



Cabarrus County Government

Cabarrus County Planning and Zoning Commission
Tuesday, December 14, 2021 @ 6:30 p.m.
Board of Commissioners Meeting Room
Cabarrus County Governmental Center

Agenda

1. Roll Call
2. Approval of November 9, 2021, PZ Meeting Minutes
3. Approval of the Granting Order with Finding of Facts for 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
4. New Business Board of Adjustment Function:
 - A. CUSE2021-00007 –Special Use Permit request for Public Service Facility (Well House). Applicant, Brian LaFranchi/Dewberry. Owner is Aqua North Carolina, Inc. Address is 5309 Historic Spring Dr. PIN 5559-76-1541.
5. New Business Planning Board Function:
 - A. Proposed Text Amendments
6. Legal Update
7. Director's Report
8. Adjourn

Planning and Zoning Commission Minutes

November 9, 2021

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.

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.

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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.

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

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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.

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)

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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.

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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.

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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.

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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 Staffs 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 with 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

Prepared by:

Richard M. Koch
Cabarrus County Attorney

Application Number: CUSE 2017-00001
CUSE 2018-00004

COUNTY OF CABARRUS
STATE OF NORTH CAROLINA

ORDER GRANTING AN AMENDMENT TO A CONDITIONAL USE PERMIT

The Board of Adjustment for Cabarrus County, held a public hearing on November 9, 2021, to consider further application number CUSE 2018-00004, a further proposed amendment to CUSE 2017-00001, submitted by NC 102 Project, LLC (Canadian Solar Inc.) (PIN 5557-40-5055 and 5556-25-9058). This hearing was to consider the close out documentation submitted by the applicant, Cabarrus County Planning and Zoning staff, and the members of the *ad hoc* committee of the Board.

This hearing was properly advertised and noticed and was held live in the Commissioners chambers of the Cabarrus County Governmental Center. No members of the public appeared or offered any response in any other form concerning this matter. Al Jensen, a project manager for Canadian Solar, did appear and answered questions from the Board.

Cabarrus County staff prepared a memorandum dated October 27, 2021, which was presented to the Board in writing and orally by Susie Morris, Planning and Zoning Manager. This report provided an update of Board committee action and staff action since this matter was last heard by the Board on November 10, 2020. At that time, the matter was tabled pending a site visit by the Board committee and staff. The committee and staff did visit the site on December 2, 2020 and provided their resultant observations, comments and concerns to the applicant. Since that time, the applicant has been working to address those matters. County and NCDEQ staff visited the site in October, 2021 to evaluate progress. The memorandum reflected the committee's observations, comments and concerns, as updated by the condition of the site as reflected after the October site visit.

A total of 8 comments were contained in the memorandum. It appears from the last site visit that most of the comments had been addressed satisfactorily by the applicant. However, it appeared that strapping installed to help plantings in the buffer survive were now hindering the growth and the health of those plants and needed to be removed. It also appeared that the buffers along Mount Pleasant Road, South and Joyner Road were filled with weeds and other wild growth that was affecting the proper growth of the plantings for the buffer. Mr. Jensen promised to take care of these two items and to document the work that was done to correct these matters.

Based on the above, the Board voted unanimously that the applicant has satisfied the conditions of approval that the Board had previously placed on this project, including the bond for the landscaping, which was provided to the County Attorney. That bond is in the amount of \$350,000 for a period of 2 years to cover deficiencies in the landscaping, which includes all the buffers. The Board also voted unanimously to accept the as-built landscape plan as the approved landscape plan for the project and the revised glare study based on the as-built landscape plan.

The Board also voted unanimously to allow the Zoning Certificate of Compliance to be issued for the overall site if the applicant removes the strapping and cleans up the buffers along Mount Pleasant Road, South and Joyner Road, all within (sixty) 60 days of the hearing date, and to the satisfaction of Cabarrus County staff. If the ZCOC is issued, it will be official verification that the project is complete and complies with the conditions contained in the CUP, as amended and the applicable standards of the Cabarrus County Development Ordinance.

The Board make the following Findings of Fact and Conclusions of Law:

1. The Board makes and adopts the Findings of Fact contained in the previous Granting Order as amended and adds additional Findings of Fact based on the above recitation of what occurred at the most recent hearing.
2. It is the Board's Conclusion that the proposed use does satisfy the first General Standard listed in Section 8.3 of the Cabarrus County Zoning Ordinance ("Ordinance"); namely, that the use will promote the public health, safety and general welfare, if located where proposed and developed and operated according to the plan as submitted.
3. It is the Board's Conclusion that the proposed use does satisfy the second General Standard listed in the Ordinance; namely, that the use will maintain or enhance the value of contiguous property.
4. It is the Board's Conclusion that the proposed use does satisfy the third General Standard listed in the Ordinance; namely, the use does not adversely affect the adequacy of sewage disposal

facilities, solid waste and water, police, fire and rescue, equal protection, schools, transportation systems (in and around the site) and other public facilities.

5. It is the Board's Conclusion that the proposed use does satisfy the fourth General Standard listed in the Ordinance; namely, the use is in compliance with the general plans for the physical developments of the County as embodied in the Ordinance or in the Comprehensive Plan, or portion thereof, adopted by the Board of County Commissioners.
6. It is the Board's Conclusion that the proposed use does satisfy the specific standards listed in the Ordinance for this use.

Therefore, because the Board concludes that all of the general and specific conditions precedent to the issuance of an AMENDMENT TO THE CONDITIONAL USE PERMIT have been satisfied, it is ORDERED that the application for the issuance of an AMENDMENT TO THE CONDITIONAL USE PERMIT be GRANTED, subject to the conditions described above, and the Findings of Fact and Conclusions of Law. It is also ORDERED that any violations previously alleged against this project by Cabarrus County prior to the date of this Order are considered to have been corrected and satisfied. The applicant shall fully comply with all the applicable, specific requirements in the Ordinance and must finish developing the property in accordance with the site plan submitted and approved. If any of the conditions shall be held invalid, this permit shall become void and of no effect.

Ordered this ____ day of December, 2021, *nunc pro tunc* to November 9, 2021.

CHAIR of the CABARRUS COUNTY
PLANNING AND ZONING COMMISSION
Sitting as the BOARD OF ADJUSTMENT

I, Arlena B. Roberts, Notary for Cabarrus County, NC certify that Adam Dagenhart, Chair of the Cabarrus Planning and Zoning Commission, appeared before me on this day and signed the foregoing document.

Arlena B. Roberts, Notary Public

My Commission expires: _____

NOTE: If you are dissatisfied with the decision of this Board, an appeal may be taken to the Superior Court of Cabarrus County within thirty (30) days after the date of this order. See Section 12-25 of the Ordinance.

PLANNING STAFF REPORT
 CABARRUS COUNTY PLANNING AND ZONING COMMISSION
 12/14/2021

Staff Use Only:

Approved: _____

Denied: _____

Tabled: _____

Conditional Use Permit: CUSE2021-00007

Applicant Information: Brian LaFranchi / Dewberry
 9300 Harris Corners Parkway
 Suite 200
 Charlotte, NC 28269

Owner Information: Aqua North Carolina, Inc
 202 Mackenan Drive
 Cary, NC 27511

PIN#: 5559-76-1541

Area in Acres: ± 1.12 ac

Purpose of Request: The purpose of this request is to install a new filtration system for the existing community well located on the site. A new building to house and protect the system will be constructed. Additional concrete will also be added for access. The use is permitted with the issuance of a conditional use permit in the Countryside Residential (CR) zoning district.

Site Description: The site currently supports an existing community well owned and operated by Aqua North Carolina. Most of the site is wooded and vacant. The site is accessed from Byfield Drive via a private access easement across 2730 Byfield Drive. The subject property is described as the original well lot for the Cold Springs subdivision recorded in 1993. According to the recorded plat, a 20-foot-wide drainage easement traverses the west side of the subject property.

Current Land Uses: Public Service Facility (Community Well for Cold Springs Subdivision)

Adjacent Land Uses: North – Vacant/Institutional
 East – Residential
 South – Residential
 West – Residential

Permitted Uses: All uses permitted within the CR zoning district are currently allowed on the subject property. However, the subject property is dedicated as the well lot for the Cold Springs Subdivision.

Existing Zoning:	CR (Countryside Residential)
Surrounding Zoning:	North: CR (Countryside Residential) East: CR (Countryside Residential) South: CR (Countryside Residential) West: CR (Countryside Residential)
Signs Posted:	11/17/2021
Newspaper Notification:	12/1/2021
Newspaper Notification 2:	12/8/2021
Notification Letters:	11/22/2021

Exhibits

- A. Staff Report
- B. Special Use Permit Application
- C. Staff Maps
- D. Site Plan
- E. Surrounding Property Owner Information
- F. Deed and Plat
- G. Neighborhood Meeting Minutes

Agency Review Comments

Planning Review:

Staff Report. Phillip Collins, Senior Planner Cabarrus County

NCDOT Review:

We have no issues with the proposed; however, Byfield Drive (location of the access) is not an NCDOT maintained roadway. Aqua NC would not be required to obtain anything from us for this project. Marc Morgan, NCDOT

Fire Marshal Review:

Approved. Doug Steele, Assistant County Fire Marshal

EMS Review:

No comments. Justin Brines, Cabarrus County EMS Deputy Chief

Sheriff's Office Review:

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

Soil and Water Review:

No comments. Tammi Remsburg, Cabarrus County Resource Conservation Manager

Health Review:

No comment. Chrystal Swinger, Cabarrus Health Alliance

Erosion Review: Approved

No comment. Chris Graybeal, NCDENR

History / Other Information

1. The applicant has provided documentation compliant with Section 8-3 of the Cabarrus County Zoning Ordinance, petitioning for a Conditional Use.
2. The applicant has submitted a complete application.
3. The subject property is approximately 1.12 acres in size.
4. The subject property is currently occupied by an existing community well facility. The applicant is proposing to add a filtration system with a building to house it.
5. The application states that approximately 190 SF will need to be cleared on the site for the new system. The rest of the site will remain in its current state.
6. A public drainage easement traverses the western side of the subject property and the applicant is providing buffering for it.
7. The subject property is located within the boundaries of the Eastern Area Plan and is designated as Open Space.

Conditions of Approval

Should the Board of Adjustment grant approval of the Special Use Permit, Staff requests the following conditions become part of the approval and case record:

1. Site plan review and approval is required subsequent to Board of Adjustment approval in order to ensure compliance with all applicable development requirements and conditions. (Zoning)
2. A granting order, stating restrictions and applicable conditions of approval, shall be recorded with the deed of the property. (Zoning)

3. The applicant shall procure any and all applicable federal, state, and local permits prior to commencement of the project. (Zoning)
4. Expansion of this project, as well as modifications or changes to the approved site plan, must receive Board of Adjustment approval in the form of an amendment to the Conditional Use Permit. (Zoning)



SPECIAL USE PERMIT 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 Special Use Permit request.

Date of Pre-Application Meeting: 11/4/2021 Staff Facilitator(s): Susie Morris, Phillip Collins

2. Submit a complete application 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.
 - Copies of the proposed site plan (number to be determined at pre-application meeting).
 - Any additional documents essential for the application to be considered complete. (Determined at pre-application meeting)
3. Submit cash, check, or money order made payable to Cabarrus County.

Fees: Special Use Permit \$650.00 (includes first acre) +\$15.00 *per acre*
 (Plus the 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 Special Use Permit request and the Special Use Permit process.
2. Submit a complete application with the appropriate fees to the Cabarrus County Planning Division.

Staff and appropriate agents will review your complete application and site plan and comments will be forwarded to you. You will need to address the comments in writing, revise the site plan accordingly and resubmit a site plan showing that all comments are addressed, and errors corrected.

3. Once advised that the site plan is correct and ready to be presented to the Board of Adjustment, you will need to submit folded copies of the site plan (number determined by staff).
4. When the copies of the plan are received, Staff will begin to 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 the Special Use Permit.

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.

Special Use Permit: Special Use Permits are considered by the Board of Adjustment during a quasi-judicial hearing. This means that anyone wishing to speak regarding the application must be sworn in. The vote requirement for the Special Use Permit to pass is a simple majority. Additional conditions may be added as part of the Special Use Permit approval process.

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

TO THE BOARD OF ADJUSTMENT:

I HEREBY PETITION THE BOARD OF ADJUSTMENT TO GRANT THE ZONING ADMINISTRATOR THE AUTHORITY TO ISSUE A SPECIAL USE PERMIT FOR THE USE OF THE PROPERTY AS DESCRIBED BELOW.

APPLICANT

Brian LaFranchi

PROPERTY OWNER

Aqua North Carolina Inc.

9300 Harris Corners Parkway, Suite 220

NAME

202 Mackenan Dr

ADDRESS

Charlotte, NC, 28269

ADDRESS

Cary, NC 27511

CITY, STATE, ZIP CODE

704-631-5206

CITY, STATE, ZIP CODE

704-704-3315

PHONE NUMBER

704-509-9937

PHONE NUMBER

FAX NUMBER

blafranchi@dewberry.com

FAX NUMBER

mamelton@aquaamerica.com

E-MAIL ADDRESS

E-MAIL ADDRESS

PARCEL INFORMATION:

Existing Use of Property

_ Well Lot _____

Proposed Use of Property

_ Well Lot _____

Existing Zoning

_ CR _____

Property Location

5309 Historic Spring Drive Concord, NC 28205

Property Acreage

_ 1.12 AC _____

Parcel Number (PIN)

_ 09-001-0002.10 _____

LAND USE OF ADJACENT PROPERTIES:

NORTH __ Church _____ SOUTH __ Residential _____
EAST __ Residential _____ WEST __ Residential _____

GENERAL REQUIREMENTS:

The Zoning Ordinance imposes the following general requirements on the use requested by the applicant. Under each requirement, the applicant should explain, with reference to the attached plans (when applicable) how the proposed use satisfies these requirements.

1. The Board must find that the uses(s) as proposed “are not detrimental to the public health, safety or general welfare.”

The proposed filtration system will remove radionuclides from the public drinking water supply, which will improve the public’s health, safety and general welfare.

2. The Board must find that the use(s) as proposed “are appropriately located with respect to transportation facilities, water supply, fire and police protection, waste disposal, etc.”

The well and filtration building is centrally located in a residential area and is located close to all of these functions.

3. The Board must find that the use(s) as proposed “will not violate neighborhood character nor adversely affect surrounding land uses.”

The proposed filtration building only requires the removal of 190 SF of existing trees, as seen on sheet C-02. The rest of the site will stay in the existing condition and will not adversely affect the surrounding residential area.

4. The Board must find that the use(s) as proposed “will comply with the general plans for the physical development of the County or Town, as embodied in the Zoning Ordinance or in the area development plans that have been adopted.”

The zoning of the parcel is not changing. The expanded filtration system building will help treat the water for the community and will not impede on the County’s physical development plans.

SPECIFIC REQUIREMENTS:

The Zoning Ordinance also imposes SPECIFIC REQUIREMENTS on the use(s) requested by the applicant. The applicant should be prepared to demonstrate that, if the land is used in a manner consistent with the plans, specifications, and other information presented to the Board, the proposed use(s) will comply with specific requirements concerning the following:

Nature of use (type, number of units, and/or area): Well lot for a water filtration system building.

Accessory uses (if any):

___ N/A _____

SETBACK PROVISIONS:

Principle Use:

Front: ___50'___ Side yard Single: ___20'___ Side yard Total: ___40'___ Rear: ___30'___

Accessory Use:

Front: _____ Side yard Single: _____ Side yard Total: _____ Rear: _____

Height provisions: Principle Use: ___40'___ Accessory Use: _____

Off street parking and loading provisions: (include calculations)

___ N/A _____

Sign provisions: (include sketch drawing with dimensions)

___ N/A _____

Provisions for screening landscaping and buffering: (show on site plan)

___ N/A. Existing landscape of a hardwood forest is to remain. _____

Provisions for vehicular circulation and access to streets: (provide NCDOT permit and/or TIA)

___ There is an existing gravel driveway that connects to Byfield Drive. No NCDOT Driveway permit is required. _____

Adequate and safe design for grades, paved curbs and gutters, drainage systems, and treatment or turf to handle storm waters, prevent erosion, subdue dust:

___ The proposed building is in a relatively flat area and the grade will tie in the with existing slope. The surrounding area of woods will remain in its current condition _____

An adequate amount and safe location of play areas for children and other recreational uses according to the concentration of residential property:

___ N/A _____

Compliance with applicable overlay zones: (see Chapter 4 of Zoning Ordinance)

The parcel is in the Manufactured Home Overlay 2 (MH-2). The proposed use of the parcel does not include any residential dwellings, so the design and installation requirements for the MH-2 overlay do not apply.

Compliance with the Flood Damage Prevention Ordinance: (see Chapter 16)

The parcel is not located in a special flood zone.

Other requirements may be requested by the applicant or specified by the Board for protection of the public health, safety, welfare, and convenience:

PREDEFINED STANDARDS:

Each individual Special Use listed in the Zoning Ordinance may have specific standards imposed. Refer to Chapter 8, the Special Use section of the Zoning Ordinance for these requirements. Each standard should be addressed in the site plan submitted along with this application.

CERTIFICATION:

I hereby confirm that the information contained herein and herewith is true and correct and that this application shall not be scheduled for official consideration until all the required contents have been submitted to the Planning and Development Department.

Signature of Applicant _____ Date: _____



Signature of Owner

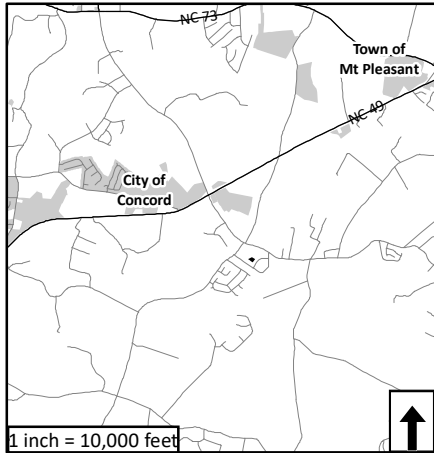
Date: 11/9/2021

LINDSAY L. MIZE, AQUA PROJECT ENG. II SIGNING FOR MICHAEL A. MELTON DUE TO MICHAEL A. MELTON BEING OUT OF THE OFFICE FOR A WORKER'S COMP INJURY.

Eastern Planning Area Existing Zoning

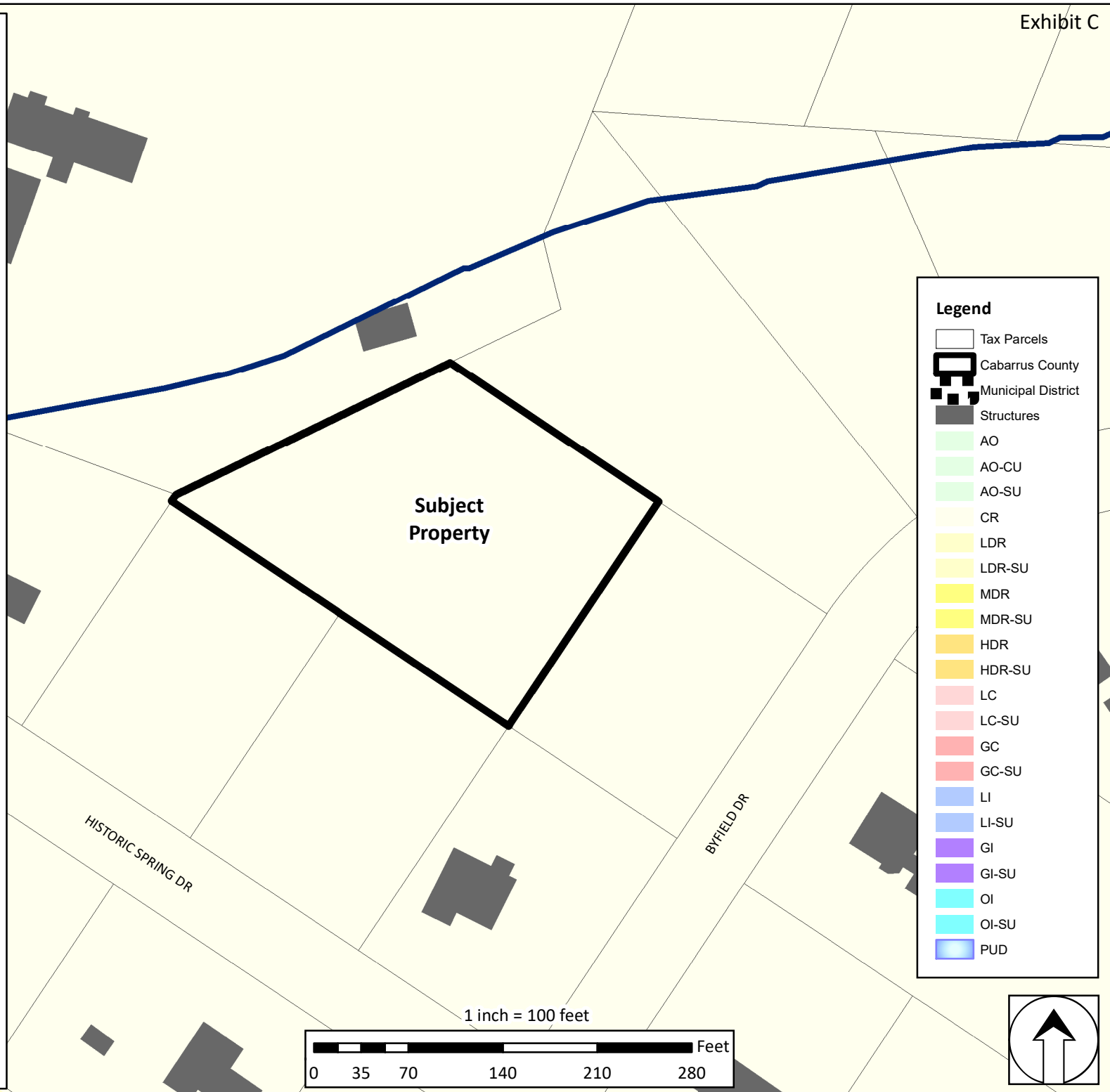


Applicant: Brian LaFranchi, Dewberry
Owner: Aqua North Carolina, Inc.
Case: CUSE2021-00007
Address: 5309 Historic Spring Dr
Purpose: Replacement of Wellhouse
PIN: 5559-76-1541



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 - December 2021






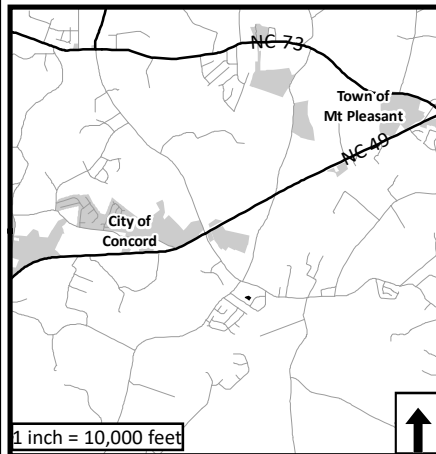
- Legend**
- Tax Parcels
 - Cabarrus County
 - Municipal District
 - Structures
 - AO
 - AO-CU
 - AO-SU
 - CR
 - LDR
 - LDR-SU
 - MDR
 - MDR-SU
 - HDR
 - HDR-SU
 - LC
 - LC-SU
 - GC
 - GC-SU
 - LI
 - LI-SU
 - GI
 - GI-SU
 - OI
 - OI-SU
 - PUD

Eastern Planning Area Aerial Map



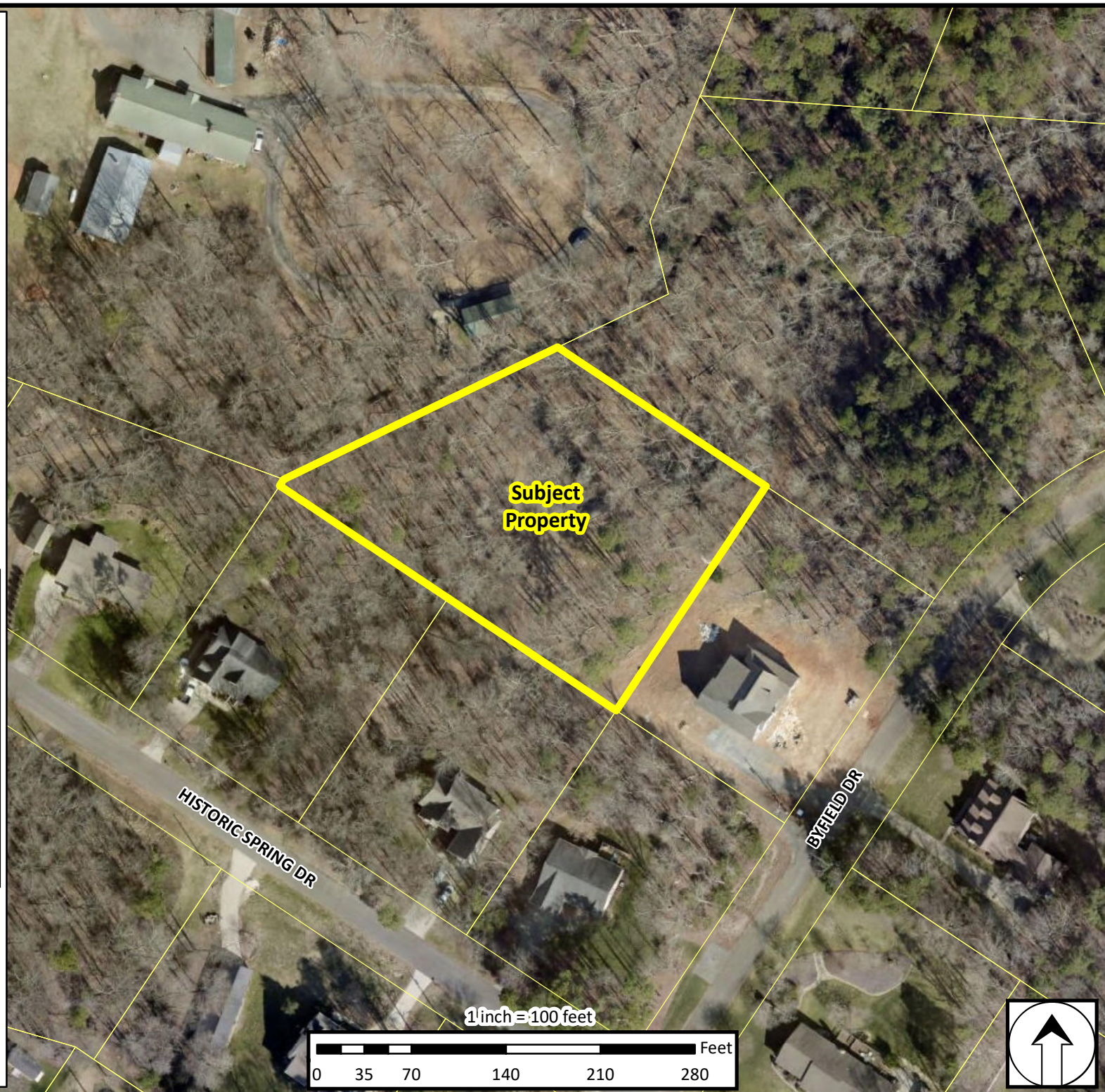
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-  Cabarrus County
-  Municipal District
-  Tax Parcels



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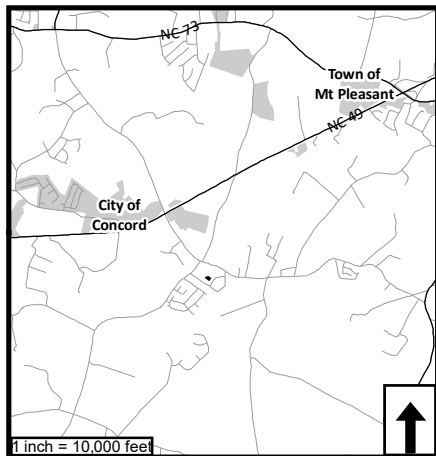
Map Prepared by Cabarrus County Planning & Development - December 2021



Eastern Planning Area Future Land Use

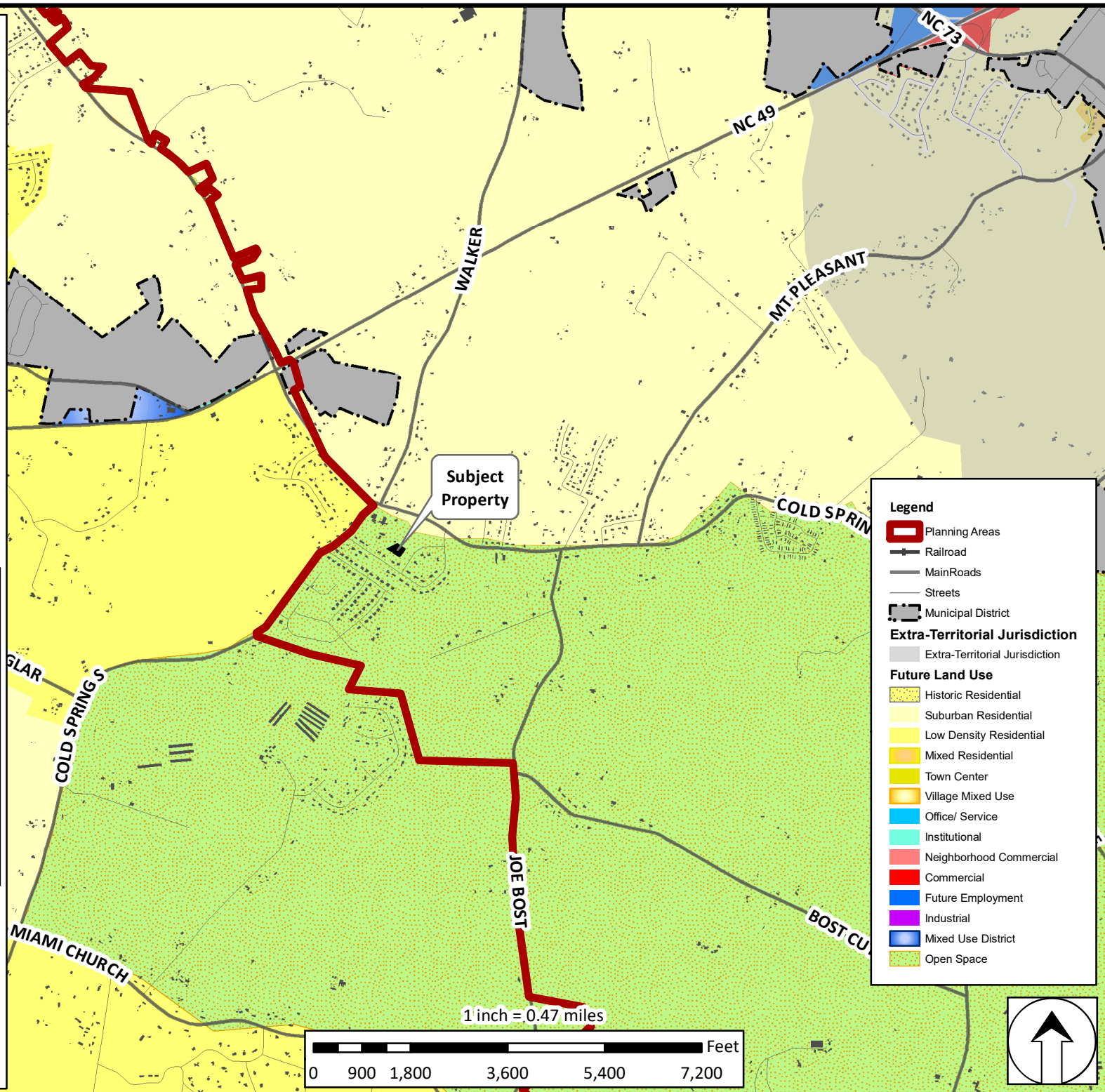


Applicant: Brian LaFranchi, Dewberry
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 Case: CUSE2021-00007
 Address: 5309 Historic Spring Dr
 Purpose: Replacement of Wellhouse
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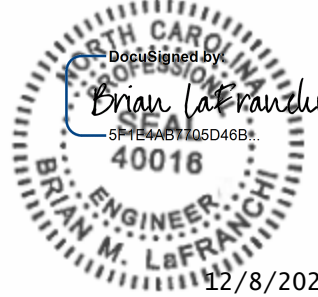
Map Prepared by Cabarrus County Planning & Development - December 2021



Dewberry Engineers Inc.
9300 HARRIS CORNERS PKWY
SUITE 220
CHARLOTTE, NC 28269
PHONE: 704.509.9918
FAX: 704.509.9937
NCBELS #F-0929

RADIUM REMOVAL
TREATMENT SYSTEM
FIELDSTONE WELL #1
AQUA NORTH CAROLINA
202 MACKENAN DR
CARY, NC 27511

SEAL



SCALE

2	12/08/21	PMW	AGENCY COMMENTS	
1	11/08/21	PMW	SUP	
No.	DATE	BY	Description	
REVISIONS				

DRAWN BY ZKM
APPROVED BY BML
CHECKED BY TMM
DATE JULY 28, 2021
TITLE

TITLE SHEET

PROJECT NO. 50140313

T-01

AQUA NORTH CAROLINA

RADIUM REMOVAL TREATMENT SYSTEM

FIELDSTONE WELL #1

JULY 2021

DEWBERRY PROJECT NO: 50140313

PROJECT INFORMATION	
LANDOWNER	AQUA NORTH CAROLINA 202 MACKENAN COURT CARY, NC 27511 PH: 919.653.6975
ENGINEER AND SURVEYOR	DEWBERRY ENGINEERS INC. 9300 HARRIS CORNERS PKWY., SUITE 220 CHARLOTTE, NC 28269 PH: 704.509.9918
EXISTING USE	WELL LOT
PROPOSED USE	WELL LOT
EXISTING BUILDING	73 SF
PROPOSED BUILDING	469 SF
SITE ZONING	CR
TOTAL ACREAGE	1.12 AC
ACREAGE OF LAND TO BE DISTURBED/EXPOSED	0.09 AC
IMPERVIOUS LIMIT %	20%
EXISTING IMPERVIOUS AREA	0.071 AC
EXISTING IMPERVIOUS AREA %	6.34%
PROPOSED IMPERVIOUS AREA	0.017 AC
PROPOSED IMPERVIOUS %	1.51%
DEED BOOK AND PAGE NUMBER	DB 8740 PG 0338
PARCEL NUMBER	09-001-0002.10
RIVER BASIN	YADKIN-PEEDEE

FIELDSTONE/COLD SPRINGS WATER SYSTEM (NC 01-13-232)
FIELDSTONE WELL NO. 1

ADDRESS
2738 BYFIELD DRIVE
CONCORD, NC 28205

INDEX OF DRAWINGS:

T-01	TITLE SHEET
G-01	APPENDIX B
C-00	EXISTING FEATURES MAP
C-01	EROSION AND SEDIMENT CONTROL PLAN
C-02	SITE AND GRADING PLAN
C-03	PLACING PLAN AND SECTION
C-04	EROSION AND SEDIMENT CONTROL DETAILS
C-05	STANDARD DETAILS
C-06	SURVEY MAP
L-01	LANDSCAPE PLAN
S-01	GENERAL STRUCTURAL NOTES AND DETAILS
S-02	STRUCTURAL PLANS AND DETAILS
E-0	ELECTRICAL LEGEND, ABBREVIATIONS & GENERAL NOTES
E-1	ELECTRICAL PLANS
E-2	ELECTRICAL SCHEDULES & SINGLE LINES
E-3	ELECTRICAL CONDUIT & WIRE DIAGRAMS & DETAILS

ME SET ADEdge TREATMENT SYSTEM DRAWINGS (BY OTHERS)

CONSTRUCTION SEQUENCE:

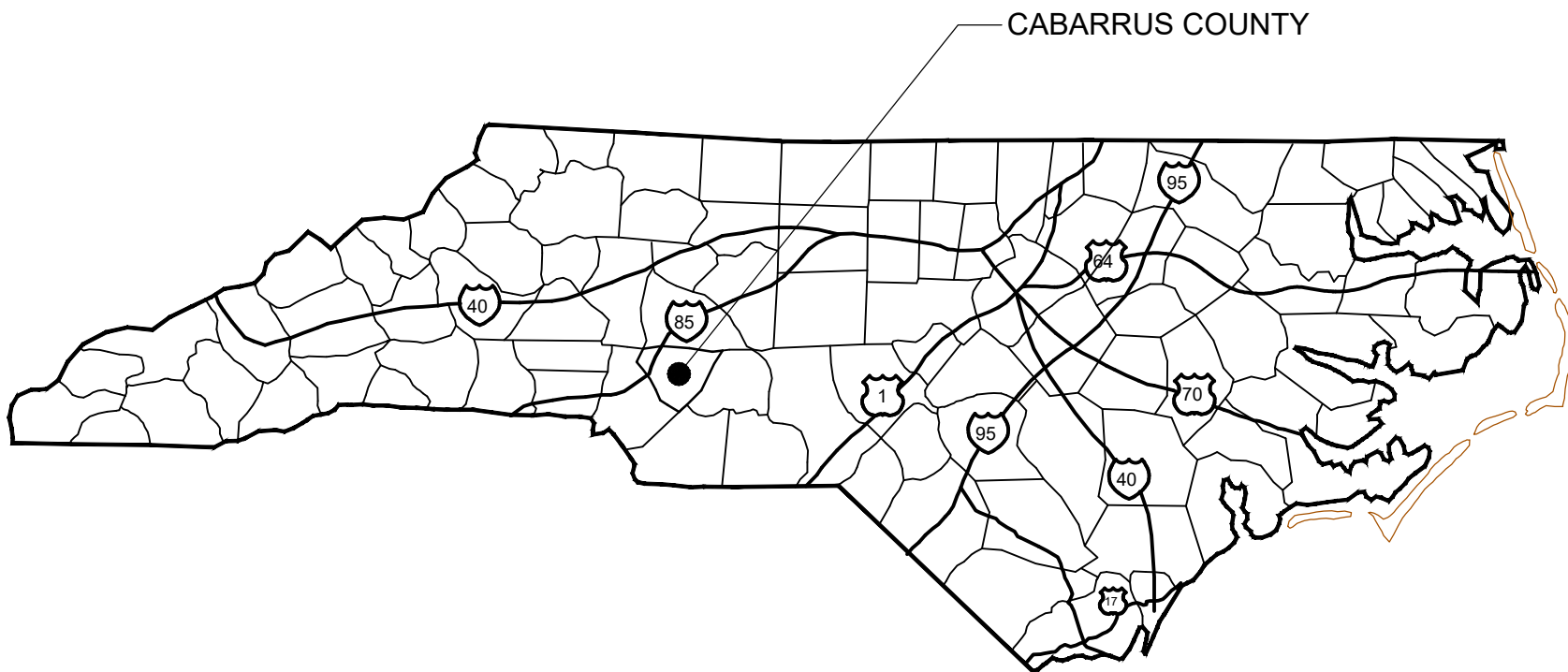
- HOLD PRECONSTRUCTION MEETING.
- NO WORK SHALL COMMENCE UNTIL ALL PERMITS ARE OBTAINED AND NOTICE-TO-PROCEED IS GRANTED.
- NOTIFY NC ONE-CALL TO FIELD LOCATE UTILITIES.
- STAKE THE PROPOSED SITE LAYOUT, MARK LIMITS OF DISTURBANCE, AND INSTALL TREE PROTECTION MEASURES AS NECESSARY.
- PROVIDE SEDIMENT CONTROL DEVICES.
- CONTRACTOR MAY STAGE MATERIALS WITHIN THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS.
- WASH WHEELS AS NEEDED TO PREVENT SEDIMENT FROM ENTERING PAVED ROADS OFF-SITE.
- WHEN CONSTRUCTION IS COMPLETE GRADE STAGING AREA BACK TO ORIGINAL CONDITION AND SEED AND STRAW.
- REMOVE ALL EROSION CONTROL DEVICES AFTER CONSTRUCTION IS COMPLETE. VEGETATION HAS BEEN ESTABLISHED AND UPON APPROVAL FROM AQUA NORTH CAROLINA.

PRESIDENT

SHANNON BECKER

ENGINEERING MANAGER

MICHAEL MELTON



GENERAL NOTES:

- PERFORM WORK BETWEEN THE HOURS OF 7:00 AM TO 5:00 PM.
- PROVIDE TRAFFIC AND PEDESTRIAN CONTROL.
- PROVIDE ALL BARRICADES, SIGNS, ETC. TO PROTECT AND SECURE CONSTRUCTION AREA, EQUIPMENT, AND MATERIALS FROM THE PUBLIC.
- PROVIDE A COMPLETE SET OF CONTRACT DOCUMENTS AS WELL AS ALL APPROVALS AND EASEMENT PLATS ON THE JOB SITE AT ALL TIMES.
- PROVIDE ALL LAYOUT WORK REQUIRED TO PROPERLY CONSTRUCT THE WORK.
- PROVIDE AND TEST WATER MAINS PER AQUA NORTH CAROLINA STANDARDS.
- ALL EXISTING UTILITIES HAVE BEEN LOCATED FROM THE INFORMATION AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCURATELY LOCATE BOTH HORIZONTALLY AND VERTICALLY ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION (ONE CALL CENTER 1-800-632-4849). COST TO REPAIR DAMAGED UTILITIES SHALL BE BORNE BY THE CONTRACTOR.
- MAKE EVERY EFFORT TO SAVE PROPERTY IRONS, MONUMENTS, OTHER PERMANENT POINTS AND LINES OF REFERENCE AND CONSTRUCTION STAKES. PROPERTY IRONS, MONUMENTS, AND OTHER PERMANENT POINTS OF REFERENCE DAMAGED DURING WORK SHALL BE REPLACED BY A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.
- REPAIR ALL DRIVEWAYS AND DRIVEWAY PIPES, PAVED OR UNPAVED CONCRETE CURB AND GUTTER AND SIDEWALKS TO EXISTING OR BETTER CONDITIONS IF DISTURBED DURING CONSTRUCTION.
- PROVIDE MEASURES AS NECESSARY DURING CONSTRUCTION FOR SEDIMENTATION AND EROSION CONTROL.
- PROTECT AND RELOCATE EXISTING UTILITIES (INCLUDING EXISTING WATER MAINS, PRIVATE OR PUBLIC) IF REQUIRED DURING INSTALLATION OF NEW WORK. THERE WILL BE NO ADDITIONAL OR SEPARATE PAY ITEM FOR THIS WORK.
- RESTORE/REPLACE ALL SIGNS, MAILBOXES, LANE STRIPING, TRAFFIC CONTROL DEVICES, ETC. ENCOUNTERED.
- RESTORE THE DISTURBED AREA TO THE EXISTING GRADE SO AS NOT TO CHANGE DRAINAGE PATTERNS OR CREATE POCKET WETLANDS OF PONDING WATER UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
- TOTAL DISTURBED AREA IS 0.09 ACRES.

TOPOGRAPHIC SURVEY NOTES:

- THE TOPOGRAPHIC SURVEY IS BASED ON SURVEY PERFORMED BY DEWBERRY ENGINEERS INC. ON JUNE 1, 2021.
- NORTH ARROW IS GRID NORTH AND ALL DISTANCES ARE GROUND DISTANCES.
- LOCATIONS OF UTILITIES SHOWN ON THIS SURVEY WERE DETERMINED BY OBSERVED EVIDENCE. LOCATION OF ABOVE GROUND UTILITY APPURTENANCES, AND UTILITY MARKINGS (PAINT, ETC.) PROVIDED BY AQUA NC AND NC 811. THESE MARKINGS WERE OBSERVED DURING THE COURSE OF THIS SURVEY. WERE FIELD LOCATED, ARE SHOWN FOR INFORMATIONAL PURPOSES, AND SHOULD BE FIELD VERIFIED IF CRITICAL. UNDERGROUND UTILITIES NOT SHOW, MAY EXIST.

2018 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2 – FAMILY DWELLINGS AND TOWNHOUSES)

Name of Project: RADIUM REMOVAL SYSTEM – FIELDSTONE/COLD SPRINGS WELL #1
Address: 5309 HISTORIC SPRING DRIVE, CONCORD NC Zip Code 28205
Owner/Authorized Agent: AQUA NORTH CAROLINA Phone #(919) 653–6975 Email MAMELTON@AQUAAMERICA.COM

Owned By: AQUA NORTH CAROLINA ☐ City/County ☒ Private ☐ State
Code Enforcement Jurisdiction: ☒ City – CONCORD ☐ County – CABARRUS ☐ State

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	EMAIL
Architectural	–	–	–	–	–
Civil	DEWBERRY ENGINEERS INC.	BRIAN M. LAFRANCHI	040016	(704) 680–8860	BLAFRANCHI@DEWBERRY.COM
Electrical	DEWBERRY ENGINEERS INC.	BRANDON D. WHELAN	033810	(704) 631–5207	BWHELAN@DEWBERRY.COM
Fire Alarm	–	–	–	–	–
Plumbing	–	–	–	–	–
Mechanical	–	–	–	–	–
Sprinkler/Standpipe	–	–	–	–	–
Structural	DEWBERRY ENGINEERS INC.	ANTHONY MILLER	036317	(704) 264–1248	ADMILLER@DEWBERRY.COM
Retain wall>5'high	–	–	–	–	–
Other	–	–	–	–	–

2018 NC BUILDING CODE: ☒ New Construction ☐ Addition ☐ Renovation
☐ 1st Time Interior Completion ☐ Shell/Core ☐ Phased Construction – Shell/Core

2018 NC EXISTING BUILDING CODE: ☐ Prescriptive ☐ Repair ☐ Chapter 14
Alteration: ☐ Level 1 ☐ Level II ☐ Chapter 14
☐ Historic Property ☐ Change of Use

CONSTRUCTED: (date) – CURRENT OCCUPANCY(S) Ch. 3: –
RENOVATED: (date) – PROPOSED OCCUPANCY(S) Ch. 3: –

RISK CATEGORY (Table 1604.5): Current: ☐ I ☐ II ☐ III ☐ IV
Proposed: ☐ I ☒ II ☐ III ☐ IV

BASIC BUILDING DATA:

Construction Type: ☐ I–A ☐ II–A ☐ III–A ☐ IV ☐ V–A
☐ I–B ☐ II–B ☐ III–B ☒ V–B

Sprinklers: ☒ No ☐ Partial ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☒ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☐ No ☒ Yes (Primary) Flood Hazard Area: ☒ No ☐ Yes
Special Inspections Required: ☒ No ☐ Yes

GROSS BUILDING AREA TABLE:

FLOOR	EXISTING (SQ. FT.)	NEW (SQ. FT.)	RENO/ALTER (SQ. FT.)	SUB–TOTAL (SQ. FT.)
9th Floor	0	0	0	0
8th Floor	0	0	0	0
7th Floor	0	0	0	0
6th Floor	0	0	0	0
5th Floor	0	0	0	0
4th Floor	0	0	0	0
3rd Floor	0	0	0	0
2nd Floor	0	0	0	0
1st Floor	175	287	0	462
Basement	0	0	0	0
TOTAL	175	287	0	462

ALLOWABLE AREA:

Primary Occupancy Classification(s):

- Assembly ☐ A–1 ☐ A–2 ☐ A–3 ☐ A–4 ☐ A–5 ☐
Business ☐
Educational ☐
Factory ☐ F–1 Moderate ☒ F–2 Low
Hazardous ☐ H–1 Detonate ☐ H–2 Deflagrate ☐ H–3 Combust ☐ H–4 Health ☐ H–5 HPM
Institutional ☐ I–1 Condition ☐ 1 ☐ 2
☐ I–2 Condition ☐ 1 ☐ 2
☐ I–3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I–4
Mercantile ☐
Residential ☐ R–1 ☐ R–2 ☐ R–3 ☐ R–4
Storage ☐ S–1 Moderate ☐ S–2 Low ☐ High–piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancy Classification(s): –

Incidental Uses (Table 509): –

Special Uses (Chapter 4 – List Code Sections): –

Special Provisions (Chapter 5 – List Code Sections): –

Mixed Occupancy: ☒ No ☐ Yes Separation: – HR. Exception: –

☐ Non–Separated Use (508.3)

The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

☐ Separated Use (508.4)

See below for area calculations
For each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual area of Occupancy A}}{\text{Allowable area of Occupancy A}} + \frac{\text{Actual area of Occupancy B}}{\text{Allowable area of Occupancy B}} \leq 1$$

STORY #	DESCRIPTION AND USE	(A) BULD AREA PER STORY (ACTUAL)	(B) TABLE 506.4 AREA	(C) AREA FOR FRONTAGE INCREASE	(D) ALLOWABLE AREA PER STORY OR UNLIMITED
1	–	–	–	–	–
1	–	–	–	–	–

1. Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 ft min. width = – (F)
b. Total Building Perimeter = – (P)
c. Ratio (F/P) = – (F/P)
d. W = Minimum width of public way = – (W)
e. Percent of frontage increase $I_f = 100[F/P - 0.25] \times W/30 = – (\%)$
2. Unlimited area applicable under conditions of Sections 507.
3. Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2)
4. The maximum area of parking garages must comply with 406.5.4. The maximum area of air-traffic control towers must comply with 412.3.1.
5. Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)	–	–	–
Building Height in Stories (Table 504.4)	–	–	–

1. Provide code reference if the "Shown-on Plans" quantity is not listed in Table 504.3 or 504.4
2. The maximum height of air-traffic control towers must comply with Table 412.3.1
3. The maximum height of open parking garages must comply with Table 406.5.4

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQUIRED	RATING PROVIDED (w/REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders trusses	–	–	–	–	–	–	–
Bearing Walls	–	–	–	–	–	–	–
Exterior	–	–	–	–	–	–	–
North	–	–	–	–	–	–	–
East	–	–	–	–	–	–	–
West	–	–	–	–	–	–	–
South	–	–	–	–	–	–	–
Interior	–	–	–	–	–	–	–
Non-Bearing Walls and Partitions	–	–	–	–	–	–	–
Exterior	–	–	–	–	–	–	–
North	–	–	–	–	–	–	–
East	–	–	–	–	–	–	–
West	–	–	–	–	–	–	–
South	–	–	–	–	–	–	–
Interior walls and partitions	–	–	–	–	–	–	–
Floor Construction	–	–	–	–	–	–	–
Including supporting beams and joists	–	–	–	–	–	–	–
Floor Ceiling Assembly	–	–	–	–	–	–	–
Columns Supporting Floors	–	–	–	–	–	–	–
Roof Construction	–	–	–	–	–	–	–
Including supporting beams and joists	–	–	–	–	–	–	–
Roof Ceiling Assembly	–	–	–	–	–	–	–
Columns Supporting Roof	–	–	–	–	–	–	–
Shaft Enclosures – Exit	–	–	–	–	–	–	–
Shaft Enclosures – Other	–	–	–	–	–	–	–
Corridor Separation	–	–	–	–	–	–	–
Occupancy/Vehicle Barrier Separation	–	–	–	–	–	–	–
Party/Fin Wall Separation	–	–	–	–	–	–	–
Smoke Barrier Separation	–	–	–	–	–	–	–
Smoke Partition	–	–	–	–	–	–	–
Tenant/Dwelling Unit/Sleeping Unit Separation	–	–	–	–	–	–	–
Incidental Use Separation	–	–	–	–	–	–	–

* Indicate section number permitting reduction

Percentage of Wall Opening Calculations

Fire Separation Distance (Feet) From Property Lines	Degree of Openings Protection (Table 705.8)	Allowable Area (%)	Actual Shown on Plans (%)
–	–	–	–
–	–	–	–
–	–	–	–

LIFE SAFETY SYSTEM:

Emergency Lighting: ☒ NO ☐ YES
Exit Signs: ☒ NO ☐ YES
Fire Alarm: ☒ NO ☐ YES
Smoke Detection Systems: ☒ NO ☐ YES ☐ PARTIAL –
Carbon Monoxide Detection: ☒ NO ☐ YES

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: –

- ☐ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations (if not on the site plan)
☐ Exterior wall openings area with respect to distance to assumed property lines (705.8)
☐ Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.2)
☐ Occupant loads for each area
☐ Exit access travel distances (1010.7)
☐ Common path of travel distances (1006.2.1 & 1006.3.2(1))
☐ Dead end lengths (1020.4)
☐ Clear exit widths for each exit door
☐ Maximum calculated occupant load capacity for each exit door can accommodate based on egress width (1005.3)
☐ Actual occupant load for each exit door
☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☐ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with electromagnetic egress locks (1010.1.9.9)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I–2 (407.5)
☐ Note any code exception or table notes that may have been utilized regarding the items above

Section/Tab/Note	Title
–	–
–	–
–	–

ACCESSIBLE DWELLING UNITS (SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
–	–	–	–	–	–	–	–

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF ACCESSIBLE PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # OF ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 8' ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	8' ACCESS AISLE	
–	–	–	–	–	–	–
TOTAL	–	–	–	–	–	–

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE		WATERCLOSETS			URINALS			LAVATORIES			SHOWERS/ TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX	MALE	FEMALE	UNISEX	REGULAR	ACCESSIBLE				
SPACE	EXISTING	--	--	--	--	--	--	--	--	--	--	--	--
	NEW	--	--	--	--	--	--	--	--	--	--	--	--
	REQUIRED	--	--	--	--	--	--	--	--	--	--	--	--

SPECIAL APPROVALS:

Special approval: (Local Jurisdiction, Department of Insurance, SCO, DPI, DHHS, ICC, etc., described below)

ENERGY SUMMARY:

ENERGY REQUIREMENTS

The following data shall be considered minimum and any special attribute required to meet the North Carolina Energy Conservation Code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing Building Envelope Complies with Code: ☐ No ☐ Yes (The remainder of this section is not applicable)

Exempt Building: ☐ No ☐ Yes (Provide Code or Statutory reference) –

Climate Zone: ☐ 3A ☐ 4A ☐ 5A

Method of Compliance: Energy Code ☐ Performance ☐ Prescriptive

ASHRAE 90.1 ☐ Performance ☐ Prescriptive

(If "Other" specify source here) –

THERMAL ENVELOPE (Prescriptive Method Only)

Roof/ceiling Assembly (each assembly)	–
Description of assembly	–
U–Value of total assembly	–
R–Value of insulation	–
Skylights in each assembly	–
U–Value of skylight	–
Total square footage of skylights in each assembly	–
Exterior Walls (each assembly)	–
Description of assembly	–
U–Value of total assembly	–
R–Value of insulation	–
Openings (windows or doors with glazing)	–
U–Value of assembly	–
Solar heat gain coefficient	–
Projection factor	–
Door R–Values	–
Walls below grade (each assembly)	–
Description of assembly	–
U–Value of total assembly	–
R–Value of insulation	–
Floors over unconditioned space (each assembly)	–
Description of assembly	–
U–Value of total assembly	–
R–Value of insulation	–
Floors slab on grade	–
Description of assembly	–
U–Value of total assembly	–
R–Value of insulation	–
Horizontal/vertical requirement	–
Slab heated	–

STRUCTURAL DESIGN (PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: (ASCE 7–10) Snow (ls): 1.0
Seismic (le): 1.0
Live Loads: Roof: 20 psf
Mezzanine: psf
Floor: 300 psf
Ground Snow Load: 15 psf
Wind Load: Ultimate wind speed 115 mph (ASCE–7)
Exposure category C

SEISMIC DESIGN CATEGORY

Provide the following Seismic Design Parameters:

Building Risk Category (Table 1604.5) I II III IV
Spectral Response Acceleration: Ss = 14.7 %g S1 = 7.4 %g

Site Classification (ASCE 7): A B C D E F

Data Source: ☐ Field Test ☒ Presumptive ☐ Historical Data

Basic structural system (check one):

- ☒ Bearing wall ☐ Dual with Special Moment Frame
☐ Building frame ☐ Dual with Intermediate R/C or Special Steel
☐ Moment frame ☐ Inverted Pendulum

Analysis Procedure: ☐ Simplified ☒ Equivalent Lateral Force ☐ Dynamic

Architectural, Mechanical, Components Anchored? ☒ Yes ☐ No

Lateral Design Control: Earthquake ☐ Wind ☒

Soil Bearing Capacities:

Field Test (provide copy of test report) – psf
Presumptive Bearing Capacity 2,000 psf
Pile size, type and capacity –

MECHANICAL DESIGN (PROVIDE ON THE MECHANICAL SHEET IF APPLICABLE)

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone	4A
Winter Dry Bulb	16.3F
Summer Dry Bulb	93.7F
Interior Design Conditions	–
Winter Dry Bulb	40F
Summer Dry Bulb	N/A NOT CONTROLLED
Relative Humidity	<90%
Building Heating Load	9mBH
Building Cooling Load	N/A
Mechanical Spacing Conditioning System	–
Unitary	–
Description of Unit	DEHUMIDIFIER, ENERGY FACTOR = 2 L/KWH
Heating Efficiency	ELECTRICAL HEAT, 100% 3.3 KW
Cooling Efficiency	N/A
Size Category of Unit	50 PINTS/24 HR
Boiler	–
Size category. If Oversized, State Reason	N/A
Chiller	–
Size category. If Oversized, State Reason	N/A
List Equipment Efficiencies	N/A

ELECTRICAL SUMMARY (PROVIDE ON THE ELECTRICAL SHEET IF APPLICABLE):

ELECTRICAL SYSTEMS AND EQUIPMENT

METHOD OF COMPLIANCE:

Energy Code: ☒ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☐ Performance

Lighting Schedule (each fixture type)

Lamp Type Required in Fixture LED
Number of Lamps in Fixture N/A
Ballast Type Used in Fixture N/A
Number of Ballasts in Fixture N/A
Total Wattage Per Fixture 31
Total Interior Wattage Specified vs. Allowed (whole building or space by space) 62 VS. 273
Total Exterior Wattage Specified vs. Allowed N/A

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)

- ☐ C406.2 More Efficient Mechanical Equipment
☐ C406.3 Reduced Lighting Power Density
☐ C406.4 Enhanced Digital Lighting Controls
☐ C406.5 On–site Renewable Energy
☐ C406.5 Dedicated Outdoor Air System
☐ C406.7 Reduced Energy Use in Service Water Heating



Dewberry Engineers Inc.
9300 HARRIS CORNERS PKWY
SUITE 220
CHARLOTTE, NC 28269
PHONE: 704.509.9918
FAX: 704.509.9937
NCEELS #F–0869

RADIUM REMOVAL
TREATMENT SYSTEM
FIELDSTONE WELL #1
AQUA NORTH CAROLINA
202 MACKENAN DR
CARY, NC 27511

SEAL



SCALE

No. DATE BY Description

REVISIONS

DRAWN BY ZKM
APPROVED BY BML
CHECKED BY TMM
DATE JULY 28, 2021
TITLE

C-00

GENERAL NOTES

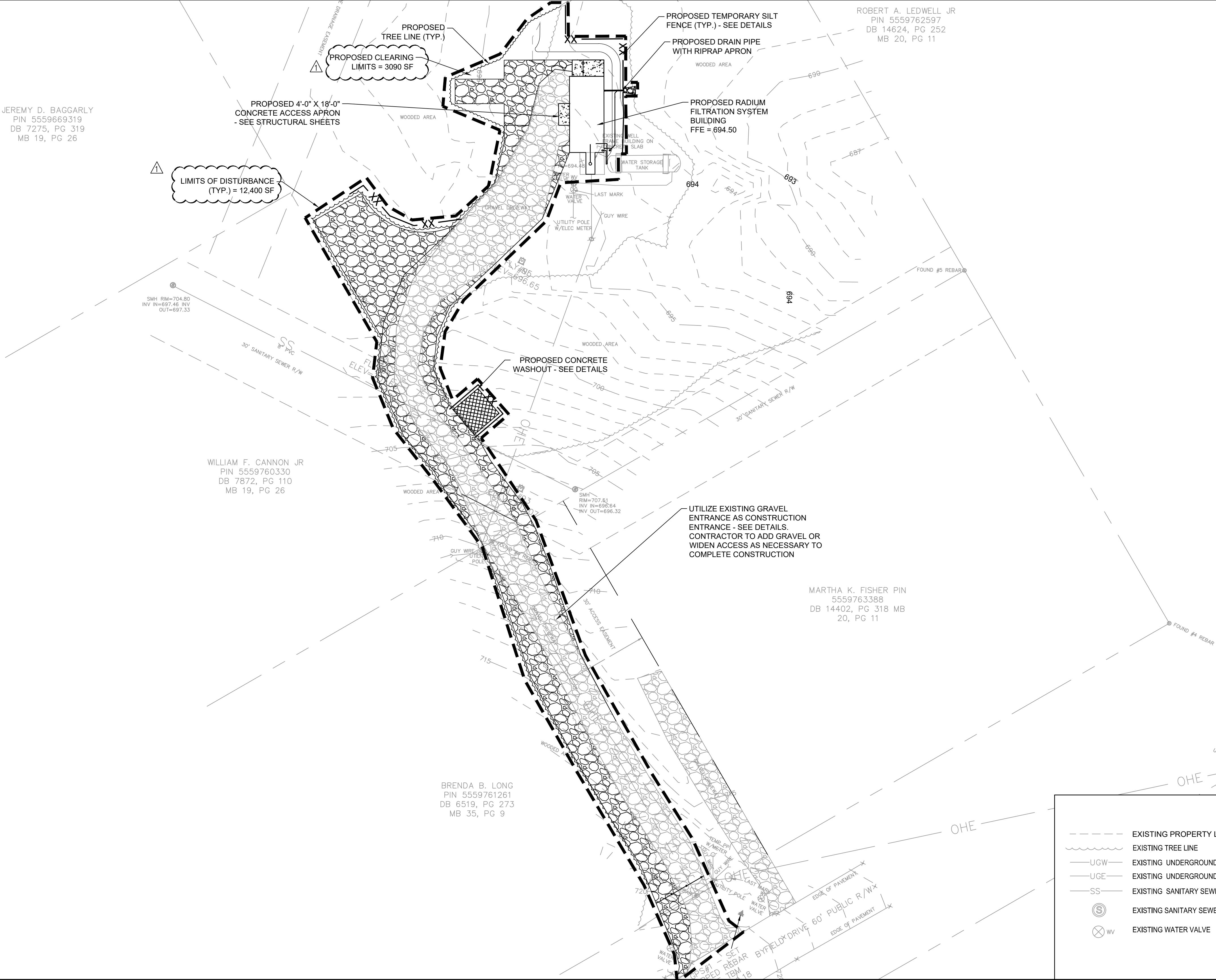
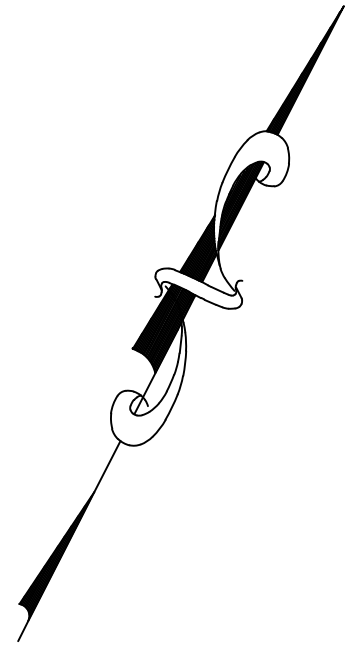
1. BASE DATA FROM SURVEY PROVIDED BY DEWBERRY ENGINEERS INC. ON JUNE 1, 2021.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL ILLUSTRATED KNOWN UNDERGROUND ELEMENTS. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXERCISING REASONABLE EFFORTS TO PROTECT ANY UNKNOWN UNDERGROUND ELEMENTS. THE CONTRACTOR SHALL NOTIFY THE OWNER AND DESIGNER OF RECORD IMMEDIATELY IF UNKNOWN ELEMENTS ARE DISCOVERED THAT WOULD NECESSITATE MODIFICATION TO THE ILLUSTRATED DESIGN.
3. PROTECT ALL ADJACENT PROPERTIES, THE GENERAL PUBLIC, AND ALL OF THE OWNER'S FACILITIES. SHOULD DAMAGES OCCUR, CONTRACTOR SHALL REPAIR IMMEDIATELY AS DIRECTED BY THE OWNER OR DESIGNER OF RECORD. REPAIRS SHALL BE MADE AT NO COST TO THE OWNER.
4. CONTRACTOR SHALL HOLD HARMLESS THE OWNER AND THE DESIGNER OF RECORD FOR DAMAGES, INJURIES OR OTHER ACCIDENTS WHICH OCCUR DURING THESE CONSTRUCTION ACTIVITIES.
5. TREES AND EXISTING LANDSCAPING NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED DURING CONSTRUCTION.
6. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES DURING CONSTRUCTION INCLUDING DAMAGES TO OTHER CONTRACTORS & CONSULTANTS WORK AND SHALL MAKE REPAIRS OR HAVE REPAIRS MADE BY OTHERS AT THEIR EXPENSE.
7. UTILIZE SIGNS, BARRICADES, ETC. TO ENSURE THE SAFETY OF THE GENERAL PUBLIC.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LAYOUT OF ALL WORK AS ILLUSTRATED ON PLANS. IF EXISTING CONDITIONS DIFFER FROM THOSE ILLUSTRATED ON PLANS, NOTIFY DESIGNER OF RECORD AND OWNER PRIOR TO CONSTRUCTION.
9. VERIFY ALL DIMENSIONS AND GRADES AT THE JOB SITE. IF DIFFERENCES ARE FOUND, NOTIFY DESIGNER OF RECORD SO THAT MODIFICATIONS TO THESE DRAWINGS CAN BE MADE.
10. ANY LAND DISTURBANCE ACTIVITY >1 ACRE REQUIRES COMPLIANCE WITH ALL CONDITIONS OF THE GENERAL PERMIT TO DISCHARGE STORMWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (PERMIT NO. NCG010000). ANY PERMIT NONCOMPLIANCE IS A VIOLATION OF THE CLEAN WATER ACT AND MAY REQUIRE ENFORCEMENT ACTION BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY. (FOR QUESTIONS CONTACT MOORESVILLE REGIONAL OFFICE WATER QUALITY STAFF AT 704-663-1699).
11. CONTRACTOR SHALL NOTIFY PROPERTY OWNERS PRIOR TO ANY CONSTRUCTION ACTIVITY.

EROSION AND SEDIMENT CONTROL NOTES

1. ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE CABARRUS COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
2. GRADING MORE THAN ONE ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF THE CABARRUS COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
3. ALL PERIMETER AREAS AND SLOPES GREATER THAN 3:1 SHALL BE STABILIZED WITHIN 7 DAYS. GROUND STABILIZATION ON ALL OTHER AREAS MUST BE COMPLETED WITHIN 14 DAYS. REFER TO THE EROSION CONTROL ORDINANCE FOR ADDITIONAL REQUIREMENTS.
4. ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY THE CABARRUS COUNTY EROSION CONTROL INSPECTOR.
5. DEWATERING TO BE AUTHORIZED BY THE EROSION CONTROL INSPECTOR AS RELATED TO SITE CONDITIONS. CONTRACTOR SHALL OBTAIN EROSION CONTROL INSPECTOR AUTHORIZATION PRIOR TO DEWATERING ACTIVITIES.
6. ALL EMBANKMENTS MUST BE CONSTRUCTED PER SECTION 4.0.6 EMBANKMENT REQUIREMENTS IN THE BMP DESIGN MANUAL.
7. ALL LAND-DISTURBING ACTIVITIES, INCLUDING THOSE THAT DISTURB LESS THAN AN ACRE, SHALL PROVIDE ADEQUATE EROSION CONTROL MEASURES, STRUCTURES, OR DEVICES IN ACCORDANCE WITH THE CABARRUS COUNTY SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCE.
8. A GROUND COVER SUFFICIENT TO RESTRAIN ACCELERATED EROSION MUST BE PROVIDED WITHIN 7 CALENDAR DAYS OF THE DATE OF LAST LAND-DISTURBING ACTIVITY ON ANY PORTION OF THE PROJECT.

GRADING NOTES

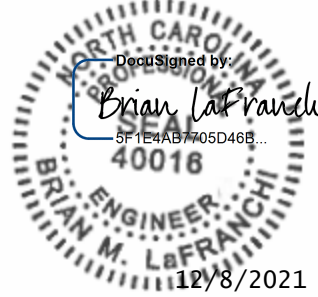
1. TOPOGRAPHIC INFORMATION SHOWN WITHIN PROJECT LIMITS TAKEN FROM SURVEY PROVIDED BY DEWBERRY ENGINEERS INC. ON JUNE 1, 2021.
2. CONTRACTOR IS RESPONSIBLE AT CONTRACTOR'S EXPENSE FOR ENSURING AND OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO CONSTRUCTION. THESE PERMITS MAY INCLUDE, BUT NOT LIMITED TO: GRADING, DEMOLITION, BLASTING, ZONING, BUILDING, DRIVEWAY, DETENTION, SUBDIVISION SPECIAL USE, WATER AND SEWER PERMITS AND APPROVALS.
3. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR CONTACTING ALL APPROPRIATE UTILITIES AND ENSURING THAT UTILITIES ARE LOCATED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACCORDING TO NC STATE LAW. CONTRACTOR SHALL VERIFY LOCATION AND DEPTHS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
4. WHEN UNDERGROUND OBSTRUCTIONS NOT SHOWN ON THE CONSTRUCTION DRAWINGS (ROCK, PIPING, ETC.) ARE ENCOUNTERED, THE CONTRACTOR SHALL PROMPTLY REPORT THE CONFLICT TO THE OWNER'S REPRESENTATIVE AND ENGINEER OF RECORD. ALL CHANGES MUST BE APPROVED IN WRITING BY THE OWNER OR HIS REPRESENTATIVE BEFORE CONSTRUCTION CAN PROCEED.
5. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE REPAIR AND/OR REPLACEMENT OF ANY UTILITIES DAMAGED DURING CONSTRUCTION.
6. CUT AND FILL SLOPES OF ANY AREA SHALL NOT EXCEED THE RATIO OF 3:1, UNLESS NOTED OTHERWISE. FILL SLOPES GREATER THAN EIGHT (8) VERTICAL FEET SHALL HAVE PERMANENT SEED/SLOPE MATTING INSTALLED.
7. FILL EMBANKMENTS SHALL BE FORMED OF SUITABLE MATERIAL PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED MORE THAN SIX (6) INCHES IN DEPTH FOR THE FULL WIDTH OF THE CROSS-SECTION INCLUDING THE WIDTH OF THE SLOPE AREA. NO STUMPS, TREES, BRUSH, RUBBISH, OR OTHER UNSUITABLE MATERIALS OR SUBSTANCES SHALL BE PLACED IN THE EMBANKMENT. EACH SUCCESSIVE SIX (6) INCH LAYER SHALL BE THOROUGHLY COMPACTED BY THE SHEEPS-FOOT TAMPING ROLLER, 10-TON POWER ROLLER, PNEUMATIC-TIRED ROLLER, OR OTHER METHODS APPROVED BY THE ENGINEER. EMBANKMENTS OVER AND AROUND ALL PIPE CULVERT SHALL BE OF SELECT MATERIAL, PLACED AND THOROUGHLY TAMPED AND COMPACTED AS DIRECTED BY THE ENGINEER.
8. ALL BACKFILL SHALL BE NON-PLASTIC IN NATURE, FREE FROM ROOTS, VEGETATIVE MATTER, WASTE, CONSTRUCTION MATERIAL AND OTHER OBJECTIONABLE MATERIAL. SAID MATERIAL SHALL BE CAPABLE OF BEING COMPACTED BY MECHANICAL MEANS AND THE MATERIAL SHALL HAVE NO TENDENCY TO FLOW OR BEHAVE IN A PLASTIC MANNER UNDER THE TAMPING BLOWS OR PROOF ROLLING.
9. ALL PROPOSED GRADES SHOWN ON THESE PLANS ARE FINAL GRADES. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE APPROPRIATE SUB-GRADE ELEVATIONS.
10. CONTRACTOR SHALL VERIFY POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES.
11. CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND THESE PLANS TO THE DESIGNER OF RECORD IMMEDIATELY.
12. THE DESIGN OF ALL ROADS, SANITARY SEWAGE, STORM DRAINAGE PIPING AND DITCHES, AND WATER QUALITY DETENTION FEATURES PRESENTED HEREIN HAS BEEN COMPLETED FROM FIELD SURVEY INFORMATION.



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NCBELS #F-0929

RADIUM REMOVAL
TREATMENT SYSTEM
FIELDSTONE WELL #1
AQUA NORTH CAROLINA
202 MACKENAN DR
CARY, NC 27511

SEAL



SCALE 1" = 20'



1	12/08/21	PMW	AGENCY COMMENTS
No.	DATE	BY	Description

REVISIONS

DRAWN BY ZKM

APPROVED BY BML

CHECKED BY TMM

DATE JULY 28, 2021

TITLE

EROSION AND
SEDIMENT CONTROL
PLAN

PROJECT NO. 50140313

C-01

AQUA PROPERTY IMPERVIOUS AREA TABULATION

EXISTING IMPERVIOUS AREA = ±3094 SF
-STRUCTURES: 233 SF
-GRAVEL PATH: 2861 SF

PROPOSED IMPERVIOUS AREA = ±4657 SF
-STRUCTURE: 355 SF
-CONCRETE PADS: 102 SF
-GRAVEL PATH: 4200 SF
-REPLACING 195 SF OF EXISTING GRAVEL WITH THE PROPOSED BUILDING

TOTAL IMPERVIOUS AREA = ±7751 SF

IMPERVIOUS AREA PERCENTAGE = ±15.85%

ALLOWABLE MAX. IMPERVIOUS PERCENTAGE = 20%

MAINTENANCE PLAN:

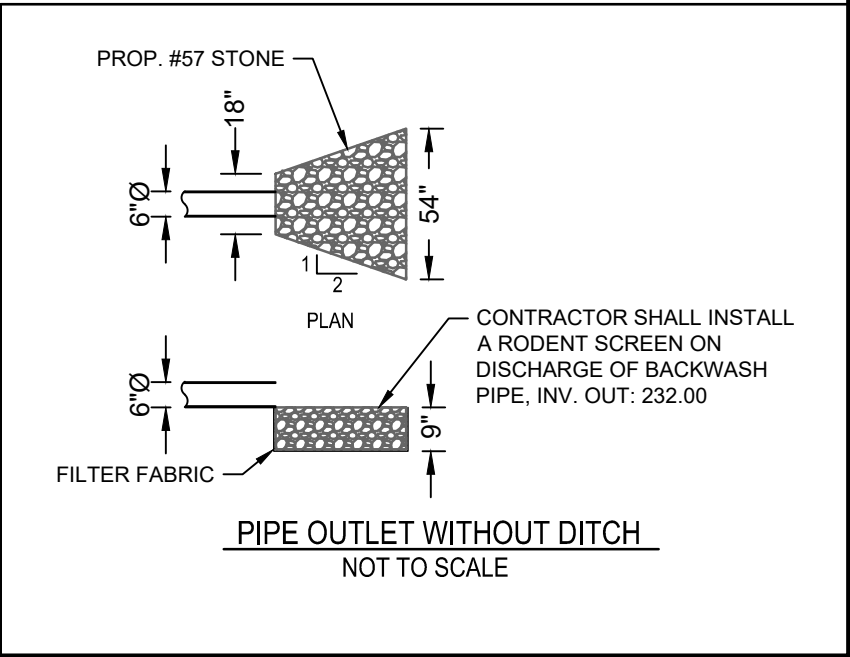
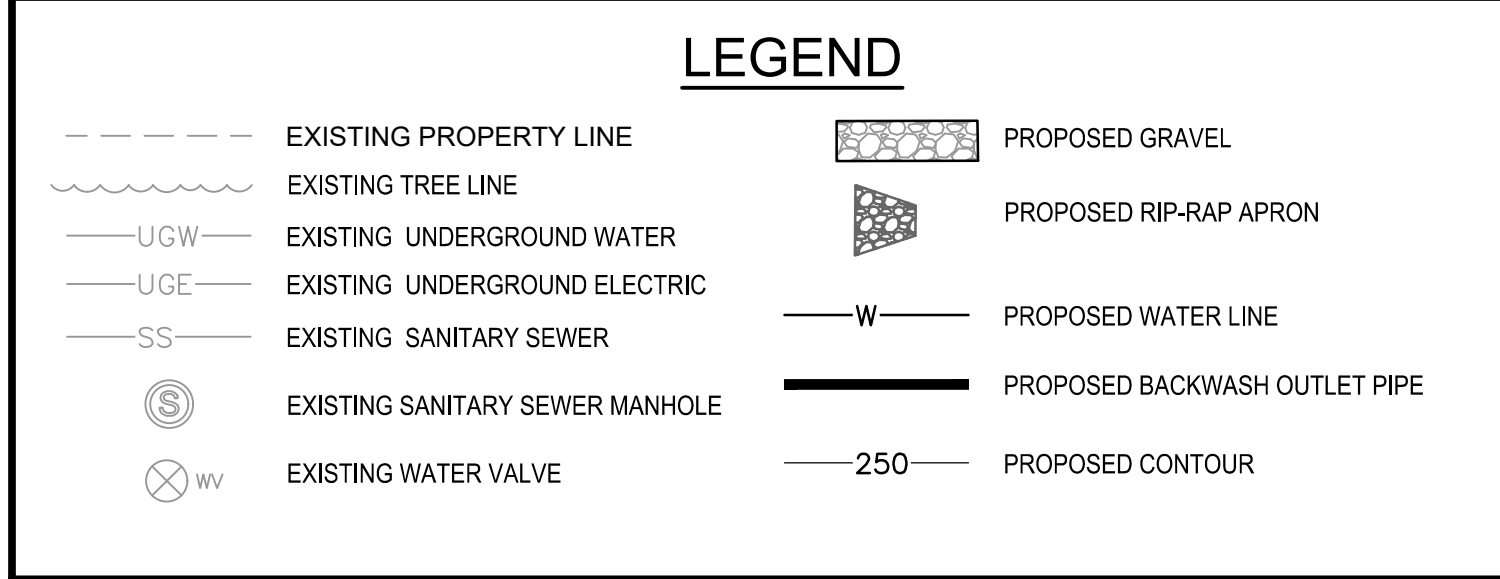
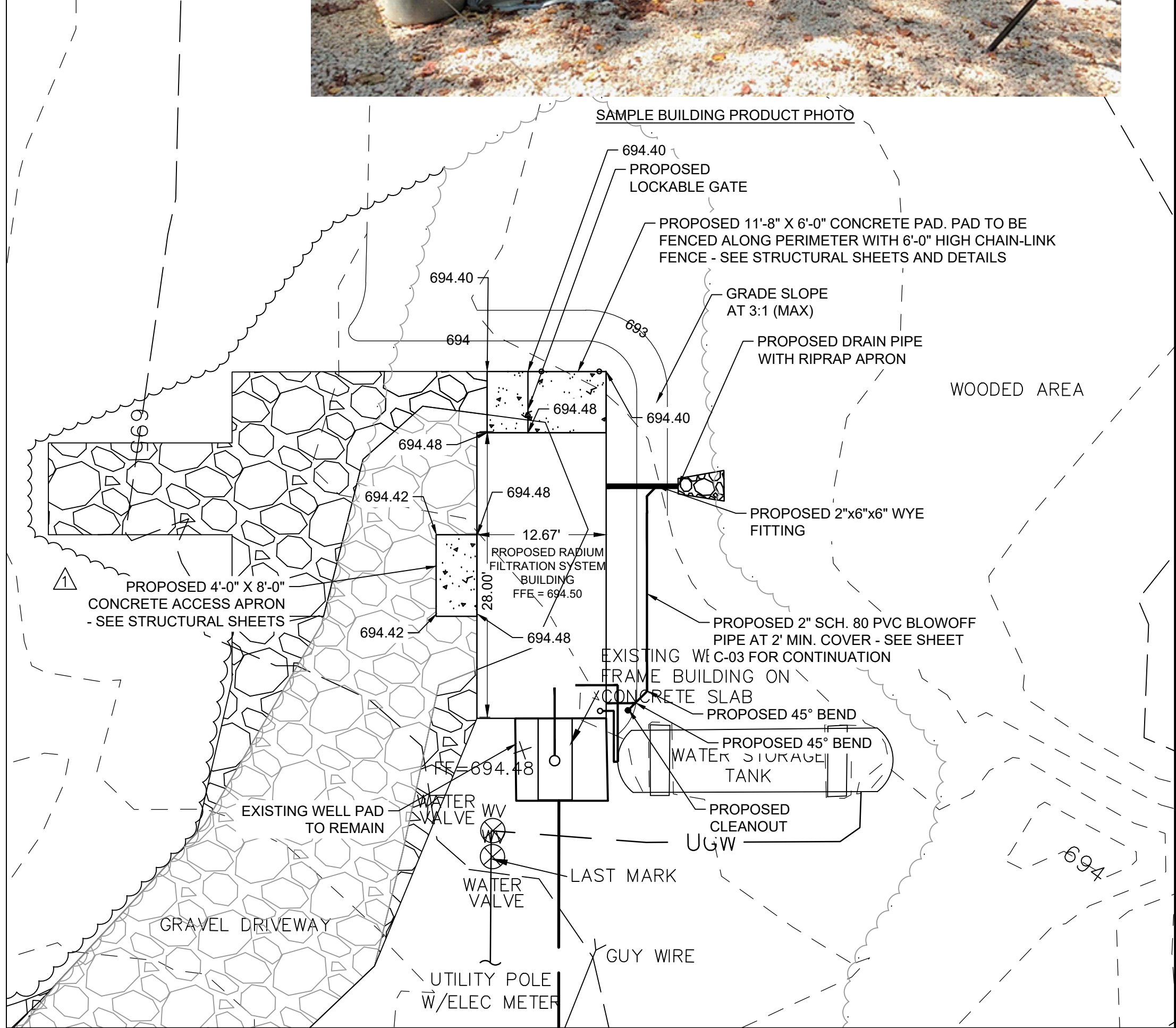
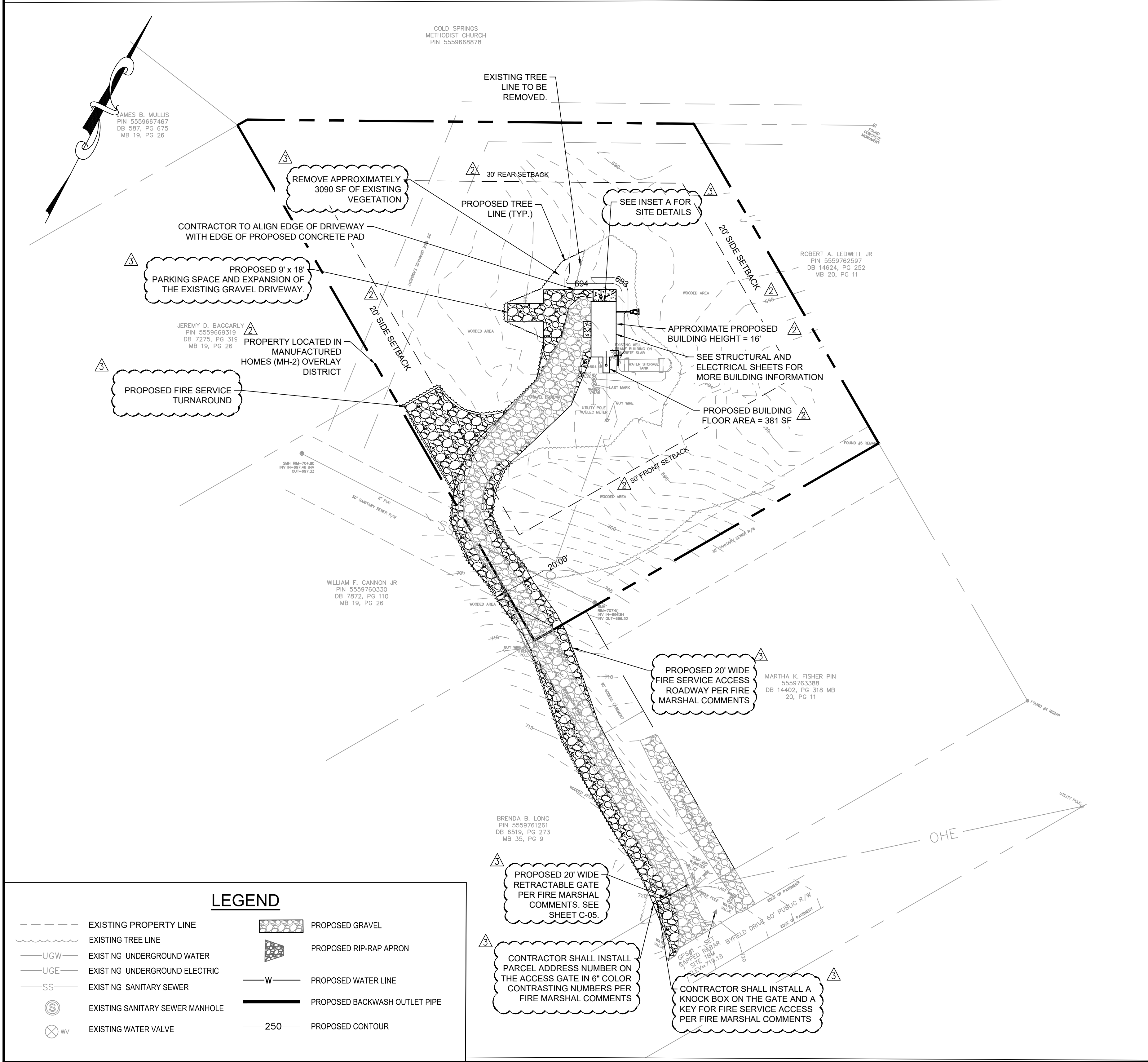
- ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
 - ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDD AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS UNTIL VEGETATION IS ESTABLISHED.
 - FERTILIZER WILL NOT BE ALLOWED ON WELL SITE.
- NOTES:
- PERFORM TEST PITS TO LOCATE EXISTING PIPES. DETERMINE EXISTING PIPE MATERIAL AND SIZE BEFORE ORDERING MATERIALS TO CONFIRM CORRECT PIPE COUPLINGS/ADAPETERS NECESSARY.
 - ALL PIPE ABOVE GRADE PIPE CONNECTION INTO AND OUT OF THE PROPOSED FILTER BUILDING SHALL BE HEAT TRACED FROM 3 FEET BELOW GRADE TO CONNECTION POINT OF BUILDING. HEAT TRACE SHALL BE THERMON TERMINATOR DP SYSTEM, BSX CABLE FOR 5 WATTS PER FOOT. INSULATION SHALL BE FIBERGLASS SUITABLEF RO OUTDOOR CONDITIONS. JACKET SHALL BE ALUMINUM.
 - A COPY OF ALL PERMITS, CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND ADDENDA SHALL BE MAINTAINED BY THE CONTRACTOR ON-SITE AT ALL TIMES.
 - ALL MATERIALS TO BE IN CONTACT WITH POTABLE WATER SHALL BE NSF APPROVED.

5. THE PROJECT IS ADDING A FILTRATION SYSTEM TO THE EXISTING PUMP SYSTEM. THE FILTRATION SYSTEM DOES NOT PRODUCE ANY NOISE; THEREFORE, THERE WILL NOT BE ANY INCREASE IN THE EXISTING DECIBEL LEVEL.

6. THE LIGHT EMITTED FROM THE PROPOSED EXTERIOR LIGHT FIXTURES SHOWN ON SHEET E1.01 WILL EXTEND APPROXIMATELY 50 FT. THE CLOSEST PROPERTY LINE IS APPROXIMATELY 90 FT AWAY FROM THE LIGHT FIXTURE AND SHOULDN'T EXPERIENCE ANY LIGHT SPILLAGE. ADDITIONALLY THE LIGHT FIXTURES WILL HAVE HAVE MOTION SENSORS; THEREFORE, ONLY EMITTING LIGHT WHEN THERE IS ACTIVE WORK ON SITE. LASTLY, THE SURROUNDING AREA IS WOODED BLOCKING THE LIGHT SPILLAGE DURING A MAJORITY OF THE YEAR.

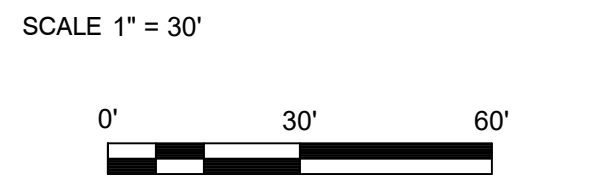
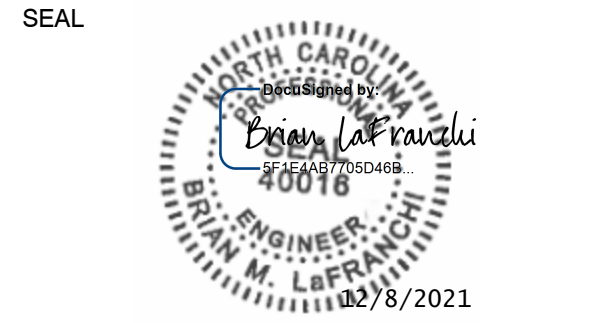
AQUA PAINT SPEC

- 7.3.2 EXTERIOR - EPOXY / POLYURETHANE
- 7.3.2.1 SURFACE PREPARATION: STEEL STRUCTURES PAINTING COUNCIL (SPCC) SP10, NEAR WHITE METAL BLAST CLEANING.
- 7.3.2.2 1ST COAT: TNEMEC SERIES N14F-1255 BEIGE POTA-POX PRIMER AT 3.0 DRY MILS.
- 7.3.2.2 2ND COAT: TNEMEC SERIES 1074 ENDURA-SHIELD (COLOR 84BR WEATHERED BARK) AT 4.0 DRY MILS.
- 7.3.2.3 3RD COAT: TNEMEC SERIES 1074U ENDURA-SHIELD (COLOR 84BR WEATHERED BARK) AT 3.0 DRY MILS.
- 7.3.2.4 A MINIMUM OF SEVEN (7) DAYS CURE TIME SHALL BE ALLOWED BEFORE PLACING INTO SERVICE.
- 7.3.2.5 MANUFACTURER APPROVED THINNERS FOR SPECIFIC SERIES AND APPLICATIONS SHALL BE USED. TOTAL DRY FILM THICKNESS OF THE NEW SYSTEM SHALL BE A MINIMUM 10 DRY MILS.



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RADIUM REMOVAL
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CARY, NC 27511



3	12/08/21	PMW	AGENCY COMMENTS
2	11/08/21	PMW	SUP
1	09/01/21	JGL	ADDENDUM #1
No.	DATE	BY	Description
REVISIONS			

DRAWN BY ZKM
APPROVED BY BML
CHECKED BY TMM
DATE JULY 28, 2021
TITLE

SITE AND GRADING PLAN

PROJECT NO. 50140313

C-02

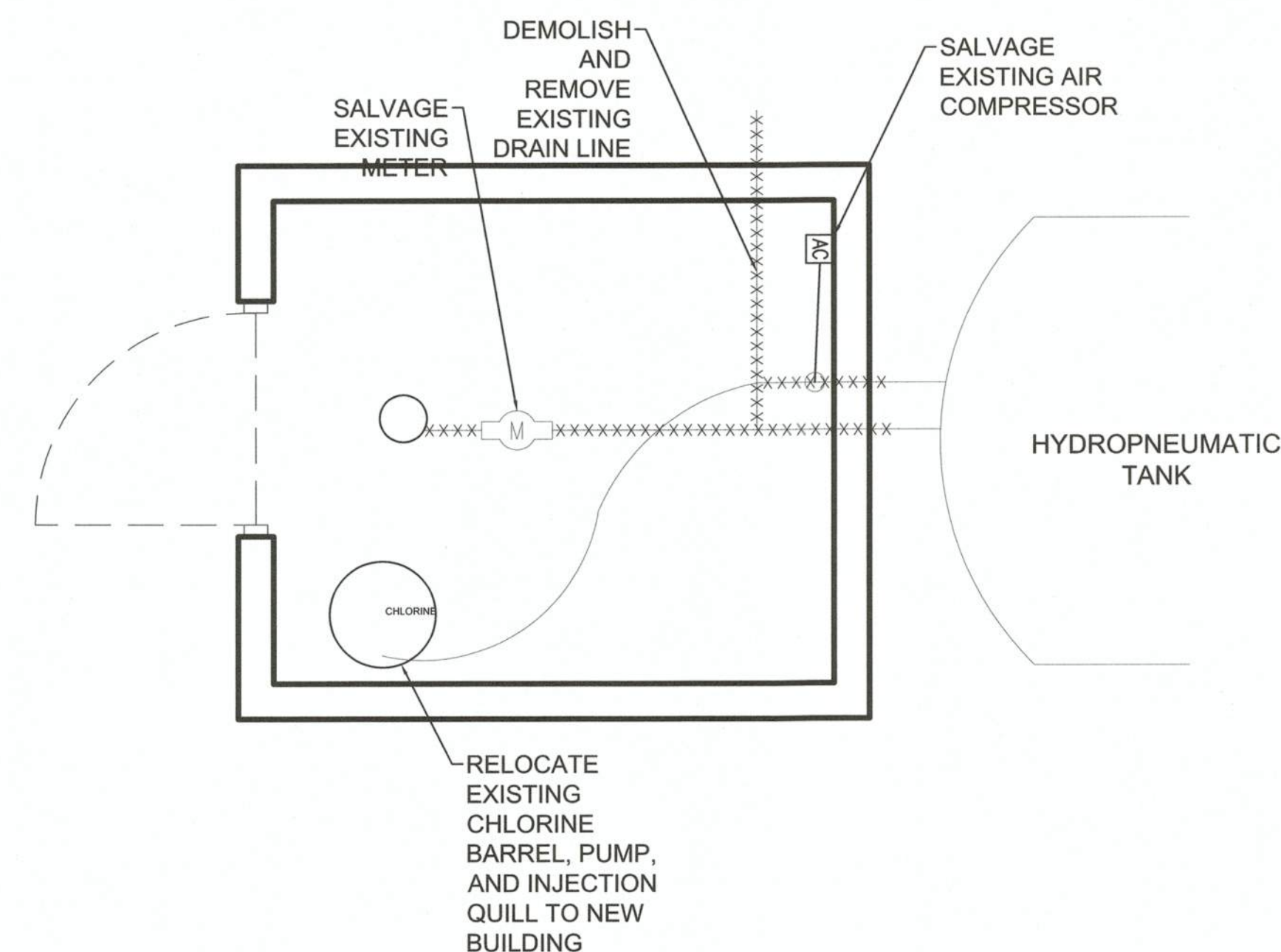
**RADIUM REMOVAL
TREATMENT SYSTEM
FIELDSTONE WELL #1**

AQUA NORTH CAROLINA
202 MACKENAN DR
CARY, NC 27511

1	09/01/21	JGL	ADDENDUM #1
No.	DATE	BY	Description
REVISIONS			
DRAWN BY	ZKM		
APPROVED BY	BML		
CHECKED BY	TMM		
DATE	JULY 28, 2021		
TITLE			

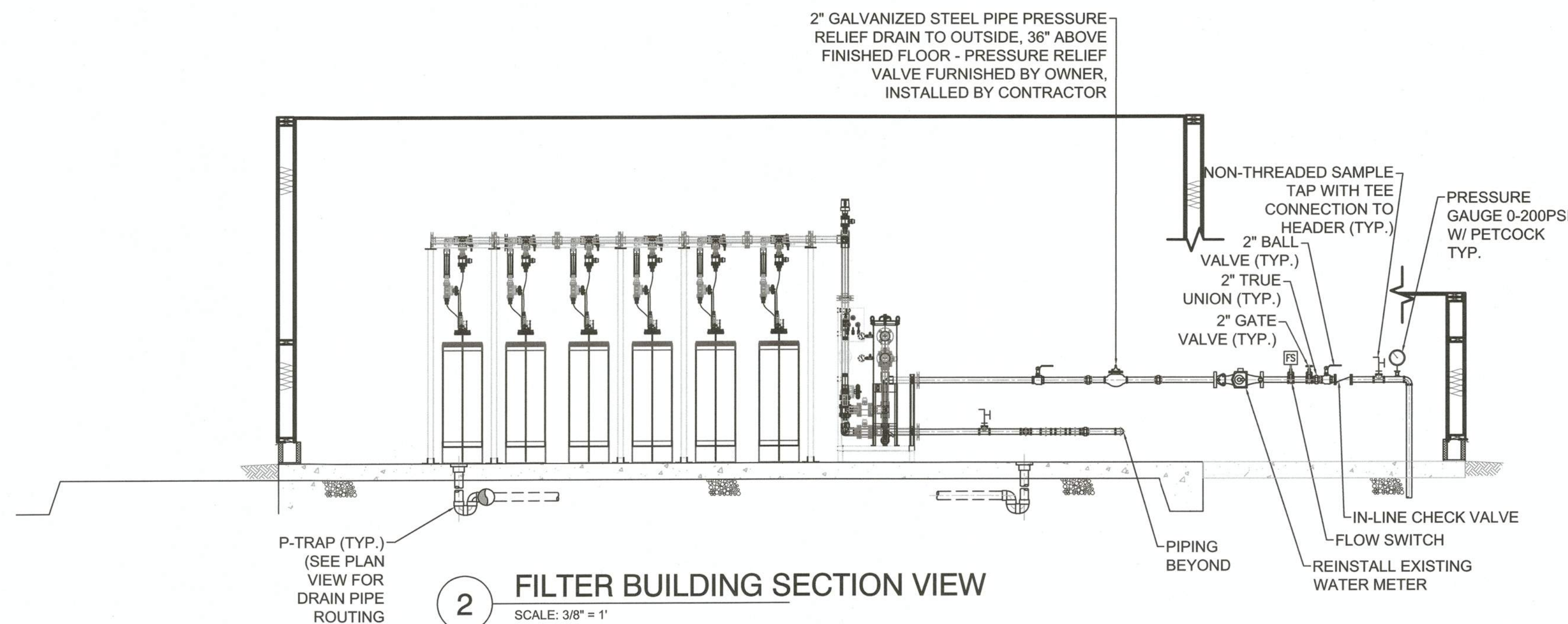
PROJECT NO. 50140313

C-03



XXXXXXXXXX. CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING PIPING, APPURTENANCES, AND EQUIPMENT AS SHOWN.

3 EXISTING WELLHOUSE MODIFICATIONS

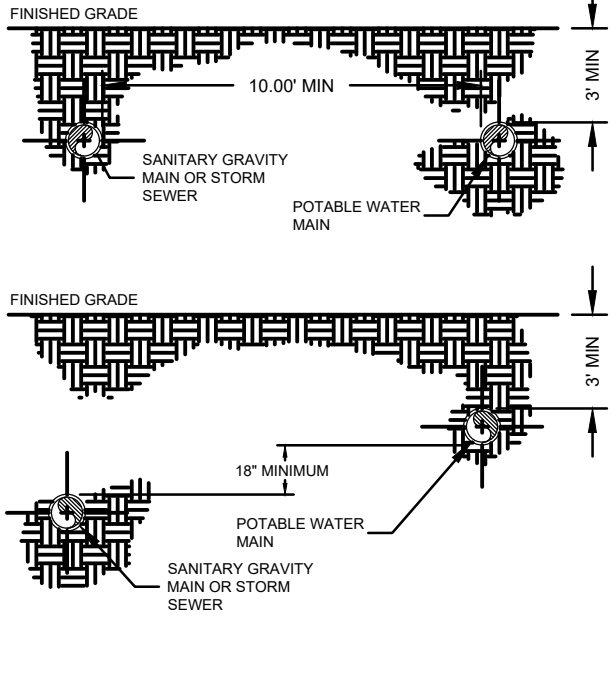


TYPICAL PVC TO GALVANIZED STEEL PIPE TRANSITION

SANITARY GRAVITY, FORCE MAIN, REUSE MAIN, STORM SEWER, & POTABLE WATER MAIN SEPARATION NOTES & SOLUTIONS

1. A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET OUTSIDE TO OUTSIDE SHALL BE MAINTAINED BETWEEN WATER MAINS AND SANITARY GRAVITY SEWER OR STORM SEWER LINES.
2. A MINIMUM HORIZONTAL SEPARATION OF THREE (3) FEET OUTSIDE TO OUTSIDE SHALL BE MAINTAINED BETWEEN WATER MAINS AND RECLAIMED WATER LINES CARRYING UNRESTRICTED PUBLIC ACCESS REUSE WATER.
3. IN AREAS WHERE IT IS NOT PRACTICAL TO MAINTAIN THE REQUIRED SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELVE LOCATED ON ONE SIDE OF THE SANITARY GRAVITY SEWER, STORM SEWER OR RECLAIMED WATER LINE AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST EIGHTEEN (18) INCHES ABOVE THE TOP OF THE OTHER LINE.
4. IF THE MINIMUM ALLOWABLE TEN (10) FOOT HORIZONTAL SEPARATION OR EIGHTEEN (18) INCH VERTICAL SEPARATION IN A SEPARATE TRENCH CANNOT BE MAINTAINED, UPGRADE THE WATER MAIN TO DUCTILE IRON, IF THE OTHER LINE IS A STORM SEWER.
5. IF THE NON-CONFORMING LINE IS A GRAVITY SANITARY SEWER, AND TEN (10) FEET OF HORIZONTAL SEPARATION OR EIGHTEEN (18) INCHES VERTICAL SEPARATION IN A SEPARATE TRENCH CANNOT BE MAINTAINED, UPGRADE THE GRAVITY SANITARY SEWER (IF BEING NEWLY INSTALLED) TO AWWA C-900, D.R. 18 PVC AND HYDROSTATICALLY TEST IT TO 150psi.
6. IF THE OTHER LINE IS A RECLAIMED WATER LINE AND THE ABOVE SEPARATION REQUIREMENTS ARE NOT MET, UPGRADE THE RECLAIMED WATER LINE MATERIAL TO DUCTILE IRON.
7. DEVIATIONS AND OTHER ALTERNATIVES SHALL BE CONSIDERED ON CASE-BY-CASE BASIS AND MUST RECEIVE SPECIFIC APPROVAL BY NCDENR PRIOR TO IMPLEMENTATION.
8. THERE SHALL BE AT LEAST A TEN (10) FOOT SEPARATION BETWEEN WATER MAINS AND SANITARY SEWER FORCE MAINS WITHOUT EXCEPTION. FIELD PROBLEMS SHALL BE REPORTED TO NCDENR/ENGINEER. SPECIAL SOLUTIONS MUST BE ACCEPTED BY NCDENR PRIOR TO IMPLEMENTATION.

9. NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF A SANITARY SEWER MANHOLE OR STORM SEWER STRUCTURE.
10. A MINIMUM OF VERTICAL SEPARATION OF EIGHTEEN (18) INCHES OUTSIDE TO OUTSIDE SHALL BE MAINTAINED BETWEEN WATER MAIN, SANITARY GRAVITY SEWER, STORM SEWER OR RECLAIMED WATER LINES.
11. WHEN THERE IS LESS THAN EIGHTEEN (18) INCHES VERTICAL CLEARANCE BETWEEN THE WATER MAIN AND STORM SEWER, THE WATER MAIN SHALL BE UPGRADED TO DUCTILE IRON, ONE FULL LENGTH OF PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
12. IF THE NON-CONFORMING IS A SANITARY GRAVITY SEWER WHERE THERE IS LESS THAN EIGHTEEN (18) INCHES VERTICAL CLEARANCE FROM THE WATER MAIN, UPGRADE THE SANITARY GRAVITY SEWER TO DRP PVC AND HYDROSTATICALLY TEST IT TO WATER MAIN STANDARDS. PIPES SHALL BE LOCATED SO THAT JOINTS ARE AS FAR AS POSSIBLE FROM EACH OTHER.
13. IF THE OTHER LINE IS A RECLAIMED WATER LINE AND THE ABOVE MINIMUM SEPARATION IS NOT MET, UPGRADE THE RECLAIMED WATER LINE MATERIAL TO DUCTILE IRON.
14. SPECIAL STRUCTURAL SUPPORT OR CONCRETE SADDLES MAY BE NECESSARY AT THE CROSSING LOCATION.
15. IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE CROSSING HAZARD.

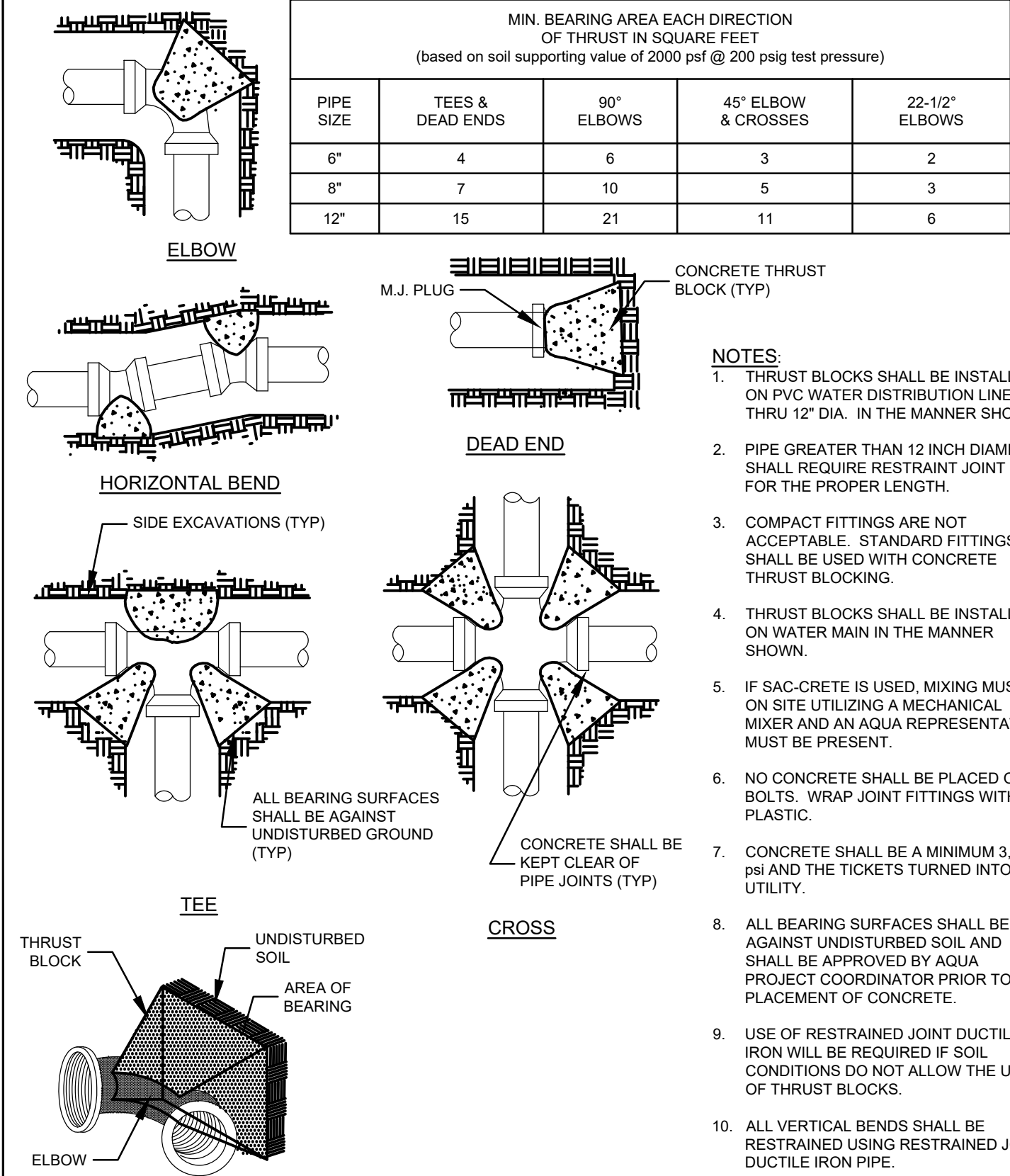


16. DEVIATIONS AND OTHER ALTERNATIVES SHALL BE CONSIDERED ON CASE-BY-CASE BASIS AND MUST RECEIVE SPECIFIC APPROVAL BY NCDENR PRIOR TO IMPLEMENTATION.

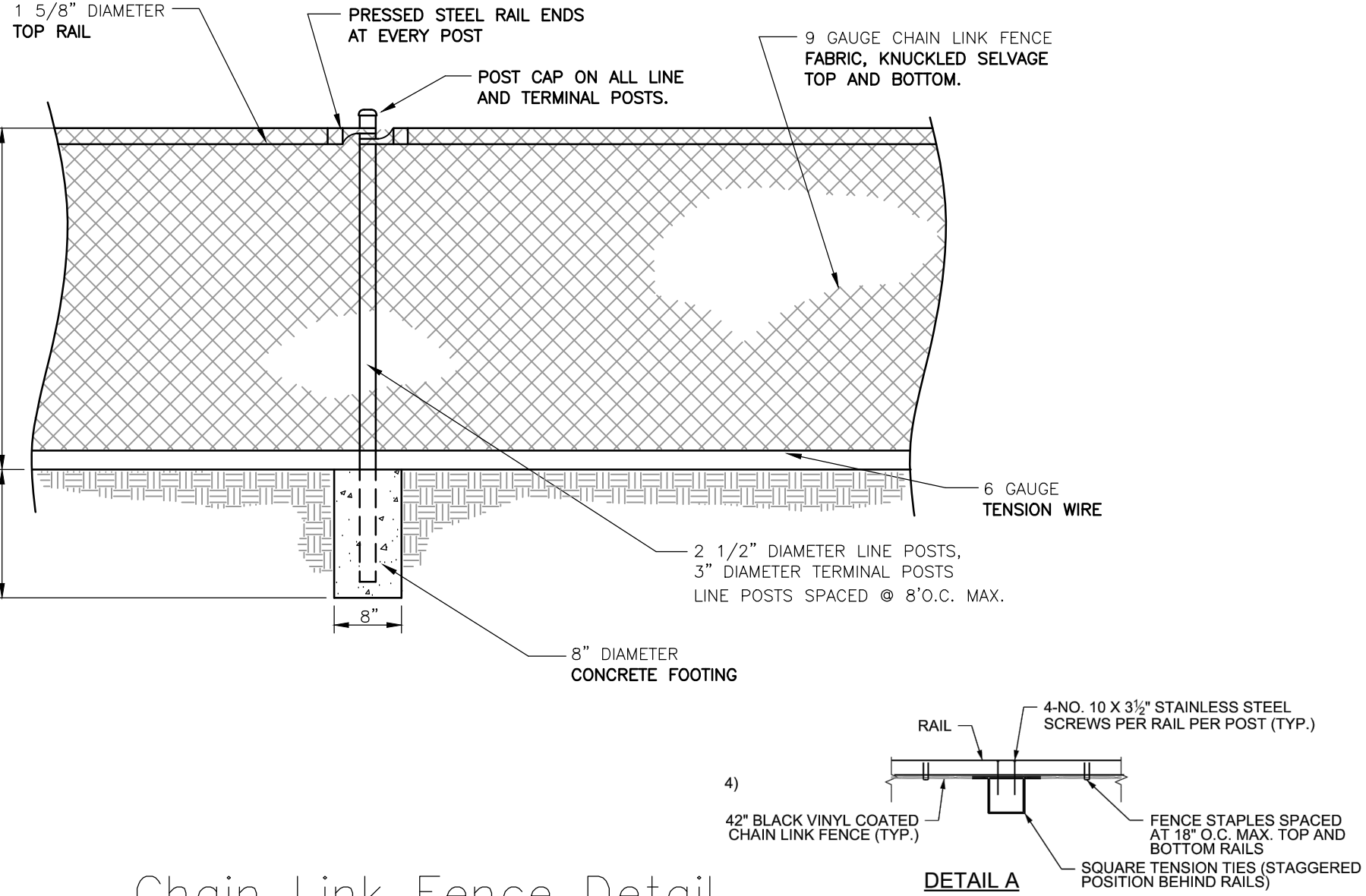
17. THERE SHALL BE AN EIGHTEEN (18) INCH VERTICAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWER FORCE MAINS AT CROSSINGS WITHOUT EXCEPTION. CONFLICTS WITH EXISTING LINES, WHERE IT IS NOT POSSIBLE TO MAINTAIN THE REQUIRED SEPARATION, IT SHALL BE REPORTED TO AQUA NORTH CAROLINA, INC./ENGINEER. SPECIAL SOLUTIONS MUST BE ACCEPTED BY NCDENR PRIOR TO IMPLEMENTATION.

- NOTES:**
1. WHERE ROCK OR NON-CUSHIONING MATERIAL IS ENCOUNTERED IN TRENCH, USE #5 STONE FOR A DEPTH OF 8" UNDER PIPE.
 2. WHERE UNSUITABLE SOIL OR MUCK IS ENCOUNTERED, EXCAVATE THE SOIL AND BACKFILL WITH #5 STONE TO FORM A PIPE BED.
 3. PVC AND DUCTILE IRON MAINS SHALL MEET ALL STANDARDS AS CALLED OUT IN THE SPECIFICATIONS (DIVISION 5, SECTION 1.3.3).
 4. ALL WATER MAINS SHALL HAVE A DETECTABLE "EARLY WARNING" PROTECTION TAPE AND HDPE LOCATING WIRE INSTALLED CONTINUOUSLY ALONG THE ALIGNMENT. THE PROTECTION TAPE AND WIRE SHALL BE INSTALLED DURING BACKFILLED 6"-12" INCHES BELOW FINISHED GRADE DIRECTLY OVER THE PIPE AND BE CONTINUOUSLY MARKED "CAUTION, WATER MAIN BURIED BELOW." THE TAPE SHALL HAVE A METALLIC DETECTABLE STRIP INCLUDED AND BE GREEN IN COLOR. ALL PROTECTION TAPE SHALL BE AS TERRA-TAPE OR EQUAL.
 5. ALL P.V.C. WATER MAINS SHALL BE EITHER A SOLID BLUE COLOR OR WHITE BLUE LETTERING. ALL LETTERING SHALL APPEAR ON THREE SIDES OF THE PIPE AND SHALL RUN THE ENTIRE LENGTH OF THE PIPE AND SHALL BE A MINIMUM 3/4 INCH IN HEIGHT WITH THE APPROPRIATE WORDING APPEARING ONE OR MORE TIMES EVERY 21 INCHES ALONG THE LENGTH OF THE PIPE. THE LETTERING MUST BE PERMANENTLY STENCILED TO THE PIPE SURFACE. LETTERING SHALL READ AS IS ACCEPTABLE FOR THE INTENDED USE. ALL LETTERING SHALL BE APPLIED BY THE PIPE MANUFACTURER DURING PRODUCTION.
 6. ALL DUCTILE IRON WATER MAINS SHALL BE MARKED WITH A CONTINUOUS STRIPE LOCATED WITHIN THE 90° OF THE PIPE. SAID STRIPE SHALL BE A MINIMUM 2-INCHES IN WIDTH AND SHALL BE BLUE IN COLOR. BACKFILL SHALL NOT BE PLACED FOR 30 MINUTES FOLLOWING PAINT APPLICATION.
 7. ALL P.V.C. PIPE SHALL BEAR THE NATIONAL SANITATION FOUNDATION (NSF) SEAL OF APPROVAL FOR POTABLE WATER PIPE.

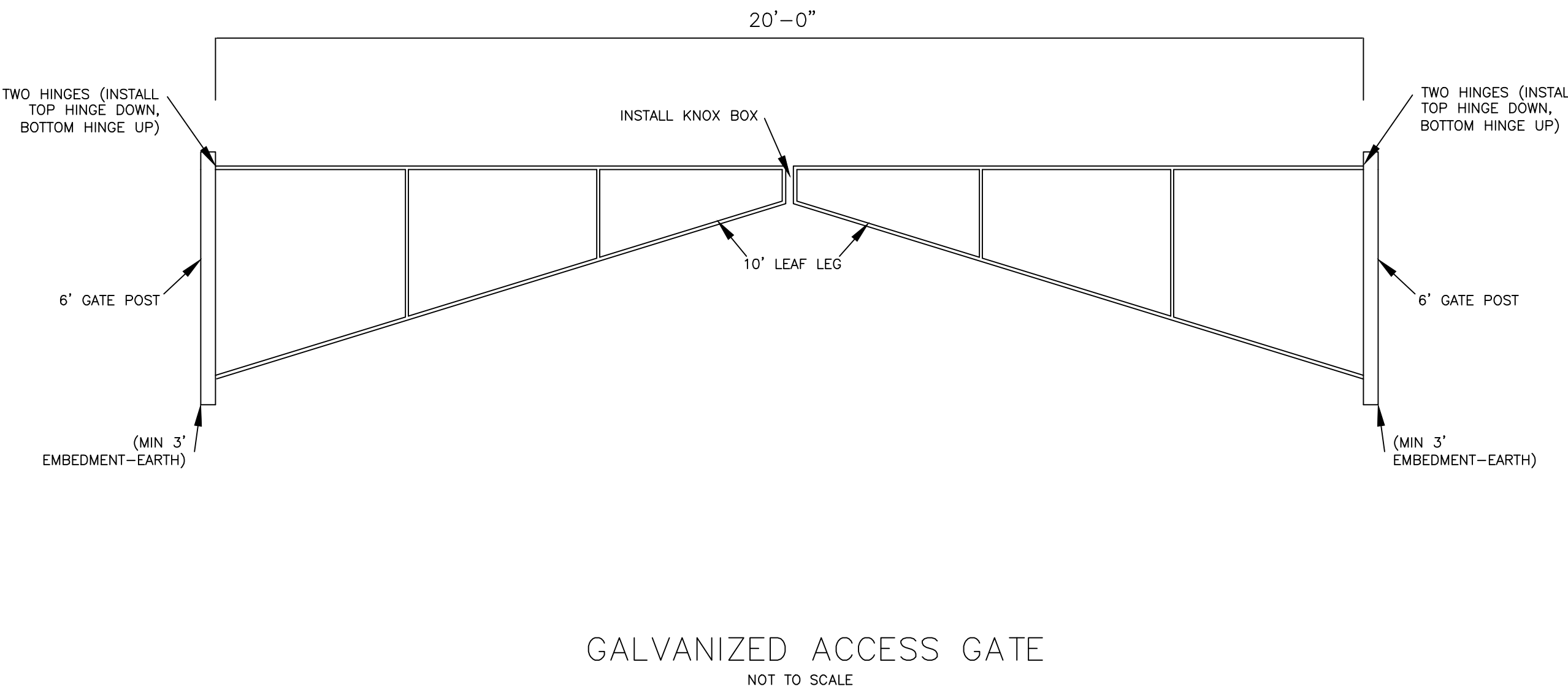
DRAWING NO.	W-14	TRENCH DETAIL	AQUA Aqua North Carolina, Inc.
REVISION DATE	01/2017		



DRAWING NO.	W-16	TYPICAL THRUST BLOCK	AQUA Aqua North Carolina, Inc.
REVISION DATE	01/2019		



Chain Link Fence Detail

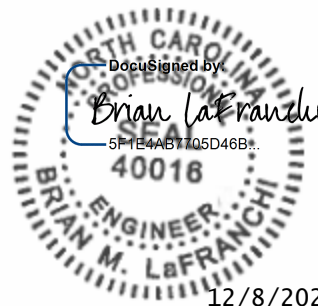


GALVANIZED ACCESS GATE
NOT TO SCALE

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RADIUM REMOVAL
TREATMENT SYSTEM
FIELDSTONE WELL #1
AQUA NORTH CAROLINA
202 MACKENAN DR
CARY, NC 27511

SEAL



12/8/2021

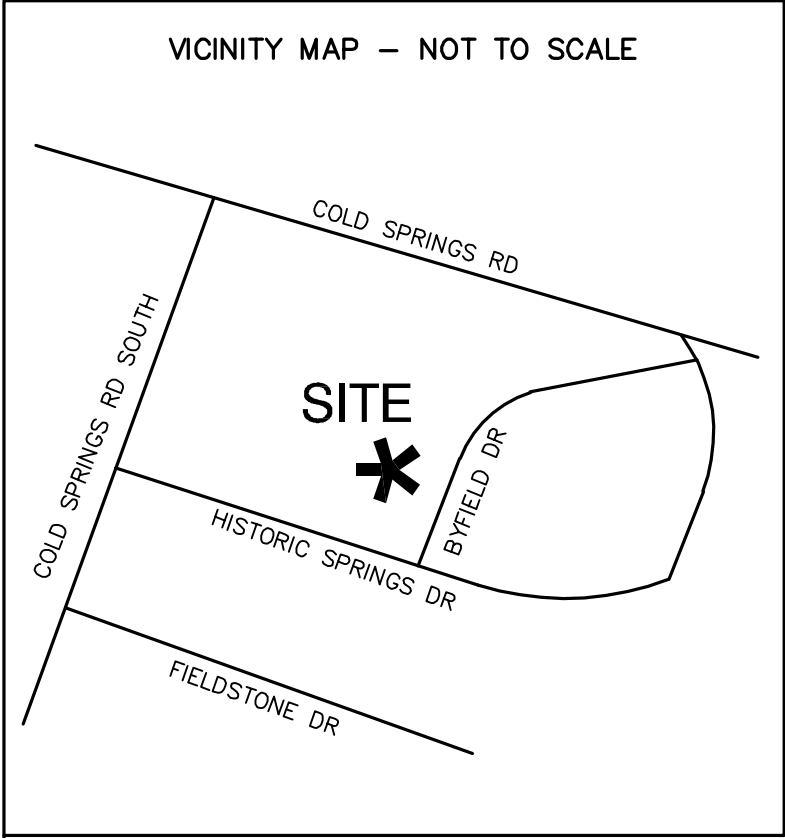
SCALE

1	12/08/21	PMW	AGENCY COMMENTS
No.	DATE	BY	Description
REVISIONS			

DRAWN BY ZKM
APPROVED BY BML
CHECKED BY TMM
DATE JULY 28, 2021
TITLE

STANDARD
DETAILS

PROJECT NO. 50140313

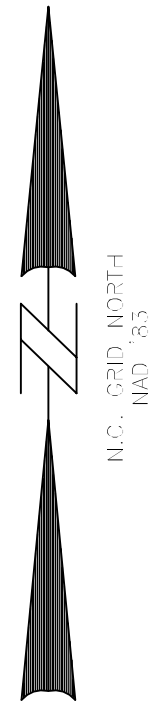


GRAVITY UTILITY NOTE:
SUB-GRADE CONNECTIVITY AND ROUTING OF STORM AND
SANITARY SEWER PIPES ARE APPROXIMATED PER AVAILABLE
INFORMATION. PIPE SIZES, INVERT ELEVATIONS, AND
MATERIALS ARE CERTIFIED TO BE CORRECT WHERE PIPES
ARE CLEARLY VISIBLE WITHOUT CONFINED SPACE ENTRY.

COLD SPRINGS
METHODIST CHURCH
PIN 5559668878

THIS IS TO CERTIFY THAT ON THE 26TH DAY OF MAY,
2021, THIS MAP WAS PREPARED UNDER THE
SUPERVISION OF TERRY M. DENNIS JR., P.S. # L-4242.
NO BOUNDARY SURVEY WAS PERFORMED IN PREPARATION
OF THIS SURVEY. THE PURPOSE OF THIS MAP IS TO
SHOW TOPOGRAPHICAL AND PHYSICAL FEATURES ONLY,
AND IS NOT INTENDED TO BE USED FOR RECORDATION,
CONVEYANCES, OR SALES; THE POSITIONAL AND
VERTICAL ACCURACY OF THE PHYSICAL AND
TOPOGRAPHICAL FEATURES SHOWN ARE RELIABLE AND
MEET THE ACCURACY STANDARDS OF A "CLASS A"
SURVEY AS DETAILED IN THE STANDARDS OF PRACTICE
FOR LAND SURVEYING IN NORTH CAROLINA.

Terry M. Dennis Jr.



DATUM DESCRIPTION:
THE LOCALIZED COORDINATE SYSTEM
DEVELOPED FOR THIS PROJECT IS BASED ON
STATE PLANE COORDINATES ESTABLISHED
BY DEWBERRY GPS #1 HAVING NAD 83(2011)
STATE PLANE COORDINATES OF NORTHING:
596,263.191 EASTING: 1,557,309.879
ELEVATION: 719.18. THE AVERAGE COMBINED
GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999845436.
VERTICAL DATUM: NAVD 88. ALL LINEAR
DIMENSIONS ARE LOCALIZED HORIZONTAL
DISTANCES. DATE OF SURVEY: 5/2021.



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RADIUM REMOVAL
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CARY, NC 27511

SEAL



SCALE 1"=20'



1	11/23/21	MD	Reviewer Comments
No.	DATE	BY	Description

REVISIONS

DRAWN BY M. DENNIS

APPROVED BY

CHECKED BY

DATE MAY 26, 2021

TITLE

EXISTING
FEATURES &
SURVEY
MAP

PROJECT NO. 50140313

C-06

JAMES B. MULLIS
PIN 5559667467
DB 587, PG 675
MB 19, PG 26

JEREMY D. BAGGARLY
PIN 5559669319
DB 7275, PG 319
MB 19, PG 26

AQUA NORTH CAROLINA INC.
PIN 5559761541
DB 8740, PG 338
MB 20, PG 11
1.1224 ACRES PER
RECORD PLAT

ROBERT A. LEDWELL JR
PIN 5559762597
DB 14624, PG 252
MB 20, PG 11

MARTHA K. FISHER
PIN 5559763388
DB 14402, PG 318
MB 20, PG 11

WILLIAM F. CANNON JR
PIN 5559760330
DB 7872, PG 110
MB 19, PG 26

BRENDA B. LONG
PIN 5559761261
DB 6519, PG 273
MB 35, PG 9

FEMA FLOOD HAZARD NOTE:
CABARRUS COUNTY PARCEL 5559761541 IS NOT
LOCATED IN A FEMA DESIGNATED FLOOD HAZARD ZONE
PER FEMA FIRM MAP 3710555900J, DATED 11/5/2008.

PROPERTY NETWORK NOTE:
PROPERTY LINES LABELED HEREON ARE
REPRESENTATIVE OF A PROPERTY NETWORK DEVELOPED
FROM RECORD PLATS AND FIELD LOCATED PROPERTY
CORNERS. THIS PLAT DOES NOT REPRESENT A FIELD
RAN BOUNDARY SURVEY NOR DOES IT CERTIFY TO
ENCROACHMENTS, GAPS, OVERLAPS OR MATTERS OF
TITLE THAT MAY BE DISCOVERED DURING THE COURSE
OF A FULL AND ACCURATE BOUNDARY SURVEY.

LEGEND

UE	UNDERGROUND ELECTRIC
PL	PROPERTY LINE
R/W	RIGHT OF WAY LINE
SS	ADJOINING PROPERTY LINE
ST	SANITARY SEWER LINE
OT	OVERHEAD TELEPHONE
OE	OVERHEAD ELECTRIC
W	WATER LINE
G	GAS LINE
FO	FIBER OPTIC LINE
TV	CABLE TV
UT	UNDERGROUND TELEPHONE
UE	UNDERGROUND ELECTRIC
E	EXISTING EASEMENT (AS LABELED)
CONTOUR LINE	
FF	FINISHED FLOOR ELEVATION
TRV	PROPERTY CORNER
MH	MANHOLE
EXIST	EXISTING
WM	WATER METER
BFV	BACK FLOW VALVE
CB	CATCH BASIN
FL	FLOW LINE
INV	INVERT
LP	LIGHT POLE
MB	MAILBOX
EM	ELECTRIC METER
GM	GAS METER
PP	POWER POLE
AC	AIR CONDITIONING
C&G	CURB AND GUTTER
DW	DRIVEWAY
CONC	CONCRETE
BRA	BRADFORD PEAR
OHE	CHERRY
CRP	CREPE MYRTLE
MB/PG	MAP BOOK / PAGE
DB/PG	DEED BOOK / PAGE
THH	TELEPHONE HANDHOLE

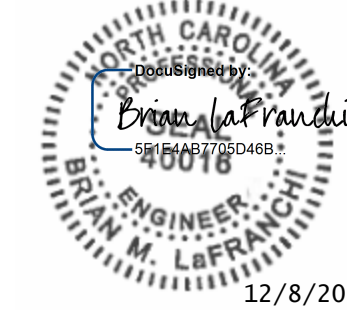


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NCBELS #F-0929

**RADIUM REMOVAL
TREATMENT SYSTEM
FIELDSTONE WELL #1**

AQUA NORTH CAROLINA
202 MACKENAN DR
CARY, NC 27511

SEAL



12/8/2021

SCALE 1" = 20'

[illegible]

2	12/08/21	PMW	AGENCY COMMENTS
1	11/08/21	PMW	SUP
No.	DATE	BY	Description

REVISIONS

DRAWN BY ZKM

APPROVED BY BML

CHECKED BY TMM

DATE JULY 28, 2021

TITLE

LANDSCAPE PLAN

PROJECT NO. 50140313

L-01



LANDSCAPE INFORMATION:

PROPOSED LANDSCAPE: N/A

EXISTING LANDSCAPE TO REMAIN IN A NATURAL STATE AND INCLUDES A MATURE HARDWOOD FOREST WITH BOTH DECIDUOUS AND EVERGREEN TREES (PINE, SUGAR GUM, POPLAR) IN GENERAL GOOD HEALTH AND VARYING EVERGREEN PINE SAPPLINGS THROUGHOUT.

AQUA PROPERTY IMPERVIOUS AREA TABULATION

EXISTING IMPERVIOUS AREA = ±3094 SF

-STRUCTURES: 233 SF
-GRAVEL PATH: 2861 SF

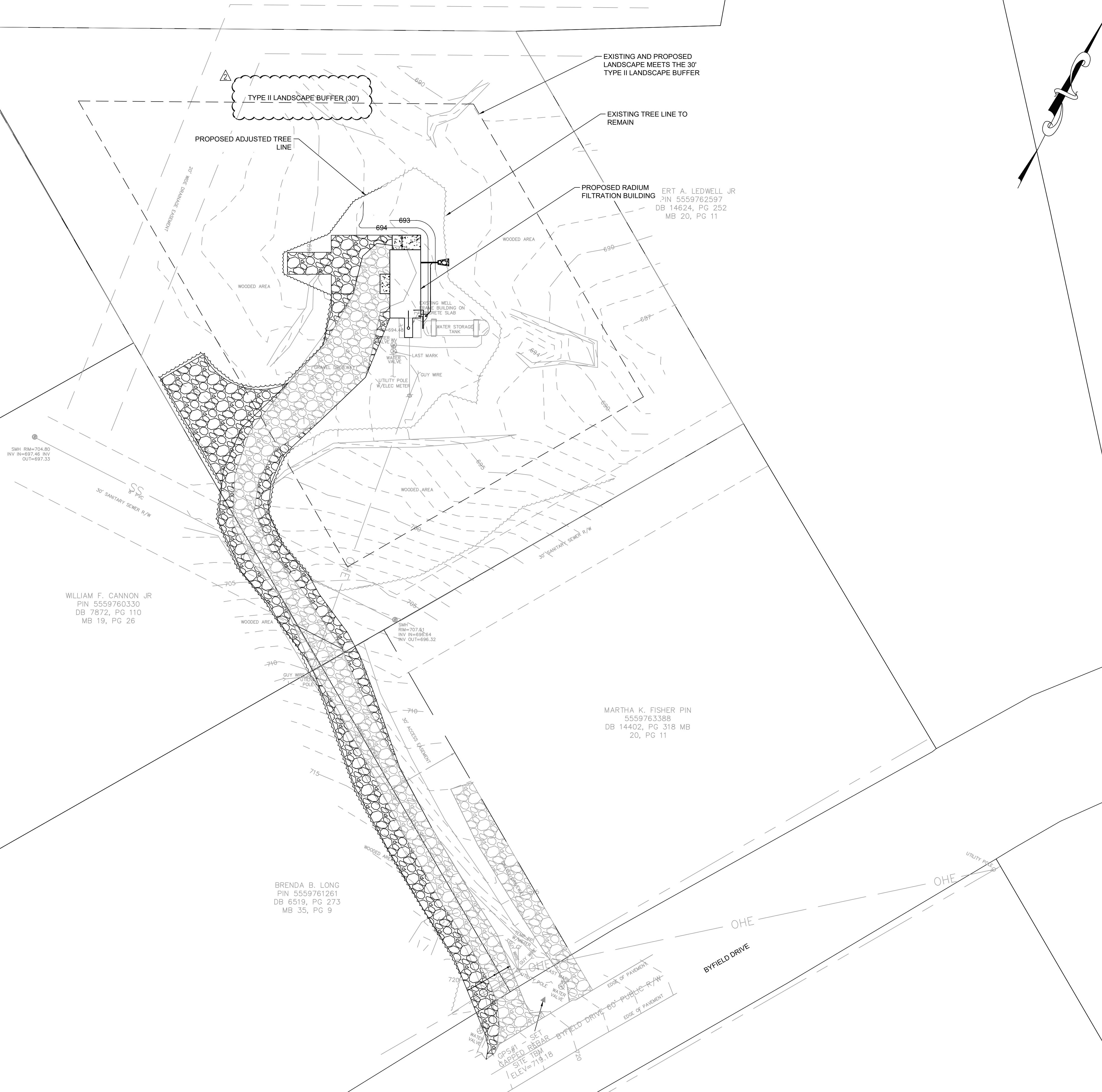
PROPOSED IMPERVIOUS AREA = ±4657 SF

- STRUCTURE: 355 SF
- CONCRETE PADS: 102 SF
- GRAVEL PATH: 4200 SF
- REPLACING 195 SF OF EXISTING GRAVEL WITH THE PROPOSED BUILDING

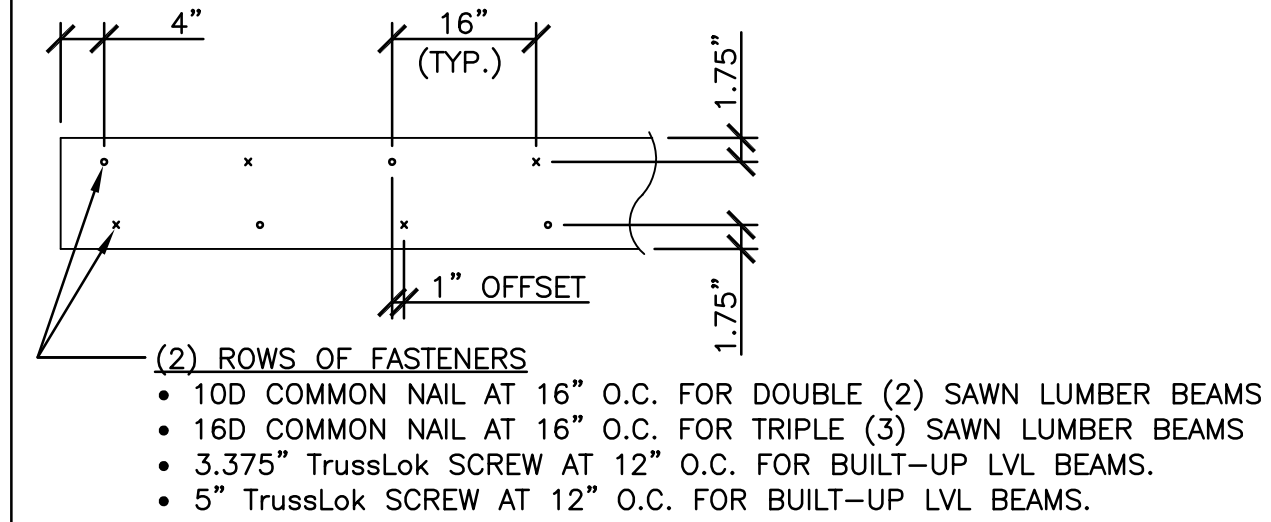
TOTAL IMPERVIOUS AREA = ±7751 SF

IMPERVIOUS AREA PERCENTAGE = ±15.85%

ALLOWABLE MAX. IMPERVIOUS PERCENTAGE = 20%



STRUCTURAL ABBREVIATION LIST		
ARCH.	ARCHITECTURAL	KSI
B.S.	BOTH SIDES	MAX.
CF	CUBIC FOOT	MIN.
CMU	CONCRETE MASONRY UNIT	MPH
CLR.	CLEAR	#
CONC.	CONCRETE	NUMBER
DIA.	DIAMETER	O.C.
DWGS.	DRAWINGS	PSI
ELEV.	ELEVATION	PSF
EQUIP.	EQUIPMENT	SIM
EXIST.	EXISTING	TYP.
EXP.	EXPANSION	U.N.O.
EXT.	EXTERIOR	V.I.F.
GALV.	GALVANIZED	W.W.F.

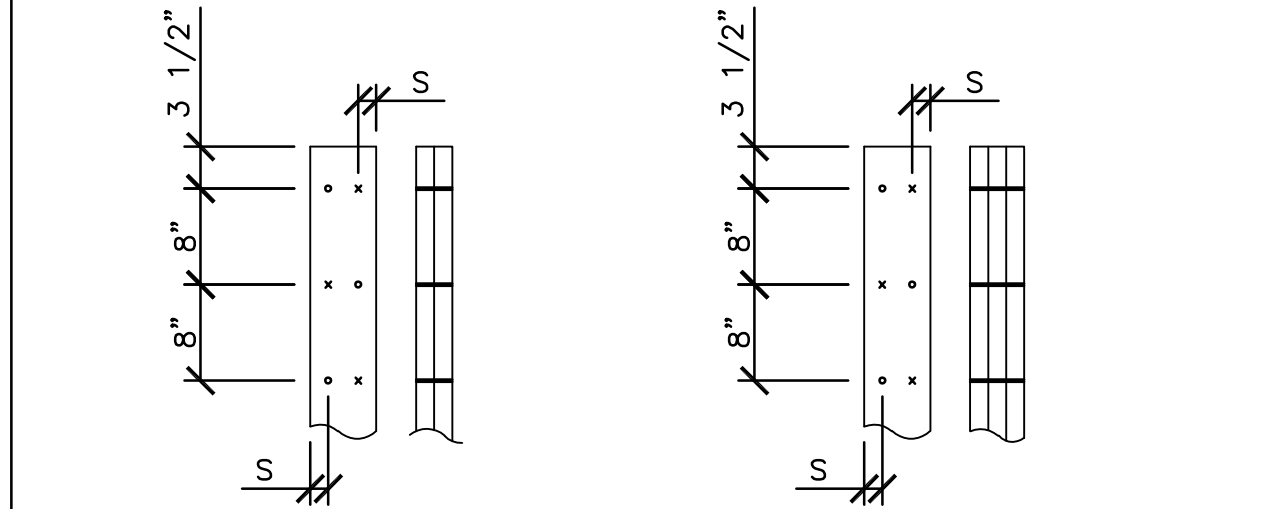


NOTE:

- ADJACENT NAILS SHALL BE DRIVEN FROM OPPOSITE SIDES OF THE COLUMN
- ALL TrussLok SCREWS MAY BE INSTALLED FROM ONE SIDE OF MULTIPLE PLY VERSA-LAM BEAMS OR GIRDERS.

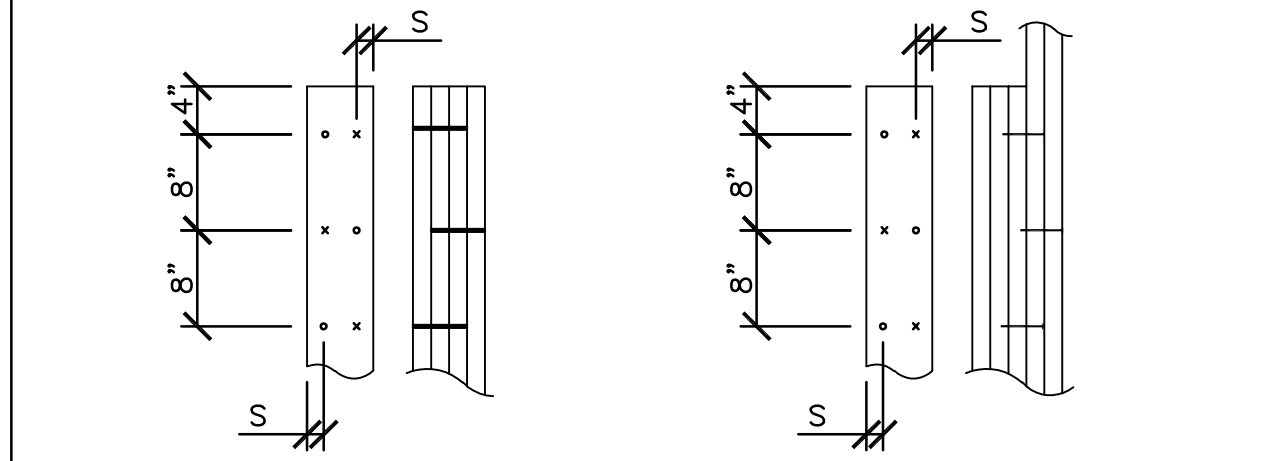
3 BUILT-UP HEADER NAILING SCHEDULE

S-01 SCALE: NOT TO SCALE



(2) LAMINATIONS TWO (2) ROWS OF STAGGERED 10d COMMON WIRE NAILS (D = .148", L = 3")

(3) LAMINATIONS TWO (2) ROWS OF STAGGERED 30d COMMON WIRE NAILS (D = .207", L = 4-1/2")



(4) LAMINATIONS TWO (2) ROWS OF STAGGERED 30d COMMON WIRE NAILS (D = .207", L = 4-1/2")

KING TO JACK STUDS TWO (2) ROWS OF 16d COMMON WIRE NAILS (D = .162", L = 3-1/2")

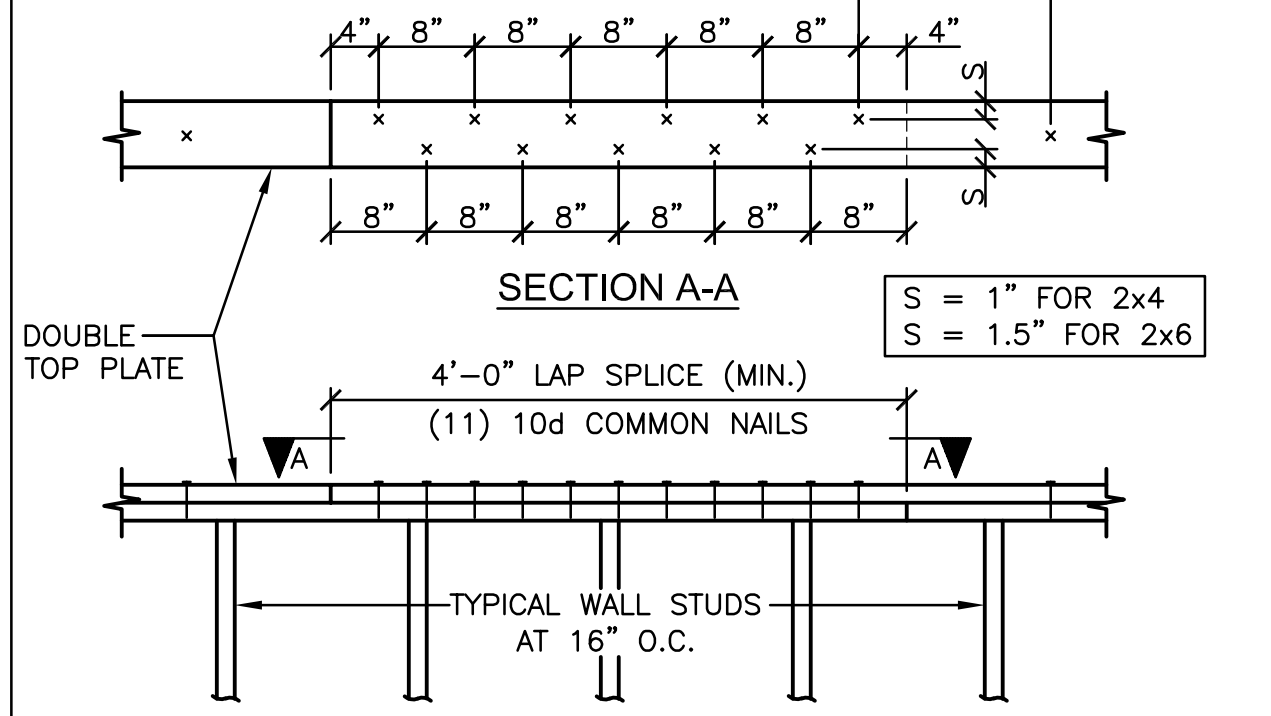
ADJACENT NAILS SHALL BE DRIVEN FROM OPPOSITE SIDES OF THE COLUMN

ADJUST NAILING PATTERN AT BASE OF BUILT-UP COLUMNS LOCATED AT END OF SHEAR WALLS TO ACCOMMODATE ATTACHMENT OF TIE DOWN ANCHOR

S = 1" FOR 2x4 BUILT UP COLUMNS
S = 1.5" FOR 2x6 BUILT UP COLUMNS

2 BUILT-UP COLUMN NAILING SCHEDULE

S-01 SCALE: NOT TO SCALE



1 TOP PLATE SPLICE DETAIL

S-01 SCALE: NOT TO SCALE

- GENERAL:**
- BUILDING SHALL BE CONSTRUCTED IN ACCORDANCE WITH AQUA NORTH CAROLINA SPECIFICATIONS FOR WATER WELL CONSTRUCTION WITH REVISION 1 DATED OCTOBER 2013.
 - THE GENERAL STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS AND SPECIFICATIONS. SEE DRAWINGS AND SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO GENERAL NOTES. SHOULD CONFLICTS EXIST BETWEEN THE DRAWINGS, SPECIFICATIONS, AND GENERAL STRUCTURAL NOTES, THE STRICTEST PROVISION SHALL GOVERN.
 - UNLESS NOTED OTHERWISE, CONSTRUCTION MEANS AND METHODS SHALL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
 - THE STRUCTURE, OR STRUCTURES, DEFINED BY THESE DRAWINGS HAVE BEEN DESIGNED AS COMPLETE STRUCTURES TO RESIST THE LOADS LISTED IN THE DESIGN SECTION OF THESE GENERAL NOTES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION LOADS AND OTHER LOADS IMPOSED ON THE PARTIALLY COMPLETED STRUCTURE(S). THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF SHORING, BRACING, FORMWORK, ERECTION AIDS, AND OTHER NON-PERMANENT SUPPORTING ELEMENTS UTILIZED FOR CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING IN ALL DIRECTIONS UNTIL ALL PERMANENT CONNECTIONS ARE MADE.
 - THE CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM THE DRAWINGS.

- COORDINATION:**
- STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH, AND COORDINATED WITH CIVIL, MECHANICAL, ELECTRICAL, AND OTHER CONTRACT DOCUMENTS.
 - OPENINGS IN SLABS, WALL, ROOFS, ETC. SHOWN ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY AND ARE NOT INTENDED TO DEFINE THE EXACT LOCATION, SIZE, ELEVATION, FIRE RATING, OR ANY OTHER PROPERTY OF THE OPENING UNLESS NOTED OTHERWISE. THE STRUCTURAL DRAWINGS ARE NOT INTENDED TO SHOW ALL OPENINGS AND PENETRATIONS WITHIN OR THROUGH THE STRUCTURE. THE CONTRACTOR SHALL COORDINATE ALL OPENINGS AND PENETRATIONS WITH THE CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS.
 - COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES AND OPENINGS THROUGH CONCRETE SLABS WITH CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS. SLEEVES SHALL BE ASTM A 53 SCHEDULE 40 STEEL WITH A DIAMETER NOT GREATER THAN 12 INCHES AND SHALL BE GALVANIZED AFTER CUTTING.
 - ALL PRODUCTS AND MATERIALS REQUIRED FOR THE WORK SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS FOR INSTALLATION IN APPLICATIONS INDICATED, INCLUDING ALL ACCESSORIES, ATTACHMENTS, AND THE LIKE.

- DESIGN:**
- STRUCTURAL DESIGN CONFORMS TO THE REQUIREMENTS OF THE FOLLOWING CODES:
 - 2018 NORTH CAROLINA BUILDING CODE
 - 2015 INTERNATIONAL BUILDING CODE (INCORPORATED BY 2018 NC BUILDING CODE)
 - DESIGN LOADS AND DESIGN DATA ARE AS FOLLOWS:
 - A. LIVE LOAD:

ROOF	20 PSF
FLOOR SLAB	300 PSF
 - B. SNOW LOAD:

GROUND SNOW LOAD (Pg)	15 PSF
SNOW EXPOSURE FACTOR (Ce)	1.0
SNOW LOAD IMPORTANCE FACTOR (I)	1.00
THERMAL FACTOR (Cs)	1.2
ROOF SLOPE FACTOR (Cs)	1.0
SLOPED ROOF SNOW LOAD (Pf)	15 PSF
 - C. WIND LOAD:

BASIC WIND SPEED (3 SECOND GUST)	115 MPH
BUILDING OCCUPANCY CATEGORY	II
WIND LOAD IMPORTANCE FACTOR (I)	1.00
WIND EXPOSURE CATEGORY	C
INTERNAL PRESSURE COEFFICIENT	±0.18
 - D. SEISMIC DESIGN DATA:

SEISMIC OCCUPANCY CATEGORY	II
SEISMIC IMPORTANCE FACTOR (Ie)	1.00
SPECTRAL RESPONSE ACCELERATION, Ss	0.161g
SPECTRAL RESPONSE ACCELERATION, S1	0.079g
SPECTRAL RESPONSE COEFF. Sps	0.172g
SPECTRAL RESPONSE COEFF. Ss1	0.127g
SITE CLASS	D
SEISMIC DESIGN CATEGORY	B
RESPONSE MODIFICATION FACTOR, R	6
SEISMIC RESPONSE COEFF. Cs	0.029
SEISMIC-FORCE-RESISTING SYSTEM ANALYSIS PROCEDURE	LIGHT FRAMED WALLS WITH SHEAR PANELS EQUIVALENT LATERAL FORCE

- FOUNDATIONS:**
- FOUNDATION DESIGN IS BASED ON AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE CAPACITY OF 2,000 PSF.
 - THE STRUCTURAL ENGINEER OF RECORD IS NOT RESPONSIBLE FOR SUBSURFACE CONDITIONS ENCOUNTERED IN THE FIELD CONTRARY TO THOSE ASSUMED FOR DESIGN.
 - COMPACTED STRUCTURAL FILL SHALL BE AS FOLLOWS:
 - A. INSPECTED AND APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER.
 - B. NON-ORGANIC ON-SITE OR OFF-SITE SOILS APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER.
 - C. PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS.
 - D. COMPACTED TO AT LEAST 95 PERCENT OF STANDARD PROCTOR (ASTM D 698) MAXIMUM DRY DENSITY.
 - E. MOISTURE CONTENT WITHIN 3 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT. PLASTICITY INDEX AS RECOMMENDED BY GEOTECHNICAL ENGINEER.
 - F. FREE OF BOULDERS, ORGANICS, TRASH, PARTICLES OF 3 INCHES OR MORE IN DIAMETER, AND OTHER DELETERIOUS MATERIALS.
 - UNLESS NOTED OTHERWISE, FOUNDATION SUBGRADES REQUIRING UNDERCUT SHALL BE FILLED FROM THE ELEVATION OF UNDERCUT TO THE ORIGINAL DESIGN SUBGRADE ELEVATION WITH LEAN CONCRETE, MINIMUM 500 PSI FLOWABLE FILL.
 - WHENEVER POSSIBLE, FOUNDATION CONCRETE SHALL BE PLACED IMMEDIATELY AFTER EXCAVATION SO THAT ACCUMULATION OF WATER IN THE EXCAVATION OR DRYING OF FOUNDATION SOILS CAN BE AVOIDED. CONCRETE STRUCTURES SHALL BE CONSTRUCTED IN AN EXPEDIENT MANNER ONCE EXCAVATIONS ARE MADE TO AVOID WEATHER DAMAGE.
 - CONTRACTOR SHALL CONTROL SITE GROUNDWATER AND/OR SURFACE WATER BY ALL MEANS NECESSARY TO MAINTAIN A WATER LEVEL ONE FOOT BELOW SLAB SUBGRADE SO AS TO NOT DAMAGE FOUNDATION EXCAVATIONS.

- REINFORCED CONCRETE:**
- UNLESS NOTED OTHERWISE, ALL CONCRETE WORK, DETAILING, FABRICATION, AND PLACING OF REINFORCING AND CONCRETE SHALL BE GOVERNED BY THE LATEST REVISIONS OF:
 - A. ACI 301, ACI 315, AND ACI 318.
 - B. CRSI RECOMMENDED PRACTICE OF PLACING REINFORCING BARS.
 - C. ACI 306 AND ACI 305 FOR COLD AND HOT WEATHER CONCRETING, RESPECTIVELY.
 - ALL CONCRETE SHALL BE NORMAL WEIGHT WITH A MAXIMUM UNIT WEIGHT OF 150 POUNDS PER CUBIC FOOT AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH, AS SPECIFIED BELOW, FOR THE RESPECTIVE AREAS:

FOOTINGS AND SLAB-ON-GRADE	4,000 PSI (AIR-ENTRAINED)
----------------------------	---------------------------
 - PLACE 1/2" EXPANSION JOINT MATERIAL BETWEEN EDGES OF SLABS AND VERTICAL SURFACES UNLESS NOTED OTHERWISE.
 - REINFORCING STEEL SHALL CONFORM TO ASTM A 615, AND SHALL BE GRADE 60 U.N.O.
 - REINFORCING STEEL INDICATED TO BE WELDED SHALL CONFORM TO ASTM A 706 AND SHALL BE GRADE 60.
 - WELDED WIRE FABRIC SHALL BE NEW BILLET STEEL, COLD DRAWN CONFORMING TO ASTM SPECIFICATIONS A 185 AND A 82 AND SHALL BE PROVIDED IN FLAT SHEETS. PROVIDE MINIMUM 12" LAP AT SHEET JOINTS.
 - REINFORCING BAR LAP SPLICES SHALL BE 48 BAR DIAMETERS AND HOOK DIMENSIONS SHALL 12 BAR DIAMETERS UNLESS NOTED OTHERWISE.

GENERAL STRUCTURAL NOTES

- MASONRY:**
- ALL MASONRY CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (ACI 530-13/ASCE 5-13/TMS 402-13) AND "SPECIFICATION FOR MASONRY STRUCTURES" (ACI 530.1-13/ASCE 6-13/TMS 602-13).
 - CONCRETE MASONRY UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 90.
 - MINIMUM REQUIRED COMPRESSIVE STRENGTH OF MASONRY ASSEMBLAGE, F'm, AT 28 DAYS SHALL BE 1,500 PSI.
 - MORTAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 270 FOR JOB-MIXED MORTAR AND ASTM C 1142 FOR READY MIXED MORTAR AND SHALL BE TYPE S.
 - GROUT FOR HOLLOW MASONRY UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 476 AND SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI. JOB SITE MIXING OF GROUT IS NOT ALLOWED.

POST-INSTALLED ANCHORS:

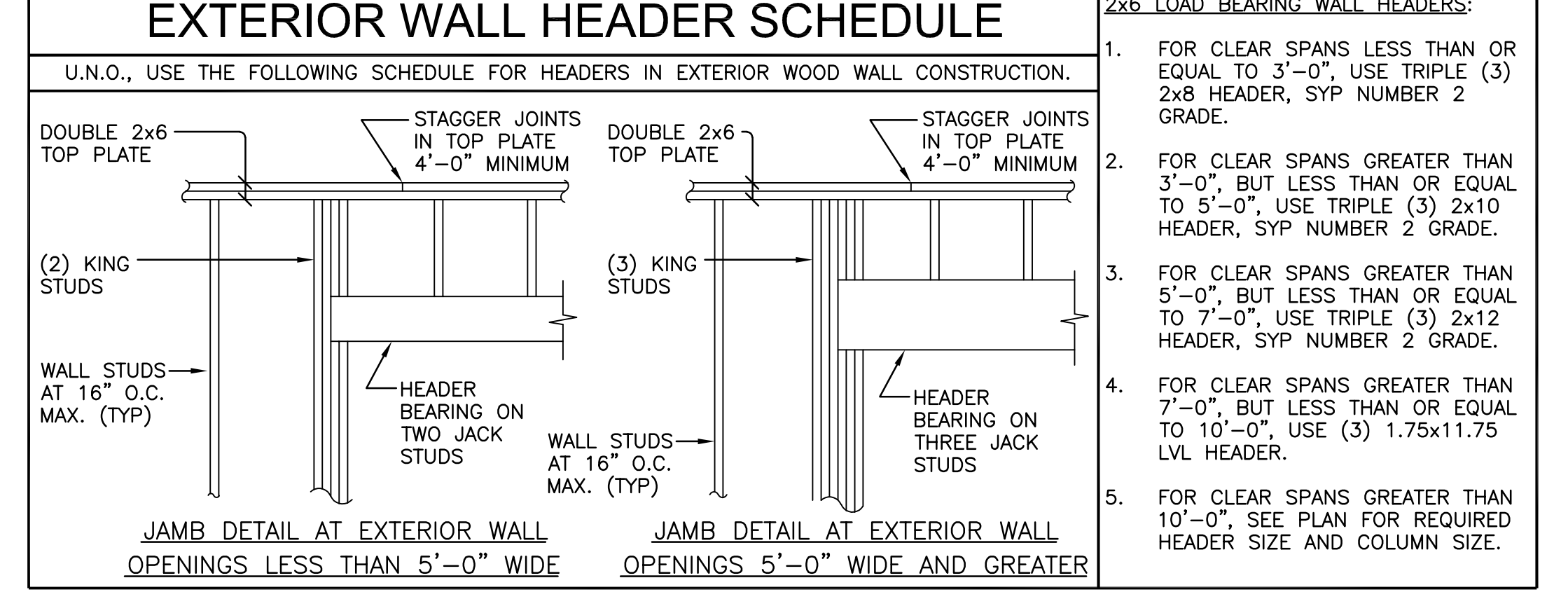
UNLESS OTHERWISE INDICATED ON PLANS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES, OR APPROVED EQUAL:

SOLID CONCRETE	ADHESIVE ANCHOR
	HILTI HY 200 SAFE SET SYSTEM (ICC ESR-3187)

- SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE.
- INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
- THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
- ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
- EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS.

- SAWN LUMBER:**
- THE FOLLOWING SHALL APPLY FOR WOOD FRAMED CONSTRUCTION:
 - A. ALL WOOD SHALL BE SOUTHERN PINE, NO. 1 GRADE OR BETTER, UNLESS NOTED OTHERWISE.
 - B. WOOD MEMBERS SHALL HAVE MAXIMUM MOISTURE CONTENT OF 19 PERCENT.
 - C. ALL PLYWOOD SHALL BE EXTERIOR GRADE, APA-RATED AS INDICATED ON DRAWINGS.
 - D. ALL BOLTS USED FOR WOOD FASTENING SHALL BE HOT-DIPPED GALVANIZED STEEL WITH EXTERNALLY AND INTERNALLY THREADED FASTENERS.
 - E. STEEL CONNECTOR PLATES SHALL CONFORM TO ASTM 36 AND SHALL BE HOT-DIPPED GALVANIZED.
 - F. LAG SCREWS SHALL BE HOT-DIPPED GALVANIZED AND CONFORM TO ANSI/ASME STANDARD B18.2.1
 - G. NAILING SHALL BE IN ACCORDANCE WITH TABLE 2304.10.1 OF THE NORTH CAROLINA BUILDING CODE UNLESS NOTED OTHERWISE.
 - UNLESS NOTED OTHERWISE, ROOF SHEATHING SHALL BE 15/32" APA-RATED STRUCTURAL I OSB, EXPOSURE 1, 32/16 SPAN RATING, 48"x96" PANELS. ATTACH SHEATHING TO FRAMING WITH 10d COMMON NAILS AT 6" ON CENTER AT PANEL EDGES AND 12" ON CENTER AT INTERMEDIATE SUPPORT MEMBERS.
 - EXTERIOR WALL SHEATHING SHALL BE 7/16" APA-RATED STRUCTURAL I SHEATHING, EXPOSURE 1, 32/16 SPAN RATING, 48"x96" PANELS. SHEATHING SHALL BE ORIENTED WITH THE LONG DIMENSION HORIZONTAL. UNLESS NOTED OTHERWISE, ATTACH SHEATHING TO WALL STUDS WITH 8d COMMON NAILS AT 6" ON CENTER AT PANEL EDGES AND 12" ON CENTER AT INTERMEDIATE SUPPORT MEMBERS. ALL WALL PANEL EDGES ARE UNBLOCKED.
 - WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.

- METAL-PLATE-CONNECTED WOOD TRUSSES:**
- UNLESS NOTED OTHERWISE, ALL DESIGN, DETAILING, FABRICATION AND ERECTION OF PREFABRICATED METAL-PLATE-CONNECTED WOOD TRUSSES SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF:
 - A. AMERICAN FOREST AND PAPER ASSOCIATIONS - NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION
 - B. TRUSS PLATE INSTITUTE - NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSSES
 - C. TRUSS PLATE INSTITUTE - COMMENTARY AND RECOMMENDATIONS FOR HANDLING INSTALLING, AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES.
 - D. TRUSS PLATE INSTITUTE - RECOMMENDED DESIGN SPECIFICATIONS FOR TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES.
 - WOOD TRUSSES SHALL BE DESIGNED FOR THE LOADS INDICATED IN THE "DESIGN" SECTION OF THE GENERAL STRUCTURAL NOTES AND AS FOLLOWS:
 - A. TOP CHORD DEAD LOAD = 10 PSF.
 - B. BOTTOM CHORD DEAD LOAD = 10 PSF
 - TRUSS MANUFACTURER SHALL CALCULATE AND DESIGN TRUSSES FOR WIND UPLIFT PRESSURES BASED ON THE WIND LOAD CRITERIA IN THESE GENERAL NOTES. AT A MINIMUM, THE NET WIND UPLIFT PRESSURE SHALL BE 15 PSF.
 - WOOD TRUSS CHORD AND WEB MEMBERS SHALL BE SOUTHERN YELLOW PINE, MINIMUM GRADE NUMBER 2.
 - MAXIMUM DEFLECTION DUE TO LIVE LOAD SHALL NOT EXCEED L/360. MAXIMUM DEFLECTION DUE TO DEAD LOAD SHALL NOT EXCEED L/240 (INCLUDING LONG TERM EFFECTS).
 - WOOD TRUSS SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW, PRIOR TO FABRICATION OF THE WOOD TRUSSES. WOOD TRUSS SHOP DRAWINGS AND CALCULATIONS SHALL BEAR THE SEAL OF A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA.
 - DO NOT FABRICATE TRUSSES UNTIL SHOP DRAWINGS AND CALCULATIONS HAVE BEEN SUBMITTED AND APPROVED.
 - PROVIDE AND INSTALL PERMANENT AND TEMPORARY BRACING AS REQUIRED BY TRUSS PLATE INSTITUTE SPECIFICATIONS. IN ADDITION, 2X4 DIAGONAL X-BRACING SHALL BE INSTALLED IN WOOD TRUSSES AT 12'-0" MAXIMUM INTERVAL AND ATTACHED TO WOOD TRUSSES WITH MINIMUM (4) 10d NAILS.
 - CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING AND SHORING OF WOOD TRUSSES AGAINST WIND LOADS, CONSTRUCTION LOADS, AND OTHER TEMPORARY FORCES UNTIL SUCH PROTECTION IS NO LONGER REQUIRED FOR THE SAFE SUPPORT OF THE ROOF STRUCTURE.



Dewberry®

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NCBELS #F-0929

Seal area for the Professional Engineer.

Seal area for the Professional Engineer.

RADIUM REMOVAL
TREATMENT SYSTEM
FIELDSTONE WELL #1
AQUA NORTH CAROLINA
202 MACKENAN DR
CARY, NC 27511



Seal area for the Professional Engineer.

Seal area for the Professional Engineer.

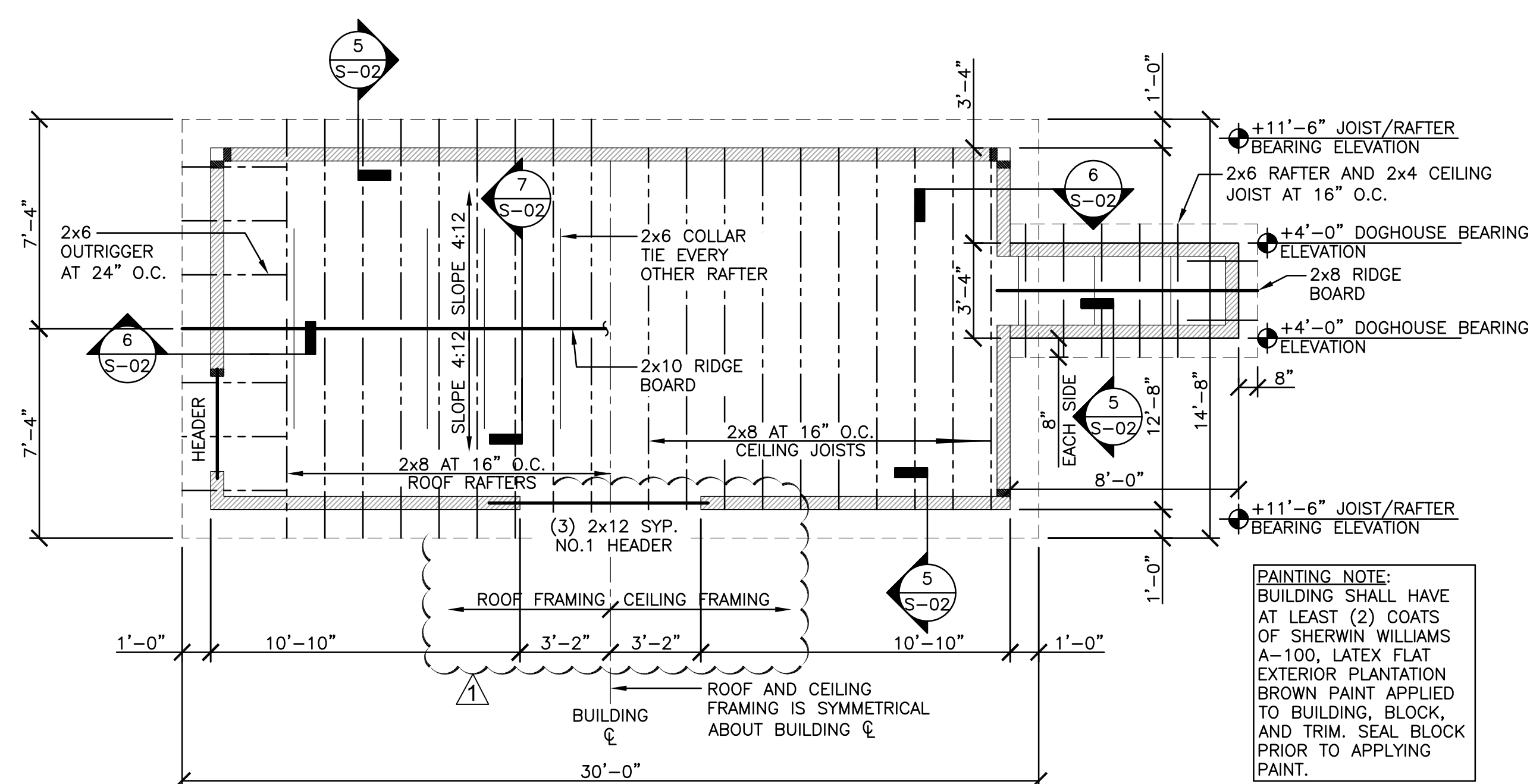
Seal area for the Professional Engineer.

No.	DATE	BY	Description
REVISIONS			
DRAWN BY ADM			
APPROVED BY ADM			
CHECKED BY ACH			
DATE JULY 28, 2021			
TITLE			

GENERAL
STRUCTURAL
NOTES AND
DETAILS

PROJECT NO. 50140313

S-01



0"x6" THICK PAD. REINF. 4.0xW4.0 WWF AT MID-DEPTH. SLOPE DOOR.

8" 28'-0" 26'-8" 8"

1'-0" TYPICAL

4'-0" CLEAR

4'-5" CLEAR

7'-10" CLEAR

3'-0" WIDE x 7'-2" DOUBLE, FIBERGLASS INSULATED, EXT. DOOR

36" x 6'-8", SINGLE, FIBERGLASS INSULATED, EXTERIOR DOOR

8'-0" x 4'-0" x 6" THICK CONCRETE PAD. REINF. WITH 6x6 W4.0xW4.0 WWF AT MID-DEPTH. SLOPE AWAY FROM DOOR.

8" 10'-2" 6'-4" DOOR 10'-2" 8"

SHEAR WALL HOLD DOWN AND SHEAR WALL CHORD LOCATION, TYPICAL OF (6). SEE 8/S-02 FOR DETAIL.

Fe/Mn TREATMENT SYSTEM BY OWNER

SLOPE SLAB SEE CIVIL DWGS.

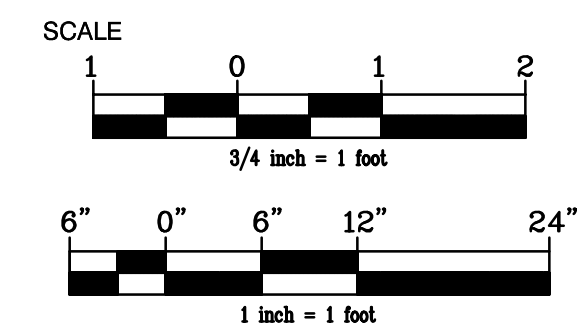
DRX. HOLES 5/8" DIA. X 12" LONG, EACHES AT 24" O.C., EACH SIDE, CENTER ON NEW SLAB AND INSTALL (5) 1/2" DIA. x 24" LONG SMOOTH DOWELS (WRAP OR GREASE ONE END)

EX. CONCRETE WELL CAP

FOUNDATION PLAN NOTES:

1. SEE SHEET S-01 FOR GENERAL STRUCTURAL NOTES.
2. FINISHED FIRST FLOOR HIGH POINT ELEVATION SHALL BE 694.48'. SLOPE SLAB TOWARDS ROLL-UP DOOR. SEE CIVIL DRAWINGS FOR SLOPE.
3. TYPICAL FLOOR CONSTRUCTION SHALL BE 6" THICK CONCRETE SLAB-ON-GRADE WITH 6x6 W4.0xW4.0 WWF OVER 10 MIL VAPOR BARRIER AND 6" #57 STONE BASE U.N.O.
4. "C" DENOTES CONTROL JOINT LOCATION

1. SEE SHEET S-01 FOR GENERAL STRUCTURAL NOTES.
2. FINISHED FIRST FLOOR HIGH POINT ELEVATION SHALL BE 694.48'. SLOPE SLAB TOWARDS ROLL-UP DOOR. SEE CIVIL DRAWINGS FOR SLOPE.
3. TYPICAL FLOOR CONSTRUCTION SHALL BE 6" THICK CONCRETE SLAB-ON-GRADE WITH 6x6 W4.0xW4.0 WNF OVER 10 MIL VAPOR BARRIER AND #6 #57 STONE BASE U.N.O.
4. "C" DENOTES CONTROL JOINT LOCATION IN SLAB-ON-GRADE. SEE DETAILS 3/S-02.
5. APPLY A CHEMICAL HARDENER FINISH TO ALL PERMANENTLY EXPOSED INTERIOR FLOOR SLABS.



1	09/01/21	JGL	ADDENDUM #1
No.	DATE	BY	Description

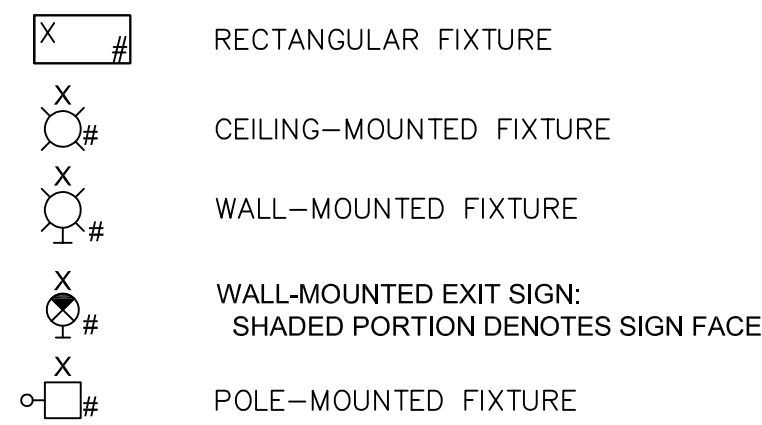
STRUCTURAL PLANS AND DETAILS

S-02

ELECTRICAL LEGEND:

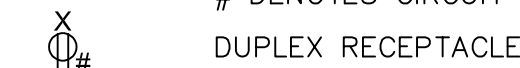
LIGHTING:

X DENOTES FIXTURE TYPE (TYP.)
SEE FIXTURE SCHEDULE
DENOTES CIRCUIT NUMBER (TYP.)

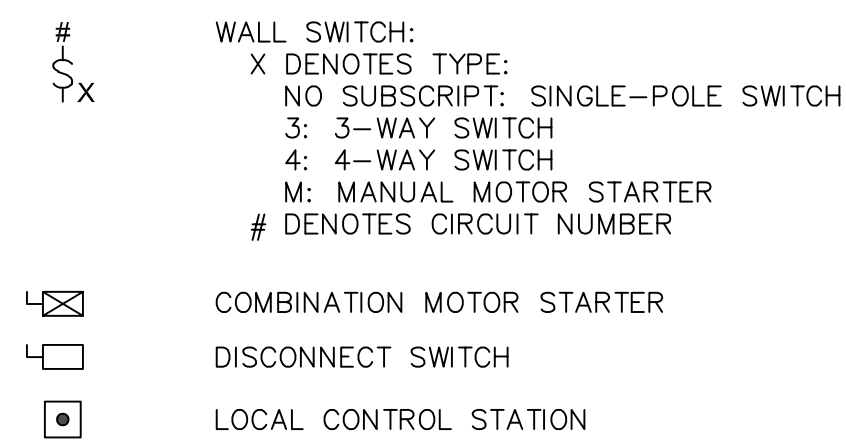


RECEPTACLES:

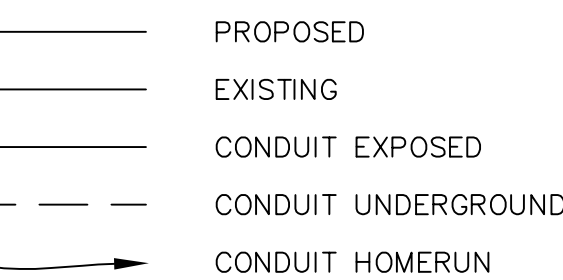
X DENOTES RECEPTACLE TYPE (TYP.):
GFCI: GROUND FAULT CIRCUIT INTERRUPT
UPS: UNINTERRUPTIBLE POWER SUPPLY
WPCR: WEATHERPROOF CORROSION RESISTANT
DENOTES CIRCUIT NUMBER (TYP.)



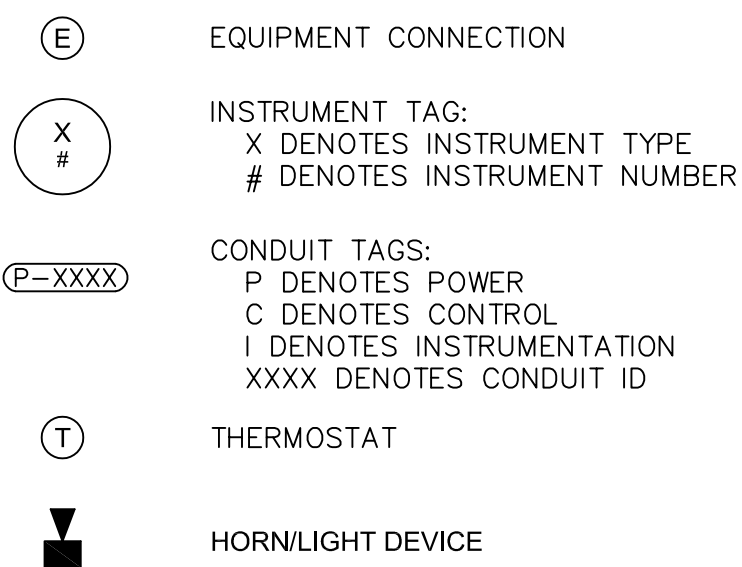
SWITCHES



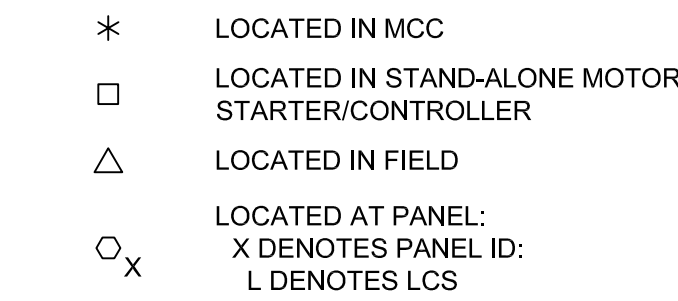
WIRING



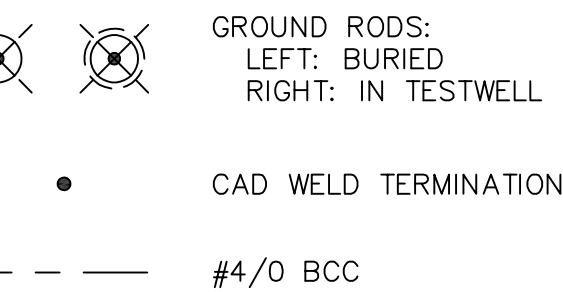
MISC. PLAN VIEW SYMBOLS



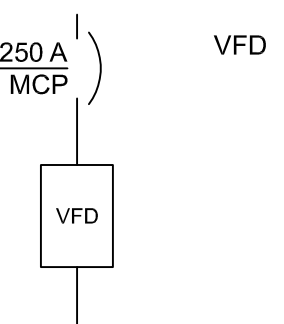
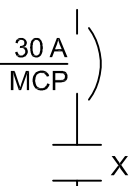
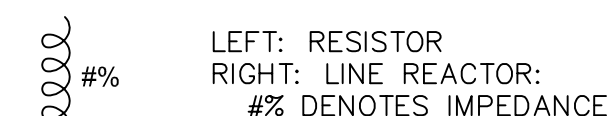
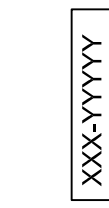
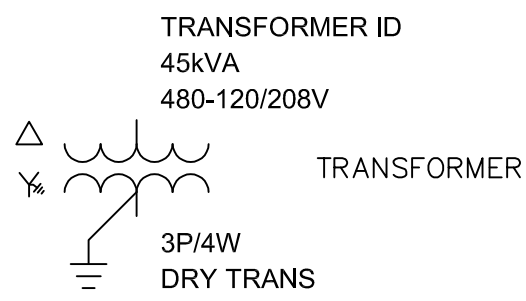
EQUIPMENT/DEVICE LOCATION SYMBOLS



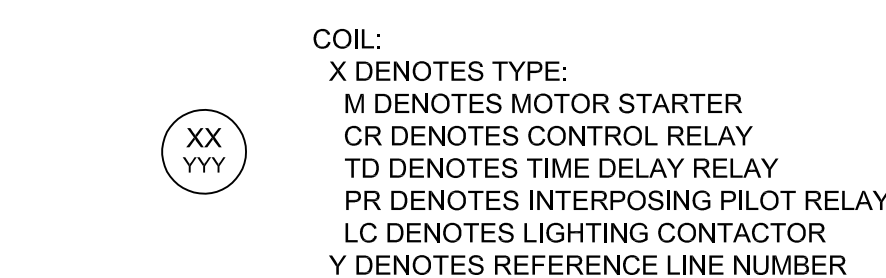
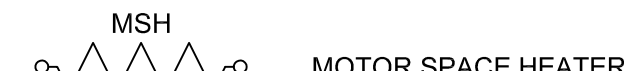
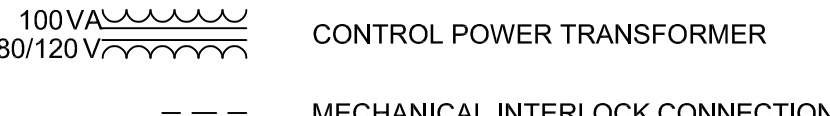
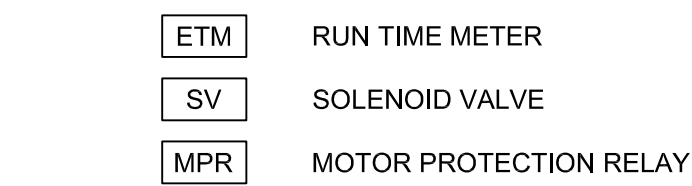
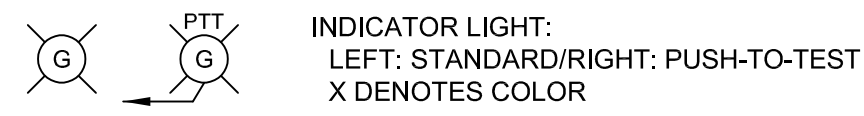
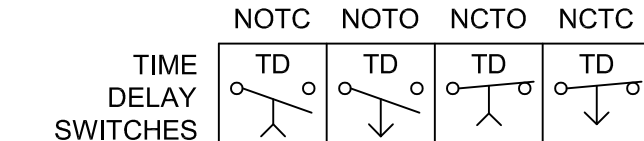
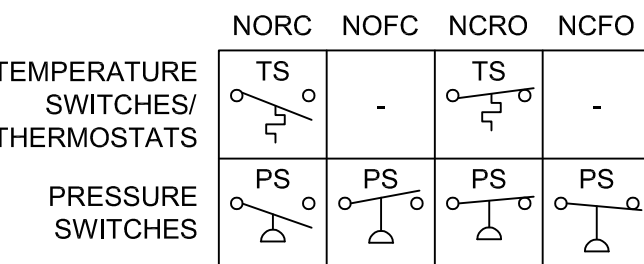
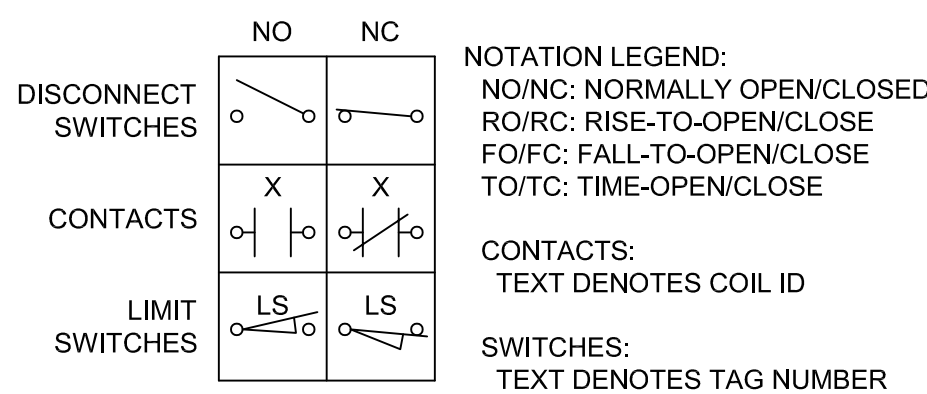
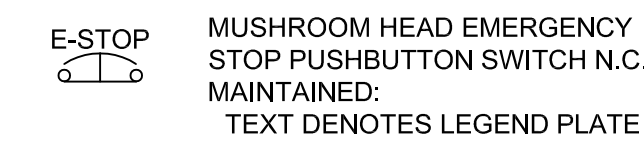
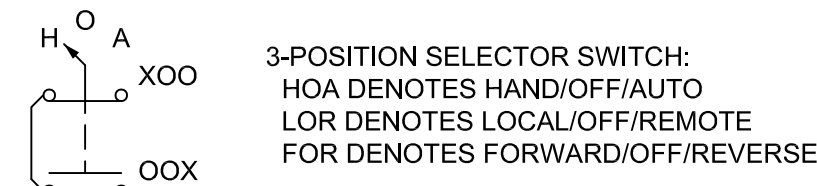
GROUNDING



SINGLE-LINE DIAGRAMS



ELEMENTARY CONTROL SCHEMATICS



ABBREVIATIONS:

AIC	AMPERE INTERRUPTING CAPACITY
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AT	AMPERE TRIP
BCC	BARE COPPER CONDUCTOR
BKR	BREAKER
CJB	CONTROL JUNCTION BOX
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CP	CONTROL PANEL
CV	CHECK VALVE
DB	DUCTBANK
DSW	DISCONNECT SWITCH
ECB	ENCLOSED CIRCUIT BREAKER
EHH	ELECTRICAL HANDHOLE
ETU	ELECTRONIC TRIP UNIT
EX	EXISTING
FE	FLOW ELEMENT
FIT	FLOW INDICATING TRANSMITTER
FVNR	FULL VOLTAGE NON-REVERSING
FS	FLOW SWITCH
GD	GAS DETECTOR
G/GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
ISO	INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
HOA	HAND-OFF-AUTO
JBX	JUNCTION BOX
LCS	LOCAL CONTROL STATION
LP	LIGHTING PANEL
LS	LEVEL SWITCH/LIMIT SWITCH
LSL	LEVEL SWITCH LOW
LSLL	LEVEL SWITCH LOW-LOW
LSH	LEVEL SWITCH HIGH
LSHH	LEVEL SWITCH HIGH-HIGH
MANUF	MANUFACTURER
MCP	MOTOR CIRCUIT PROTECTOR
MS	MOTOR STARTER
MSH	MOTOR SPACE HEATER
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
MWTS	MOTOR WINDING TEMPERATURE SWITCH
N4X	NEMA 4X SST
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NTS	NOT TO SCALE
OL	OVERLOAD
PC	PHOTOCELL
PIT	PRESSURE INDICATING TRANSMITTER
PLC	PROGRAMMABLE LOGIC CONTROLLER
PP	POWER PANEL
PS	PRESSURE SWITCH
PSH	PRESSURE SWITCH HIGH
PSL	PRESSURE SWITCH LOW
PT	POTENTIAL TRANSFORMER/PRESSURE TRANSDUCER
RECP	RECEPTACLE
RTU	REMOTE TELEMETRY UNIT
RVSS	REDUCED VOLTAGE SOFT STARTER
S.E.	SERVICE ENTRANCE
SP C.	SPARE CONDUIT
SPD	SURGE PROTECTIVE DEVICE
SST	STAINLESS STEEL
SV	SOLENOID VALVE
TSH	TWSTED SHIELDED
TX	TRANSFORMER
TYP	TYPICAL
VFD	VARIABLE FREQUENCY DRIVE
WPCR	WEATHER PROOF CORROSION RESISTANT
XFMR	TRANSFORMER

GENERAL NOTES:

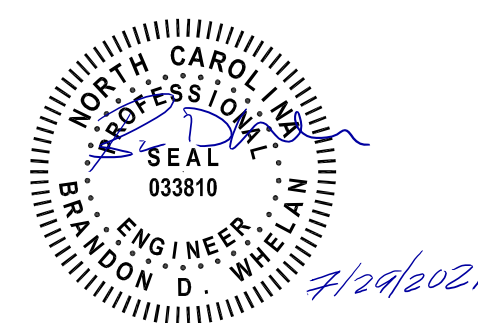
- THESE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT SHOW ALL DETAILS REQUIRED FOR THE COMPLETE SYSTEM. THEY SHOULD HOWEVER BE FOLLOWED AS CLOSELY AS POSSIBLE IN THE GENERAL ARRANGEMENT AND LOCATION OF EQUIPMENT. ALL DIMENSIONS SHALL BE CHECKED AT THE BUILDING AND ALL STRUCTURAL AND FINISH CONDITIONS INVESTIGATED. THE CONTRACTOR SHALL ARRANGE HIS WORK TO MEET THESE CONDITIONS AND PROVIDED SUCH EQUIPMENT AND ACCESSORIES AS MAY BE REQUIRED.
- PROPERLY SUPPORT ALL WORK AND EQUIPMENT INSTALLED UNDER THIS CONTRACT PLUMB AND PARALLEL. STUDY ALL GENERAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS, SHOP DRAWINGS, AND CATALOG DATA TO DETERMINE HOW EQUIPMENT, ACCESSORIES, PIPING, FIXTURES, AND RELATED ITEMS ARE TO BE SUPPORTED, MOUNTED, OR SUSPENDED. PROVIDE ALL BOLTS, INSERTS, PIPE STANDS, BRACKETS, STRUCTURAL SUPPORTS, AND ACCESSORIES FOR PROPER SUPPORT OF EQUIPMENT FURNISHED UNDER THIS CONTRACT. COORDINATE THE ELECTRICAL WORK WITH ALL OTHER CONTRACTORS BEFORE BEGINNING WORK TO ENSURE THAT THE ELECTRICAL WORK DOES NOT INTERFERE WITH OTHER WORK.
- NOTIFY THE ENGINEER IN WRITING IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCY OR POINTS OF CONFLICT IN THE DRAWINGS OR THE SPECIFICATIONS.
- THE INSTALLATION OF ALL CONCRETE ENCASED ELECTRICAL CONDUITS SHALL COMPLY WITH ACI 318, SECTION 6.3. CONTRACTOR SHALL SUPPLY EXPANSION JOINT FITTINGS AS REQUIRED FOR THERMAL EXPANSION AND DEFLECTION.
- BOND ALL DIRECT BURIED GROUND CONDUCTORS TO EXISTING GROUND CONDUCTORS IN ALL MANHOLES, PULL BOXES, CABLE TRAYS, AND SIMILAR LOCATIONS WHERE APPLICABLE.
- UNLESS OTHERWISE SPECIFIED OR NOTED, ALL WALL MOUNTED ELECTRICAL PANELS, ENCLOSURES, AND SIMILAR EQUIPMENT SHALL BE MOUNTED 6'-6" (MAX) FROM THE TOP OF THE PANEL TO FINISHED FLOOR OR GRADE.
- UNLESS OTHERWISE NOTED, ALL LIGHTING SWITCHES, CONTROL SWITCHES, AND SIMILAR EQUIPMENT SHALL BE MOUNTED WITH THEIR CENTERLINE APPROXIMATELY 4'-0" ABOVE FINISHED FLOOR, SLAB, OR GRADE. THERMOSTATS SHALL BE MOUNTED 4'-4" ABOVE FINISHED FLOOR.
- A SEPARATE EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED FOR EACH CIRCUIT (SEPARATE CONDUCTOR IN THE CONDUIT). THE CONDUCTOR SHALL BE TERMINATED AT THE PROPER DEVICE, TERMINAL, OR LUG AT THE POWER SOURCE (MCC GROUND BUS, PANELBOARD GROUND BUS, ETC.). GROUND CONDUCTOR SIZE SHALL BE PER THE LATEST EDITION OF THE NEC.
- ALL CONDUIT HOMERUNS ARE NOT SHOWN ON DRAWINGS. CONTRACTOR SHALL REFER TO CONDUIT AND WIRE SCHEDULE, RISER DIAGRAMS, SINGLE LINE DIAGRAMS, AND OTHER DRAWINGS FOR CONDUIT AND WIRE REQUIREMENTS.
- UNLESS OTHERWISE NOTED, DIRECT-BURIED CONDUIT SHALL BE SCHEDULE 40 PVC. WIRE TYPE SHALL BE THHN/THWN. GFCI RECEPTACLES SHALL BE RATED 20A AT 120-240V AND UL 943 LISTED.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL METERING EQUIPMENT WITH LOCAL ELECTRIC UTILITY. COORDINATION SHALL INCLUDE, BUT NOT LIMITED TO: SECONDARY CONDUIT & WIRE, METERING CABINET AND EQUIPMENT, AND SECONDARY DISCONNECTING MEANS. ALL COSTS RELATED TO UTILITY REQUIREMENTS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL MEET ALL REQUIREMENTS OF THE NEC AND LOCAL BUILDING CODES.



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NCBELS #F-0929

RADIUM REMOVAL
TREATMENT SYSTEM
FIELDSTONE WELL #1
AQUA NORTH CAROLINA
202 MACKENAN DR
CARY, NC 27511

SEAL



SCALE

No.	DATE	BY	Description
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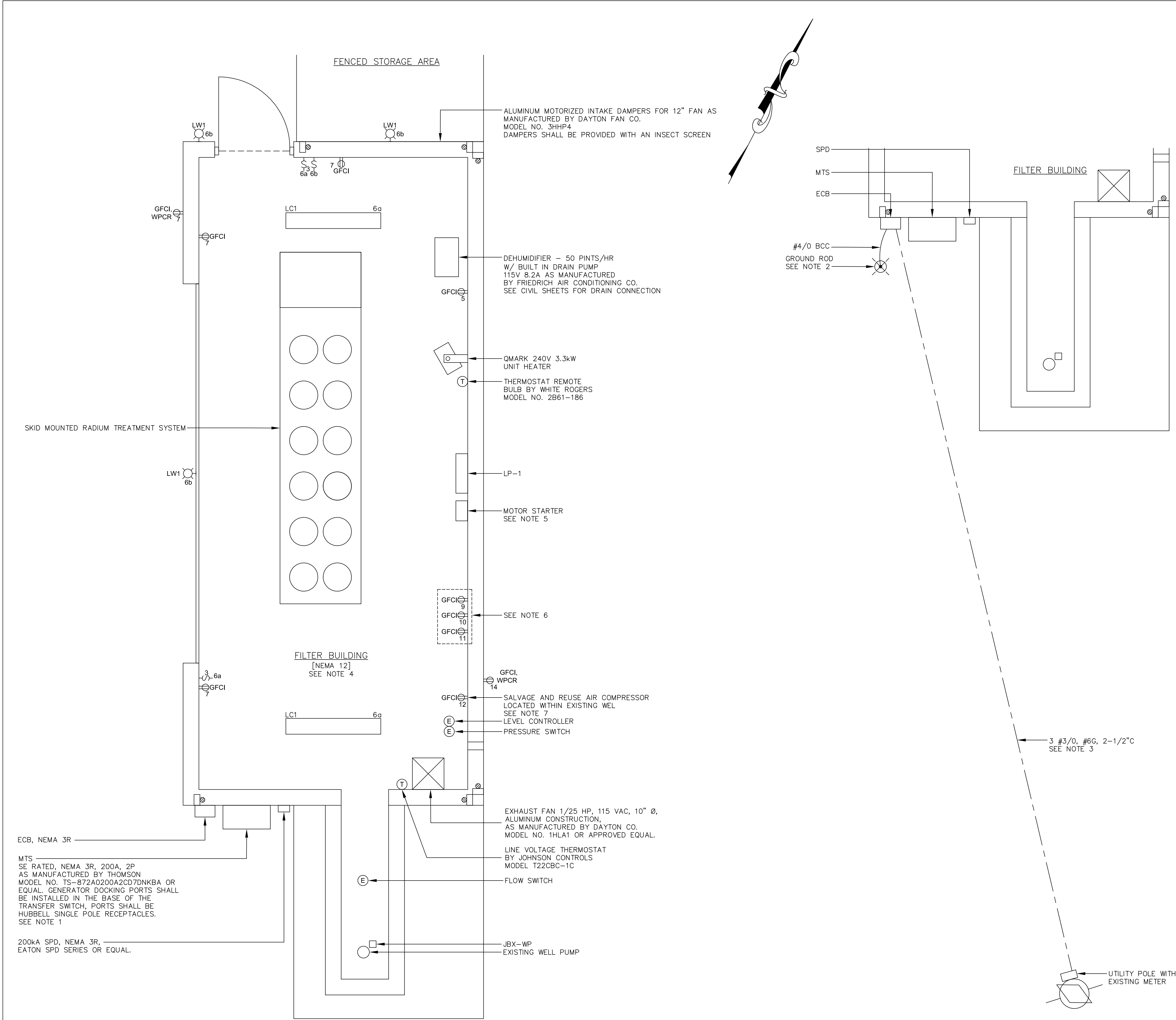
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DRAWN BY	TK		
APPROVED BY	SB		
CHECKED BY	BW		
DATE	JULY 28, 2021		

TITLE

ELECTRICAL
LEGEND,
ABBREVIATIONS &
GENERAL NOTES

PROJECT NO. 50140313

E0.01



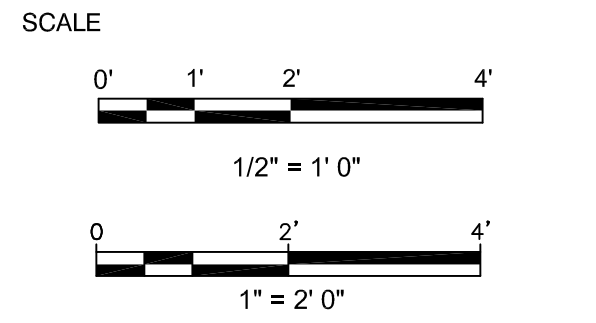
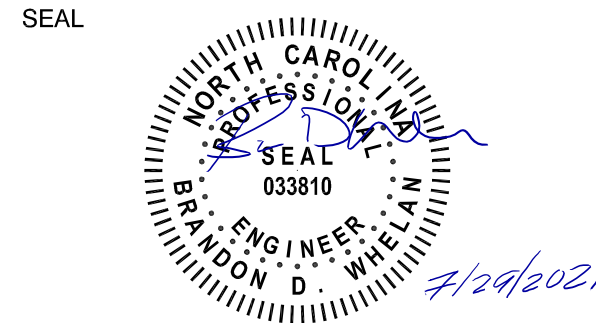
NOTES:

1. PROVIDE MTS WITH SURGE PROTECTOR, CUTLER HAMMER CHS-A01 OR EQUAL.
2. CONNECT TO EXISTING GROUNDING RING. SEE 1/E3.01-DETAILS.
3. ALL UNDERGROUND RACEWAY SHALL BE SCHEDULE 40 PVC.
4. ALL INTERIOR CONDUIT SHALL BE PVC.
5. PROVIDE SHP MAGNETIC MOTOR STARTER FOR WELL PUMP. MOTOR STARTER SHALL HAVE THE FOLLOWING INTEGRAL FEATURES:
 - 5.1. MANUFACTURE: ALLEN-BRADLEY, SERIES 509
 - 5.2. NEMA 3R ENCLOSURE
 - 5.3. 120VAC COIL
 - 5.4. THERMAL OVERLOADS: J-SERIES
 - 5.5. HAND/OFF/AUTO SWITCH, WITH RUNNING INDICATION LIGHT
 - 5.6. TIMER SWITCH: INTERMATIC MODEL FF5M, WIRED TO CONTROL THE AUTO CIRCUIT.
 - 5.7. TWO (2) NORMALLY OPEN AUXILIARY CONTACTS
 - 5.8. ELAPSED TIME METER: VENDER-ROOT 7795
 - 5.9. IMPULSE COUNTER: DURANT 6-Y-41345
6. RECEPTACLES DEDICATED TO CHEMICAL PUMPS.
7. RECEPTACLE DEDICATED TO AIR COMPRESSOR.



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RADIUM REMOVAL
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CARY, NC 27511

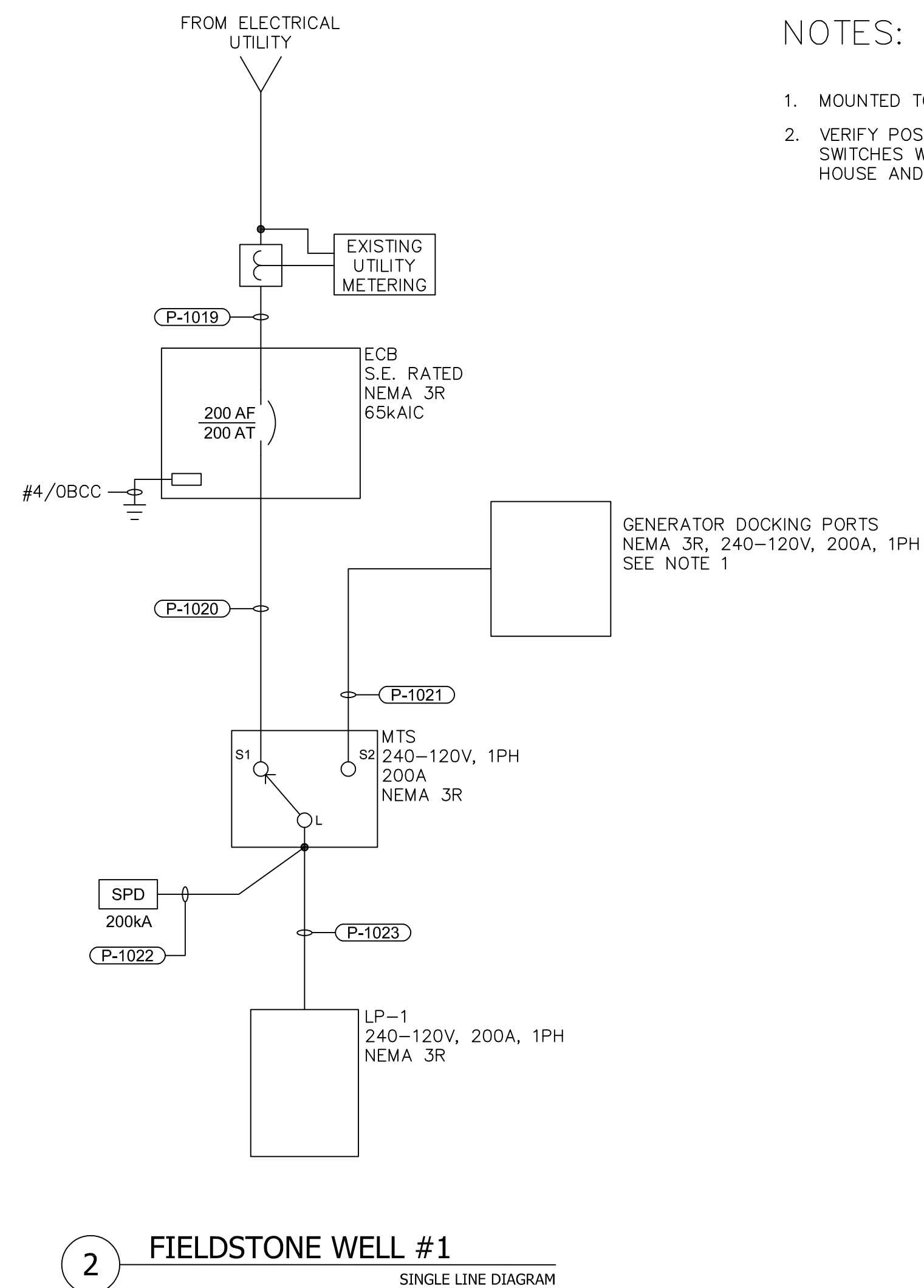
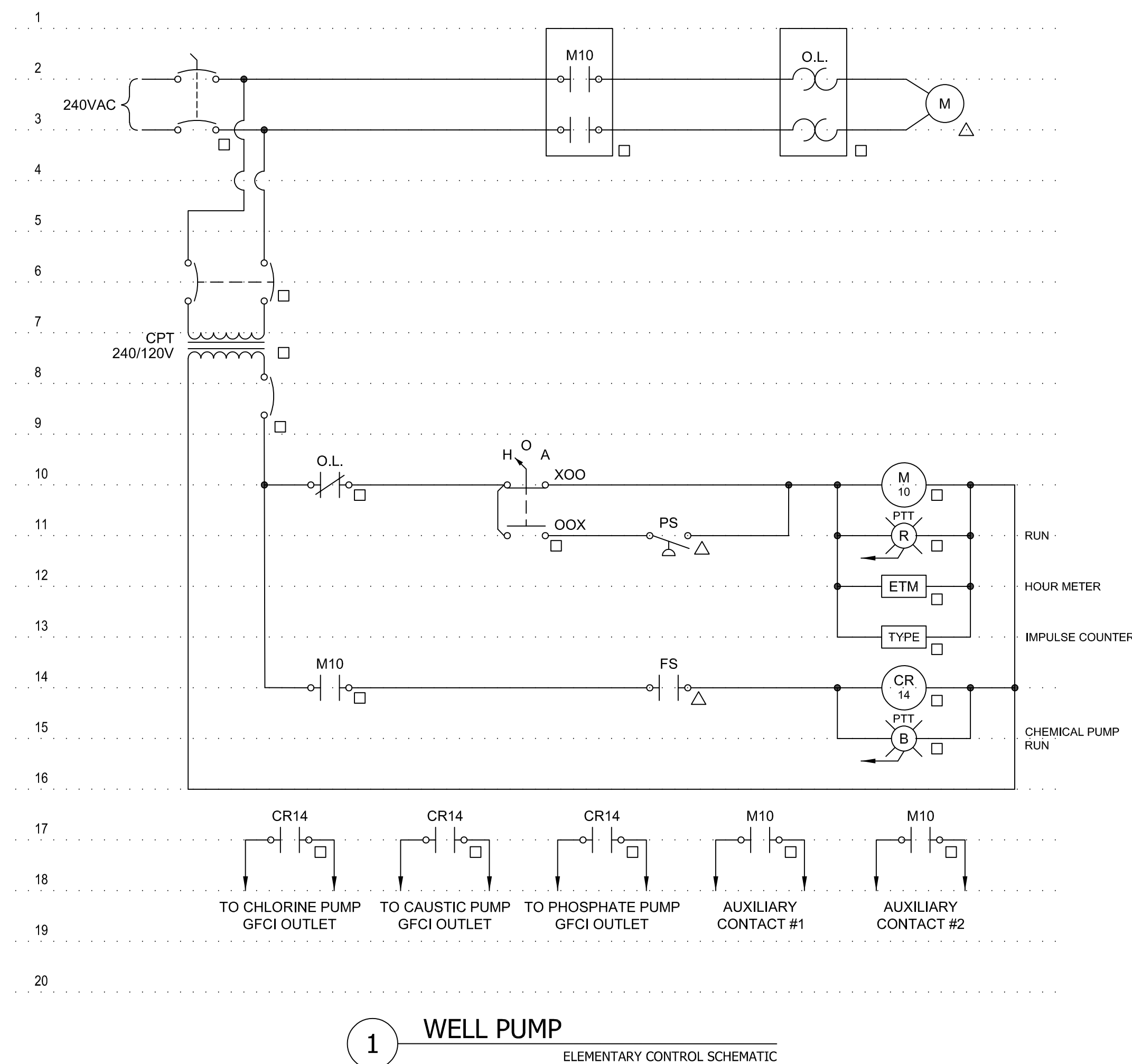


No.	DATE	BY	Description
REVISIONS			
		TK	
		SB	
		BW	
	JULY 28, 2021		

TITLE
ELECTRICAL
PLANS

PROJECT NO. 50140313

E1.01



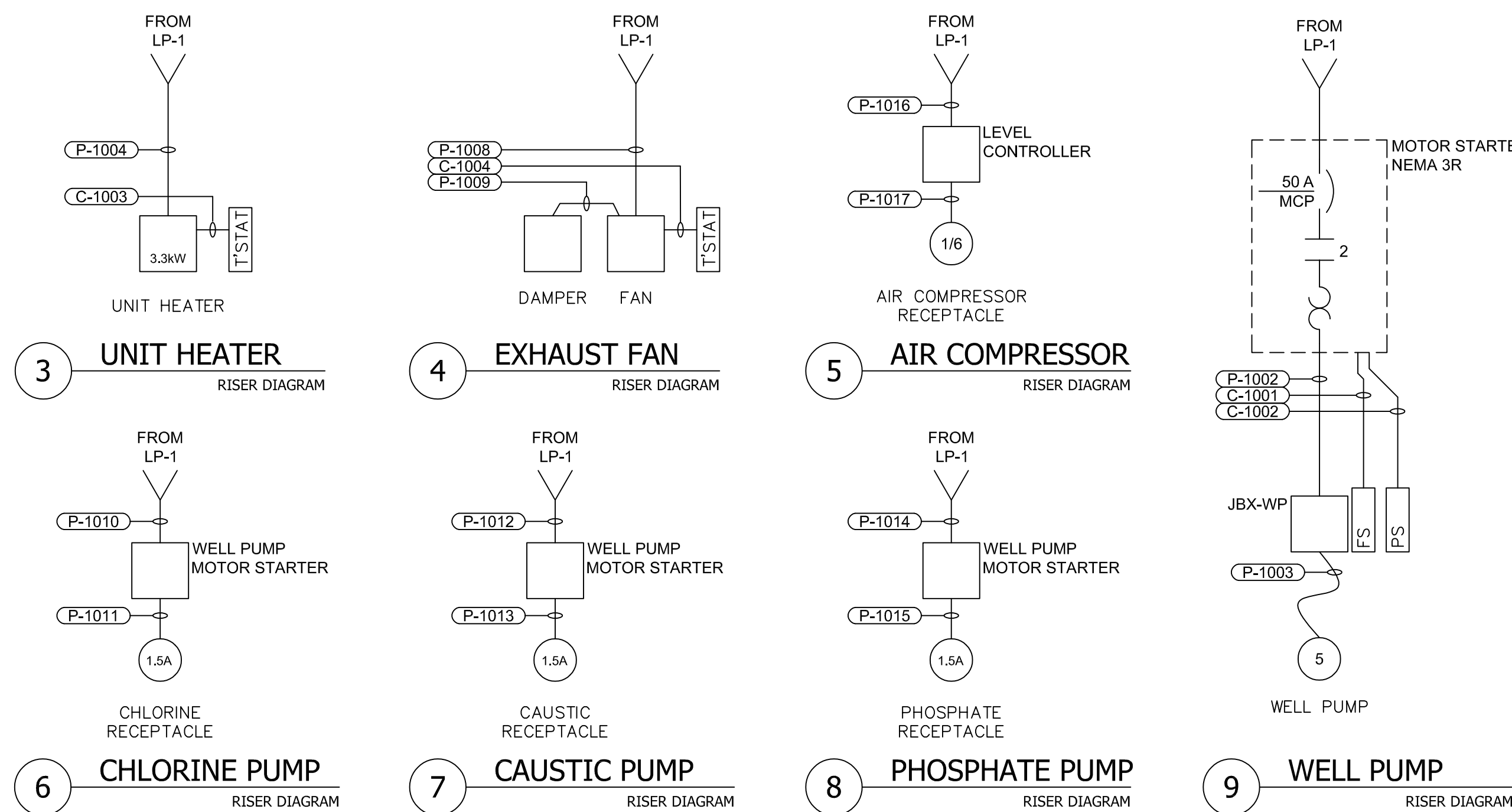
NOTES:

1. MOUNTED TO BASE OF MTS.
2. VERIFY POSITIONING AND WIRING OF EXISTING PROCESS SWITCHES WHEN THEY ARE UNWIRED FROM EXISTING WELL HOUSE AND TIED INTO NEW PIPING.

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**RADIUM REMOVAL
TREATMENT SYSTEM
FIELDSTONE WELL #1
AQUA NORTH CAROLINA
202 MACKENAN DR
CARY, NC 27511**

SCALE



No.	DATE	BY	Description

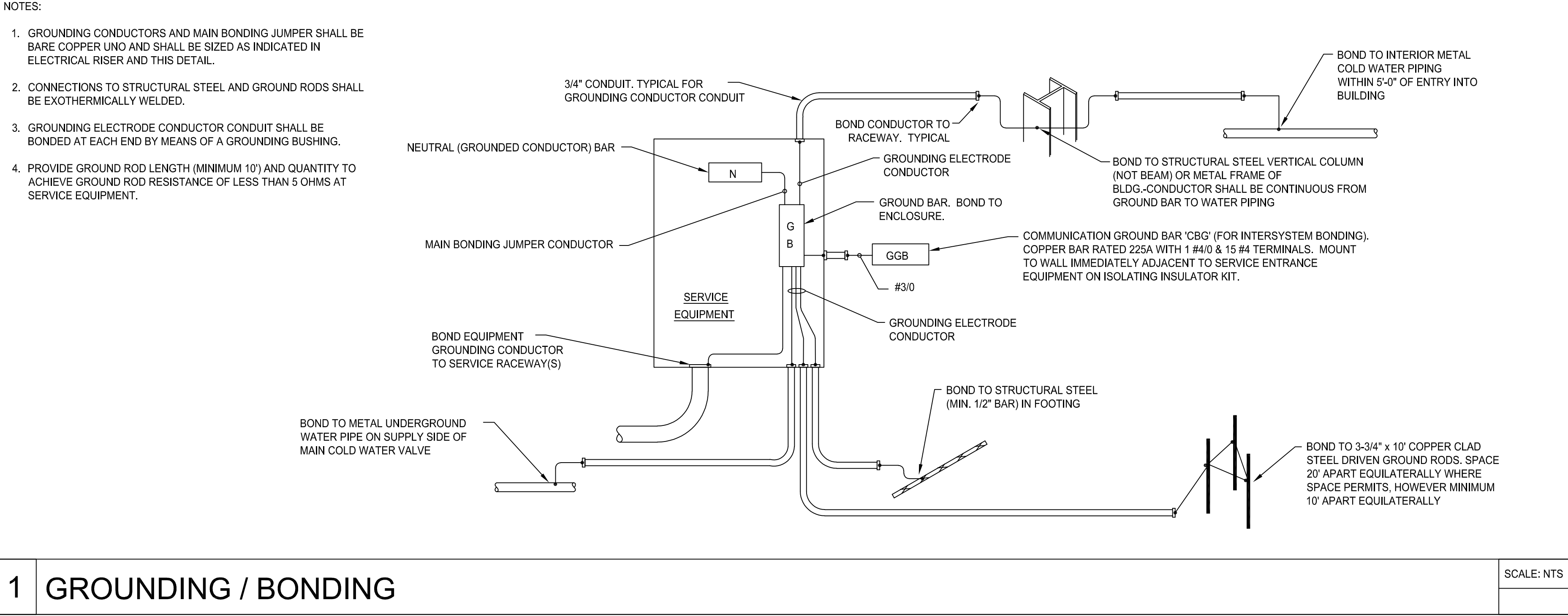
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CHECKED BY	BW
DATE	JULY 28, 2021

TITLE

ELECTRICAL
SCHEDULES
& SINGLE LINES

PROJECT NO. 50140313

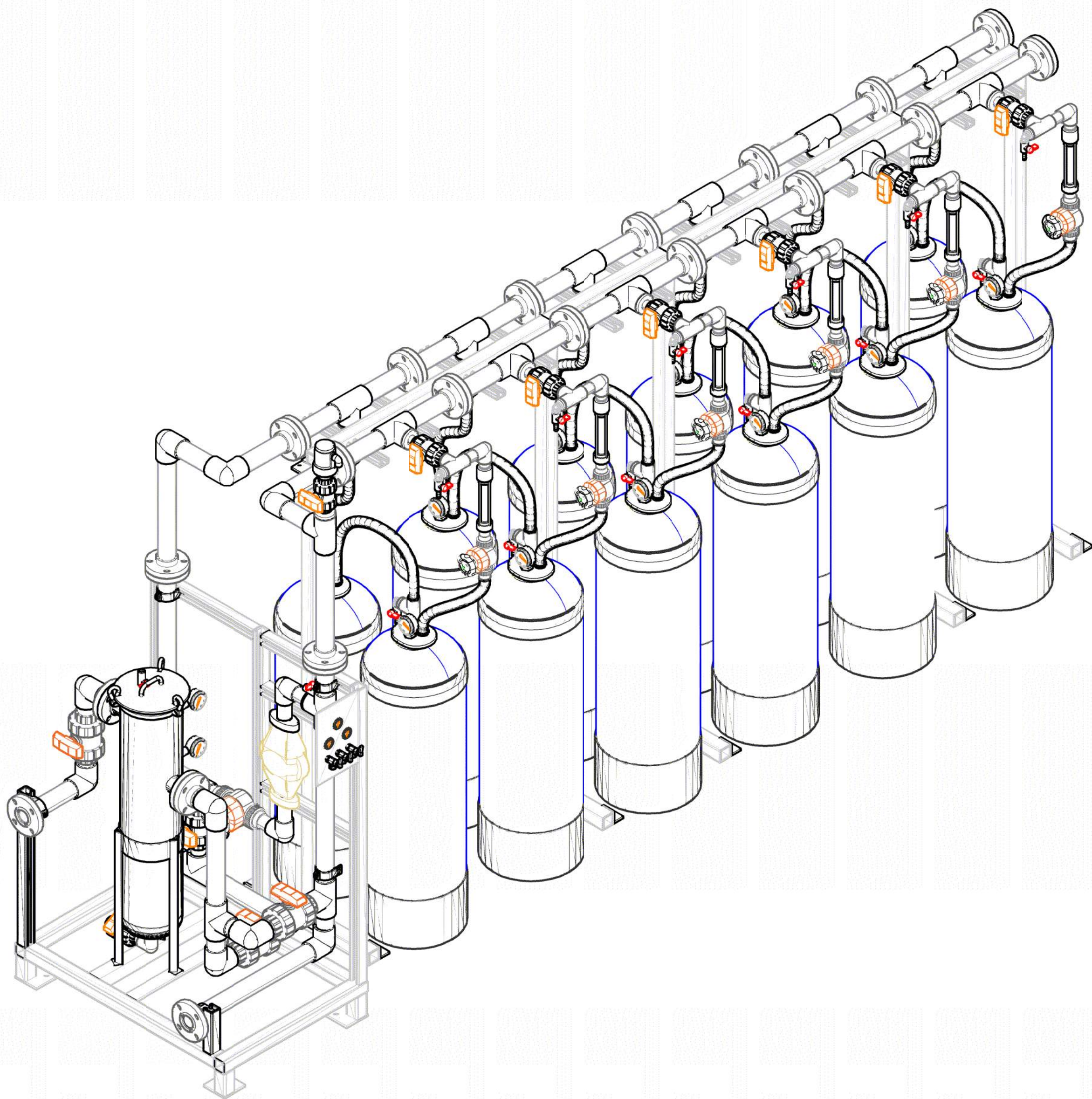
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FIELDSTONE WELL #1

AQUA NORTH CAROLINA

AEDGE TREATMENT SYSTEM



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CONTRACTOR/CONTRATISTA		SHEET INDEX			REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:	DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
-----		DRAWING NO.	TITLE	SHEET NO.						TJ	JB	BM	FWNC-0521	5/14/21	NTS
										MODEL:			CUSTOMER:		
										AEDGE TREATMENT SYSTEM			FIELDSTONE WELL #1		
										MOD88-IX-1447EX-12-MVH-LL			AQUA NORTH CAROLINA		
										TITLE:			FOR APPROVAL		
										COVER					

D

C

B

A

- MAIN PROCESS LINE
— SECONDARY PROCESS LINE
- - - PIPING BY OTHER
+ + + HYDRAULIC SIGNAL
- · - · - DISCRETE CONTROL SIGNAL
- - - PNEUMATIC SIGNAL
- - - POWER SUPPLY SIGNAL
— INSTRUMENT SUPPLY/CONNECTION TO PROCESS

TYPICAL SYMBOLS

- AIR RELEASE VALVE
 BALL VALVE (MANUAL / NORMALLY OPEN)
 BALL VALVE (MANUAL / NORMALLY CLOSED)
 BALL VALVE (ELECTRIC ACTUATED)
 BUTTERFLY VALVE (MANUAL)
 BUTTERFLY VALVE (ELECTRIC ACTIVATED)
 BUTTERFLY VALVE (PNEUMATIC ACTIVATED)
 CHECK VALVE
 CIRCUIT BALANCING VALVE (MANUAL)
 CROSSOVER VALVE
 DIAPHRAGM VALVE (MANUAL)
 GATE VALVE
 GLOBE VALVE
 NEEDLE OR TOGGLE VALVE (NORMALLY CLOSED)
 PILOT OPERATED DIAPHRAGM VALVE
 PRESSURE REDUCING VALVE
 PRESSURE RELIEF VALVE
 SOLENOID CONTROL VALVE
 THREE-WAY VALVE (MANUAL)
 VACUUM RELIEF VALVE
 V-PORT BALL VALVE
 FLOAT LEVEL INDICATOR
 MAGNETIC FLOW METER
 TURBINE/IMPELLER FLOW METER
 VARIABLE AREA FLOW INDICATOR
 CORPORATION STOP
 STATIC MIXER
 PIPE REDUCER
 UNION
 DRAIN
 FLEXIBLE TUBING/HOSE
 ORIFICE PLATE

- CFP DIAPHRAGM CHEMICAL PUMP
 PCP PERISTALTIC CHEMICAL PUMP
 VES MEDIA FILTER CS
 BLO BLOWER
 P CENTRIFUGAL PUMP
 FBT FLAT BOTTOM
 CBT CONE BOTTOM W/STAND
 WPP WELL PUMP
 FLT BAG FILTER OR CARTRIDGE FILTER
 CTK CHEMICAL TANK
 CO2 CYLINDER
 VES PRESSURE VESSEL
 VES MEDIA FILTER CO

TYPICAL NOMENCLATURE	
TAG	DESCRIPTION
ARV	AIR RELEASE VALVE
AS	AIR STRIPPER
AE	ANALYTICAL SENSOR
AIT	ANALYTICAL TRANSMITTER
BFV	BUTTERFLY VALVE
BHF	BULKHEAD FITTING
BLO	BLOWER
BLV	BALL VALVE
CBV	CIRCUIT BALANCING VALVE
TK	CONE BOTTOM TANK
CCL	CO/2 CYLINDER
CFP	CHEMICAL FEED PUMP
CKV	CHECK VALVE
CT	CONTACTOR
CST	CORPORATION STOP
TK	CHEMICAL STORAGE TANK
DBL	DEBUBBLER
DMV	DIAPHRAGM VALVE
TK	CHEMICAL DAY TANK
EDC	EDUCATOR/EJECTOR (CHEMICAL DRAW)
TK	FLAT BOTTOM TANK
FCP	FILTER CONTROL PANEL
FCV	FLOW CONTROL VALVE
FG	SIGHT GLASS (PVC/STAINLESS)
FKV	FLECK VALVE
FE	FLOW ELEMENT
FI	FLOW INSTRUMENT
FIT	FLOW TRANSMITTER
FLT	BAG OR CARTRIDGE FILTER HOUSING
FM	FLOW METER
FQT	FLOW TOTALIZING TRANSMITTER
GAV	GATE VALVE
GLV	GLOBE VALVE
HET	HEATING ELEMENT
INJ	INJECTION ASSEMBLY
JP	JUNCTION PANEL
LCP	LOCAL CONTROL PANEL
LG	LEVEL VIEWING GAUGE
LIT	LEVEL INDICATION TRANSMITTER
LSH	LEVEL SWITCH HIGH
LSHH	LEVEL SWITCH HIGH HIGH
LSL	LEVEL SWITCH LOW
LSLL	LEVEL SWITCH LOW LOL
LT	LEVEL TRANSMITTER
MCP	MASTER CONTROL PANEL
MEL	MEMBRANE ELEMENT
VES	MEDIA FILTER COMPOSITE VESSEL
VES	MEDIA FILTER CARBON STEEL VESSEL
MIX	STATIC MIXER
CP	PERISTALTIC CHEMICAL PUMP
PDIS	PRESSURE DIFFERENTIAL INDICATING SWITCH
PI	PRESSURE INDICATION (LOCAL READING)
PIT	PRESSURE INDICATING SENSOR
P	PUMP
PDV	PRESSURE REDUCING VALVE
PRV	PRESSURE RELIEF VALVE
PSV	PRESSURE SUSTAINING VALVE
PT	PRESSURE TRANSDUCER
PVL	PRESSURE VESSEL
PSL	PRESSURE SWITCH LOW
RP	RELAY PANEL
SLV	SOLENOID VALVE
SPV	SAMPLE VALVE

LOCATION / ACCESSIBILITY	DISCRETE SYMBOL	SHARED DISPLAY & CONTROL (DCS)	PROGRAM-ABLE LOGIC CONTROLLER	DISCRETE HARDWARE INTERLOCK
FIELD MOUNTED				
1)FIELD OR LOCALLY MOUNTED 2)ACCESSIBLE TO AN OPERATOR AT THE DEVICE				
PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR				
1)CENTRAL OR MAIN CONTROL ROOM 2)FRONT OF MAIN PANEL OR CONSOLE MOUNTED 3)VISIBLE ON VIDEO DISPLAY 4)ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE				
PRIMARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR				
1)CENTRAL OR MAIN CONTROL ROOM 2)REAR OF PANEL OR CABINET MOUNTED 3)NOT VISIBLE ON VIDEO DISPLAY 4)INACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE				
AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR				
1)SECONDARY OR LOCAL CONTROL ROOM 2)FIELD OR LOCAL CONTROL PANEL 3)FRONT OF SECONDARY OR LOCAL PANEL MOUNTED 4)VISIBLE ON VIDEO DISPLAY 5)ACCESSIBLE TO OPERATOR AT DEVICE OR CONSOLE				
AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR				
1)SECONDARY OR LOCAL CONTROL ROOM 2)FIELD OR LOCAL CONTROL PANEL 3)REAR OF SECONDARY/LOCAL OR CABINET PANEL MOUNTED 4)NOT VISIBLE ON VIDEO DISPLAY 5)NOT ACCESSIBLE TO OPERATOR AT DEVICE OR CONSOLE				

TYPICAL TRANSMITTER NOMENCLATURE AND TRANSMITTER LOCATION ARE AS FOLLOWS:

IF THE TRANSMITTER IS CONTROL PANEL MOUNTED THE PANEL TAG NUMBER WILL BE PROVIDED (E.G. MCP-291); IF THE TRANSMITTER IS LOCALLY MOUNTED ON THE SENSOR, THE DESIGNATION "LOCAL" WILL BE PROVIDED. IF THE TRANSMITTER IS MOUNTED ON A LOW FLOW PANEL THEN THE TAG WILL BE PROVIDED (E.G. LFP-375).

TYPICAL PANEL I/O NOMENCLATURE

- AI ANALOG INPUT (E.G. mA OR mV)
AO ANALOG OUTPUT (E.G. mA OR mV)
DI DIGITAL INPUT (E.G. NS OR HSI)
NS NORMAL SPEED; SINGLE CONTACT CLOSURE
HSI HIGH SPEED INPUT; MULTIPLE CONTACT CLOSURES
DO DIGITAL OUTPUT
1) RELAY FOR VALVE OR PUMP ON/OFF CONTROL
2) PULSE FOR DOSING PUMP AND FLOW CONTROL
SI DATA OR SCADA INPUT (E.G. MODBUS OR EIP)
SO DATA OR SCADA OUTPUT (E.G. MODBUS OR EIP)

- PANEL WHERE THE DEVICE INPUT IS RECEIVED
TYPE OF I/O
 TRANSMITTER LOCATION
TYPE OF TRANSMITTER

D

C

B

A

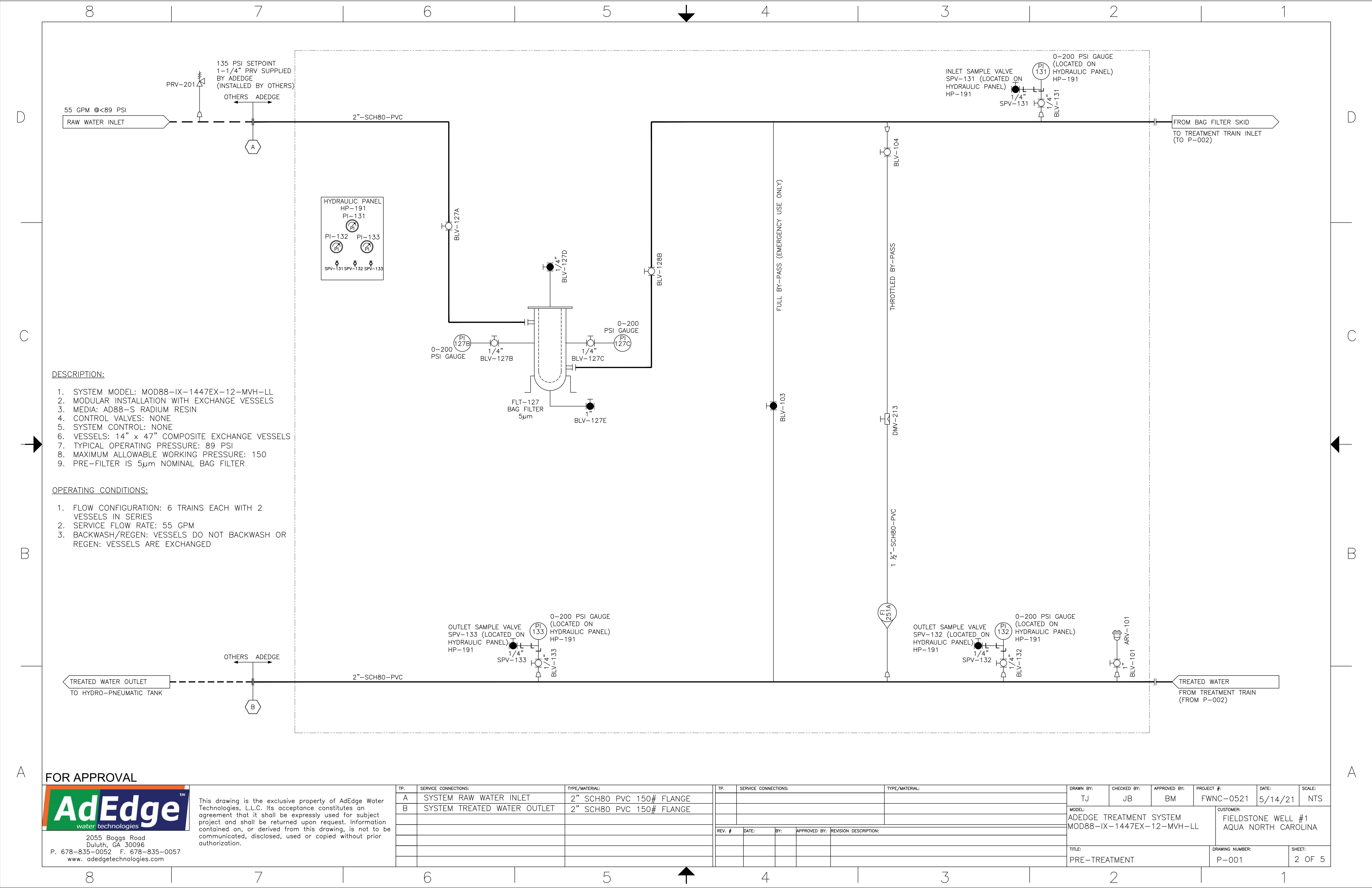
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TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:	TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:	DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:	
A	—	—				TJ	JB	BM	FWNC-0521	5/14/21	NTS	
B	—	—				MODEL: ADEEDGE TREATMENT SYSTEM MOD88-IX-1447EX-12-MVH-LL				CUSTOMER: FIELDSTONE WELL #1 AQUA NORTH CAROLINA		
C	—	—										
D	—	—	REV. #			DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:			
E	—	—										
F	—	—				TITLE: GENERAL NOTES				DRAWING NUMBER: G-001		SHEET: 1 OF 5
G	—	—										



DESCRIPTION:

1. SYSTEM MODEL: MOD88-IX-1447EX-12-MVH-LL
2. MODULAR INSTALLATION WITH EXCHANGE VESSELS
3. MEDIA: AD88-S RADIUM RESIN
4. CONTROL VALVES: NONE
5. SYSTEM CONTROL: NONE
6. VESSELS: 14" x 47" COMPOSITE EXCHANGE VESSELS
7. TYPICAL OPERATING PRESSURE: 89 PSI
8. MAXIMUM ALLOWABLE WORKING PRESSURE: 150
9. PRE-FILTER IS 5µm NOMINAL BAG FILTER

OPERATING CONDITIONS:

1. FLOW CONFIGURATION: 6 TRAINS EACH WITH 2 VESSELS IN SERIES
2. SERVICE FLOW RATE: 55 GPM
3. BACKWASH/REGEN: VESSELS DO NOT BACKWASH OR REGEN: VESSELS ARE EXCHANGED

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P. 678-835-0052 F. 678-835-0057
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This drawing is the exclusive property of AdEdge Water Technologies, L.L.C. Its acceptance constitutes an agreement that it shall be expressly used for subject project and shall be returned upon request. Information contained on, or derived from this drawing, is not to be communicated, disclosed, used or copied without prior authorization.

TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:
A	SYSTEM RAW WATER INLET	2" SCH80 PVC 150# FLANGE
B	SYSTEM TREATED WATER OUTLET	2" SCH80 PVC 150# FLANGE

TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:
REV. #	DATE:	BY:

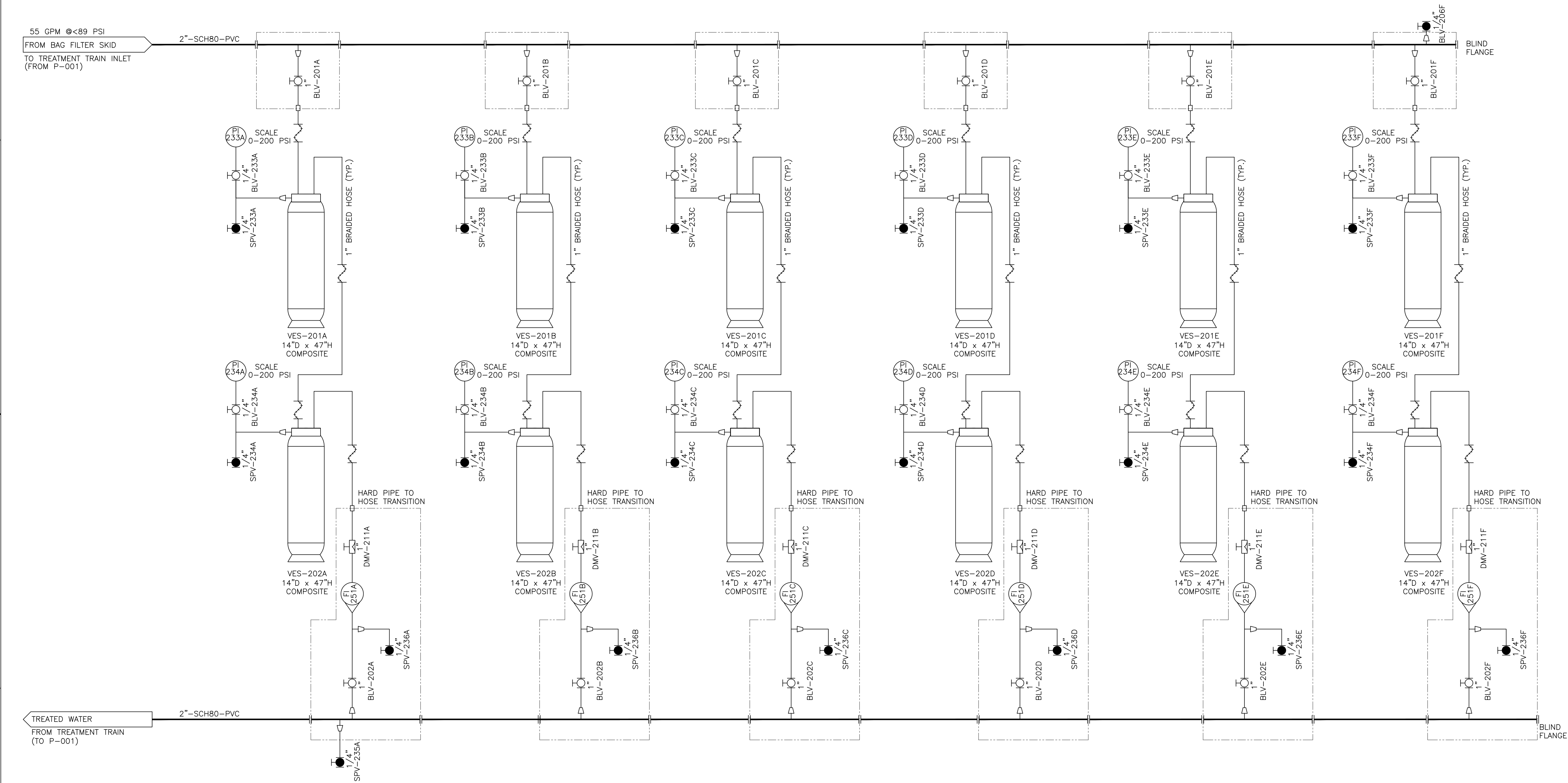
DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	JB	BM	FWNC-0521	5/14/21	NTS
MODEL:			CUSTOMER:		
ADEGE TREATMENT SYSTEM			FIELDSTONE WELL #1		
MOD88-IX-1447EX-12-MVH-LL			AQUA NORTH CAROLINA		
TITLE:			DRAWING NUMBER:	SHEET:	
PRE-TREATMENT			P-001	2 OF 5	

D

C

B

A



D

C

B

A

FOR APPROVAL



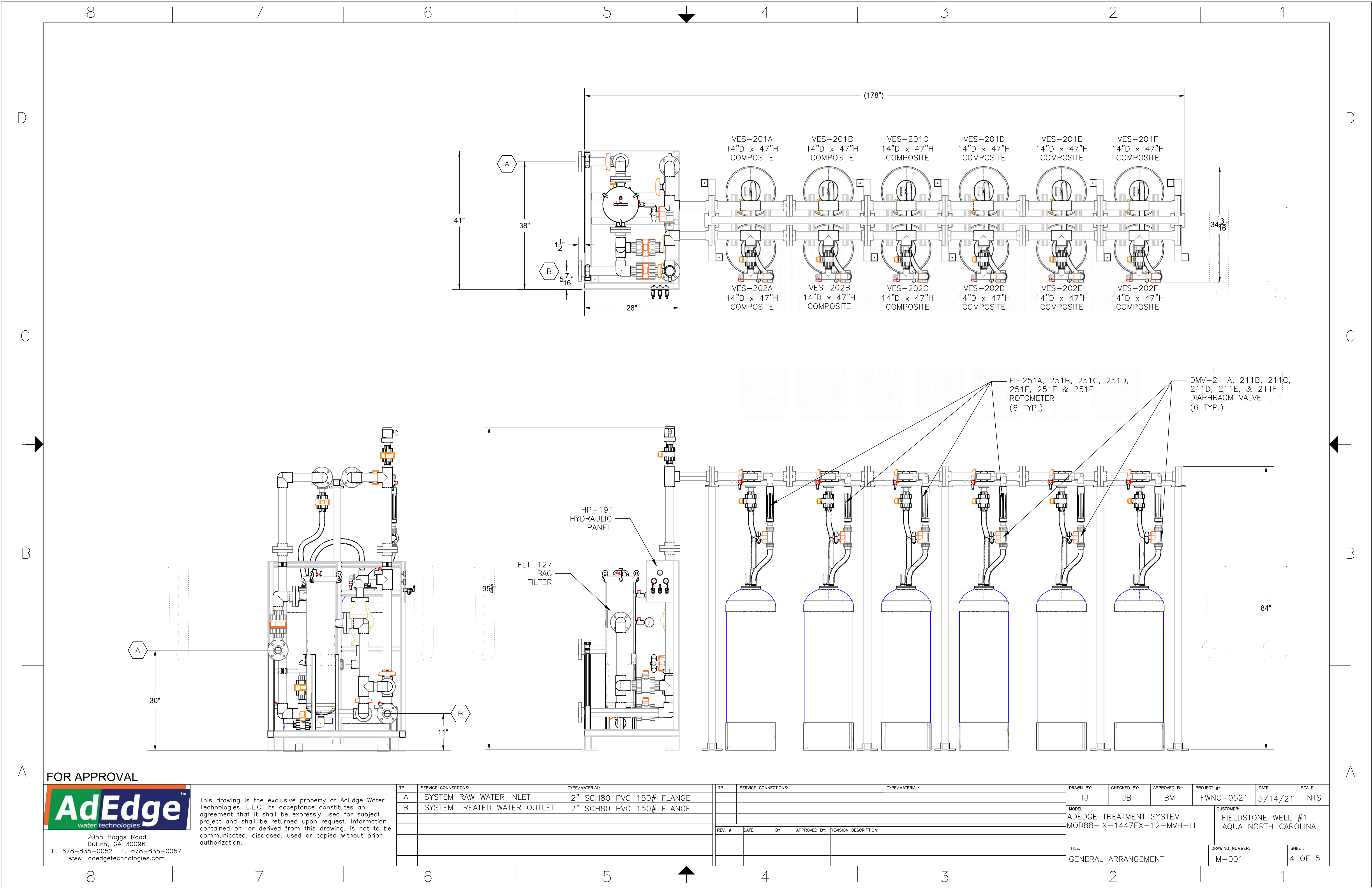
2055 Boggs Road
Duluth, GA 30096
P. 678-835-0052 F. 678-835-0057
www. adedgetechnologies.com

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TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:		
REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:

DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	JB	BM	FWNC-0521	5/14/21	NTS
MODEL:			CUSTOMER:		
ADEEDGE TREATMENT SYSTEM			FIELDSTONE WELL #1		
MOD88-IX-1447EX-12-MVH-LL			AQUA NORTH CAROLINA		
TITLE:			DRAWING NUMBER:	SHEET:	
TREATMENT SYSTEM			P-002	3 OF 5	



FOR APPROVAL



2055 Boggs Road
Duluth, GA 30096
P. 678-835-0052 F. 678-835-0057
www.adedgetechnologies.com

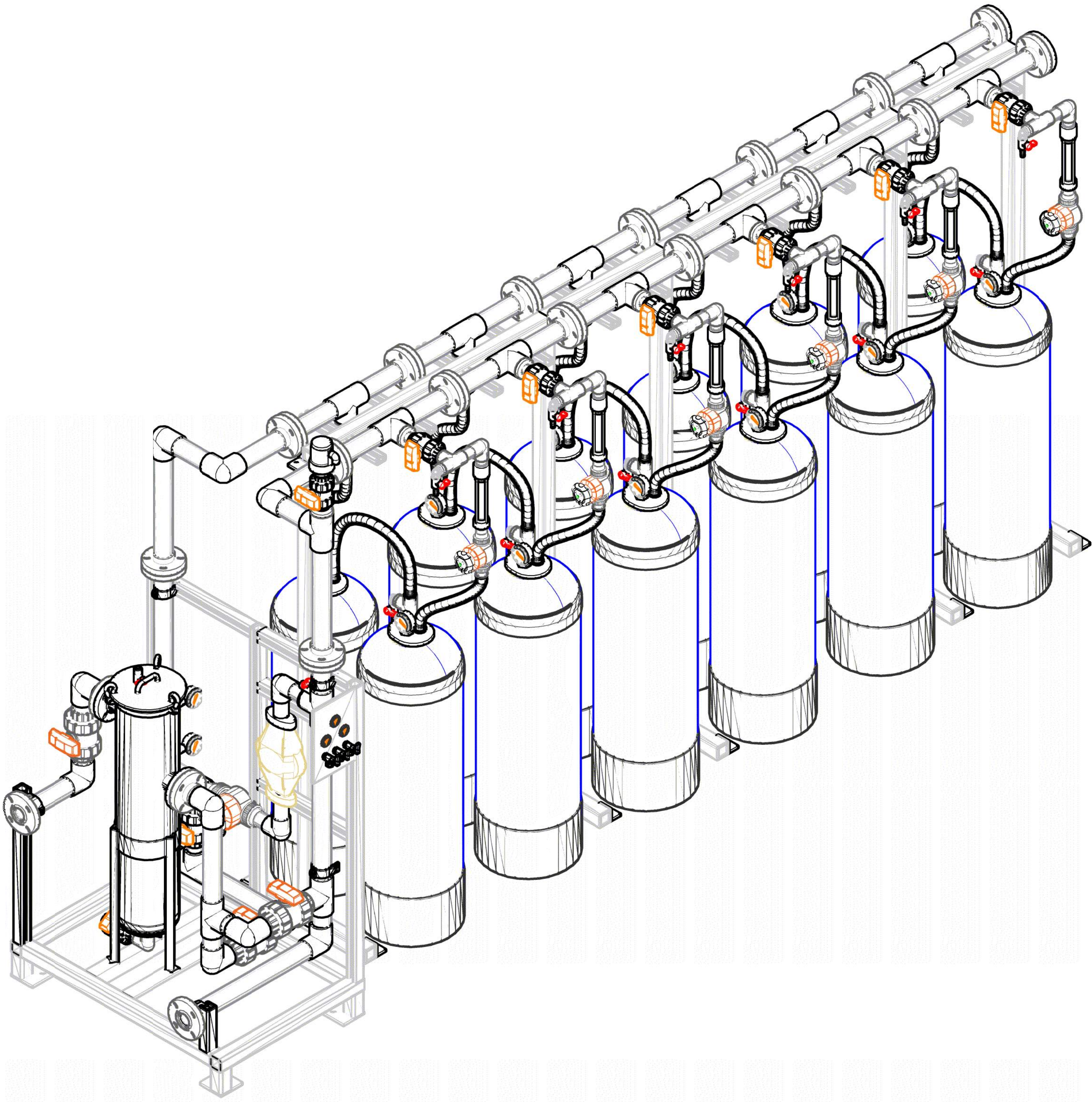
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REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:

DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	JB	BM	FWNC-0521	5/14/21	NTS
MODEL:			CUSTOMER:		
ADEGE TREATMENT SYSTEM MOD88-IX-1447EX-12-MVH-LL			FIELDSTONE WELL #1 AQUA NORTH CAROLINA		
TITLE:			DRAWING NUMBER:	SHEET:	
GENERAL ARRANGEMENT			M-001	4 OF 5	



FOR APPROVAL



2055 Boggs Road
Duluth, GA 30096
P. 678-835-0052 F. 678-835-0057
www.adedgetechnologies.com

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REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:

DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	JB	BM	FWNC-0521	5/14/21	NTS
MODEL:			CUSTOMER:		
ADEGE TREATMENT SYSTEM MOD88-IX-1447EX-12-MVH-LL			FIELDSTONE WELL #1 AQUA NORTH CAROLINA		
TITLE:			DRAWING NUMBER:	SHEET:	
ISO GENERAL ARRANGEMENT			M-002	5 OF 5	

PROPERTY OWNER
 5559-76-1541
 Aqua North Carolina Inc
 202 Mackenan Dr
 Cary, NC 27511

5559-66-8878 Cold Springs Methodist Church 2550 Cold Springs Rd Concord, NC 28025	5559-76-2597 Robert & Bethany Ledwell 56 Sumner Ave, NW Concord, NC 28027	5559-76-2388 Martha Fisher 7387 Hoffner Dr Harrisburg, NC 28075
5559-76-1261 Brenda Long 5339 Historic Springs Dr Concord, NC 28025	5559-76-0330 William & Cheryl Cannon 5313 Historic Springs Dr Concord, NC 28025	5559-66-9319 Jeremy & Christy Baggarly 5307 Historic Springs Dr Concord, NC 28025
5559-66-7467 James & Deborah Mullis 5301 Historic Springs Dr Concord, NC 28025		



Cabarrus County Government – Planning and Development Department

November 22, 2021

Dear Property Owner:

A Conditional Use Permit Application has been filed in our office for your property. The specifics of the request are listed below. The Cabarrus County Board of Adjustment will consider this petition on Tuesday December 14, 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 this request, I encourage you to attend this meeting.

Petitioner	Aqua North Carolina Inc
Petition Number	CUSE2021-00007
Property Location	5309 Historic Spring Drive
Parcel ID Number	5559-76-1541
Existing Zoning	Countryside Residential (CR)
Conditional Use Request	Public Service Facility

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 black ink that reads "Phillip Collins".

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



Cabarrus County Government – Planning and Development Department

November 22, 2021

Dear Property Owner:

A Conditional Use Permit Application has been filed in our office for property **adjacent** to yours. The specifics of the request are listed below. The Cabarrus County Board of Adjustment will consider this petition on Tuesday December 14, 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 this request, I encourage you to attend this meeting.

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Petition Number	CUSE2021-00007
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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

Nov 17, 2021 at 2:30:27 PM
2701–2799 Byfield Dr
Cabarrus County



FILED	Aug 11, 2020
AT	11:20:00 AM
BOOK	14402
START PAGE	0319
END PAGE	0321
INSTRUMENT #	26164
EXCISE TAX	\$80.00

Excise Tax \$80.00

Tax Parcel: 5559-76-2388

Prepared by: Samuel F. Davis, Jr., Hartsell & Williams, P.A.
PO Box 368, Concord, NC 28026-0368

NO TITLE OPINION REQUESTED
OR RENDERED

Return to: Howard S. Irvin, Esq., Concord, NC

Brief description for the index: Lot 44, Sec. 4, Cold Springs Subdivision

SPECIAL WARRANTY DEED

THIS SPECIAL WARRANTY DEED made this 10th day of August 2020, by and between

GRANTOR	GRANTEE
Samuel F. Davis, Jr. and wife, Alice F. Davis 446 Winfield Blvd SE, Concord, NC 28025	Martha Kay Blackwelder Fisher 7387 Hoffner Drive, Harrisburg, NC 28075
Enter each party's, name, address, and the character of any entity, e.g. LLC, Inc., etc.	

The designations Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter, as required by context.

WITNESSETH, that: - The Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in No. 9 Township, Cabarrus County, North Carolina and more particularly described as follows:

Lot 44 in Section 4 of Cold Springs Subdivision as shown upon the map of the Revision of Cold Springs Subdivision recorded in Map Book 20, page 11 in the Office of the Register of Deeds for Cabarrus County, North Carolina.

For back reference, see instrument recorded in Book 11230, page 274.

This conveyance is made and accepted SUBJECT TO the following:

1. The Protective Covenants and Restrictions for the Subdivision of "Cold Springs" as recorded in Deed Book 562, page 404 and amended by instrument recorded in Deed Book 571, page 387 in the Office of the Register of Deeds for Cabarrus County, North Carolina, and Grantor reserves the easements and right to grant rights-of-way for utility purposes, as set forth in paragraphs 10(a), 10(b) and 10(c) of said Protective Covenants and Restrictions.
2. The 30' Wide Access Easement along the dividing line with Lot 29, as shown upon the map recorded in Map Book 20, page 11.
3. The sanitary sewer right-of-way across the rear of Lot 44 as shown on the map recorded in Map Book 35, page 9 in the Office of the Register of Deeds for Cabarrus County, North Carolina.

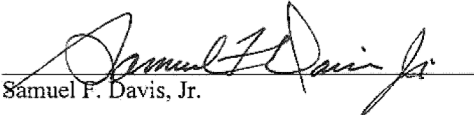
Alice F. Davis is signing this deed for the sole purpose of releasing any marital interest that she may have in said property.

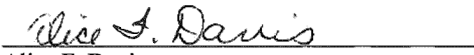
TO HAVE AND TO HOLD the aforesaid tract or parcel of land and all privileges and appurtenances thereunto belonging to the Grantee in fee simple.

Grantor does hereby covenant that Grantor has not placed or suffered to be placed any presently existing lien or encumbrance on the premises and that Grantor will warrant and defend the title to the same against the lawful claims of all persons claiming by, through, under, or on account of the Grantor, but no further. The title to the property hereinabove described is subject to the following exceptions:

1. Cabarrus County property taxes for 2020, which are not yet due or ascertainable.
2. The Protective Covenants and Restrictions for the Subdivision of "Cold Springs", the 30' Wide Access Easement, and the Sanitary Sewer Right of Way, referenced above.
3. All enforceable rights of way, easements, and restrictions without reimposing the same.

IN TESTIMONY WHEREOF, the said Grantor has executed this Special Warranty Deed, as of the day and year first above written.


 Samuel F. Davis, Jr.


 Alice F. Davis

NORTH CAROLINA, Cabarrus COUNTY

I, Sherri C. Williams, a Notary Public for said County and State, do hereby certify that the following person personally appeared before me this day and acknowledged the due execution of the foregoing instrument in the capacity stated: Samuel F. Davis, Jr.

WITNESS my hand and official seal, this the 10th day of August 2020.



Sherri C. Williams
Notary Public

My Commission Expires:

11-19-20

NORTH CAROLINA, Cabarrus COUNTY

I, Sherri C. Williams, a Notary Public for said County and State, do hereby certify that the following person personally appeared before me this day and acknowledged the due execution of the foregoing instrument in the capacity stated: Alice F. Davis, wife of Samuel F. Davis, Jr.

WITNESS my hand and official seal, this the 10 day of August 2020.



Sherri C. Williams
Notary Public

My Commission Expires:

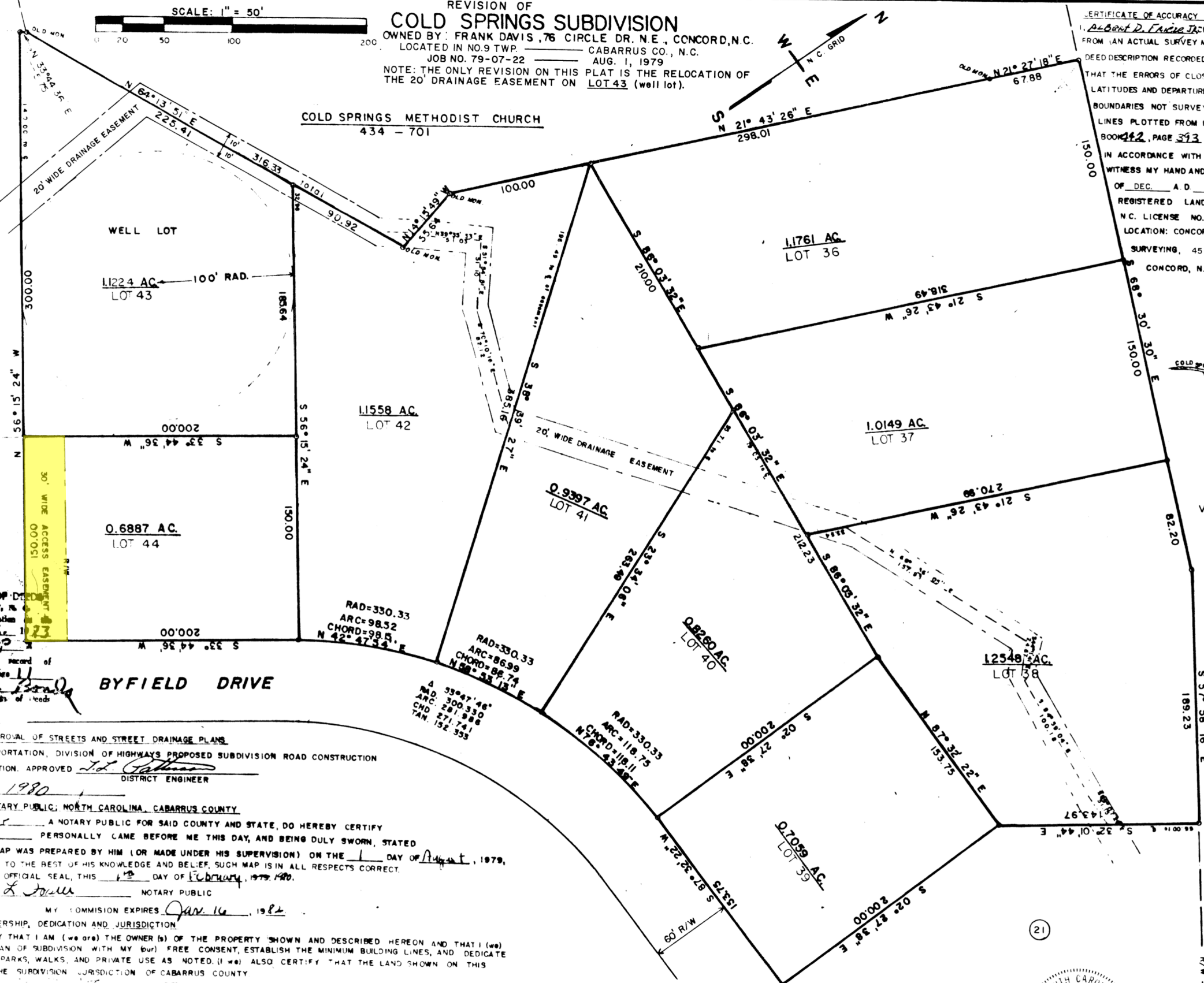
11-19-20

SCALE: 1" = 50'

REVISION OF
COLD SPRINGS SUBDIVISION
OWNED BY: FRANK DAVIS, 76 CIRCLE DR. N.E., CONCORD, N.C.
LOCATED IN NO. 9 TWP. CABARRUS CO., N.C.
JOB NO. 79-07-22 AUG. 1, 1979
NOTE: THE ONLY REVISION ON THIS PLAT IS THE RELOCATION OF
THE 20' DRAINAGE EASEMENT ON LOT 43 (well lot).

CERTIFICATE OF ACCURACY OF MAPPING
I, Albert D. Frieze Jr. CERTIFY THAT THIS MAP WAS DRAWN
FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION
DEED DESCRIPTION RECORDED IN BOOK 442, PAGE 373
THAT THE ERRORS OF CLOSURE AS CALCULATED BY
LATITUDES AND DEPARTURES IS 1:10,000+; THAT THE
BOUNDARIES NOT SURVEYED ARE SHOWN AS BROKEN
LINES PLOTTED FROM INFORMATION FOUND IN
BOOK 442, PAGE 373; THAT THIS MAP WAS PREPARED
IN ACCORDANCE WITH G.S. 47-30 AS AMENDED
WITNESS MY HAND AND SEAL THIS 1st DAY
OF DEC. A.D. 1983
REGISTERED LAND SURVEYOR Albert D. Frieze Jr.
N.C. LICENSE NO. L2837
LOCATION: CONCORD ENGINEERING AND
SURVEYING, 45 SPRING ST. N.W.
CONCORD, N.C. 28025

Certificate of Approval by the Board of County Commissioners
The Cabarrus County Board of County Commissioners approves
this final plat, provided that this plat is recorded with
the Register of Deeds within ninety (90) days of approval.
Chairman, Board of County
Commissioners
Date



OFFICE REGISTER OF DEEDS
CABARRUS COUNTY, N.C.
Filed for Registration
1st day of DEC. 1983
at 3:40 o'clock P.M.
and registered in record of
Map No. 20 Page 11
James A. Bondy
Register of Deeds

CERTIFICATE OF APPROVAL OF STREETS AND STREET DRAINAGE PLANS
DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS PROPOSED SUBDIVISION ROAD CONSTRUCTION
STANDARDS CERTIFICATION, APPROVED John T. Galtman
DISTRICT ENGINEER
DATE Jan. 30, 1980

CERTIFICATE OF NOTARY PUBLIC, NORTH CAROLINA, CABARRUS COUNTY
I, Ann L. Jones A NOTARY PUBLIC FOR SAID COUNTY AND STATE, DO HEREBY CERTIFY
K. Grayson PERSONALLY CAME BEFORE ME THIS DAY, AND BEING DULY SWORN, STATED
THAT THE ANNEXED MAP WAS PREPARED BY HIM (OR MADE UNDER HIS SUPERVISION) ON THE 1st DAY OF August, 1979,
AND THAT ACCORDING TO THE BEST OF HIS KNOWLEDGE AND BELIEF, SUCH MAP IS IN ALL RESPECTS CORRECT.
WITNESS MY HAND AND OFFICIAL SEAL, THIS 1st DAY OF February, 1980.
Ann L. Jones NOTARY PUBLIC
MY COMMISSION EXPIRES Jan. 16, 1984

CERTIFICATE OF OWNERSHIP, DEDICATION AND JURISDICTION
I, we HEREBY CERTIFY THAT I AM (we are) THE OWNER (s) OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND THAT I (we)
HEREBY ADOPT THIS PLAN OF SUBDIVISION WITH MY (our) FREE CONSENT, ESTABLISH THE MINIMUM BUILDING LINES, AND DEDICATE
ALL STREETS, ALLEYS PARKS, WALKS, AND PRIVATE USE AS NOTED. (I we) ALSO CERTIFY THAT THE LAND SHOWN ON THIS
PLAT FALLS WITHIN THE SUBDIVISION JURISDICTION OF CABARRUS COUNTY
979

WATER/SEWER TO BE SUPPLIED BY INDIVIDUAL WELLS/SEPTIC TANKS
Certificate of Approval By The Planning Board --
Final Plat
The Cabarrus County Planning Board hereby approves/
disapproves this final plat for this subdivision.
Date _____ Chairman, Planning Board

SURVEYED BY:
CONCORD ENGINEERING/SURVEYING
45 SPRING ST. N.W.
CONCORD, N.C. 28025
DRAWN BY: P.E.H. & C.E.



DEED BK. 442 PG. 393
TOTAL SUBDIVISION ACREAGE = 43.4765
SECTION 4



MEETING MINUTES

DATE: November 9, 2021

TIME: 5:30 p.m. – 6:00 p.m.

LOCATION: MS Teams

PURPOSE: Neighborhood Meeting to discuss Aqua Fieldstone Well #1 Project

In Attendance

NAME	✓	ORGANIZATION	PHONE	EMAIL
Brian LaFranchi	✓	Dewberry	704.631.5206	blafranchi@dewberry.com
Michael Melton	✓	Aqua North Carolina	704.704.3315	MAMelton@aquaamerica.com
Cheryl Cannon	✓	5313 Historic Springs Drive	704.791.5133	ccannongirl@icloud.com
Christy Baggarly	✓	5301 Historic Springs Drive		cmbaggarly@gmail.com
Brenda Long	✓	5339 Historic Springs Drive		

Summary of Discussion

1. **Q: Ms. Baggerly - What is driving the purpose of the project? A: Mr. Melton – There are over 100 chemicals tested for. We saw elevated sets of results for radionuclides. The well is currently offline. In an abundance of caution we are getting ahead of State intervention and adding additional treatment. Going to tear down existing building and build a new building large enough to house the new filtration system.**
2. **Q: Ms. Cannon – What is the timeframe? A: Mr. Melton - We were hoping to finish by the end of the year. We have Kevin Tyndall Builders contracted to do the construction. End of first quarter, 2022 is likely, given the permitting, which is out of our hands.**
3. **Q: Ms. Long – Can you talk about what is happening with the well off of Byfield drive? A: Mr. Melton – showed a map and clarified that we were talking about well #1 off of Byfield drive. Mr. LaFranchi indicated that the confusion is probably stemming from the fact that the address for the parcel is off of Historic Springs Drive.**
4. **Ms. Cannon – I’m glad you kept us informed, we live directly across from the building and are glad that you are replacing the existing building and keeping the existing tree line.**
5. **Q: Ms. Cannon – will you keep the existing driveway gravel? A: Mr. Melton– Yes, we typically do. Concrete is expensive. As part of the project we will fix the driveway [top dress] and prevent it from washing out. Ms. Cannon – In rainy weather, I’ve seen some trucks having difficulty getting back up the drive, but I feel comfortable that you will take care of it to fit your needs.**

Action Items

ACTION ITEM	ASSIGNED TO	DATE DUE	STATUS

We believe the foregoing record to be an accurate summary of the meeting and related decisions. We would appreciate notification of exceptions or corrections to these Minutes within five (5) days of receipt. Without notification, we will consider these minutes to be a record of fact.

COPIED: Cabarrus County

Sincerely, Brian LaFranchi, Dewberry

Memo

To: Cabarrus County Planning and Zoning Commission

From: Susie Morris, Planning and Zoning Manager

cc: File

Date: 12/6/2021

Re: Proposed Text Amendments

Amend Chapter 16 (2021 NC Model Ordinance Updates)

Attached you will find proposed updates to Chapter 16, Flood Damage Prevention. The updates are to address amendments to the 2021 Non-Coastal Flood Damage Prevention Model Ordinance provided by the North Carolina Department of Emergency Management.

The proposed amendments include specific updates for Community Rating System (CRS) Communities and general updates for all National Flood Insurance Program participants in North Carolina.

Proposed updates to the Ordinance are in blue text

Correct Identified Typos

Staff has identified a list of typos that need to be corrected. Proposed corrections are as follows:

Chapter 1- Correct the date in Section 1-5 from February 2, 1982 to February 1, 1982. Per the February 1, 1982, official Board of Commissioner minutes, the effective date for the Zoning Ordinance and Atlas Maps is February 1, 1982.

Chapter 5, Section 5-7, Section B. Stream buffer and floodplain limitations - Correct the reference from Chapter 15 to Chapter 16. Chapter 16 is the correct Chapter.

Please review the proposed amendments and be prepared to discuss them. The Planning and Zoning Commission will need to consider the proposed changes and make a recommendation to the Board of Commissioners.

PART 1. STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND OBJECTIVES

SECTION A. STATUTORY AUTHORIZATION

The Legislature of the State of North Carolina has in Part 6, Article 21 of Chapter 143; Article 6 of Chapter 153A; Article 8 of Chapter 160A; and Article 7, 9, and 11 of Chapter 160D of the North Carolina General Statutes, delegated to local governmental units the authority to adopt regulations designed to promote the public health, safety, and general welfare.

Therefore, the Board of Commissioners of Cabarrus County, North Carolina, does ordain as follows:

SECTION B. FINDINGS OF FACT

- (1) The flood prone areas within the jurisdiction of Cabarrus County are subject to periodic inundation which results in loss of life, property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures of flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
- (2) These flood losses are caused by the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities and by the occupancy in flood prone areas of uses vulnerable to floods or other hazards.

SECTION C. STATEMENT OF PURPOSE

It is the purpose of this ordinance to promote public health, safety, and general welfare and to minimize public and private losses due to flood conditions within flood prone areas by provisions designed to:

- (1) Restrict or prohibit uses that are dangerous to health, safety, and property due to water or erosion hazards or that result in damaging increases in erosion, flood heights or velocities;
- (2) Require that uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction;
- (3) Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of floodwaters;
- (4) Control filling, grading, dredging, and all other development that may increase erosion or flood damage; and
- (5) Prevent or regulate the construction of flood barriers that will unnaturally divert flood waters or which may increase flood hazards to other lands.

SECTION D. OBJECTIVES

The objectives of this ordinance are to:

- (1) Protect human life, safety, and health;
- (2) Minimize expenditure of public money for costly flood control projects;
- (3) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (4) Minimize prolonged business losses and interruptions;
- (5) Minimize damage to public facilities and utilities (i.e. water and gas mains, electric, telephone, cable and sewer lines, streets, and bridges) that are located in flood prone areas;

CABARRUS COUNTY DEVELOPMENT ORDINANCE

CHAPTER 16-FLOOD DAMAGE PREVENTION

- (6) Minimize damage to private and public property due to flooding;
- (7) Make flood insurance available to the community through the National Flood Insurance Program;
- (8) Maintain the natural and beneficial functions of floodplains;
- (9) Help maintain a stable tax base by providing for the sound use and development of flood prone areas; and
- (10) Ensure that potential buyers are aware that property is in a Special Flood Hazard Area.

PART 2. DEFINITIONS

Unless specifically defined below, words or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance it's most reasonable application.

Accessory Structure (Appurtenant Structure) means a structure located on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure. Garages, carports and storage sheds are common urban accessory structures. Pole barns, hay sheds and the like qualify as accessory structures on farms, and may or may not be located on the same parcel as the farm dwelling or shop building.

Addition (to an existing building) means an extension or increase in the floor area or height of a building or structure.

Alteration of a watercourse means a dam, impoundment, channel relocation, change in channel alignment, channelization, or change in cross-sectional area of the channel or the channel capacity, or any other form of modification which may alter, impede, retard or change the direction and/or velocity of the riverine flow of water during conditions of the base flood.

Appeal means a request for a review of the Floodplain Administrator's interpretation of any provision of this ordinance.

Area of Shallow Flooding means a designated Zone AO or AH on a community's Flood Insurance Rate Map (FIRM) with base flood depths determined to be from one (1) to three (3) feet. These areas are located where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

Area of Special Flood Hazard see Special Flood Hazard Area (SFHA).

Area of Future-Conditions Flood Hazard means the land area that would be inundated by the 1-percent-annual-chance (100- year) flood based on future-conditions hydrology.

Base Flood means the flood having a one (1) percent chance of being equaled or exceeded in any given year.

Base Flood Elevation (BFE) means a determination of the water surface elevations of the base flood as published in the Flood Insurance Study. When the BFE has not been provided in a Special Flood Hazard Area, it may be obtained from engineering studies available from a Federal, State, or other source using FEMA approved engineering methodologies. This elevation, when combined with the Freeboard, establishes the Regulatory Flood Protection Elevation.

Basement means any area of the building having its floor subgrade (below ground level) on all sides.

Building see Structure.

Chemical Storage Facility means a building, portion of a building, or exterior area adjacent to a building used for the storage of any chemical or chemically reactive products.

Design Flood: See Regulatory Flood Protection Elevation.

Development means any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.

Development Activity means any activity defined as Development which will necessitate a Floodplain Development Permit. This includes buildings, structures, and non-structural items, including (but not limited to) fill, bulkheads, piers, pools, docks, landings, ramps, and erosion control/stabilization measures.

Digital Flood Insurance Rate Map (DFIRM) means the digital official map of a community, issued by the Federal Emergency Management Agency (FEMA), on which both the Special Flood Hazard Areas and the risk premium zones applicable to the community are delineated.

Disposal means, as defined in NCGS 130A-290(a)(6), the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that the solid waste or any constituent part of the solid waste may enter the environment or be emitted into the air or discharged into any waters, including groundwaters.

Elevated Building means a non-basement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

Encroachment means the advance or infringement of uses, fill, excavation, buildings, structures or development into a special flood hazard area, which may impede or alter the flow capacity of a floodplain.

Existing building and existing structure means any building and/or structure for which the start of construction commenced before November 2, 1994.

Existing Manufactured Home Park or Manufactured Home Subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) was completed before the initial effective date of the floodplain management regulations adopted by the community.

Flood or Flooding means a general and temporary condition of partial or complete inundation of normally dry land areas from:

- (a) The overflow of inland or tidal waters; and/or
- (b) The unusual and rapid accumulation or runoff of surface waters from any source.

Flood Boundary and Floodway Map (FBFM) means an official map of a community, issued by the FEMA, on which the Special Flood Hazard Areas and the floodways are delineated. This official map is a supplement to and shall be used in conjunction with the Flood Insurance Rate Map (FIRM).

Flood Insurance means the insurance coverage provided under the National Flood Insurance Program.

Flood Insurance Rate Map (FIRM) means an official map of a community, issued by the FEMA, on which both the Special Flood Hazard Areas and the risk premium zones applicable to the community are delineated. (See also DFIRM)

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Flood Insurance Study (FIS) means an examination, evaluation, and determination of flood hazards, corresponding water surface elevations (if appropriate), flood hazard risk zones, and other flood data in a community issued by the FEMA. The Flood Insurance Study report includes Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFMs), if published.

Flood Prone Area see Floodplain

Flood Zone means a geographical area shown on a Flood Hazard Boundary Map or Flood Insurance Rate Map that reflects the severity or type of flooding in the area.

Floodplain means any land area susceptible to being inundated by water from any source.

Floodplain Administrator is the individual appointed to administer and enforce the floodplain management regulations.

Floodplain Development Permit means any type of permit that is required in conformance with the provisions of this ordinance, prior to the commencement of any development activity.

Floodplain Management means the operation of an overall program of corrective and preventive measures for reducing flood damage and preserving and enhancing, where possible, natural resources in the floodplain, including, but not limited to, emergency preparedness plans, flood control works, floodplain management regulations, and open space plans.

Floodplain Management Regulations means this ordinance and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances, and other applications of police power. This term describes federal, state or local regulations, in any combination thereof, which provide standards for preventing and reducing flood loss and damage.

Floodproofing means any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitation facilities, structures, and their contents.

Flood-resistant material means any building product [material, component or system] capable of withstanding direct and prolonged contact (minimum 72 hours) with floodwaters without sustaining damage that requires more than low-cost cosmetic repair. Any material that is water-soluble or is not resistant to alkali or acid in water, including normal adhesives for above-grade use, is not flood-resistant. Pressure-treated lumber or naturally decay-resistant lumbers are acceptable flooring materials. Sheet-type flooring coverings that restrict evaporation from below and materials that are impervious, but dimensionally unstable are not acceptable. Materials that absorb or retain water excessively after submergence are not flood-resistant. Please refer to Technical Bulletin 2, *Flood Damage-Resistant Materials Requirements*, and available from the FEMA. Class 4 and 5 materials, referenced therein, are acceptable flood-resistant materials.

Floodway means the channel of a river or other watercourse, including the area above a bridge or culvert when applicable, and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot.

Floodway encroachment analysis means an engineering analysis of the impact that a proposed encroachment into a floodway or non-encroachment area is expected to have on the floodway boundaries and flood levels during the occurrence of the base flood discharge. The evaluation shall be prepared by a qualified North Carolina licensed

engineer using standard engineering methods and models.

Freeboard means the height added to the BFE to account for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, blockage of bridge or culvert openings, and the hydrological effect of urbanization of the watershed. The BFE plus the freeboard establishes the Regulatory Flood Protection Elevation. The freeboard for Cabarrus County is a [minimum](#) of 2 feet.

Functionally Dependent Facility means a facility which cannot be used for its intended purpose unless it is located in close proximity to water, limited to a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, or ship repair. The term does not include long-term storage, manufacture, sales, or service facilities.

Hazardous Waste Management Facility means, as defined in NCGS 130A, Article 9, a facility for the collection, storage, processing, treatment, recycling, recovery, or disposal of hazardous waste.

Highest Adjacent Grade (HAG) means the highest natural elevation of the ground surface, prior to construction, immediately next to the proposed walls of the structure.

Historic Structure means any structure that is:

- (a) Listed individually in the National Register of Historic Places (a listing maintained by the US Department of Interior) or preliminarily determined by the Secretary of Interior as meeting the requirements for individual listing on the National Register;
- (b) Certified or preliminarily determined by the Secretary of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- (c) Individually listed on a local inventory of historic landmarks in communities with a Certified Local Government (CLG) Program; or
- (d) Certified as contributing to the historical significance of a historic district designated by a community with a Certified Local Government (CLG) Program.

Certified Local Government (CLG) Programs are approved by the US Department of the Interior in cooperation with the North Carolina Department of Cultural Resources through the State Historic Preservation Officer as having met the requirements of the National Historic Preservation Act of 1966 as amended in 1980.

Letter of Map Change (LOMC) means an official determination issued by FEMA that amends or revises an effective Flood Insurance Rate Map or Flood Insurance Study. Letters of Map Change include:

- (a) Letter of Map Amendment (LOMA): An official amendment, by letter, to an effective National Flood Insurance Program map. A LOMA is based on technical data showing that a property had been inadvertently mapped as being in the floodplain, but is actually on natural high ground above the base flood elevation. A LOMA amends the current effective Flood Insurance Rate Map and establishes that a specific property, portion of a property, or structure is not located in a special flood hazard area.
- (b) Letter of Map Revision (LOMR): A revision based on technical data that may show changes to flood zones, flood elevations, special flood hazard area boundaries and floodway delineations, and other planimetric features.
- (c) Letter of Map Revision Based on Fill (LOMR-F): A determination that a structure or parcel of land has been elevated by fill above the BFE and is, therefore, no longer located within the special flood hazard area. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the community's floodplain management regulations.
- (d) Conditional Letter of Map Revision (CLOMR): A formal review and comment as to whether a proposed project complies with the minimum NFIP requirements for such projects with respect to delineation of

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special flood hazard areas. A CLOMR does not revise the effective Flood Insurance Rate Map or Flood Insurance Study; upon submission and approval of certified as-built documentation, a Letter of Map Revision may be issued by FEMA to revise the effective FIRM.

Light Duty Truck means any motor vehicle rated at 8,500 pounds Gross Vehicular Weight Rating or less which has a vehicular curb weight of 6,000 pounds or less and which has a basic vehicle frontal area of 45 square feet or less as defined in 40 CFR 86.082-2 and is:

- (a) Designed primarily for purposes of transportation of property or is a derivation of such a vehicle, or
- (b) Designed primarily for transportation of persons and has a capacity of more than 12 persons; or
- (c) Available with special features enabling off-street or off-highway operation and use.

Lowest Adjacent Grade (LAG) means the elevation of the ground, sidewalk or patio slab immediately next to the building, or deck support, after completion of the building.

Lowest Floor means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or limited storage in an area other than a basement area is not considered a building's lowest floor, provided that such an enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

Manufactured Home means a structure, transportable in one or more sections, which is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term manufactured home does not include a recreational vehicle.

Manufactured Home Park or Subdivision means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Map Repository means the location of the official flood hazard data to be applied for floodplain management. It is a central location in which flood data is stored and managed; in North Carolina, FEMA has recognized that the application of digital flood hazard data products have the same authority as hard copy products. Therefore, the NCEM's Floodplain Mapping Program websites house current and historical flood hazard data. For effective flood hazard data the NC FRIS website (<http://FRIS.NC.GOV/FRIS>) is the map repository, and for historical flood hazard data the FloodNC website (<http://FLOODNC.GOV/NCFLOOD>) is the map repository.

Market Value means the building value, not including the land value and that of any accessory structures or other improvements on the lot. Market value may be established by independent certified appraisal; replacement cost depreciated for age of building and quality of construction (Actual Cash Value); or adjusted tax assessed values.

New Construction means structures for which the start of construction commenced on or after the effective date of the initial floodplain management regulations and includes any subsequent improvements to such structures.

Non-Conversion Agreement means a document stating that the owner will not convert or alter what has been constructed and approved. Violation of the agreement is considered a violation of the ordinance and, therefore, subject to the same enforcement procedures and penalties. The agreement must be filed with the recorded deed for the property. The agreement must show the clerk's or recorder's stamps and/or notations that the filing has been completed.

Non-Encroachment Area (NEA) means the channel of a river or other watercourse, including the area above a bridge or culvert when applicable, and the adjacent land areas that must be reserved in order to discharge the base flood

without cumulatively increasing the water surface elevation more than one (1) foot as designated in the Flood Insurance Study report.

Post-FIRM means construction or other development for which the start of construction occurred on or after November 2, 1994, the effective date of the initial Flood Insurance Rate Map.

Pre-FIRM means construction or other development for which the start of construction occurred before November 2, 1994, the effective date of the initial Flood Insurance Rate Map.

Principally Above Ground means that at least 51% of the actual cash value of the structure is above ground.

Public Safety and/or Nuisance means anything which is injurious to the safety or health of an entire community or neighborhood, or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin.

Recreational Vehicle (RV) means a vehicle, which is:

- (a) Built on a single chassis;
- (b) 400 square feet or less when measured at the largest horizontal projection;
- (c) Designed to be self-propelled or permanently towable by a light duty truck;
- (d) Designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational, camping, travel, or seasonal use, and
- (e) Is fully licensed and ready for highway use.

Tiny Houses and Park Models that do not meet the items listed above are not considered Recreational Vehicles and should meet the development and construction standards for residential structures.

Reference Level is the bottom of the lowest horizontal structural member of the lowest floor for structures within all Special Flood Hazard Areas.

Regulatory Flood Protection Elevation means the Base Flood Elevation plus the Freeboard. In Special Flood Hazard Areas where Base Flood Elevations (BFEs) have been determined, this elevation shall be the BFE plus 2 feet of freeboard. In Special Flood Hazard Areas where no BFE has been established, this elevation shall be at least 2 feet above the highest adjacent grade.

Remedy a Violation means to bring the structure or other development into compliance with state and community floodplain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing federal financial exposure with regard to the structure or other development.

Riverine means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

Salvage Yard means any non-residential property used for the storage, collection, and/or recycling of any type of equipment, and including but not limited to vehicles, appliances and related machinery.

Solid Waste Disposal Facility means any facility involved in the disposal of solid waste, as defined in NCGS 130A-290(a) (35).

Solid Waste Disposal Site means, as defined in NCGS 130A-290(a) (36), any place at which solid wastes are disposed of by incineration, sanitary landfill, or any other method.

Special Flood Hazard Area (SFHA) means the land in the floodplain subject to a one percent (1%) or greater chance

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of being flooded in any given year, as determined in Part 3, Section B of this ordinance.

Start of Construction includes substantial improvement, and means the date the building permit was issued provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of the building, whether or not that alteration affects the external dimensions of the building.

Structure means a walled and roofed building, a manufactured home, or a gas, liquid, or liquefied gas storage tank that is principally above ground.

Substantial Damage means damage of any origin sustained by a structure during any one-year period whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. See definition of substantial improvement. Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

Substantial Improvement means any combination of repairs, reconstruction, rehabilitation, addition, or other improvement of a structure, taking place during any one-year period for which the cost equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. This term includes structures which have incurred substantial damage, regardless of the actual repair work performed. The term does not, however, include either:

- (a) Any correction of existing violations of state or community health, sanitary, or safety code specifications which have been identified by the community code enforcement official and which are the minimum necessary to assure safe living conditions; or
- (b) Any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure and the alteration is approved by variance issued pursuant to Part 4 Section E of this ordinance.

Technical Bulletin and Technical Fact Sheet means a FEMA publication that provides guidance concerning the building performance standards of the NFIP, which are contained in Title 44 of the U.S. Code of Federal Regulations at Section 60.3. The bulletins and fact sheets are intended for use primarily by State and local officials responsible for interpreting and enforcing NFIP regulations and by members of the development community, such as design professionals and builders. New bulletins, as well as updates of existing bulletins, are issued periodically as needed. The bulletins do not create regulations; rather they provide specific guidance for complying with the minimum requirements of existing NFIP regulations.

It should be noted that Technical Bulletins and Technical Fact Sheets provide guidance on the minimum requirements of the NFIP regulations. State or community requirements that exceed those of the NFIP take precedence. Design professionals should contact the community officials to determine whether more restrictive State or local regulations apply to the building or site in question. All applicable standards of the State or local

building code must also be met for any building in a flood hazard area.

Temperature Controlled means having the temperature regulated by a heating and/or cooling system, built-in or appliance.

Variance is a grant of relief from the requirements of this ordinance.

Violation means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Parts 4 and 5 is presumed to be in violation until such time as that documentation is provided.

Water Surface Elevation (WSE) means the height, in relation to NAVD 1988, of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

Watercourse means a lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

PART 3. GENERAL PROVISIONS

SECTION A. LANDS TO WHICH THIS ORDINANCE APPLIES

This ordinance shall apply to all Special Flood Hazard Areas within the unincorporated areas of Cabarrus County.

SECTION B. BASIS FOR ESTABLISHING THE SPECIAL FLOOD HAZARD AREAS

The Special Flood Hazard Areas are those identified under the Cooperating Technical State (CTS) agreement between the State of North Carolina and FEMA in its FIS dated November 5, 2008 for Cabarrus County and associated DFIRM panels dated November 5, 2008, March 2, 2009, June 16, 2009, February 19, 2014 and November 16, 2018, including any digital data developed as part of the FIS, which are adopted by reference and declared a part of this ordinance. Future revisions to the FIS and DFIRM panels that do not change flood hazard data within the jurisdictional authority of Cabarrus County are also adopted by reference and declared a part of this ordinance.

SECTION C. ESTABLISHMENT OF FLOODPLAIN DEVELOPMENT PERMIT

A Floodplain Development Permit shall be required in conformance with the provisions of this ordinance prior to the commencement of any development activities within Special Flood Hazard Areas determined in accordance with the provisions of Part 3, Section B of this ordinance.

SECTION D. COMPLIANCE

No structure or land shall hereafter be located, extended, converted, altered, or developed in any way without full compliance with the terms of this ordinance and other applicable regulations.

SECTION E. ABROGATION AND GREATER RESTRICTIONS

This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

SECTION F. INTERPRETATION

In the interpretation and application of this ordinance, all provisions shall be:

- (a) Considered as minimum requirements;
- (b) Liberally construed in favor of the Board of Commissioners; and
- (c) Deemed neither to limit nor repeal any other powers granted under State statutes.

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SECTION G. WARNING AND DISCLAIMER OF LIABILITY

The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. Larger floods can and will occur. Actual flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the Special Flood Hazard Areas or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of Cabarrus County or by any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

SECTION H. PENALTIES FOR VIOLATION

Violation of the provisions of this ordinance or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variance or special exceptions, shall constitute a Class 1 misdemeanor pursuant to NC G.S. § 143-215.58. Any person who violates this ordinance or fails to comply with any of its requirements shall, upon conviction thereof, be fined not more than \$100.00 or imprisoned for not more than thirty (30) days, or both. Each day such violation continues shall be considered a separate offense. Nothing herein contained shall prevent Cabarrus County from taking such other lawful action as is necessary to prevent or remedy any violation.

PART 4. ADMINISTRATION

SECTION A. DESIGNATION OF FLOODPLAIN ADMINISTRATOR

The Zoning Administrator or his/her designee, hereinafter referred to as the Floodplain Administrator, is hereby appointed to administer and implement the provisions of this ordinance. In instances where the Floodplain Administrator receives assistance from others to complete tasks to administer and implement this ordinance, the Floodplain Administrator shall be responsible for the coordination and community's overall compliance with the National Flood Insurance Program and the provisions of this ordinance.

SECTION B. FLOODPLAIN DEVELOPMENT APPLICATION, PERMIT AND CERTIFICATION REQUIREMENTS

- (1) **Application Requirements**-Application for a Floodplain Development Permit shall be made to the Floodplain Administrator prior to any development activities located within Special Flood Hazard Areas. The following items shall be presented to the Floodplain Administrator to apply for a floodplain development permit:
 - (a) A plot plan drawn to scale which shall include, but shall not be limited to, the following specific details of the proposed floodplain development:
 - (i) The nature, location, dimensions, and elevations of the area of development/disturbance; existing and proposed structures, utility systems, grading/pavement areas, fill materials, storage areas, drainage facilities, and other development;
 - (ii) The boundary of the Special Flood Hazard Area as delineated on the FIRM or other flood map as determined in Part 3, Section B, or a statement that the entire lot is within the Special Flood Hazard Area;
 - (iii) Flood zone(s) designation of the proposed development area as determined on the FIRM or other flood map as determined in Part 3, Section B;
 - (iv) The boundary of the floodway(s) or non-encroachment area(s) as determined in Part 3, Section B;

- (v) The Base Flood Elevation (BFE) where provided as set forth in Part 3, Section B; Part 4, Section C; or Part 5, Section D;
 - (vi) The old and new location of any watercourse that will be altered or relocated as a result of proposed development; and
 - (vii) The certification of the plot plan by a registered land surveyor or professional engineer.
- (b) Proposed elevation, and method thereof, of all development within a Special Flood Hazard Area including but not limited to:
- (i) Elevation in relation to NAVD 1988 of the proposed reference level (including basement) of all structures;
 - (ii) Elevation in relation to NAVD 1988 to which any non-residential structure in Zones A, AE, AH, AO, A99 will be floodproofed; and
 - (iii) Elevation in relation to NAVD 1988 to which any proposed utility systems will be elevated or floodproofed.
- (c) If floodproofing, a Floodproofing Certificate (FEMA Form 086-0-34) with supporting data, an operational plan, and an inspection and maintenance plan that include, but are not limited to, installation, exercise, and maintenance of floodproofing measures.
- (d) A Foundation Plan, drawn to scale, which shall include details of the proposed foundation system to ensure all provisions of this ordinance are met. These details include but are not limited to:
- (i) The proposed method of elevation, if applicable (i.e., fill, solid foundation perimeter wall, solid backfilled foundation, open foundation on columns/posts/piers/piles/shear walls); and
 - (ii) Openings to facilitate automatic equalization of hydrostatic flood forces on walls in accordance with Part 5, Section B(4)(d) when solid foundation perimeter walls are used in Zones A, AE, AH, AO, A99.
- (e) Usage details of any enclosed areas below the lowest floor.
- (f) Plans and/or details for the protection of public utilities and facilities such as sewer, gas, electrical, and water systems to be located and constructed to minimize flood damage.
- (g) Certification that all other Local, State and Federal permits required prior to floodplain development permit issuance have been received.
- (h) Documentation for placement of Recreational Vehicles and/or Temporary Structures, when applicable, to ensure that the provisions of Part 5, Section B, subsections (6) and (7) of this ordinance are met.
- (i) A description of proposed watercourse alteration or relocation, when applicable, including an engineering report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map (if not shown on plot plan) showing the location of the proposed watercourse alteration or relocation.
- (2) **Permit Requirements**-The Floodplain Development Permit shall include, but not be limited to:

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- (a) A complete description of all the development to be permitted under the floodplain development permit (e.g. house, garage, pool, septic, bulkhead, cabana, pier, bridge, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials, etc.).
- (b) The Special Flood Hazard Area determination for the proposed development in accordance with available data specified in Part 3, Section B.
- (c) The Regulatory Flood Protection Elevation required for the reference level and all attendant utilities.
- (d) The Regulatory Flood Protection Elevation required for the protection of all public utilities.
- (e) All certification submittal requirements with timelines.
- (f) A statement that no fill material or other development shall encroach into the floodway or non-encroachment area of any watercourse unless the requirements of Part 5, Section F have been met.
- (g) The flood openings requirements, if in Zone AE.
- (h) Limitations of below BFE enclosure uses (if applicable). (i.e., parking, building access and limited storage only).
- (i) A statement, that all materials below BFE/RFPE must be flood resistant materials.

(3) **Certification Requirements**

- (a) **Elevation Certificates**
 - (i) An Elevation Certificate (FEMA Form 086-0-33) is required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of the elevation of the reference level, in relation to NAVD 1988. The Floodplain Administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder prior to the beginning of construction. Failure to submit the certification or failure to make required corrections shall be cause to deny a floodplain development permit.
 - (ii) An Elevation Certificate (FEMA Form 086-0-33) is required after the reference level is established. Within seven (7) calendar days of establishment of the reference level elevation, it shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of the elevation of the reference level, in relation to NAVD 1988. Any work done within the seven (7) day calendar period and prior to submission of the certification shall be at the permit holder's risk. The Floodplain Administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further work being permitted to proceed. Failure to submit the certification or failure to make required corrections shall be cause to issue a stop-work order for the project.
 - (iii) A final Finished Construction Elevation Certificate (FEMA Form 086-0-33) is required after construction is completed and prior to Certificate of Compliance/Occupancy issuance. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of final as-built construction of the elevation of the reference level and all attendant utilities. The

Floodplain Administrator shall review the certificate data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to Certificate of Compliance/Occupancy issuance. In some instances, another certification may be required to certify corrected as-built construction. Failure to submit the certification or failure to make required corrections shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy. The Finished Construction Elevation Certificate certifier shall provide at least 2 photographs showing the front and rear of the building taken within 90 days from the date of certification. The photographs must be taken with views confirming the building description and diagram number provided in Section A. To the extent possible, these photographs should show the entire building including foundation. If the building has split-level or multi-level areas, provide at least 2 additional photographs showing side views of the building. In addition, when applicable, provide a photograph of the foundation showing a representative example of the flood openings or vents. All photographs must be in color and measure at least 3 × 3. Digital photographs are acceptable.

(b) Floodproofing Certificate

- (i) If non-residential floodproofing is used to meet the Regulatory Flood Protection Elevation requirements, a Floodproofing Certificate (FEMA Form 086-0-34), with supporting data, an operational plan, and an inspection and maintenance plan are required prior to the actual start of any new construction. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of the floodproofed design elevation of the reference level and all attendant utilities, in relation to NAVD 1988. Floodproofing certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The Floodplain Administrator shall review the certificate data, the operational plan, and the inspection and maintenance plan. Deficiencies detected by such review shall be corrected by the applicant prior to permit approval. Failure to submit the certification or failure to make required corrections shall be cause to deny a Floodplain Development Permit. Failure to construct in accordance with the certified design shall be cause to withhold the issuance of a Certificate of Compliance/Occupancy.
 - (ii) A final Finished Construction Floodproofing Certificate (FEMA Form 086-0-34), with supporting data, an operational plan, and an inspection and maintenance plan are required prior to the issuance of a Certificate of Compliance/Occupancy. It shall be the duty of the permit holder to submit to the Floodplain Administrator a certification of the floodproofed design elevation of the reference level and all attendant utilities, in relation to NAVD 1988. Floodproofing certificate shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. The Floodplain Administrator shall review the certificate data, the operational plan, and the inspection and maintenance plan. Deficiencies detected by such review shall be corrected by the applicant prior to Certificate of Occupancy. Failure to submit the certification or failure to make required corrections shall be cause to deny a Floodplain Development Permit. Failure to construct in accordance with the certified design shall be cause to deny a Certificate of Compliance/Occupancy.
- (c) If a manufactured home is placed within Zone AE and the elevation of the chassis is more than 36 inches in height above grade, an engineered foundation certification is required in accordance with the provisions of Part 5, Section B(3)(b).
- (d) If a watercourse is to be altered or relocated, a description of the extent of watercourse alteration or relocation; a professional engineer's certified report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map showing the location of the proposed watercourse alteration or relocation

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shall all be submitted by the permit applicant prior to issuance of a floodplain development permit.

- (e) Certification Exemptions. The following structures, if located within Zone AE, are exempt from the elevation/floodproofing certification requirements specified in items (a) and (b) of this subsection:
 - (i) Recreational Vehicles meeting requirements of Part 5, Section B (6) (a);
 - (ii) Temporary Structures meeting requirements of Part 5, Section B (7); and
 - (iii) Accessory Structures that are 150 square feet or less meeting requirements of Part 5, Section B(8).

(4) Determinations for existing buildings and structures

For applications for building permits to improve buildings and structures, including alterations, movement, enlargement, replacement, repair, change of occupancy, additions, rehabilitations, renovations, substantial improvements, repairs of substantial damage, and any other improvement of or work on such buildings and structures, the Floodplain Administrator, in coordination with the Building and Tax Officials, shall:

- (a) Estimate the market value, or require the applicant to obtain an appraisal of the market value prepared by a qualified independent appraiser, of the building or structure before the start of construction of the proposed work; in the case of repair, the market value of the building or structure shall be the market value before the damage occurred and before any repairs are made;
- (b) Compare the cost to perform the improvement, the cost to repair a damaged building to its pre-damaged condition, or the combined costs of improvements and repairs, if applicable, to the market value of the building or structure;
- (c) Determine and document whether the proposed work constitutes substantial improvement or repair of substantial damage; and
- (d) Notify the applicant if it is determined that the work constitutes substantial improvement or repair of substantial damage and that compliance with the flood resistant construction requirements of the NC Building Code and this ordinance is required.

SECTION C. DUTIES AND RESPONSIBILITIES OF THE FLOODPLAIN ADMINISTRATOR

The Floodplain Administrator shall perform, but not be limited to, the following duties:

- (1) Review all floodplain development applications and issue permits for all proposed development within Special Flood Hazard Areas to assure that the requirements of this ordinance have been satisfied.
- (2) Review all proposed development within Special Flood Hazard Areas to assure that all necessary local, state and federal permits have been received, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334.
- (3) Notify adjacent communities and the North Carolina Department of Public Safety, Division of Emergency Management, State Coordinator for the National Flood Insurance Program prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency

(FEMA).

- (4) Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is maintained.
- (5) Prevent encroachments into floodways and non-encroachment areas unless the certification and flood hazard reduction provisions of Part 5, Section F are met.
- (6) Obtain actual elevation (in relation to NAVD 1988) of the reference level (including basement) and all attendant utilities of all new and substantially improved structures, in accordance with the provisions of Part 4, Section B(3).
- (7) Obtain actual elevation (in relation to NAVD 1988) to which all new and substantially improved structures and utilities have been floodproofed, in accordance with the provisions of Part 4, Section B(3).
- (8) Obtain actual elevation (in relation to NAVD 1988) of all public utilities in accordance with the provisions of Part 4, Section B (3).
- (9) When floodproofing is utilized for a particular structure, obtain certifications from a registered professional engineer or architect in accordance with the provisions of Part 4, Section B(3) and Part 5, Section B(2).
- (10) Where interpretation is needed as to the exact location of boundaries of the Special Flood Hazard Areas, floodways, or non-encroachment areas (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), make the necessary interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in in Part 4, Section D.
- (11) When BFE data has not been provided in accordance with the provisions of Part 3, Section B, obtain, review, and reasonably utilize any BFE data, along with floodway data or non-encroachment area data available from a federal, state, or other source, including data developed pursuant to Part 5, Section D (2) (c), in order to administer the provisions of this ordinance.
- (12) When BFE data is provided but no floodway or non-encroachment area data has been provided in accordance with the provisions of Part 3, Section B, obtain, review, and reasonably utilize any floodway data or non-encroachment area data available from a federal, state, or other source in order to administer the provisions of this ordinance.
- (13) When the lowest floor and the lowest adjacent grade of a structure or the lowest ground elevation of a parcel in a Special Flood Hazard Area is above the BFE, advise the property owner of the option to apply for a Letter of Map Amendment (LOMA) from FEMA. Maintain a copy of the LOMA issued by FEMA in the floodplain development permit file.
- (14) Permanently maintain all records that pertain to the administration of this ordinance and make these records available for public inspection, recognizing that such information may be subject to the Privacy Act of 1974, as amended.
- (15) Make on-site inspections of work in progress. As the work pursuant to a floodplain development permit progresses, the Floodplain Administrator shall make as many inspections of the work as may be necessary to ensure that the work is being done according to the provisions of the local ordinance and the terms of the permit. In exercising this power, the Floodplain Administrator has a right, upon presentation of proper credentials, to enter on any premises within the jurisdiction of the community at any reasonable hour for the purposes of inspection or other enforcement action.

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- (16) Issue stop-work orders as required. Whenever a building or part thereof is being constructed, reconstructed, altered, or repaired in violation of this ordinance, the Floodplain Administrator may order the work to be immediately stopped. The stop-work order shall be in writing and directed to the person doing or in charge of the work. The stop-work order shall state the specific work to be stopped, the specific reason(s) for the stoppage, and the condition(s) under which the work may be resumed. Violation of a stop-work order constitutes a misdemeanor.
- (17) Revoke floodplain development permits as required. The Floodplain Administrator may revoke and require the return of the floodplain development permit by notifying the permit holder in writing stating the reason(s) for the revocation. Permits shall be revoked for any substantial departure from the approved application, plans, and specifications; for refusal or failure to comply with the requirements of State or local laws; or for false statements or misrepresentations made in securing the permit. Any floodplain development permit mistakenly issued in violation of an applicable State or local law may also be revoked.
- (18) Make periodic inspections throughout the Special Flood Hazard Areas within the jurisdiction of the community. The Floodplain Administrator and each member of his or her inspections department shall have a right, upon presentation of proper credentials, to enter on any premises within the territorial jurisdiction of the department at any reasonable hour for the purposes of inspection or other enforcement action.
- (19) Follow through with corrective procedures of Part 4, Section D.
- (20) Review, provide input, and make recommendations for variance requests.
- (21) Maintain a current map repository to include, but not limited to, historical and effective FIS Report, historical and effective FIRM and other official flood maps and studies adopted in accordance with the provisions of Part 3, Section B of this ordinance, including any revisions thereto including Letters of Map Change, issued by FEMA. Notify State and FEMA of mapping needs.
- (22) Coordinate revisions to FIS reports and FIRMs, including Letters of Map Revision Based on Fill (LOMR-Fs) and Letters of Map Revision (LOMRs).

SECTION D. CORRECTIVE PROCEDURES

- (1) Violations to be corrected: When the Floodplain Administrator finds violations of applicable state and local laws; it shall be his or her duty to notify the owner or occupant of the building of the violation. The owner or occupant shall immediately remedy each of the violations of law cited in such notification.
- (2) Actions in Event of Failure to Take Corrective Action: If the owner of a building or property shall fail to take prompt corrective action, the Floodplain Administrator shall give the owner written notice, by certified or registered mail to the owner's last known address or by personal service, stating:
 - (a) That the building or property is in violation of the floodplain management regulations;
 - (b) That a hearing will be held before the Floodplain Administrator at a designated place and time, not later than ten (10) days after the date of the notice, at which time the owner shall be entitled to be heard in person or by counsel and to present arguments and evidence pertaining to the matter; and
 - (c) That following the hearing, the Floodplain Administrator may issue an order to alter, vacate, or demolish the building; or to remove fill as applicable.

- (3) Order to Take Corrective Action: If, upon a hearing held pursuant to the notice prescribed above, the Floodplain Administrator shall find that the building or development is in violation of the Flood Damage Prevention Ordinance, he or she shall issue an order in writing to the owner, requiring the owner to remedy the violation within a specified time period, not less than sixty (60) calendar days, nor more than ninety (90) calendar days. Where the Floodplain Administrator finds that there is imminent danger to life or other property, he or she may order that corrective action be taken in such lesser period as may be feasible.
- (4) Appeal: Any owner who has received an order to take corrective action may appeal the order to the Board of Adjustment by giving notice of appeal in writing to the Floodplain Administrator and the Planning and Zoning Commission Clerk within ten (10) days following issuance of the final order. In the absence of an appeal, the order of the Floodplain Administrator shall be final. The Board of Adjustment shall hear an appeal within a reasonable time and may affirm, modify and affirm, or revoke the order.
- (5) Failure to Comply with Order: If the owner of a building or property fails to comply with an order to take corrective action for which no appeal has been made or fails to comply with an order of the Board of Adjustment following an appeal, the owner shall be guilty of a Class 1 misdemeanor pursuant to NC G.S. § 143-215.58 and shall be punished at the discretion of the court.

SECTION E. VARIANCE PROCEDURES

- (1) The Board of Adjustment as established by Cabarrus County, hereinafter referred to as the "appeal board," shall hear and decide requests for variances from the requirements of this ordinance.
- (2) Any person aggrieved by the decision of the appeal board may appeal such decision to the Court, as provided in Chapter 7A of the North Carolina General Statutes.
- (3) Variances may be issued for:
 - (a) The repair or rehabilitation of historic structures upon the determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and that the variance is the minimum necessary to preserve the historic character and design of the structure;
 - (b) Functionally dependent facilities if determined to meet the definition as stated in Part 2 of this ordinance, provided provisions of Part 4, Section E(9)(b), (c), and (e) have been satisfied, and such facilities are protected by methods that minimize flood damages during the base flood and create no additional threats to public safety; or
 - (c) Any other type of development provided it meets the requirements of this Section.
- (4) In passing upon variances, the appeal board shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this ordinance, and:
 - (a) The danger that materials may be swept onto other lands to the injury of others;
 - (b) The danger to life and property due to flooding or erosion damage;
 - (c) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - (d) The importance of the services provided by the proposed facility to the community;
 - (e) The necessity to the facility of a waterfront location as defined under Part 2 of this ordinance as a functionally dependent facility, where applicable;

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- (f) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
 - (g) The compatibility of the proposed use with existing and anticipated development;
 - (h) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
 - (i) The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - (j) The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site; and
 - (k) The costs of providing governmental services during and after flood conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical and water systems, and streets and bridges.
- (5) A written report addressing each of the above factors shall be submitted with the application for a variance.
- (6) Upon consideration of the factors listed above and the purposes of this ordinance, the appeal board may attach such conditions to the granting of variances as it deems necessary to further the purposes and objectives of this ordinance.
- (7) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the BFE and the elevation to which the structure is to be built and that such construction below the BFE increases risks to life and property, and that the issuance of a variance to construct a structure below the BFE may result in increased premium rates for flood insurance up to \$25 per \$100 of insurance coverage. Such notification shall be maintained with a record of all variance actions, including justification for their issuance.
- (8) The Floodplain Administrator shall maintain the records of all appeal actions and report any variances to the FEMA and the State of North Carolina upon request.
- (9) Conditions for Variances:
- (a) Variances shall not be issued when the variance will make the structure in violation of other federal, state, or local laws, regulations, or ordinances.
 - (b) Variances shall not be issued within any designated floodway or non-encroachment area if the variance would result in any increase in flood levels during the base flood discharge.
 - (c) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
 - (d) Variances shall only be issued prior to development permit approval.
 - (e) Variances shall only be issued upon:
 - (i) A showing of good and sufficient cause;

- (ii) A determination that failure to grant the variance would result in exceptional hardship; and
- (iii) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, or extraordinary public expense, create nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.

PART 5. PROVISIONS FOR FLOOD HAZARD REDUCTION

SECTION A. GENERAL STANDARDS

In all Special Flood Hazard Areas the following provisions are required:

- (1) All new construction and substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse, and lateral movement of the structure.
- (2) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage in accordance with the FEMA Technical Bulletin 2, *Flood Damage-Resistant Materials Requirements*.
- (3) All new construction and substantial improvements shall be constructed by methods and practices that minimize flood damages.
- (4) All new electrical, heating, ventilation, air-conditioning, plumbing, duct systems, and other building utility systems, equipment, and service facilities must be located at or above the Regulatory Flood Protection Elevation or specially designed to prevent water from entering or accumulating within the components and installed to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the Regulatory Flood Protection Elevation. Utility systems, equipment, and service facilities include, but are not limited to, HVAC equipment, water softener units, bath/kitchen plumbing fixtures, ductwork, electric/gas meter panels/boxes, utility/cable boxes, water heaters, fuel tanks, and electric outlets/switches.
 - (a) Replacements part of a substantial improvement, electrical, heating, ventilation, plumbing, air conditioning equipment, and other service equipment shall also meet the above provisions.
 - (b) Replacements that are for maintenance and not part of a substantial improvement, may be installed at the original location provided the addition and/or improvements only comply with the standards for new construction consistent with the code and requirements for the original structure.
- (5) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
- (6) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into flood waters.
- (7) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.
- (8) Nothing in this ordinance shall prevent the repair, reconstruction, or replacement of a building or structure existing on the effective date of this ordinance and located totally or partially within the floodway, non-encroachment area, or stream setback, provided there is no additional encroachment below the Regulatory Flood Protection Elevation in the floodway, non-encroachment area, or stream setback, and provided that such repair, reconstruction, or replacement meets all of the other requirements of this ordinance.

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- (9) A structure or tank for chemical or fuel storage incidental to an allowed use or to the operation of a water treatment plant or wastewater treatment facility may be located in a Special Flood Hazard Area only if the structure or tank is either elevated or floodproofed to at least the Regulatory Flood Protection Elevation and certified in accordance with the provisions of Part 4, Section B (3).
- (10) All subdivision proposals and other development proposals shall be consistent with the need to minimize flood damage.
- (11) All subdivision proposals and other development proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
- (12) All subdivision proposals and other development proposals shall have adequate drainage provided to reduce exposure to flood hazards.
- (13) All subdivision proposals and other development proposals shall have received all necessary permits from those governmental agencies for which approval is required by federal or state law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334.
- (14) When a structure is partially located in a Special Flood Hazard Area, the entire structure shall meet the requirements for new construction and substantial improvements.
- (15) When a structure is located in multiple flood hazard zones or in a flood hazard risk zone with multiple base flood elevations, the provisions for the more restrictive flood hazard risk zone and the highest BFE shall apply.

SECTION B. SPECIFIC STANDARDS

In all Special Flood Hazard Areas where BFE data has been provided, as set forth in Part 3, Section B, or Part 5, Section D, the following provisions, in addition to the provisions of Part 5, Section A, are required:

- (1) Residential Construction. New construction and substantial improvement of any residential structure (including manufactured homes) shall have the reference level, including basement, elevated no lower than the Regulatory Flood Protection Elevation, as defined in Part 2 of this ordinance. [See Section A\(4\) for development standards related to utility systems, equipment, and service facilities.](#)
- (2) Non-Residential Construction. New construction and substantial improvement of any commercial, industrial, or other non-residential structure shall have the reference level, including basement, elevated no lower than the Regulatory Flood Protection Elevation, as defined in Part 2 of this ordinance. Structures located in Zone AE, may be floodproofed to the Regulatory Flood Protection Elevation in lieu of elevation provided that all areas of the structure, together with attendant utility and sanitary facilities, below the Regulatory Flood Protection Elevation are watertight with walls substantially impermeable to the passage of water, using structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the floodproofing standards of this subsection are satisfied. Such certification shall be provided to the Floodplain Administrator as set forth in Part 4, Section B (3), along with the operational plan and the inspection and maintenance plan.
- (3) Manufactured Homes
 - (a) New and replacement manufactured homes shall be elevated so that the reference level of the manufactured home is no lower than the Regulatory Flood Protection Elevation, as defined in Part 2 of this ordinance. [See](#)

Section A(4) for development standards related to utility systems, equipment, and service facilities.

- (b) Manufactured homes shall be securely anchored to an adequately anchored foundation to resist flotation, collapse, and lateral movement, either by certified engineered foundation system, or in accordance with the most current edition of the State of North Carolina Regulations for Manufactured Homes adopted by the Commissioner of Insurance pursuant to NCGS 143-143.15. Additionally, when the elevation would be met by an elevation of the chassis thirty-six (36) inches or less above the grade at the site, the chassis shall be supported by reinforced piers or engineered foundation. When the elevation of the chassis is above thirty-six (36) inches in height, an engineering certification is required.
 - (c) All enclosures or skirting below the lowest floor shall meet the requirements of Part 5, Section B (4).
 - (d) An evacuation plan must be developed for evacuation of all residents of all new, substantially improved or substantially damaged manufactured home parks or subdivisions located within flood prone areas. This plan shall be filed with and approved by the Floodplain Administrator and the local Emergency Management Coordinator.
- (4) Elevated Buildings. Fully enclosed area, of new construction and substantially improved structures, which is below the lowest floor:
- (a) Shall not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator). The interior portion of such enclosed area shall not be finished or partitioned into separate rooms, except to enclose storage areas;
 - (b) Shall not be temperature-controlled or conditioned;
 - (c) Shall be constructed entirely of flood resistant materials
 - (d) Shall include, in Zone, AE flood openings to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet or exceed the following minimum design criteria:
 - (i) A minimum of two flood openings on different sides of each enclosed area subject to flooding;
 - (ii) The total net area of all flood openings must be at least one (1) square inch for each square foot of enclosed area subject to flooding;
 - (iii) If a building has more than one enclosed area, each enclosed area must have flood openings to allow floodwaters to automatically enter and exit;
 - (iv) The bottom of all required flood openings shall be no higher than one (1) foot above the higher of the interior or exterior adjacent grade;
 - (v) Flood openings may be equipped with screens, louvers, or other coverings or devices, provided they permit the automatic flow of floodwaters in both directions; and
 - (vi) Enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require flood openings. Masonry or wood underpinning, regardless of

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structural status, is considered an enclosure and requires flood openings as outlined above.

- (e) Property owners shall be required to execute and record a non-conversion agreement prior to issuance of a building permit declaring that the area below the lowest floor shall not be improved, finished or otherwise converted to habitable space ; Cabarrus County will have the right to inspect the enclosed area . Cabarrus County will conduct annual inspections. This agreement shall be recorded with the Cabarrus County Register of Deeds and shall transfer with the property in perpetuity.

(5) Additions/Improvements.

- (a) Additions and/or improvements to pre-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:
 - (i) Not a substantial improvement, the addition and/or improvements must be designed to minimize flood damages.
 - (ii) A substantial improvement, with modifications/rehabilitations/improvements to the existing structure or the common wall is structurally modified more than installing a doorway, both the existing structure and the addition must comply with the standards for new construction.
- (b) Additions to pre-FIRM or post-FIRM structures that are a substantial improvement with no modifications/rehabilitations/improvements to the existing structure other than a standard door in the common wall, shall require only the addition to comply with the standards for new construction.
- (c) Additions and/or improvements to post-FIRM structures when the addition and/or improvements in combination with any interior modifications to the existing structure are:
 - (i) Not a substantial improvement, the addition and/or improvements only must comply with the standards for new construction consistent with the code and requirements for the original structure.
 - (ii) A substantial improvement, both the existing structure and the addition and/or improvements must comply with the standards for new construction.
- (d) Any combination of repair, reconstruction, rehabilitation, addition or improvement of a building or structure taking place during a 1 year period, the cumulative cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started must comply with the standards for new construction. For each building or structure, the 2 year period begins on the date of the first improvement or repair of that building or structure subsequent to the effective date of this ordinance. Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred. If the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The requirement does not, however, include either:
 - (i) Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the building official and that are the minimum necessary to assume safe living conditions.

- (ii) Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.
- (6) Recreational Vehicles. Recreational vehicles shall either:
- (a) Temporary Placement
 - (i) Be on site for fewer than 180 consecutive days; or
 - (ii) Be fully licensed and ready for highway use. (A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities, and has no permanently attached additions.)
 - (b) Permanent Placement. Recreational vehicles that do not meet the limitations of Temporary Placement shall meet all the requirements for new construction.
- (7) Temporary Non-Residential Structures. Prior to the issuance of a floodplain development permit for a temporary structure, the applicant must submit to the Floodplain Administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood or other type of flood warning notification. The following information shall be submitted in writing to the Floodplain Administrator for review and written approval:
- (a) A specified time period for which the temporary use will be permitted. Time specified may not exceed three (3) months, renewable up to one (1) year;
 - (b) The name, address, and phone number of the individual responsible for the removal of the temporary structure;
 - (c) The time frame prior to the event at which a structure will be removed (i.e., minimum of 72 hours before landfall of a hurricane or immediately upon flood warning notification);
 - (d) A copy of the contract or other suitable instrument with the entity responsible for physical removal of the structure; and
 - (e) Designation, accompanied by documentation, of a location outside the Special Flood Hazard Area, to which the temporary structure will be moved.
- (8) Accessory Structures. When accessory structures (sheds, detached garages, etc.) are to be placed within a Special Flood Hazard Area, the following criteria shall be met:
- (a) Accessory structures shall not be used for human habitation (including working, sleeping, living, cooking or restroom areas);
 - (b) Accessory structures shall not be temperature-controlled;
 - (c) Accessory structures shall be designed to have low flood damage potential;
 - (d) Accessory structures shall be constructed and placed on the building site so as to offer the minimum resistance to the flow of floodwaters;
 - (e) Accessory structures shall be firmly anchored in accordance with the provisions of Part 5, Section A(1);
 - (f) All service facilities such as electrical shall be installed in accordance with the provisions of Part 5,

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Section A(4); and

- (g) Flood openings to facilitate automatic equalization of hydrostatic flood forces shall be provided below Regulatory Flood Protection Elevation in conformance with the provisions of Part 5, Section B(4)(d).

An accessory structure with a footprint less than 150 square feet or that is a minimal investment of \$3,000 or less and satisfies the criteria outlined above is not required to meet the elevation or floodproofing standards of Part 5, Section B (2). Elevation or floodproofing certifications are required for all other accessory structures in accordance with Part 4, Section B(3).

- (9) Tanks. When gas and liquid storage tanks are to be placed within a Special Flood Hazard Area, the following criteria shall be met:
 - (a) Underground tanks. Underground tanks in flood hazard areas shall be anchored to prevent flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads during conditions of the design flood, including the effects of buoyancy assuming the tank is empty;
 - (b) Above-ground tanks, elevated. Above-ground tanks in flood hazard areas shall be elevated to or above the Regulatory Flood Protection Elevation on a supporting structure that is designed to prevent flotation, collapse or lateral movement during conditions of the design flood. Tank-supporting structures shall meet the foundation requirements of the applicable flood hazard area;
 - (c) Above-ground tanks, not elevated. Above-ground tanks that do not meet the elevation requirements of Section B (2) of this ordinance shall be permitted in flood hazard areas provided the tanks are designed, constructed, installed, and anchored to resist all flood-related and other loads, including the effects of buoyancy, during conditions of the design flood and without release of contents in the floodwaters or infiltration by floodwaters into the tanks. Tanks shall be designed, constructed, installed, and anchored to resist the potential buoyant and other flood forces acting on an empty tank during design flood conditions.
 - (d) Tank inlets and vents. Tank inlets, fill openings, outlets and vents shall be:
 - (i) At or above the Regulatory Flood Protection Elevation or fitted with covers designed to prevent the inflow of floodwater or outflow of the contents of the tanks during conditions of the design flood; and
 - (ii) Anchored to prevent lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the design flood.
- (10) Other Development. Prior to the issuance of a floodplain development permit for a temporary structure, the applicant must submit to the Floodplain Administrator a plan for the removal of such structure(s) in the event of a hurricane, flash flood, or other type of flood warning notification. The following information shall be submitted in writing to the Floodplain Administrator for review and written approval:
 - (a) Fences in regulated floodways and NEAs that have the potential to block the passage of floodwaters, such as stockade fences and wire mesh fences, shall meet the limitations of Part 5, Section F of this ordinance.
 - (b) Retaining walls, sidewalks and driveways in regulated floodways and NEAs. Retaining walls and

sidewalks and driveways that involve the placement of fill in regulated floodways shall meet the limitations of Part 5, Section F of this ordinance.

- (c) Roads and watercourse crossings in regulated floodways and NEAs. Roads and watercourse crossings, including roads, bridges, culverts, low-water crossings and similar means for vehicles or pedestrians to travel from one side of a watercourse to the other side, that encroach into regulated floodways shall meet the limitations of Part 5, Section F of this ordinance.
- (d) Commercial storage facilities are not considered "limited storage" as noted in this ordinance and shall be protected to the Regulatory Flood Protection Elevation as required for commercial structures.

SECTION C. RESERVED

SECTION D. STANDARDS FOR FLOODPLAINS WITHOUT ESTABLISHED BASE FLOOD ELEVATIONS

Within the Special Flood Hazard Areas designated as Approximate Zone A and established in Part 3, Section B, where no BFE data has been provided by FEMA, the following provisions, in addition to the provisions of Part 5, Section A, shall apply:

- (1) No encroachments, including fill, new construction, substantial improvements or new development shall be permitted within a distance of twenty (20) feet each side from top of bank or five times the width of the stream, whichever is greater, unless certification with supporting technical data by a registered professional engineer is provided demonstrating that such encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
 - (a) When BFE data is available from other sources, all new construction and substantial improvements within such areas shall also comply with all applicable provisions of this ordinance and shall be elevated or floodproofed in accordance with standards in Part 5, Sections A and B.
 - (b) When floodway or non-encroachment data is available from a Federal, State, or other source, all new construction and substantial improvements within floodway and non-encroachment areas shall also comply with the requirements of Part 5, Sections B and F.
 - (c) All subdivision, manufactured home park and other development proposals shall provide BFE data if development is greater than five (5) acres or has more than fifty (50) lots/manufactured home sites. Such BFE data shall be adopted by reference in accordance with Part 3, Section B and utilized in implementing this ordinance.
 - (d) When BFE data is not available from a Federal, State, or other source as outlined above, the reference level shall be elevated or floodproofed (nonresidential) to or above the Regulatory Flood Protection Elevation, as defined in Part 2. All other applicable provisions of Part 5, Section B shall also apply.

SECTION E. STANDARDS FOR RIVERINE FLOODPLAINS WITH BASE FLOOD ELEVATIONS BUT WITHOUT ESTABLISHED FLOODWAYS OR NON-ENCROACHMENT AREAS

Along rivers and streams where BFE data is provided by FEMA or is available from another source but neither floodway nor non-encroachment areas are identified for a Special Flood Hazard Area on the FIRM or in the FIS report, the following requirements shall apply to all development within such areas:

- (1) Standards of Part 5, Sections A and B; and
- (2) Until a regulatory floodway or non-encroachment area is designated, no encroachments, including fill, new construction, substantial improvements, or other development, shall be permitted unless certification with

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supporting technical data by a registered professional engineer is provided demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one (1) foot at any point within the community.

SECTION F. FLOODWAYS AND NON-ENCROACHMENT AREAS

Areas designated as floodways or non-encroachment areas are located within the Special Flood Hazard Areas established in Part 3, Section B. The floodways and non-encroachment areas are extremely hazardous areas due to the velocity of floodwaters that have erosion potential and carry debris and potential projectiles. The following provisions, in addition to standards outlined in Part 5, Sections A and B, shall apply to all development within such areas:

- (1) No encroachments, including fill, new construction, substantial improvements and other developments shall be permitted unless:
 - (a) It is demonstrated that the proposed encroachment would not result in any increase in the flood levels during the occurrence of the base flood discharge, based on hydrologic and hydraulic analyses performed in accordance with standard engineering practice and presented to the Floodplain Administrator prior to issuance of floodplain development permit; or
 - (b) A Conditional Letter of Map Revision (CLOMR) has been approved by FEMA. A Letter of Map Revision (LOMR) must also be obtained within six months of completion of the proposed encroachment.
 - (c) In addition to subsection (a) and (b), the following standards apply to all fill activities in special flood hazard areas:
 - a. Fill material must be graded to drain, provide such is protected against erosion. When expected velocities during the occurrence of the base flood are greater than five feet per second armoring with stone or rock protection shall be provided. When expected velocities during the base flood are five feet per second or less protection shall be provided by covering them with vegetative cover.
 - b. Any fill material on which a structure is to be located shall be extended at grade 10 feet beyond the limits of the structure foundation and shall have a side slope no steeper than one foot vertical to two feet horizontal.
 - c. Fill shall be composed of clean granular or earthen material.
- (2) If Part 5, Section F(1) is satisfied, all development shall comply with all applicable flood hazard reduction provisions of this ordinance.
- (3) No manufactured homes shall be permitted, except replacement manufactured homes in an existing manufactured home park or subdivision, provided following provisions are met:
 - (a) The anchoring and the elevation standards of Part 5, Section B(3); and
 - (b) The encroachment standards of Part 5, Section F(1).

SECTION G. STANDARDS FOR AREAS OF SHALLOW FLOODING (ZONE AO)

Located within the Special Flood Hazard Areas established in Part 3, Section B, are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate. In addition to Part 5, Sections A and B, all new construction and substantial improvements shall meet the following requirements:

- (1) The reference level shall be elevated at least as high as the depth number specified on the Flood Insurance Rate Map (FIRM), in feet, plus a freeboard of 2 feet, above the highest adjacent grade; or at least 4 feet where a depth is not provided above the highest adjacent grade if no depth number is specified.
- (2) Non-residential structures may, in lieu of elevation, be floodproofed to the same level as required in Part 5, Section I(1) so that the structure, together with attendant utility and sanitary facilities, below that level shall be watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. Certification is required in accordance with Part 4, Section B(3) and Part 5, Section B(2).
- (3) Adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

PART 6. LEGAL STATUS PROVISIONS

SECTION A. EFFECT ON RIGHTS AND LIABILITIES UNDER THE EXISTING FLOOD DAMAGE PREVENTION ORDINANCE

This ordinance in part comes forward by re-enactment of some of the provisions of the Flood Damage Prevention Ordinance enacted November 2, 1994 as amended, and it is not the intention to repeal but rather to re-enact and continue to enforce without interruption of such existing provisions, so that all rights and liabilities that have accrued thereunder are reserved and may be enforced. The enactment of this ordinance shall not affect any action, suit or proceeding instituted or pending. All provisions of the Flood Damage Prevention Ordinance of Cabarrus County enacted on November 2, 1994, as amended, which are not reenacted herein are repealed.

The date of the initial Flood Damage Prevention Ordinance for each municipal jurisdiction within Cabarrus County is as follows:

Mount Pleasant: November 2, 1994
Town of Harrisburg: October 13, 2008
Town of Midland: November 10, 2008

City of Locust: September 3, 2008
City of Kannapolis: December 17, 1990
City of Concord: February 14, 1983

SECTION B. EFFECT UPON OUTSTANDING FLOODPLAIN DEVELOPMENT PERMITS.

Nothing herein contained shall require any change in the plans, construction, size, or designated use of any development or any part thereof for which a floodplain development permit has been granted by the Floodplain Administrator or his or her authorized agents before the time of passage of this ordinance; provided, however, that when construction is not begun under such outstanding permit within a period of six (6) months subsequent to the date of issuance of the outstanding permit, construction or use shall be in conformity with the provisions of this ordinance.

SECTION C. SEVERABILITY

If any section, clause, sentence, or phrase of the Ordinance is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of this Ordinance.

CABARRUS COUNTY DEVELOPMENT ORDINANCE

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SECTION D. EFFECTIVE DATE

This ordinance shall become effective upon the adoption by the Cabarrus County Board of Commissioners.

SECTION E. ADOPTION CERTIFICATION

I hereby certify that this is a true and correct copy of the Flood Damage Prevention Ordinance as adopted by the Board of Commissioners of Cabarrus County, North Carolina, on the 15th day of October, 2018.

WITNESS my hand and the official seal of Cabarrus County this the 15th day of October, 2018.

Stephen M. Morris

Stephen M. Morris, Chairman
Cabarrus County Board of Commissioners

P&Z Draft Model Ordinance Updates Dec 2021