

MONROE COUNTY DRAINAGE BOARD

Thursday January 4, 2024, at 8:30 AM

Location: Showers Building Room 106D

Hybrid Meeting with Virtual Attendance via Teams

AGENDA

1. Call to Order
2. Approval of Minutes for: November 1, 2023 and December 6, 2023 +*
3. Public Input for Items not on the Agenda
4. Business
 - a. PUO-23-6 Preliminary Drainage Plan: North Park II B-9 Fill Site – Karst updates +
 - b. SPP-23-3 Preliminary Drainage Plan: North Park Area B-3 Lot 3 – Stone Carver Drive +*
 - c. Drainage Easement Waiver Request (after-the-fact): 408 W Irie Ct. (Southern Meadows Lot 60) +*
 - d. Drainage Easement Waiver Request (after-the-fact): 404 W Irie Ct. (Southern Meadows Lot 58) +*
5. Future Drainage Plan Reviews:
 - a. SIT-23-15 Preliminary Drainage Plan: Clear Creek Homes New Office
 - b. PUO-23-7 Preliminary Drainage Plan: The Trails at Robertson Farm
6. Staff Reports/Discussion
 - a. January/February meetings to complete final reviews of Stormwater Management Ordinance and Technical Standards
7. Adjournment
 - a. Date of Next Meeting: Thursday February 1, 2024, at 8:30 AM

+ Attachment Included

* Board Action Requested

Microsoft Teams meeting

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Individuals requiring special language services should, if possible, contact the Monroe County Government Title VI Coordinator at least seventy-two (72) hours prior to the date on which the services will be needed.

The meeting is open to the public.

MINUTES
MONROE COUNTY DRAINAGE BOARD
Wednesday November 1, 2023, at 8:30 AM
Location: Showers Building Room 106D
Hybrid Meeting with Virtual Attendance via Zoom

MEMBERS PRESENT: Bob Autio, Trohn Enright-Randolph (*ex officio*), Lee Jones, James Faber

MEMBERS ABSENT: Ginger Davis, Bill Riggert

STAFF: Kelsey Thetonia (MS4 Coordinator), (attending remotely) Donna Barbrick (Secretary), Anne Crecelius (Planning), Jackie Nester Jelen (Planning), TSD

1. Call to Order. Meeting called to order by Bob Autio.

2. Approval of Minutes for: October 4, 2023, Motion to approve by Autio; second by Faber. VOTE: Jones, Faber, Autio YES (unanimous). Minutes approved.

3. Public input: (Donuts were enjoyed by those present in honor of Mr. Faber's years of service to Drainage Board since his term expires 12/31/2023 and he will step off the board.) Thetonia spoke about finding another candidate for the board. Mr. Faber read a thank-you from the commissioners:

We wish to thank you for your 25 years of service to the community. During this time, the Drainage Board has become increasingly important for the future of Monroe County and your contributions have made both the Board and the community more prepared and proactive in overcoming the many drainage problems our community will be facing. Your efforts have been greatly appreciated. Once again, thank you for your 25 years of service.

Faber expressed interest in attending future meetings on Zoom. He spoke about wanting a white line on North Maple Road since there is a ditch so close to the road.

4. Business

a. Drainage Easement Waiver Request – 427 W That Road (Southern Meadows Lot 75) +*
Kelsey Thetonia explained where the site is located and outlined what the development included. She said the entire site drains to the west and there is a storm sewer collecting runoff from the roads and there are swales to convey water to detention ponds. She showed a 20-foot-wide drainage easement behind some of the homes. She said Lot 75 is proposing a deck inside a 10-foot-wide drainage easement. She said Lot 80 has not been built out yet, but she had some concerns. She said it was too close to the drainage easement. She said my general recommendation is not to approve this because we haven't seen the rest of the development built out. She displayed a letter from property owners of Lot 75 concerning a deck that they would like to expand. Thetonia said the proposed deck would expand six feet into the drainage easement. She displayed pictures of the current site. Autio asked if the current deck was right up against the easement now. Thetonia showed a map with proposed grading compared with what there is now. She said the current deck is very close to the easement now. She said with the elevation changes on the site, it could be conveying large amounts of water during a significant rain event. Thetonia said I recommend denying this petition for a variance based on the planned development on the other side of this drainage easement.

Autio asked do they have an opportunity to appeal if we deny. Thetonia said yes, they have the opportunity to appeal. **Motion by Autio to DENY the variance; second by Faber. Trohn said everyone would have to be in agreement. VOTE: JONES YES, FABER YES, and AUTIO YES.**

Thetonia said she would notify the property owner and could work with them on an appeals process if they would like to appeal.

b. Violation of Drainage Easements Lot 60 Southern Meadows

Thetonia projected site plans on the screen and talked about the site. She said the property owners were here today. She said Lot 60 drains to a common area detention pond. She showed the plot plan for Lot 60. She talked about the drainage from the cul-de-sac going into a manhole and then to a 24-inch HDPE pipe that discharges to the detention pond. She said the homeowners built a fence up to their property line that happens to be directly over the plastic drainpipe that drains the cul-de-sac. She showed flood plain to the west. She showed a map of the side yard of Lot 60 and where a fence had been built. She brought up a couple of photos for DB to see the storm pipe and the fence. She said the fence post is directly over the drainpipe. She said I inspected the pipe as best as I could and saw some potential damage. She said without televising it to get a clearer view, it is hard to see. She said there is about six inches of cover for the pipe. She said at the last DB meeting, Ginger Davis brought up the possibility of soils settling. She said the bottom of the pipe is on original material but everything around it has been filled in so there is the possibility of settling. Autio asked about the request for a variance. Thetonia said it is a request for the fence to remain in place. She said my current concern is that the post is directly on top of the pipe with less than a foot of cover. She said we have granted variances in the past where the fence posts straddled the pipe, but this is different.

Trohn said it is more about the compound effect of what may occur. He said everything we are looking at today is in the subdivision today and the last one we made a motion to deny. He asked how we are going to apply a level of fairness as well as try to mitigate any stormwater impact or flash flooding. He said we will probably see more development occur in the region and so we need to make sure that things are adequate. He said if you look at Clear Creek and all the things we have heard about that area, and we go through more of these, how are we going to get folks to follow the ordinance when we have a variance here, no variance there. He said I understand that some people are not aware. He said this subdivision is not even fully developed yet and people will be coming in and seeing the fences that have been put up. He said this is more of a compound situation of variances and after-the-fact builds. He said we want to make sure that this is done in line with our ordinance. He said it is unfortunate that we must address this after there have been dollars put into it. He said we are looking at four different things going on in this subdivision today. He said if we start piecemealing yes or no, what does that do with other potential homeowners in the future. Jones said when I got training for the Plan Commission, we were told to consider each one on its own merits without worrying about how other people feel about it. She said I agree that the fact that it is not built out makes it particularly sensitive. Faber said DB does not have the capability of imposing a fine for doing something that should not have been done. Thetonia said I think you do, but it has not been exercised. She said Chapter 761 does have enforcement capability through Chapter 115 of Monroe County code. Jones said it would have to go through Monroe County Legal. Thetonia said for any work in a drainage easement we have a lot of power to maintain what is there through several different means.

Motion by Faber to remove the fence.

The property owners (Don and Julie Grinstead) spoke. Julie Grinstead said we purchased this lot and moved here from Georgia; we had no idea about the easement. She said there is a common area behind us for the drainage area. She said we have two little dogs and six grandchildren, and we put up a fence and had no idea that there was any issue at all. She said then someone was walking around and said there might be an issue with the fence and the next day we got a letter about the violation. Don Grinstead asked

about having an inspection before the conclusion. He said we want to do the right thing with the fence, but we also want to look out for our financial and lawful space issues. He said as we have gone through this process, we want to make sure that DB knows we are doing this in good faith.

Thetonia said if the fence were not directly on top of the pipe and we had it televised to show it was not damaged, I would be more agreeable to maybe allow some leniency there. She said but it's location would still be an issue. She said it is clearly directly over the pipe. She said the county will not pay for televising it, so it would be the responsibility of the property owner and then, regardless, the DB could still say it cannot be allowed. She said it could cost upwards of \$1,000 to have it televised. She said this is regarding the east side of the fence, specifically.

Julie Grinstead said the house is built all the way up to the easement so I am not sure where the fence could start on that side of the house. Trohn said there are two issues there, the easement and then the discussion of if the pipe has been damaged. He said those are two separate matters. He said knowing that the pipe is functioning adequately, then that might allow the DB to lean toward allowing the obstruction in the drainage area. He said I sympathize with you; this is not an easy role for us or for you as property owners.

Jones said if they do move the fence and we still do not know if the pipe has been damaged, what do we do from there. Thetonia said when the developer goes to the county to take in the roads, we have, in Chapter 761, we can require them to televise the pipe and before we take it in, we can require them to fix issues. She said that is why it is complicated, on who is responsible for what. Don Grinstead asked about distances required for any structures. Thetonia said drainage easement sizing is in our ordinance. She said we have specific sizes for drainage easements based on the size of the pipe and how deep it is. She said when we go to excavate it, if the pipe is small and shallow, we don't need too big of a trench but if it is really deep and a large pipe, we need to excavate a wider trench. She said typically we allow ten feet on either side of the pipe, or larger for larger pipes. Julie Grinstead spoke about not knowing about the drainage easement. She said if we had known, we would have never done this. Don Grinstead said the area is still being developed; there are likely other homeowners contemplating fences or other structures.

Tom Wininger spoke. He said on a new build, we give them a plot plan and it shows [easements] on that. He said I can work with the homeowners to televise [the pipe]. He said I give everybody a plot plan. He said you do not have to get a building permit to get a fence. He said I read your suggestion in the minutes about televising it and then if later down the road there is a problem, they understand the responsibilities.

Faber commented that the City of Bloomington requires permission to even put up a fence. Autio said my position is, if the pipe is functional both now and when the inspection is done, then allowing that variance. He said if it is not functional, then a repair needs to be made and the fence needs to be moved. Trohn said we need a unanimous decision on this. He asked would it just continue to move forward. He said DB could table it; maybe we could ask for an inspection to be done and then maybe we would have that information next time we look at this.

Autio suggested a motion to table this until there is more data on this. Jones asked if we are requiring it to be televised. **Autio said a motion to table until December and require the pipe be televised. Seconded by Faber. VOTE: JONES YES; FABER YES; and AUTIO YES. Motion to TABLE carried. Thetonia said the next meeting was scheduled for December 6.**

c. Drainage Easement Violation (after-the-fact) – 404 W Irie Ct. (Southern Meadows Lot 58) +*

Thetonia talked about the site, a rear yard drainage swale, and a common area detention pond. She said there is supposed to be a drainage swale here and then there is a large deck that the property owners constructed within the drainage easement. She said basically the swale was moved over, I think. She said the drainage could not be completed because the deck had been built. She said I worked with Tom's drainage engineer to make sure this had capacity to convey runoff from a flood event to the pond. She said there is a lot of elevation change in this area so that helps. She said my concern is that upstream from this has not been fully developed, but based on the engineer's calculations, they are comfortable signing off on the grading that the developer did. She said if we do have a big flood and it turns out that we do need to re-grade some of this, then the deck would most certainly be in the way. She said also they are required to apply for an after-the-fact building permit since it is over 30 inches tall, so they received another violation letter from Planning/Building departments.

Santiago Sotomayor spoke via Zoom. He said good morning, my name is Santiago, and I am filling in for my parents who have very limited English. He said I talked on the phone with you a couple weeks ago. He said I think the biggest issue was that there was not a lot of transparency when these lots were being purchased because there were conversations about decks and fences being built and didn't hear about easements. He said there were multiple conversations. He said my dad was unaware that a permit was needed for the deck. He said I know the structure is pretty sound; we sent some pictures from the other side. He said the top is closest to the easement; he said the bottom is close to the ten feet from the property line. He said I heard the concern about needing to remove the deck and I think it's worth crossing that bridge if we ever have to. He said they just added a whole bunch of pipes in the neighbor's yard, and I do not think there will be any issues with the deck.

Trohn asked to see the plat on Elevate. He said it is unfortunate that we are here for after-the-fact builds. He said I just wanted to highlight that there is an official process; the easements are platted. He said there is a procedure that the county follows; we are not selecting these sites randomly. Jones commented I agree, but I also think asking buyers to look at a plat map and understand all of that is not reasonable. Trohn said I just wanted to indicate that there is a process that we follow. Thetonia said I would recommend to anyone who is building to contact the county planning department because they can help you determine if there are easements on your property.

Tom Wininger said I do give plot plans to everyone, and I will probably put out a flyer from here on out, that all homeowners need to contact county planning. He said the other thing is, Kate Stein (Smith Design) re-did the swales in there and I believe that the criteria that we had to live up to was that all the inlets in the neighborhood were 100% for a 100-year flood. He said that is the criteria that she signed off on. He said I know a deck built after the fact has nothing to do with that, but she said that the deck did not impede the water flow that day.

Thetonia said I am not comfortable with it being there because if we do need to move it in the future it is going to make it that much harder. Autio said to get the full easement how far would it be. Thetonia said it goes 10 feet into the easement. Wininger said we had more than one attempt and we did it and Smith Design came out and site checked it, and it did not make it, so then I came back and talked to the homeowner about cutting the downspout. He said Smith re-shot it and then Katie Stein certified it. He said with it in place, it still meets those criteria.

Trohn said the easement is a 20 foot total span, so they are going completely into the easement on their property but it does not look like it is impeding. Trohn said I think Planning should weigh in on this one.

Autio said I am leaning toward having the deck removed to clear out the easement issue, even with the engineering.

Jones had to leave the meeting.

Thetonia said we have lost our DB quorum.

d. Drainage Easement Floodplain Violations (after-the-fact) – Southern Meadows Lots 60, 61, and 62 +*

Thetonia spoke concerning Southern Meadows Lots 60, 61, and 62, which all abut the floodplain for Clear Creek. She said the floodplain is within the drainage easement on the west side. She said the lots were graded in a way where fill was placed in the floodplain. She said all the grading was supposed to be in the lots and the floodplain was not supposed to be touched. She said Tammy Behrman (Planning) has been leading the enforcement of Chapter 808 Floodplain Management, working with them on compliance. She said DB does have some say on this because it's also in Chapter 761. She talked about plot plans in the packet. She said options given were to remove the fill from the floodplain or to provide compensatory storage and a No-rise certification, meaning that you are not contributing to any vertical change in that floodplain. She said that is a Federal FEMA requirement for zero rise. She said previously the State had 0.14 feet of acceptable rise and that is no longer in place due to changes at the Federal level. She said our current ordinance allows DB to dictate that zero-rise requirement as well. She said DB has a say in this. She said to be consistent with what Tammy is doing, we have asked the developer to comply with the Federal No-rise requirement. She said Tom Wininger (developer) has chosen to hire an engineer to do the modeling and to design compensatory storage to be in compliance. She said we will review this next month.

Autio asked where the compensatory storage would be. Thetonia said it would be, I assume, in the floodplain just west of these properties. Tom Wininger said Katie Stein with Smith Design is working on that. Thetonia said I also have contracts with local engineering firms for third party review so I can contract out review of this, just to make sure it is meeting the requirements. Autio said that sounds like a good solution.

e. Future Drainage Plan Reviews for DB approval:

i. K&S Rolloff – New Fill Area (determining if drainage plan is required)

ii. North Park II Area B-9 – large fill site

iii. North Park Area B-3 Lot 3 – Stone Carver Drive Extension

iv. Monroe County Airport Drainage Improvements Project – pipe lining and replacement

Thetonia said I have four things that are most likely going to be on the December agenda. She said one is K&S Rolloff. She said they are modifying the fill area. She said we did modeling to see if the fill placed in the sinkhole would impact the neighboring property and they were able to demonstrate that the 48-hour 100-year event would still be contained in the sinkhole area. She said we gave them the go-ahead to allow the fill to remain because we felt that removing it would disturb the sinkhole. She said now they are proposing to add an additional seven feet of fill and then put the dumpsters on top of what they have been doing now. She said my main concern is water quality. She said they are proposing check dams and other things. She said we may need to bring this back to DB to look at the additional seven feet of fill. She said the new fill should not be in the sinkhole.

She talked about activity in the North Park area. She showed Hunter Valley Road and the North Park area. She said there is an old quarry site which they plan as a long-term fill site for possible future development. She said they have some sediment basins.

She said the other one is an extension of Stone Carver Drive. She said I have received preliminary plans and will bring this to DB in the future.

She said the last one is regarding a request from the airport. She said the general proposal is showing repair/replacement of almost every single storm pipe on the property, excluding the main pipes under the runway. She said they are looking for remediation of some significant issues with older pipes. She said my first comment was about detention. She said they have existing ponds on site that are fairly large, and we have had preliminary discussions about adding more storage on the property. She said there were discussions of underground detention, as well, but that would require significant geotech work. She said they are open to whatever help they can get. She spoke about gullies forming and said you don't want gullies along the runways. She said they are required to have 250 feet of basically flat lawn on the sides of the runways in case a plane goes off the side. She said preliminary plans are just asking approval of the design. She said in time that will develop into a drainage master plan. She said in 2002, an airport evaluation was completed, and all the sinkholes were noted on the property and modeling was done. She said that expired in 2007, so we are working with Planning to determine whether another evaluation is needed. Autoio asked if there was an evaluation of the condition of the pipes that are under the runway. She said I know in 2013, a sinkhole formed next to a runway and there was an emergency grant from the FAA to help fix it.

Trohn noted a comment from Jackie Nester Jelen in the meeting chat (concerning a previous agenda item). She had commented that the owners will be required to apply for a variance through the Planning Department for construction within the platted building setback or revise the deck location (Lot 58).

5. Staff Reports/Discussion

6. Adjournment

a. Date of Next Meeting: Wednesday December 6, 2023, at 8:30 AM

The meeting adjourned at approximately 10:05 a.m.

Minutes approved: _____

President

Secretary

MEETING MINUTES
MONROE COUNTY DRAINAGE BOARD
Wednesday December 6, 2023, at 8:30 AM
Showers Building Room 106D
Hybrid Meeting with Virtual Attendance via Zoom

MEMBERS PRESENT: James Faber, William Riggert, Ginger Davis, Trohn Enright-Randolph (*ex officio*)

MEMBERS ABSENT: Robert Autio, Lee Jones

STAFF: Kelsey Thetonia (MS4 Coordinator), Donna Barbrick (Secretary), Tina Engle (Stormwater), Erica Penna (Stormwater), Anne Crecelius (Planning), Tammy Berhman (Planning), Daniel Brown (Planning),

OTHERS: Katie Stein, Daniel Butler, Scott Pardue, AJ Willis

1. **Call to Order. In the absence of Robert Autio, James Faber called to order at 8:35 a.m.**
2. **Approval of Minutes for: November 1, 2023: TABLED.** Trohn said thank you to Donna Barbrick for putting the minutes together.

3. Public Input for Items not on the Agenda

Faber said he would still like white paint on the bend on Arlington Road. Kelsey Thetonia said she had sent that request to the Highway Engineer, and she could connect Faber with Paul Satterly.

Thetonia requested to change the order of the agenda. She said Smith Design is here for the Spring Woods Major Subdivision petition.

4. Business

a. SPP-23-4 Preliminary Drainage Plan: Spring Woods Major Subdivision +*

Thetonia said this is a seven-lot major subdivision being proposed south of Carmola Drive. She gave an overview of the location and the drainage. She said it is in Jack's Defeat Creek critical watershed and would require critical watershed release rates. She said there will be six single family lots with frontage on Carmola Drive. She displayed the plat and talked about the proposed development including a detention area in the northwest corner of the site. She said it would have an outlet control structure and then the water would eventually drain into an existing 18-inch pipe that is connected to a storm sewer.

Katie Stein introduced herself and Scott Pardue (Smith Design Group). Stein said it is a fairly small development in comparison to the entire drainage area that is coming here now. She said there is about ten acres of offsite runoff that comes there now. She said the detention pond will detain not only the site runoff but the offsite runoff. She said existing conditions would be significantly reduced. She said the critical drainage area release rates were based upon this development being developed and was modelled a couple of different ways. She said this plan would improve the drainage in the area. She spoke about an existing drainage easement to the north and said that would still be intact and separate from this one. She said the 18-inch pipe that all of this runoff is conveyed to should have been sized as part of that. She said we are now decreasing the amount of runoff to that 18-inch culvert. Thetonia traced the drainage in the area to a series of detention ponds downstream that manage runoff.

Stein said I think it is about half of what is currently going there that we are detaining.

There was a question about a 12-inch existing pipe coming from the Glen Meadows detention pond to the east. Scott Pardue said we asked for plans, and they were never produced for us. Thetonia said I think we should find out where that is. Davis asked if the pond is functional. Stein said she has not looked at that adjacent detention pond to see if it was holding water. Thetonia said Erica Penna has inspected this pond and didn't have any major concerns. Stein said the discharge from this pond should bypass the new pond.

Davis asked about plans for the northeast corner where there is a 90 degree turn at the toe of the Glen Meadows pond berm. Stein said I believe the velocity is pretty low there, but we can look at that. Regarding the discharge from the Glen Meadows pond, Stein said it is confusing because we will also have two different subdivisions/HOAs. She suggested keeping the discharge from the Glen Meadows pond within the Drainage Easement in the rear yards of the properties in the Glen Meadows subdivision so that we would not be dealing with two different HOAs for maintenance. Trohn asked about how many different HOAs we are dealing with. Stein said this one would be its own HOA and they would be doing everything including inspections. Thetonia said every single pond is important; my main concern is when HOAs don't exist and there is no legal ability to enforce maintenance. Stein said this is a question that has come up many, many times. Thetonia said my interest is making sure that those six homeowners are aware that they will need to be the HOA. She said we have completed our countywide inventory, and we will be doing more outreach and concentrating on the ones that are in poor condition and then work our way through all the neighborhoods.

Erica Penna (attending virtually) spoke. She said I will add that the graduate student fellows added these ponds to our inventory, so I have not personally gone out to look at them in depth. She said according to our notes, the only one that is ranked in "fair" condition in this area is the pond that this would drain into at the corner of Geranium Lane and Mocha Drive. She said I do not believe that the basin was fully finished out. She said all the other ones in the area are ranked "good." Thetonia commented we have some investigating to do for this upstream pond and then we can work to address some of the surrounding areas.

Thetonia said back to Ginger's comment about the drainage easement turning into the pond, we will also look at the conditions there. Thetonia said my only other comment would be regarding connecting the outlet for the pond to the 18-inch HDPE, making sure that swale is defined and stable. Davis said thank you for working on the capacity of offsite drainage.

Motion by Riggert to approve the preliminary drainage plan.

Daniel Brown (Planning) spoke. He said he did not have any real comments at this time. He said it would go to the Plat Committee this December and to Plan Commission in January.

Faber called for a vote. VOTE: Faber AYE, Riggert AYE, and Davis AYE. Motion carried.

b. PUD-23-6 Preliminary Drainage Plan North Park II Area

Thetonia gave an overview of the PUD area. She said this is a proposal for a fill site on an old quarry. She said it is a former Superfund site (Bennetts Quarry) that was delisted a few years ago but we would still have restrictions on this property with a lot of environmental concerns here. She said I wanted to bring this to Drainage Board (DB) to see if you had any additional comments on this.

She said the proposed fill would be on the east side of the property. She showed an existing driveway that would be used for vehicles to come in and dump material. She said you can see on the contours we have a high point on the adjoining property at about 820 and then it slopes down currently, and they propose to fill it to come up to this elevation. She said there would be extensive fill operations, to the point where it could be years before the proposed grade is reached. She said runoff from the site would drain to an old quarry area. She said it is in the Stoutes Creek watershed. She talked about temporary sedimentation basins during construction. Davis asked a question about subsurface drainage. Thetonia said there are three identified karst features within the project area. She said I have asked that we try to avoid the karst features and only impact them if we absolutely need to. She said one is a sinking stream that was identified in the karst report. She said there is a spring alongside the existing drive and there would be improvements made to the drive. She said if it is impossible to avoid the karst features then we need to bring their geologist back to talk about mitigation strategies.

Anne Crecelius (Planning) spoke. She said the petitioner has acknowledged even though all the karst features on the west side are not in the current development area, we have seen preliminary drawings for an additional, larger fill area that would include all of those features. Davis asked about where the fill would be coming from. Crecelius said the fill would be from other construction projects. She said they have stated that the fill must be clean; it could be soils or aggregates. She said they stated that asphalt pavements removed from other projects may not be taken here. She said it would generally be concrete that would be sized, crushed or ground on site. She said they have said that the fill would be done in layers, compacted, and then tested by Geotech to meet standards for eventual development. Trohn brought up a suggestion from Tammy Behrman to talk about the road. Crecelius said we have brought up the impact to Vernal Pike which is newly constructed; the petitioner states that it would be approximately 33,000 triaxle dump trucks going over the roads over a period of three to four years. She said we have brought it up to them about how to reduce the impact to the roads.

Thetonia said I asked about making this an INDOT certified dump site and potentially making this a fill site for the county operations to use, as well. She said we want to make sure we are doing this properly to protect our environment and ground water.

Daniel Butler (Bynum Fanyo) spoke. He said we have had multiple environmental impact studies done on this project. He said we realize there are sinkholes, different flow ways, and streams that need to be protected. He said we also got a karst study and a geotechnical report. He said this would be useful long term for the area. He said the first step is responsibly filling it so that it can be developed someday. He spoke about a possible future road connection. He said Anne Crecelius alluded to filling in to the west and that is correct; we had some preliminary discussions. He said that is not included in the current proposal. He said the project owner has thrown out bonding for the road in case the county believes that there is any damage to the road, it would be on them. He said the vehicles used would be normal tri-axle dump trucks. He said we have done three or four fill sites around Monroe County in the last five years. He said with this one there is a commitment to clean fill, having geotechnical there to make sure that it is compacted correctly. He said we want to make sure that no one is illegally dumping on the site and so we want to make sure we know about everyone who has that agreement. He said this proposal would allow only the owner of the site (the Heritage Group) to come in and dump, so they can make sure it is done correctly and filled properly. He said the Planning department wanted to expand the actual roadbed with fill so that you don't have only part of it being filled and that is fine with us. He said I do not see any issues

with protecting those two karst features and then we will work on protecting the spring. Faber asked about inspection of loads. Butler said we would require geotechnical to be on site; the site will have to be tested in the future before buildings and parking lots could be placed on it. He said there would be some self-regulation on where they are getting the fill.

Thetonia asked if fill would be brought in from outside the county. Butler responded likely not; it would be regulated if it is. Thetonia brought up having a phased plan for sediment traps, installed in phases so that they would be properly sized. She said I would like to see more about that phasing. Butler said that is fine; that sediment trap location will stay the same. He said it will look similar even though it will be brought up in phasing. Thetonia said you have the open, old quarry ponds onsite; before it can be completely levelled, the flow of surface or subsurface water will look pretty different. She said I would like to see a little more about how that looks at the beginning of the project and then once it gets fill, the sediment trap will look different. Butler said that is fine.

Davis said she just brought up the karst dye tracing lines, for any information that we had in this area. She said it looks like flow to those springs is coming from the Memory Gardens area. She said it did not have information on where the sinks in this site flow to. She said part of my concern is that we do not know if the sinkholes in the area are providing major recharge to the aquifer below or to Stoutes Creek or where those drains are going. Thetonia mentioned houses in the area not on city utilities. Davis said I do have concerns about extra protections beyond just sediment traps, maybe more filtration such as compost berms that do hydrocarbon filtration along with sediment filtration. She said if the area was expanded to go over those sinks, there would have to be some significant plan to cap and sealing the area so that it doesn't impact any local drinking water or other water resource.

Tammy Behrman (attending virtually) spoke. She said a lot of those people, during the construction of Highway 46 West, experienced their cisterns and wells cracking. She said I know there was testimony that they are not on any municipal water system there. She said Stone Carver Drive would be expanded to the south and they will be pulling a new waterline there. There was a discussion of wells in the area.

Thetonia said it sounds like for the future we should do some more thorough geological investigation about the impacts if we were to fill in all those sinkholes.

Trohn asked what your concerns are if this does go forward. Thetonia said my main concern is surface water quality treatment and avoiding groundwater impact as much as possible. Trohn asked about measures to minimize/mitigate subsurface water impacts. Thetonia said she would work with Daniel on the phasing of the sediment trap and there will be some type of diversion ditch at the bottom that will have another BMP by the outlet before it discharges.

Davis said there are a few more things that I would suggest. She said suggested ground penetrating radar or some other form of study that would allow for ensuring that we do not have any major fracture systems in this area. She said that would be due diligence.

Trohn said he had a question for Planning about the process and how the project would move forward. Crecelius said we did identify that this is a separate use from the quarry definition. She said we have identified this as a mass fill use. She said this is actually North Park 2, so it is technically a separate PUD from the other North Park area. She said an ordinance was adopted and then this property was added in later. She said this is a PUD outline plan

amendment to add in the mass fill use. She said with this kind of proposal the Plan Commission and ultimately the County Commissioners would be very interested in the environmental impacts. She said the DB is able to do a much deeper dive before even having a true development plan. She said if approved by County Commissioners, this use would be added, the ordinance would be amended and then a development plan will be proposed. She said we had some questions that we brought up; we published a packet for the plan review committee in November. She said we were missing some information, and we were going to recommend denial. She said the petitioner asked for it to be continued; we have received an updated site plan and I have uploaded that to OpenGov this morning. She said there was also a letter, and we will be reviewing the responses and getting it on the December 12 plan review meeting.

Thetonia said I wanted to make sure the general environmental concerns are addressed at this stage before approving this outline plan. She said then the specifics on what the plan will look like will be with the development plan approval. She said there will be another stage for DB to review this when we review the development plan. Trohn asked about the self-monitoring of the fill. He asked is that something that we need to think about from a DB perspective. He asked should we start considering some type of condition like testing results. Thetonia said I can talk to Daniel about the potential for surface water monitoring throughout the fill operations and work with them on a written commitment. She said maybe I can work with Planning on some kind of reporting, so we have some idea of where the fill has come from. She said I can continue to work with Daniel Butler as this progresses; we do not need to vote on this.

c. Stone Carver Drive Extension, North Park Area B (Bynum Fanyo)

Thetonia gave an overview of the site. She showed a drainage easement on the plat already and an old farm pond. She said she did not have any information on the pond. She said she asked for detention to be provided for the road and then each lot would be required to have their own detention/water quality treatment when they are developed. She said they have provided a grading plan with a detention pond that would capture most of the runoff from the road. She said it is meeting the county release rates that will be in the new ordinance. She said there is no regional pond for this development; it would be the responsibility of the owner of this lot. She showed the plan for the detention pond that is within the drainage easement area. She said the road is the high point. There was a discussion of the lack of regional ponds in the area. She said she needed to look at this some more and she would bring this back in January.

Daniel Butler commented I have worked a lot in this area and have some background knowledge of the infrastructure there and to the north of Curry Pike. He said I am here for questions, just to let you know.

AJ Willis (attending virtually) spoke. He said this project is a roadway extension with no future plans yet for development of the lots at this time. He said it is to meet the North Park ordinance requirements to extend this roadway. He said there is a detention basin at the intersection of the extension and Lintel Drive. He said this pond will capture a half-inch of runoff and provided extended detention for that and it will eventually outlet to the existing pond, matching the existing flow path. He said at the Woodyard intersection, there would be a double catch basin to provide sediment storage. Thetonia said thank you, AJ. She said I will bring this back in January; it will be going to the Plan Commission in December.

d. Drainage Easement Violation, Drainage Easement Waiver Request

Thetonia said she was able to work with the owners of Lot 57 on a fence configuration that did not cross the drainage easement. She said there are still a couple of others. She said there was a request that was denied last month, and the property owners have not yet asked to appeal.

Thetonia said Lot 60 is the one where we had a fence that was built over a pipe. She said we decided we needed more information on the condition of the pipe. She said they found a survey stake had punctured through it but there was not anything noticeable on the fence posts affecting the pipe. She said my main concern was future settling and that the pipe does not have a lot of cover. She said this will come to DB at our next meeting.

Thetonia said regarding Lot 58, there was a deck built within the drainage easement against the property line. She said there was also a setback concern that would have to go to BZA if they wanted to keep it. She said displayed the area and the drainage easement. She said the grading here did not follow the original plans. She said there has not been any movement on this in Planning/Building. She said this would come to DB at the next meeting on January 4.

5. Staff Reports

Davis asked where we are at with the ordinance. Thetonia said I have a deadline of July 2024 to get this passed. She said I wonder if DB members would be interested in special meetings in early 2024 to wrap up the discussion of the ordinance so that we do not take time at our regular meetings. She said it is important that we coordinate with Planning since they are re-writing their ordinance. She said we will be taking on logging permits in our stormwater ordinance, basing on our former logging ordinance, since Planning is so limited in what they can regulate in non-urban areas. She said since it is erosion/sediment control that we are really concerned with then it will be regulated under our construction site erosion/sediment control ordinance.

6. Adjournment

Motion to adjourn by Davis. Second by Riggert. VOTE: AYE (unanimous). Meeting adjourned at approximately 10:19 am.

Minutes approved: _____

President

Secretary

Project Name: North Park Area B-9
Engineer/Design Firm: Daniel Butler, Bynum Fanyo
Address: SW of SR 46 and I-69
Acres: 28 acres disturbed/98.6 acres

Watershed: Stouts Creek
Karst Report: Completed
Wetland Delineation: Not Completed

Updates since the 12/6/2023 Drainage Board meeting are shown in red.

Project Summary

The North Park Area B-9 Fill Site is located in the Stouts Creek watershed at the SW corner of SR 46 and I-69. The project site is surrounded by the North Park PUD to the north, and commercial/PUD/industrial/quarry to the south. This property is the former Bennett’s quarry superfund site. The project is not located within a mapped floodplain. The karst study has identified karst features within and around the project area, including springs and one sinking stream. This petition is requesting to add ‘mass grading with fill operations’ as a use under the current PUD.



Project Drainage

This property drains northwest towards a former quarry area (restricted development-free zone). As a vacant quarry, there are existing quarry ponds and piles of rock throughout the site. There is a stream that runs south to north just west of this proposed fill area. The stream has a drainage area of 0.87 mi² and flows to an INDOT culvert that runs under SR 46. There is also off-site discharge from I-69 infrastructure.

Email from Daniel Butler to Planning Department 11/22/2023:

Anne,

Here are some responses to your questions from the last PRC packet that we hope will satisfy enough to get a 'recommendation of approval' for next PRC meeting:

1. See attached for revised plans that now show grading to edge of future ROW. This plan does take into account future planning of the road to go through the property
2. We are only asking for the needed fill of the site to get to a point of commercial or industrial future uses. 3-5 years is the anticipated current timeline for completion of fill as shown.
3. The timeline will depend on the volume of construction work in the area that contains excess clean fill. We anticipate that based on the current market conditions this could take up to 5 years for completion, which would be up to 30 normal, legal dump truck loads per day. The owner is willing to bond the portion of the roadway that has not been re-constructed to ensure it's viability to the county highway dept.
4. Definition for "mass grading with filling operations": to fill the site with the excess material from other construction projects. The fill must be clean fill material from other projects and could be soils and aggregates. Asphalt pavements that are removed from other projects may not be taken to this site. Concrete is allowed to be brought to the site as fill from other projects but this material shall be properly sized before it is incorporated into any fill. Once the material is at the site it will be placed, compacted and tested per Geotechnical Standards for future buildability. On-site crushing of materials is allowed but anticipated to be seldom and would be for the purposes of obtaining proper clean fill placement. All fill material must be clean and no environmental questionable material is allowed. Resale of any on-site fill is not allowed and only for use of filling site to proposed engineered grades.

-Daniel

North Park Area B-9 Fill Site – Drainage Comments

Sinkholes, Sinking Streams, and Karst Springs:

- SCAs noted on the plans should specify the types of karst features where there are proposed impacts. This information is available in your karst report.
- No karst features should be impacted as part of these fill operations.
 - Please revise plans to show that SS-01 and SP-03 are avoided and their drainage areas protected.
 - **12/6/2023 Revised plans show SCAs are avoided.**
 - **Ensure drainage from sinkholes is provided, if the sinkhole were to stop draining.**
 - If SP-04 will be impacted due to its proximity to the existing driveway, please show plans for mitigation (what will you do with the water from the spring?) and ideally, this should be communicated to Jason Krothe so he can provide input on appropriate mitigation strategies.
 - **From Jason Krothe email to Dainel Butler 12/8/2023:**
"For SP-04, I recommend a spring box be installed to prevent any impacts to the spring or the roadway. I have attached the specs for two types of spring boxes. The spring currently flows west to the main south to north stream. The spring should continue to flow to this stream after installation of the spring box. We have sampled SP-04 as part of the I-69 water quality sampling since 2017. The most flow we have observed in that time is 10 gallons per minute, although typically it is lower (1-2gpm), and sometimes dry."
 - **Jason provided an example detail sheet of a spring box from INDOT's manual 'Protection of Karst Features during Project Development and Construction' dated July 2021.**

Environmental:

- Is there an environmental report describing the 'development free zone' where the runoff from this project will be discharging to? What are the restrictions?
 - The SWPPP will aim to minimize the amount of sediment and pollutants entering the development free zone.
 - At the 12/6/2023 Drainage Board meeting, the board asked for an additional water quality measure prior to discharging to the development free zone.
- A wetland delineation will be required prior to development plan review.
- Demonstration of compliance with other environmental permitting will be required for concrete crushing operations. Additional stormwater quality measures may be required.

Adequacy of outlets/receiving infrastructure:

- Need more information on how/if water flows north under SR 46?
 - Discharge from the site flows to an INDOT culvert to the north of the project.

Overall Grading Plan:

- The proposed temporary sediment basin is shown roughly 40 feet above existing grade. This is fine for later fill operations, but I need to see a plan for temporary sediment traps to be installed prior to any fill operations beginning. Since this will be a large long-term operation, there should be sediment traps along the toe of the slope to capture erosion from the fill area during different phases of the project.
- Provide benches along the slope in the final grading plan.
- Silt fence is not an adequate practice to capture runoff from a 30-40 ft 3:1 slope. Pipe slope drains may be a good practice to convey water from the top of the pile to sediment traps at the toe of the slope.
- Provide drainage calculations showing the capacity/adequacy of the sediment traps.
- A natural buffer of 50 feet must be provided on either side of the main south-north stream channel.

Final Stabilization:

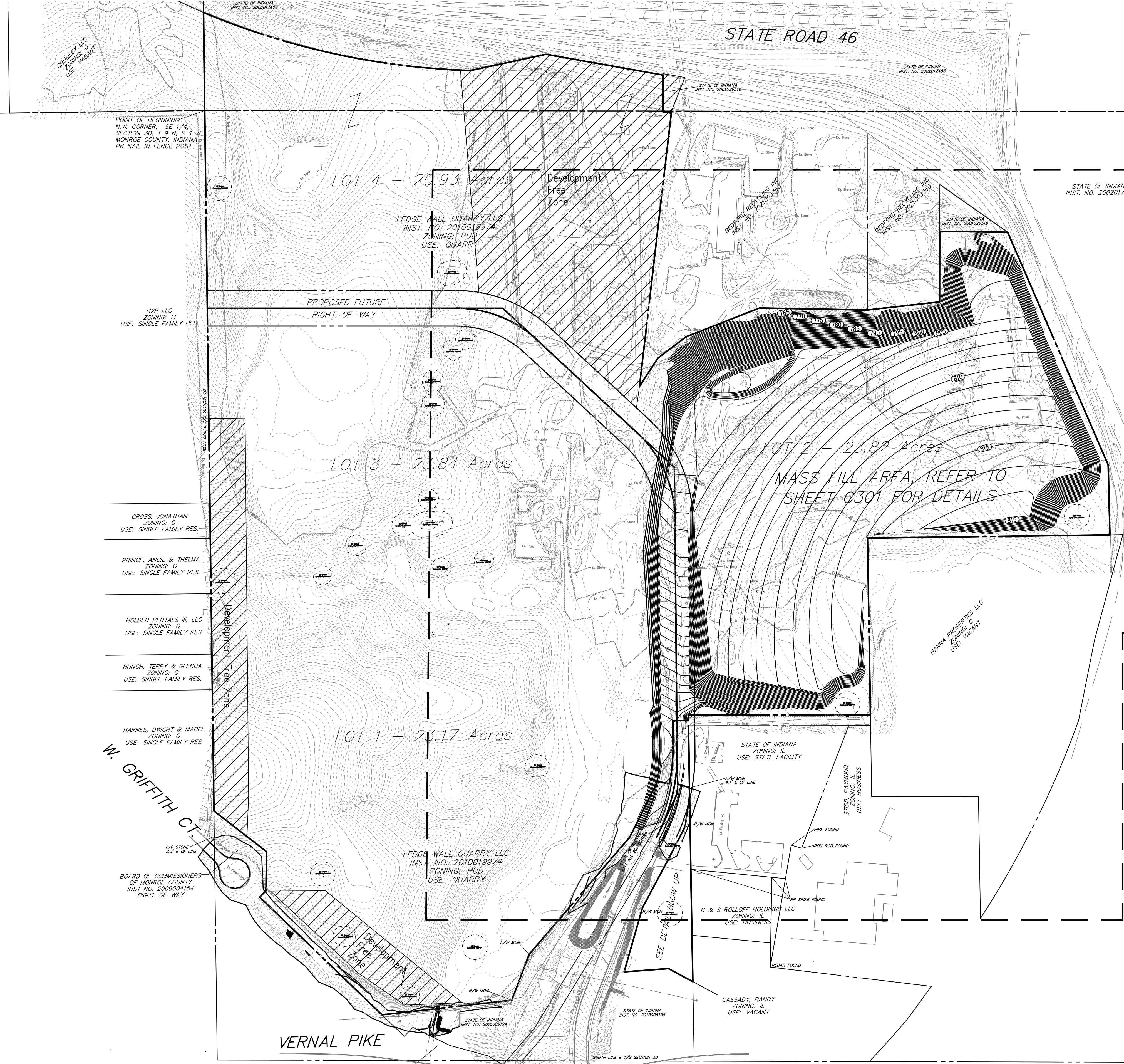
- Provide a final stabilization plan including topsoil/seed (specify depth of topsoil), wattles along the slopes, and description of the phasing/sequencing.

Some of these specific comments can be addressed during the development plan review. However, I'd like to have the issues with karst impacts figured out before I complete my review of this outline plan.

I would like the Drainage Board to provide their input for any additional considerations for this project.

If this proceeds, I will provide the Drainage Board with an update during the development plan review.

NT, LLC
174



W. GRIFFITH CT.

STATE ROAD 37

VERNAL PIKE

SEE SITE PLAN - C301

POINT OF BEGINNING
N.W. CORNER, SE 1/4
SECTION 30, T 9 N, R 1 W
MONROE COUNTY, INDIANA
PK NAIL IN FENCE POST

H2R LLC
ZONING: L1
USE: SINGLE FAMILY RES.

CROSS, JONATHAN
ZONING: Q
USE: SINGLE FAMILY RES.

PRINCE, ANGL & THELMA
ZONING: Q
USE: SINGLE FAMILY RES.

HOLDEN RENTALS III, LLC
ZONING: Q
USE: SINGLE FAMILY RES.

BUNCH, TERRY & GLENDA
ZONING: Q
USE: SINGLE FAMILY RES.

BARNES, DWIGHT & MABEL
ZONING: Q
USE: SINGLE FAMILY RES.

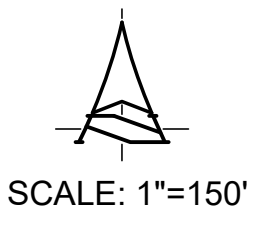
BOARD OF COMMISSIONERS
OF MONROE COUNTY
INST. NO. 2009004154
RIGHT-OF-WAY

S.W. CORNER, E 1/2
SECTION 30, T 9 N, R 1 W
MONROE COUNTY, INDIANA
IRON ROD IN BOX FOUND

BOARD OF COMMISSIONERS
OF MONROE COUNTY
INST. NO. 2009004154
RIGHT-OF-WAY

BOARD OF COMMISSIONERS
OF MONROE COUNTY
INST. NO. 2009004154

SOUTHEAST CORNER
SECTION 30, T 9 N, R 1 W
MONROE COUNTY, INDIANA
IRON ROD FOUND



NOTE TO CONTRACTOR

CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ENGINEER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CONFLICTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE TO CONTRACTOR FOR UTILITY DESTRUCTION OR UNDERGROUND CHANGES REQUIRED DUE TO CONFLICTING ELEVATIONS.

revisions:

ARCHITECTURE
CIVIL ENGINEERING
PLANNING

BFB
BYNUM FANYO & ASSOCIATES, INC.

528 north walnut street
(812) 332-8030

bloomington, indiana
(812) 339-2990 (Fax)

certified by:

**PROPOSED
NORTH PARK AREA B-9 MASS
GRADING**

N HUNTER LN
BLOOMINGTON, IN 47401

title: Overall Grading Plan

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C201
project no.: 402231

20.93 Acres

Development Free Zone

DGE WALL QUARRY LLC
INST. NO. 2010018974
ZONING: PUD
USE: QUARRY

STATE OF INDIANA
INST. NO. 2002017453

GRADING/DRAINAGE LEGEND

EXISTING CONTOUR	---
PROPOSED CONTOUR	---
PROPOSED INTENDED FLOWLINE DIRECTION	→

PHASING NOTE: CONTRACTOR TO ADD FILL IN PHASES OF 10 FOOT ELEVATION CHANGES. EROSION CONTROL MEASURES SUCH AS ROCK CHECK DAMS AND SEDIMENT POND ARE TO BE IMPLEMENTED AND MAINTAINED AT EACH PHASE AS SHOWN ON SITE PLAN AND DETAILS SHEETS.

NOTE: EXISTING ELEVATION CONTOURS DEPICTED ARE FROM AN AERIAL SURVEY. ACTUAL EXISTING CONDITIONS CONTOURS MAY DIFFER WHEN CONSTRUCTION HAS COMMENCED. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES THAT WOULD INHIBIT GRADING THE PROPOSED CONTOURS AS INDICATED.

GRADING & GENERAL NOTES

- PROPOSED CONTOURS SHOWN ARE MAXIMUM TOP OF FILL IN AREAS TO BE MULCHED AND SEED.
- ALL DISTURBED AREAS SHALL RECEIVE 4" TO 6" OF SOIL/DIRT AFTER FILL OF THE SITE. THIS SOIL IS TO BE PLACED AND LEVELED BY THE CONTRACTOR. DURING CONSTRUCTION THE TOP 4" TO 6" OF EXISTING SOIL SHALL BE STOCKPILED BY THE CONTRACTOR IN AREA DESIGNATED ON PLAN TO THEN BE REDISTRIBUTED THROUGHOUT THE DISTURBED SITE IN ORDER TO ESTABLISH MATURE AND HEALTHY VEGETATION AFTER CONSTRUCTION HAS COMMENCED. ANY AREAS FOUND TO NOT BE COVERED BY SOIL AND MATURE VEGETATION AFTER CONSTRUCTION SHALL BE RE-COVERED, RE-LEVELED AND SEED/MULCHED AGAIN.
- CONTRACTOR SHALL NOTIFY AND COOPERATE WITH ALL UTILITY COMPANIES OR FIRMS HAVING FACILITIES ON OR ADJACENT TO THE SITE BEFORE DISTURBING, ALTERING, REMOVING, RELOCATING, ADJUSTING, OR CONNECTING TO SAID FACILITIES. CONTRACTOR SHALL PAY ALL COSTS IN CONNECTION WITH ALTERATION OF OR RELOCATION OF THE FACILITY.
- ALL WORK IS TO BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS.
- ALL PERMITS ARE TO BE OBTAINED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE LANDSCAPE CONSTRUCTION. PLANTING LOCATIONS MAY REQUIRE ADJUSTMENTS IN FIELD TO AVOID OVERHEAD AND UNDERGROUND UTILITIES.
- UNUSABLE EXCAVATED MATERIALS AND ALL WASTE RESULTING FROM CLEARING AND GRUBBING SHALL BE DISPOSED OF OFF SITE BY CONTRACTOR.
- BEFORE ANY MACHINE WORK IS DONE, CONTRACTOR SHALL STAKE OUT AND MARK THE ITEMS ESTABLISHED BY THIS GRADING PLAN. CONTROL POINTS SHALL BE PRESERVED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION. THE LACK OF PROPER WORKING POINTS AND GRADE STAKES MAY REQUIRE CESSATION OF OPERATIONS UNTIL SUCH POINTS AND GRADES HAVE BEEN PLACED TO THE OWNER'S SATISFACTION.
- ANY FILL AREAS SHALL BE FREE OF VEGETABLE MATTER, RUBBISH, LARGE ROCK, AND OTHER DELETERIOUS MATERIAL. THE FILL MATERIAL SHOULD BE PLACED IN LAYERS NOT TO EXCEED SIX (6) INCHES IN LOOSE THICKNESS AND SHOULD BE SPRINKLED WITH WATER AS REQUIRED TO SECURE SPECIFIED COMPACTION. EACH LAYER SHOULD BE UNIFORMLY COMPACTED BY MEANS OF SUITABLE EQUIPMENT AS DICTATED BY THE TYPE OF FILL MATERIAL. UNDER NO CIRCUMSTANCES SHOULD A BULLDOZER OR SIMILARLY TRACKED VEHICLE BE USED AS COMPACTION EQUIPMENT. MATERIAL CONTAINING AN EXCESS OF WATER SHOULD BE SPREAD AND DRIED TO A MOISTURE CONTENT THAT WILL PERMIT PROPER COMPACTION. ALL FILL SHOULD BE COMPACTED TO THE SPECIFIED PERCENTAGE OF THE MAXIMUM DENSITY OBTAINED IN ACCORDANCE WITH ASTM DENSITY TEST D-698 (95 PERCENT OF MAXIMUM DRY DENSITY). IF THE SPECIFIED COMPACTION LIMITS ARE NOT MET, SUCH AREAS SHOULD BE REWORKED AND RETESTED AS REQUIRED UNTIL THE SPECIFIED LIMITS ARE REACHED.
- SAFE, CLEARLY MARKED PEDESTRIAN AND VEHICULAR ACCESS TO ALL ADJACENT PUBLIC ROADS AND PROPERTIES MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS.

STATE ROAD 37

EROSION CONTROL LEGEND

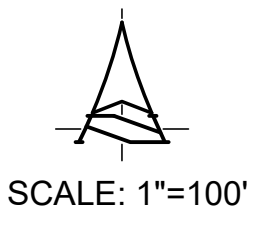
DB	TEMPORARY EARTHEN DIVERSION BERM - REFER TO DETAIL. BERM SHALL BE A MINIMUM OF 2' HIGH, 2' WIDE FLAT TOP AND A MAXIMUM OF 3:1 SIDE SLOPES
DS	TEMPORARY EARTHEN DIVERSION SWALE - REFER TO DETAIL. BERM SHALL BE A MINIMUM OF 2' DEEP, 2' WIDE FLAT BOTTOM AND A MAXIMUM OF 3:1 SIDE SLOPES
CD	ROCK CHECK DAM (TEMPORARY DURING CONSTRUCTION) - REFER TO DETAIL
TSF	TEMPORARY SILTATION FENCE, REFER TO DETAIL
CL	CONSTRUCTION LIMITS, DELINEATED BY PROPERTY LINE UNLESS OTHERWISE SPECIFIED
MS	TEMPORARY MULCH SEEDING - REFER TO DETAILS
SP	30' X 800' STONE PAD, 6" DEEP TO KEEP FROM TRACKING MUD OFF SITE - REFER TO DETAIL (TEMPORARY DURING CONSTRUCTION)
ECB	PERMANENT EROSION CONTROL BLANKET - CURLEX NET-FREE BRAND 100% BIO-DEGRADABLE EROSION CONTROL BLANKET OR APPROVED EQUAL - REFER TO DETAIL
RR	D-50 RIP-RAP STORM OUTLET PROTECTION - REFER TO DETAIL AND PLAN FOR MIN. QUANTITY (PERMANENT)
RW	LIMESTONE BLOCK OR GABION BASKET RETAINING WALL
CB	COMPOST FILTER BERM
SB	SPRING BOX - REFER TO DETAIL

EARTHWORK QUANTITIES

NORTH PARK AREA 'B-9' TOTAL ACREAGE = 99.6 ACRES
NORTH PARK AREA 'B-9' CONSTRUCTION LIMITS = 26.2 ACRES
TOTAL NET SITE VOLUME = APPROX. 350,000 CUBIC YDS

NOTE TO CONTRACTOR

CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ENGINEER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CONFLICTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE TO CONTRACTOR FOR UTILITY DESTRUCTION OR UNDERGROUND CHANGES REQUIRED DUE TO CONFLICTING ELEVATIONS.



SCALE: 1"=100'

23.84 Acres

23.17 Acres

EDGE WALL QUARRY LLC
INST. NO. 2010018974
ZONING: PUD
USE: QUARRY

CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THIS SEDIMENT BASIN, REFER TO THE SEDIMENT BASIN DETAIL IN THIS PLAN SET. CONTRACTOR TO RE-EXCAVATE SEDIMENT BASIN TO DESIGNED ELEVATIONS SHOWN WHEN SEDIMENT REACHES AN ELEVATION OF 796.00 AT THE ROCK FILTER. PLACE A METAL STAKE WITH A CLEARLY MARKED LINE FOR THE 796.00 ELEVATION.

18.5 ACRES IS THE DRAINAGE BASIN TO THIS TEMPORARY SEDIMENT POND PROPOSED SEDIMENT BASIN (TSB). MINIMUM VOLUME = 33300 CF. STORAGE PROVIDED = 47390 CF BEFORE 1' UNDER TOP OF DAM OF 798.50 AS INDICATED

CONTRACTOR TO FOLLOW PIPING AND BENCHING ON THIS FILL SLOPE FROM INDIANA DESIGN MANUAL - REFER TO DETAIL ON SHEET C603 FOR INFORMATION

CONTRACTOR TO INSTALL EROSION CONTROL BLANKET ON ALL 3:1 SLOPES (ECB), REFER TO DETAIL

CONTRACTOR TO FOLLOW PIPING AND BENCHING ON THIS FILL SLOPE FROM INDIANA DESIGN MANUAL - REFER TO DETAIL ON SHEET C603 FOR INFORMATION

CONTRACTOR TO INSTALL EROSION CONTROL BLANKET ON ALL 3:1 SLOPES (ECB), REFER TO DETAIL

PROJECT REQUIRES TWO (2) LINES OF SILT FENCE

CONTRACTOR TO INSTALL EROSION CONTROL BLANKET ON ALL 3:1 SLOPES (ECB), REFER TO DETAIL

CONTRACTOR TO FOLLOW PIPING AND BENCHING ON THIS FILL SLOPE FROM INDIANA DESIGN MANUAL - REFER TO DETAIL ON SHEET C603 FOR INFORMATION

HANNA PROPERTIES LLC
ZONING: Q
USE: VACANT

STATE OF INDIANA
ZONING: IL
USE: STATE FACILITY

CONTRACTOR TO INSTALL EROSION CONTROL BLANKET ON ALL 3:1 SLOPES (ECB), REFER TO DETAIL

CONTRACTOR TO FOLLOW PIPING AND BENCHING ON THIS FILL SLOPE FROM INDIANA DESIGN MANUAL - REFER TO DETAIL ON SHEET C603 FOR INFORMATION

ST100,000 USE: BUSINESS

PIPE FOUND

IRON ROD FOUND

RR SPIKE FOUND

BLOW UP

revisions:

ARCHITECTURE
CIVIL ENGINEERING
PLANNING

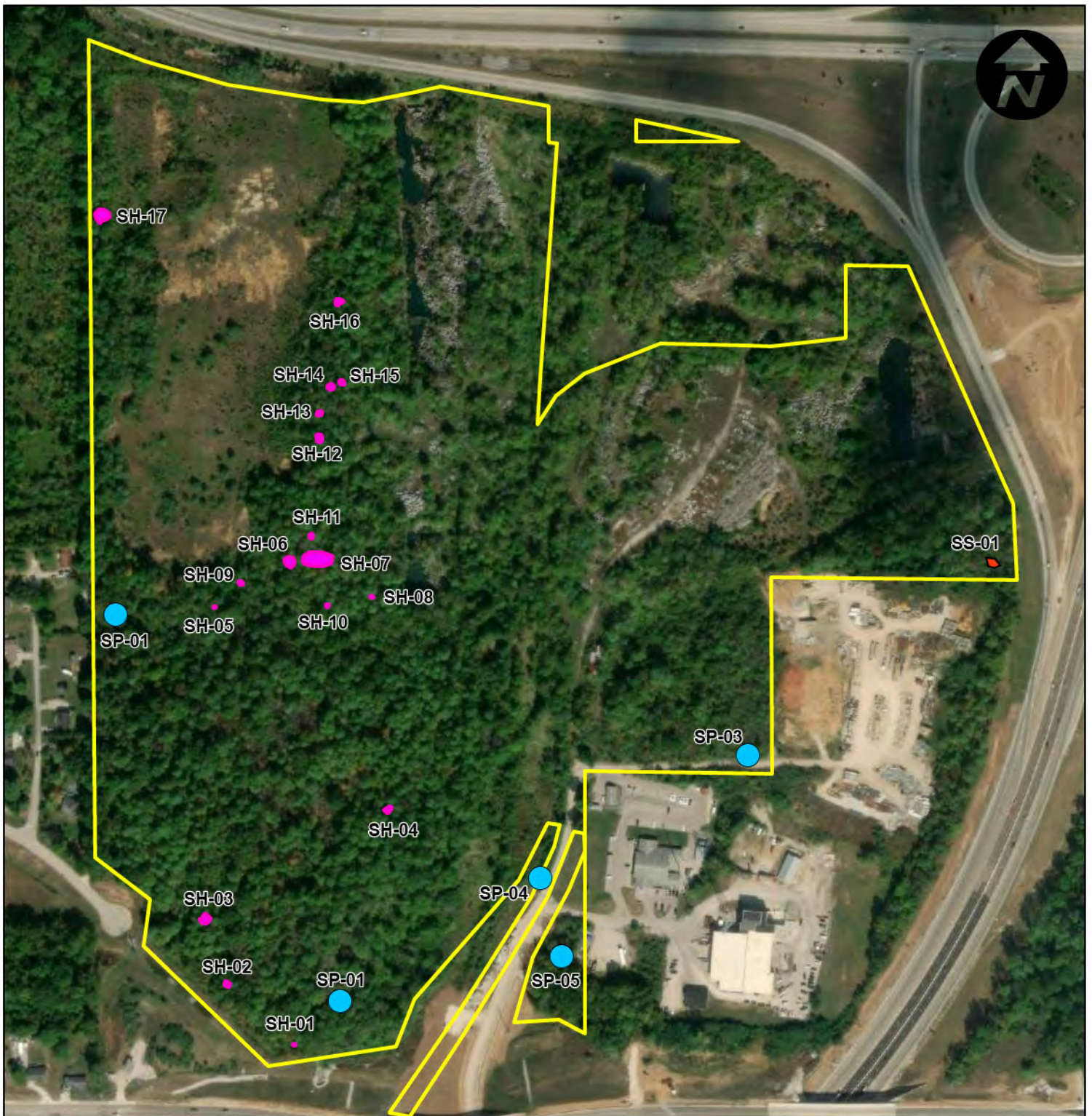
BYNUM FANYO & ASSOCIATES, INC.
528 north walnut street
(812) 332-8030

certified by:

PROPOSED
NORTH PARK AREA B-9 MASS
GRADING
N HUNTER LN
BLOOMINGTON, IN 47401

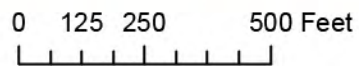
title: GRADING AND EROSION CONTROL PLAN

designed by: DAS
drawn by: DAS
checked by: DJB
sheet no: C301
project no: 402231



LEGEND

- Property Boundary
- Sinkhole
- Sinking Stream
- Spring



**KARST SURVEY
OLD LEDGE WALL QUARRY
BLOOMINGTON, IN**

KARST FEATURES

hydrogeology inc.

FIGURE

6

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

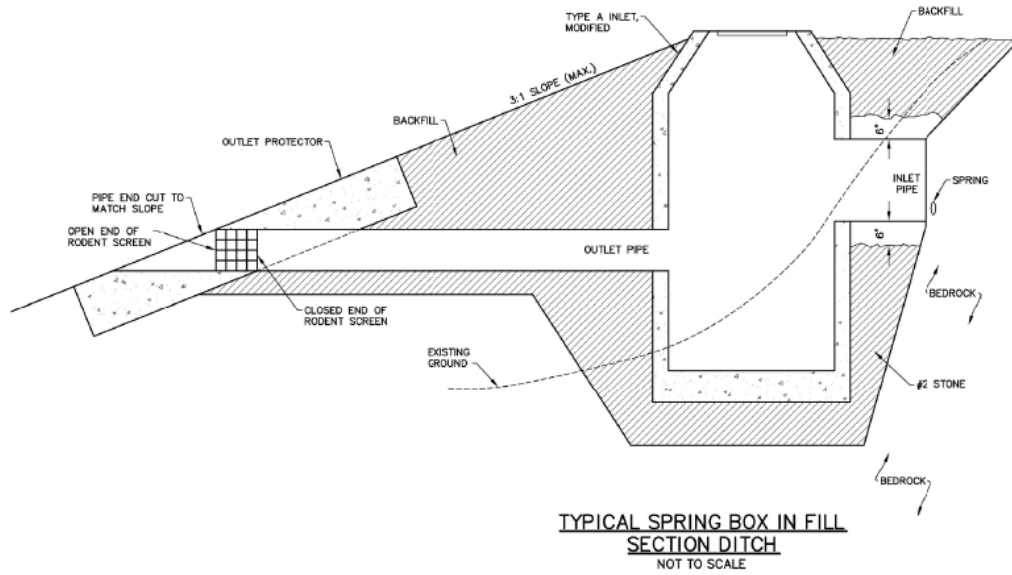


Figure 9. Offset structure
Source INDOT

This offset structure is designed to allow water from the roadside ditch to flow into a sinkhole located under the embankment. The sinkhole is stabilized prior to installing the structure. The grate provides access for maintenance.

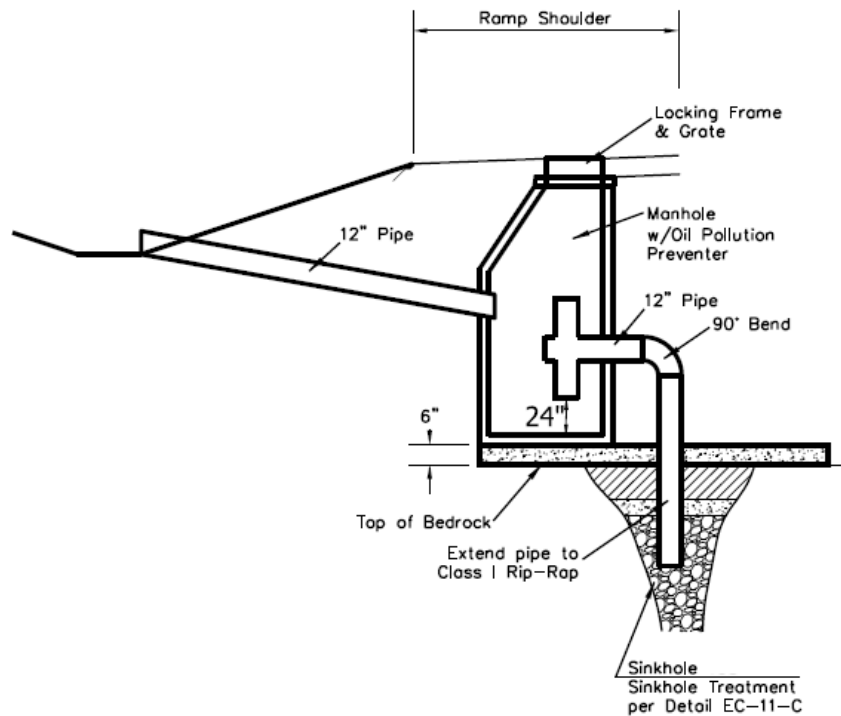


Figure 10. Spring Box
Source INDOT

The spring box is designed to capture flow from a spring or seep located under fill and direct it toward the bottom of the slope.

Project Name: Stone Carver Drive Extension
Engineer/Design Firm: AJ Willis, Bynum Fanyo
Address: N Stone Carver Dr.
Acres: 14.53 acres

Watershed: Stouts Creek
Karst Report: Not Completed
Wetland Delineation: Not Completed

Project Summary

The Stone Carver Drive Extension is part of the North Park PUD and is located in the Stouts Creek watershed (not a Critical Watershed). The project site is surrounded by the North Park PUD to the north, and residential/agricultural to the south. The project is not located within a mapped floodplain. No additional studies have been completed.



Project Drainage

This property drains southeast towards Stout Creek. There is an existing farm pond in the Common Area/Drainage Easement that will not be part of the roadway extension project. Runoff from the northern portion of the road extension (most of the roadway) will be captured in a detention pond located in the Common Area/Drainage Easement. A small area of runoff at the southern end of the extension will not have detention and will be discharged to the ditch along Woodyard Rd. Catch basins will be provided as a water quality measure.

Stone Carver Drive Extension – Drainage Comments**Drainage Easements:**

- Verify the portion of the Common Area with the new detention pond is within a Drainage Easement.
- Provide Drainage Easements for storm infrastructure outside the right-of-way.
- There is no business association, so it is assumed that individual lot owners will be responsible for maintenance of infrastructure on their property.

Adequacy of outlets/receiving infrastructure:

- The southern portion of the road extension will discharge to Woodyard Rd. County Stormwater will ditch this portion of roadway. One driveway pipe may be required (owned by Indiana University Health Bloomington Inc).
- The northern detention area drains to the existing farm pond. The berm of the pond will need to be repaired/stabilized during development of this lot.

Water Quality:

- Detention pond will treat 0.5" runoff from the majority of the roadway. Catch basins will be provided for the southern portion of roadway.

ELECTRIC UNDERGROUND LINE EASEMENT
16' WIDE, D.R. 282, P. 528

6" DIP AND FIRE HYDRANT/VALVE REQUIRED,
CONTRACTOR TO PLACE 12"x12"x6" TEE FITTING -
REFER TO THE CITY OF BLOOMINGTON UTILITIES
SPECIFICATIONS AND DETAIL. HYDRANTS FROM
PRIVATE MAINS SHALL BE PAINTED 'ALUMINIZED'
PER CBU SPECIFICATION 4.4.4.4.

CONTRACTOR SHALL END 12"
WATER MAIN EXTENSION WITH
BLIND FLANGE AND VALVE.

CONTRACTOR SHALL END 12"
WATER MAIN EXTENSION WITH
BLIND FLANGE AND VALVE.

EDWARDS
INST. NO. 2001003811
ZONING: RE 1
USE: VACANT

WOODYARD ROAD
MAJOR COLLECTOR

EMPSON
D.R. 325, P. 257
ZONING: RE 1
USE: RESIDENTIAL

SITE IMPROVEMENT LEGEND

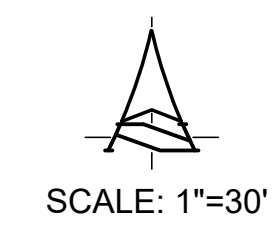
- (A) PROPOSED ROAD BITUMINOUS PAVING - REFER TO DETAIL
- (A1) PROPOSED ACCELERATION/DECELERATION TAPER ROAD BITUMINOUS PAVING - REFER TO DETAIL
- (A2) PROPOSED HEAVY-DUTY ROAD BITUMINOUS PAVING - REFER TO DETAIL
- (C) PROPOSED CONCRETE PAVING - REFER TO DETAIL
- (F) PROPOSED CONCRETE PATIO OR SIDEWALK - REFER TO PLAN FOR LOCATIONS AND REFER TO DETAIL
- (15) PROPOSED 6" MONOLITHIC CURB AND GUTTER - REFER TO DETAIL
- (R) PROPOSED INDOT SIDEWALK ACCESSIBLE RAMP WITH CAST IRON DETECTIBLE WARNING SURFACES - REFER TO DETAILS ON SHEET C01(3)
- (36) PROPOSED STOP BAR PAVEMENT MARKING; THERMOPLASTIC, SOLID, WHITE, 24" WIDE, 12" LONG FROM CENTER LINE OF ROAD AS INDICATED. 4" SEPARATION FROM CROSS-WALK MARKINGS
- (38) PROPOSED CROSSWALK PAVEMENT MARKING; THERMOPLASTIC, SOLID, 24" WIDE, 24" SPACING, WHITE, WIDTH TO MATCH SIDEWALK OR ALL-PURPOSE PATH, SEE PLAN (CROSSWALK PER INDOT STANDARD 808.07)
- (33) PROPOSED TURN LANE INDICATION ARROW PAVEMENT MARKING; THERMOPLASTIC, SOLID, WHITE, 6"-1" WIDE, 8"-0" TALL (TRANSVERSE MARKING LANE INDICATION ARROW PER INDOT STANDARD SPECIFICATION 808.07) AND STANDARD DRAWING E808-MKPM-02)
- (R1-1) PROPOSED INDOT 30" x 30" ROAD 'STOP' SIGN - REFER TO DETAILS
- [Symbol] EXISTING DEDICATED OPEN SPACE AREA PER NORTH PARK PUD OPEN SPACE REQUIREMENTS

EXISTING LEGEND

- EXISTING FENCE [Symbol]
- EXISTING WATER LINE [Symbol]
- EXISTING OVERHEAD UTILITY LINES [Symbol]
- EXISTING UNDERGROUND ELECTRIC LINES [Symbol]
- EXISTING UNDERGROUND TELEPHONE LINES [Symbol]
- EXISTING UNDERGROUND FIBER OPTIC LINES [Symbol]
- EXISTING GAS LINE [Symbol]
- EXISTING SANITARY FORCEMAIN [Symbol]
- EXISTING CONTOUR [Symbol]
- FLOW LINE [Symbol]
- EXISTING SANITARY SEWER AND MANHOLE [Symbol]
- EXISTING STORM SEWER AND INLET [Symbol]
- PROPERTY LINE [Symbol]

UTILITY LEGEND

- PROPOSED PUBLIC WATER LINE MAIN: AWWA C900 PVC AND FITTINGS, REFER TO MECHANICAL JOINT RESTRAINT DETAIL AND PROFILE FOR THRUST RESTRAINT DESIGN REQUIREMENT. NOTE: PRIVATE WATER MAIN SHALL BE FULLY CONSTRUCTED AND TESTED AS SHOWN BEFORE CBU WILL RELEASE MASTER METERS FOR PRIVATE WATER TO BE IMPLEMENTED. CONTRACTOR TO COORDINATE WITH CBU. 48" COVER MIN.
- PROPOSED FIRE HYDRANT, HYDRANTS FROM PUBLIC MAINS SHALL BE PAINTED 'ALUMINIZED' PER CBU SPECIFICATION 4.4.4.4, REFER TO DETAIL
- PROPOSED WATERLINE CAP AND VALVE [Symbol]
- PROPOSED WATER VALVE PER CBU SPECIFICATIONS [Symbol]
- PROPOSED PUBLIC 4" DR-11 HDPE FORCEMAIN PIPE, REFER TO PLAN AND 'FORCEMAIN NOTES' FOR MORE INFORMATION ON FORCEMAIN SPECIFICATIONS REQUIRED. 48" COVER MIN. [Symbol]
- NOTE: ALL WATER AND SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF BLOOMINGTON UTILITY SPECIFICATIONS.



NOTE TO CONTRACTOR

CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ENGINEER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CONFLICTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE TO CONTRACTOR FOR UTILITY DESTRUCTION OR UNDERGROUND CHANGES REQUIRED DUE TO CONFLICTING ELEVATIONS.

revisions:

ARCHITECTURE
CIVIL ENGINEERING
PLANNING

BYNUM FANYO & ASSOCIATES, INC.
528 north walnut street
(812) 332-8030

certified by:

PROPOSED
STONE CARVER DRIVE EXTENSION
N. STONE CARVER DRIVE,
BLOOMINGTON, IN 47404
FROM N LINTEL DR. TO W. WOODYARD ROAD

title: SITE & UTILITY PLAN (SOUTH)

designed by: AJW
drawn by: AJW
checked by: JSF
sheet no: C201
project no.: 402337

SITE IMPROVEMENT LEGEND

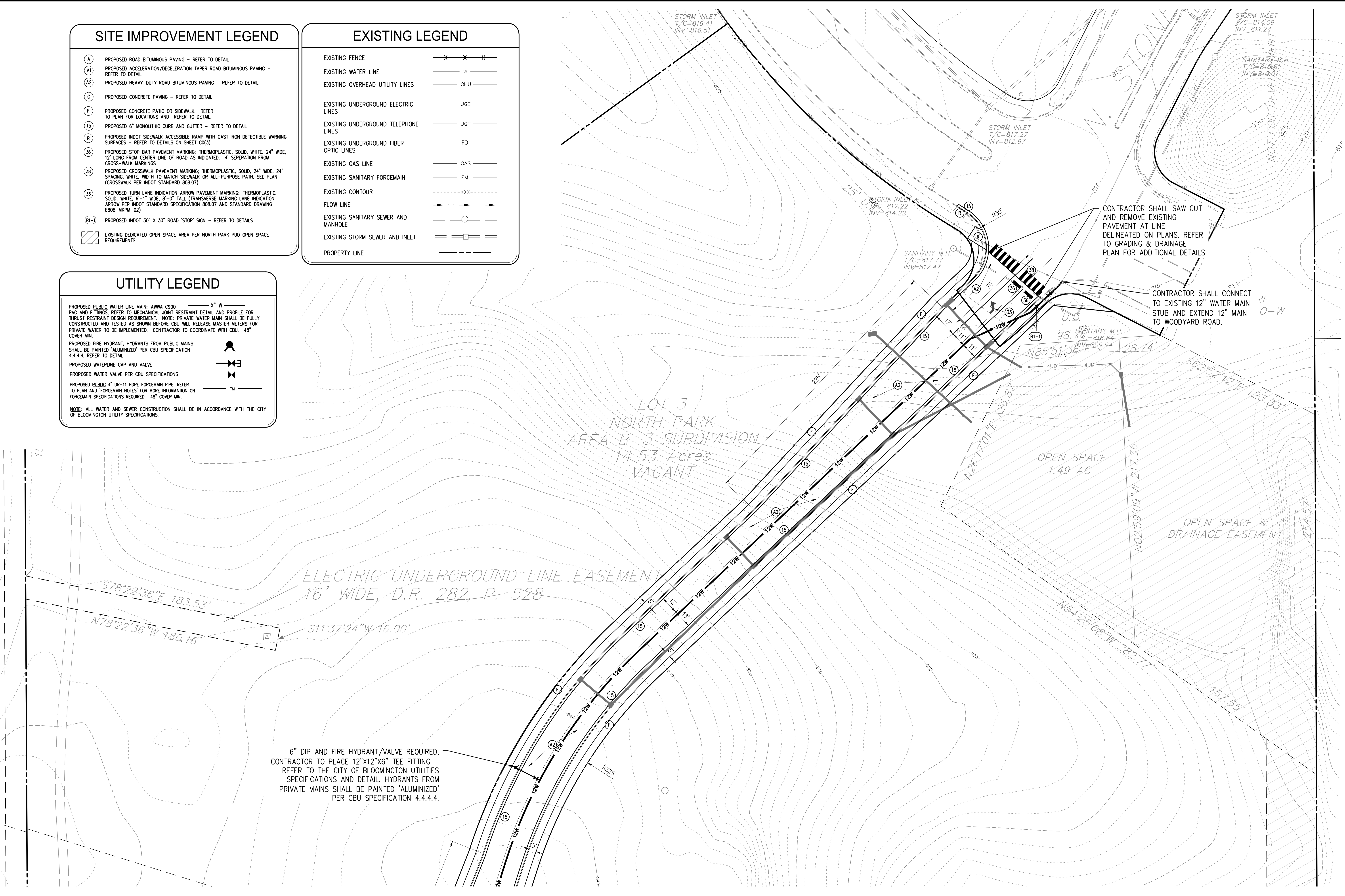
- (A) PROPOSED ROAD BITUMINOUS PAVING - REFER TO DETAIL
- (A1) PROPOSED ACCELERATION/DECELERATION TAPER ROAD BITUMINOUS PAVING - REFER TO DETAIL
- (A2) PROPOSED HEAVY-DUTY ROAD BITUMINOUS PAVING - REFER TO DETAIL
- (C) PROPOSED CONCRETE PAVING - REFER TO DETAIL
- (F) PROPOSED CONCRETE PATIO OR SIDEWALK. REFER TO PLAN FOR LOCATIONS AND REFER TO DETAIL.
- (15) PROPOSED 6" MONOLITHIC CURB AND GUTTER - REFER TO DETAIL
- (R) PROPOSED INDOT SIDEWALK ACCESSIBLE RAMP WITH CAST IRON DETECTIBLE WARNING SURFACES - REFER TO DETAILS ON SHEET C0(3)
- (36) PROPOSED STOP BAR PAVEMENT MARKING; THERMOPLASTIC, SOLID, WHITE, 24" WIDE, 12" LONG FROM CENTER LINE OF ROAD AS INDICATED. 4" SEPERATION FROM CROSS-WALK MARKINGS
- (38) PROPOSED CROSSWALK PAVEMENT MARKING; THERMOPLASTIC, SOLID, 24" WIDE, 24" SPACING, WHITE, WIDTH TO MATCH SIDEWALK OR ALL-PURPOSE PATH, SEE PLAN (CROSSWALK PER INDOT STANDARD 808.07)
- (33) PROPOSED TURN LANE INDICATION ARROW PAVEMENT MARKING; THERMOPLASTIC, SOLID, WHITE, 6"-1" WIDE, 8"-0" TALL (TRANSVERSE MARKING LANE INDICATION ARROW PER INDOT STANDARD SPECIFICATION 808.07 AND STANDARD DRAWING E808-MKPM-02)
- (R1-1) PROPOSED INDOT 30" X 30" ROAD 'STOP' SIGN - REFER TO DETAILS
- [Symbol] EXISTING DEDICATED OPEN SPACE AREA PER NORTH PARK PUD OPEN SPACE REQUIREMENTS

EXISTING LEGEND

- EXISTING FENCE — X X X
- EXISTING WATER LINE — W —
- EXISTING OVERHEAD UTILITY LINES — OHU —
- EXISTING UNDERGROUND ELECTRIC LINES — UGE —
- EXISTING UNDERGROUND TELEPHONE LINES — UGT —
- EXISTING UNDERGROUND FIBER OPTIC LINES — FO —
- EXISTING GAS LINE — GAS —
- EXISTING SANITARY FORCEMAIN — FM —
- EXISTING CONTOUR — XXX —
- FLOW LINE — —>>>
- EXISTING SANITARY SEWER AND MANHOLE — —○—
- EXISTING STORM SEWER AND INLET — —□—
- PROPERTY LINE — - - - -

UTILITY LEGEND

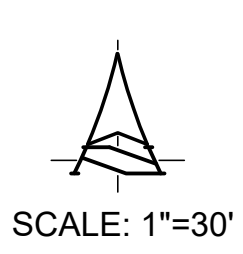
- PROPOSED PUBLIC WATER LINE MAIN: AWWA C900 — X" W —
- PVC AND FITTINGS. REFER TO MECHANICAL JOINT RESTRAINT DETAIL AND PROFILE FOR THRUST RESTRAINT DESIGN REQUIREMENT. NOTE: PRIVATE WATER MAIN SHALL BE FULLY CONSTRUCTED AND TESTED AS SHOWN BEFORE CBU WILL RELEASE MASTER METERS FOR PRIVATE WATER TO BE IMPLEMENTED. CONTRACTOR TO COORDINATE WITH CBU. 48" COVER MIN.
- PROPOSED FIRE HYDRANT, HYDRANTS FROM PUBLIC MAINS SHALL BE PAINTED 'ALUMINIZED' PER CBU SPECIFICATION 4.4.4.4. REFER TO DETAIL.
- PROPOSED WATERLINE CAP AND VALVE
- PROPOSED WATER VALVE PER CBU SPECIFICATIONS
- PROPOSED PUBLIC 4" DR-11 HOPE FORCEMAIN PIPE. REFER TO PLAN AND 'FORCEMAIN NOTES' FOR MORE INFORMATION ON FORCEMAIN SPECIFICATIONS REQUIRED. 48" COVER MIN.
- NOTE: ALL WATER AND SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF BLOOMINGTON UTILITY SPECIFICATIONS.



6" DIP AND FIRE HYDRANT/VALVE REQUIRED, CONTRACTOR TO PLACE 12"x12"x6" TEE FITTING - REFER TO THE CITY OF BLOOMINGTON UTILITIES SPECIFICATIONS AND DETAIL. HYDRANTS FROM PRIVATE MAINS SHALL BE PAINTED 'ALUMINIZED' PER CBU SPECIFICATION 4.4.4.4.

CONTRACTOR SHALL SAW CUT AND REMOVE EXISTING PAVEMENT AT LINE DELINEATED ON PLANS. REFER TO GRADING & DRAINAGE PLAN FOR ADDITIONAL DETAILS

CONTRACTOR SHALL CONNECT TO EXISTING 12" WATER MAIN STUB AND EXTEND 12" MAIN TO WOODYARD ROAD.



SCALE: 1"=30'

NOTE TO CONTRACTOR

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revisions:

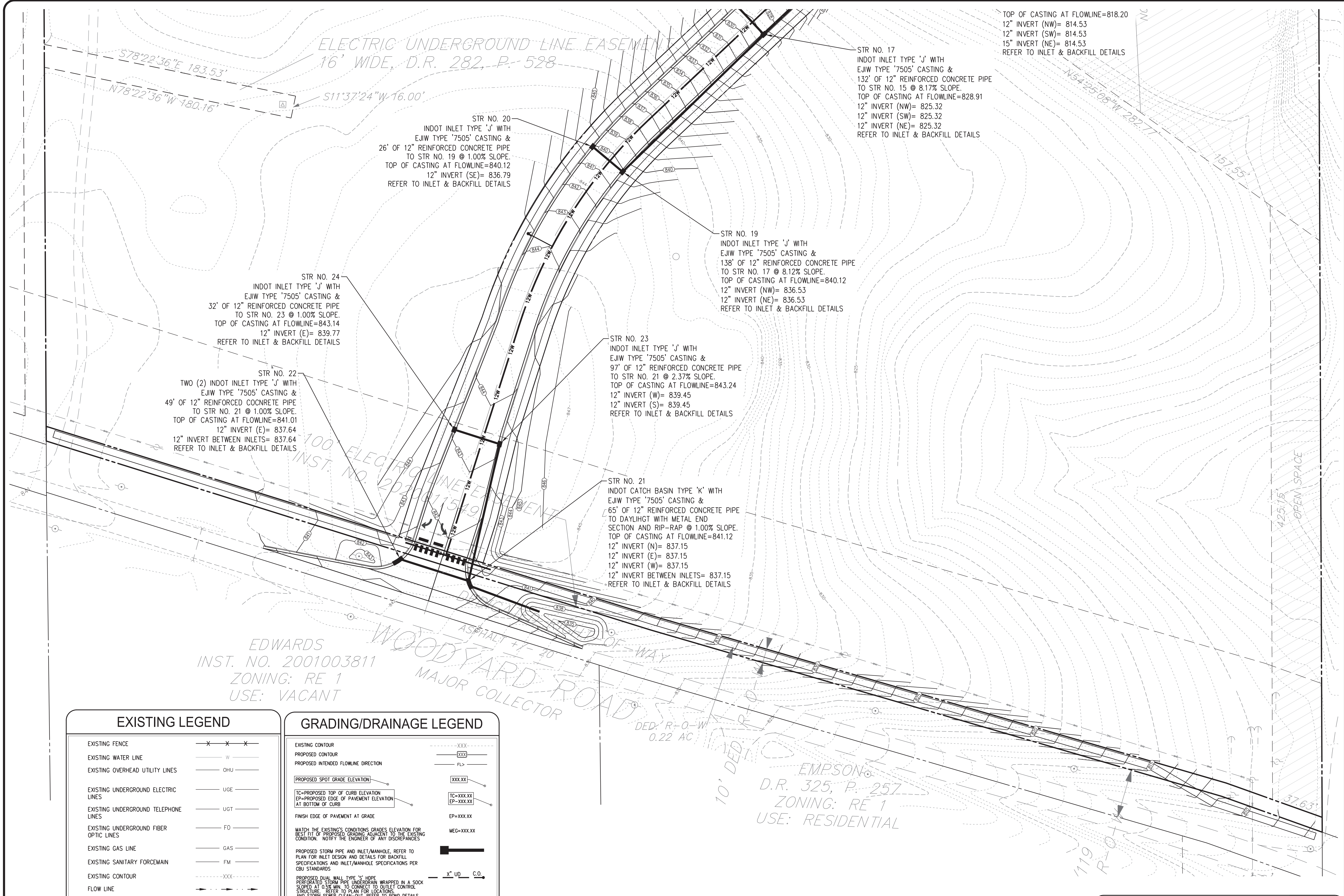
BBB
 BYNUM FANYO & ASSOCIATES, INC.
 ARCHITECTURE
 CIVIL ENGINEERING
 PLANNING
 Bloomington, Indiana
 (812) 359-2990 (Fax)
 528 north walnut street
 (812) 352-8030

certified by:

PROPOSED
STONE CARVER DRIVE EXTENSION
 N. STONE CARVER DRIVE,
 BLOOMINGTON, IN 47404
 FROM N LINTEL DR. TO W. WOODYARD ROAD

title: SITE & UTILITY PLAN (SOUTH)

designed by: AJW
 drawn by: AJW
 checked by: JSF
 sheet no: C201
 project no.: 402337



TOP OF CASTING AT FLOWLINE=818.20
 12" INVERT (NW)= 814.53
 12" INVERT (SW)= 814.53
 15" INVERT (NE)= 814.53
 REFER TO INLET & BACKFILL DETAILS

STR NO. 17
 INDOT INLET TYPE 'J' WITH
 EJIW TYPE '7505' CASTING &
 132' OF 12" REINFORCED CONCRETE PIPE
 TO STR NO. 15 @ 8.17% SLOPE.
 TOP OF CASTING AT FLOWLINE=828.91
 12" INVERT (NW)= 825.32
 12" INVERT (SW)= 825.32
 12" INVERT (NE)= 825.32
 REFER TO INLET & BACKFILL DETAILS

STR NO. 20
 INDOT INLET TYPE 'J' WITH
 EJIW TYPE '7505' CASTING &
 26' OF 12" REINFORCED CONCRETE PIPE
 TO STR NO. 19 @ 1.00% SLOPE.
 TOP OF CASTING AT FLOWLINE=840.12
 12" INVERT (SE)= 836.79
 REFER TO INLET & BACKFILL DETAILS

STR NO. 19
 INDOT INLET TYPE 'J' WITH
 EJIW TYPE '7505' CASTING &
 138' OF 12" REINFORCED CONCRETE PIPE
 TO STR NO. 17 @ 8.12% SLOPE.
 TOP OF CASTING AT FLOWLINE=840.12
 12" INVERT (NW)= 836.53
 12" INVERT (NE)= 836.53
 REFER TO INLET & BACKFILL DETAILS

STR NO. 24
 INDOT INLET TYPE 'J' WITH
 EJIW TYPE '7505' CASTING &
 32' OF 12" REINFORCED CONCRETE PIPE
 TO STR NO. 23 @ 1.00% SLOPE.
 TOP OF CASTING AT FLOWLINE=843.14
 12" INVERT (E)= 839.77
 REFER TO INLET & BACKFILL DETAILS

STR NO. 23
 INDOT INLET TYPE 'J' WITH
 EJIW TYPE '7505' CASTING &
 97' OF 12" REINFORCED CONCRETE PIPE
 TO STR NO. 21 @ 2.37% SLOPE.
 TOP OF CASTING AT FLOWLINE=843.24
 12" INVERT (W)= 839.45
 12" INVERT (S)= 839.45
 REFER TO INLET & BACKFILL DETAILS

STR NO. 22
 TWO (2) INDOT INLET TYPE 'J' WITH
 EJIW TYPE '7505' CASTING &
 49' OF 12" REINFORCED CONCRETE PIPE
 TO STR NO. 21 @ 1.00% SLOPE.
 TOP OF CASTING AT FLOWLINE=841.01
 12" INVERT (E)= 837.64
 12" INVERT BETWEEN INLETS= 837.64
 REFER TO INLET & BACKFILL DETAILS

STR NO. 21
 INDOT CATCH BASIN TYPE 'K' WITH
 EJIW TYPE '7505' CASTING &
 65' OF 12" REINFORCED CONCRETE PIPE
 TO DAYLIGHT WITH METAL END
 SECTION AND RIP-RAP @ 1.00% SLOPE.
 TOP OF CASTING AT FLOWLINE=841.12
 12" INVERT (N)= 837.15
 12" INVERT (E)= 837.15
 12" INVERT (W)= 837.15
 12" INVERT BETWEEN INLETS= 837.15
 REFER TO INLET & BACKFILL DETAILS

EDWARDS
 INST. NO. 2001003811
 ZONING: RE 1
 USE: VACANT

EMPSON
 D.R. 325, P. 257
 ZONING: RE 1
 USE: RESIDENTIAL

EXISTING LEGEND

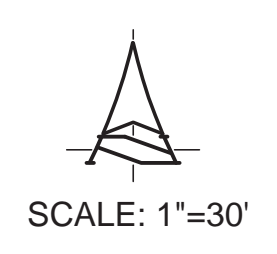
EXISTING FENCE	-X-X-X-
EXISTING WATER LINE	-W-
EXISTING OVERHEAD UTILITY LINES	-OHU-
EXISTING UNDERGROUND ELECTRIC LINES	-UGE-
EXISTING UNDERGROUND TELEPHONE LINES	-UGT-
EXISTING UNDERGROUND FIBER OPTIC LINES	-FD-
EXISTING GAS LINE	-GAS-
EXISTING SANITARY FORCEMAIN	-FM-
EXISTING CONTOUR	-XXX-
FLOW LINE	->>>-
EXISTING SANITARY SEWER AND MANHOLE	-O-
EXISTING STORM SEWER AND INLET	-S-
PROPERTY LINE	-DASH-

GRADING/DRAINAGE LEGEND

EXISTING CONTOUR	-XXX-
PROPOSED CONTOUR	-XXX-
PROPOSED INTENDED FLOWLINE DIRECTION	-FL>-
PROPOSED SPOT GRADE ELEVATION	XXX.XX
TC=PROPOSED TOP OF CURB ELEVATION	TC=XXX.XX
EP=PROPOSED ELEVATION AT BOTTOM OF CURB	EP=XXX.XX
FINISH EDGE OF PAVEMENT AT GRADE	EP=XXX.XX
MATCH THE EXISTING'S CONDITIONS GRADES ELEVATION FOR BEST FIT OF PROPOSED GRADING ADJACENT TO THE EXISTING CONDITION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES	MEG=XXX.XX
PROPOSED STORM PIPE AND INLET/MANHOLE. REFER TO PLAN FOR INLET DESIGN AND DETAILS FOR BACKFILL SPECIFICATIONS AND INLET/MANHOLE SPECIFICATIONS PER CBU STANDARDS	[Symbol]
PROPOSED DUAL WALL TYPE 'S' HDPE PERFORATED STORM PIPE UNDERDRAIN WRAPPED IN A SOCK SLOPED AT 0.5% MIN. TO CONNECT TO OUTLET CONTROL STRUCTURE. REFER TO PLAN FOR LOCATIONS AND STORM SEWER CLEAN-OUT. REFER TO POND DETAILS FOR MORE INFORMATION AND STORM CLEAN-OUT DETAIL	[Symbol]
STORMWATER QUALITY POND SOIL MIXTURE LIMITS: THIS IS FOR FILTRATION AND FOR GROWING GRASSES, SEDGES, PERENNIALS AND FORBS AS SPECIFIED ON THE LANDSCAPE PLAN. SEE SHEET C602 FOR DEPTH AND ADDITIONAL SPECIFICATIONS OF SOIL MIXTURE	[Symbol]

NOTE TO CONTRACTOR

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revisions:

ARCHITECTURE
 CIVIL ENGINEERING
 PLANNING

BYNUM FANYO & ASSOCIATES, INC.
 528 north walnut street
 (812) 332-8030

bloomington, indiana
 (812) 339-2990 (Fax)

certified by:

**PROPOSED
 STONE CARVER DRIVE EXTENSION**

N. STONE CARVER DRIVE,
 BLOOMINGTON, IN 47404
 FROM N LINTEL DR. TO W. WOODYARD ROAD

title: GRADING &
 DRAINAGE PLAN
 (SOUTH)

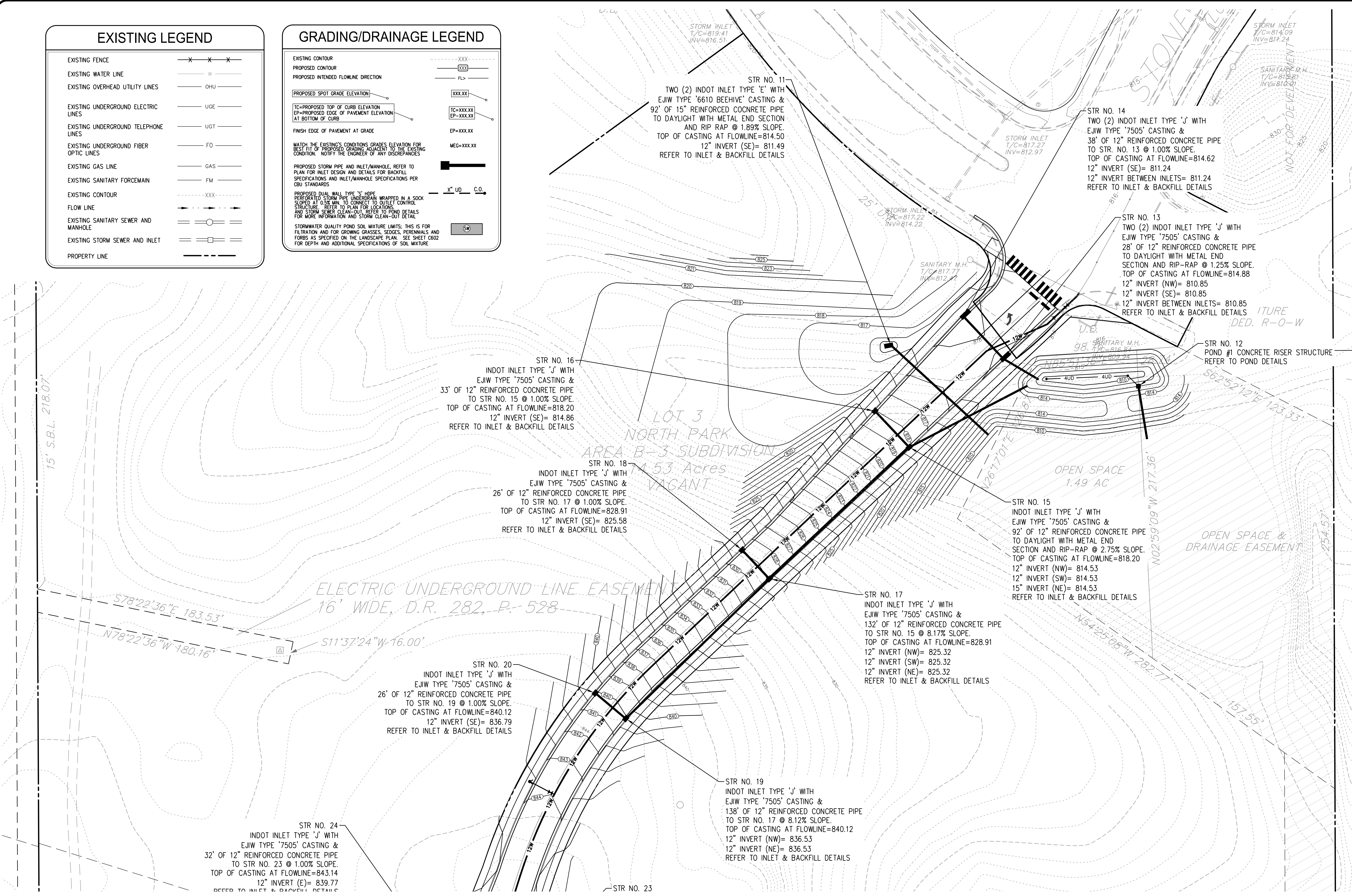
designed by: AJW
 drawn by: AJW
 checked by: JSF
 sheet no: C301
 project no.: 402337

EXISTING LEGEND

EXISTING FENCE	X X X
EXISTING WATER LINE	W
EXISTING OVERHEAD UTILITY LINES	OHU
EXISTING UNDERGROUND ELECTRIC LINES	UGE
EXISTING UNDERGROUND TELEPHONE LINES	UGT
EXISTING UNDERGROUND FIBER OPTIC LINES	FO
EXISTING GAS LINE	GAS
EXISTING SANITARY FORCEMAIN	FM
EXISTING CONTOUR	XXX
FLOW LINE	→ → →
EXISTING SANITARY SEWER AND MANHOLE	○
EXISTING STORM SEWER AND INLET	□
PROPERTY LINE	- - - - -

GRADING/DRAINAGE LEGEND

EXISTING CONTOUR	XXX
PROPOSED CONTOUR	XXX
PROPOSED INTENDED FLOWLINE DIRECTION	FLD
PROPOSED SPOT GRADE ELEVATION	XXX.XX
TC=PROPOSED TOP OF CURB ELEVATION EP=PROPOSED EDGE OF PAVEMENT ELEVATION AT BOTTOM OF CURB	TC=XXX.XX EP=XXX.XX
FINISH EDGE OF PAVEMENT AT GRADE	EP=XXX.XX
MATCH THE EXISTING'S CONDITIONS GRADES ELEVATION FOR BEST FIT OF PROPOSED GRADING ADJACENT TO THE EXISTING CONDITION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES	MEG=XXX.XX
PROPOSED STORM PIPE AND INLET/MANHOLE. REFER TO PLAN FOR INLET DESIGN AND DETAILS FOR BACKFILL SPECIFICATIONS AND INLET/MANHOLE SPECIFICATIONS PER CBU STANDARDS	— x' UD C.O.
PROPOSED DUAL WALL TYPE 'S' HOPE PERFORATED STORM PIPE UNDERGRASS WRAPPED IN A SOOK SLOPED AT 0.5% MIN. TO CONNECT TO OUTLET CONTROL STRUCTURE. REFER TO PLAN FOR LOCATIONS AND STORM SEWER CLEAN-OUT. REFER TO POND DETAILS FOR MORE INFORMATION AND STORM CLEAN-OUT DETAIL	— SW
STORMWATER QUALITY POND SOIL MIXTURE LIMITS: THIS IS FOR FILTRATION AND FOR GROWING GRASSES, SEDGES, PERENNIALS AND FORBS AS SPECIFIED ON THE LANDSCAPE PLAN. SEE SHEET 0802 FOR DEPTH AND ADDITIONAL SPECIFICATIONS OF SOIL MIXTURE	



STR NO. 16
INDOT INLET TYPE 'J' WITH
EJIW TYPE '7505' CASTING &
33' OF 12" REINFORCED COCNRETE PIPE
TO STR NO. 15 @ 1.00% SLOPE.
TOP OF CASTING AT FLOWLINE=818.20
12" INVERT (SE)= 814.86
REFER TO INLET & BACKFILL DETAILS

STR NO. 18
INDOT INLET TYPE 'J' WITH
EJIW TYPE '7505' CASTING &
26' OF 12" REINFORCED CONCRETE PIPE
TO STR NO. 17 @ 1.00% SLOPE.
TOP OF CASTING AT FLOWLINE=828.91
12" INVERT (SE)= 825.58
REFER TO INLET & BACKFILL DETAILS

STR NO. 20
INDOT INLET TYPE 'J' WITH
EJIW TYPE '7505' CASTING &
26' OF 12" REINFORCED CONCRETE PIPE
TO STR NO. 19 @ 1.00% SLOPE.
TOP OF CASTING AT FLOWLINE=840.12
12" INVERT (SE)= 836.79
REFER TO INLET & BACKFILL DETAILS

STR NO. 24
INDOT INLET TYPE 'J' WITH
EJIW TYPE '7505' CASTING &
32' OF 12" REINFORCED CONCRETE PIPE
TO STR NO. 23 @ 1.00% SLOPE.
TOP OF CASTING AT FLOWLINE=843.14
12" INVERT (E)= 839.77
REFER TO INLET & BACKFILL DETAILS

STR NO. 11
TWO (2) INDOT INLET TYPE 'E' WITH
EJIW TYPE '6610 BEEHIVE' CASTING &
92' OF 15" REINFORCED COCNRETE PIPE
TO DAYLIGHT WITH METAL END SECTION
AND RIP RAP @ 1.89% SLOPE.
TOP OF CASTING AT FLOWLINE=814.50
12" INVERT (SE)= 811.49
REFER TO INLET & BACKFILL DETAILS

STR NO. 14
TWO (2) INDOT INLET TYPE 'J' WITH
EJIW TYPE '7505' CASTING &
38' OF 12" REINFORCED CONCRETE PIPE
TO STR. NO. 13 @ 1.00% SLOPE.
TOP OF CASTING AT FLOWLINE=814.62
12" INVERT (SE)= 811.24
12" INVERT BETWEEN INLETS= 811.24
REFER TO INLET & BACKFILL DETAILS

STR NO. 13
TWO (2) INDOT INLET TYPE 'J' WITH
EJIW TYPE '7505' CASTING &
28' OF 12" REINFORCED CONCRETE PIPE
TO DAYLIGHT WITH METAL END
SECTION AND RIP-RAP @ 1.25% SLOPE.
TOP OF CASTING AT FLOWLINE=814.88
12" INVERT (NW)= 810.85
12" INVERT (SE)= 810.85
12" INVERT BETWEEN INLETS= 810.85
REFER TO INLET & BACKFILL DETAILS

STR NO. 12
POND #1 CONCRETE RISER STRUCTURE
REFER TO POND DETAILS

STR NO. 15
INDOT INLET TYPE 'J' WITH
EJIW TYPE '7505' CASTING &
92' OF 12" REINFORCED CONCRETE PIPE
TO DAYLIGHT WITH METAL END
SECTION AND RIP-RAP @ 2.75% SLOPE.
TOP OF CASTING AT FLOWLINE=818.20
12" INVERT (NW)= 814.53
12" INVERT (SW)= 814.53
15" INVERT (NE)= 814.53
REFER TO INLET & BACKFILL DETAILS

STR NO. 17
INDOT INLET TYPE 'J' WITH
EJIW TYPE '7505' CASTING &
132' OF 12" REINFORCED CONCRETE PIPE
TO STR NO. 15 @ 8.17% SLOPE.
TOP OF CASTING AT FLOWLINE=828.91
12" INVERT (NW)= 825.32
12" INVERT (SW)= 825.32
12" INVERT (NE)= 825.32
REFER TO INLET & BACKFILL DETAILS

STR NO. 19
INDOT INLET TYPE 'J' WITH
EJIW TYPE '7505' CASTING &
138' OF 12" REINFORCED CONCRETE PIPE
TO STR NO. 17 @ 8.12% SLOPE.
TOP OF CASTING AT FLOWLINE=840.12
12" INVERT (NW)= 836.53
12" INVERT (NE)= 836.53
REFER TO INLET & BACKFILL DETAILS

revisions:

ARCHITECTURE
CIVIL ENGINEERING
PLANNING

BYNUM FANYO & ASSOCIATES, INC.
Bloomington, Indiana
(812) 359-2990 (Fax)

528 north walnut street
(812) 352-8030

certified by:

**PROPOSED
STONE CARVER DRIVE EXTENSION**

N. STONE CARVER DRIVE,
BLOOMINGTON, IN 47404
FROM N LINTEL DR. TO W. WOODYARD ROAD

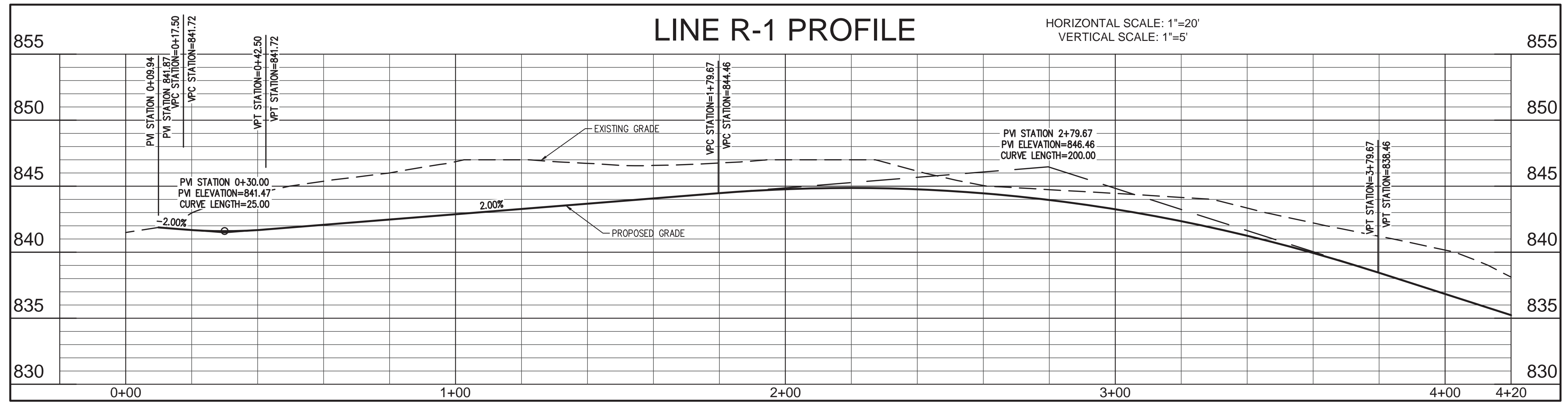
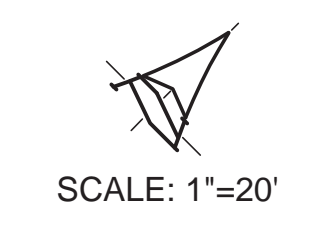
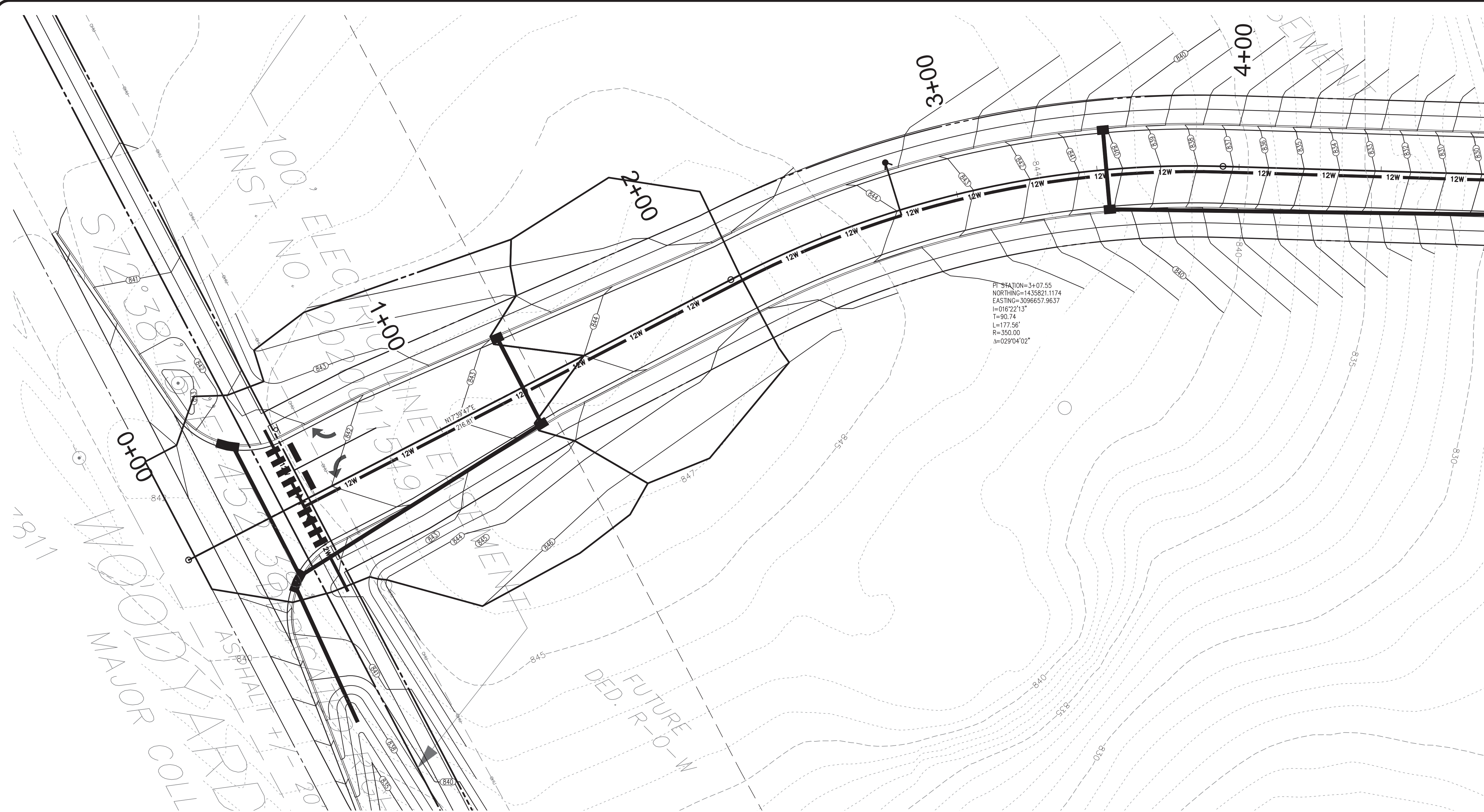
title: GRADING &
DRAINAGE PLAN
(NORTH)

designed by: AJW
drawn by: AJW
checked by: JSF
sheet no: C302
project no.: 402337

NOTE TO CONTRACTOR

CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ENGINEER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CONFLICTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE TO CONTRACTOR FOR UTILITY DESTRUCTION OR UNDERGROUND CHANGES REQUIRED DUE TO CONFLICTING ELEVATIONS.

SCALE: 1"=30'



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revisions:

BBB
BYNUM FANYO & ASSOCIATES, INC.
528 north walnut street
(812) 332-8030

ARCHITECTURE
CIVIL ENGINEERING
PLANNING

Bloomington, Indiana
(812) 339-2990 (Fax)

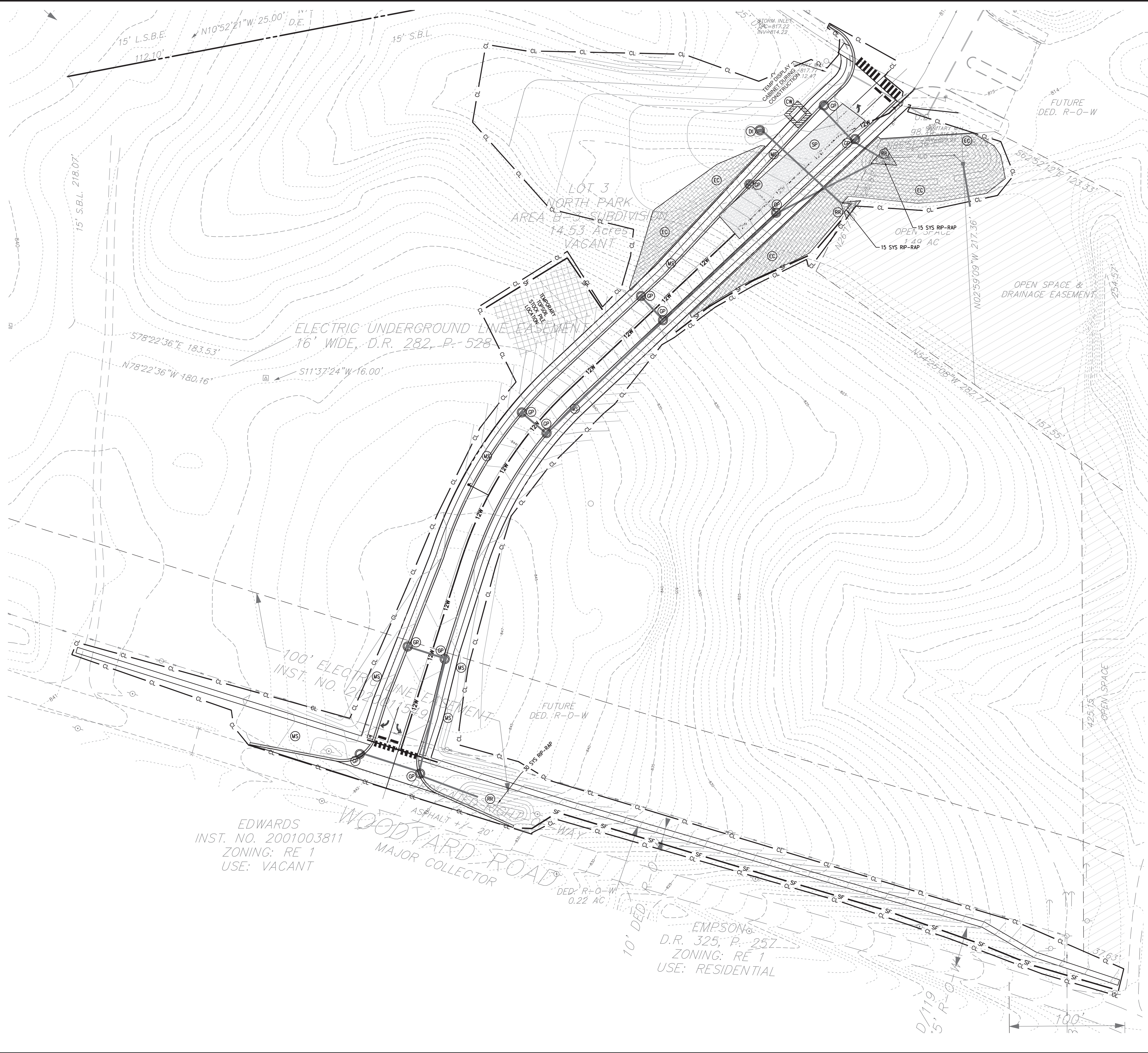
certified by:

**PROPOSED
STONE CARVER DRIVE EXTENSION**

N. STONE CARVER DRIVE,
BLOOMINGTON, IN 47404
FROM N LINTEL DR. TO W. WOODYARD ROAD

title: "R-1" GRADING PLAN
& PROFILE

designed by: AJW
drawn by: AJW
checked by: JSF
sheet no: C401
project no.: 402337

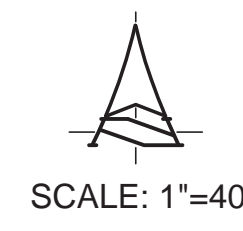


EXISTING LEGEND

EXISTING FENCE	-X-X-X-
EXISTING WATER LINE	-W-
EXISTING OVERHEAD UTILITY LINES	-OHU-
EXISTING UNDERGROUND ELECTRIC LINES	-UGE-
EXISTING UNDERGROUND TELEPHONE LINES	-UGT-
EXISTING UNDERGROUND FIBER OPTIC LINES	-FO-
EXISTING GAS LINE	-GAS-
EXISTING SANITARY FORCEMAIN	-FM-
EXISTING CONTOUR	-XXX-
FLOW LINE	->>>-
EXISTING SANITARY SEWER AND MANHOLE	-○-
EXISTING STORM SEWER AND INLET	-□-
PROPERTY LINE	- - - -

EROSION CONTROL LEGEND

EXISTING CONTOUR	-XXX-
PROPOSED CONTOUR	-XXXX-
TEMPORARY SILTATION FENCE, REFER TO DETAIL	-SF-
TREE PRESERVATION FENCING REQUIRED - TEMPORARY DURING CONSTRUCTION - REFER TO DETAILS ON SHEET C801	-X-X-
CONSTRUCTION LIMITS: DELINEATED BY PROPERTY LINE UNLESS OTHERWISE SPECIFIED	-CL-
TEMPORARY MULCH SEEDING - REFER TO DETAILS	(MS)
25' X 100' STONE PAD, 6" DEEP TO KEEP FROM TRACKING MUD OFF SITE - REFER TO DETAIL (TEMPORARY DURING CONSTRUCTION)	(SP)
TEMPORARY CONCRETE WASHOUT AREA - REFER TO DETAIL	(CW)
D-50 RIP-RAP STORM OUTLET PROTECTION - REFER TO DETAIL AND PLAN FOR MIN. QUANTITY (PERMANENT)	(RR)
GRAVEL CURB INLET PROTECTION (TEMPORARY) (TO BE USED ON ALL CURB INLETS)	(GP)



NOTE TO CONTRACTOR

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revisions:

ARCHITECTURE
CIVIL ENGINEERING
PLANNING

Bloomington, Indiana
(812) 359-2990 (Fax)

BFB
BYNUM FANYO & ASSOCIATES, INC.

528 north walnut street
(812) 352-8030

certified by:

PROPOSED
STONE CARVER DRIVE EXTENSION

N. STONE CARVER DRIVE,
BLOOMINGTON, IN 47404
FROM N LINTEL DR. TO W. WOODYARD ROAD

title: STORMWATER
POLLUTION
PREVENTION PLAN

designed by: AJW
drawn by: AJW
checked by: JSF
sheet no: C701
project no.: 402337

Stone Carver Drive Extension

Preliminary Drainage & Water Quality Calculations

December 4th, 2023

Project Narrative:

The project consists of the extension of N. Stone Carver Drive from the existing intersection of N. Lintel Drive to W. Woodyard Road. There will be no development of the existing vacant lot. Water quality/detention measures are only required for the roadway development. The project will include landscaping, proposed water quality/bio-retention pond, and associated drainage system. The Monroe County MS4 Coordinator has asked that additional measures be implemented into the design to improve water quality and reduce runoff rates so as not to increase the flooding potential downstream.

The following are calculations that support this mitigation effort for the design of one detention/water quality pond to capture runoff from the new development. The location of the detention/water quality pond and drainage basins are indicated in the included Post-Development Basin Map. Calculations are included for detention, water quality, flood routing and storm sewer infrastructure design and begins with the discussion on special design criteria for the project.

Design Criteria:

During Construction Sediment:

Post-Developed Sediment Storage: An amount equal to 10% of the required detention volume will be added to the storage volume of each pond for post-construction sediment storage. The current requirement is 0%.

Post-Developed Runoff Rates: Post-developed 10% EP and 1% EP runoff rates will be calculated using Autodesk Civil 3D Hydraflow Hydrographs Extension program using the 24-hour NRCS method with the Type II rainfall distribution as required by the County MS4 Coordinator. Runoff travel times will be generated using the TR-55 method. Curve numbers will be selected based on the next less infiltrating capacity classification.

Allowable Detention Pond Discharge Rates: Per memorandum by the County MS4 Coordinator detention ponds will be designed to release post-developed 10% EP runoff to a rate of 0.50 cfs/ac and 1% EP runoff to a rate of 0.90 cfs/ac. The current ordinance requires that the 10% EP post-developed runoff be released at the 10% EP pre-developed rate and the same for 1% EP storm.

Water Quality: Once site improvements are complete and vegetation is established throughout the site, all ponds will be converted to permanent water quality/detention facilities. The ponds will be outfitted with perforated underdrain pipes contained in clean crushed stone and covered with amended soil.

Pond Emergency Overflow: – Emergency overflow spillways will be designed to safely handle 1.25 times the post-developed 1% EP rates plus any 1% EP offsite discharges entering the detention pond.

Offsite Runoff through the Project: Offsite runoff will either be routed around detention ponds where room allows or allowed to enter the ponds. Offsite basins with larger than a 5:1 ratio to the detention basin shall be diverted around the detention basin. Where offsite runoff enters a pond a secondary outlet control structure will be added in the pond with its control elevation set at the on-site 100-year pond flood elevation.

Storm Sewerage: Stormwater inlet pipes will be sized using the Rational Method for the 10% EP storm. Inlet piping from low points in the design will be sized for the 1% EP storm. Inlets in sag points shall be designed at 50% efficiency with less than 7" of ponding in the street for the 1% EP storm. Culverts will be sized for the 4% EP storm.

Drainage Easements: Detention ponds, their discharge pipes and overflow spillways, flood routing paths and storm sewer infrastructure will be covered by drainage easements in the County's favor where required by the County MS4 Coordinator.

Sinkhole Conservancy: Sinkhole conservancy easements will be recorded in the County's favor per current easement requirements. A Karst report has been included with this submittal.

Impact Statement:

Considering the stringent requirement for reducing post-developed discharges to Allowable Discharges instead of the currently required pre-developed rates it is anticipated that there will be no additional adverse flooding effects downstream of the proposed development. For comparison purposes see the table in the summary table below. The project only consists of the roadway extension of N. Stone Carver Drive. Water quality/detention is only required for the roadway extension. There are two post-development drainage basins. Post Development Basin #1 will drain to the proposed water quality/bio-detention pond #1. Post Development Basin #2 will utilize INDOT catch basins and a small stilling basin to provide water quality. The rest of the site is considered offsite runoff and will bypass the proposed storm sewer infrastructure. Allowable rates are considerably less than pre-developed rates with actual discharge rates less than the allowable rates.

The following are calculations that support this effort for the design of the detention/water quality pond where indicated in the plan sheets. Calculations are included for detention, water quality, storm sewer infrastructure, and pre- and post-development flow rates.

Summary:

<i>10% EP Storm</i>						
Basin Area	(1) Pre-Developed Drainage Area (Ac)	Post-Developed Drainage Area (Ac)	Post-Developed Q (cfs)	Pre-Developed Q (cfs)	(2) Allowable Q (cfs)	(3) Actual Q (cfs)
1	N/A	1.10	5.35	N/A	0.55	0.26
2	N/A	0.48	1.94	N/A	0.24	1.94

<i>1% EP Storm</i>						
Basin Area	(1) Pre-Developed Drainage Area (Ac)	Post-Developed Drainage Area (Ac)	Post-Developed Q (cfs)	Pre-Developed Q (cfs)	(2) Allowable Q (cfs)	(3) Actual Q (cfs)
1	N/A	1.10	7.44	N/A	0.99	0.28
2	N/A	0.48	2.69	N/A	0.43	2.64

(1) Pre-Developed Drainage Areas do not apply to this site because the project does not include development of the overall site. The lots will remain vacant. The roadway construction splits the existing drainage basins and storm sewer infrastructure is designed to preserve the existing drainage patterns.

(2) Allowable Discharge: 10% EP at 0.50 cfs/ac and the 1% EP at 0.90 cfs/ac.

(3) Actual Discharge = Pond Discharge as calculated via hydrograph routing.

Discharge Rate Statement

Post-Development Basin #2 exceeds the allowable release rate for development. However, the proposed construction is a roadway extension and is not considered development of the site. The Monroe County MS4 requested that any proposed water quality/detention ponds be located outside of the public right-of-way. There are two existing overhead utility lines parallel along W. Woodyard Road. One line is located within the right-of-way and the other is located approximately 15' from the right-of-way line. The overhead utility line located outside of the right-of-way is a Duke Energy Transmission line and is routed in a 100' exclusive easement. It would require extraordinary measures to provide detention for Post-Development Basin #2 without relocation of existing overhead utility poles. Post-Development Basin #2 is a relatively small drainage area with low discharge rates. Water quality measures are provided for said Basin in the form of catch basins and a small stilling area at the discharge location. Due to the reasons listed above detention is not provided for Post-Development Basin #2 and water-quality in the form of catch basins is sufficient.

Basin Characteristics

(Pre-Developed Conditions)

Basin '1'

Total Area = 1.10 ac

Area=0.42 ac C=0.17 (Lawns, open spaces, parks, golf courses, cemeteries, etc., Some B & C soils, Average slope (2 to 7%))

Area=0.68 ac C=0.95 (Pave w/curbs & storm sewers excl. ROW)

Weighted Runoff Coefficient = $((0.42 \times 0.17) + (0.68 \times 0.95)) / 0.87 = 0.65$

Time of Concentration, TC:

Overland:

n-value = 0.013 (Asphalt)

Length = 27 ft

Slope = 2.00%

2-yr/24hr = 3.07 in

Channel Flow:

Area=0.07 sq. ft.

Wetted Perimeter = 3.2 ft

Length = 43 ft

Slope = 6.00%

Mannings n-Value = .015

Channel Flow:

Area=0.078 sq. ft.

Wetted Perimeter = 3.14 ft

Length = 275 ft

Slope = 8.00%

Mannings n-Value = .015

Channel Flow:

Area=0.78 sq. ft.

Wetted Perimeter = 3.14 ft

Length = 110 ft

Slope = 2.00%

Mannings n-Value = .015

TC = 3 min use 5 min TC

Basin '2'

Total Area = 0.48 ac

Area = 0.25 ac C=0.17 (Lawns, open spaces, parks, golf courses, cemeteries, etc., Some B & C soils, Average slope (2 to 7%))

Area=0.23 ac C=0.95 (Pave w/curbs & storm sewers excl. ROW)

Weighted Runoff Coefficient = $((0.25*0.17)+(0.23*0.95))/0.48 = 0.54$

Time of Concentration, TC:

Overland:

n-value = 0.130 (Short prairie grass and lawns)

Length = 37 ft

Slope = 10.00%

2-yr/24hr = 3.07 in

Shallow Concentrated:

Length = 56 ft

Slope = 2.00%

Paved

Channel Flow:

Area=0.785 sq. ft.

Wetted Perimeter = 3.14 ft

Length = 186 ft

Slope = 2.00%

Mannings n-Value = .015

TC = 2 min use 5 min TC

Offsite (Bypass)

Total Area = 9.15 ac

Area=9.15 ac C=0.20 (Lawns, open spaces, parks, golf courses, cemeteries, etc., Some B & D soils, Steep slope (>8%))

Weighted Runoff Coefficient = $((9.15*0.17)/0.17) = 0.17$

Time of Concentration, TC:

Overland:

n-value = 0.130 (Short prairie grass and lawns)

Length = 100 ft

Slope = 1.50%

2-yr/24hr = 3.07 in

Shallow Concentrated:

Length = 311 ft

Slope = 3.85%

Unpaved

Channel Flow:

Area=5.63 sq. ft.

Wetted Perimeter = 15.5 ft

Length = 434 ft

Slope = 2.76%

Mannings n-Value = .025

Channel Flow:

Area=0.78 sq. ft.

Wetted Perimeter = 3.14 ft

Length = 92 ft

Slope = 2.00%

Mannings n-Value = .015

TC = 13 min

Water Quality Volume:

Description:

The following are sizing calculations for one water quality/detention facilities. The site in its current condition is primarily grassed and wooded. The drainage ordinance requires that 1/2" over the new proposed lot areas draining to each pond/detention facility can be ensured to size the ponds at a minimum. The calculations below show that this design criterion is being followed.

Water Quality Storage Calculations:

Water Quality/detention Pond #1-

Proposed drainage area to the pond = 1.10 ac (47,766 sf)

Water Quality Capture Volume: (Capture and retain 0.5" runoff from drainage area)

Total Storage Required = (47,766 sf)/24 = 1,990 cf

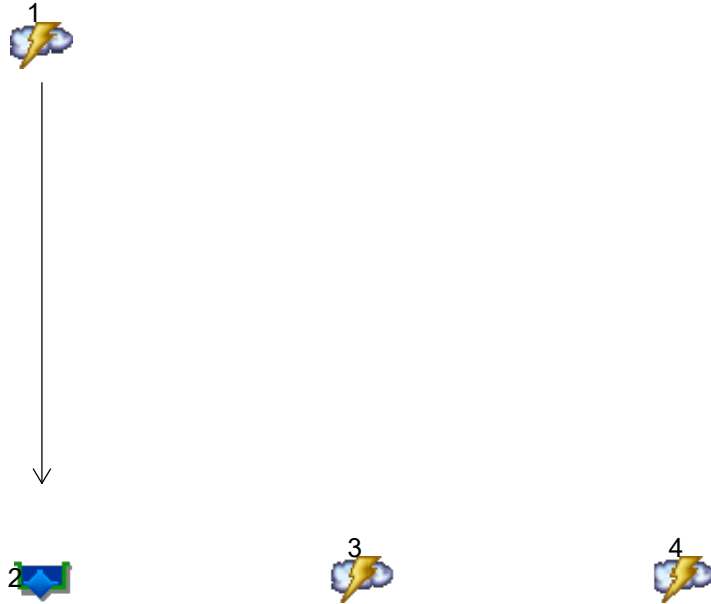
Proposed Pond #1 Stage/Storage:

Elevation (ft)	Contour Area (sf)	Total Storage (cf)
809.75	0	0
810.00	400	50
811.00	911	706
812.00	1,508	1,915
813.00	2,148	3,743 (Water Quality volume will reach 812.04) (No orifice shall be placed before this elevation to encourage stormwater to percolate to the underdrain)

If the pond should breach excess stormwater will spill over the emergency overflow toward the ewes and into the existing pond.

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023



Legend


Hyd. Origin	Description
1	Rational Post Development Basin 1
2	Reservoir Pond 1 Dishcharge
3	Rational Post Development Basin 2
4	Rational Offsite Bypass Basin



SCALE: 1"=30'

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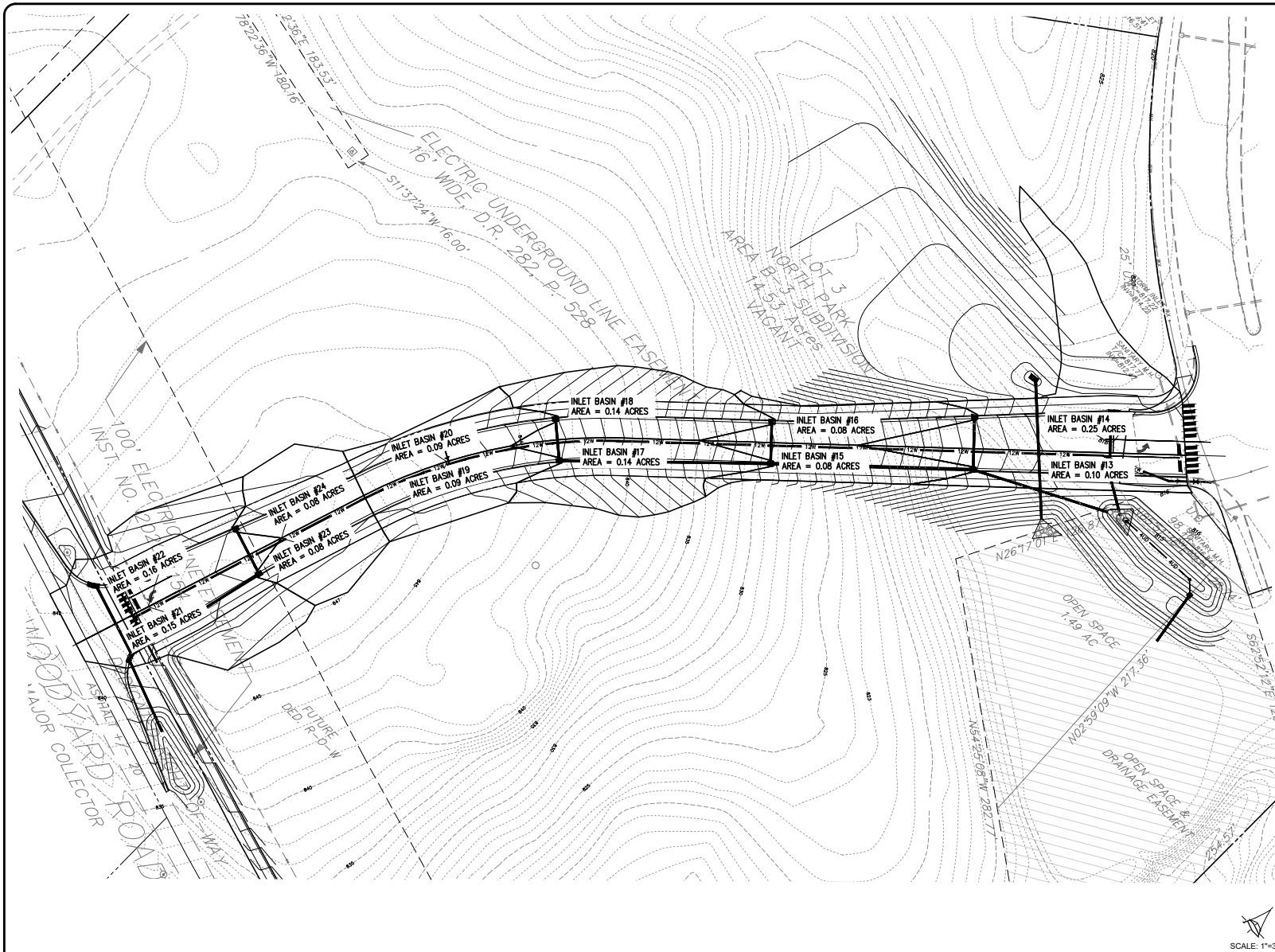
Revisions:

 BRUNNEN PANTO ASSOCIATES, INC. 528 North Main Street (612) 332-8330		ARCHITECTURE
		CHALLENGERING PLANNING
		Moberg, J. edwin (612) 332-2865 (F)

Certified by:

PROPOSED
STONE CARVER DRIVE EXTENSION
 N. STONE CARVER DRIVE
 BLOCKING CANTON DRIVE
 FROM N LUTEL DR. TOW. WOODYARD ROAD

Title: PROPOSED BASIN EXHIBIT
 designed by: AJW
 drawn by: AJW
 checked by: JST
 sheet no. EXHIBIT
 project no. 402337



SCALE: 1"=30'

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revisions:

BBA
 BYNUM PANYO & ASSOCIATES, INC.
 ARCHITECTURE
 CIVIL ENGINEERING
 PLANNING
 1628 South Woodruff Street
 (813) 332-8040
 (813) 399-2166 (fax)

certified by:

**PROPOSED
 STONE CARVER DRIVE EXTENSION**
 N. STONE CARVER DRIVE,
 CONVENTION UNIT #74001,
 FROM N LINTEL DR. TO W. WOODYARD ROAD

title: INLET BASIN EXHIBIT

designed by: AJW
 drawn by: AJW
 checked by: JSF
 sheet no: EXHIBIT
 project no.: 402337



Monroe County Highway Department

501 N Morton Street Suite 216, Bloomington, IN 47404

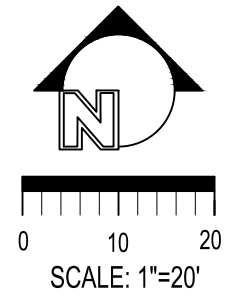
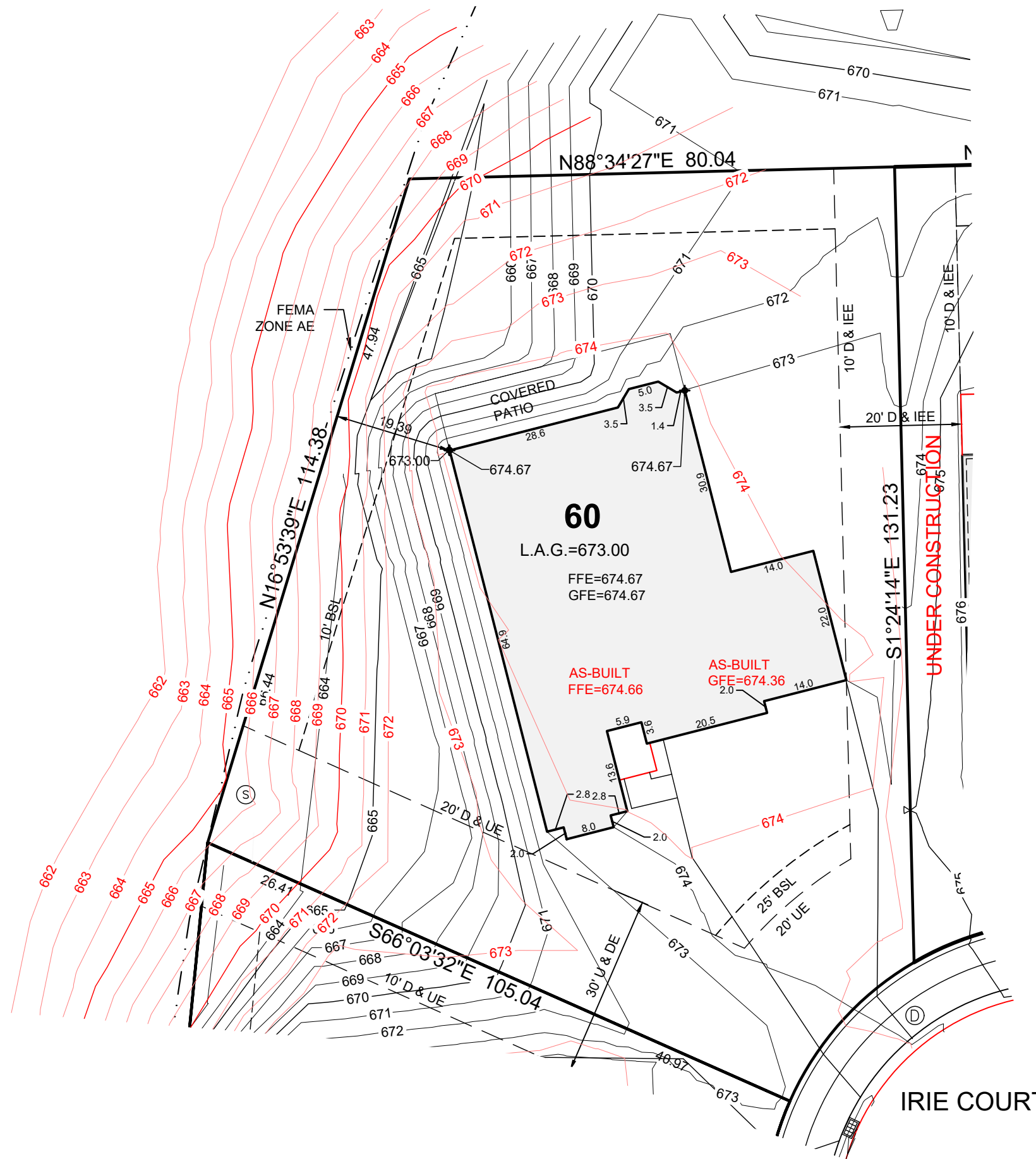
(812) 349-2555 | Fax (812) 349-2959 | www.co.monroe.in.us

To: Monroe County Drainage Board
From: Kelsey Thetonia, MS4 Coordinator
Date: December 28, 2023
Re: Southern Meadows Drainage Easement Violations

There are two drainage easement violations on the January 2024 Drainage Board agenda: 408 W Irie Ct. (Southern Meadows Lot 60) and 404 W Irie Ct. (Southern Meadows Lot 58). Both violations were first presented to the Drainage Board at our November 2023 meeting.

At 408 W Irie Ct., the property owner installed a fence within a 20 ft. drainage easement over an HDPE storm pipe. The property owner inspected the pipe themselves and provided video footage. They found the survey stake at the corner of the property punctured the pipe but no damage from fence posts was observed. At the November 2023 meeting, there was a comment made about the issue of potential settling. The pipe was laid on native soil (not new fill) as shown on the storm sewer profile.

At 404 W Irie Ct., the property owner installed a deck within a 20 ft. drainage easement that serves as an emergency overflow for the seven sag inlets on Abington Ave. and drains the rear/side yards of Lots 57 and 56. The emergency overflow drainage easement was not graded to the original drainage easement grading plan, and corrections were made on Lot 57. The grading of the rear yard and easement on Lot 58 still does not appear to meet the original grading plans, but there is a fair amount of elevation change in this area. The property owner also received a violation letter from the Building and Planning Departments because its height, over 30", should have been permitted by the Building Department prior to construction.



LEGEND

- BSL BUILDING SETBACK LINE
- UE UTILITY EASEMENT
- R/W RIGHT OF WAY

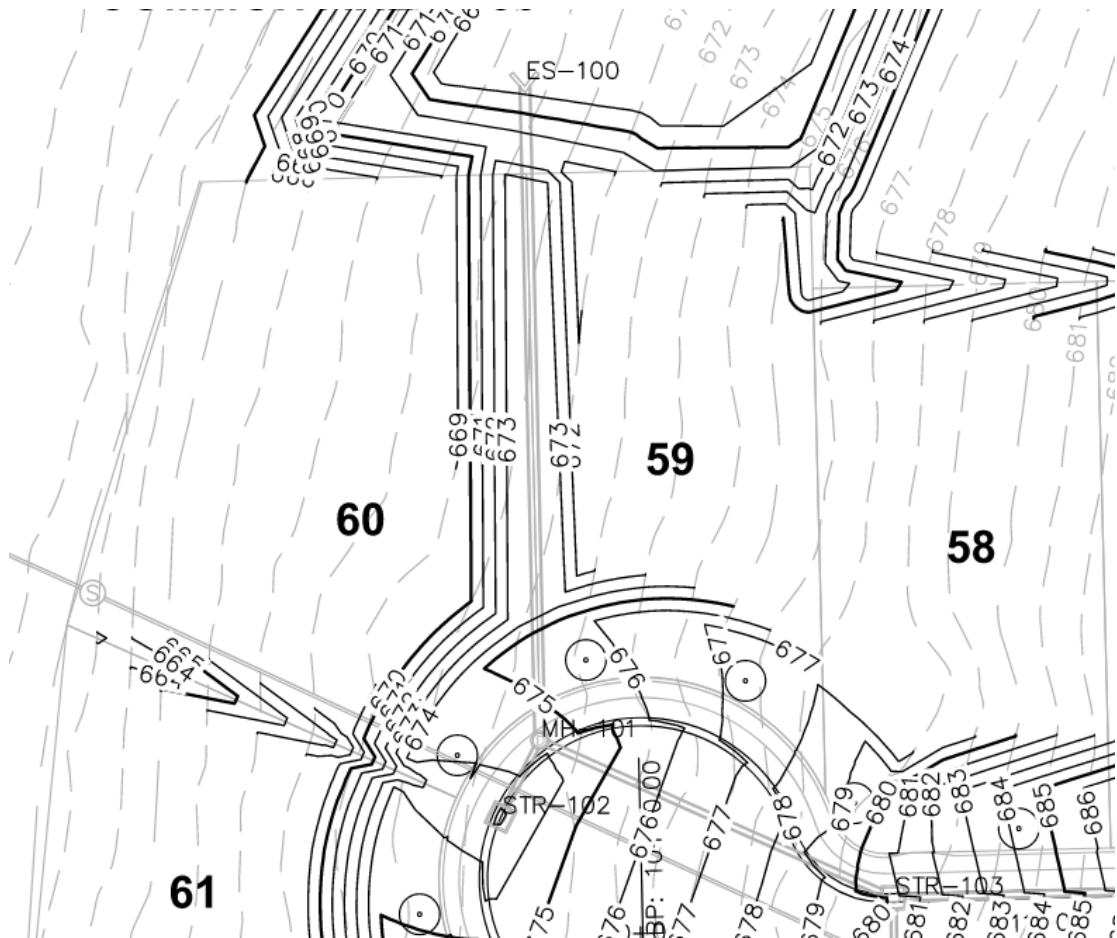
**AS-BUILT PLAN
LOT 60 SOUTHER MEADOWS PHASE 2
(408 W IRIE COURT)**



CIVIL ENGINEERING - LAND SURVEYING
1467 W Arlington Road Bloomington, IN 47404
(812) 336-6536 - smithdginc.com
JOB: 6064 DATE: 01/13/2023

IRIE COURT

Southern Meadows Lot 60 (408 W Irie Ct.) – Violation: Fence in Drainage Easement

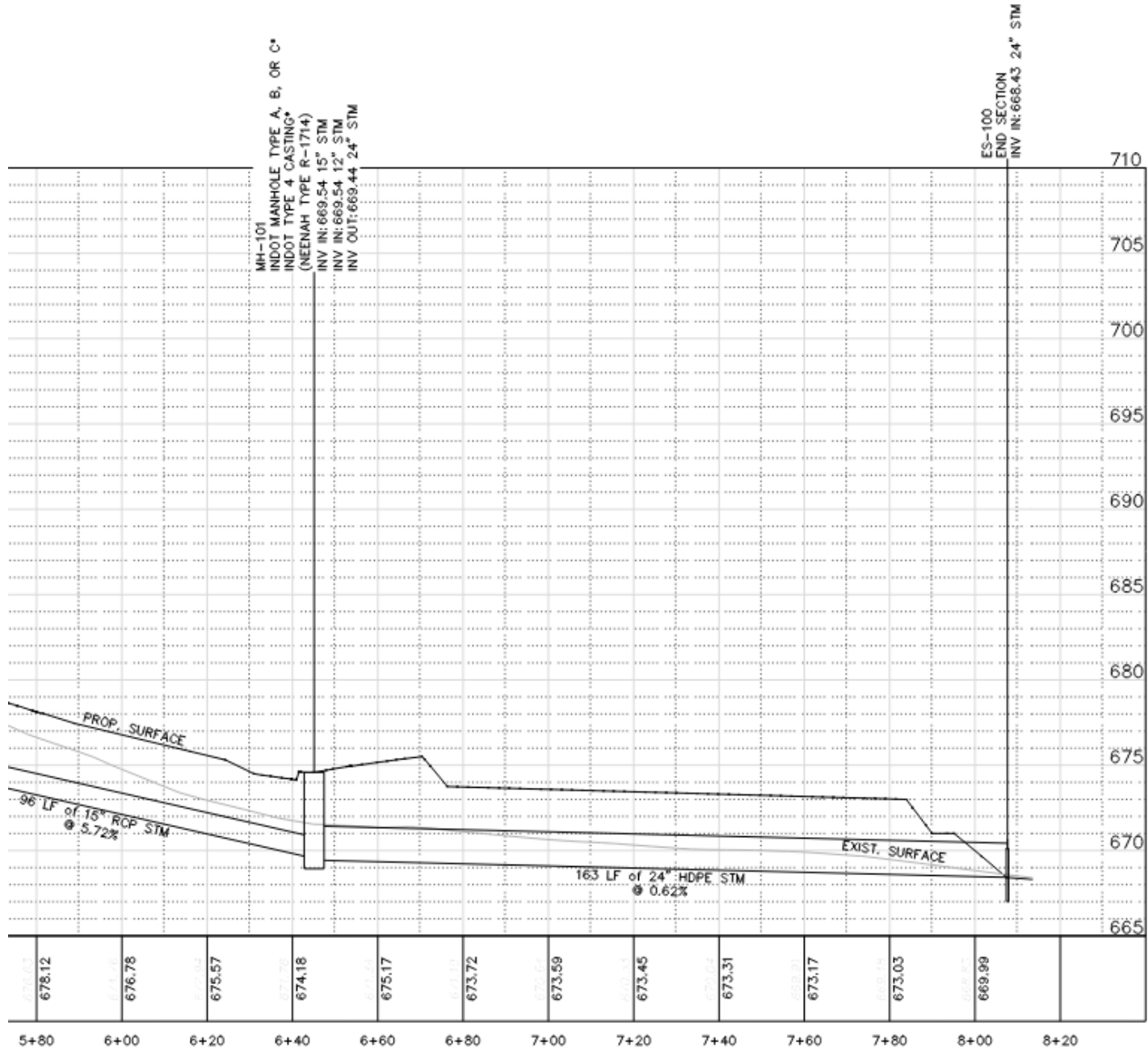


Southern Meadows Lot 60 (408 W Irie Ct.) – Violation: Fence in Drainage Easement

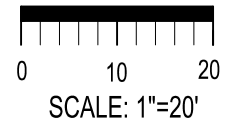
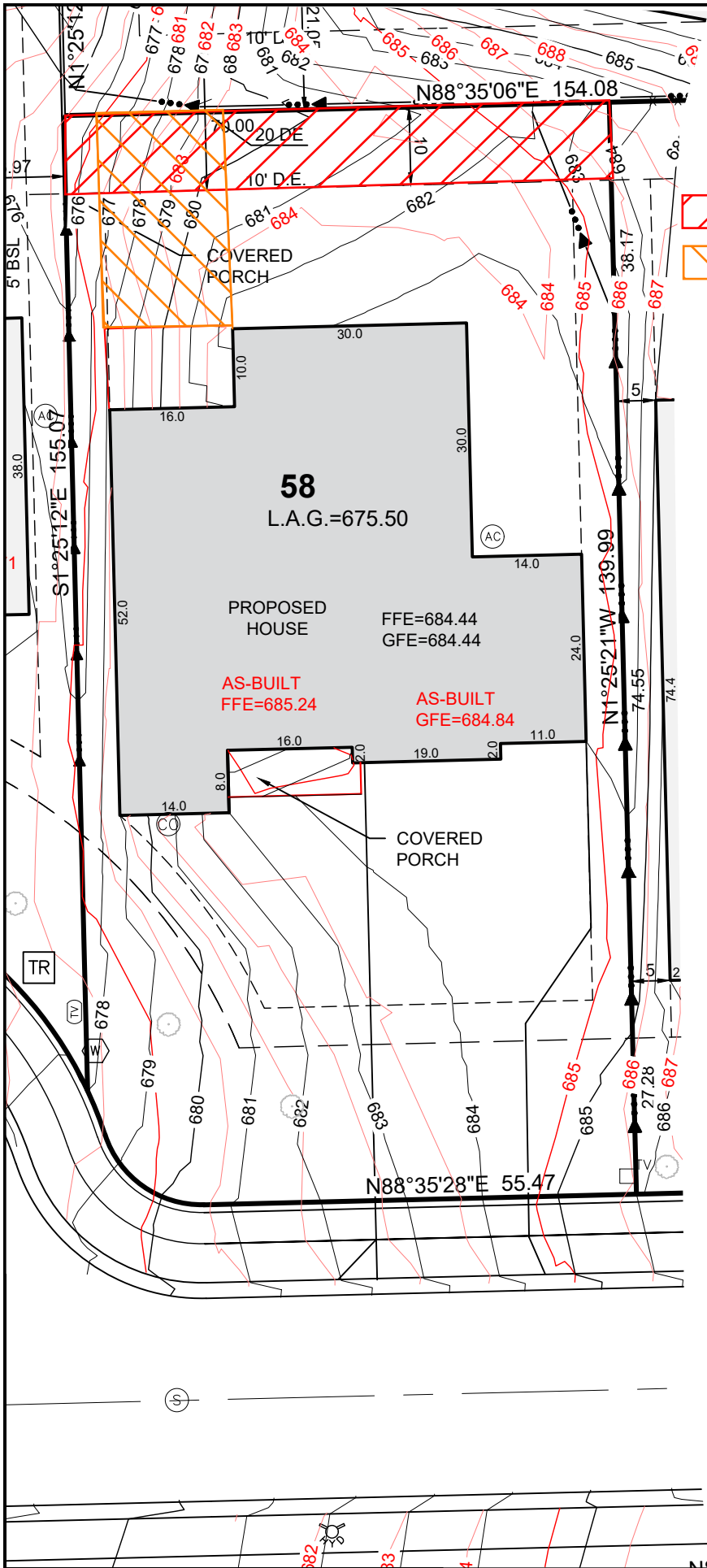


Lot 60. Photo of survey stake at property corner punctured HDPE storm pipe.

Southern Meadows Lot 60 (408 W Irie Ct.) – Violation: Fence in Drainage Easement



110A TO 100 PROFILE



-  Drainage Easement
-  Deck

LEGEND

- BSL BUILDING SETBACK LINE
- UE UTILITY EASEMENT
- DE DRAINAGE EASEMENT
- R/W RIGHT OF WAY
- GFE GARAGE FLOOR ELEVATION
- FFE FINISH FLOOR ELEVATION
- BFE BASEMENT FLOOR ELEVATION
- LAG LOWEST ADJACENT GRADE

**AS-BUILT PLAN
LOT 58 SOUTHER MEADOWS
PHASE 2
(404 W IRIE COURT)**

NOTES:

1. AS-BUILT CONTOURS AND ELEVATIONS SHOWN IN RED
2. THIS EXHIBIT WAS PREPARED BASED UPON DOCUMENTS OBTAINED FROM THE OFFICE OF THE RECORDER OF MONROE COUNTY, AND OTHER SOURCES AND IS NOT INTENDED TO BE REPRESENTED AS A RETRACEMENT OR ORIGINAL BOUNDARY SURVEY, A ROUTE SURVEY OR A SURVEYOR LOCATION REPORT



CIVIL ENGINEERING - LAND SURVEYING
1505 W Arlington Rd Bloomington, IN 47404
(812) 336-6536 - smithdgroup.com
JOB: 6064 DATE: 09/12/2023

