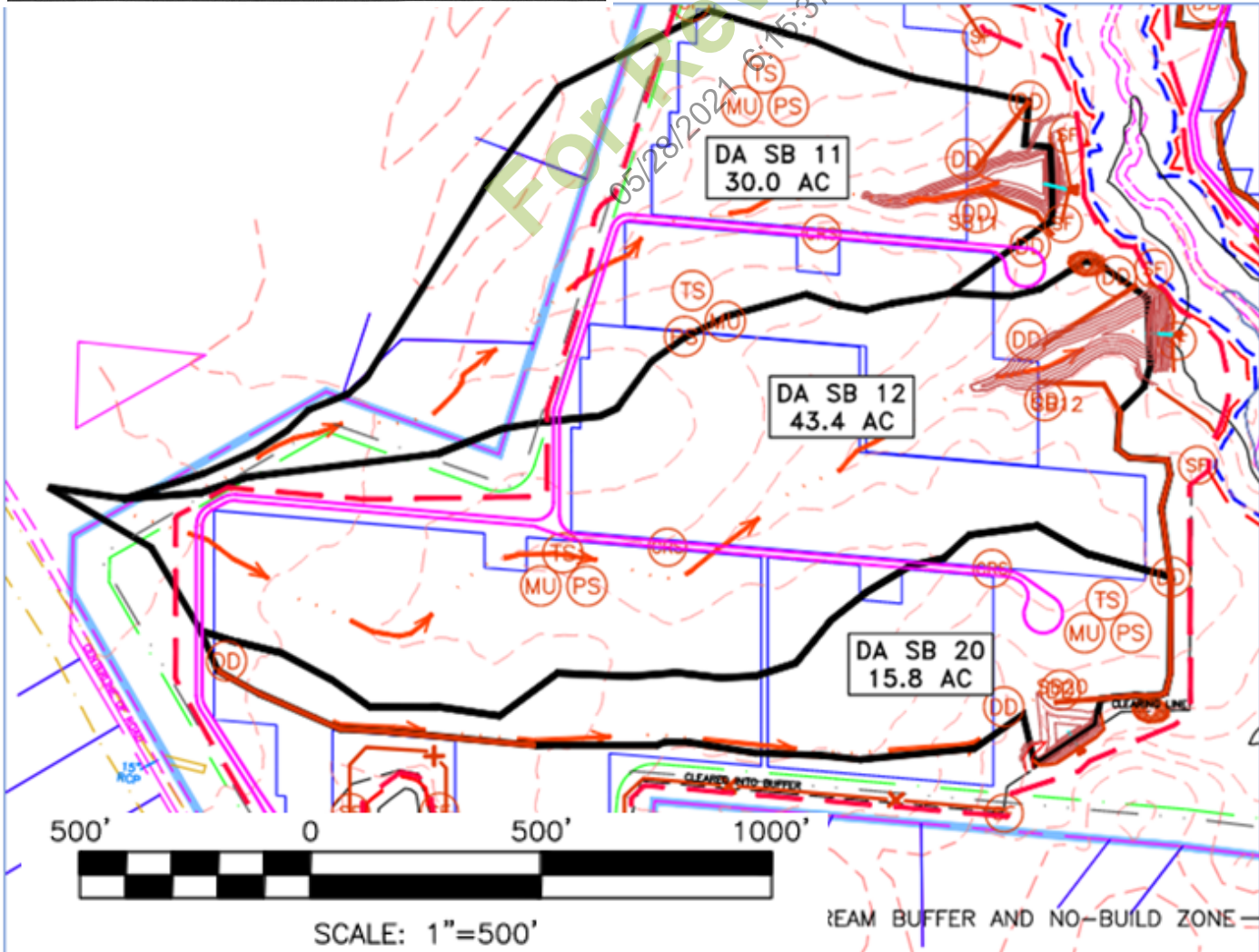


Blackwell Engineering PLC

B 566 East Market Street
Harrisonburg, VA 22801
Ph. (540) 432-9555 Fax (540) 434-7604
Blackwellengineering.com

BE # 2377

NOTE: THE FOLLOWING INFORMATION WAS ACQUIRED FROM PREVIOUS WORK, BY OTHERS (BLACKWELL ENGINEERING, 2018)



Revision Dates
4-25-17 COUNTY
5-10-17 COUNTY
1-8-18 NCEG
2-7-18 CEPCOM
2018 REV SHEET
2018 REV SHEET

Drawing No.
6
of 12 Sheets

Job No.	2377
---------	------

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

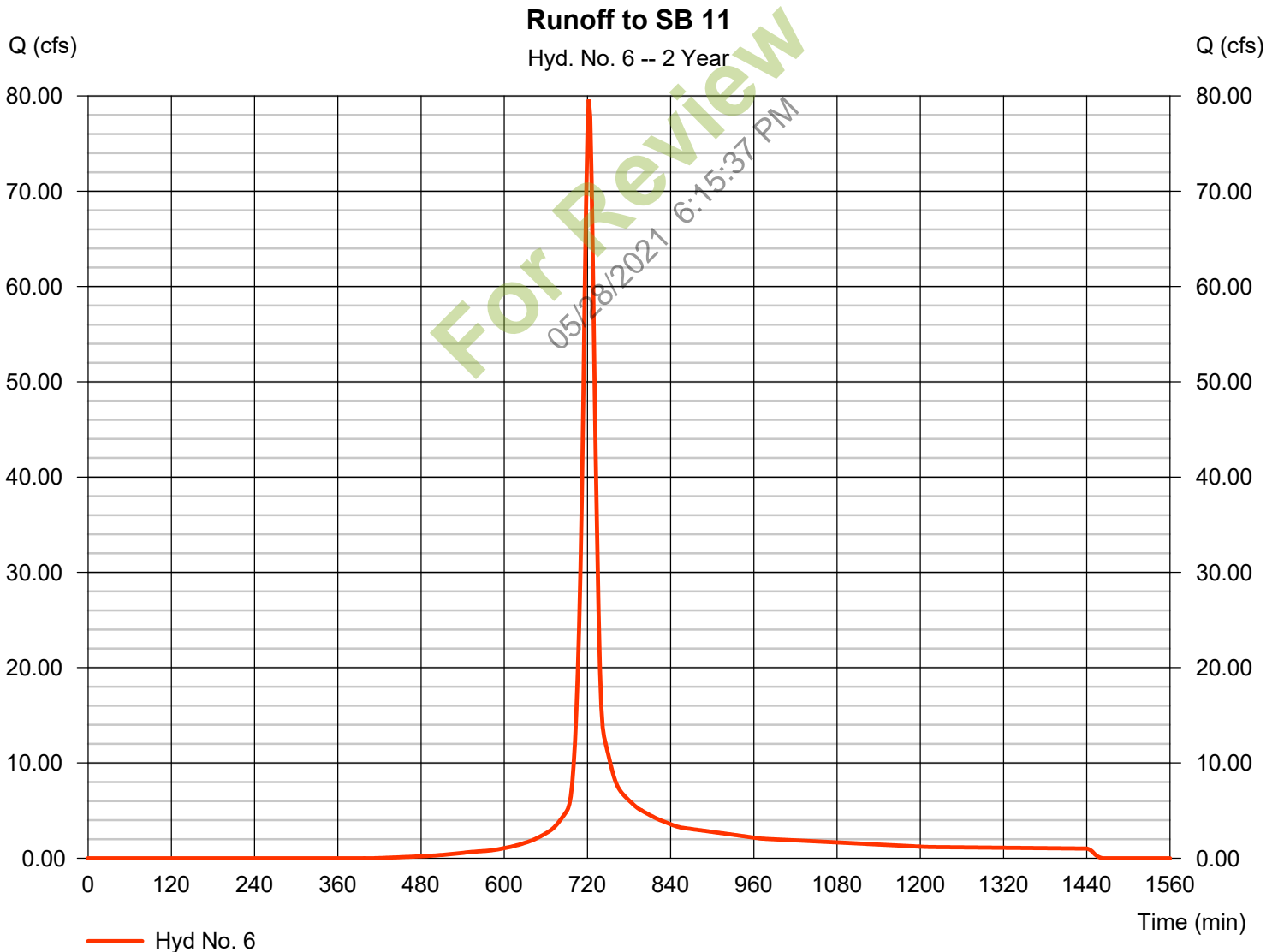
Friday, 01 / 5 / 2018

Hyd. No. 6

Runoff to SB 11

Hydrograph type	= SCS Runoff	Peak discharge	= 79.62 cfs
Storm frequency	= 2 yrs	Time to peak	= 722 min
Time interval	= 2 min	Hyd. volume	= 223,737 cuft
Drainage area	= 30.000 ac	Curve number	= 86*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.60 min
Total precip.	= 3.51 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(11.400 x 80) + (18.600 x 90)] / 30.000



Hydrograph Report

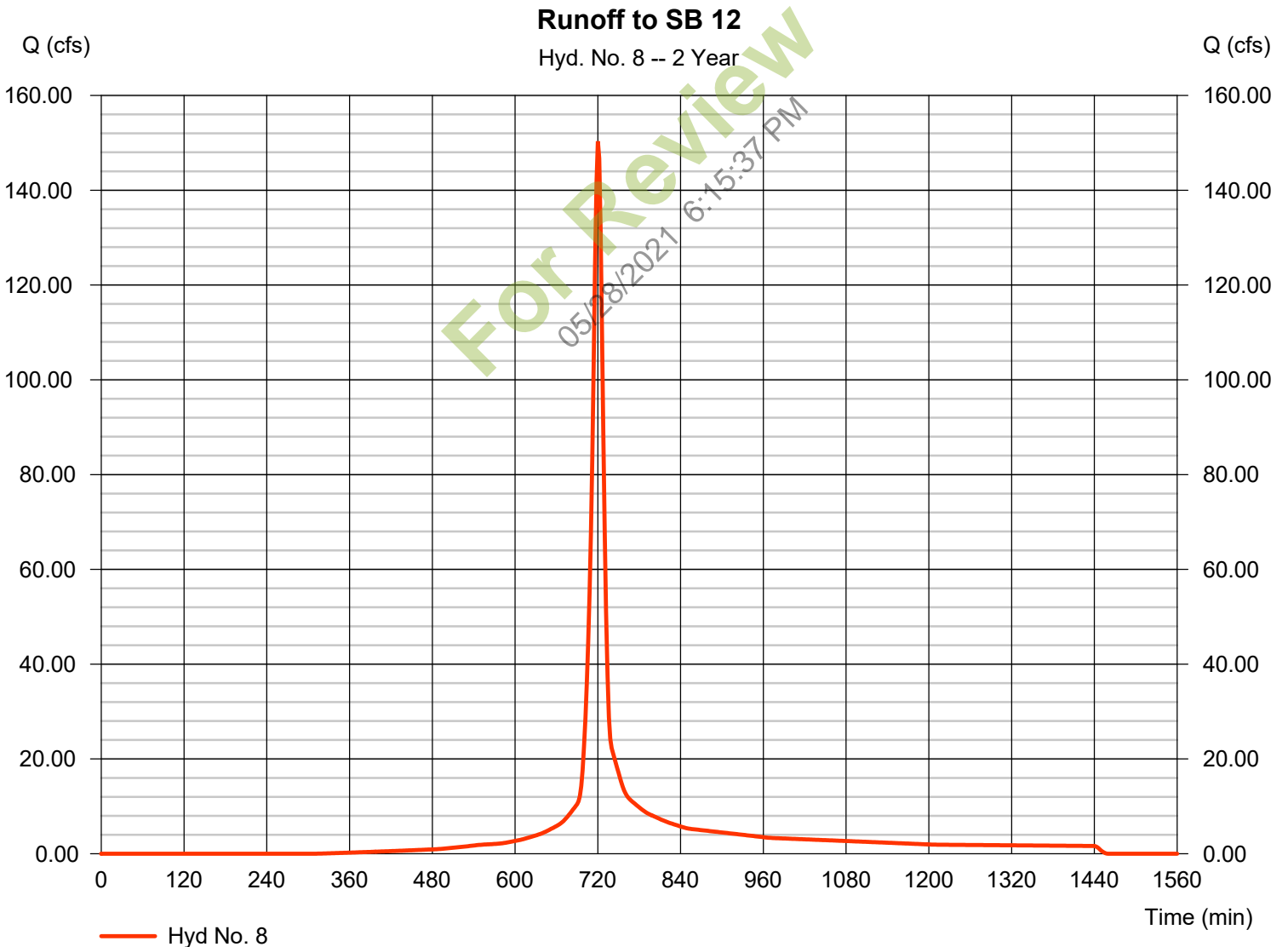
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Friday, 01 / 5 / 2018

Hyd. No. 8

Runoff to SB 12

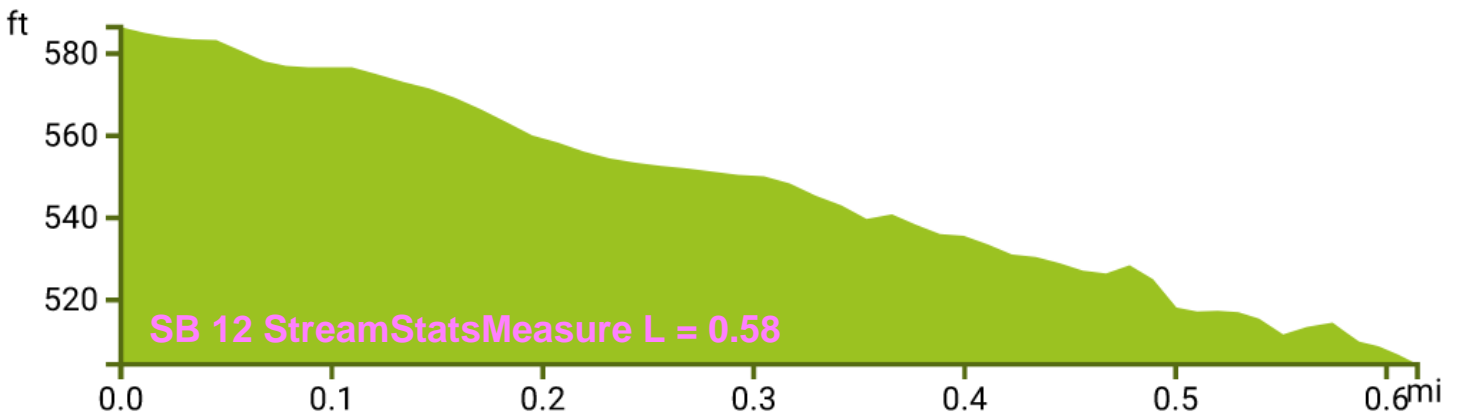
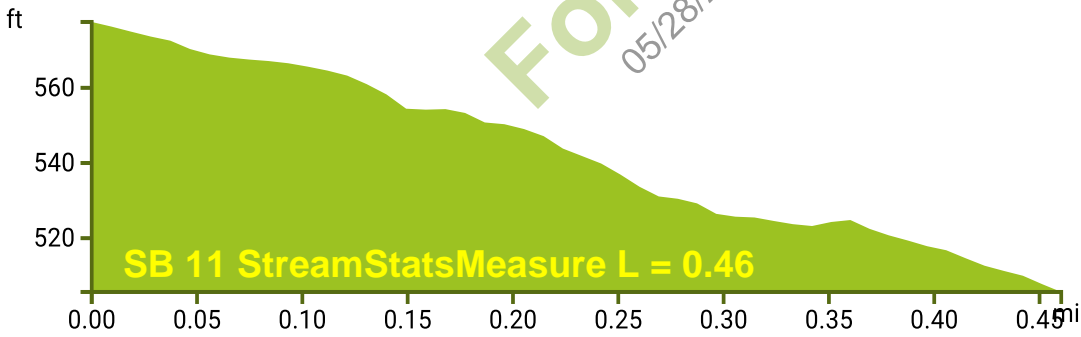
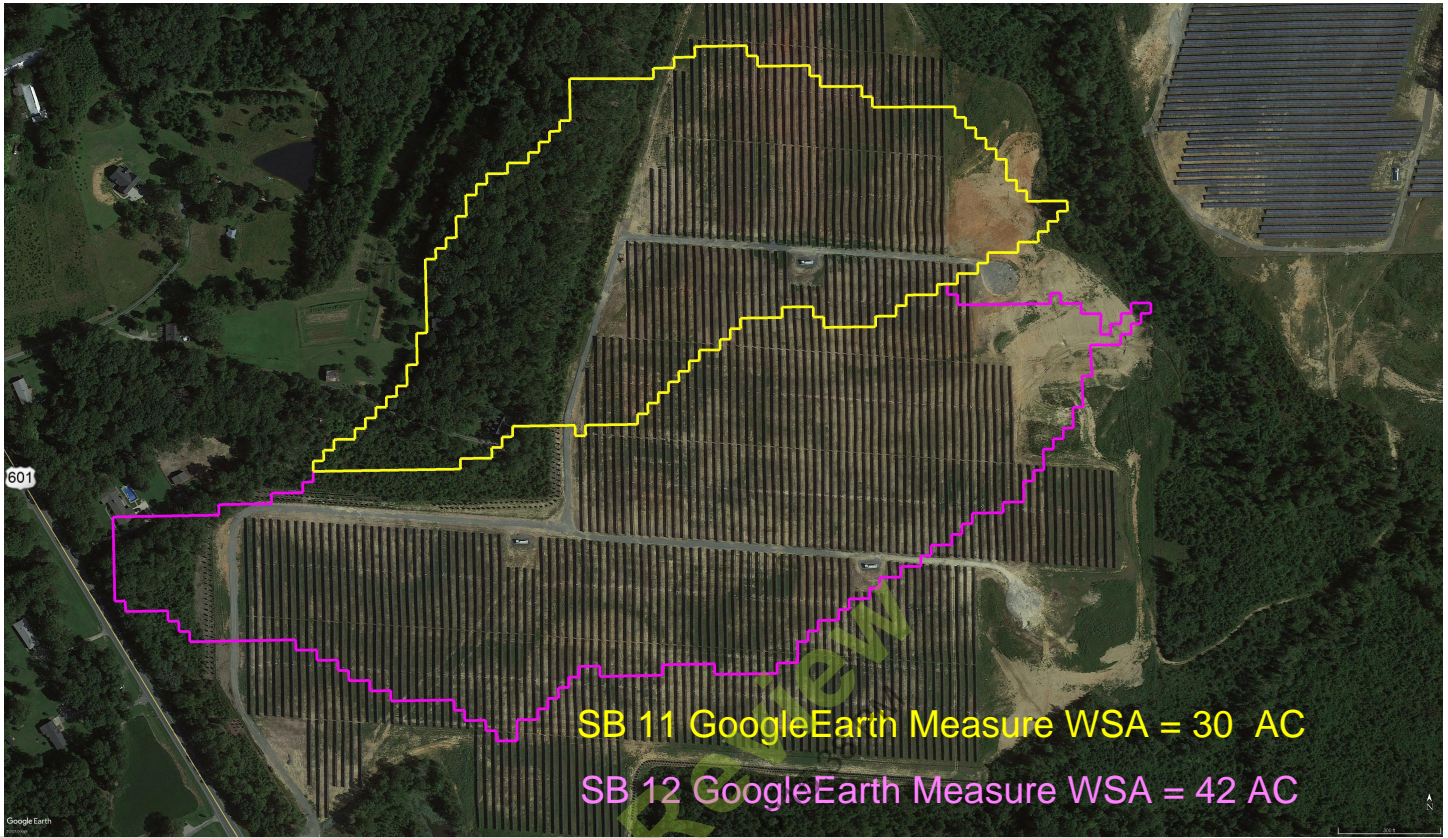
Hydrograph type	= SCS Runoff	Peak discharge	= 150.34 cfs
Storm frequency	= 2 yrs	Time to peak	= 720 min
Time interval	= 2 min	Hyd. volume	= 397,389 cuft
Drainage area	= 43.200 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 13.30 min
Total precip.	= 3.51 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



ATTACHMENT C - SUGGESTED
CONVEYANCE MODIFICATION PEAK
FLOW HYDROLOGY CALCULATIONS

For Review
05/28/2021 6:15:37 PM

SB 11 AND SB 12 WATERSHED AREA AND LENGTH MEASUREMENTS FOR USE IN FOLLOWING PEAK FLOW DISCHARGE CALCULATIONS



SB 11 PEAK FLOW DISCHARGE CALCULATIONS USING THE RATIONAL METHOD (CHARLOTTE-MECKLENBURG STORWATER DESIGN MANUAL, 2014)

Q = C_f CIA	
Q _{2-year}	82
Q _{5-year}	107
Q _{10-year}	122
Q _{25-year}	157
Q _{50-year}	188
Q _{100-year}	216

Measured using StreamStats *.shp file
 A (acres) = 30 **0.0465**

Recurrence Interval (years)	C _f
2	1
10	1
25	1.1
50	1.2
100	1.25

C _f values	C values (Table 2-4, F2)	~ I values (interpolated Table 2-2, for corresponding T _c)
C _{2-year} 1.00	0.75	I _{2-year} 3.695
C _{5-year} 1.00	0.75	I _{5-year} 4.776
C _{10-year} 1.00	0.75	I _{10-year} 5.478
C _{25-year} 1.10	0.75	I _{25-year} 6.401
C _{50-year} 1.20	0.75	I _{50-year} 7.036
C _{100-year} 1.25	0.75	I _{100-year} 7.747

NOTE: VARIOUS C-VALUES WERE CONSIDERED (TABLE 2-4 AND F-2), USE OF **C = 0.75** BASED ON SITE-SPECIFIC ACTUAL RUNOFF RESPONSE OBSERVED OVER TIME

Description of Area	Runoff Coefficient (C)
Lawns	0.30
Wooded	0.25
Streets	0.95
Gravel Areas	0.55
Drives, walks, roofs	0.95
Bare soils	0.45
Residential (including streets):	
Single-Family (Lot < 20,000 square feet - SF)	0.60
Single-Family (Lot > 20,000 square feet - SF)	0.50
Multi-family, Attached	0.70
Industrial:	
Light areas	0.70
Heavy areas	0.80
Office Parks	0.75
Shopping Centers	0.80

Note: The above runoff coefficients are valid for 2-year to 10-year storm frequencies only. Coefficients must be accompanied with a C_f factor when used for less frequent, higher intensity storms.

SB 11 PEAK FLOW DISCHARGE CALCULATIONS USING THE RATIONAL METHOD
 (CHARLOTTE-MECKLENBURG STORWATER DESIGN MANUAL, 2014)

TABLE F-2
RATIONAL RUNOFF COEFFICIENTS

LAND USE DESCRIPTION	HYDROLOGIC SOIL GROUP			
	A	B	C	D
Cultivated land : without conservation treatment	.49	.67	.81	.88
: with conservation treatment	.27	.43	.61	.67
Pasture or range land: poor condition	.38	.63	.78	.84
: good condition	---*	.25	.51	.65
Meadow: good condition	---*	---*	.44	.61
Woods: thin stand, poor cover, no mulch	---*	.34	.59	.70
: good cover	---*	---*	.45	.59
Open spaces, lawns, parks, golf courses, cemeteries				
Good condition: grass cover on 75% or more of the area	---*	.25	.51	.65
Fair condition: grass cover on 50% to 75% of the area	---*	.45	.63	.74
Commercial and business areas (85% impervious)	.84	.90	.93	.96
Industrial districts (72% impervious)	.67	.81	.88	.92
Residential:				
Average lot size Average % impervious				
1/8 acre or less 65	.59	.76	.86	.90
1/4 acre 38	.25	.49	.67	.78
1/3 acre 30	---*	.49	.67	.78
1/2 acre 25	---*	.45	.65	.76
1 acre 20	---*	.41	.63	.74
Paved parking lots, roofs, driveways, etc.	.99	.99	.99	.99
Streets and roads:				
Paved with curbs and storm sewers	.99	.99	.99	.99
Gravel	.57	.76	.84	.88
Dirt	.49	.69	.80	.84

Notes: Values are based on SCS definitions and are average values.
 Values indicated by ---* should be determined by the design engineer based on site characteristics.

Source : New Jersey Department of Environmental Protection, Technical Manual for Stream Encroachment, August 1984

SB 11 PEAK FLOW DISCHARGE CALCULATIONS USING THE RATIONAL METHOD (CHARLOTTE-MECKLENBURG STORWATER DESIGN MANUAL, 2014)

Although not commonly used, the Kirpich Equation is an acceptable method for calculating time of concentration.

$$t_c = 0.0078 \times \frac{L^{0.77}}{S^{0.385}} \quad (2.3)$$

Where: t_c = Time of Concentration (min)

L = Longest hydraulic flow length (foot - ft)

S = Surface slope (foot/foot - ft/ft)

Measured using StreamStats *.shp file and GE

L = 2428.8 (ft) 0.46 miles reference profile figure above

S = 0.0296 (ft/ft) 577.53 begin watershed

t_c = 12.2320 (min) 505.68 end watershed

2.3.2 Rainfall Intensity

The following rainfall intensities (Table 2-2) shall be used for all hydrologic analysis.

**Table 2-2
Rainfall Intensities - Charlotte, North Carolina**

IDF variables for equation:
Intensity (I) = $\frac{a}{(t + b)^n}$ (2.3)

t = duration of rainfall (minutes - min)
 I = intensity (inches/hour - in/hr)
 a, b, n = storm fitting parameters

Time		Recurrence interval (years)					
Hours	Minutes	2	5	10	25	50	100
0	5	5.03	6.30	7.03	8.21	9.00	9.92
	6	4.78	6.02	6.75	7.89	8.65	9.53
	7	4.55	5.76	6.49	7.59	8.32	9.17
	8	4.34	5.53	6.26	7.31	8.03	8.84
	9	4.16	5.32	6.04	7.06	7.75	8.54
	10	3.99	5.12	5.84	6.83	7.50	8.26
	15	3.33	4.35	5.03	5.87	6.46	7.11
	16	3.23	4.22	4.89	5.72	6.29	6.92
	17	3.13	4.10	4.77	5.57	6.13	6.74
	18	3.04	3.99	4.65	5.43	5.97	6.57
	19	2.96	3.89	4.53	5.30	5.83	6.41
	20	2.88	3.79	4.43	5.17	5.69	6.26
	21	2.80	3.70	4.32	5.05	5.56	6.12
	22	2.73	3.61	4.23	4.94	5.44	5.98
	23	2.66	3.53	4.14	4.83	5.32	5.85
	24	2.60	3.45	4.05	4.73	5.21	5.73
	25	2.54	3.37	3.96	4.63	5.10	5.61
	26	2.48	3.30	3.88	4.54	5.00	5.50
	27	2.43	3.23	3.81	4.45	4.90	5.39
	28	2.38	3.17	3.73	4.36	4.81	5.29
	29	2.33	3.11	3.66	4.28	4.72	5.19
	30	2.28	3.05	3.60	4.20	4.64	5.09
	40	1.90	2.57	3.05	3.56	3.93	4.32
	50	1.64	2.23	2.66	3.10	3.43	3.76

SB 12 PEAK FLOW DISCHARGE CALCULATIONS USING THE RATIONAL METHOD (CHARLOTTE-MECKLENBURG STORWATER DESIGN MANUAL, 2014)

Q = C_fCIA	
Q _{2-year}	105
Q _{5-year}	137
Q _{10-year}	159
Q _{25-year}	204
Q _{50-year}	245
Q _{100-year}	280

Measured using StreamStats *.shp file
 A (acres) = **42** **0.0661**

<u>Recurrence Interval (years)</u>	<u>C_f</u>
2	1
10	1
25	1.1
50	1.2
100	1.25

~ I values

	C_f values	C values (Table 2-4, F2)	(interpolated Table 2-2, for corresponding T _c)
C _{2-year}	1.00	0.75	I _{2-year} 3.309
C _{5-year}	1.00	0.75	I _{5-year} 4.323
C _{10-year}	1.00	0.75	I _{10-year} 5.001
C _{25-year}	1.10	0.75	I _{25-year} 5.838
C _{50-year}	1.20	0.75	I _{50-year} 6.424
C _{100-year}	1.25	0.75	I _{100-year} 7.070

NOTE: VARIOUS C-VALUES WERE CONSIDERED (TABLE 2-4 AND F-2), USE OF **C = 0.75** BASED ON SITE-SPECIFIC ACTUAL RUNOFF RESPONSE OBSERVED OVER TIME

<u>Description of Area</u>	<u>Runoff Coefficient (C)</u>
Lawns	0.30
Wooded	0.25
Streets	0.95
Gravel Areas	0.55
Drives, walks, roofs	0.95
Bare soils	0.45
Residential (including streets):	
Single-Family (Lot < 20,000 square feet - SF)	0.60
Single-Family (Lot > 20,000 square feet - SF)	0.50
Multi-family, Attached	0.70
Industrial:	
Light areas	0.70
Heavy areas	0.80
Office Parks	0.75
Shopping Centers	0.80

Note: The above runoff coefficients are valid for 2-year to 10-year storm frequencies only. Coefficients must be accompanied with a C_f factor when used for less frequent, higher intensity storms.

SB 12 PEAK FLOW DISCHARGE CALCULATIONS USING THE RATIONAL METHOD
 (CHARLOTTE-MECKLENBURG STORWATER DESIGN MANUAL, 2014)

TABLE F-2
RATIONAL RUNOFF COEFFICIENTS

LAND USE DESCRIPTION	HYDROLOGIC SOIL GROUP			
	A	B	C	D
Cultivated land : without conservation treatment	.49	.67	.81	.88
: with conservation treatment	.27	.43	.61	.67
Pasture or range land: poor condition	.38	.63	.78	.84
: good condition	---*	.25	.51	.65
Meadow: good condition	---*	---*	.44	.61
Woods: thin stand, poor cover, no mulch	---*	.34	.59	.70
: good cover	---*	---*	.45	.59
Open spaces, lawns, parks, golf courses, cemeteries				
Good condition: grass cover on 75% or more of the area	---*	.25	.51	.65
Fair condition: grass cover on 50% to 75% of the area	---*	.45	.63	.74
Commercial and business areas (85% impervious)	.84	.90	.93	.96
Industrial districts (72% impervious)	.67	.81	.88	.92
Residential:				
Average lot size Average % impervious				
1/8 acre or less 65	.59	.76	.86	.90
1/4 acre 38	.25	.49	.67	.78
1/3 acre 30	---*	.49	.67	.78
1/2 acre 25	---*	.45	.65	.76
1 acre 20	---*	.41	.63	.74
Paved parking lots, roofs, driveways, etc.	.99	.99	.99	.99
Streets and roads:				
Paved with curbs and storm sewers	.99	.99	.99	.99
Gravel	.57	.76	.84	.88
Dirt	.49	.69	.80	.84

Notes: Values are based on SCS definitions and are average values.
 Values indicated by ---* should be determined by the design engineer based on site characteristics.

Source : New Jersey Department of Environmental Protection, Technical Manual for Stream Encroachment, August 1984

SB 12 PEAK FLOW DISCHARGE CALCULATIONS USING THE RATIONAL METHOD (CHARLOTTE-MECKLENBURG STORWATER DESIGN MANUAL, 2014)

Although not commonly used, the Kirpich Equation is an acceptable method for calculating time of concentration.

$$t_c = 0.0078 \times \frac{L^{0.77}}{S^{0.385}} \quad (2.3)$$

Where: t_c = Time of Concentration (min)

L = Longest hydraulic flow length (foot - ft)

S = Surface slope (foot/foot - ft/ft)

Measured using StreamStats *.shp file and GE

L = 3062.4 (ft) 0.58 miles reference profile figure above

S = 0.026701 (ft/ft) 586.68 begin watershed

t_c = 15.21064 (min) 504.91 end watershed

2.3.2 Rainfall Intensity

The following rainfall intensities (Table 2-2) shall be used for all hydrologic analysis.

**Table 2-2
Rainfall Intensities - Charlotte, North Carolina**

IDF variables for equation:
Intensity (I) = $\frac{a}{(t + b)^n}$ (2.1)

t = duration of rainfall (minutes - min)
 I = intensity (inches/hour - in/hr)
 a, b, n = storm fitting parameters

Time		Recurrence interval (years)					
Hours	Minutes	2	5	10	25	50	100
0	5	5.03	6.30	7.03	8.21	9.00	9.92
	6	4.78	6.02	6.75	7.89	8.65	9.53
	7	4.55	5.76	6.49	7.59	8.32	9.17
	8	4.34	5.53	6.26	7.31	8.03	8.84
	9	4.16	5.32	6.04	7.06	7.75	8.54
	10	3.99	5.12	5.84	6.83	7.50	8.26
	15	3.33	4.35	5.03	5.87	6.46	7.11
	16	3.23	4.22	4.89	5.72	6.29	6.92
	17	3.13	4.10	4.77	5.57	6.13	6.74
	18	3.04	3.99	4.65	5.43	5.97	6.57
	19	2.96	3.89	4.53	5.30	5.83	6.41
	20	2.88	3.79	4.43	5.17	5.69	6.26
	21	2.80	3.70	4.32	5.05	5.56	6.12
	22	2.73	3.61	4.23	4.94	5.44	5.98
	23	2.66	3.53	4.14	4.83	5.32	5.85
	24	2.60	3.45	4.05	4.73	5.21	5.73
	25	2.54	3.37	3.96	4.63	5.10	5.61
	26	2.48	3.30	3.88	4.54	5.00	5.50
	27	2.43	3.23	3.81	4.45	4.90	5.39
	28	2.38	3.17	3.73	4.36	4.81	5.29
	29	2.33	3.11	3.66	4.28	4.72	5.19
	30	2.28	3.05	3.60	4.20	4.64	5.09
	40	1.90	2.57	3.05	3.56	3.93	4.32
	50	1.64	2.23	2.66	3.10	3.43	3.76

ATTACHMENT D - SUGGESTED
CONVEYANCE MODIFICATION DESIGN
HYDRAULICS & MATERIAL SIZING

For Review
05/28/2021 6:15:38 PM

SB 11, 5% HYDRAULIC PERFORMANCE CALCULATIONS (82 - 216 cfs)

ELEV (ft)	DEPTH (ft)	AREA (sq ft)	WET PER (ft)	WIDTH (ft)	HYD RAD (ft)	MEAN D (ft)	SLOPE (ft/ft)	ROUGH [n] (ft ^{1/6})	VELOCITY (fps)	U/U*	U ² /2g (ft)	DISCHARGE (cfs)	SHEAR (psf)	POWER (lb/s)	POWER/W (lb/ft/s)	FROUDE	TRANSPORT (lb/s)
95.1	0.1	2.03	20.63	20.6	0.1	0.1	0.05	0.056	1.28	3.19	0.03	2.6	0.31	8.1	0.39	0.71	0.01
95.2	0.2	4.12	21.26	21.2	0.19	0.19	0.05	0.056	1.96	3.55	0.06	8.08	0.59	25.22	1.19	0.79	11.66
95.3	0.3	6.27	21.9	21.8	0.29	0.29	0.05	0.056	2.6	3.81	0.1	16.31	0.9	50.87	2.33	0.85	61.19
95.4	0.4	8.48	22.53	22.4	0.38	0.38	0.05	0.056	3.11	3.98	0.15	26.41	1.19	82.39	3.68	0.89	138.59
95.5	0.5	10.75	23.16	23	0.46	0.47	0.05	0.056	3.54	4.11	0.19	38.02	1.44	118.63	5.16	0.91	231.99
95.6	0.6	13.08	23.79	23.6	0.55	0.55	0.05	0.056	3.98	4.23	0.25	52.12	1.72	162.6	6.89	0.95	361.97
95.7	0.7	15.47	24.43	24.2	0.63	0.64	0.05	0.056	4.36	4.33	0.3	67.48	1.97	210.54	8.7	0.96	500.59
95.8	0.8	17.92	25.06	24.8	0.72	0.72	0.05	0.056	4.77	4.43	0.35	85.45	2.25	266.59	10.75	0.99	679.24
95.9	0.9	20.43	25.69	25.4	0.8	0.8	0.05	0.056	5.12	4.51	0.41	104.5	2.5	326.05	12.84	1.01	861.23
96	1	23	26.32	26	0.87	0.88	0.05	0.056	5.41	4.57	0.45	124.41	2.71	388.17	14.93	1.02	1040.29
96.1	1.1	25.63	26.96	26.6	0.95	0.96	0.05	0.056	5.74	4.64	0.51	147.01	2.96	458.68	17.24	1.03	1261.33
96.2	1.2	28.32	27.59	27.2	1.03	1.04	0.05	0.056	6.05	4.7	0.57	171.44	3.21	534.89	19.67	1.05	1503.08
96.3	1.3	31.07	28.22	27.8	1.1	1.12	0.05	0.056	6.32	4.75	0.62	196.52	3.43	613.13	22.06	1.05	1736.42
96.4	1.4	33.88	28.85	28.4	1.17	1.19	0.05	0.056	6.59	4.8	0.67	223.29	3.65	696.65	24.53	1.06	1986.98
96.5	1.5	36.75	29.49	29	1.25	1.27	0.05	0.056	6.89	4.86	0.74	253.12	3.9	789.73	27.23	1.08	2287.94
96.6	1.6	39.68	30.12	29.6	1.32	1.34	0.05	0.056	7.14	4.9	0.79	283.41	4.12	884.24	29.87	1.09	2575.45
96.7	1.7	42.67	30.75	30.2	1.39	1.41	0.05	0.056	7.39	4.94	0.85	315.45	4.34	984.2	32.59	1.1	2880.84
96.8	1.8	45.72	31.38	30.8	1.46	1.48	0.05	0.056	7.64	4.98	0.91	349.25	4.56	1089.66	35.38	1.11	3204.34
96.9	1.9	48.83	32.02	31.4	1.53	1.56	0.05	0.056	7.88	5.02	0.96	384.84	4.77	1200.69	38.24	1.11	3546.19
97	2	52	32.65	32	1.59	1.63	0.05	0.056	8.09	5.05	1.02	420.47	4.96	1311.85	41	1.12	3864.33
98	3	87	38.97	38	2.23	2.29	0.05	0.056	10.13	5.35	1.59	881.42	6.96	2750.04	72.37	1.18	8153.3
99	4	128	45.3	44	2.83	2.91	0.05	0.056	11.88	5.56	2.19	1520.07	8.83	4742.61	107.79	1.23	13978.63

SB 11, 12% HYDRAULIC PERFORMANCE CALCULATIONS (82 - 216 cfs)

ELEV (ft)	DEPTH (ft)	AREA (sq ft)	WET PER (ft)	WIDTH (ft)	HYD RAD (ft)	MEAN D (ft)	SLOPE (ft/ft)	ROUGH [n] (ft ^{1/6})	VELOCITY (fps)	U/U*	U ² /2g (ft)	DISCHARGE (cfs)	SHEAR (psf)	POWER (lb/s)	POWER/W (lb/ft/s)	FROUDE	TRANSPORT (lb/s)
95.1	0.1	2.03	20.63	20.6	0.1	0.1	0.12	0.057	1.95	3.13	0.06	3.95	0.75	29.59	1.44	1.08	30.13
95.2	0.2	4.12	21.26	21.2	0.19	0.19	0.12	0.057	2.99	3.48	0.14	12.3	1.42	92.11	4.34	1.21	209.32
95.3	0.3	6.27	21.9	21.8	0.29	0.29	0.12	0.057	3.96	3.74	0.24	24.82	2.17	185.83	8.52	1.3	556.63
95.4	0.4	8.48	22.53	22.4	0.38	0.38	0.12	0.057	4.74	3.91	0.35	40.19	2.85	300.95	13.44	1.35	982.11
95.5	0.5	10.75	23.16	23	0.46	0.47	0.12	0.057	5.38	4.04	0.45	57.87	3.44	433.34	18.84	1.38	1446.28
95.6	0.6	13.08	23.79	23.6	0.55	0.55	0.12	0.057	6.06	4.16	0.57	79.32	4.12	593.97	25.17	1.44	2053.4
95.7	0.7	15.47	24.43	24.2	0.63	0.64	0.12	0.057	6.64	4.26	0.68	102.71	4.72	769.07	31.78	1.46	2677.1
95.8	0.8	17.92	25.06	24.8	0.72	0.72	0.12	0.057	7.26	4.35	0.82	130.05	5.39	973.81	39.27	1.51	3457.66
95.9	0.9	20.43	25.69	25.4	0.8	0.8	0.12	0.057	7.79	4.43	0.94	159.05	5.99	1190.99	46.89	1.53	4238.3
96	1	23	26.32	26	0.87	0.88	0.12	0.057	8.23	4.49	1.05	189.36	6.51	1417.93	54.54	1.55	4997.44
96.1	1.1	25.63	26.96	26.6	0.95	0.96	0.12	0.057	8.73	4.56	1.18	223.76	7.11	1675.5	62.99	1.57	5921.86
96.2	1.2	28.32	27.59	27.2	1.03	1.04	0.12	0.057	9.21	4.62	1.32	260.93	7.71	1953.88	71.83	1.59	6922.86
96.3	1.3	31.07	28.22	27.8	1.1	1.12	0.12	0.057	9.68	4.67	1.44	299.1	8.24	2239.66	80.56	1.6	7883.48
96.4	1.4	33.88	28.85	28.4	1.17	1.19	0.12	0.057	10.03	4.72	1.56	339.85	8.76	2544.76	89.6	1.62	8908.49
96.5	1.5	36.75	29.49	29	1.25	1.27	0.12	0.057	10.48	4.77	1.71	385.25	9.36	2884.77	99.47	1.64	10129.93
96.6	1.6	39.68	30.12	29.6	1.32	1.34	0.12	0.057	10.87	4.81	1.83	431.36	9.88	3229.99	109.12	1.65	11293.07
96.7	1.7	42.67	30.75	30.2	1.39	1.41	0.12	0.057	11.25	4.86	1.97	480.12	10.41	3595.11	119.04	1.67	12523.26
96.8	1.8	45.72	31.38	30.8	1.46	1.48	0.12	0.057	11.63	4.9	2.1	531.56	10.93	3980.35	129.23	1.68	13821.39
96.9	1.9	48.83	32.02	31.4	1.53	1.56	0.12	0.057	12	4.93	2.23	585.73	11.46	4385.92	139.68	1.69	15188.35
97	2	52	32.65	32	1.59	1.63	0.12	0.057	12.31	4.97	2.35	639.95	11.91	4791.98	149.75	1.7	16459.59
98	3	87	38.97	38	2.23	2.29	0.12	0.057	15.42	5.25	3.69	1341.54	16.7	10045.44	264.35	1.8	33365.5
99	4	128	45.3	44	2.83	2.91	0.12	0.057	18.07	5.47	5.07	2313.56	21.19	17323.97	393.73	1.87	56029.86

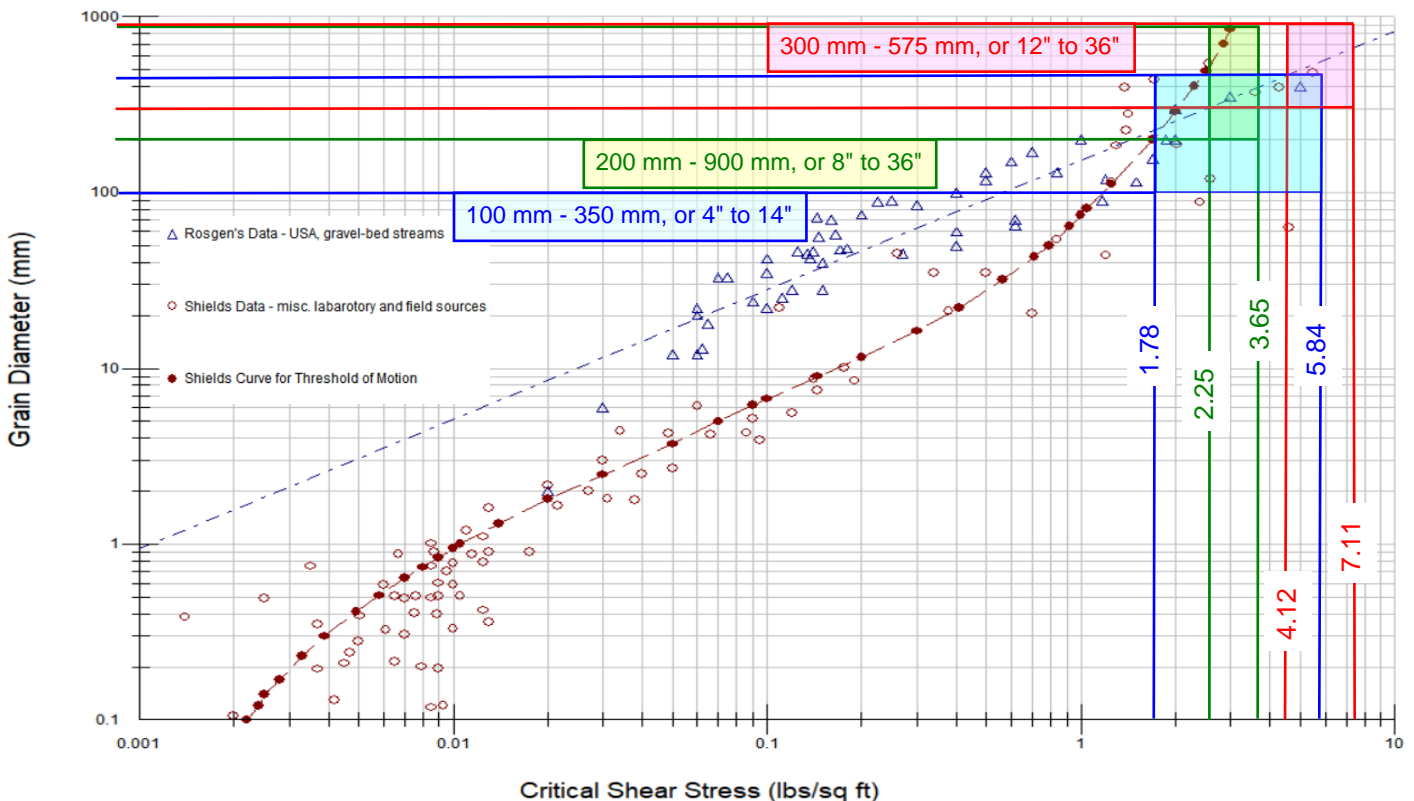
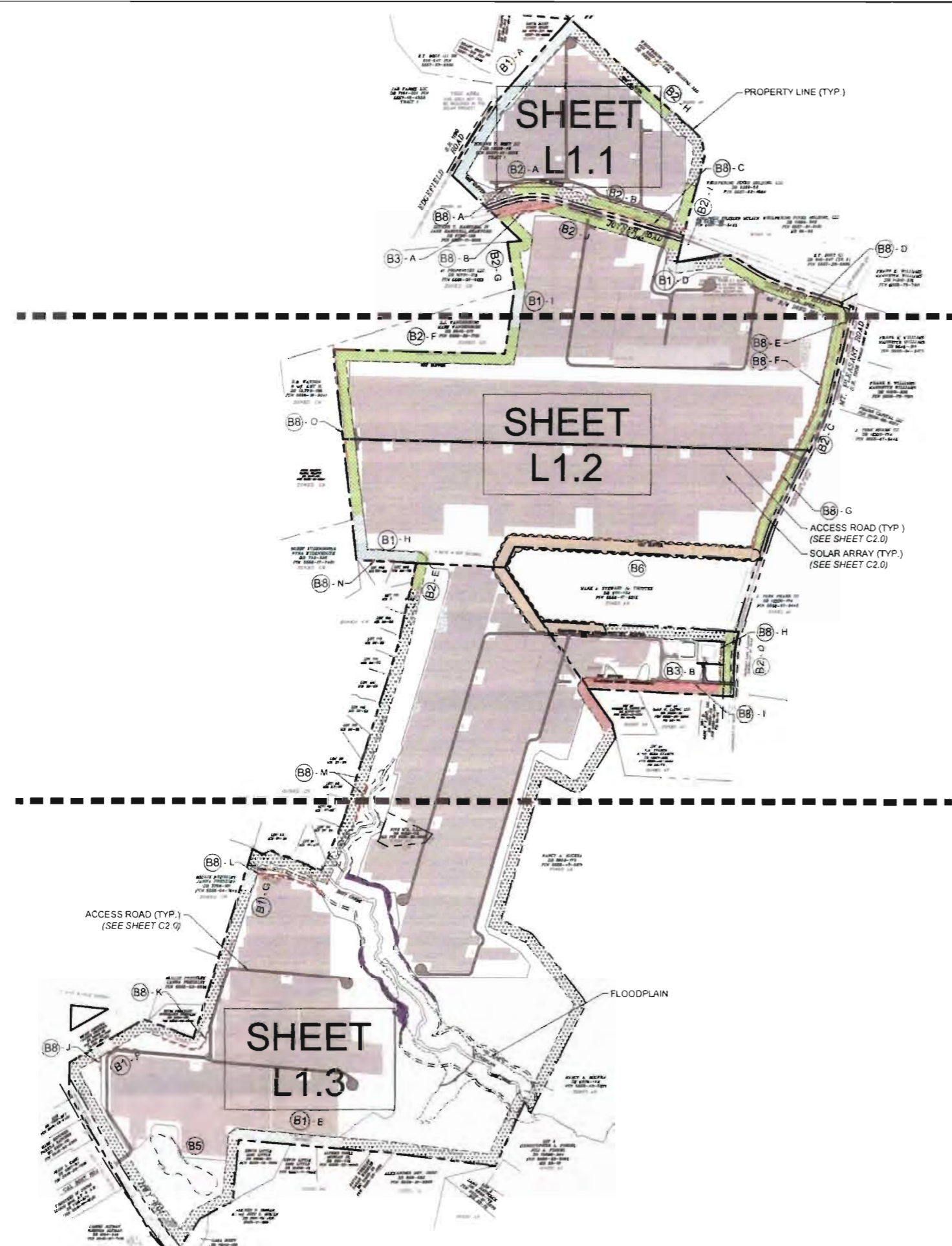


TABLE 1042-1			
ACCEPTANCE CRITERIA FOR RIP RAP AND STONE FOR EROSION CONTROL			
Class	Required Stone Sizes, inches		
	Minimum	Midrange	Maximum
A	2	4	6
B	5	8	12
1	5	10	17
2	9	14	23

No more than 5.0% of the material furnished can be less than the minimum size specified nor no more than 10.0% of the material can exceed the maximum size specified.

For Review

05/28/2021 6:15:38 PM



LANDSCAPE REQUIREMENTS & CALCULATIONS

AREA TO BE LANDSCAPED	CODE REQUIREMENT	AREA / LENGTH	TOTAL QUANTITY REQUIRED PER COUNTY MINIMUM	TOTAL QUANTITY PROVIDED	CODE SECTION
10' LEVEL 1 BUFFER	IN THE EVENT THAT A SOLAR FARM ADJACENT TO A RESIDENTIAL PROPERTY OR A STREET RIGHT OF WAY, A LEVEL ONE BUFFER MUST BE IMPLEMENTED.	SITES > 10 ACRES 5,128 LF	100' WIDTH 50' LENGTH SEGMENTS (FOR SITES GREATER THAN 10 ACRES) B: 28' 50" x 15' = 1,058 SHRUBS TOTALS BELOW ARE ROUNDED UP AND MAY REFLECT A GREATER QUANTITY THAN WHAT IS CALCULATED AS A MINIMUM ABOVE	100' WIDTH 50' LENGTH SEGMENTS (FOR SITES GREATER THAN 10 ACRES) (5,128 / 50) x 15 = 1,538 SHRUBS	8-4.17.5 & TABLE 4 - CHAPTER 3
B1	WHERE EXISTING VEGETATION FAILS TO MEET THE PERFORMANCE STANDARD SET FORTH IN TABLE 4, CHAPTER 3, FOR SHRUB SCREENING, 15 SHRUBS SHALL BE INSTALLED FOR EVERY 50 LINEAR FEET OF BUFFER.	2,332 160 1,050 194 185 562 354	2,332 50' x 15' = 699 SHRUBS 160 50' x 15' = 48 SHRUBS 1,050 50' x 15' = 315 SHRUBS 194 50' x 15' = 58 SHRUBS 185 50' x 15' = 56 SHRUBS 562 50' x 15' = 169 SHRUBS 354 50' x 15' = 107 SHRUBS	(2,332 / 50) x 15 = 699 SHRUBS (160 / 50) x 15 = 48 SHRUBS (1,050 / 50) x 15 = 315 SHRUBS (194 / 50) x 15 = 58 SHRUBS (185 / 50) x 15 = 56 SHRUBS (562 / 50) x 15 = 169 SHRUBS (354 / 50) x 15 = 107 SHRUBS	8-4.17.5 & TABLE 4 - CHAPTER 3
B2	WHERE EXISTING VEGETATION FAILS TO MEET THE PERFORMANCE STANDARD SET FORTH IN TABLE 4, CHAPTER 3, 2 SHADE TREES AND 15 SHRUBS SHALL BE INSTALLED FOR EVERY 50 LINEAR FEET OF BUFFER. MOUNTAIN AREAS UNDER POWERLINES SHALL SUBSTITUTE 2 UNDERSTORY TREES PER SHADE TREE.	11,622 LF	11,622 50' x 2' = 465 CANOPY TREES (11,622 / 50) x 2 = 465 CANOPY TREES TOTALS BELOW ARE ROUNDED UP AND MAY REFLECT A GREATER QUANTITY THAN WHAT IS CALCULATED AS A MINIMUM ABOVE	11,622 50' x 2' = 465 CANOPY TREES (11,622 / 50) x 2 = 465 CANOPY TREES 2 UNDERSTORY TREES + 1 CANOPY TREE	8-4.17.5 & TABLE 4 - CHAPTER 4
B2A		361	(361 / 50) x 2 = 15 CANOPY TREES (361 / 50) x 4 = 29 UNDERSTORY TREES	(361 / 50) x 2 = 15 CANOPY TREES (361 / 50) x 4 = 29 UNDERSTORY TREES	
B2B		740	(740 / 50) x 2 = 30 CANOPY TREES (740 / 50) x 4 = 59 UNDERSTORY TREES	(740 / 50) x 2 = 30 CANOPY TREES (740 / 50) x 4 = 59 UNDERSTORY TREES	
B2C		3,650	(3,650 / 50) x 2 = 146 CANOPY TREES (3,650 / 50) x 4 = 292 UNDERSTORY TREES	(3,650 / 50) x 2 = 146 CANOPY TREES (3,650 / 50) x 4 = 292 UNDERSTORY TREES	
B2D		600	(600 / 50) x 2 = 24 CANOPY TREES (600 / 50) x 4 = 48 UNDERSTORY TREES	(600 / 50) x 2 = 24 CANOPY TREES (600 / 50) x 4 = 48 UNDERSTORY TREES	
B2E		243	(243 / 50) x 2 = 10 CANOPY TREES (243 / 50) x 4 = 19 UNDERSTORY TREES	(243 / 50) x 2 = 10 CANOPY TREES (243 / 50) x 4 = 19 UNDERSTORY TREES	
B2F		3,368	(3,368 / 50) x 2 = 135 CANOPY TREES (3,368 / 50) x 4 = 271 UNDERSTORY TREES	(3,368 / 50) x 2 = 135 CANOPY TREES (3,368 / 50) x 4 = 271 UNDERSTORY TREES	
B2G		847	(847 / 50) x 2 = 34 CANOPY TREES (847 / 50) x 4 = 68 UNDERSTORY TREES	(847 / 50) x 2 = 34 CANOPY TREES (847 / 50) x 4 = 68 UNDERSTORY TREES	
B2H		400	(400 / 50) x 2 = 16 CANOPY TREES (400 / 50) x 4 = 32 UNDERSTORY TREES	(400 / 50) x 2 = 16 CANOPY TREES (400 / 50) x 4 = 32 UNDERSTORY TREES	
B2I		365	(365 / 50) x 2 = 15 CANOPY TREES (365 / 50) x 4 = 30 UNDERSTORY TREES	(365 / 50) x 2 = 15 CANOPY TREES (365 / 50) x 4 = 30 UNDERSTORY TREES	
B2J		1,282	(1,282 / 50) x 2 = 51 CANOPY TREES (1,282 / 50) x 4 = 102 UNDERSTORY TREES	(1,282 / 50) x 2 = 51 CANOPY TREES (1,282 / 50) x 4 = 102 UNDERSTORY TREES	
B3	SUPPLEMENTAL OR REPLACEMENT UNDERSTORY BUFFER TO BE PLANTED IN ADDITION TO EXISTING TREES AT A RATE OF (5) UNDERSTORY TREES AND (20) SHRUBS PER 100 LINEAR FEET.	2,129 LF	(2,129 / 50) x 2 = 85 UNDERSTORY TREES (2,129 / 50) x 15 = 639 SHRUBS	(2,129 / 50) x 2 = 85 UNDERSTORY TREES (2,129 / 50) x 15 = 639 SHRUBS	8-4.17.5 & TABLE 4 - CHAPTER 4
B3A		555	(555 / 50) x 2 = 22 UNDERSTORY TREES (555 / 50) x 15 = 167 SHRUBS	(555 / 50) x 2 = 22 UNDERSTORY TREES (555 / 50) x 15 = 167 SHRUBS	
B3B		1,674	(1,674 / 50) x 2 = 67 UNDERSTORY TREES (1,674 / 50) x 15 = 502 SHRUBS	(1,674 / 50) x 2 = 67 UNDERSTORY TREES (1,674 / 50) x 15 = 502 SHRUBS	
B4	WHERE BUFFER ZONE ENCROACHMENT VEGETATION PLAN PER CABARRUS COUNTY SOIL AND WATER CONSERVATION DEPARTMENT (SEE SHEET L2.3)	2.43 AC	BARRE ROOT SEEDLINGS SHALL BE PLANTED @ 6" C. #15 1/2" DIAMETER ROWS @ 4' x 6' @ 1,865 SEEDLINGS	1,725 1/2" x 1/2" FINE SEEDLINGS (SEE CHART) ON 2.3 AC GROUND COVER SEEDING ESTABLISHMENT	SECTION 7
B5	20' BUFFER SHALL BE ESTABLISHED ALONG THE EDGE OF ANY IDENTIFIED WETLANDS. IN THE EVENT THAT A BUFFER IS DISTURBED, ALL DISTURBED AREAS WITHIN THE BUFFER ZONE SHALL BE REVEGETATED WITH APPROPRIATE VEGETATION IMMEDIATELY.	350 LF	(350 / 100) x 2 = 7 TREES (350 / 100) x 30 = 105 SHRUBS	(350 / 100) x 2 = 7 TREES (350 / 100) x 30 = 105 SHRUBS	4-10.2 & 4-10.12
B6	PROPOSED BUFFER TO SATISFY COUNTY REQUIREMENTS AND OWNER PREFERENCES (SEE SHEET L1.4)	3,845 LF	(3,845 / 50) x 2 = 154 CANOPY TREES (3,845 / 50) x 15 = 1,154 SHRUBS	(3,845 / 50) x 2 = 154 CANOPY TREES (3,845 / 50) x 15 = 1,154 SHRUBS	8-4.17.4 & TABLE 4 - CHAPTER 3
B7	EXISTING VEGETATION COMPLIANT WITH THE COUNTY DEVELOPMENT ORDINANCE BUFFER REQUIREMENTS AND CONDITIONS OF APPROVAL.	AS SHOWN	NA	NA	8-4.17.4 & 8-4.17.5
B8	UNDERSTORY TREES SHALL BE INSTALLED TO PROVIDE ADDITIONAL BUFFER DENSITY. UNDERSTORY TREES SPACED 15' ON CENTER IN A DOUBLE STAGGERED ROW SHALL BE PROVIDED.	10,712 LF		UNDERSTORY TREES FOR ADDITIONAL BUFFER DENSITY	
B8A		538	(538 / 15) x 2 = 72 TREES	(538 / 15) x 2 = 72 TREES	
B8B		480	(480 / 15) x 2 = 64 TREES	(480 / 15) x 2 = 64 TREES	
B8C		745	(745 / 15) x 2 = 100 TREES	(745 / 15) x 2 = 100 TREES	
B8D		495	(495 / 15) x 2 = 66 TREES	(495 / 15) x 2 = 66 TREES	
B8E		420	(420 / 15) x 2 = 56 TREES	(420 / 15) x 2 = 56 TREES	
B8F		468	(468 / 15) x 2 = 62 TREES	(468 / 15) x 2 = 62 TREES	
B8G		368	(368 / 15) x 2 = 49 TREES	(368 / 15) x 2 = 49 TREES	
B8H		330	(330 / 15) x 2 = 44 TREES	(330 / 15) x 2 = 44 TREES	
B8I		1,200	(1,200 / 15) x 2 = 160 TREES	(1,200 / 15) x 2 = 160 TREES	
B8J		974	(974 / 15) x 2 = 130 TREES	(974 / 15) x 2 = 130 TREES	
B8K		629	(629 / 15) x 2 = 84 TREES	(629 / 15) x 2 = 84 TREES	
B8L		562	(562 / 15) x 2 = 75 TREES	(562 / 15) x 2 = 75 TREES	
B8M		613	(613 / 15) x 2 = 82 TREES	(613 / 15) x 2 = 82 TREES	
B8N		711	(711 / 15) x 2 = 95 TREES	(711 / 15) x 2 = 95 TREES	
B8O		1,198	(1,198 / 15) x 2 = 160 TREES	(1,198 / 15) x 2 = 160 TREES	

VISUAL SCREENING LANDSCAPE PLAN

NC 102 PROJECT LLC PREPARED FOR DEPCOM POWER

SHEET NUMBER L1.0

DATE: 07/20/18
 SCALE: AS SHOWN
 DRAWN BY: BPG
 CHECKED BY: BPG

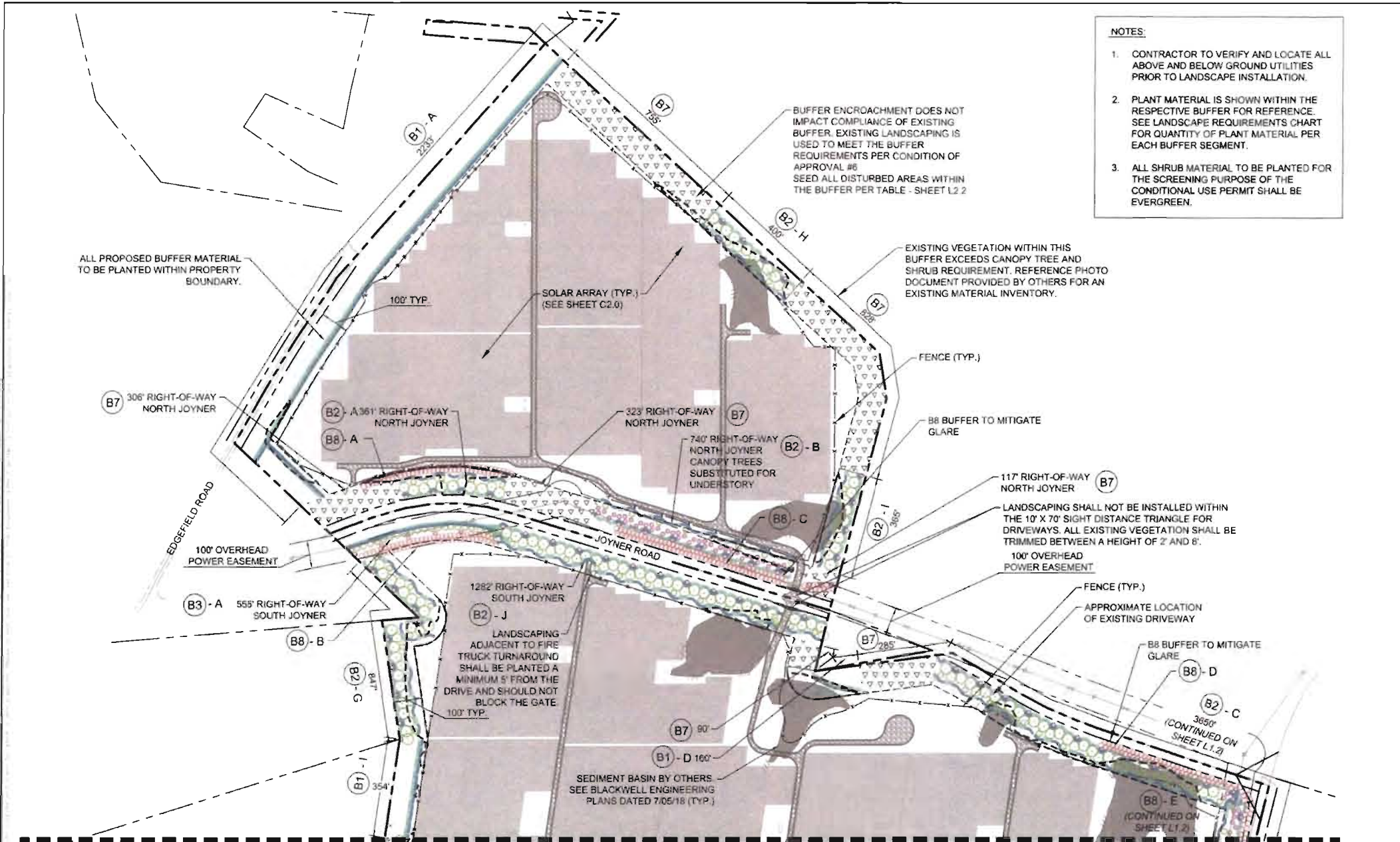
COUNTY SUBMITTAL: 07/20/18
 COUNTY SUBMITTAL: 07/20/18
 SITE VISIT COMMENTS: 02/07/19
 CLIENT COMMENTS: 07/26/18
 CLIENT COMMENTS: 10/05/18
 REVISIONS: 10/09/18

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL NCEQ, CABARRUS COUNTY AND/OR NC DOT STANDARDS AND SPECIFICATIONS.

SURVEY NOTE:
 EXISTING SITE INFORMATION SHOWN BASED ON SURVEY FILES: 1/14/2018, LAND TITLE SURVEY FOR RECURRENT ENERGY PROPERTY OF PFC M'S LLC, & EVIDENCE: BOOK 28, PAGE 501 OF JOYNER ROAD & 4TH PLEASANT ROAD, COREORD, NC 28028, DATED: 4/6/18, PROVIDED BY PYRAMID LAND SURVEYING, P.O. BOX 11, DAVIDSON, NC 28036, PHONE: (704) 892-4229.
 EXISTING TOPOGRAPHIC INFORMATION SHOWN BASED ON CLIENT PROVIDED DRONE LIDAR SURVEY INFORMATION ON 01/18/2018, AS-BUILT INFORMATION, AND GIS CONTOURS.

EROSION CONTROL NOTE:
 EROSION CONTROL MEASURES AND DESIGN ARE FOR REFERENCE ONLY. REFER TO NC 102 PROJECT LLC SOLAR FARM CONSTRUCTION DOCUMENTS PREPARED BY BLACKWELL ENGINEERING, DATED 07/05/2018.

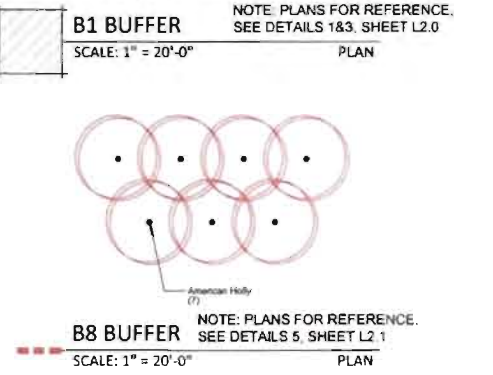
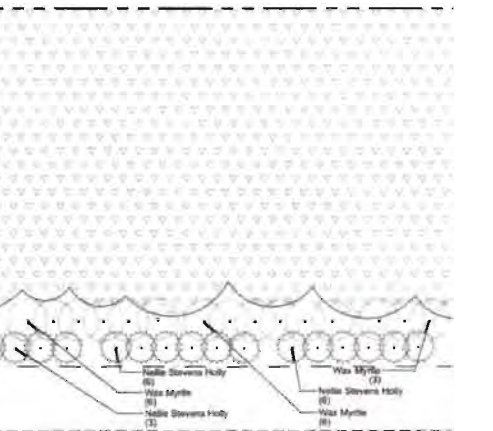
Know what's below. Call before you dig.



- NOTES:**
- CONTRACTOR TO VERIFY AND LOCATE ALL ABOVE AND BELOW GROUND UTILITIES PRIOR TO LANDSCAPE INSTALLATION.
 - PLANT MATERIAL IS SHOWN WITHIN THE RESPECTIVE BUFFER FOR REFERENCE. SEE LANDSCAPE REQUIREMENTS CHART FOR QUANTITY OF PLANT MATERIAL PER EACH BUFFER SEGMENT.
 - ALL SHRUB MATERIAL TO BE PLANTED FOR THE SCREENING PURPOSE OF THE CONDITIONAL USE PERMIT SHALL BE EVERGREEN.

LEGEND:

- B1 EXISTING CANOPY TREES WITH SUPPLEMENTAL EVERGREEN SCREEN (SEE DETAIL 1 & 3 SHEET L2.0)
- B2 CDO REQUIRED SUPPLEMENTAL BUFFER (SEE DETAIL 2 & 4 SHEET L2.0)
- B3 SUPPLEMENTAL OR REPLACEMENT UNDERSTORY BUFFER (SEE DETAIL 1 & 3 SHEET L2.1)
- B4 WATERBODY BUFFER ZONE ENCROACHMENT REVEGETATION PLAN (SEE SHEET L2.3)
- B5 WETLAND REVEGETATION PLAN (SEE DETAIL 2 & 4 SHEET L2.1)
- B6 ADJACENT PROPERTY LANDSCAPE (SEE SHEET L1.4)
- B7 EXISTING VEGETATION COMPLIANT WITH CDO BUFFER REQUIREMENTS
- FIELD SURVEYED BUFFER ENCROACHMENT
- B8 UNDERSTORY TREE BUFFER (SEE DETAIL 5 SHEET L2.1)



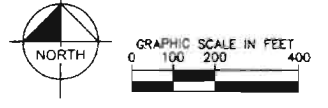
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Know what's below. Call before you dig.

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL NEEDED, CABARRUS COUNTY AND/OR NCDOT STANDARDS AND SPECIFICATIONS.

SURVEY NOTE:
EXISTING SITE INFORMATION SHOWN BASED ON SURVEY TITLED: ALTA/NSPS LAND TITLE SURVEY FOR RECURRENT ENERGY PROPERTY OF FIVE W'S LLC, 8 EUGENE T. BOST III, US HWY 801 S, JOYNER ROAD & MT. PLEASANT ROAD, CONCORD, NC 28025 DATED: 4/8/18, PROVIDED BY PYRAMID LAND SURVEYING, P.O. BOX 11, DAVIDSON, NC 28036; PHONE (704) 892-4249.

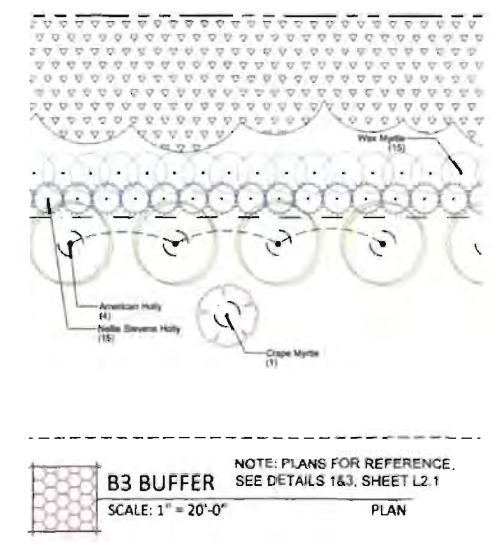
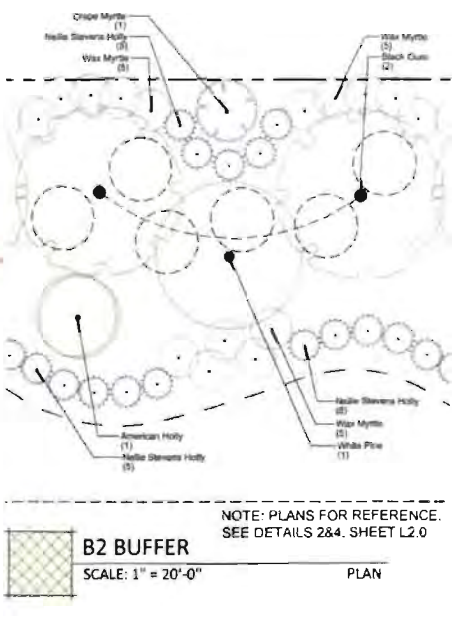
EXISTING TOPOGRAPHIC INFORMATION SHOWN BASED ON CLIENT PROVIDED DRONE LIDAR SURVEY RECEIVED ON 01/19/2018. AS-BUILT INFORMATION AND GIS CONTOURS.

EROSION CONTROL NOTE:
EROSION CONTROL MEASURES AND DESIGN ARE FOR REFERENCE ONLY. REFER TO NC 102 PROJECT LLC SOLAR FARM CONSTRUCTION DOCUMENTS PREPARED BY BLACKWELL ENGINEERING, DATED 07/05/2018.



MATCHLINE: SEE L1.2 - LANDSCAPE PLAN

AREA TO BE LANDSCAPED	CODE REQUIREMENT	AREA / LENGTH	TOTAL QUANTITY REQUIRED PER COUNTY MINIMUM	TOTAL QUANTITY PROVIDED	CODE SECTION
B1	BUFFER B1 - A	2,233	(2,233 / 50) * 15 = 670 SHRUBS	(2,233 / 50) * 15 = 670 SHRUBS	84 47.5 & TABLE 4 - CHAPTER 8
	BUFFER B1 - C	166	(166 / 50) * 15 = 48 SHRUBS	(166 / 50) * 15 = 48 SHRUBS	
	BUFFER B1 - E	354	(354 / 50) * 15 = 107 SHRUBS	(354 / 50) * 15 = 107 SHRUBS	
B2	BUFFER B2 - A	361	(361 / 50) * 2 = 14 CANOPY TREES (361 / 50) * 4 = 29 UNDERSTORY TREES	(361 / 50) * 2 = 14 CANOPY TREES (361 / 50) * 4 = 29 UNDERSTORY TREES	84 47.5 & TABLE 4 - CHAPTER 8
	BUFFER B2 - B	740	(740 / 50) * 2 = 29 CANOPY TREES (740 / 50) * 4 = 59 UNDERSTORY TREES	(740 / 50) * 2 = 29 CANOPY TREES (740 / 50) * 4 = 59 UNDERSTORY TREES	
	BUFFER B2 - C EXTENDS TO SHEET L1.2	5,680	(5,680 / 50) * 2 = 227 CANOPY TREES (5,680 / 50) * 4 = 454 UNDERSTORY TREES	(5,680 / 50) * 2 = 227 CANOPY TREES (5,680 / 50) * 4 = 454 UNDERSTORY TREES	
	BUFFER B2 - D	447	(447 / 50) * 2 = 18 CANOPY TREES (447 / 50) * 4 = 36 UNDERSTORY TREES	(447 / 50) * 2 = 18 CANOPY TREES (447 / 50) * 4 = 36 UNDERSTORY TREES	
	BUFFER B2 - H	400	(400 / 50) * 2 = 16 CANOPY TREES (400 / 50) * 4 = 32 UNDERSTORY TREES	(400 / 50) * 2 = 16 CANOPY TREES (400 / 50) * 4 = 32 UNDERSTORY TREES	
	BUFFER B2 - I	348	(348 / 50) * 2 = 14 CANOPY TREES (348 / 50) * 4 = 28 UNDERSTORY TREES	(348 / 50) * 2 = 14 CANOPY TREES (348 / 50) * 4 = 28 UNDERSTORY TREES	
B3	BUFFER B3 - A	885	(885 / 50) * 2 = 35 UNDERSTORY TREES	(885 / 50) * 2 = 35 UNDERSTORY TREES SUPPLEMENTED WITH B8	84 47.5 & TABLE 4 - CHAPTER 8
	BUFFER B3 - A	885	(885 / 50) * 2 = 35 UNDERSTORY TREES	(885 / 50) * 2 = 35 UNDERSTORY TREES	
B8	BUFFER B8 - A	838	(838 / 10) * 2 = 168 TREES	(838 / 10) * 2 = 168 TREES	84 47.5 & TABLE 4 - CHAPTER 8
	BUFFER B8 - B	480	(480 / 10) * 2 = 96 TREES	(480 / 10) * 2 = 96 TREES	
	BUFFER B8 - C	748	(748 / 10) * 2 = 149 TREES	(748 / 10) * 2 = 149 TREES	
	BUFFER B8 - D	482	(482 / 10) * 2 = 96 TREES	(482 / 10) * 2 = 96 TREES	
BUFFER B8 - E EXTENDS TO SHEET L1.2	432	(432 / 10) * 2 = 86 TREES	(432 / 10) * 2 = 86 TREES		



05/30/18
04/09/18
02/20/18
02/07/18
11/26/18
10/05/18
10/04/18

COUNTY SUBMITTAL
COUNTY SUBMITTAL
SITE VISIT COMMENTS
3RD COUNTY COMMENTS
CLIENT COMMENTS
CLIENT COMMENTS

DATE
REVISIONS

Kimley-Horn

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BWA-MALDEN, HORN CAMP HOUSE, 811-A, RD-1404
437 FAYTOWN STREET, SUITE 400
FAYTOWN, NC 27401

RECURRENT ENERGY

PHONE: 415-635-1500
1000 DAK ROAD, SUITE 300
WALNUT CREEK, CA 94597

NO. 102

06-11-19

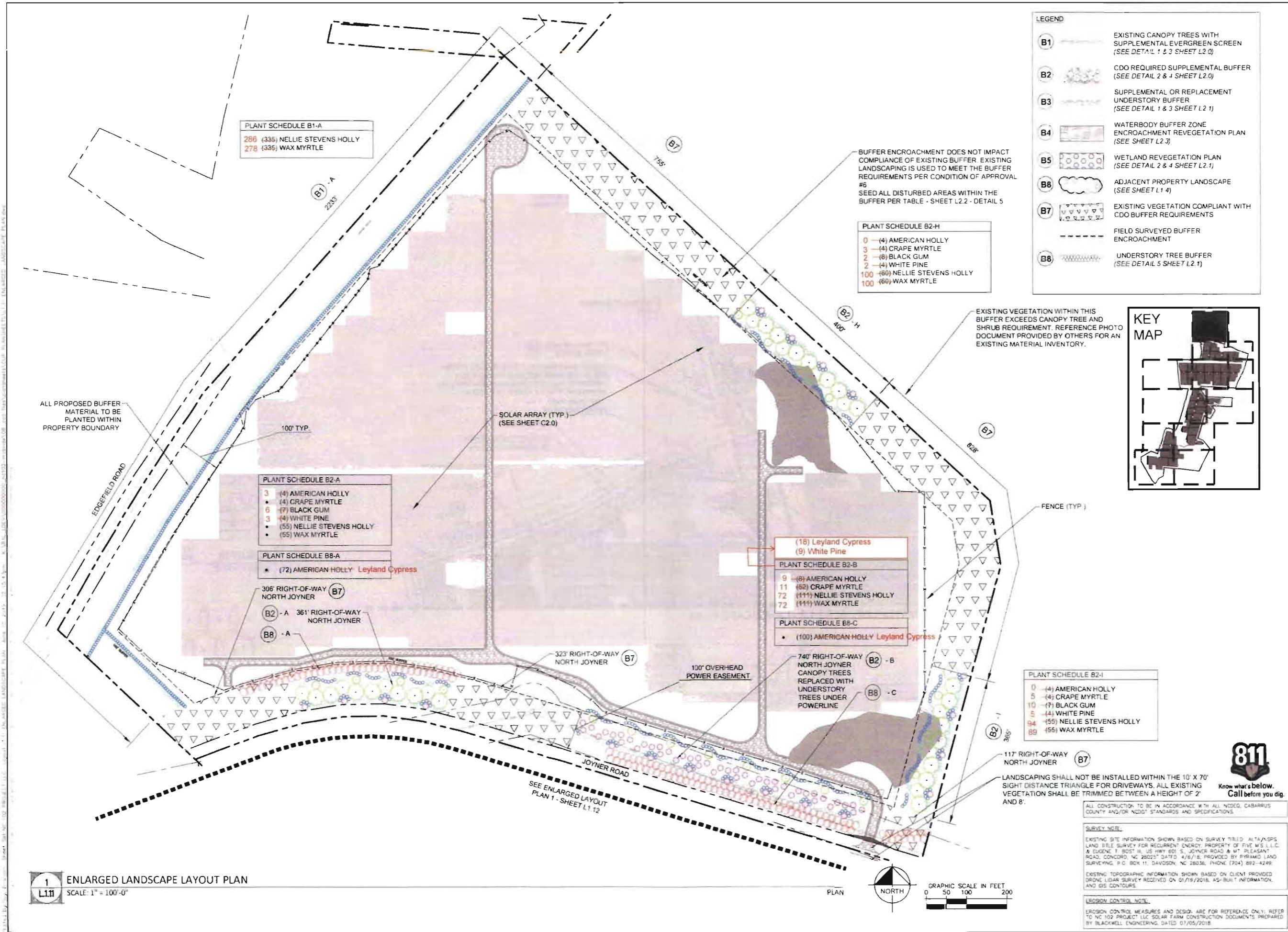
SCALE AS SHOWN
PREPARED BY: BPG
DRAWN BY: AWF
CHECKED BY: BPG

LANDSCAPE PLAN

NC 102 PROJECT LLC PREPARED FOR DEPCOM POWER

CABARRUS COUNTY

SHEET NUMBER L1.1



NO.	REVISIONS	DATE
1	05/20/18	05/20/18
2	06/09/18	06/09/18
3	02/20/19	02/20/19
4	02/20/19	02/20/19
5	11/21/18	11/21/18
6	10/05/18	10/05/18
7	10/14/18	10/14/18

Kimley»Horn
 2700 WILKINSON DRIVE, SUITE 200, RALEIGH, NC 27609
 WWW.KIMLEY-HORN.COM
 PHONE: 919-876-1500
 FAX: 919-876-1501
 MAILING CHECK: CA 24987

RECURRENT ENERGY
 3000 THE WOODS, SUITE 300
 RALEIGH, NORTH CAROLINA 27609



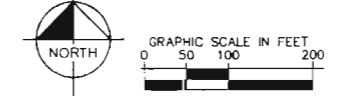
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02-11-19	BPG	AWF

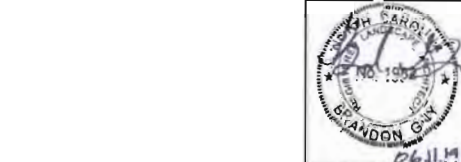
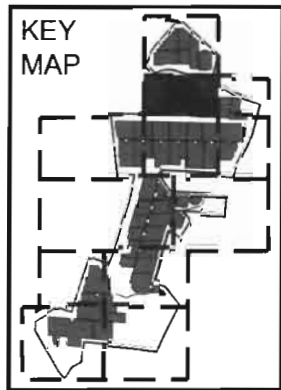
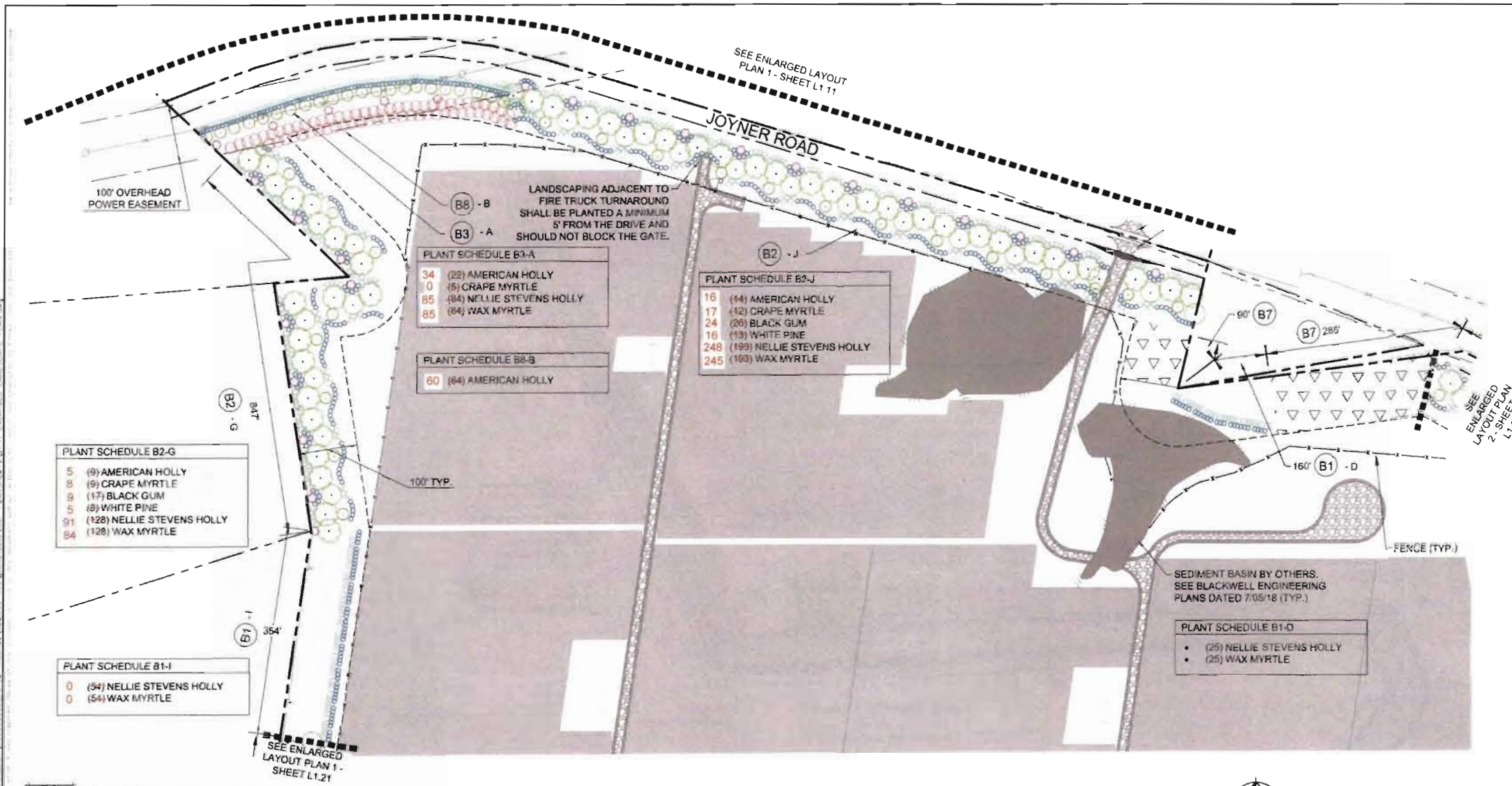
ENLARGED LANDSCAPE LAYOUT PLAN

NC 102 PROJECT LLC
 PREPARED FOR
DEPCOM POWER
 CARRIAGE COUNTRY

SHEET NUMBER
L1.11

1
L1.11 ENLARGED LANDSCAPE LAYOUT PLAN
 SCALE: 1" = 100'-0"





NO. PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
1014-0000000000	07/20/18	AS SHOWN	BPG	AWF	BPG

ENLARGED LANDSCAPE LAYOUT PLAN

NC 102 PROJECT LLC
 PREPARED FOR
DEPCOM POWER

CABARRUS COUNTY

SHEET NUMBER
L1.12

NO.	REVISIONS	DATE
1	ISSUE FOR PERMIT	06/08/18
2	COUNTY SUBMITTAL	02/20/18
3	CITY SUBMITTAL	02/07/18
4	STATE DEPT COMMENTS	11/26/18
5	CITY COMMENTS	10/05/18
6	CLIENT COMMENTS	10/04/18

Kimley-Horn

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 WWW.KIMLEY-HORN.COM PHONE: 704-399-3333
 451 FAYETTEVILLE STREET, SUITE 300
 WALDEA, NC 28157

RECURRENT ENERGY

PHONE: 813-433-1338
 8001 SAW ROAD, SUITE 300
 BALWIL ORCH, GA 30007

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

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL CODES, CABARRUS COUNTY AND/OR ACDOT STANDARDS AND SPECIFICATIONS.

SURVEY NOTE:
 EXISTING SITE INFORMATION SHOWN BASED ON SURVEY TITLED: ALTA/NOPI LAND TITLE SURVEY FOR RECURRENT ENERGY PROPERTY OF FIVE AFS L.L.C. & EUGENE I. BOST BY US HWY 801 S., JOYNER ROAD & MT. PLEASANT ROAD, CONCORD, NC 28025 DATED 1/6/18, PROVIDED BY PYRAMID LAND SURVEYS, P.O. BOX 11, DAVENPORT, NC 28036; PHONE (704) 892-4249.

EXISTING TOPOGRAPHIC INFORMATION SHOWN BASED ON CLIENT PROVIDED DRONE LIDAR SURVEY RECEIVED ON 01/19/2018. AS-BUILT INFORMATION AND GSI CONTOURS.

EROSION CONTROL NOTE:
 EROSION CONTROL MEASURES AND DESIGN ARE FOR REFERENCE ONLY. REFER TO NC 102 PROJECT LLC SEAR FARM CONSTRUCTION DOCUMENTS PREPARED BY BLACKWELL ENGINEERING, DATED 07/05/2018.

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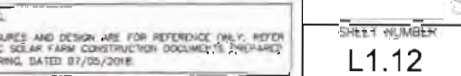
- (B1) EXISTING CANOPY TREES WITH SUPPLEMENTAL EVERGREEN SCREEN (SEE DETAIL 1 & 3 SHEET L2.0)
- (B2) CDO REQUIRED SUPPLEMENTAL BUFFER (SEE DETAIL 2 & 4 SHEET L2.0)
- (B3) SUPPLEMENTAL OR REPLACEMENT UNDERSTORY BUFFER (SEE DETAIL 1 & 3 SHEET L2.1)
- (B4) WATERBODY BUFFER ZONE ENCROACHMENT REVEGETATION PLAN (SEE SHEET L2.3)
- (B5) WETLAND REVEGETATION PLAN (SEE DETAIL 2 & 4 SHEET L2.1)
- (B6) ADJACENT PROPERTY LANDSCAPE (SEE SHEET L1.4)
- (B7) EXISTING VEGETATION COMPLIANT WITH CDO BUFFER REQUIREMENTS
- (B8) UNDERSTORY TREE BUFFER (SEE DETAIL 5 SHEET L2.1)

1 ENLARGED LANDSCAPE LAYOUT PLAN
 SCALE: 1" = 100'-0"

2 ENLARGED LANDSCAPE LAYOUT PLAN
 SCALE: 1" = 100'-0"



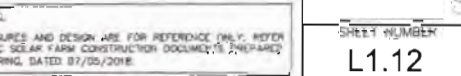
10 ENLARGED LANDSCAPE LAYOUT PLAN
 SCALE: 1" = 100'-0"



2 ENLARGED LANDSCAPE LAYOUT PLAN
 SCALE: 1" = 100'-0"



10 ENLARGED LANDSCAPE LAYOUT PLAN
 SCALE: 1" = 100'-0"



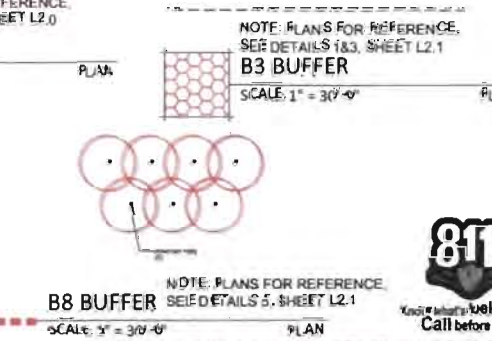
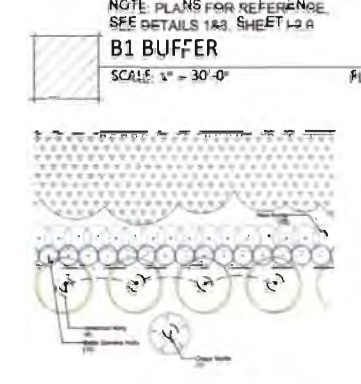
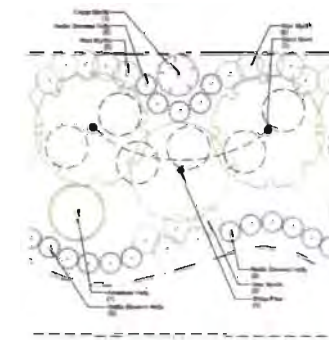
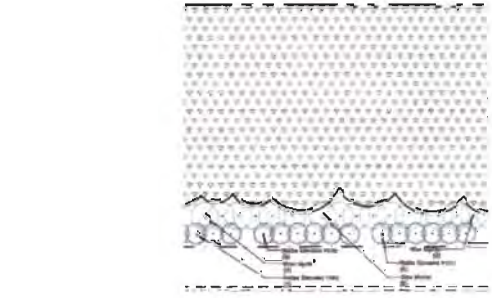
2 ENLARGED LANDSCAPE LAYOUT PLAN
 SCALE: 1" = 100'-0"

MATCHLINE: SEE L1.1 - LANDSCAPE PLAN

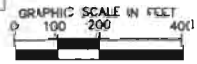
AREA TO BE LANDSCAPED	CODE REQUIREMENT	AREA (SQ. FEET)	TOTAL QUANTITY REQUIRED PER COUNTY NUMBER	TOTAL QUANTITY PROVIDED	CODE SECTION
B1	BUFFER B1 - A	832	102 (150' x 2) + 261 SHRUBS	102 (150' x 2) + 261 SHRUBS	84.175 & TABLE 4 - CHAPTER 6
B2	BUFFER B2 - C	1,138	0,280 (150' x 2) + 181 CANOPY TREES 0,300 (150' x 2) + 1,200 SHRUBS	0,280 (150' x 2) + 181 CANOPY TREES (0,280 (150' x 2) + 181 UNDERSTORY TREES) 0,300 (150' x 2) + 1,200 SHRUBS	84.175 & TABLE 4 - CHAPTER 6
	BUFFER B2 - D	848	880 (150' x 2) + 240 CANOPY TREES 880 (150' x 2) + 880 SHRUBS	880 (150' x 2) + 240 CANOPY TREES 880 (150' x 2) + 880 SHRUBS	
B3	BUFFER B3 - E	242	0,441 (150' x 2) + 110 CANOPY TREES 0,441 (150' x 2) + 110 SHRUBS	0,441 (150' x 2) + 110 CANOPY TREES 0,441 (150' x 2) + 110 SHRUBS	84.175 & TABLE 4 - CHAPTER 6
	BUFFER B3 - F	1,340	0,280 (150' x 2) + 181 CANOPY TREES 0,300 (150' x 2) + 1,200 SHRUBS	0,280 (150' x 2) + 181 CANOPY TREES 0,300 (150' x 2) + 1,200 SHRUBS	
B6	PROPOSED BUFFER TO SATELITE COUNTY REQUIREMENTS AND OTHER FOR REFERENCES (SEE SHEET L1.4)	3,886.17	0,284 (150' x 2) + 182 CANOPY TREES 0,304 (150' x 2) + 1,216 SHRUBS	0,284 (150' x 2) + 182 CANOPY TREES 0,304 (150' x 2) + 1,216 SHRUBS	TABLE 4 - CHAPTER 6
B8	BUFFER B8 - E (EXPANDED FROM SHEET L1.1)	472		123 (150' x 2) + 88 TREES	TABLE 4 - CHAPTER 6
	BUFFER B8 - F	398		286 (150' x 2) + 88 TREES	
	BUFFER B8 - G	388		286 (150' x 2) + 88 TREES	
	BUFFER B8 - H	330		283 (150' x 2) + 88 TREES	
	BUFFER B8 - I (CONTINUES TO SHEET L1.2)	513		371 (150' x 2) + 88 TREES	
	BUFFER B8 - N	711		711 (150' x 2) + 88 TREES	
	BUFFER B8 - O	1,138		1,138 (150' x 2) + 88 TREES	

LEGEND

- (B1) EXISTING CANOPY TREES WITH SUPPLEMENTAL EVERGREEN SCREEN (SEE DETAIL 1 & 3 SHEET L2.0)
- (B2) CDO REQUIRED SUPPLEMENTAL BUFFER (SEE DETAIL 2 & 4 SHEET L2.0)
- (B3) SUPPLEMENTAL OR REPLACEMENT UNDERSTORY BUFFER (SEE DETAIL 1 & 3 SHEET L2.1)
- (B4) WATERBODY BUFFER ZONE ENCROACHMENT REVEGETATION PLAN (SEE SHEET L2.3)
- (B5) WETLAND REVEGETATION PLAN (SEE DETAIL 2 & 4 SHEET L2.1)
- (B6) ADJACENT PROPERTY LANDSCAPE (SEE SHEET L1.4)
- (B7) EXISTING VEGETATION COMPLIANT WITH CDO BUFFER REQUIREMENTS
- (B8) FIELD SURVEYED BUFFER ENCROACHMENT
- (B8) UNDERSTORY TREE BUFFER (SEE DETAIL 5 SHEET L2.1)



- NOTES:**
- CONTRACTOR TO VERIFY AND LOCATE ALL ABOVE AND BELOW GROUND UTILITIES PRIOR TO LANDSCAPE INSTALLATION.
 - PLANT MATERIAL IS SHOWN WITHIN THE RESPECTIVE BUFFER FOR REFERENCE. SEE LANDSCAPE REQUIREMENTS CHART FOR QUANTITY OF PLANT MATERIAL PER EACH BUFFER SEGMENT.
 - ALL SHRUB MATERIAL TO BE PLANTED FOR THE SCREENING PURPOSE OF THE CONDITIONAL USE PERMIT SHALL BE EVERGREEN.



811
Call before you dig.

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL CODES, CABARRUS COUNTY AND/OR NCDOT STANDARDS AND SPECIFICATIONS.

SURVEY NOTE:
EXISTING SITE INFORMATION SHOWN BASED ON SURVEY TITLED: ALTA/PLS/PLS LAND TITLE SURVEY FOR RECURRENT ENERGY PROPERTY OF FIVE M'S, L.L.C. & EUGENE T. BOST III - US HWY 401 S., JOYNER ROAD & MT PLEASANT ROAD, CONCORD, NC 28027 DATED: 4/8/18, PROVIDED BY PIRAMID LAND SURVEYING, P.O. BOX 15, DAVIDSON, NC 28036, PHONE: (704) 892-4248.

EXISTING TOPOGRAPHIC INFORMATION SHOWN BASED ON CLIENT PROVIDED GROUND LEASER SURVEY RECEIVED ON 07/19/2018, AS-BUILT INFORMATION, AND GIS CONTOURS.

EROSION CONTROL NOTE:
EROSION CONTROL MEASURES AND DESIGN ARE FOR REFERENCE ONLY. REFER TO NC 102 PROJECT LLC SOLAR FARM CONSTRUCTION DOCUMENTS PREPARED BY BLACKWELL ENGINEERING, DATED 07/05/2018.

05/20/18
04/09/18
02/20/18
02/07/18
11/26/18
10/05/18
10/04/18

COUNTY SUBMITTAL
COUNTY SUBMITTAL
SITE VISIT COMMENTS
3RD COUNTY COMMENTS
CLIENT COMMENTS
CLIENT COMMENTS

DATE
REVISES

Kimley Horn
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1700 W. HARRIS STREET, SUITE 400
WARRAHER, NORTH CAROLINA 27578
PHONE: 919.471.1200
3000 OAK ROAD, SUITE 300
WALTON GREEN, GA 30487

RECURRENT ENERGY

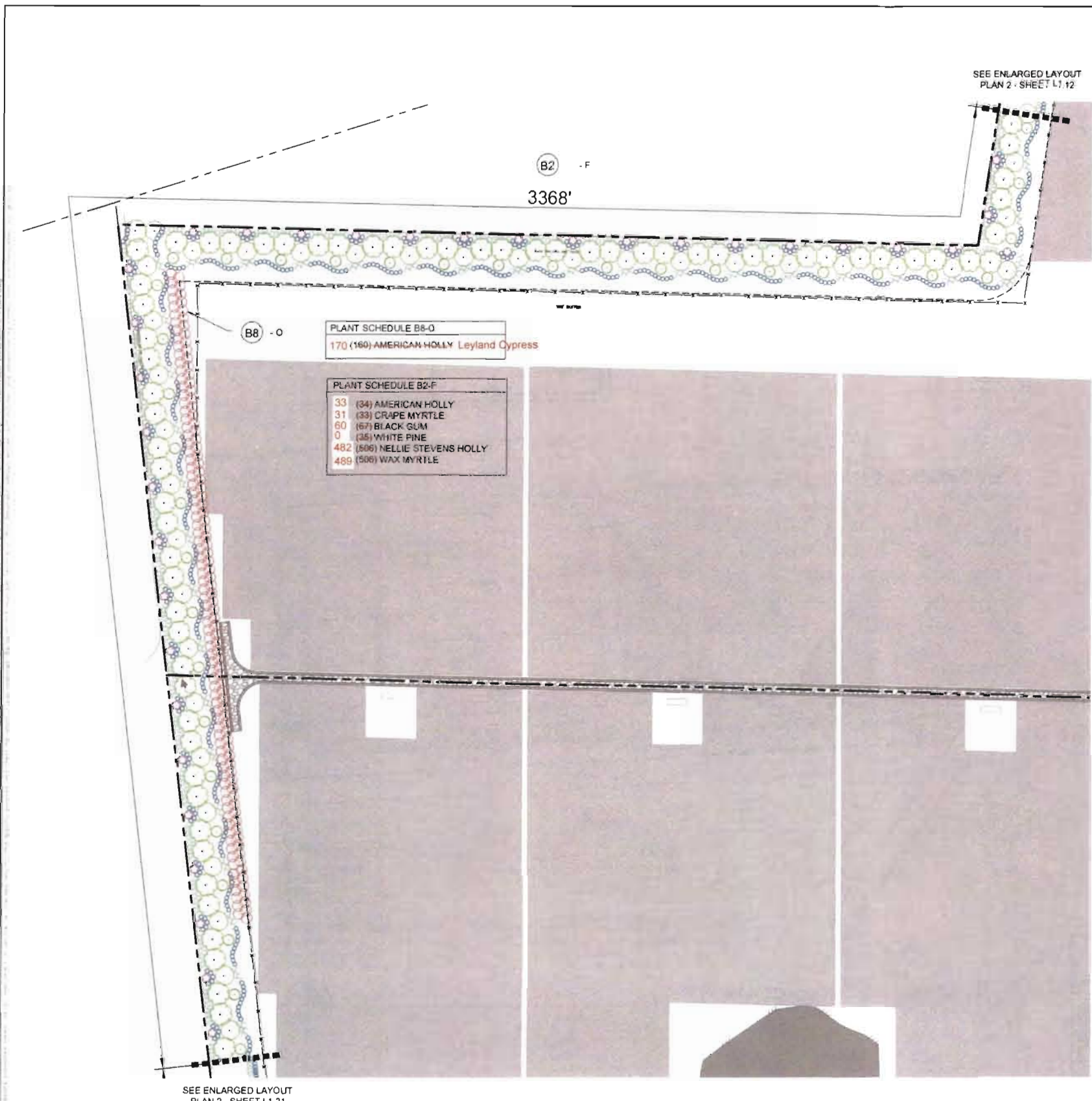
STATE PROJECT: NC 102
DATE: 07/07/18
SCALE: AS SHOWN
DESIGNED BY: BPG
DRAWN BY: JAMF
CHECKED BY: BPG

LANDSCAPE PLAN

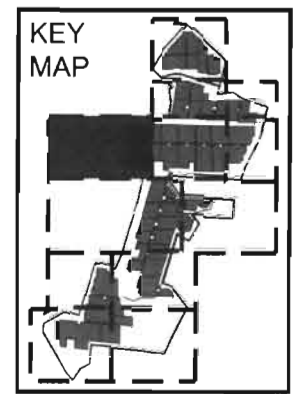
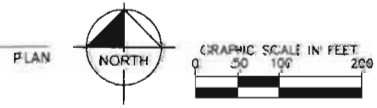
NC 102 PROJECT LLC PREPARED FOR DEPCOM POWER

SHEET NUMBER
L1.2

MATCHLINE: SEE L1.3 - LANDSCAPE PLAN

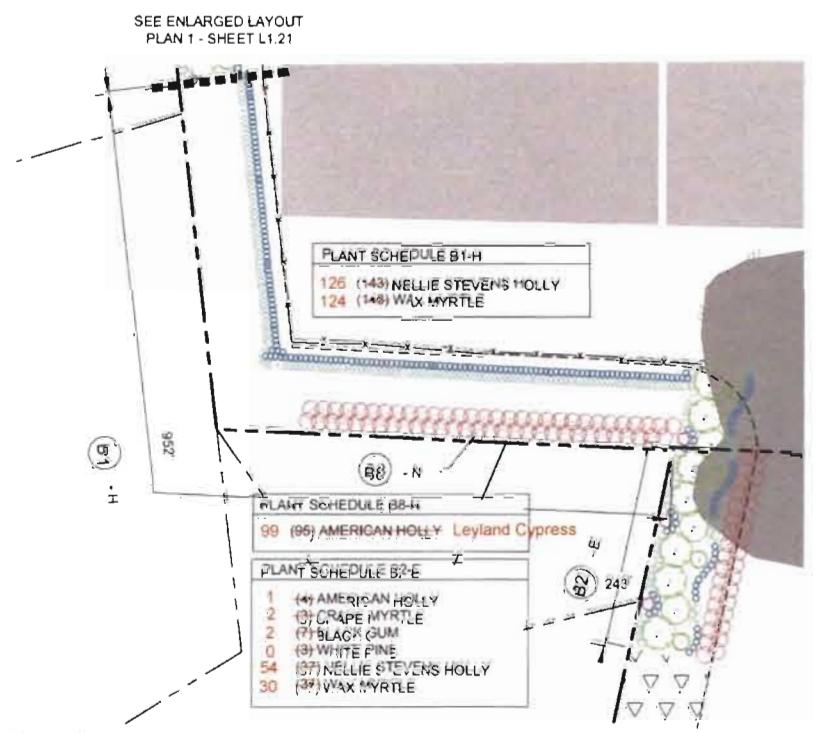


1
L121 ENLARGED LANDSCAPE LAYOUT PLAN
SCALE: 1" = 100'-0"



LEGEND

- B1** EXISTING CANOPY TREES WITH SUPPLEMENTAL EVERGREEN SCREEN (SEE DETAIL 1 & 3 SHEET L2.0)
- B2** CDO REQUIRED SUPPLEMENTAL BUFFER (SEE DETAIL 2 & 4 SHEET L2.0)
- B3** SUPPLEMENTAL OR REPLACEMENT UNDERSTORY BUFFER (SEE DETAIL 1 & 3 SHEET L2.1)
- B4** WATERBODY BUFFER ZONE ENCROACHMENT REVEGETATION PLAN (SEE SHEET L2.3)
- B5** WETLAND REVEGETATION PLAN (SEE DETAIL 2 & 4 SHEET L2.1)
- B6** ADJACENT PROPERTY LANDSCAPE (SEE SHEET L1.4)
- B7** EXISTING VEGETATION COMPLIANT WITH CDO BUFFER REQUIREMENTS
- FIELD SURVEYED BUFFER ENCROACHMENT
- B8** UNDERSTORY TREE BUFFER (SEE DETAIL 5 SHEET L2.1)



2
L121 ENLARGED LANDSCAPE LAYOUT PLAN
SCALE: 1" = 100'-0"

9/5/2019	DATE	
08/09/19	COUNTY SUBMITTAL	
09/20/19	COUNTY SUBMITTAL	
02/07/19	3RD COUNTY COMMENTS	
11/26/18	CLIENT COMMENTS	
10/05/18	CLIENT COMMENTS	
19/04/18	CLIENT COMMENTS	
	NO. REVISIONS	

Kimley & Horn

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421 LAYETTEVILLE STREET, SUITE 100
WALTON, NC 27157

RECURRENT ENERGY

INDIANA CAROLINA
No. 188
BRANDON GW

NVA PROJECT	0743551004
DATE	01/10/19
SCALE AS SHOWN	
DESIGNED BY BRG	
DRAWN BY AMF	
CHECKED BY BRG	

ENLARGED LANDSCAPE LAYOUT PLAN

NC 102 PROJECT LLC
PREPARED FOR
DEPCOM POWER
CABARRUS COUNTY

SHEET NUMBER
L121

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

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL NCEQ, CABARRUS COUNTY AND/OR NCDOT STANDARDS AND SPECIFICATIONS.

SURVEY NOTE:
EXISTING SITE INFORMATION SHOWN BASED ON SURVEY TITLED: ALTA/NRPS LAND TITLE SURVEY FOR RECURRENT ENERGY PROPERTY OF FIVE L1'S, L.L.C. & EUGENE T. BOST JR., US HWY 601 S., ZONER ROAD & MC PLEASANT ROAD, CONCORD, NC 28027 DATED 4/8/18, PROVIDED BY PYRAMID LAND SURVEYING, P.O. BOX 11, DAVIDSON, NC 28036; PHONE (704) 892-4248.

EXISTING TOPOGRAPHIC INFORMATION SHOWN BASED ON CLIENT PROVIDED (DRONE) LIDAR SURVEY RECEIVED ON 01/19/2018. AS-BUILT INFORMATION AND GIS CONTOURS.

EROSION CONTROL NOTE:
EROSION CONTROL MEASURES AND DESIGN ARE FOR REFERENCE ONLY. REFER TO NC 102 PROJECT LLC SOLAR FARM CONSTRUCTION DOCUMENTS PREPARED BY BLACKWELL ENGINEERING, DATED 07/06/2018.

MATCHLINE: SEE L1.2 - LANDSCAPE PLAN

- NOTES:**
1. CONTRACTOR TO VERIFY AND LOCATE ALL ABOVE AND BELOW GROUND UTILITIES PRIOR TO LANDSCAPE INSTALLATION.
 2. PLANT MATERIAL IS SHOWN WITHIN THE RESPECTIVE BUFFER FOR REFERENCE. SEE LANDSCAPE REQUIREMENTS CHART FOR QUANTITY OF PLANT MATERIAL PER EACH BUFFER SEGMENT.
 3. ALL SHRUB MATERIAL TO BE PLANTED FOR THE SCREENING PURPOSE OF THE CONDITIONAL USE PERMIT SHALL BE EVERGREEN.

BUFFER ENCROACHMENT DOES NOT IMPACT COMPLIANCE OF EXISTING BUFFER. EXISTING LANDSCAPING IS USED TO MEET THE BUFFER REQUIREMENTS PER CONDITION OF APPROVAL #6. EXISTING BUFFER CONTAINS A MINIMUM OF (2) CANOPY TREES AND (15) UNDERSTORY SHRUBS PER 50 LINEAR FEET. REFERENCE PHOTO DOCUMENT PROVIDED BY OTHERS FOR AN EXISTING MATERIAL INVENTORY.

SEED ALL DISTURBED AREAS WITHIN THE BUFFER PER TABLE - SHEET L2.2

EXISTING VEGETATION WITHIN THIS BUFFER EXCEEDS CANOPY TREE AND SHRUB REQUIREMENT

LANDSCAPING SHALL NOT BE INSTALLED WITHIN THE 10' X 70' SIGHT TRIANGLE FOR DRIVEWAYS. ALL EXISTING VEGETATION SHALL BE TRIMMED BETWEEN A HEIGHT OF 2' AND 6'.

KLEINFELDER REVISED 30' WETLAND BUFFER PER CAD FILE RECEIVED FROM KLEINFELDER, INC. ON 8/6/18

PROPOSED PLANTING SHALL NOT BE INSTALLED WITHIN CRZ OF EXISTING VEGETATION

SEDIMENT BASIN BY OTHERS. SEE BLACKWELL ENGINEERING PLANS DATED 7/05/18

BUFFER ENCROACHMENT DOES NOT IMPACT COMPLIANCE OF EXISTING BUFFER. EXISTING LANDSCAPING IS USED TO MEET THE BUFFER REQUIREMENTS PER CONDITION OF APPROVAL #6. EXISTING BUFFER CONTAINS A MINIMUM OF (2) CANOPY TREES AND (15) UNDERSTORY SHRUBS PER 50 LINEAR FEET. REFERENCE PHOTO DOCUMENT PROVIDED BY OTHERS FOR AN EXISTING MATERIAL INVENTORY.

SEED ALL DISTURBED AREAS WITHIN THE BUFFER PER TABLE - SHEET L2.2

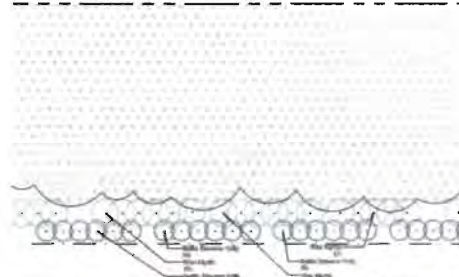
CONTRACTOR TO VERIFY AND LOCATE ALL ABOVE AND BELOW GROUND UTILITIES PRIOR TO LANDSCAPE INSTALLATION

11 AMERICAN HOLLY PROPOSED IN EXISTING DRIVEWAY LOCATION



LEGEND:

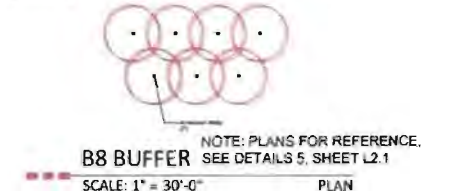
- (B1) EXISTING CANOPY TREES WITH SUPPLEMENTAL EVERGREEN SCREEN (SEE DETAIL 1 & 3 SHEET L2.0)
- (B2) CDO REQUIRED SUPPLEMENTAL BUFFER (SEE DETAIL 2 & 4 SHEET L2.0)
- (B3) SUPPLEMENTAL OR REPLACEMENT UNDERSTORY BUFFER (SEE DETAIL 1 & 3 SHEET L2.1)
- (B4) WATERBODY BUFFER ZONE ENCROACHMENT REVEGETATION PLAN (SEE SHEET L2.3)
- (B5) WETLAND REVEGETATION PLAN (SEE DETAIL 2 & 4 SHEET L2.1)
- (B6) ADJACENT PROPERTY LANDSCAPE (SEE SHEET L1.4)
- (B7) EXISTING VEGETATION COMPLIANT WITH CDO BUFFER REQUIREMENTS
- FIELD SURVEYED BUFFER ENCROACHMENT
- (B8) UNDERSTORY TREE BUFFER (SEE DETAIL 5 SHEET L2.1)



B1 BUFFER NOTE: PLANS FOR REFERENCE. SEE DETAILS 1&3, SHEET L2.0
SCALE: 1" = 30'-0" PLAN



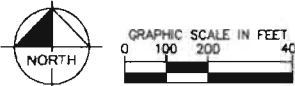
B5 BUFFER NOTE: PLANS FOR REFERENCE. SEE DETAILS 2&4, SHEET L2.1
SCALE: 1" = 30'-0" PLAN



B8 BUFFER NOTE: PLANS FOR REFERENCE. SEE DETAILS 5, SHEET L2.1
SCALE: 1" = 30'-0" PLAN

LANDSCAPE REQUIREMENTS & CALCULATIONS

AREA TO BE LANDSCAPED	CODE REQUIREMENT	AREA LENGTH	TOTAL QUANTITY REQUIRED PER COUNTY MINIMUM	TOTAL QUANTITY PROVIDED	COOR. SECTION
(B1)	BUFFER B1 - E BUFFER B1 - A BUFFER B1 - G	1,080 184 186	(100/150) * 15 = 100 SHRUBS (100/150) * 15 = 100 SHRUBS (100/150) * 15 = 100 SHRUBS	300/150 = 2 = 200 SHRUBS 100/150 = 0.67 = 100 SHRUBS 100/150 = 0.67 = 100 SHRUBS	24-17-1 24-17-1 24-17-1
(B4)	WATERBODY BUFFER ZONE ENCROACHMENT REVEGETATION PLAN FOR CABARRUS COUNTY W/6 AND W/6B CONSERVATION (SEE SHEET L2.3)	2.43 AC	DARE ROOF SEEDLING SHALL BE PLANTED @ 6'-6" IN STAGGERED ROWS @ 2'-0" X 1'-0" = 1,296 SEEDLING	1,728 (60/100) * 15 = 900 SHRUBS (SEE COMMENTS ON L2.3 FOR ROUND-OVER SEEDLING ESTABLISHMENT)	COUNTY
(B5)	30' BUFFER SHALL BE ESTABLISHED ALONG THE EDGE OF ANY DISTURBED WETLANDS IN THE EVENT THAT A BUFFER IS DISTURBED. ALL DISTURBED AREAS WITHIN THE BUFFER SHALL BE REVEGETATED WITH APPROPRIATE VEGETATION (BARRIERS)	380 LF	(100/150) * 15 = 100 TREES (100/150) * 15 = 100 SHRUBS	100/150 = 0.67 = 100 TREES 100/150 = 0.67 = 100 SHRUBS	4-11-1 4-11-1
(B8)	BUFFER B8 - E BUFFER B8 - A BUFFER B8 - L BUFFER B8 - K *BUFFER B8 - M CONTINUED FROM SHEET L1.2	874 428 662 643	(100/150) * 2 = 133 TREES (100/150) * 2 = 133 TREES (100/150) * 2 = 133 TREES (100/150) * 2 = 133 TREES	100/150 = 0.67 = 100 TREES 100/150 = 0.67 = 100 TREES 100/150 = 0.67 = 100 TREES 100/150 = 0.67 = 100 TREES	4-11-1 4-11-1 4-11-1 4-11-1



NO.	REVISIONS	DATE
05/20/19		
04/20/19		
02/20/19		
02/07/18		
02/07/18		
11/26/16		
10/05/16		
10/04/16		

Kimley Horn
 2010 KIMLEY-HORN AND ASSOCIATES, INC.
 WWW.KIMLEY-HORN.COM PHONE: 818.555.1484
 421 FAYETTEVILLE STREET, SUITE 200
 RALEIGH, NC 27601

RECURRENT ENERGY
 TRUCKEE, NV 89411
 3500 OAK RIDGE DRIVE, SUITE 200
 WALNUT CREEK, CA 94597



MVA PROJECT CHARACTERISTICS	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
	07/09/18	AS SHOWN	BFG	AWF	BFG

LANDSCAPE PLAN

NC 102 PROJECT LLC
 PREPARED FOR
DEPCOM POWER

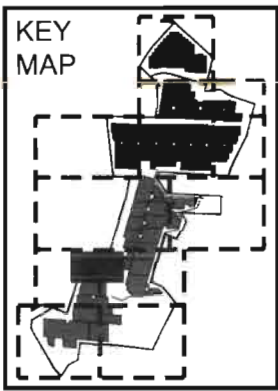
SHEET NUMBER
L1.3



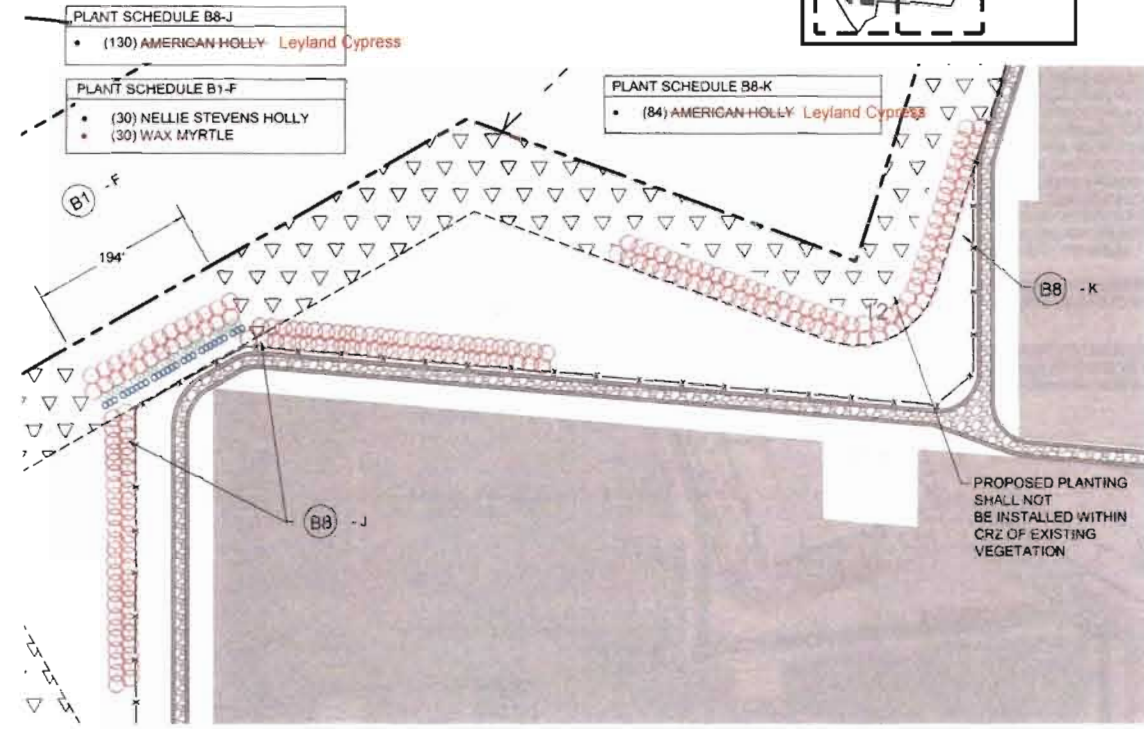
ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL NCEC, CABARRUS COUNTY AND/OR NCCO1 STANDARDS AND SPECIFICATIONS.

SURVEY NOTE:
 EXISTING SITE INFORMATION SHOWN BASED ON SURVEY TITLED: ALTA/NSPS LAND TITLE SURVEY FOR RECURRENT ENERGY, PROPERTY OF FIVE MTS L.L.C. & EUGENE F. BOST JR., US HWY 801 S., JOYNER ROAD & W/1 PLEASANT ROAD, CONCORD, NC 28025 DATED 4/6/18, PROVIDED BY PYRAMID LAND SURVEYING, P.O. BOX 11, DAVENPORT, NC 28036, PHONE (704) 892-4240.
 EXISTING TOPOGRAPHIC INFORMATION SHOWN BASED ON CLIENT PROVIDED DRONE LIDAR SURVEY RECEIVED ON 01/19/2018, AS-BUILT INFORMATION, AND GIS CONTOURS.

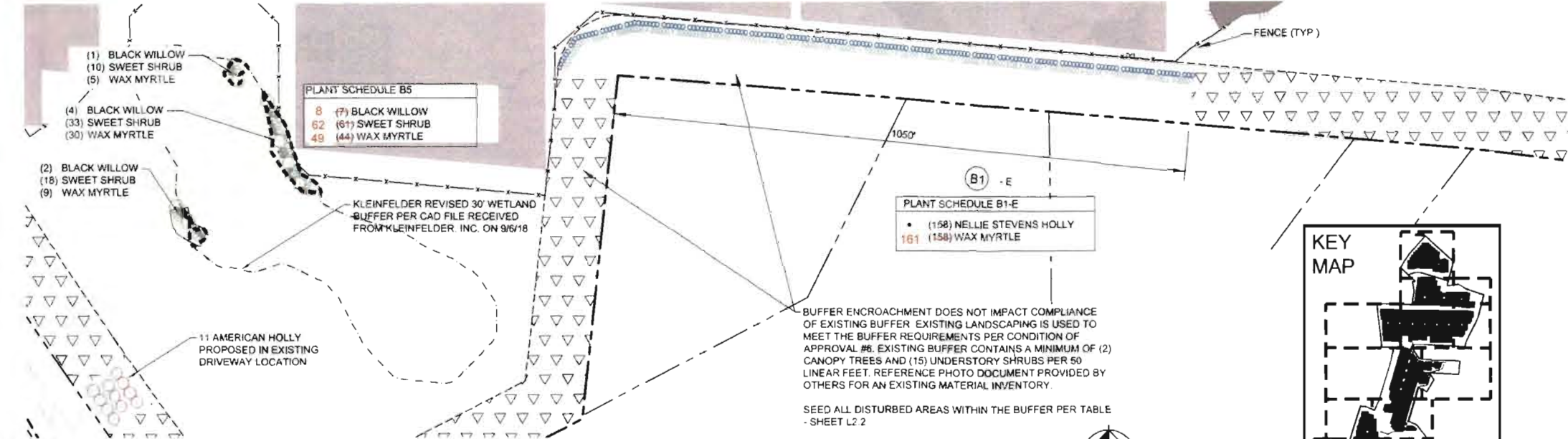
EROSION CONTROL NOTE:
 EROSION CONTROL MEASURES AND DESIGN ARE FOR REFERENCE ONLY. REFER TO NC 102 PROJECT LLC SOLAR FARM CONSTRUCTION DOCUMENTS PREPARED BY BLACKWELL ENGINEERING, DATED 07/05/2018.



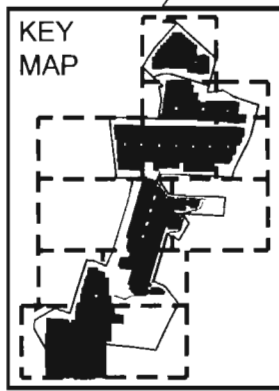
1 ENLARGED LANDSCAPE LAYOUT PLAN
L1.31 SCALE: 1" = 100'-0"
PLAN NORTH GRAPHIC SCALE IN FEET 0 50 100 200



2 ENLARGED LANDSCAPE LAYOUT PLAN
L1.31 SCALE: 1" = 100'-0"
PLAN NORTH GRAPHIC SCALE IN FEET 0 50 100 200



3 ENLARGED LANDSCAPE LAYOUT PLAN
L1.31 SCALE: 1" = 100'-0"
PLAN NORTH GRAPHIC SCALE IN FEET 0 50 100 200



811
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ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL HICED, CABARRUS COUNTY AND/OR HICED STANDARDS AND SPECIFICATIONS.

SURVEY NOTE:
EXISTING SITE INFORMATION SHOWN BASED ON SURVEY TITLED: ALTA/NSP LAND TITLE SURVEY FOR RECURRENT ENERGY, PROPERTY OF FIVE M'S LLC, & EUGENE T. BOSTON, UT, HAY 801 S., JOYNER ROAD & MT. PLEASANT ROAD, CONCORD, NC 28024, DATED 4/6/16, PROVIDED BY PYRAMID LAND SURVEYING, P.O. BOX 11, DAVIDSON, NC 28036; PHONE (704) 892-4248.

EXISTING TOPOGRAPHIC INFORMATION SHOWN BASED ON CLIENT PROVIDED DRONE LIDAR SURVEY RECEIVED ON 01/19/2018, AS-BUILT INFORMATION, AND GIS CONTOURS.

EROSION CONTROL NOTE:
EROSION CONTROL MEASURES AND DESIGN ARE FOR REFERENCE ONLY. REFER TO NC 102 PROJECT LLC SOLAR FARM CONSTRUCTION DOCUMENTS PREPARED BY BLACKWELL ENGINEERING, DATED 07/05/2018.

NO. COUNTY SUBMITTAL	05/20/19	DATE	
NO. COUNTY SUBMITTAL	04/09/19	DATE	
NO. SITE VISIT COMMENTS	02/20/19	DATE	
NO. COUNTY COMMENTS	02/07/19	DATE	
NO. CLIENT COMMENTS	11/26/18	DATE	
NO. CLIENT COMMENTS	10/05/18	DATE	
NO. REVISIONS	10/04/18	DATE	

Kimley-Horn

RECURRENT ENERGY

BRANDON GUY
REGISTERED PROFESSIONAL ENGINEER
NO. 1987
STATE OF NORTH CAROLINA

DATE: 06/11/19

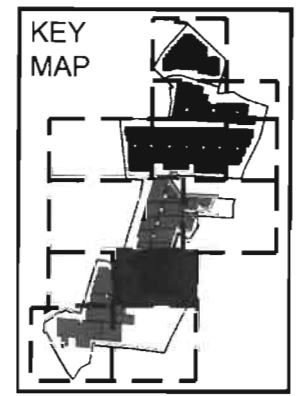
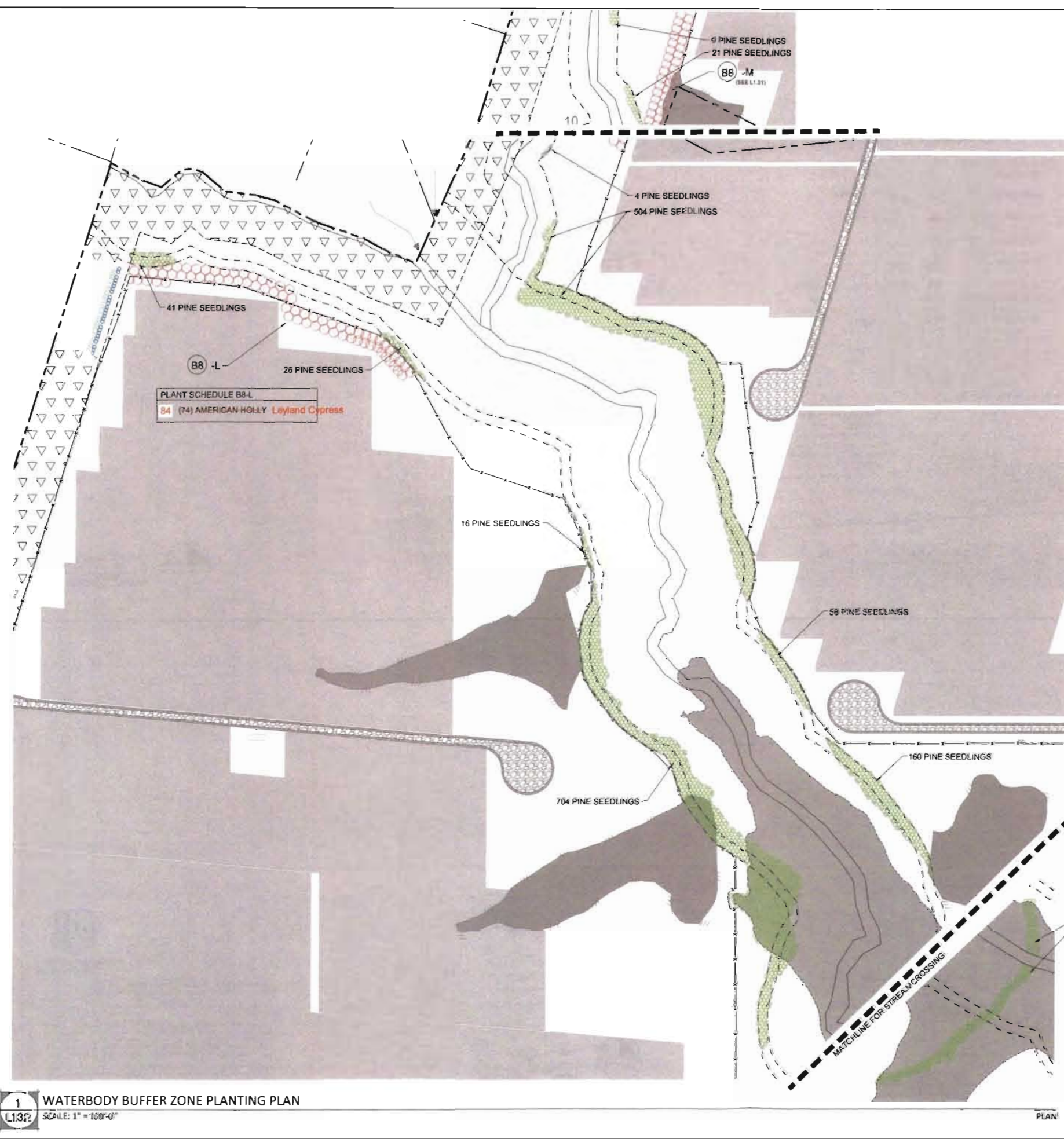
SCALE AS SHOWN
DESIGNED BY: BPD
DRAWN BY: AWF
CHECKED BY: BPG

ENLARGED LANDSCAPE LAYOUT PLAN

NC 102 PROJECT LLC
PREPARED FOR DEPCOM POWER

SHEET NUMBER L1.31

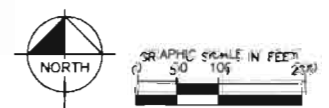
PREPARED BY: BLACKWELL ENGINEERING, INC. 1000 BIRCHWOOD DRIVE, SUITE 100, WILSON, NC 27587
 DATE: 07/05/2018
 PROJECT: NC 102 PROJECT LLC SOLAR FARM CONSTRUCTION DOCUMENTS PREPARED BY BLACKWELL ENGINEERING, INC. 1000 BIRCHWOOD DRIVE, SUITE 100, WILSON, NC 27587



NOTES:

1. WATERBODY BUFFER ZONE PLANTINGS SHOWN FOR QUANTITY PURPOSES ONLY FOR EACH DISTURBED AREA. SEE SHEET L2.3 FOR INSTALLATION MEASURES.

1
L132 WATERBODY BUFFER ZONE PLANTING PLAN
 SCALE: 1" = 100'-0"



NOTE: PINE SEEDLINGS SHALL NOT BE PLANTED WITHIN THE LIMITS OF BOST CREEK AND THE FLOODWAY

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL LOCAL, CABARRUS COUNTY AND/OR NC DOT STANDARDS AND SPECIFICATIONS.

SURVEY NOTE:
 EXISTING SITE INFORMATION SHOWN BASED ON SURVEY TITLED: ALPHA/NSPS LAND TITLE SURVEY FOR RECURRENT ENERGY PROPERTY OF THE M'S LLC, 6 EUGENE T. BOST BL, US HWY 601 S., JOYNER ROAD & FT. PLEASANT ROAD, CONCORD, NC 28025 DATED 4/8/18, PROVIDED BY PYRAMID LAND SURVEYING, P.O. BOX 11, DAVIDSON, NC 28036; PHONE (704) 852-4249.

EXISTING TOPOGRAPHIC INFORMATION SHOWN BASED ON LIGHT PROVIDED DRONE LIDAR SURVEY RECEIVED ON 01/19/2018, AS-BUILT INFORMATION AND GIS CONTOURS.

EROSION CONTROL NOTE:
 EROSION CONTROL MEASURES AND DESIGN ARE FOR REFERENCE ONLY. REFER TO NC 102 PROJECT LLC SOLAR FARM CONSTRUCTION DOCUMENTS PREPARED BY BLACKWELL ENGINEERING, DATED 07/05/2018.

NO. / DATE	REVISIONS
01 / 03 / 18	
04 / 09 / 18	
02 / 20 / 18	
02 / 07 / 19	
11 / 26 / 18	
03 / 02 / 18	
10 / 09 / 18	

PROJECT	NC 102 PROJECT LLC SOLAR FARM CONSTRUCTION DOCUMENTS
DATE	07/05/2018
SCALE	AS SHOWN
DESIGNED BY	BFG
DRAWN BY	AMF
CHECKED BY	BFG

Kimley-Horn

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 WWW.KIMLEY-HORN.COM PHONE: 919.351.1000
 127 EASTHALL STREET, SUITE 100
 RALPHOCH, NC 27607

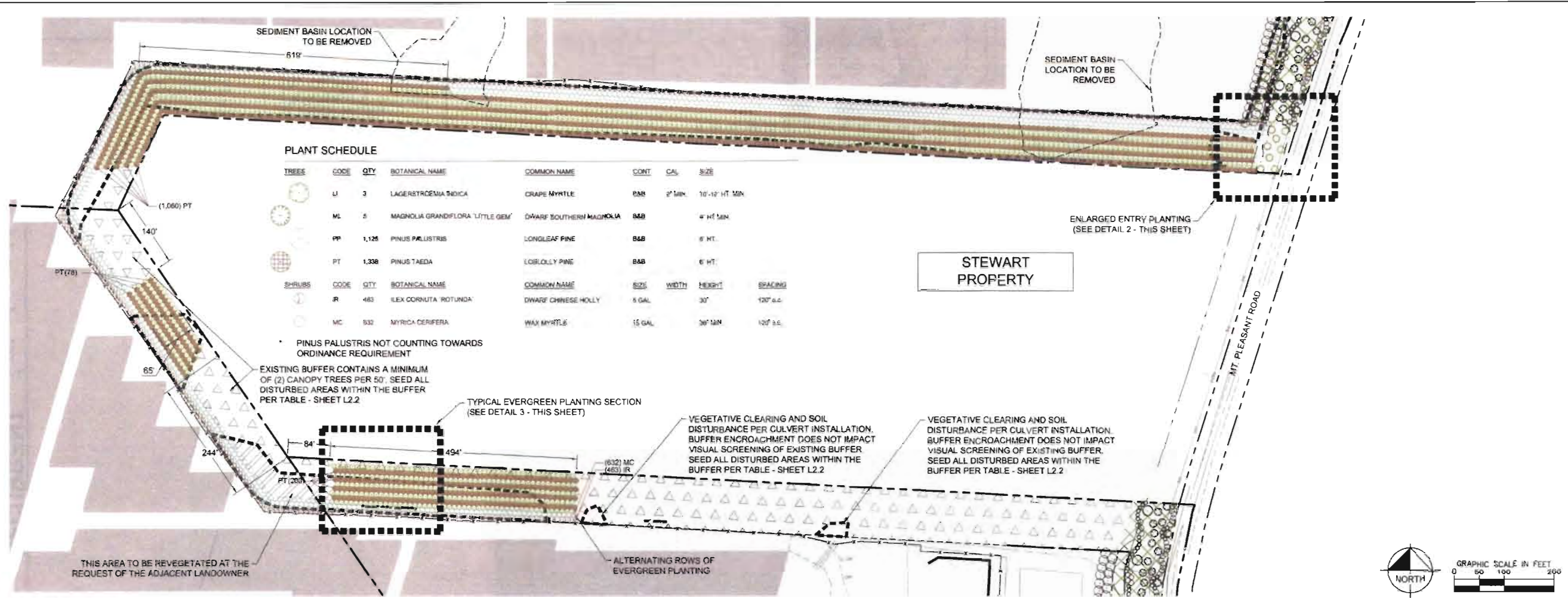
RECURRENT ENERGY

PHONE: 919-875-1900
 5005 DAK ROAD, SUITE 300
 WALNUT CREEK, CA 94597

ENLARGED LANDSCAPE PLAN

NC 102 PROJECT LLC
 PREPARED FOR
DEPCOM POWER
 CABARRUS COUNTY

SHEET NUMBER
L1.32



PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT.	CAL.	SIZE	
	LI	3	LAGERSTRÖMIA INDICA	GRAPE MYRTLE	P&B	2" MIN.	10'-12" HT. MIN.	
	ML	5	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	DWARF SOUTHERN MAGNOLIA	8&8	4" HT. MIN.		
	PP	1,125	PINUS PALUSTRIS	LONGLEAF PINE	8&8	6" HT.		
	PT	1,338	PINUS TAEDA	LOBLOLLY PINE	8&8	6" HT.		
SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WIDTH	HEIGHT	SPACING
	IR	463	ILEX CORNUTA 'ROTUNDA'	DWARF CHINESE HOLLY	5 GAL.	30"	120" S.S.	
	MC	532	MYRTICA CERIFERA	WAX MYRTLE	15 GAL.	36" MIN.	120" S.S.	

* PINUS PALUSTRIS NOT COUNTING TOWARDS ORDINANCE REQUIREMENT

EXISTING BUFFER CONTAINS A MINIMUM OF (2) CANOPY TREES PER 50'. SEED ALL DISTURBED AREAS WITHIN THE BUFFER PER TABLE - SHEET L2.2

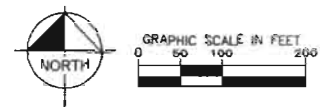
TYPICAL EVERGREEN PLANTING SECTION (SEE DETAIL 3 - THIS SHEET)

VEGETATIVE CLEARING AND SOIL DISTURBANCE PER CULVERT INSTALLATION. BUFFER ENCROACHMENT DOES NOT IMPACT VISUAL SCREENING OF EXISTING BUFFER. SEED ALL DISTURBED AREAS WITHIN THE BUFFER PER TABLE - SHEET L2.2

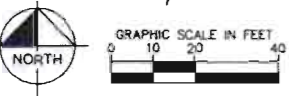
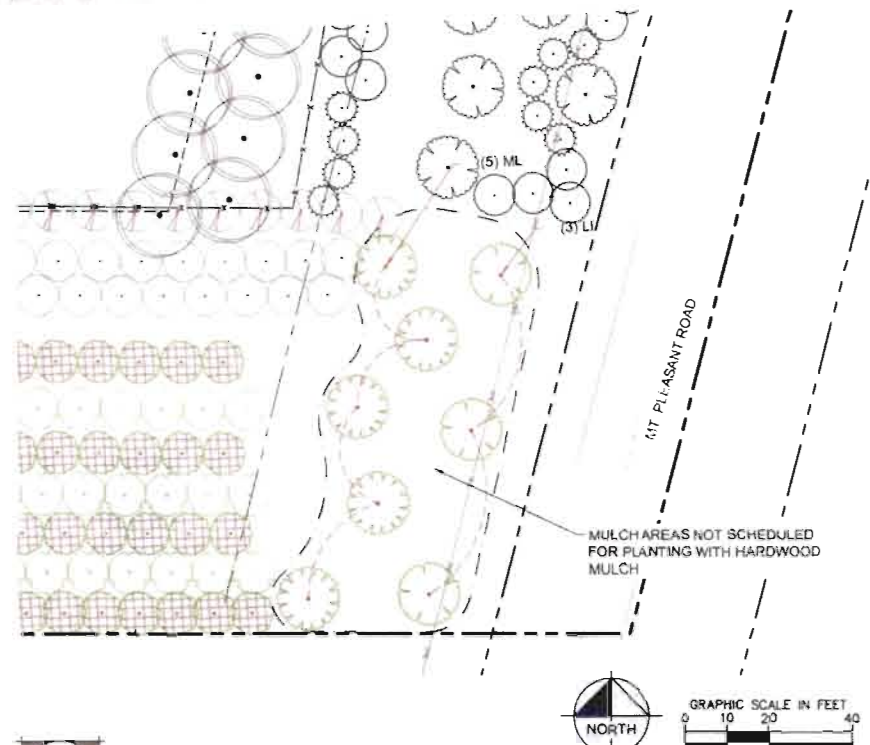
VEGETATIVE CLEARING AND SOIL DISTURBANCE PER CULVERT INSTALLATION. BUFFER ENCROACHMENT DOES NOT IMPACT VISUAL SCREENING OF EXISTING BUFFER. SEED ALL DISTURBED AREAS WITHIN THE BUFFER PER TABLE - SHEET L2.2

ALTERNATING ROWS OF EVERGREEN PLANTING

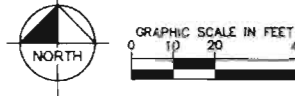
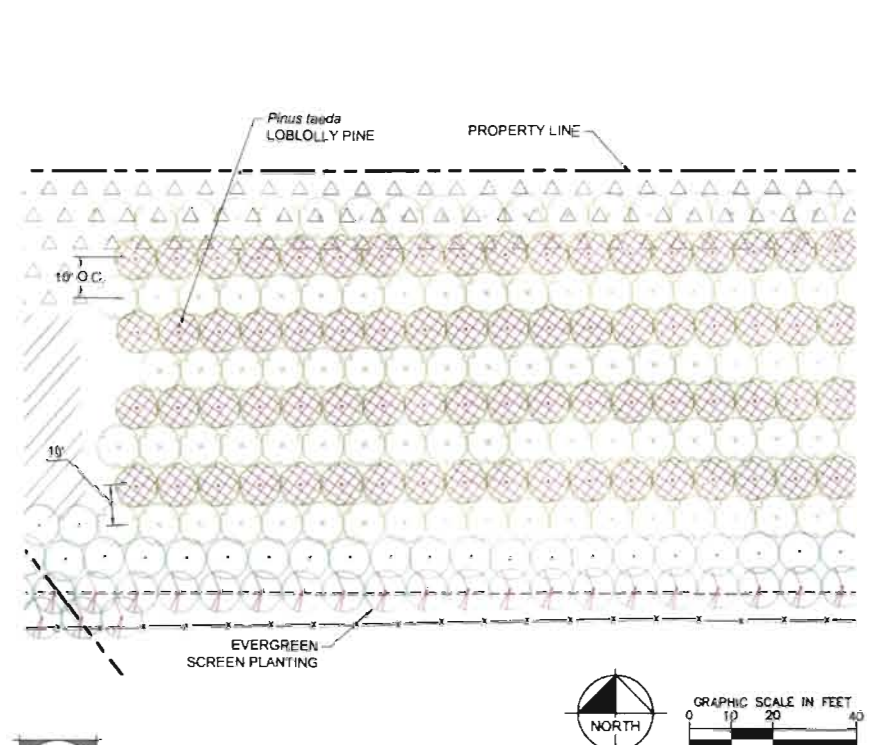
THIS AREA TO BE REVEGETATED AT THE REQUEST OF THE ADJACENT LANDOWNER



1 STEWART PROPERTY LANDSCAPE PLAN
L1.4 SCALE: 1" = 100' - 0"



2 ENLARGED ENTRY PLANTING
L1.4 SCALE: 1" = 20' - 0"



3 TYPICAL EVERGREEN PLANTING SECTION
L1.4

ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL NCDC, CABARRUS COUNTY AND/OR NCDOT STANDARDS AND SPECIFICATIONS.

811
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EROSION CONTROL NOTE:
EROSION CONTROL MEASURES AND DESIGN ARE FOR REFERENCE ONLY. REFER TO NC 102 PROJECT LLC SOLAR FARM CONSTRUCTION DOCUMENTS PREPARED BY BLACKWELL ENGINEERING, DATED 07/05/2018.

05/20/19	COUNTY SUBMITTAL	DATE
04/09/19	COUNTY SUBMITTAL	DATE
02/20/19	COUNTY SUBMITTAL	DATE
02/07/19	SITE MEET COMMENTS	DATE
11/26/18	3RD COUNTY COMMENTS	DATE
10/05/18	CLIENT COMMENTS	DATE
10/04/18	CLIENT COMMENTS	DATE
	REVISIONS	DATE

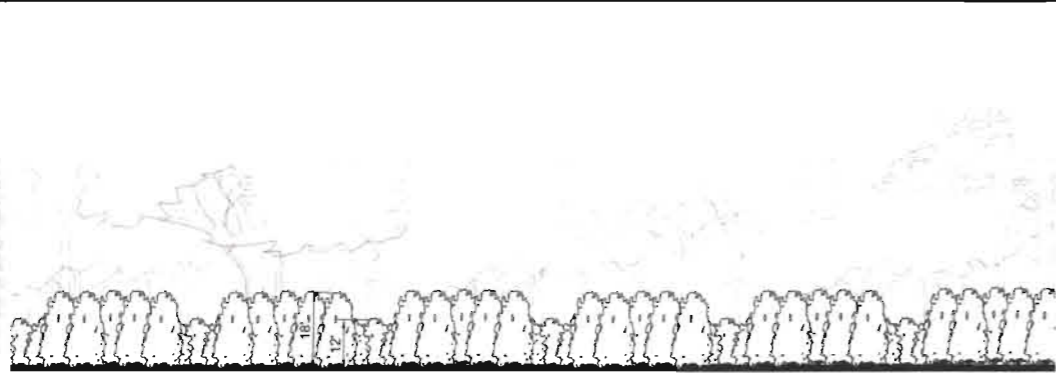
Kimley»Horn
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400 WILSON TERRACE, SUITE 200
427 FAYETTEVILLE STREET, SUITE 500
FAYETTEVILLE, NC 27401

RECURRENT ENERGY
PHON: 919-852-7560
305 OAK ROAD, SUITE 300
WALTON BEACH, FL 32587

STEWART PROPERTY LANDSCAPE PLAN

NC 102 PROJECT LLC
PREPARED FOR
DEPCOM POWER

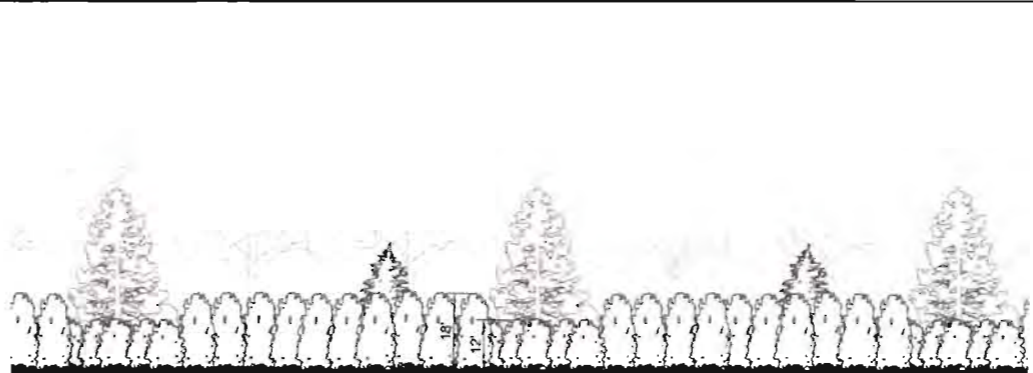
SHEET NUMBER
L1.4



1
L2.0 SUPPLEMENTAL EVERGREEN SCREENING (BUFFER B1)
SCALE: 1" = 20'-0"
ELEVATION

PLANT SCHEDULE SUPPLEMENTAL EVERGREEN SCREENING

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WIDTH	HEIGHT	SPACING	REMARKS
	15	ILEX X 'NELLIE R STEVENS'	NELLIE STEVENS HOLLY	B&B		6' MIN.	96" o.c.	
	15	MYRICA CERIFERA	WAX MYRTLE	15 GAL		36" MIN.	120" o.c.	

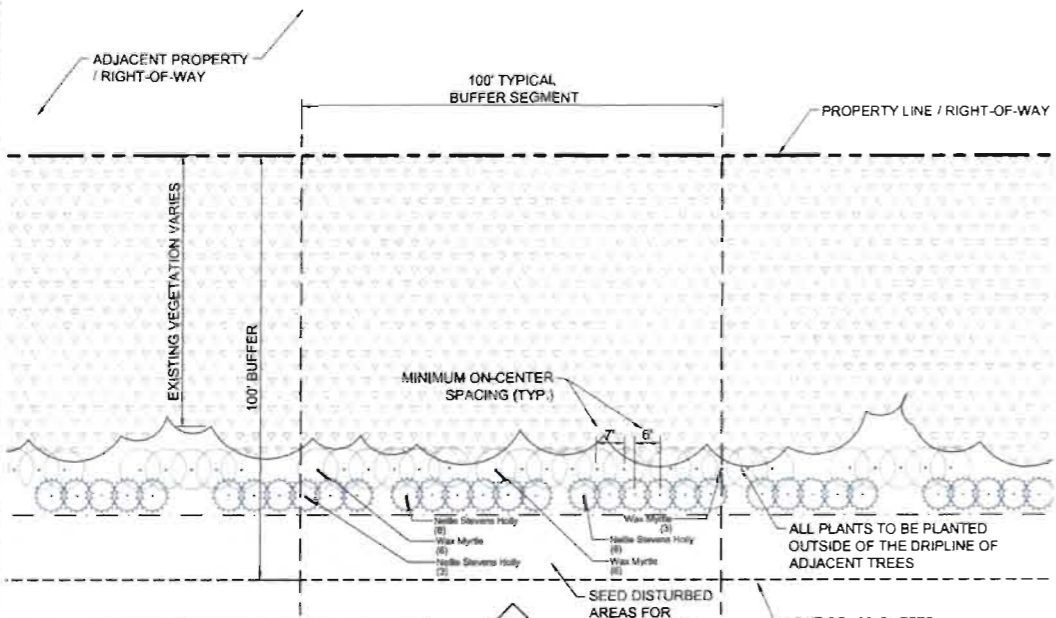


2
L2.0 CDO REQUIRED SUPPLEMENTAL BUFFER (BUFFER B2)
SCALE: 1" = 20'-0"
ELEVATION

PLANT SCHEDULE SUPPLEMENTAL CDO REQUIRED BUFFER

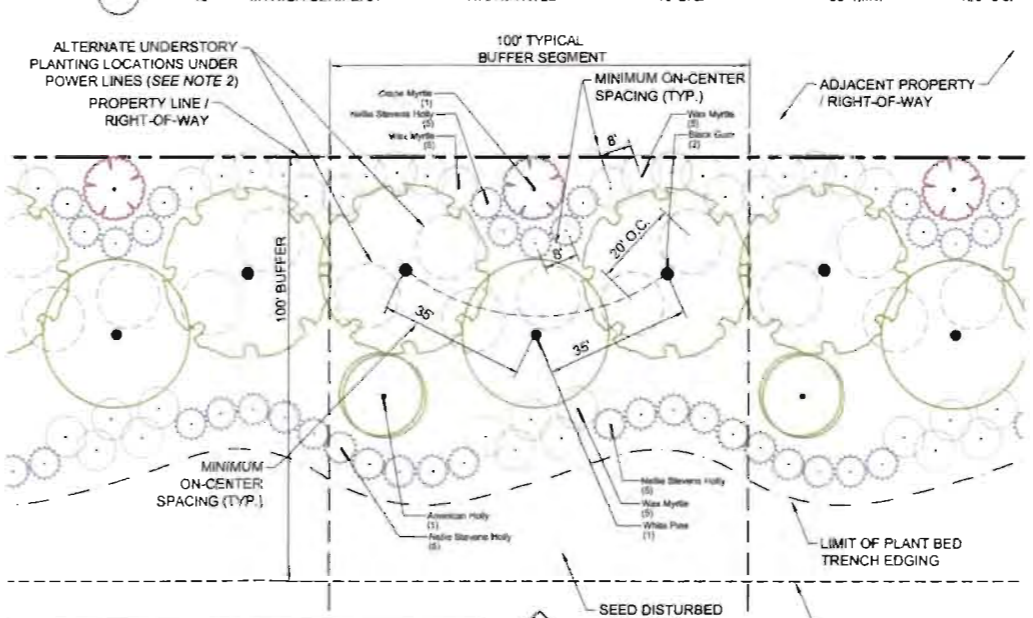
TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE
	1	ILEX OPACA	AMERICAN HOLLY	B&B	2' MIN.	6' HT. MIN.
	1	LAGERSTROEMIA INDICA	CRAPE MYRTLE	B&B	2' MIN.	10'-12' HT. MIN.
	2	NYSSA SYLVATICA	BLACK GUM	B&B	2 1/2" MIN.	12'-14' HT. MIN.
	1	PINUS STROBUS	WHITE PINE	B&B	2 1/2" MIN.	12'-14' HT. MIN.

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WIDTH	HEIGHT	SPACING
	15	ILEX X 'NELLIE R STEVENS'	NELLIE STEVENS HOLLY	B&B		6' MIN.	96" o.c.
	15	MYRICA CERIFERA	WAX MYRTLE	15 GAL		36" MIN.	120" o.c.



NOTES:
1. SAMPLE 100' BUFFER SEGMENT IN THIS DETAIL IS SHOWN FOR DESIGN INTENT AND GRAPHIC CLARITY. COUNTY REQUIREMENTS ARE CALCULATED IN 50' SEGMENTS.

3
L2.0 SUPPLEMENTAL EVERGREEN SCREENING (BUFFER B1)
SCALE: 1" = 20'-0"
PLAN



NOTES:
1. SAMPLE 100' BUFFER SEGMENT IN THIS DETAIL IS SHOWN FOR DESIGN INTENT AND GRAPHIC CLARITY. COUNTY REQUIREMENTS ARE CALCULATED IN 50' SEGMENTS.
2. WHERE OVERHEAD POWER LINES EXIST, UNDERSTORY TREES TO BE SUBSTITUTED IN PLACE OF CANOPY TREES AT A RATE OF (2) UNDERSTORY TREES PER CANOPY TREE. *Lagerstroemia indica*, CRAPE MYRTLE, SHALL BE USED IN THIS SUBSTITUTION.

4
L2.0 CDO REQUIRED SUPPLEMENTAL BUFFER (BUFFER B2)
SCALE: 1" = 20'-0"
PLAN

Prepared by: C. Brown, Brandon, NC
 Date: 06/10/2019
 Scale: 1" = 20'-0"
 Project: NC 102 PROJECT LLC
 Drawing No.: 102-01-001-01
 Drawing Title: LANDSCAPE DETAILS
 Drawing Scale: 1" = 20'-0"
 Drawing Date: 06/10/2019

No.	REVISIONS	DATE
05/26/19	COUNTY SUBMITTAL	05/26/19
04/09/19	COUNTY SUBMITTAL	04/09/19
02/20/19	SITE VISIT COMMENTS	02/20/19
02/07/19	SFD COUNTY COMMENTS	02/07/19
11/26/18	CLIENT COMMENTS	11/26/18
10/05/18	CLIENT COMMENTS	10/05/18
10/04/18	REVISIONS	10/04/18

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 WWW.KIMLEY-HORN.COM PHONE: 919-833-1004
 4217 AVONDALE DRIVE, SUITE 300
 WALTON, NC 27160

RECURRENT ENERGY
 PHONE: 813-679-1500
 2000 GAY ROAD, SUITE 300
 WALNUT CREEK, CA 94597

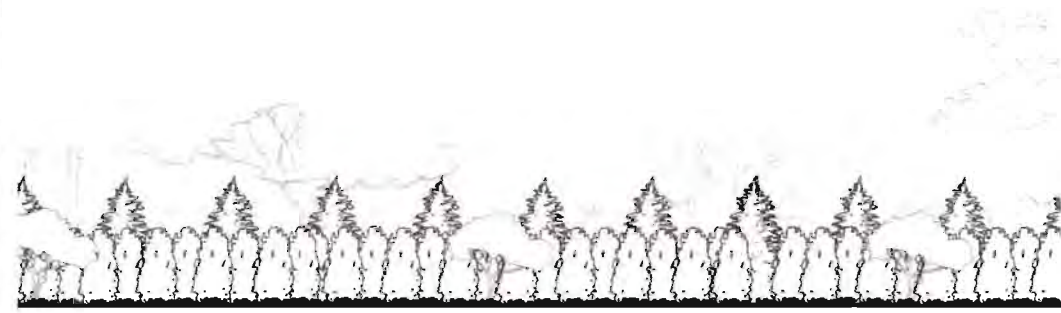


NHA PROJECT: NC 102 PROJECT LLC
 DATE: 06/10/2019
 SCALE: AS SHOWN
 DESIGNED BY: BRG
 DRAWN BY: AVF
 CHECKED BY: BFG

LANDSCAPE DETAILS

NC 102 PROJECT LLC
 PREPARED FOR
DEPCOM POWER

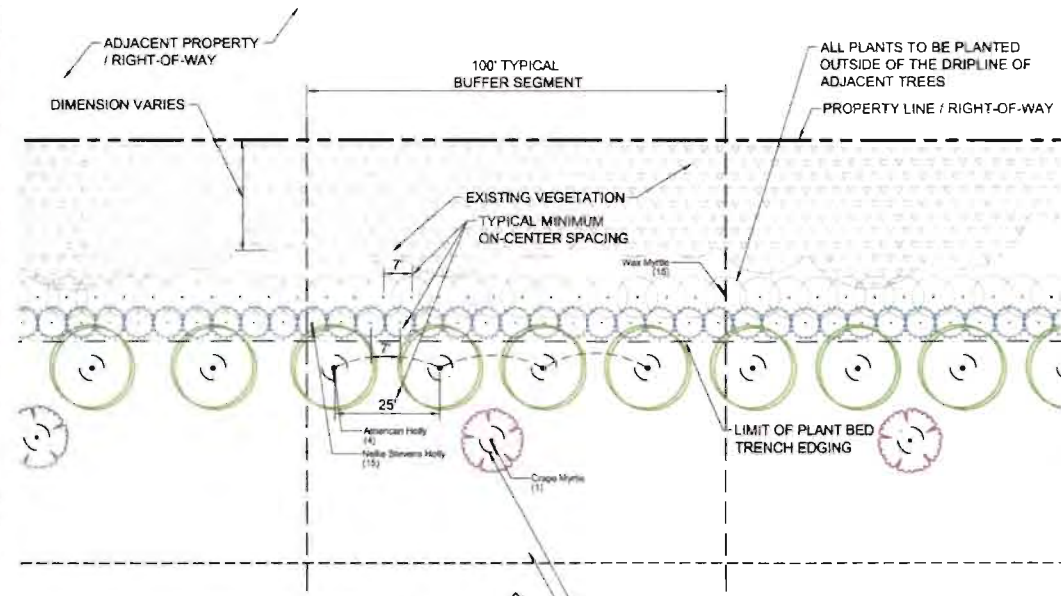
SHEET NUMBER
L2.0



1
L21 SUPPLEMENTAL OR REPLACEMENT UNDERSTORY BUFFER (BUFFER B3)
SCALE: 1" = 20'-0" ELEVATION

PLANT SCHEDULE SUPPLEMENTAL OR REPLACEMENT UNDERSTORY BUFFER

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	
	4	ILEX OPACA	AMERICAN HOLLY	B&B	2" MIN	6' HT. MIN.	
	1	LAGERSTROEMIA INDICA	CRAPE MYRTLE	B&B	2" MIN	10'-12' HT. MIN.	
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WIDTH	HEIGHT	SPACING
	15	ILEX X 'NELLIE R STEVENS'	NELLIE STEVENS HOLLY	B&B		6" MIN.	96" o.c.
	15	MYRICA CERIFERA	WAX MYRTLE	15 GAL		36" MIN.	120" o.c.



NOTES:
1. SAMPLE 100' BUFFER SEGMENT IN THIS DETAIL IS SHOWN FOR DESIGN INTENT AND GRAPHIC CLARITY. COUNTY REQUIREMENTS ARE CALCULATED IN 50' SEGMENTS.

PROVIDE 3" MULCH RING FOR NEW TREE PLANTINGS (TYP.)
SEED DISTURBED AREAS UP TO SHRUBS FOR STABILIZATION (TYP.)

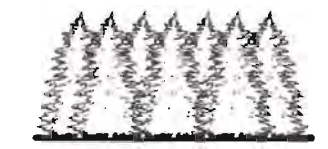
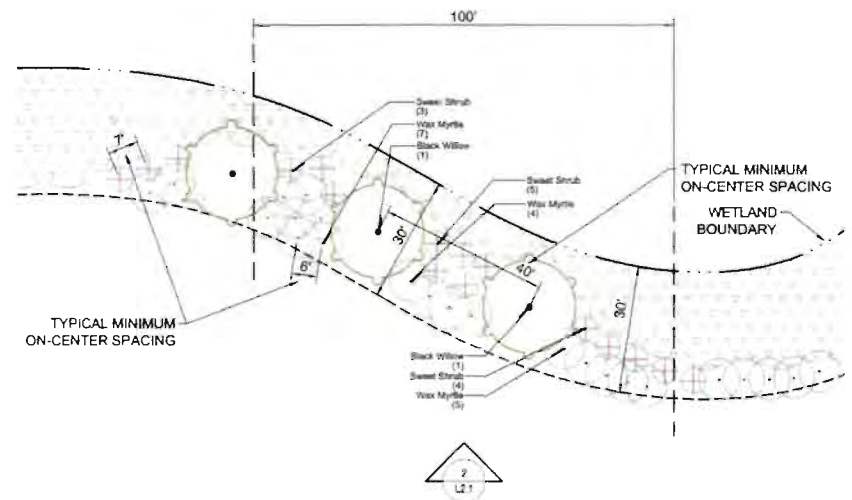
3
L21 SUPPLEMENTAL OR REPLACEMENT UNDERSTORY BUFFER (BUFFER B3)
SCALE: 1" = 20'-0" PLAN



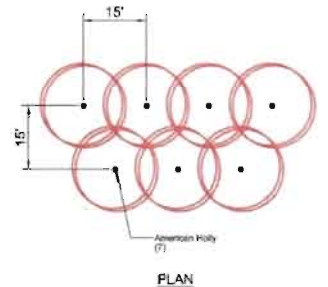
2
L21 WETLAND REVEGETATION PLAN (BUFFER B5)
SCALE: 1" = 20'-0" ELEVATION

PLANT SCHEDULE WETLAND REVEGETATION PLAN

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	
	2	SALIX NIGRA	BLACK WILLOW	B&B	2 1/2" MIN.	12 - 14' HT. MIN.	
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	WIDTH	HEIGHT	SPACING
	12	CALYCANTHUS FLORIDUS	SWEET SHRUB	10 GAL		36" MIN.	72" o.c.
	16	MYRICA CERIFERA	WAX MYRTLE	15 GAL		36" MIN.	120" o.c.



ELEVATION



PLAN

NOTES:
1. AMERICAN HOLLY, OR OTHER APPROVED CABARRUS COUNTY UNDERSTORY TREE EQUIVALENT, ARE TO BE 8'-10' HT. AT INSTALL.
2. UNDERSTORY TREES TO BE SPACED 15' ON-CENTER IN A DOUBLE STAGGERED ROW (SEE LAYOUT ABOVE).
3. UNDERSTORY TREES SHALL NOT BE PLANTED IN A WAY THAT CONFLICTS WITH COUNTY REQUIRED BUFFERS OR CRITICAL ROOT ZONE OF EXISTING TREES. UNDERSTORY TREES SHOULD NOT BE PLANTED WITHIN PUBLIC RIGHT-OF-WAY OR ANY ASSOCIATED SIGHT DISTANCE TRIANGLES.

4
L21 WETLAND REVEGETATION PLAN (BUFFER B5)
SCALE: 1" = 20'-0" PLAN

5
L21 UNDERSTORY TREE BUFFER (BUFFER B8)
SCALE: 1" = 20'-0" PLAN

No.	REVISIONS	DATE
05/10/18	COUNTY SUBMITTAL	05/10/18
04/09/18	COUNTY SUBMITTAL	04/09/18
02/20/18	COUNTY SUBMITTAL	02/20/18
02/07/18	SITE VISIT COMMENTS	02/07/18
11/26/18	3RD COUNTY COMMENTS	11/26/18
10/05/18	CLIENT COMMENTS	10/05/18
10/04/18	CLIENT COMMENTS	10/04/18

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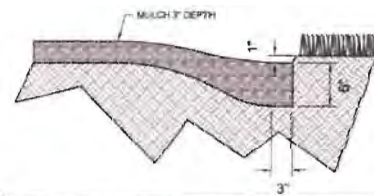


KHA PROJECT: 17-00000000000000000000
DATE: 05/10/18
SCALE: AS SHOWN
DESIGNED BY: BPG
DRAWN BY: AWF
CHECKED BY: BPG

LANDSCAPE DETAILS

NC 102
PROJECT LLC
PREPARED FOR
DEPCOM POWER
CABARRUS COUNTY

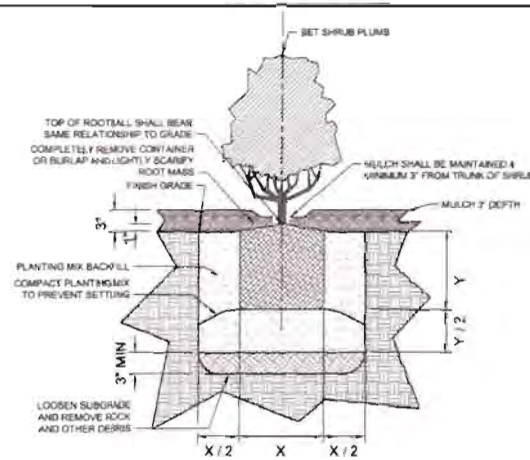
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L2.1



PLANTING BED TRENCH EDGING NOTE

- 1. TRENCH EDGE SHALL BE LOCATED AT THE EDGE OF PLANTING BED AND ALL TURF OR NATIVE GRASS AREAS.
- 2. MAINTAIN POSITIVE DRAINAGE IN ALL PLANTING BEDS
- 3. SEE GENERAL LANDSCAPE NOTES FOR TYPE OF MULCH

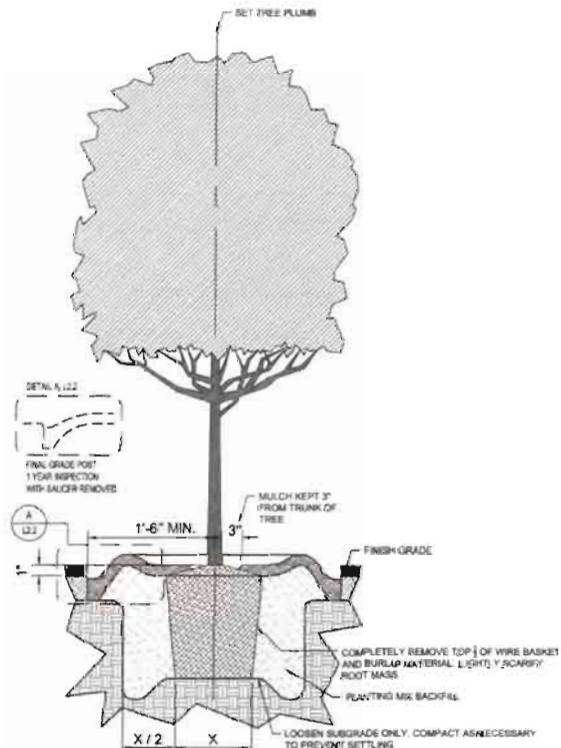
1
L2.2 PLANT BED TRENCH EDGING
SCALE: NTS SECTION



NOTES

- 1. ALL PLANT MATERIAL PRICING SHALL INCLUDE MULCH, BED PREPARATION, AND STAKING
- 2. ALL PLANTING BEDS SHALL RECEIVE 3" (THREE INCHES) OF MULCH
MULCH TYPE FOR PROJECT: DOUBLE GROUND HARDWOOD MULCH OR CURRENT COUNTY STANDARD
- 3. PLANT MATERIAL SPACING SHOWN ON LANDSCAPE PLANS SHALL OVERRIDE TYPICAL PLANT SPACING INDICATED ON PLANT SCHEDULE. LANDSCAPE CONTRACTOR RESPONSIBLE FOR VERIFYING ALL PLANT SPACING AND MAKING MINOR FIELD ADJUSTMENTS DUE TO UTILITY CONFLICTS.

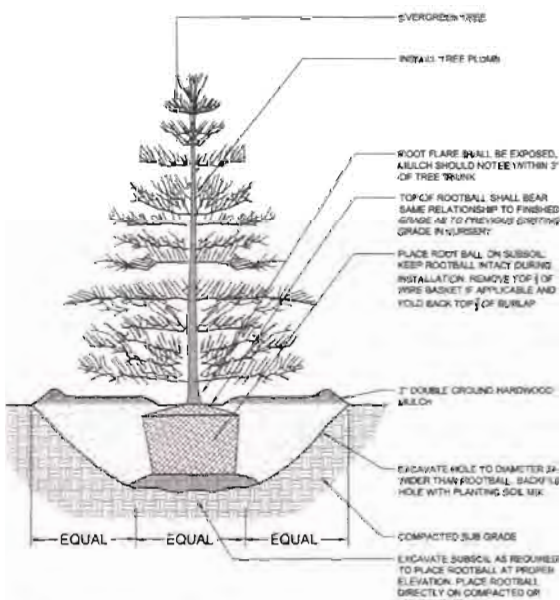
2
L2.2 TYPICAL SHRUB PLANTING
SCALE: NTS SECTION



TREE PLANTING NOTES

- 1. SET TREE MIN. 3" ABOVE SURROUNDING FINISH GRADE, MEASURED AT BASE OF TRUNK.
- 2. MAINTAIN 3" RADIUS CLEAR AREA SURROUNDING WOODY TRUNK FOR MULCH

3
L2.2 TYPICAL TREE PLANTING
SCALE: NTS SECTION



NOTE

- 1. ROOT SYSTEM SHALL BE WRAPPED AS SOLID UNITS WITH BALLS OF EARTH FIRMLY INTACT USING UNTREATED 8 OUNCE NATURAL BIODEGRADABLE FABRIC BURLAP, FIRMLY LACED WITH STOUT, NATURAL BIODEGRADABLE CORD OR TWINE.

4
L2.2 EVERGREEN SHRUB PLANTING
SCALE: NTS SECTION

5
L2.2 PERMANENT SEEDING SCHEDULE
SCALE: NTS SECTION

SEEDING PERIOD	SEEDING TYPE	APPLICATION RATE (SBS/LA/AC)
August 01 - November 01	TALL FESCUE	300
November 02 - March 01	TALL FESCUE AND ARIZONA RYE	300
March 02 - April 15	TALL FESCUE	300
April 16 - June 30	MULLED COMMON BERMUDAGRASS	25
July 01 - August 15	TALL FESCUE AND ARIZONA RYE OR PENNSYLVANIA BLUEGRASS	35
March 01 - June 01	BONICA LEOPARDA (SHADED) AND	50
March 02 - April 15	TALL FESCUE OR	125
March 01 - June 30	MULLED COMMON BERMUDAGRASS OR	10
June 01 - September 31	TALL FESCUE AND ARIZONA RYE OR PENNSYLVANIA BLUEGRASS	30
September 01 - March 01	BONICA LEOPARDA (SHADED) LEOPARDA AND	70
November 02 - March 01	TALL FESCUE OR	125
November 02 - March 01	ARIZONA RYE	25

TEMPORARY - BASED ACCORDING TO OPEN SEASON FOR PERMANENT SEEDING. SET 1" ALL OR TEMPORARY COVER IS 1" SHOW RISE 12" IN HEIGHT BEFORE. OTHERS: OTHERS MAY BE BASED ON LOCAL CONSIDERATIONS. CONSULT WITH LOCAL AGENCIES FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR PROTECTION OF SENSITIVE AREAS. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR PROTECTION OF SENSITIVE AREAS. OTHER SEE DATE USE PREVIOUS EDITIONS.

GROUND COVER - WHENEVER LAND DESTROYING ACTIVITY IS UNDERTAKEN ON A TRACT CONTAINING MORE THAN ONE (1) ACRE, A GROUND COVER DEFENSE TO RESTORE EROSION MUST BE PLANTED OR PROVIDED WITHIN 90 DAYS OF THE CALENDAR YEAR.

GRAZE SLOPES AND FILL - WITHIN 15 WORKING DAYS OF 30 CALENDAR DAYS OF COMPLETION OF ANY PHASE OF GRAZING, SLOPES SHALL BE PLANTED OR COVERED WITHIN 15 WORKING DAYS OF COMPLETION OF ANY PHASE OF GRAZING. SLOPES SHALL BE PLANTED OR COVERED WITHIN 15 WORKING DAYS OF COMPLETION OF ANY PHASE OF GRAZING.

GENERAL LANDSCAPE NOTES:

- 1. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FREE OF DISEASE AND PESTS.
- 2. ALL PLANTS MUST BE CONTAINER GROWN ON BALLS AND BURLAPPED AS INDICATED IN THE PLANT SCHEDULE.
- 3. ALL TREES MUST HAVE A STRAIGHT TRUNK AND BE FULL HEADED AND MEET ALL REQUIREMENTS SPECIFIED IN THE PLAN SCHEDULE.
- 4. ANY SHADE TREES LOCATED ADJACENT TO VEHICLE SIGHT TRIANGLES SHALL BE LIMBED MIN. 8' (MEASURED FROM ADJACENT PROJECTED CURB/EDGE-OF-PAVEMENT) LINE ELEVATION PER ANAS 250.1 STANDARDS FOR HEIGHT OF BRANCHING - STREET TREES.
- 5. ANY PLANT MATERIAL WHICH DIES, TURNS BROWN, OR DEFOOLIATES PRIOR TO COMPLETED INSTALLATION OF ALL PLANT MATERIAL SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.
- 6. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
- 7. ALL SHRUB AND TREE PLANTING BEDS, AND TREE RINGS, ARE TO BE COMPLETELY COVERED WITH DOUBLE GROUND HARDWOOD MULCH TO A MINIMUM DEPTH OF THREE (3) INCHES.
- 8. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN WITHIN THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF UTILITY LINES AND ADJACENT TO THE WORK AREA. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD.
- 9. SAFE, CLEARLY MARKED PEDESTRIAN AND VEHICULAR ACCESS TO ALL ADJACENT PROPERTIES MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS.
- 10. ALL PLANT MATERIAL QUANTITIES ARE CALCULATED ACCORDING TO LINEAR FEET OF FRONTAGE. REQUIRED FOR SCREENING BASED UPON FIELD LOCATED VEGETATION LIMITS. ACTUAL NUMBERS MAY VARY BASED ON DIFFERENT SITE CONDITIONS. FULL PERIMETER IS TO MEET REQUIRED SCREENING PARAMETERS. IF A DISCREPANCY IS FOUND, CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT FOR CLARIFICATION.
- 11. THE TOP OF ALL SHRUB ROOT BALLS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE, AS BORN TO PREVIOUS GRADE AND GROWING CONDITIONS. ALL TREES SHALL BE PLANTED MINIMUM 2' ABOVE SURROUNDING FINISH GRADE, MEASURED AT BASE OF TRUNK.
- 12. ALL ROOT BALLS REMOVED FROM CONTAINERS SHALL BE SCARIFIED PRIOR TO BACKFILLING.
- 13. ALL STRAPPING AND TOP 20% OF WIRE BASKET MUST BE CUT AWAY AND REMOVED FROM ROOT BALL PRIOR TO BACKFILLING PLANTING PIT. REMOVE TOP 1/3 OF THE BURLAP FROM ROOT BALL.
- 14. FOR NEW PLANTING AREAS: REMOVE ALL HAVEMENT, GRAVEL, SUB-BASE AND CONSTRUCTION DEBRIS. REMOVE COMPACTED SOIL AND ADD 2" NEW TOPSOIL OR UNCOMPACT AND AMEND THE TOP 3" OF EXISTING SOIL TO MEET TOPSOIL PLANTING MIX STANDARDS FOR TREES.
- 15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TREES AND SHRUBS THAT WILL MEET BOTH MINIMUM SIZE AND SPACING FOR TREE AND ZONING ORDINANCE COMPLIANCE. FAILURE TO INSTALL PLANT MATERIAL FOR THIS PLAN WILL JEOPARDIZE ISSUANCE OF FINAL PROJECT ACCEPTANCE. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING INSPECTIONS OF PLANT MATERIAL.
- 16. CONTRACTOR SHALL MAINTAIN LANDSCAPING FOR AT LEAST 30 DAYS AFTER ALL PLANTS HAVE BEEN INSTALLED, AND 90 DAYS AFTER SEEDING, OR AS LONG AS IS NECESSARY TO ESTABLISH UNIFORM STAND OF THE SPECIFIED GRASSES, OR UNTIL SUBSTANTIAL COMPLETION OF THE PROJECT, OR UNTIL ACCEPTANCE OF THE LAWN AND SHRUBS, WHICHEVER IS LATER.
- 17. NO PLANT SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION FROM THE LANDSCAPE ARCHITECT. ALL PLANT MATERIAL SHALL MEET THE CABARRUS COUNTY MINIMUM ORDINANCE STANDARD FOR PLANT SIZES.
- 18. NONE OF THE FOLLOWING SHALL OCCUR WITHIN THE ROOT ZONE OF AN EXISTING TREE WITHOUT PERMISSION OF THE LANDSCAPE ARCHITECT: STAGING OR STORAGE OF CONSTRUCTION MATERIALS, EQUIPMENT, SOIL OR DEBRIS, TRENCHING, OR DISPOSAL OF ANY LIQUIDS.

PLANT SCHEDULE

TREES	COMMON NAME	COUNT	CAL. MIN	SIZE	REMARKS
LEX GRACA	COMMON HOLLY	800	2 1/2"	3 1/2"	
LAGERSTROEMIA INDICA	GRAPE HYDRATE	800	2 1/2"	10-12 HT. MIN	
NYSSA SYLVATICA	BLACK OAK	800	2 1/2"	12-14 HT. MIN	
FINUS STROBUS	WHITE PINE	800	2 1/2"	12-14 HT. MIN	
SALEX NIGRA	BLACK WILLOW	800	2 1/2"	12-14 HT. MIN	
SHRUBS					
CALYCANTHUS FLORIDUS	SWEETSHRUB	10 GAL.		4" MIN.	SEE PLAN
ILEX X. HILLS R. STEVENS	HILLS STEVENS HOLLY	8 & S		2" MIN.	SEE PLAN
MYRTICA CERIFERA	WAX MYRTLE	15 GAL.		30" MIN.	SEE PLAN

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RECURRENT ENERGY
PHONE: 415-875-3581
3000 CAM ROAD SUITE 300
WALNUT CREEK, CA 94597

LANSCAPE DETAILS

NC 102 PROJECT LLC
PREPARED FOR
DEPCOM POWER
CABARRUS COUNTY

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATES, INC.
08/20/18
06/09/19
02/20/19
02/07/19
11/26/18
10/05/18
10/04/18
REVISIONS
DATE

SHEET NUMBER
L2.2

05/20/19	AA COUNTY SUBMITTAL	02/20/18	AA COUNTY SUBMITTAL	02/07/18	AA COUNTY COMMENTS	11/26/16	AA COUNTY COMMENTS	10/04/16	AA COUNTY COMMENTS
No.	REVISIONS	DATE							

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RECURRENT ENERGY
PHONE: 919-476-1200
2007 SHAW ROAD, SUITE 300
WALNUT CREEK, CA 94597



NHA PROJECT: 2018-04-174
DATE: 07/19/19
SCALE: AS SHOWN
DESIGNED BY: BPG
DRAWN BY: AWF
CHECKED BY: BPG

WATERBODY BUFFER ZONE REVEGETATION PLAN

NC 102 PROJECT LLC
PREPARED FOR
DEPCOM POWER
CABARRUS COUNTY, NC

SHEET NUMBER L2.3

Prepared for: Cabarrus County Tract: _____

Tree Shrub Establishment SPECIFICATIONS

Site-specific information to be completed by the client or the contractor. This information is to be used by the contractor to prepare the final planting plan by the Registered Forester or Other Professional.

Planting Instructions (continued):

General:

- Planting should be done during the dormant season (October through February) unless otherwise specified.
- Planting should be done during the dormant season (October through February) unless otherwise specified.

Site Preparation:

- Remove all vegetation within the planting area.
- Remove all stumps and roots within the planting area.
- Remove all rocks and debris within the planting area.
- Remove all utility lines within the planting area.
- Remove all power lines within the planting area.

Planting:

- Planting should be done during the dormant season (October through February) unless otherwise specified.
- Planting should be done during the dormant season (October through February) unless otherwise specified.

Additional Notes:

Plant 1 tree in 10' x 10' spacing in order to create a stand density to withstand water cut of adjacent. Follow planting instructions as listed below.

Prepared for: Cabarrus County Tract: _____

Planting Instructions (continued)

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Prepared for: Cabarrus County Tract: _____

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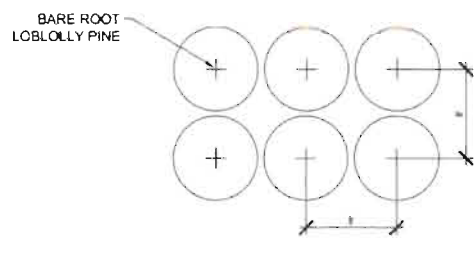
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Plant 1 tree in 10' x 10' spacing in order to create a stand density to withstand water cut of adjacent. Follow planting instructions as listed below.



BARE ROOT LOBLOBBY PINE

PLANT SPACING NOTES:
1. PLANT MATERIAL SHALL BE INSTALLED IN STRAIGHT AND PARALLEL ROWS.

TREE AND SHRUB PLANTING DETAIL

* See tree and shrub planting detail this page

TREE AND SHRUB ESTABLISHMENT SPECIFICATIONS
CABARRUS COUNTY SOIL AND WATER CONSERVATION DEPARTMENT

342-B Short-Term Seeding Specification Guide

When temporary vegetation is desirable to minimize erosion and pollution and permanent vegetation cannot be established due to season of the year, and where a temporary seeding is needed to control erosion and water collection prior to the establishment of seeded grasses or permanent vegetation. The temporary measures should be coordinated with the permanent erosion control measures planned, to ensure economical and effective control.

- Site Preparation**
 - A. Excessive water runoff must be controlled by planned and installed needed erosion control practices, such as diked drains, ditches, dikes, diversion, contour ripping, sediment basins or other erosion control methods.
 - B. Grade where practical and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application and anchoring.
- Materials**
 - A. Lime and fertilizer treatment specified will be affected by site conditions, length of time short-term seedlings are expected to be on the site, and the planned treatment to follow.
 - B. If soils are reasonably uniform, lime and fertilizer according to soil test recommendations. Otherwise, apply 100 pounds of ground agricultural limestone or equivalent per 1,000 sq. ft. or 2 tons per acre and apply 12 to 16 pounds of 15-15-15 or similar fertilizer per 1,000 sq. ft. or 300-700 pounds per acre. On some sites, seeding may be done without liming or fertilizing. Nitrogen top dressing may be applied after grass is up if needed for vigorous growth. Lime and fertilizer should be spread uniformly over the area to be planted.
 - C. Where a permanent seeding is to follow the temporary cover, optimum land preparation should be done. When further grading is to be done before the permanent seeding or where site conditions are favorable, minimal preparation may be satisfactory for establishing temporary cover. For optimum results, work lime and fertilizer into the soil to a depth of 3-4 inches using disks, chisels, rotary tillage equipment or other suitable equipment. On sloping land, the final tillage operation should be on the general contour. The adequacy of minimum preparation is dependent upon site conditions. In general, if the soil surface is such that the seeds of plants with high seedling vigor can be placed so as to remain in contact with moist soil, no preparation is required.

- Seeding**
 - A. Select from the following table a quick growing grass with high seedling vigor that is suited to the area, to the time of planting, and that will provide a temporary cover which will not interfere with the plants to be sown later for permanent cover. Seedlings made in December and January will not provide effective short-term cover. Mulch without seeding should be considered for this period.
 - B. Apply seed uniformly by hand, cyclone seeder, drill, cutpacker seeder or hydraulically (air may include fertilizer, seed and cellulose fiber mulch). For quickest and best results, seed should be covered from 1/2 to 1 inch deep except when hydrosower is used.
 - C. When a hydrosower or cutpacker type seeder is not used, the seedbed should be firm following seeding using such equipment as a cutpacker, roller or light drag, or following dry mulch application, with the mulch anchoring tool, disk harrow set straight, or stalk cutler. On sloping land, seeding operation should be performed across the slope.

Site Conditions	Per 1,000 Sq. Ft.	Per Acre
Backsaw	3 lbs.	30 lbs.
Chisel	2 lbs.	20 lbs.
Rye	3 lbs.	30 lbs.
Hydroseed	1-2 lbs.	10-20 lbs.
Cuts and	1 lb.	10 lbs.
Other Logistical	1/2 lb.	5 lbs.

Site Conditions	Per 1,000 Sq. Ft.	Per Acre
Hydroseed	1 lb.	10 lbs.
Cuts and	1 lb.	10 lbs.
Other Logistical	1/2 lb.	5 lbs.

Site Conditions	Per 1,000 Sq. Ft.	Per Acre
Rye	3 lbs.	30 lbs.
Hydroseed	1-2 lbs.	10-20 lbs.
Cuts and	1 lb.	10 lbs.
Other Logistical	1/2 lb.	5 lbs.

NOTE: All seed used in contracts shall have been tested not more than six (6) months prior to date of seeding. The specifications shall state the acceptable percent purity, germination and number of viable seed per pound.

- Mulching (See CPS 484 Mulching for additional information)**
 - A. Mulching should usually be applied to reduce damage from water run-off and improve moisture conditions for seedlings. Temporary vegetation can in some cases be satisfactorily established without the use of mulch. The use of mulch is a judgment decision based on time of seeding and conditions of individual sites.
- Mulching Materials**
 - A. Dry unrotted, unweathered small grain straw or hay free of seeds of competing plants - Spread at the rate of 1 to 2 tons per acre, depending upon the site and season. Evenly spread mulch over the area by hand or blower-type spreading equipment. Apply mulch so that about 25% of the ground surface is visible.
 - B. Local materials such as bark and pine brought in - Cover entire area, secure in place if flowing water is involved.
 - C. Barnyard manure and bedding - Apply uniformly so that about 25% of the ground surface is visible. Do not apply within 50 feet of surface waters.
 - D. Jute matting may be used in the place of mulch or sod and has the strength to withstand water flow. It is an accepted practice to sow half the seed before placing the matting. Sow the remaining half after the matting is laid. See the manufacturer's specifications for instructions.
 - E. Wood fiber (excelsior) - Available as mulch material to be blown on after seeding or as a matting to be stacked on steep slopes, waterways, etc. See the manufacturer's specifications for matting.
 - F. Wood cellulose fiber mulch is mixed with seed, fertilizer, and water. The resulting slurry is sprayed on with hydraulic seeding equipment. Use at the rate of 500 lbs. per acre where straw or hay is to be applied. Use at the rate of 1,000 to 1,500 lbs. per acre without other mulching materials. Applied in a slurry, wood cellulose fiber mulch is self-anchoring.
 - G. Other commercial products, as fiberglass shredded or hammer milled hardwood bark and various kinds of nettings are available. Manufacturer's directions should be followed for applying and securing in place.
- Mulch Anchoring Methods**
 - A. Anchor mulch immediately after placement to minimize loss by wind and water. Consider size of area, type of site, and cost and select one of the following:
 - * If planting in summer, browntop millet should be used. NOTE: Annual Ryegrass shall not be part of any mixture used for seeding and stabilization.

- Much anchoring tool with a series of flat notched disks that punch and anchor mulch material into the soil. A regular farm disk weighted and set nearly straight may be substituted but will not perform as well as a mulch anchoring tool. The disk should not be sharp enough to cut out the mulch.
- The soil should be moist, free of stones or roots, and loose enough to permit penetration to a depth of 3 inches. Consider the condition of the soil.
- Mulch matting - Staple light weight paper, jute, cotton, or wire nettings to the soil surface according to manufacturer's specifications. These nettings are usually in rolls 3 to 4 feet wide and up to 300 feet long.
- Peg and twine - Drive 6 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a cross-rows within a square pattern. Secure twine around each peg with two or more round turns. Poles and stakes may also be used to secure twine in place.
- Straw - With a square pointed spike, cut mulch into the surface soil in contour rows 16 inches apart.
- Asphalt mulch lay-down - Asphalt sprayed uniformly on the mulch as it is being from the blower is more effective than applied as a separate operation. Apply so area has uniform appearance. Rate of application will vary with conditions. The higher the grade number assigned each type of asphalt, the higher the percentage of asphalt resin. Asphalt should not be used in freezing weather, and should not be applied within 50 feet of surface waters.
- Emulsified asphalt - Apply uniformly 0.04 to 0.08 gallons per square yard or 200 to 400 gallons per acre of good setting (MS-1, MS-2, or CMS-2) slow setting (SS-1 or CSS-1).
 - Rapid setting (RS or CRS) is formulated for curing in less than 24 hours even during periods of high humidity. Best for spring and fall.
 - Medium setting (MS or CMS) is formulated for curing within 24 to 48 hours.
 - Slow setting (SS or CSS) is formulated for use during hot, dry weather with 48 hours or more curing time.

Note - In areas of playing children or pedestrian traffic, asphalt application could cause problems of "tracking" or ruts, damage shoes, clothing, etc. Use types RS or CRS to minimize problems.

VI - Irrigation (if needed)

A. Water should be applied as soon as the mulch is applied in a rate that does not cause runoff and erosion. If fertilizer/irrigation equipment cannot be used and water is applied from a truck, use a nozzle that will produce a spray that will not disturb the mulch. A second application should be made in 5-10 days, if so indicated on contract.

342 - Critical Area Planting Implementation Requirements

The Practice Purpose(s): (check all that apply)
 Stabilize areas with existing or expected high rates of soil erosion by wind or water
 Stabilize stream and channel banks, pond and other shorelines, earthen features of structural conservation practices.
 Stabilize areas such as sand dunes and riparian areas.

Slope range	pH range	Soil type/soil texture	Soil drainage class	Current vegetation or site condition
1:1 to 3:1	6.0 to 7.0	CL, ML, PL, SH, CH, SL, SH, CL, SH, CL, SH	DR, S, M, P, V, V, S, M, P, V, S, M, P, V	See attached site photos

Permanent Seed and/or Plant Requirements
N/A

Site preparation earthmoving (if applicable), etc.:
N/A

Seedbed preparation:
Level and ensure the seedbed is prepared for the planting of warm season annuals

Top soiling requirements (if applicable):
N/A

Seeding time:
See NCDEQ permanent seeding chart 5 sheet L2.2 for appropriate species per time of year proposed

Permanent Seed/Plant Species Mixture	Acres	Lbs./ac PLS, Or plants spacing in feet	Total lbs needed or total plants needed
See NCDEQ permanent seeding chart 5 sheet L2.2 for appropriate species per time of year proposed. Note species mix and ensure one of the approved NCDEQ permanent groundcover is included within the mixture.	0.20	100,000	20,000
	0.20	100,000	20,000
	0.20	100,000	20,000
	0.20	100,000	20,000

Fertilizer requirements	Source	Tons/acre	Total	Notes
Nitrogen	100% N	0.05	0.05	See attached site photos
Phosphate (P ₂ O ₅)	100% P	0.05	0.05	See attached site photos
Potash (K ₂ O)	100% K	0.05	0.05	See attached site photos

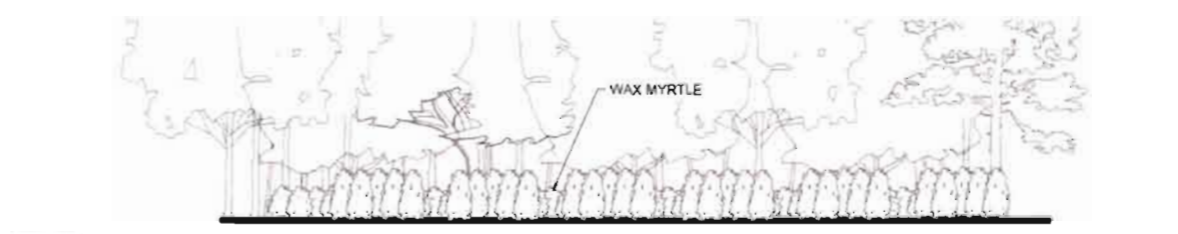
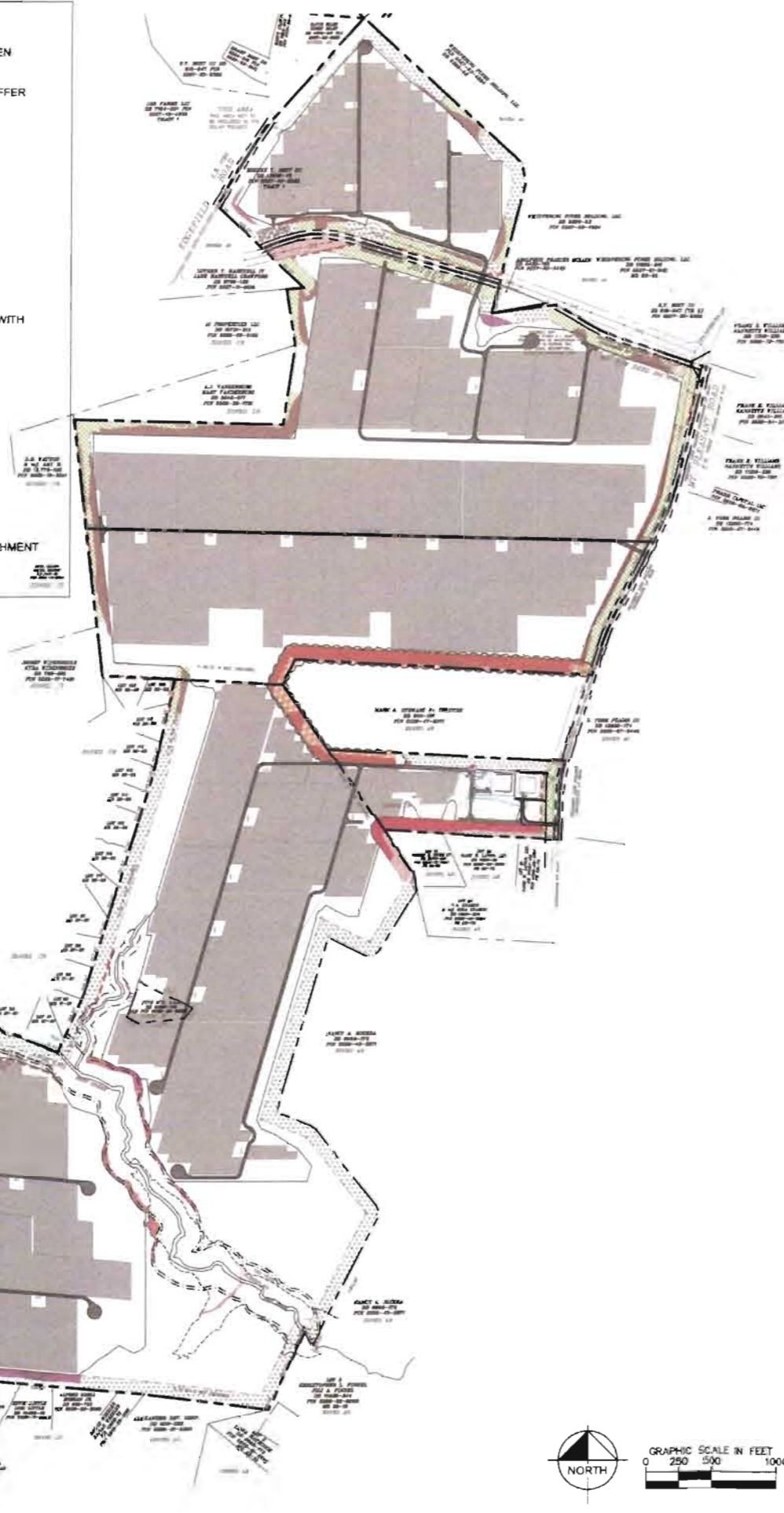
342 - Critical Area Planting Implementation Requirements

Lime requirements	Source	Tons/acre	Total	Notes
Lime	100% CaO	0.05	0.05	See attached site photos
Method of seedbed preparation	See attached site photos			
Method of seeding/planting/setting	See attached site photos			
Mulch requirements (type, rate, etc)	See attached site photos			
Other notes (e.g., irrigation, management, plant protection, etc.)	See attached site photos			

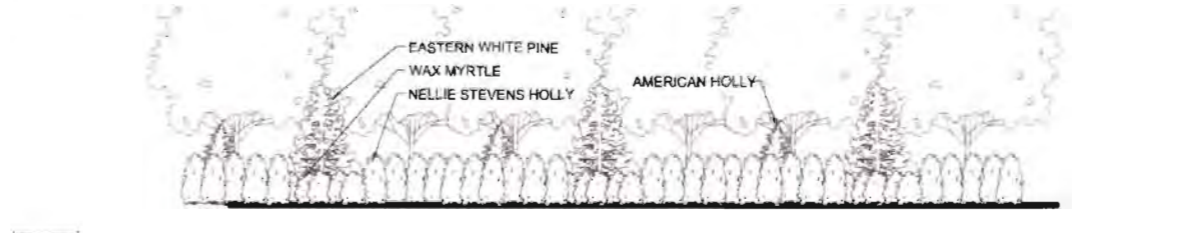
SHORT TERM SEEDING SPECIFICATIONS GUIDE
CABARRUS COUNTY SOIL AND WATER CONSERVATION DEPARTMENT

CRITICAL AREA PLANTING IMPLEMENTATION REQUIREMENTS
CABARRUS COUNTY SOIL AND WATER CONSERVATION DEPARTMENT

- LEGEND**
- B1** [Symbol] EXISTING CANOPY TREES WITH SUPPLEMENTAL EVERGREEN SCREEN (SEE DETAIL 1 & 3 SHEET L2.0)
 - B2** [Symbol] CDO REQUIRED SUPPLEMENTAL BUFFER (SEE DETAIL 2 & 4 SHEET L2.0)
 - B3** [Symbol] SUPPLEMENTAL OR REPLACEMENT UNDERSTORY BUFFER (SEE DETAIL 1 & 3 SHEET L2.1)
 - B4** [Symbol] WATERBODY ENCROACHMENT REVEGETATION PLAN (SEE SHEET L2.3)
 - B5** [Symbol] WETLAND REVEGETATION PLAN (SEE DETAIL 2 & 4 SHEET L2.1)
 - B6** [Symbol] ADJACENT PROPERTY LANDSCAPE (SEE SHEET L1.4)
 - B7** [Symbol] EXISTING VEGETATION COMPLIANT WITH CDO BUFFER REQUIREMENTS
 - B8** [Symbol] AREA TO BE PLANTED WITH ADDITIONAL PLANTINGS, 8'-10" TALL AMERICAN HOLLY TREES, OR CABARRUS COUNTY APPROVED SPECIES IN SIMILAR MATURE HEIGHT AND WIDTH, PLANTED IN A DOUBLE STAGGERED ROW SPACED 15' ON CENTER. AREAS TO BE FIELD VERIFIED FOR SUITABLE PLANTING AND DENSITY TO PROVIDE RESIDENTIAL AND PUBLIC SCREENING.
 - [Symbol] FIELD SURVEYED BUFFER ENCROACHMENT



SUPPLEMENTAL EVERGREEN SCREENING
SCALE: 1" = 30'-0"
ELEVATION



SUPPLEMENTAL COUNTY DEVELOPMENT ORDINANCE (CDO) REQUIRED BUFFER
SCALE: 1" = 30'-0"
ELEVATION



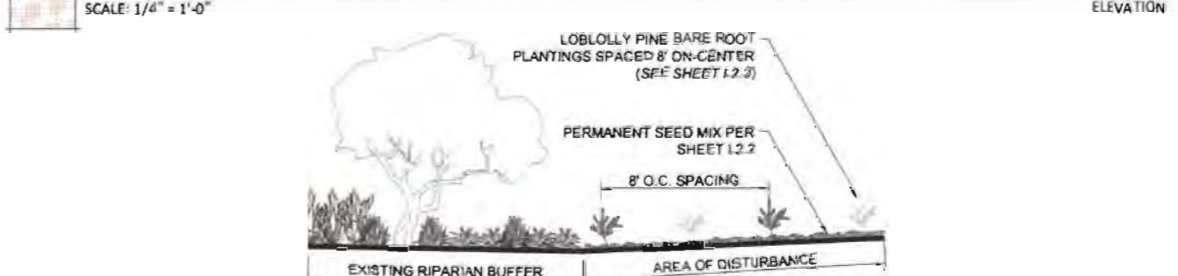
SUPPLEMENTAL OR REPLACEMENT UNDERSTORY BUFFER
SCALE: 1" = 30'-0"
ELEVATION



WETLAND REVEGETATION PLAN
SCALE: 1" = 30'-0"
ELEVATION



STEWART PROPERTY LANDSCAPE PLAN
SCALE: 1/4" = 1'-0"
ELEVATION



BOST CREEK / FLOODPLAIN REVEGETATION
SCALE: 1/4" = 1'-0"
SECTION

NO.	REVISIONS	DATE
05/05/19	COUNTY SUBMITTAL	05/05/19
04/09/19	COUNTY SUBMITTAL	04/09/19
02/20/19	COUNTY COMMENTS	02/20/19
02/07/19	SITE VISIT COMMENTS	02/07/19
11/26/18	3RD COUNTY COMMENTS	11/26/18
10/05/18	CLIENT COMMENTS	10/05/18
10/04/18	CLIENT COMMENTS	10/04/18

Kimley-Horn
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WWW.KIMLEY-HORN.COM PHONE: 704.341.1488
421 FAYETTEVILLE TOWER, SUITE 4000
RALEIGH, NC 27609

RECURRENT ENERGY
PHONE: 919-870-1500
3000 OAK ROAD, SUITE 300
WALNUT CREEK, CA 94597

FOR REFERENCE ONLY

NO.	REVISIONS	DATE
09/18/2014	DATE	07/09/18
SCALE	AS SHOWN	
DESIGNED BY	EPG	
DRAWN BY	AWF	
CHECKED BY	BFG	

ENCROACHMENT EXHIBIT

NC 102 PROJECT LLC
PREPARED FOR
DEPCOM POWER
CARRIAGEWAY FERTILITY

SHEET NUMBER
EXLA1.0



February 28, 2020

Don Ling
Director of Projects
Recurrent Energy Group, Inc.
3000 Oak Road, Suite 300
Walnut Creek, CA 94597

Re: Effect of Landscaping Change on Potential Glare at Project NC-102

Dear Mr. Ling:

Burns & McDonnell was informed that a landscaping change has been made to Project NC102 and was requested to determine if the landscaping change would impact the glare study results for the project.

The original landscaping plan included the installation of American Holly trees; however, the American Holly tree type was substituted with the Leyland Cypress tree type. Upon review of the attached USDA fact sheets, the Leyland Cypress trees grow taller than the American Holly, they have a fast growth rate, and have a 15- to 25-foot spread upon maturity.

Based on the fact sheets, it was determined that the substitution would not change the results or recommendations as described in the submitted Solar Glare Ocular Impact Analysis report.

Sincerely,

A handwritten signature in black ink that reads "Robert E.A. Healy". The signature is stylized and includes a large, sweeping flourish at the end.

Robert Healy
Managing Director

Attachment:
Plant Fact Sheet—American Holly
Fact Sheet ST-671—Leyland Cypress

AMERICAN HOLLY

Ilex opaca Ait.

Plant Symbol = ILOP

Contributed by: USDA NRCS Plant Materials Program



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Smithsonian Institution
© USDA NRCS PLANTS

Uses

The attractive evergreen foliage and bright red fruit of this small tree make it a very popular for landscaping. The same attributes that allow this tree to be a desirable ornamental make it one of the most sought after greens for Christmas decoration. The firm bright red berries are consumed by white-tail deer and 18 species of birds. The dense foliage also provides cover and nesting habitat for various songbirds.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

American holly normally grows to heights of 15 to 30 feet tall, but records indicate mature heights of up to 100 feet. On the poor soils of coastal beaches, this holly may never exceed shrub size. The bark of it is smooth, and grayish to grayish-brown. The dense branches of this holly grow nearly horizontal in a spreading crown, which takes on a pyramidal silhouette.

The evergreen foliage is stiff and leathery in texture, with large, remotely spined teeth. The leaves are arranged alternately. They are 2 to 4 inches long, satin green and smooth above, and yellowish-green below.

Small, axillary, greenish-white flowers bloom from April to June. Like most others in the holly genus, American holly is dioecious. Pistillate flowers emerge in small clusters from one plant, while staminate flower clusters develop on another. Newly established plants will not flower for 4 to 7 years; prior to flowering there is no practical means of determining the gender of a plant. Bright red, rarely orange or yellow, globular fruit mature from September to October, but may be retained on the plant into the following spring. The berry-like fruit is about 1/3 inch in diameter, and contains 4 to 9 small nutlets. There are an average of 28,430 seeds per pound.

Adaptation and Distribution

American holly grows from Massachusetts to Florida, west to Texas and Missouri, and is adapted to a wide range of site conditions. It grows best on well drained, sandy soils, but will tolerate those which are somewhat poorly drained. This small tree has good shade tolerance, but does well in direct sun. Although this species is often found growing on coastal sand dunes, it is not very salt spray tolerant.

For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

Establishment

Utilize standard tree and shrub planting procedures to establish containerized or balled and burlapped plants. Bare rooted transplants usually have marginal success.

When establishing American holly, it is important to plant males as well as females if berry production is desired. In a nursery situation the gender ratio should be 1:10, males to females. Establish American holly only where surrounding vegetation or physical barriers protect the plants from harsh winds. Holly plants prefer partial shade, with some full sun exposure during the day.

Cultivars, Improved, and Selected Materials (and area of origin)

There are many ornamental varieties, available from commercial nurseries, selected for berry and leaf color. There are also commercial sources of locally and regionally collected material available from native plant nurseries.

Prepared By & Species Coordinator:

USDA NRCS Plant Materials Program

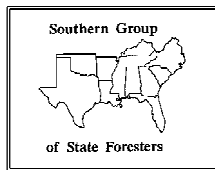
Edited: 05Feb2002 JLK; 060801 jsp

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

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Read about [Civil Rights at the Natural Resources Conservation Service](#).



x Cupressocyparis leylandii Leyland Cypress¹

Edward F. Gilman and Dennis G. Watson²

INTRODUCTION

A rapidly-growing evergreen when young, Leyland Cypress will easily grow three to four feet per year, even on poor soils, and will ultimately attain a majestic height of 50 feet or more in the west, perhaps somewhat shorter in the east (Fig. 1). Leyland Cypress forms a dense, oval or pyramidal outline when left unpruned, but the graceful, slightly pendulous branches will tolerate severe trimming to create a formal hedge, screen or windbreak. The fine, feathery foliage is composed of soft, pointed leaves on flattened branchlets and are dark blue-green when mature, soft green when young. Leyland Cypress quickly outgrows its space in small landscapes and is too big for most residential landscapes unless it will be regularly trimmed. Although it can be sheared into a tall screen on small lots, Leyland Cypress should probably be saved for large-scale landscapes where it can be allowed to develop into its natural shape.

GENERAL INFORMATION

Scientific name: *x Cupressocyparis leylandii*

Pronunciation: x koo-press-so-SIP-air-iss
lay-LAN-dee-eye

Common name(s): Leyland Cypress

Family: *Cupressaceae*

USDA hardiness zones: 6 through 10A (Fig. 2)

Origin: not native to North America

Uses: hedge; recommended for buffer strips around parking lots or for median strip plantings in the highway; screen; specimen; Christmas tree

Availability: generally available in many areas within its hardiness range

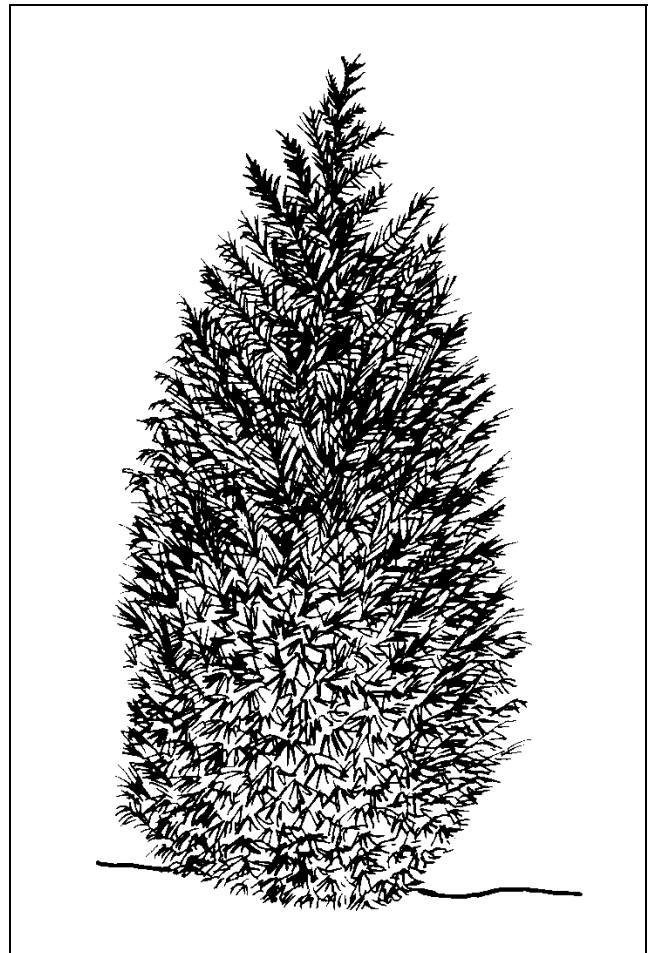


Figure 1. Middle-aged Leyland Cypress.

1. This document is adapted from Fact Sheet ST-671, a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: October 1994.
2. Edward F. Gilman, associate professor, Environmental Horticulture Department; Dennis G. Watson, associate professor, Agricultural Engineering Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.



Figure 2. Shaded area represents potential planting range.

DESCRIPTION

Height: 35 to 50 feet
Spread: 15 to 25 feet
Crown uniformity: symmetrical canopy with a regular (or smooth) outline, and individuals have more or less identical crown forms
Crown shape: columnar; oval; pyramidal
Crown density: dense
Growth rate: fast
Texture: fine

Foliage

Leaf arrangement: opposite/subopposite
Leaf type: simple
Leaf margin: entire
Leaf shape: scale-like
Leaf venation: none, or difficult to see
Leaf type and persistence: evergreen
Leaf blade length: less than 2 inches
Leaf color: blue or blue-green; green
Fall color: no fall color change
Fall characteristic: not showy

Flower

Flower color: no flowers
Flower characteristics: no flowers

Fruit

Fruit shape: round
Fruit length: < .5 inch
Fruit covering: dry or hard
Fruit color: brown
Fruit characteristics: does not attract wildlife; inconspicuous and not showy; no significant litter problem

Trunk and Branches

Trunk/bark/branches: grow mostly upright and will not droop; not particularly showy; should be grown with a single leader; no thorns
Pruning requirement: needs little pruning to develop a strong structure
Breakage: resistant
Current year twig color: green
Current year twig thickness: thin

Culture

Light requirement: tree grows in part shade/part sun; tree grows in full sun

Soil tolerances: clay; loam; sand; acidic; alkaline; well-drained

Drought tolerance: high

Aerosol salt tolerance: moderate

Soil salt tolerance: moderate

Other

Roots: surface roots are usually not a problem

Winter interest: no special winter interest

Outstanding tree: tree has outstanding ornamental features and could be planted more

Invasive potential: little, if any, potential at this time

Verticillium wilt susceptibility: not known to be susceptible

Pest resistance: very sensitive to one or more pests or diseases which can affect tree health or aesthetics

Diseases

A canker affects the tree following drought; a foliage fungus occasionally infects foliage. This plant is not recommended for planting in California due to the severity of this canker disease. Perhaps the disease will stay in the western United States.

USE AND MANAGEMENT

Leyland Cypress grows in full sun on a wide range of soils, from acid to alkaline, but looks its best on moderately fertile soil with sufficient moisture. It is surprisingly tolerant of severe pruning, recovering nicely from even severe topping (although this is not recommended), even when half the top is removed. It grows well in clay soil and tolerates poor drainage for a short period of time. It also is very tolerant of salt spray.

Some available cultivars include: 'Castlewellan', a more compact form with gold-tipped leaves, excellent for hedges in cool climates; 'Leighton Green', dense branching with dark green foliage, columnar form; 'Haggerston Gray', loose branches, columnar-pyramidal, upturned at ends, sage-green color; 'Naylor's Blue', blue-grey foliage, columnar form; 'Silver Dust', wide-spreading form with blue-green foliage marked with white variegations.

Propagation is by cuttings from side growths.

Pests

Bagworm can defoliate a tree in a week or two, and can be quite serious.

NC102 Project Solar Glare Ocular Impact Analysis Addendum 2



Recurrent Energy Group, Inc.

**NC102 Project
Project No. 105172**

**Revision 0
8/31/2020**

NC102 Project Solar Glare Ocular Impact Analysis Addendum 2

prepared for

**Recurrent Energy Group, Inc.
NC102 Project
Cabarrus County, North Carolina**

Project No. 105172

**Revision 0
8/31/2020**

prepared by

**Burns & McDonnell Consultants, Inc.
Raleigh, North Carolina**

INDEX AND CERTIFICATION

**Recurrent Energy Group, Inc.
NC102 Project
Solar Glare Ocular Impact Analysis Addendum 2
Project No. 105172**

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2.0	Methodology	2
3.0	Results	7
4.0	Conclusion	1
Attachment 1	Photo Log	N/A

Certification

I hereby certify, as a Professional Engineer in the state of North Carolina that the information in this document was assembled under my direct personal charge. This report is not intended or represented to be suitable for reuse by the Recurrent Energy Group, Inc. or others without specific verification or adaptation by the Engineer.

Thad Wingo, PE, North Carolina #032018
Insert Engineer's Name, P.E., state, & license

Date: September 9, 2020

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LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
Burns & McDonnell	Burns & McDonnell Consultants, Inc.
FAA	Federal Aviation Administration
LOS	Line-of-sight
MPE	Major Part of Energy Generating Facility
OP	Observation Point
Project	NC-102 Solar PV Project located in Cabarrus County, North Carolina
PV	Photovoltaic
SGHAT	Solar Glare Hazard Analysis Tool

1.0 EXECUTIVE SUMMARY

1.1 Background

Burns & McDonnell Consultants, Inc. (Burns & McDonnell) evaluated the potential ocular hazard for the NC-102 solar photovoltaic (PV) project (Project) located in Cabarrus County, North Carolina and issued this Addendum to the latest revision of the “NC102 Project Solar Glare Ocular Impact Analysis” report dated May 31st, 2019. Burns & McDonnell was retained to evaluate and opine on the effect of the clearing of the trees located northwest of the intersection of Joyner Road and Mount Pleasant Road to determine if the clearing would affect the results and conclusions within the “NC102 Project Solar Glare Ocular Impact Analysis” report.

1.2 Summary

Burns & McDonnell evaluated the changes to project visibility at OP1, OP2, OP17, and OP37 following concerns the forest clearing performed northwest of the intersection of Joyner Road and Mount Pleasant Road would remove vegetation that screened the Project and mitigated the potential glare from the Project. Four observation points were evaluated, due to their proximity to the cleared forest and potential to receive glare from MPE 6 as identified by the May 31st, 2019 report. Burns & McDonnell conducted a site visit on August 18th, 2020 and photographed the visibility from those locations. From those photos, Burns & McDonnell assessed whether line of sight (LOS) from the observation points to the Project remained sufficiently obstructed to mitigate the potential for glare. The photo log containing all images captured during the site visit can be found in Attachment 1.

1.3 Results

Burns & McDonnell concluded that the site clearing performed does not change the LOS results from the report issued May 31st, 2019. Therefore, the conclusions from that report remain the same.

Table 1-1: Forest Clearing Line of Sight Results

Observation Point	MPE 5 Visibility	MPE 6 Visibility
OP1	Not Visible	Not Visible
OP2	Visible	Marginally Visible
OP17	Not Visible	Not Visible
OP37	Visible	Marginally Visible

2.0 METHODOLOGY

2.1 Observation Point Identification

Observation points around the Project were identified and included several points along Mt. Pleasant Road, Joyner Road, nearby residences, and other recommendations from the County for the report issued May 31st, 2019. These OPs were chosen based on their proximity to the Project and the potential for glare to occur. This Addendum evaluated four of the OPs initially evaluated as potentially being affected by the forest clearing, which were OP1, OP2, OP17, and OP37, due to their proximity to the cleared region and the potential for glare identified in the May 31st, 2019 report.

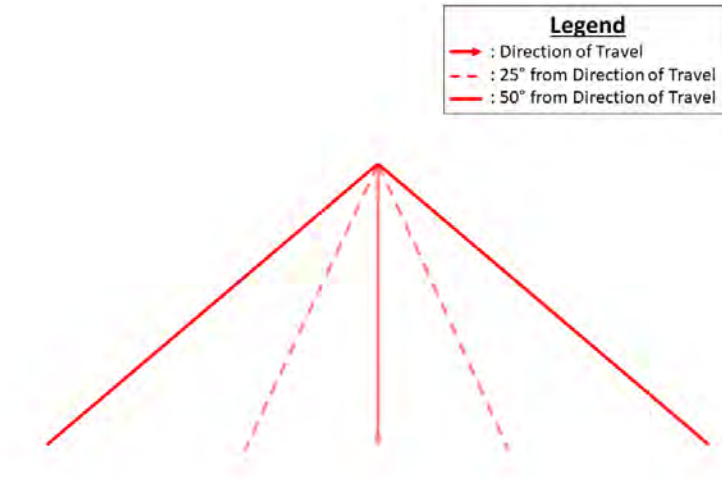
2.2 Line-of-Sight Analysis

A field visit was conducted to review the updated line of sight from the four OPs to MPE 5 and MPE 6 as they were determined to be most affected by the tree clearing. The line of sight was evaluated while on site and from the photos, and the LOS from each OP to the array sections was put into one of three categories:

- (V) visible, i.e. one had a mostly unobstructed view of the arrays,
- (NV) not visible, i.e. one could not see the arrays due to obstructions, and
- (M) marginally visible, i.e. one could see some of the arrays, but the view was partially obstructed.

2.3 View-Angle Analysis

These OPs, since they were located on major roadways, were further reviewed to determine if the glare would be within a 25-degree view angle of a vehicle traveling in either direction. This analysis was conducted by applying a view angle from the OP in the potential directions of a vehicle operating in the right of way near the OP. See Figure 2-1 for an illustration of the view angle.

Figure 2-1: View Angle

The vertex of the view angle was placed at the OP on a Google Earth view of the OP. The view angle was adjusted so the straight-ahead view was in the direction of the right of way (i.e. roadway) with a 25-degree (dashed line) and 50-degree (solid line) angle shown on either side of the straight-ahead view.

The diagram was reviewed to determine if any potential glare would originate from within the 25-degree angle from the direction of travel for each OP. Potential glare originating outside of the 25-degree angle was determined to not adversely impact a vehicle traveling on the right of way per the study performed by the Federal Aviation Administration (FAA) in 2015 and further detailed in Section 2.5 of the May 31st, 2019 report.

3.0 RESULTS

3.1 Line-of-Sight Analysis

Burns & McDonnell evaluated the line of sight from photos taken during a site visit. The photos were taken in specific directions of concern with details of the exact location, direction, elevation, and time indicated on the photos. In addition to this, panoramic photos were taken to show a more complete field of view from those observation points. It should be noted that the stitching of images to generate a panoramic photo does cause some distortion of straight lines in the images. However, they are representative of the visible region from the location the photo is taken.

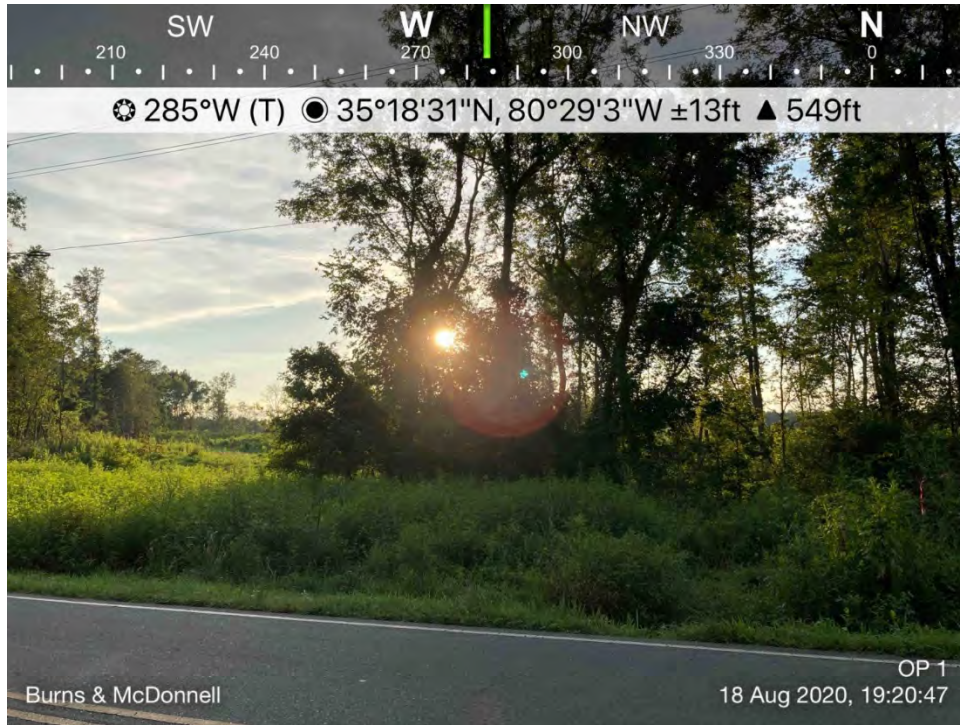
3.1.1 Observation Point 1

Burns & McDonnell visited the site on August 18th, 2020 in which the perspective from OP1 to MPE 5 and MPE 6 were photographed. MPE 5 was not visible as was verified in the panoramic photo taken from OP1 shown in Figure 3-1 and MPE 6 was not visible as is shown in Figure 3-2.

Figure 3-1: OP1 Panoramic Photo, Facing West



Figure 3-2: OP1 Facing West



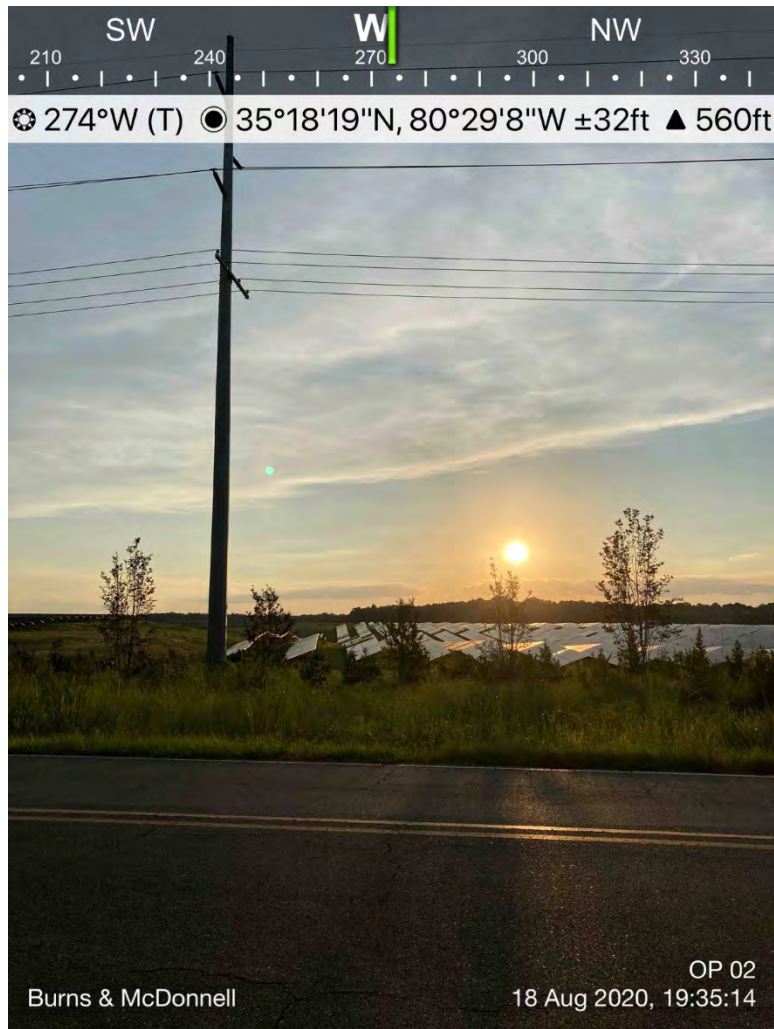
As such, the findings of Section 4.3 of the May 31st, 2019 report from Burns & McDonnell remain the same.

3.1.2 Observation Point 2

Burns & McDonnell visited the site on August 18th, 2020 in which the perspective from OP2 to MPE 5 and MPE 6 were photographed. MPE 6 was not visible through the tree line as is observed in the panoramic photo taken from OP2 as shown in Figure 3-3 and MPE 5 was visible as is observed in Figure 3-3 and Figure 3-4.

Figure 3-3: OP2 Panoramic Photo, Facing West



Figure 3-4: OP2 Facing West

As such, the findings of Section 4.5.1 of the May 31st, 2019 report from Burns & McDonnell remain the same.

3.1.3 Observation Point 17

Burns & McDonnell visited the site on August 18th, 2020 in which the perspective from OP17 to MPE 5 and MPE 6 were photographed. MPE 5 and MPE 6 were not visible as can be seen in Figure 3-5 and Figure 3-6.

Figure 3-5: OP 17 Facing West



Figure 3-6: OP17 Facing South

As such, the findings of Section 4.3 of the May 31st, 2019 report from Burns & McDonnell remain the same.

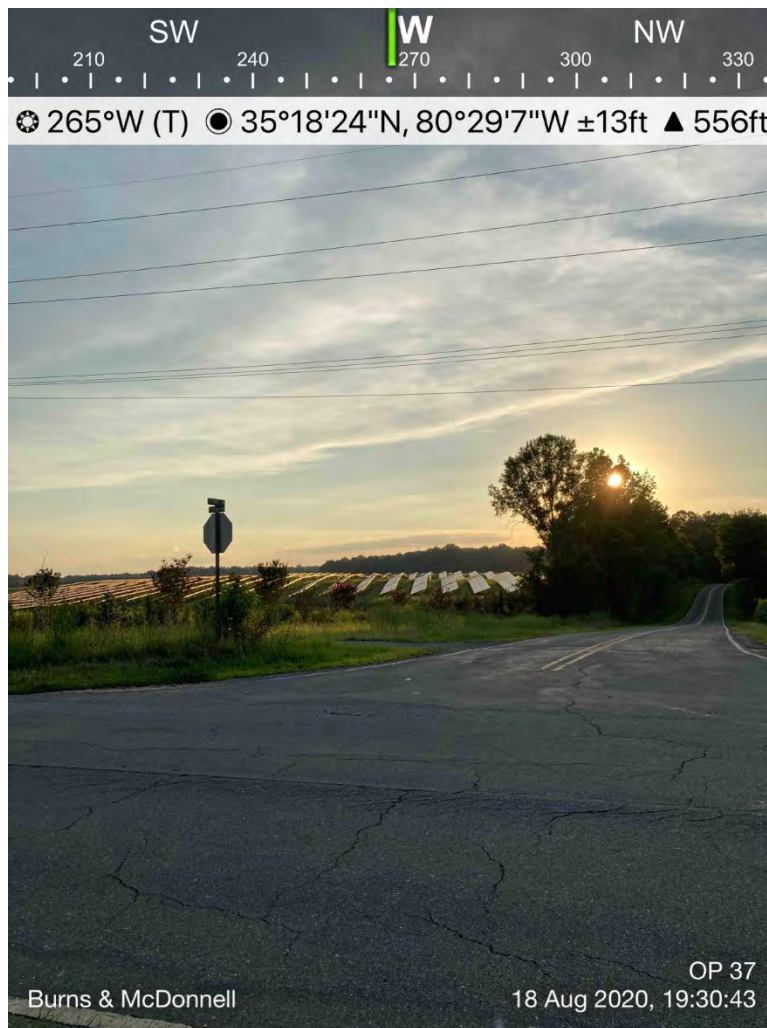
3.1.4 Observation Point 37

Burns & McDonnell visited the site on August 18th, 2020 in which the perspective from OP37 to MPE 5 and MPE 6 were photographed. MPE 5 is visible and MPE 6 is only marginally visible through the tree line as seen in Figure 3-7 and Figure 3-8.

Figure 3-7: OP37 Panoramic View, Facing West



Figure 3-8: OP37 Facing West



As such, the findings of Section 4.5.11 of the May 31st, 2019 report from Burns & McDonnell remain the same.

3.2 View-Angle Analysis

As the line-of-sight visibility was observed to have not been affected by the clearing of trees near the intersection of Joyner Road and Mount Pleasant Road, the results of the view-angle analysis done in the May 31st, 2019 report by Burns & McDonnell remain the same.

4.0 CONCLUSION

Burns & McDonnell concluded that the line of sight and view-angle analysis conclusions provided in the May 31st, 2019 report by Burns & McDonnell were not affected by the clearing of trees northwest of the intersection of Joyner Road and Mount Pleasant Road. As such, the findings within the May 31st, 2019 report remain the same.

ATTACHMENT 1 - PHOTO LOG



CREATE AMAZING.

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