

MONROE COUNTY DRAINAGE BOARD
Wednesday October 4, 2023, at 8:30 AM
Location: Showers Building Room 106D
Hybrid Meeting with Virtual Attendance via Zoom

AGENDA

1. Call to Order
2. Approval of Minutes for: May 31, 2023 and September 6, 2023 +*
3. Public Input for Items not on the Agenda
4. Business
 - a. Highland Park Elementary School Improvements +*
 - b. Southern Meadows Subdivision Drainage Easement Violations
 - c. 2024 Drainage Board Meeting Dates +*
5. Staff Reports/Discussion

Link to DRAFT Stormwater Management Ordinance (August 2022):

https://www.co.monroe.in.us/egov/documents/1669831347_72535.pdf

Link to DRAFT Stormwater Technical Standards Manual (August 2022):

https://www.co.monroe.in.us/egov/documents/1669831403_93922.pdf

6. Adjournment
 - a. Date of Next Meeting: Wednesday November 1, 2023, at 8:30 AM

+ Attachment Included

* Board Action Requested

Zoom Meeting Information:

<https://monroecounty-in.zoom.us/j/81406336371?pwd=WWxYd240SGpGdG0yR2Vra3BRSVpYUT09>

Meeting ID: 814 0633 6371

Password: 663262

Dial by your location:

+1 312 626 6799 US (Chicago)

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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.

MONROE COUNTY DRAINAGE BOARD

Wednesday May 31, 2023, at 8:30 AM

Location: Showers Building Room 106D

Hybrid Meeting with Virtual Attendance via Zoom

MEMBERS PRESENT: Bob Autio, James Faber, Ginger Davis, Bill Riggert, Lee Jones

ABSENT: Trohn Enright-Randolph (*ex officio*)

STAFF: Donna Barbrick (Secretary), Kelsey Thetonia (MS4 Coordinator), Charlie Moore (intern), Charlotte McFerrin (intern), Tammy Behrman (Planning), TSD

1. Call to Order by Robert Autio. Kelsey Thetonia introduced Charlie Moore and Charlotte McFerrin, interns, and talked about their recent activities.

2. Approval of Minutes for May 3, 2023: Autio wished to add a sentence (Autio introduced the meaning of “severe soils” as discussed in the soils survey.)

3. Public Input for Items not on the Agenda. Jim Faber brought up a problem on Maple Grove Road. He said the ditch should be deepened and widened. He said farther up, there is a field that goes to the west and every time there is a heavy rainfall it comes down and floods Maple Grove Road. There was a discussion of the drainage in the area. Thetonia said I know that the Highway department is aware of this.

4. Business.

Staff Reports/Discussion

a. Ch. 808 Discussion – Floodplain Management +

b. Ch. 829 Discussion – Karst ordinance

c. N Buskirk Rd. Petition to Drainage Board for Removal of Obstruction of a Natural Watercourse

Tammy Behrman (Planning) was introduced by Kelsey Thetonia as the floodplain administrator for the county. She said she wanted to focus on floodplain management and also, briefly, the karst ordinance. She said the floodplain ordinance is housed within the Planning department, Chapter 808. She said I will let Tammy talk about how they regulate floodplain from the Planning department perspective and then I’d like to go over the Technical Standards Manual, especially compensatory storage calculations.

Behrman said Monroe County and Stinesville were accepted into the national flood insurance program by adopting the state’s mandated ordinance and part of the requirements is that we use their permitting requirements within this chapter, and we have to do enforcement and utilize their DNR flood maps. She said we will see what happens with the state because there are some laws that are in play right now and we will see if we can continue to use those DNR maps. She said we think we have 110 policies within the county, which gives them some insurance if there is a large event. She said we have permits that come in occasionally. She said anything that is within the floodway does require state permits; if it is considered the fringe, then it only requires a local permit. She said we use OpenGov for the permitting portion of it. She talked about the different types of permits that Planning oversees. She talked adopting an ordinance in 2017 concerning compensatory storage. She said I have engineers submit things that meet state requirements but Monroe County has higher standards for some permits. She said we have been trying to get the word out about the higher standards.

Thetonia asked for clarification about streams where the drainage area is greater than one square mile; we don’t regulate floodplain for streams with less than one square mile of drainage. Behrman said yes, although I think we have the capacity to do so if we have an area that we want delineated. Faber talked about builders getting flood insurance when they are in a floodplain. Behrman said we adopted increased

cost compliance and substantial cost of increase verbiage in our ordinance so that if you are going to be doing an improvement that is more than 50% of fair market value for the structure then you have to elevate the entire structure. She said we are working with people to adapt existing structures in the floodplain. She said some people are not aware that their property is in the floodplain.

Davis said one of the things that I have seen communities do for things like stream crossings is to adopt ordinances that follow water passage rules. She said these rules give a lot of room adjacent to the waterway for migration of animals and increases the flood throughway; it is basically oversizing culverts and passages to encourage an increase in efficiency through that area. She said that might be something to look at. Thetonia said if we do not have areas with extended duration flooding, then you can afford to have a crossing inundated for a flash flood and then allow it to recede, it makes sense to have it not so high up. Davis asked about compensatory storage and state requirements. Behrman said compensatory storage is a one-for-one tradeoff. She said planning's ordinance has a lot of specific requirements such as, if you are putting in a certain amount of fill, then that same amount of fill has to be removed from the property. She referred to Chapter 808-5. There was a discussion of the verbiage concerning compensatory storage. Behrman said I adopted the state's ordinance and then anything you see in yellow is optional. She said it has to be clean fill, it has to be on the same property, and it has to be connected to the flood plain. Thetonia noted some redundancy in the stormwater ordinance and said she would strike out some of the things that are already in Chapter 808. There was a discussion of whether DNR would make optional regulations required statewide in the future.

Thetonia moved on to the topic of sinking streams. She said we have one-to-one ratio countywide through Chapter 808 mirrored in our Chapter 1 standards but because we have studies saying we need to control the volume of water in Sinking Creek watershed, would you consider a more stringent ratio for these watersheds if someone were to fill in some floodplain. She asked is the one-to-one sufficient or should we consider a more stringent ratio in those watersheds when we already know that we need an additional 390 acre feet of storage at that sinkhole. She said I do not think a regional pond would be appropriate there, according to our previous studies. She said I don't know if any other counties have more stringent ratios for compensatory storage but if we were to do it, Sinking Creek watershed would be what I would target. She said we could address this in the future. Autio said it sounds like a future goal.

Behrman brought up an example at the corner of Curry Pike and West SR 45. She said we had a plan for commercial storage structures on the site and part of the plan was taking stockpile that was in the floodplain already and using that to fill in the edge around it. She said they did things a little bit backwards; the project has been stalled out for 2 ½ years. She said luckily, we had compensatory storage in the ordinance and so we were confirming where they were adding in the floodplain, they were taking out an equal amount. She said this was in the Sinking Creek area. She said I can see where you are coming from, Kelsey; if we had a larger ratio would that discourage people from developing.

Berhman commented I am pretty good with all these restrictive standards in the ordinance but there is one that is hard to administer. She talked about parking lots, driveways and sidewalks being paved with permeable materials. She said I do not have the manpower to keep a good watch. There was a discussion about permeable pavers needing maintenance. Thetonia said from a water quality perspective, there is no winning here because something with a natural surface is subject to erosion if you have a large flood event and so you could have a washout on a cinder or gravel trail whereas asphalt might hold up better, but asphalt does not allow any infiltration.

Lee Jones commented that with a long, very steep gravel driveway, it does not seem like it absorbs much water at all. Behrman proposed striking this part of the CDO ordinance since it is hard to administer.

Behrman said there are some projects where compensatory storage hinders projects. She said one property owner wanted to relocate the driveway out of the floodplain and they had to get a variance because their property was so small and there was no way to take out an equal volume somewhere else. Thetonia said since variances to compensatory storage would be handled under Chapter 808, does the Drainage Board (DB) want to review variances when we also have these provisions in our ordinance and technical standards. Riggert asked did it go to Board of Zoning Appeals (BZA). Behrman said yes, it did. Thetonia said I think there could be a way for DB to provide feedback to the BZA. There was a discussion of changing the day of DB meetings and maybe lining it up better with BZA meetings.

Thetonia asked for DB input on the section about protection of bluffs that Christopher Burke (CB) has in their model ordinance. Thetonia said the ordinance mentions bluff zones. She said a bluff can be formed by a stream channel or karst. She said CB has added provisions for development near a bluff. She read the definition of a bluff from the CB ordinance. She said we have great protections for development on steep slopes that are more stringent than this, but this provides setbacks from development on bluffs, forty feet from the top of the cliff. She said when I read this, I thought this doesn't really align with what we currently define as buildable area. She said if you have the bluff and it flattens out you'd still be subject to a forty foot setback.

Behrman said there are a couple of ways we think about it. She said Kevin Enright was set in teaching me that to envision a 15% slope we divide a 100-feet in half to make it a 50-foot stretch, and that would be a 7 ½ foot total drop. She said we try to be more conservative. She said in theory you could have a 40-foot buffer if that entire 7 ½ foot drop happened within 40 feet. Davis said the question is, what is at the bottom of the bluff. She said with uplands there is still a chance of erosion, but in a riverine system there is much higher risk of erosion. Thetonia said currently there is no setback from the buildable area. Behrman said if it was a steeper slope, we could count the contour lines and look at elevations. She said the BZA issues a lot of variances to slope ordinances. Riggert said I think it is different than when you have a lake or a stream with wave action eroding away at something.

Davis said I feel like if erosion is not there, this makes sense but if we are in an area with bedrock, then it is resistant to erosion and this restriction makes no sense. Thetonia suggested striking some of this since we already have stringent requirements about development on slopes. Thetonia said I would like to simplify this so our staff doesn't have another thing to review or for people building homes.

Behrman said I know Morgan County gets impacted by the way the White River meanders and changes and they really have to be cognizant of it. She said I don't know that we have other alluvial areas. There was a discussion of a layer for alluvial areas that could be shown on Elevate.

Lee Jones asked a question about a sinking stream that emerges and then empties into Richland Creek and there is a rather steep slope on the west side of it. She said when it rains a lot, there are all kinds of ephemeral springs along that slope. She asked wouldn't that be another kind of problem. Thetonia said we put sinkhole conservancy areas on springs. There was a discussion of whether ephemeral springs were included. Davis said seepage basins encourage erosion along bluffs, too; but I feel our bedrock is fairly resistant to it, all in all. She said we can't predict every scenario and that is why people hire engineers to evaluate the site for construction.

Thetonia said she also wanted to talk about Chapter 12 in the Technical Standards Manual which is standards for dams and levees. She said it addresses having an Incident and Emergency Action Plan (IEAP) for any new dam and mapping of any potential for flooding. She said if you are developing downstream from a dam, you may be required to do modeling. She said it's on the developer, if we feel like we do not have a good idea of whether there might be flooding or not. She said it does not give a

threshold, but it is for larger dams. She said our current Chapter 761 specifies dams 10 feet or higher requires review by the MS4 Coordinator so we could put something like that in here to give a threshold for required review. Riggert talked about maintaining dams and lower Twin Lakes dam where trees grew on the dam, animals got in and there were leaks.

Thetonia said this requires a management and maintenance plan for the proposed dam or levee. She said we have an enforcement case with someone who built one without permitting. She said I think having a way to require them to do that IEAP and downstream flood mapping.

Thetonia said she met with Trohn Enright-Randolph and talked about the karst ordinance quite a bit and weighing whether to place more stringent Sinkhole Conservancy Area SCA requirements in this ordinance revision right now. She said there would be a lot of work on Planning's end if the SCA is increased. She said there are clear water quality concerns and the need to protect sinkholes but implementing this would be a lot of work. She suggested keeping the standard as is for now. She said I feel like, we find we need more protections but how do we agree upon what that is going to look like. Jones said the city is looking at things like this and is also putting pressure on the county to increase this. Berhman said there was a discussion of doing the karst watershed option and maybe hiring someone to come up with an overlay of karst features. She said maintaining it for new karst features could be difficult. Thetonia said we don't have the funding right now to make that layer happen. Autio suggested putting in wording about "our goal will be to..." Jones said that sounds more like a resolution. Davis said since there is a push for it and it would maybe cause backlash to put it in later, wouldn't it make more sense to put it in with the idea that we would be looking towards creating an overlay when funds become available. She said then it is in, and you don't have to worry about getting it in later. She said you could go ahead and adopt it, knowing that we can't necessarily enforce it until an overlay is created but it's there. She said that would be easier than trying to change it after the fact.

Thetonia said we would still have the protections in place of 25 feet around the largest close contours. She said what are the consequences of adopting something that we are not prepared to implement. She said we would still have the same level of protection.

Behrman said I like this idea as well; I'd like to have similar verbiage as what we are saying. She said I'd take the largest close contour, buffer it by 25 feet, and call that the SCA area. She said I'd be interested in seeing a karst overlay and finding that watershed area and then decide what the proper buffer amount is from a karst watershed. She said does it make sense to clearly define the watershed of a karst feature and then we could have additional regulations that could change overtime if needed. She said you have to be careful because, in a sense, you are regulating people's property.

Thetonia said this gives me a general feel from everyone about moving forward. She said I would like to get the ordinance passed this year. Davis said if the overlay seems to be the stopping issue and we have an idea of certain watersheds of concern, is there a way to get funding to get an overlay. Jones said I think it would have support.

(Lee Jones left the meeting at approximately 9:45 am.)

Autio suggested a motion to request for a karst watershed overlay map countywide, focusing on critical watersheds first, with funds coming out of the general fund. *(9/27/2023 note: funding will come from the Stormwater Budget in 2024, not the General Fund).*

Davis said so moved. Riggert seconded. VOTE: AYE (unanimous). Thetonia said I will talk to Lisa about putting this into the 2024 budget request.

6. Adjournment. Thetonia said we won't plan to meet until August unless someone wants to really meet in mid-July. She said our next meeting would be August 2. Meeting adjourned at approximately 9:48 am.

Minutes approved: _____

President

Secretary

MONROE COUNTY DRAINAGE BOARD

Wednesday September 6, 2023, at 8:30 AM

Location: Showers Building Room 106D

Hybrid Meeting with Virtual Attendance via Zoom

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

ABSENT: Bob Autio, Lee Jones

Staff: Donna Barbrick (Secretary), Kelsey Thetonia (MS4 Coordinator), Jackie Jelen (Planning), Tammy Behrman (Planning), Shawn Smith (Planning)

Others: Katie Stein, Daniel Butler

1. **Call to Order** at 8:35 am by Ginger Davis, in the absence of board president, Bob Autio.
2. **Approval of Minutes for: May 31, 2023 (tabled)**
3. **Public Input** – James Faber spoke about conditions and traffic concerns at a Maple Grove Road intersection.
4. **Business**
 - a. **Pinnacle Business Park – MacAllister Rentals**

Kelsey Thetonia gave the location information. She said this requires Drainage Board (DB) approval. She said this is the old ABB site, former Westinghouse site, and there are contaminated soils throughout. She said we have a regional pond to the southeast of the property and, as part of the business park subdivision, we required swales to be constructed that were sized to convey runoff from each of the lots. She said that part was completed last year or beginning of this year, I believe, and the construction permit has been closed out or has been initiated for close out. She said we have the first major development here; this one is developing five lots within the subdivision. She said they have a plat amendment to combine the five lots into one parcel. She said from a drainage perspective this one is fairly simple because it does not have a lot of offsite drainage and since the parcels are combined, we don't have to worry about discharging water onto another lot. She said it will discharge almost immediately into the regional pond. She referred to a grading plan and had a copy to pass around to DB.

She said the entire property of 16-acres is being proposed for an equipment rental business. She said they will have an office building, storage building, equipment prep building and a fueling area. She said most of the property would be used for outdoor storage of equipment to be rented out/sold. She said this entire area will be converted to impervious cover; most of it will be asphalt. She said there is a small network of storm sewers to help with drainage. She said the most notable drainage comment is that they are encapsulating the existing swale that was going to be used to drain the five lots. She said since they are combining lots, they encapsulated it and would be discharging into a riprap ditch that would go into the regional pond.

Katie Stein (design engineer) said she did not have anything to add but would be happy to answer questions. Faber asked about contaminated soils. Thetonia said it is mostly on the east portion of the property. She said a cap was required and any disturbance in the area would be overseen by the same company that oversaw construction of the swales for the development, so they are familiar with the site. She said I do not see too much excavation on the affected area.

Faber asked about drainage going into the pond. Stein said there would be runoff over those areas, but the polluted soil would all be under the cap.

Davis asked if any of the equipment stored could potentially dig into the soil when dropped; that would be my only concern, potential disturbance of the soil by the equipment. Stein said they are putting in an extra foot of material on top of the existing cap.

Faber asked about flowing in the subsurface. Thetonia said she did not see any water in the swales; they are always dry when I have been out there. She said as far as this site goes, they are reducing infiltration. She said I haven't seen any evidence of springs or groundwater.

Faber asked about drainage from the pond. Stein said there are two more ponds downstream south of Jonathan Drive. Thetonia pointed out the ponds and wetlands in the area in the Sinking Creek watershed.

Riggert asked about permitting. Thetonia pointed out jurisdictional waters to the east of this development. Davis asked about inlets in the area adjacent to the contaminated soils area. Stein said there are manholes but not inlets within the affected soil area. She said the inlets are all on the west side of the main building and on the left side of the storage buildings. She said the storm pipe would go through that existing swale, covered, encapsulated, and have one manhole structure within that affected soil area. Davis asked about how the drainage is going to get into the buried conduit. Stein said it will be sheet drained back into the swales.

Riggert asked about water quality treatment. Stein said that would take place within the regional detention pond. Thetonia spoke about a SPCC plan for the site with procedural measures in place to reduce the potential of discharge of any petroleum products. Davis asked about the open-air equipment storage being included in that plan. Thetonia said we could require things under the equipment if there are signs of leaks from the equipment. There was a discussion of pollution from the stored equipment getting to the pond and measures that could be taken. Thetonia said I could ask for spill kits.

Stein said I would like to also ask MacAllister about this, since it operates nationwide and items like this have probably been brought up in the past and they probably have means and measures on handling all of this. Riggert said I would think they have some sort of plan.

Thetonia said we asked them to put in a small berm on the south side to make sure all the runoff is contained and directed to the regional pond. She said what if we also asked for a small berm on this side to divert flow to a single area. Davis said sheet flow would be better actually. Stein said there will be plantings around the outside of this as a planning requirement. The county's landscape requirement was discussed. Thetonia said there is a soils management plan that is IDEM approved.

Jackie Jelen said Shawn Smith and Daniel Brown are also attendees. She said in addition to the site plan, they are also doing a plat amendment and reducing the area devoted to drainage easement because they are burying that swale line pipe. She said regarding sheet draining to the east, that there would be a fence that surrounds this entire area.

Daniel Brown said regarding the site plan, we do have three commercial building permits for these that are on hold until drainage plan approval. Trohn said the pond is the lynchpin to all this. He asked about monitoring. Thetonia said I think that is something that we could discuss with the business association, outside of the site plan review. She said I will talk to Planning about conditions on the business association for monitoring the pond. Trohn said I heard that sunlight is actually not that bad for some of these drainage areas, to have exposure to the sun. He said I was just wondering what people's thoughts were on that. He said it seems like that pond is threatened if there is no one to monitor it. Trohn said we should have done something to restrict having more pollutants in this particular area for a longer period of time.

Motion by Riggert to approve the drainage plan. Faber seconded.

There was a discussion of adding a condition to monitor the pond. Trohn said you could potentially ask Planning to look into monitoring. Jelen said she pulled out the O&M manual that has been executed as part of the subdivision and it says the owner is required to do quarterly inspections of all stormwater facilities. She said the pond that this is draining to is denoted as a treatment pond. She said I believe there was a hard look at the pond and the types of uses that would be going in following the subdivision.

VOTE by roll call: Riggert YES, Faber YES, Davis YES. Motion carried unanimously.

b. Joseph Greene PUD – C I & L Clear Creek +

Thetonia asked to discuss this item next. She gave an overview of the site on the south side of town. She said this linear property here is west of Southern Meadows subdivision. She said this property will be developed as a PUD. She said Terry Quillman reviewed a development plan a couple of years ago that was not implemented. She said we are looking at another amendment. She said we have floodplain on this property; the development itself is for the most part outside of the floodplain. She said the only improvement proposed in the floodplain is a simple walking trail. She said most of the development would be outside of the floodplain. She said the development would be done in phases. She said there will be two buildings going in; one is commercial, and one is a 15-unit residential building. She said there are parking areas and a detention pond. She said most of the area would be draining south toward the detention pond. She said one of the things we have been discussing recently is the outlet for this project and what it is going to look like. She said there was no evidence of sinkholes on the property. She said there is a pond with a large CBU sewer main, which we try not to do but there were spatial constraints on the site. She said it does meet critical drainage release rates; it is a large pond. She said we have an area of amended soils for water quality treatment outside of the sanitary sewer easement. She said there is an encroachment agreement between the property owner and CBU stating that CBU has the authority to go in and use the easement as needed but the property owner has the responsibility to put this back as designed. She said we also have the O&M manual to ensure that it will be put back as designed. She said CBU has required an impervious liner over their portion of the pond with the sanitary sewer. She said we want to make sure that this is meeting the requirements but also not being a maintenance burden on the property owner.

She said the pond drains to the south and we have two new inlets on South Rogers Street. She said the county has an existing culvert under the road that discharges to a ditch. She said it is the same route that the detention pond in Southern Meadows is taking as well. She said these houses are right up against the floodplain; there are drainage concerns for homes so close to floodplain. She said the size of the detention pond meets critical drainage release rates so hopefully this will actually help the drainage in this area.

Trohn had a question about everything being appropriately sized. Stein said I am taking over this project. She said this is an area that Kelsey and I have talked about. She said I would like to look at this in person and look through the drainage calculations to see if there were downstream calculations done. She said this is handling the runoff coming from Southern Meadows and taking on the runoff from Rogers. She said in theory we are releasing at lower rates. She said there are some details that we are still working on. Trohn said it is a lot of water to be taking on, from three different areas. He said I'd be curious if that culvert is cleaned or how it is maintained. Thetonia said that would be highway department's jurisdiction.

Tammy Behrman asked about plans to get permits. Thetonia said this project was not proposing any work in the floodplain in the area. Trohn asked a question about Southern Meadows. Thetonia said Southern Meadows was approved in 2019 and Terry Quillman did the review. She said I know that Terry did look

at the downstream receiving area. Thetonia said if we were to have a large flood event, Clear Creek drains two-thirds of the city of Bloomington; this area is a small portion of the troubles here, but I definitely do not want to make it worse.

Davis said I think this is one way to reduce the discharge rates. She said it is better than what exists now, and I think that's a good thing to try and reduce the impact moving forward. She said I don't know if we can have Highway size the culvert and ensure its capacity, but I do not think the onus should be on the property owner upstream. She said knowing that there are two large detention ponds draining to it the capacity of the culvert to move the water is important.

Riggert asked about funds to upsize pipes. Thetonia said we have funding for studies and replacement. Riggert said I was thinking that if Katie does an analysis and finds that a 36-inch pipe is not adequate. There was a discussion of concerns about the size of the highway culvert.

Davis said I'd also be interested to see how much the permeable pavers are reducing. Stein said I don't believe the pavers are being counted towards any volume from a detention/runoff viewpoint.

Motion by Riggert to approve the drainage plan for this development with the condition that Stein finalizes the review of the existing infrastructure downstream to ensure it is adequate. Second by Faber.

VOTE by roll call: Faber YES, Riggert YES, Davis YES. Motion carried unanimously.

c. Heitink Properties, LLC +

Thetonia said we have Daniel Butler online for this discussion. She gave information on the location of the site. She said because of the roadway extension, these properties are reconfiguring their driveway and parking areas. She said they are reconfiguring the parking area and they are adding in a detention pond, which will drain through an existing riprap channel south to the culvert under the railroad. Davis asked about the culvert and its capacity. Thetonia said I do not think we have any power to change what is under the railroad property. She said the pond will meet critical drainage area release rates; it is in the Sinking Creek watershed. She said yesterday she got additional information about the grades around the riprap ditch and calculations from Daniel showing that the capacity is adequate. She said she has not yet had time to review those.

Daniel Butler spoke. He said there is an existing building to the north that is all being treated plus all the existing parking lot and the new parking that will all be treated as well. He said these will be running to the new pond. He said there is also existing untreated areas that will remain untreated.

There was a question about a greyed area on the plan. Butler said we are detaining and treating more area from the existing large building and the existing building to the north than were previously treated at all. He said the grey square is a new loading dock. He said with the road extension to the south, that triggered this project to happen because they were not able to get trucks to get in and out as before.

Butler said there is an existing 24-inch metal culvert that goes underneath the railroad tracks. He said it is south of this site and there are swales that drain on the north side of the tracks and then they go to the culvert that goes underneath the railroad. He said regarding the ditch, there is a channel that runs north south and we will be draining to that and it is lower than the adjacent property to the west. He said it is overgrown with a lot of vegetation, but the actual drainage way is defined. He said in most places it is 2.5 foot deep with a one-foot flat bottom, riprap lined, and we did an open panel calculation, assuming that our pond failed. He said if our pond failed, then the water would rise to about 1.3 feet with a 100-year event and it's 2.5 feet tall, so we are good on a 100-year event.

Davis asked about any additional offsite drainage going to this pond. Butler said there is a little area offsite that flows to the swale but none of that flows to our new pond.

Shawn Smith (Planning) said we have been reviewing this for quite some time now but I do not have any concerns from a planner's perspective. Davis said my only comment would be is that if we are allowing for the pavement on the south side of the property to be covered by the extra treatment on the north side, we may be opening the door for that to happen again. She said we may be opening the door to swaps in the future. She said I have no problem with this one.

Motion by Riggert to approve the proposed drainage improvements for the Heitink project. Second by Faber. VOTE by roll call: Faber YES, Riggert YES, Davis YES . Motion carried.

5. Staff Reports/Discussion

Thetonia said the Planning Department is re-doing the whole Planning ordinance. She said we will go over this in the future, but not today because of the time. Trohn said he had a comment about the Technical Standards Manual. He said when we get to that part to review, maybe have a presentation outlining the major changes and the goals and what our intent is about writing this into the technical manual. He said this is going to have significant impacts and I would like a good comprehensive review in a way where I can understand the end goal.

Adjourned at 10:03 am.

Minutes approved: _____

President

Secretary

Project Name: Highland Park Elementary
Engineer/Design Firm: Andy Knust, BRCJ
Address: W Gifford Rd.
Acres: 19.99 acre site, 1.64 ac disturb

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

Project Summary

The Highland Park Elementary School – Student Pickup Improvements project is located in the Sinking Creek Critical Watershed. The project site is surrounded by single family residential to the west (Stone Chase subdivision), and multi-family residential to the north (Westgate on Third) and to the east. The site is not located within a mapped floodplain. The improvements include a 200 meter running track and a driveway extension at the northwest corner of the campus, and expanded parking on the east side of the school.

Project Drainage

This property drains south towards the west fork of Sinking Creek. Offsite runoff primarily comes from the Westgate on Third site, entering at the northwest corner of the property and flowing south through a defined channel to an existing detention pond. MCCSC will be responsible for regular inspections and maintenance of their pond and drainage infrastructure.

Highland Park Elementary – Drainage Comments

Critical Watershed:

- This project is in the Sinking Creek critical watershed.

Adequacy of outlets/receiving infrastructure:

- Defined stream drains existing pond.
- Downstream drainage concerns at Bloomington Church of Christ and at 4595 W Gifford Rd.

Water Quality:

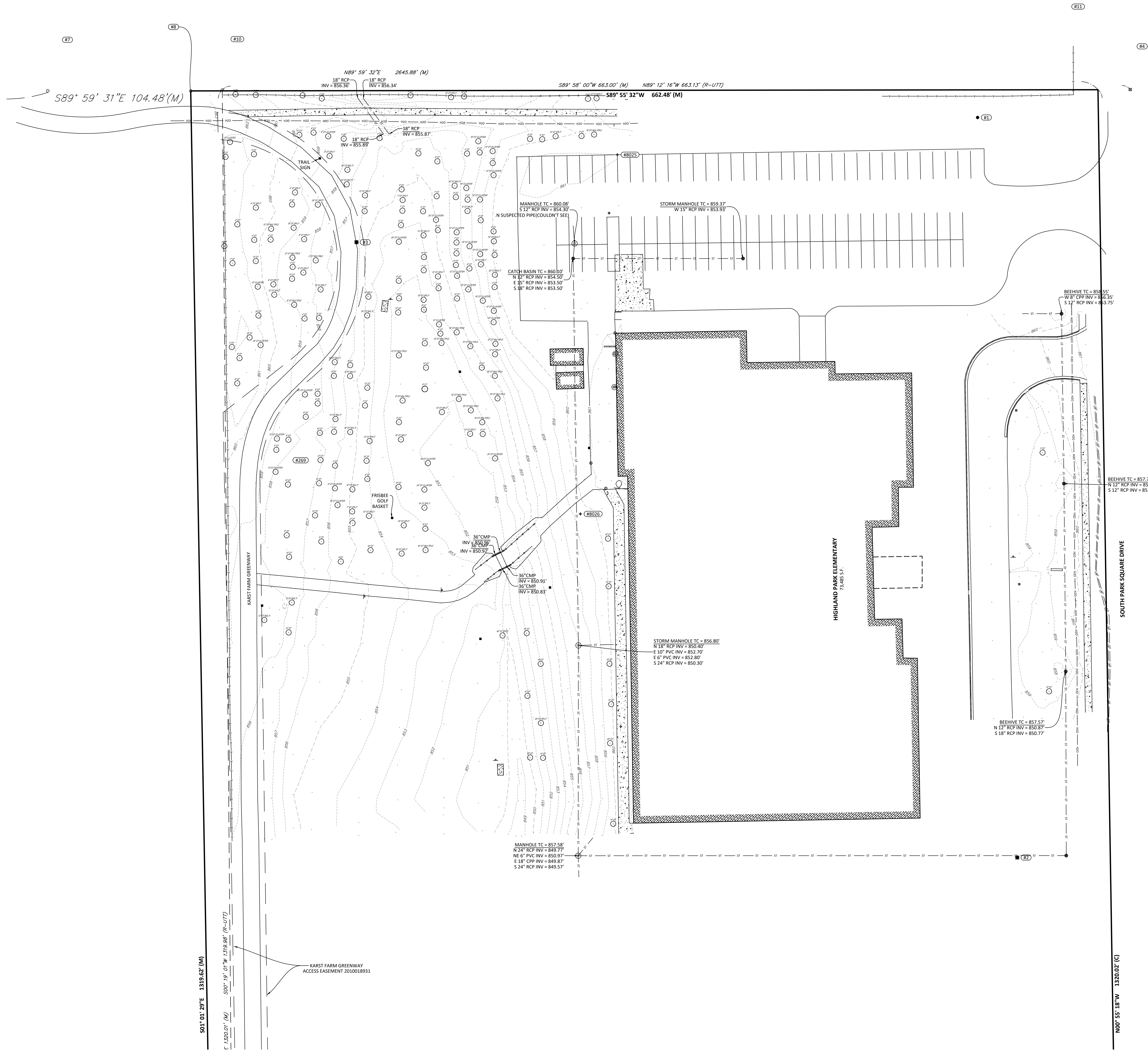
- No additional water quality treatment measures are proposed, aside from the storage volume and vegetation in the modified detention pond.

Drainage Easements:

- The stream and detention pond will be placed in a Drainage Easement.



TOPOGRAPHIC SURVEY
HIGHLAND PARK ELEMENTARY SCHOOL
A PART OF THE NORTHEAST QUARTER OF
SECTION 2, T8N, R2W
MONROE COUNTY, INDIANA.



- NOTES:**
- FIELD WORK PERFORMED MARCH 8, 2023.
 - SEE RETRACEMENT BOUNDARY SURVEY OF SAME DATE FOR REPORT OF SURVEY AND BOUNDARY LINE INFORMATION.
 - CONTOURS REPRESENT 1-FOOT INTERVALS.
 - UTILITIES SHOWN HEREON ARE PER OBSERVED ABOVE GROUND EVIDENCE AND FROM UTILITY MARKINGS PLACED ON THE GROUND BY INDIANA B11 MEMBER UTILITIES (SEE TICKETS BELOW). MEMBER UTILITIES DO NOT LOCATE PRIVATE LINES OR FACILITIES. MEMBER UTILITIES DO NOT LOCATE SERVICE LINES NOR ALL UTILITIES WHEN A SURVEY IS THE PURPOSE OF THE TICKET. OVERHEAD UTILITIES ARE IDENTIFIED AS OVERHEAD WITHOUT SPECIAL INVESTIGATION AS TO THE TYPE OR NATURE. STORM AND SANITARY INVERT ELEVATIONS, PIPE SIZES, AND MATERIALS ARE ALL APPROXIMATE BASED ON LIMITED INFORMATION AVAILABLE FROM THE SURFACE. NO STRUCTURES WERE ENTERED TO ACCURATELY MEASURE PIPE SIZES OR TO VERIFY PIPE TYPE AND MATERIAL. STRUCTURE GRATES AND COVERS SHOWN SHOULD NOT BE ASSUMED TO BE THE CENTER OF THE BELOW GROUND STRUCTURE. ALL UTILITIES INCLUDING LOCATIONS AND SIZES NEED TO BE VERIFIED PRIOR TO CONSTRUCTION EFFORTS.
 - THE FOLLOWING ARE THE INDIANA B11 TICKET NUMBERS FOR THIS PROJECT: 2303091211, 2303091213, 2303091212, 2303091206
 - THE FOLLOWING ARE THE MEMBER UTILITIES NOTIFIED BY INDIANA B11:

DUNE ENERGY	ELECTRIC
COMCAST CABLE	CABLE TV
CENTERPOINT ENERGY (SOUTH) (FORMERLY VECTREN)	GAS
BLOOMINGTON UTILITIES, CITY OF	SEWER, WATER
SMITHVILLE TELEPHONE COMPANY	TELEPHONE
ORCHARD GLEN COOPERATIVE	MASTER METER
AT&T - DISTRIBUTION	COMMUNICATIONS
 - The utilities shown on this survey represent Quality Level B standard of care. The American Society of Civil Engineers (ASCE) has developed an important standard of care guideline, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, CI/ASCE 38-02. This standard guideline describes four quality levels of utility depiction:
 - Quality Level D - Information derived from existing records or oral recollections.
 - Quality Level C - Information obtained by surveying and plotting visible above ground utility features and by using professional judgment in correlating this information to Quality Level D.
 - Quality Level B - Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities.
 - Quality Level A - Precise horizontal and vertical location of utilities obtained by the actual exposure and subsequent measurement of subsurface utilities, usually at a specific point. To order a copy of ASCE Standard 38-02, please go to the ASCE Bookstore: <http://www.pubs.asce.org/> or call 1-800-548-2723.
 - THIS DRAWING IS NOT INTENDED TO BE REPRESENTED AS A RETRACEMENT OR ORIGINAL BOUNDARY SURVEY, A ROUTE SURVEY, OR A SURVEYOR LOCATION REPORT.

CONTROL POINTS:

HORIZONTAL DATUM: Reference Frame NAD 83(2011) Epoch 2010.0000, Indiana State Plane Coordinates East Zone, U.S. Survey Feet.
 VERTICAL DATUM: NAVD83 (Computed using Geoid 12A), U.S. Survey Feet.

CONTROL POINTS				
POINT #	NORTHING	EASTING	ELEV	DESCRIPTION
1	1424545.08	3092032.47	865.93	5/8" REBAR W/CAP
2	1424004.91	3092061.46	859.84	MAG NAIL
3	1424454.03	3091578.96	856.36	MAG NAIL
9	1423245.09	3091481.49	856.04	5/8" REBAR W/BFA CAP(OFFSITE)



NOT FOR
CONSTRUCTION

HIGHLAND PARK ELEMENTARY SCHOOL - STUDENT PICKUP IMPROVEMENTS
 900 S Park Square Dr, Bloomington, IN 47403

BRCJ Project No: 11187

EXISTING SITE CONDITION PLAN NORTH

Date: 08-22-2023
 Issue: MONROE COUNTY REVIEW

REVISION SCHEDULE		
Rev. #	Rev. Description:	Issue Date

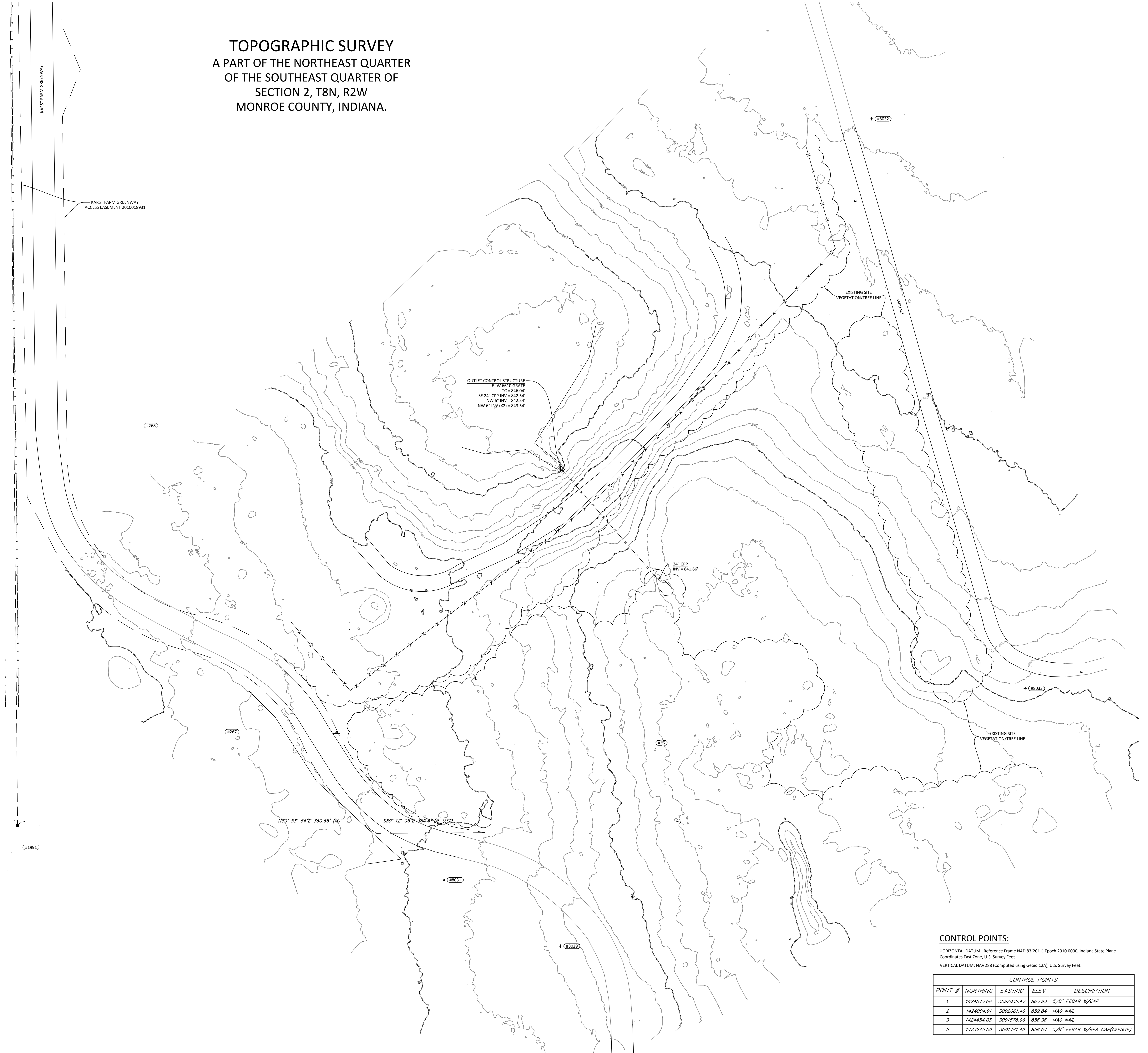
LEGEND

<ul style="list-style-type: none"> YARD LIGHT LIGHT POLE SIGNAL POLE UTILITY POLE GUW WIRE CATCH BASIN CURB INLET ELECTRIC MH MANHOLE PHONE MH SANITARY MH SIGNAL MH STEAM MH STORM MH WATER MH ELEC. METER CLEANOUT GAS METER GAS VALVE WATER VALVE FIRE HYDRANT SPIR. HOODUP SPIRINKLER 	<ul style="list-style-type: none"> FENCE GUARDRAIL OVERHEAD WIRES UNDER ELEC. GAS LINE SAN SEWER LINE STORM SEWER LINE UNDER TELEPHONE EXISTING WATER LINE CHILLED WATER LINE SIGN R.O.W. MON. MONITORING WELL BOLLARD BORE HOLE DOWNSPOUT GATE POST POLE PARKING METER SPIGOT WOOD POST T-POST PARKING SPACES TRANSFORMER ELEC. VAULT STEAM VAULT VALVE VAULT AC UNIT PHONE BOOTH BIRD FEEDER MAILBOX PROP. TANK PARKING BLOCK 	<ul style="list-style-type: none"> FD AXEL FD BRASS DISK FD COT GIN SPOLE FD CHISELED X SET CHISELED X SET DRILL HOLE FD HARRISON MON. SET HARRISON MON. SET HUB/TACK FD REBAR SET REBAR FD MAG NAIL SET MAG NAIL FD NAIL SET NAIL FD PIPE FD RR SPIKE SET RR SPIKE FD STONE RECORDED B&D (M) MEASURED B&D (C) CALCULATED B&D (PROP) PROPORTIONAL DIST. A.L. ABOVE GROUND B.G. BELOW GROUND CONF. TREE DECID. TREE SHRUB PHONE RISER-BOX TV RISER BOX ELEC. RISER-BOX GAS RISER-BOX
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Drawn By: KJP
 Designed By: KJP
 Checked By: WSR

C101

TOPOGRAPHIC SURVEY
 A PART OF THE NORTHEAST QUARTER
 OF THE SOUTHEAST QUARTER OF
 SECTION 2, T8N, R2W
 MONROE COUNTY, INDIANA.



OUTLET CONTROL STRUCTURE
 E/W 6610 GRATE
 C = 846.04'
 SE 24° CPP INV = 842.54'
 NW 6° INV = 842.54'
 NW 6° INV (X2) = 843.54'

CONTROL POINTS:
 HORIZONTAL DATUM: Reference Frame NAD 83(2011) Epoch 2010.0000, Indiana State Plane Coordinates East Zone, U.S. Survey Feet.
 VERTICAL DATUM: NAVD88 (Computed using Geoid 12A), U.S. Survey Feet.

POINT #	NORTHING	EASTING	ELEV	DESCRIPTION
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2	1424004.91	3092061.46	859.84	MAG NAIL
3	1424454.03	3091578.96	856.36	MAG NAIL
9	1423245.09	3091481.49	856.04	5/8" REBAR W/BFA CAP(OFFSITE)

NOTES:
 1. FIELD WORK PERFORMED MARCH 8 - JUNE 13, 2023.
 2. CONTOURS REPRESENT 1-FOOT INTERVALS.
 3. THIS DRAWING IS NOT INTENDED TO BE REPRESENTED AS A RETRACEMENT OR ORIGINAL BOUNDARY SURVEY, A ROUTE SURVEY, OR A SURVEYOR LOCATION REPORT.

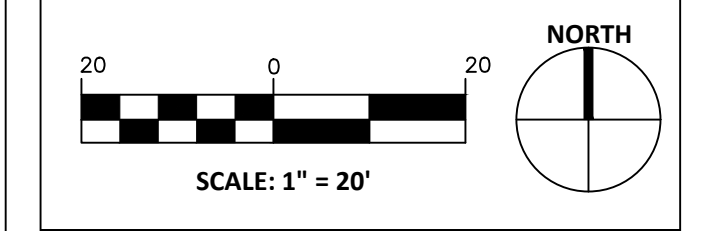


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HIGHLAND PARK ELEMENTARY SCHOOL - STUDENT PICKUP IMPROVEMENTS
 900 S Park Square Dr, Bloomington, IN 47403

BRCJ Project No: 11187

EXISTING SITE CONDITION PLAN SOUTH



Date: 08-22-2023 Issue: MONROE COUNTY REVIEW

REVISION SCHEDULE

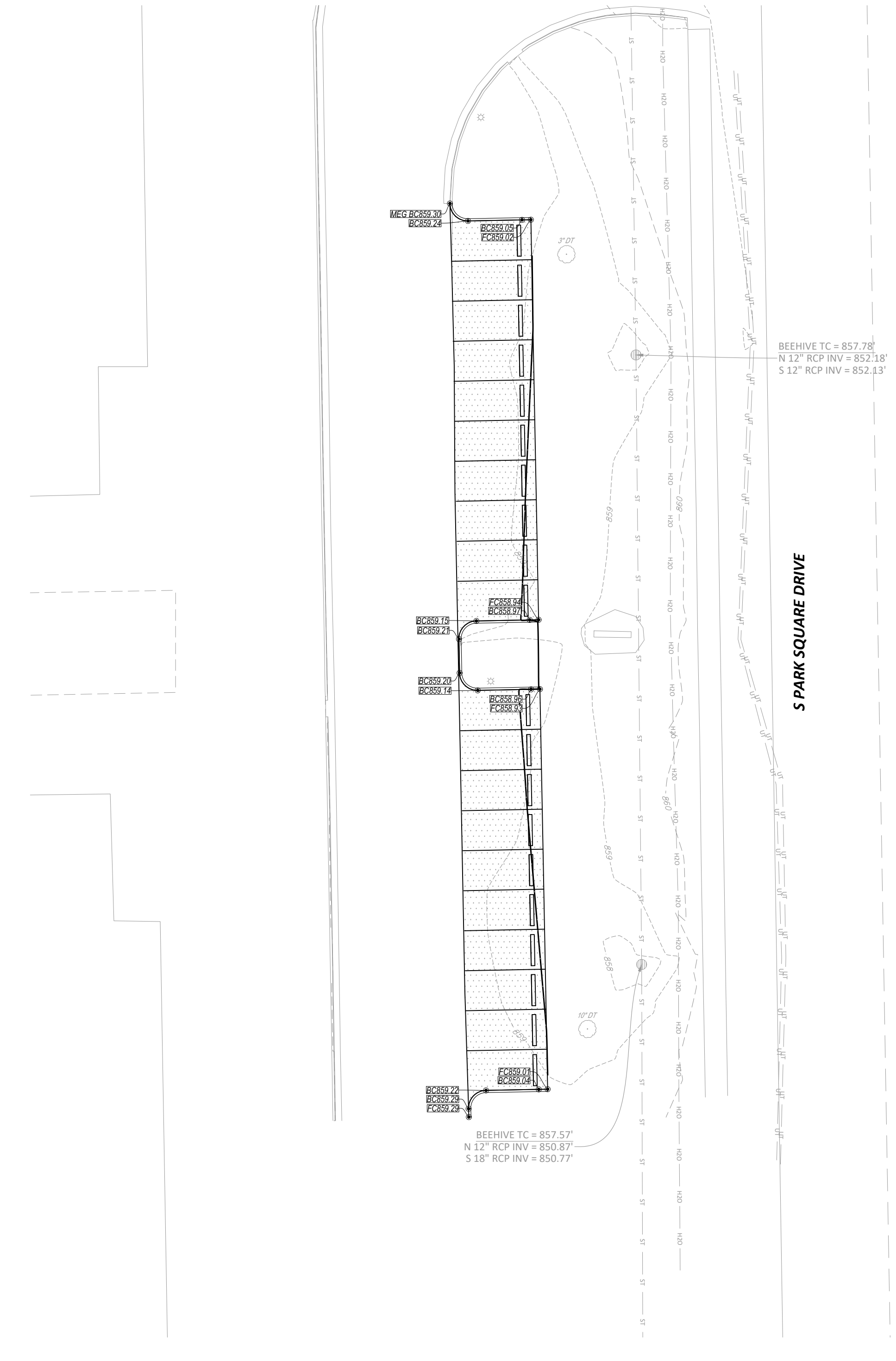
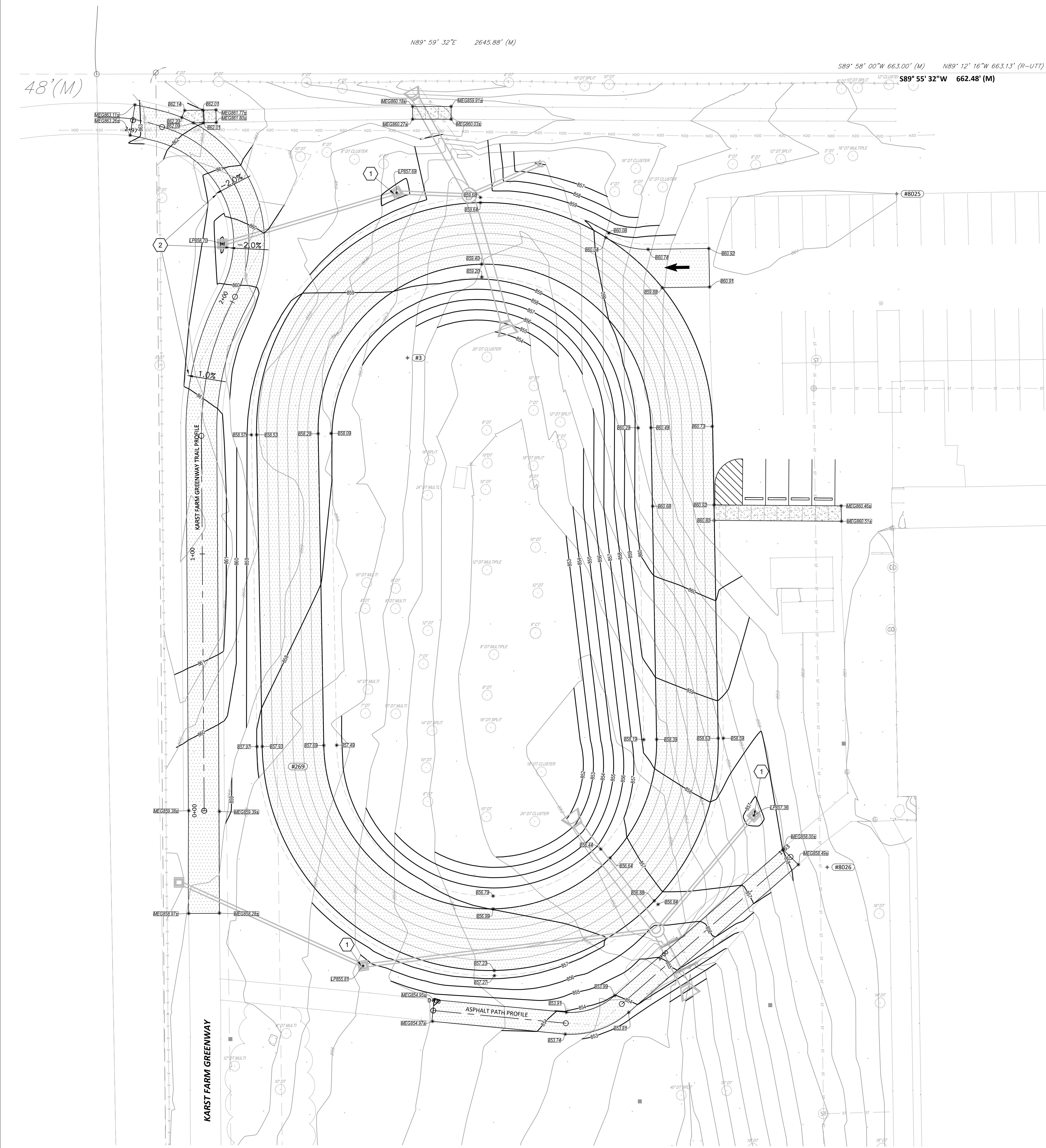
Rev. #	Rev. Description:	Issue Date

LEGEND

- △ YARD LIGHT
- LIGHT POLE
- ⊕ SIGNAL POLE
- ⊙ UTILITY POLE
- ⊖ GUY WIRE
- ⊙ CATCH BASIN
- ⊙ CURB INLET
- ⊙ ELECTRIC MH
- ⊙ MANHOLE
- ⊙ PHONE MH
- ⊙ SANITARY MH
- ⊙ SIGNAL MH
- ⊙ STEAM MH
- ⊙ STORM MH
- ⊙ WATER MH
- ⊙ ELEC. METER
- ⊙ CLEANOUT
- ⊙ GAS METER
- ⊙ GAS VALVE
- ⊙ WATER VALVE
- ⊙ FIRE HYDRANT
- ⊙ SPR. HOOKUP
- ⊙ SPRINKLER
- FENCE
- GUARDRAIL
- OVERHEAD WIRES
- UNDER ELEC.
- GAS LINE
- SAN SEWER LINE
- STORM SEWER LINE
- UNDER TELEPHONE
- EXISTING WATER LINE
- CHILLED WATER LINE
- SIGN
- ⊙ R.O.W. MON.
- ⊙ MONITORING WELL
- ⊙ BOLLARD
- ⊙ BORE HOLE
- ⊙ DOWNSPOUT
- ⊙ GATE POST
- ⊙ POLE
- ⊙ PARKING METER
- ⊙ SPOT
- ⊙ T-POST
- ⊙ WOOD POST
- ⊙ PARKING SPACES
- ⊙ TRANSFORMER
- ⊙ ELEC. VAULT
- ⊙ PHONE VAULT
- ⊙ AC UNIT
- ⊙ PHONE BOOTH
- ⊙ BIRD FEEDER
- ⊙ MAILBOX
- ⊙ PROP. TANK
- ⊙ PARKING BLOCK
- ⊙ FD AXEL
- ⊙ FD BRASS DISK
- ⊙ FD COT. GIN SPOLE
- ⊙ FD CHISELED X
- ⊙ SET DRILL HOLE
- ⊙ FD HARRISON MON.
- ⊙ SET HARRISON MON.
- ⊙ SET HUB/TACK
- ⊙ SET REBAR
- ⊙ FD MAG NAIL
- ⊙ SET MAG NAIL
- ⊙ FD NAIL
- ⊙ SET NAIL
- ⊙ FD PIPE
- ⊙ FD RR SPIKE
- ⊙ SET RR SPIKE
- ⊙ FD STONE
- ⊙ RECORDED B&D
- ⊙ MEASURED B&D
- ⊙ CALCULATED B&D
- ⊙ PROPP. PROPORTIONAL DIST.
- ⊙ A.G. ABOVE GROUND
- ⊙ B.G. BELOW GROUND
- ⊙ CONF. TREE
- ⊙ DECID. TREE
- ⊙ SHRUB
- ⊙ PHONE RISER-BOX
- ⊙ TV RISER-BOX
- ⊙ ELEC. RISER-BOX
- ⊙ GAS RISER-BOX

Drawn By: KJP
 Designed By: KJP
 Checked By: WSR

C102

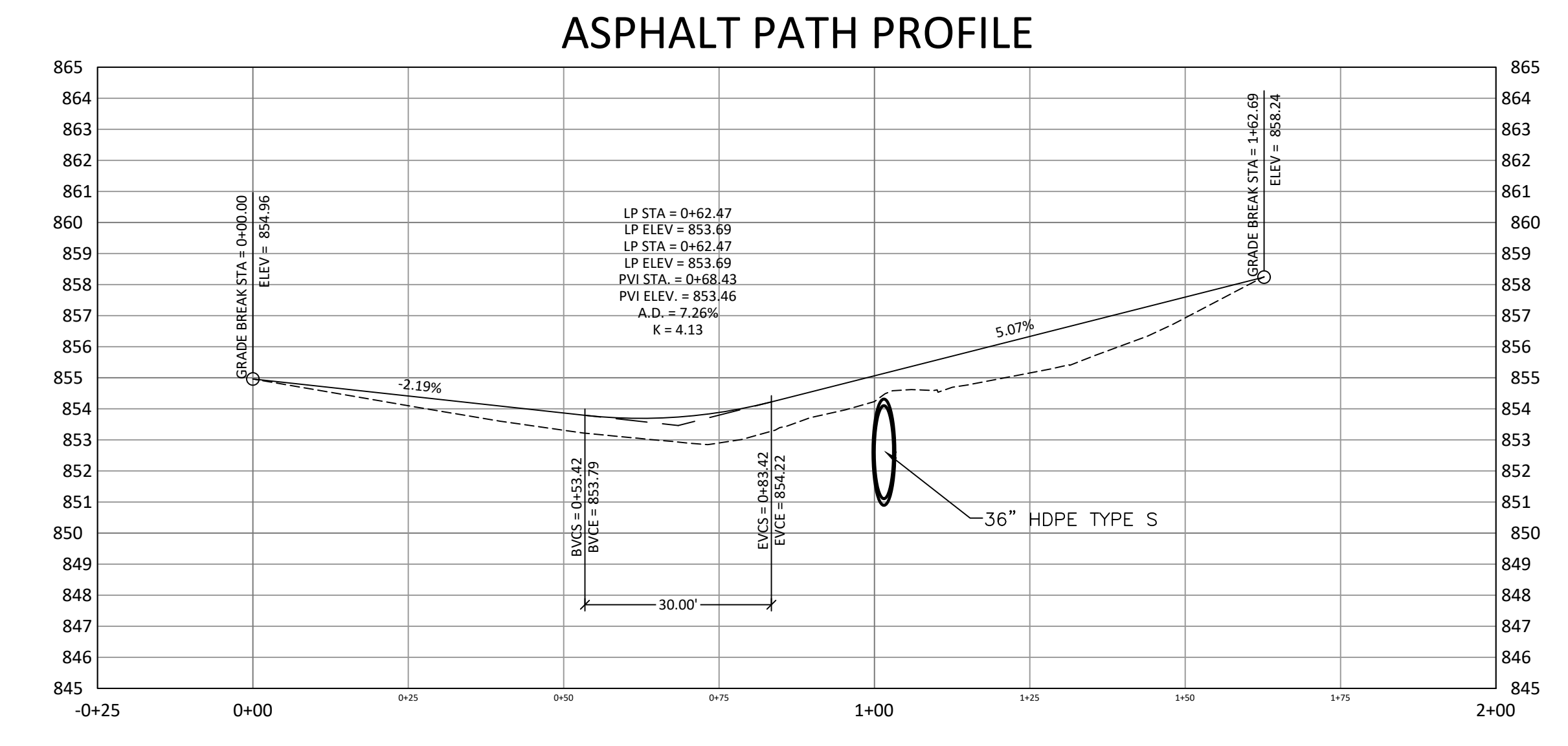
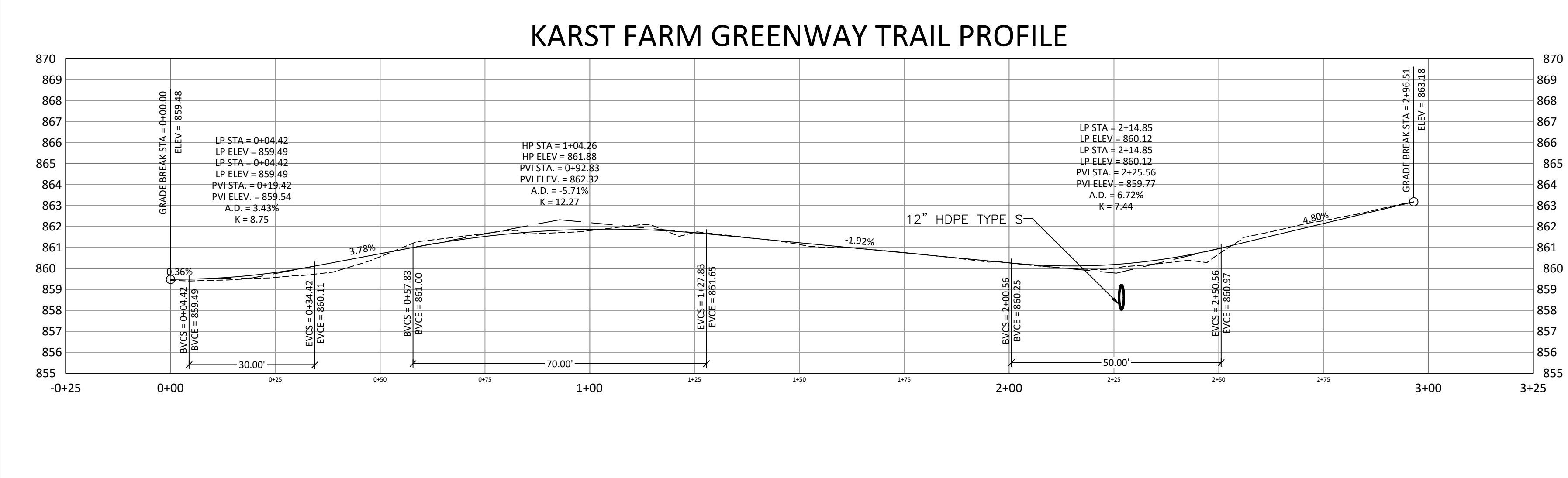


GENERAL NOTES

- GRADE ALL AREAS TO THE FINISH GRADES SHOWN.
- CONTRACTOR TO VERIFY FIELD CONDITIONS WITH RESPECT TO THE PROPOSED GRADING PLANS AND NOTIFY ENGINEER OF ANY AND ALL DISCREPANCIES PRIOR TO BEGINNING WORK.
- INSTALL AND MAINTAIN EROSION CONTROL DEVICES AS REQUIRED AND WHERE NECESSARY TO CONTROL SEDIMENT.
- CONTRACTOR SHALL PREVENT SURFACE WATER AND GROUND WATER FROM ENTERING EXCAVATIONS, FROM PONDING ON PREPARED SUBGRADES AND FROM FLOODING PROJECT SITE AND SURROUNDING AREAS. PROTECT SUBGRADES FROM SOFTENING, UNDERMINING, WASHOUT AND DAMAGE BY RAIN OR WATER ACCUMULATION. THIS WILL REQUIRE SUPPLEMENTAL GRADING ABOVE AND BEYOND THAT SHOWN.
- CONTRACTOR SHALL ADJUST ALL CASTINGS TO FINISHED GRADE.
- CONTRACTOR SHALL ESTABLISH FINISH GRADES TO ENSURE POSITIVE DRAINAGE WITH NO PONDING.
- LONGITUDINAL SIDEWALK SLOPE SHALL NOT EXCEED 5% UNLESS NOTED OTHERWISE. TRANSVERSE SIDEWALK SLOPE SHALL NOT EXCEED 2%.
- SPOT GRADES GIVEN AT THE FACE OF CURB INDICATE PAVEMENT EDGE/CURB INTERFACE (FLOW LINE ELEVATION) UNLESS NOTED OTHERWISE. BOTTOM OF WALL ELEVATIONS INDICATE WHERE FINISH GRADE AND WALL MEET.
- ALL SLOPES 3:1 OR GREATER TO BE COVERED WITH NORTH AMERICAN GREEN SB1500 EROSION CONTROL BLANKET OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

PLAN NOTES

- GRADE TO INLET.
- REVERSE CROSS SLOPE AROUND CURVE IN TRAIL 2% MAXIMUM SUPERELEVATION.



LEGEND

- PROPOSED CONTOURS
- EXISTING CONTOURS
- SPOT ELEVATION
- MATCH EXISTING GRADE
- TW TOP OF WALL
- BW BOTTOM OF WALL AT FINISH GRADE ELEVATION
- TS TOP OF STAIR - ELEVATION IS EQUAL ACROSS WIDTH
- BS BOTTOM OF STAIR - ELEVATION IS EQUAL ACROSS WIDTH
- BC BOTTOM OF CURB WHERE IT MEETS PAVEMENT. FOR STANDING AND CHAIR BACK CURBS, TOP OF CURB IS 6" ABOVE THIS ELEVATION UNLESS NOTED OTHERWISE. FOR ROLL CURBS, TOP OF CURB IS 3.5" ABOVE THIS ELEVATION, UNLESS NOTED OTHERWISE
- FL FLOW LINE
- FC FLUSH CURB - CURB IS IN FULLY DEPRESSED CONDITION
- TC TOP OF CURB - PROVIDED ONLY WHEN CURB IS IN A NONSTANDARD HEIGHT CONDITION.
- TB TOP OF BANK
- LIMITS OF ASPHALT PAVEMENT
- LIMITS OF CONCRETE PAVING

Know what's below.
Call before you dig.
CALL 3 WORKING DAYS BEFORE YOU DIG
1-800-382-5544 CALL TOLL FREE
PER INDIANA STATE LAW ICR 3-2-6,
IT IS AGAINST THE LAW TO DIG ANYWHERE
WITHOUT NOTIFYING THE UNDERGROUND
LOCATION SERVICE TWO (2) WORKING DAYS
BEFORE COMMENCING WORK.

Bledsoe Riggert Cooper James
BRCJ
LAND SURVEYING • CIVIL ENGINEERING • GIS
1351 West Tapp Road Bloomington, Indiana 47403
Phone: 812-336-8277 www.brcjvill.com

NOT FOR CONSTRUCTION

HIGHLAND PARK ELEMENTARY SCHOOL - STUDENT PICKUP IMPROVEMENTS
900 S Park Square Dr, Bloomington, IN 47403

BRCJ Project No: 11187

SITE GRADING PLAN

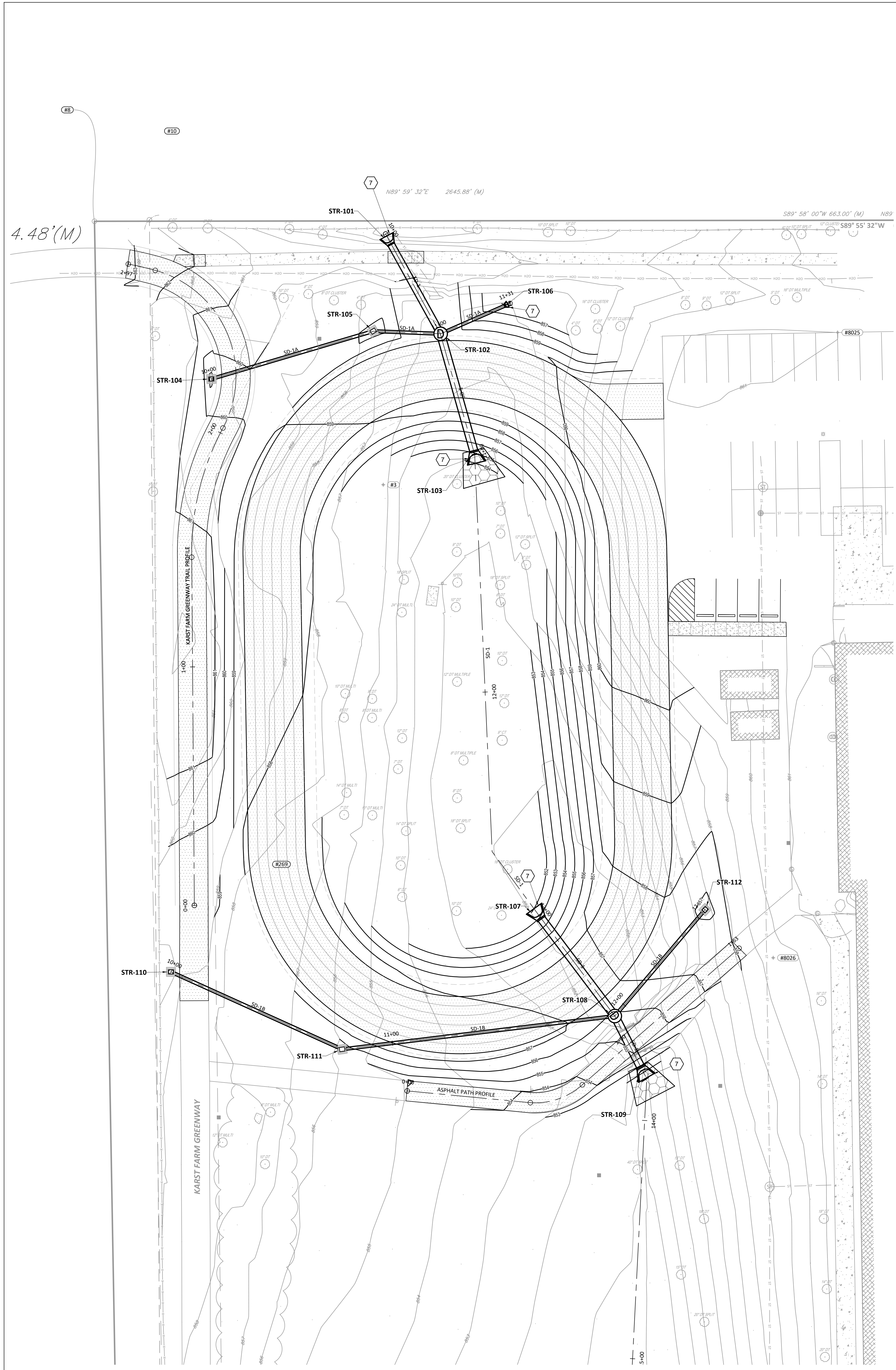
SCALE: 1" = 20'

Date: 08-22-2023 Issue: MONROE COUNTY REVIEW

REVISION SCHEDULE		
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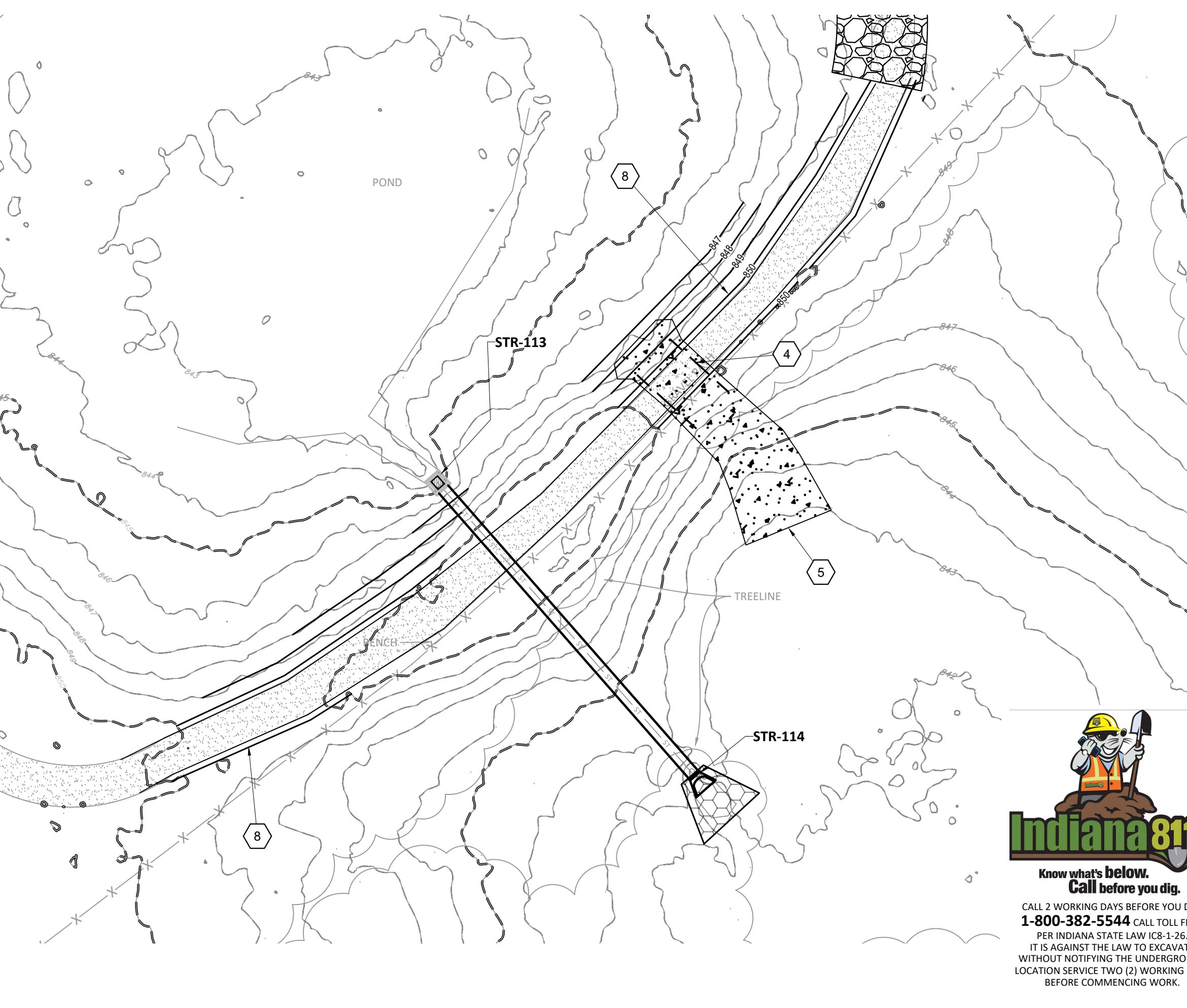
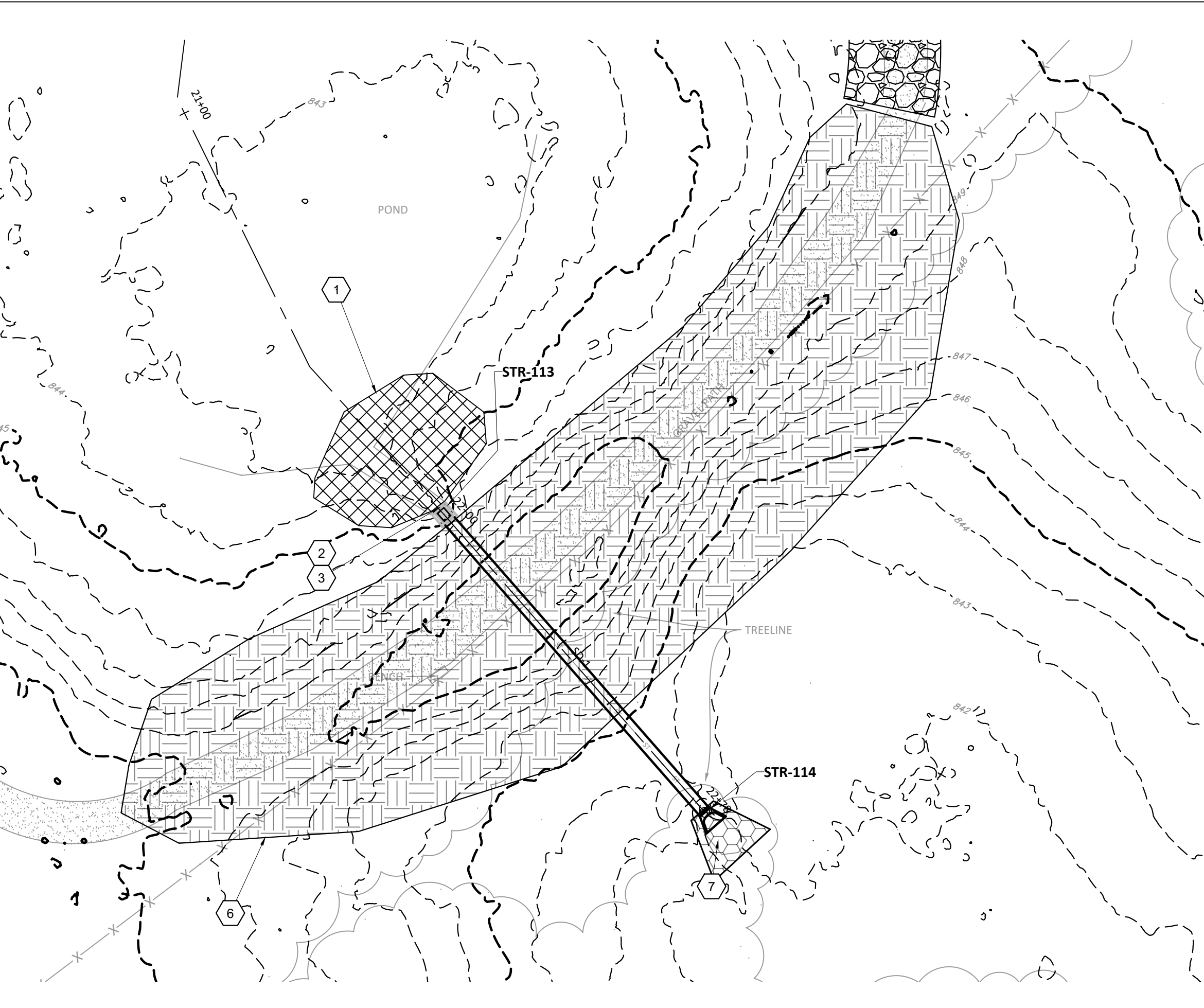
Drawn By: DLN/KJP
Designed By: DLN
Checked By: WSR

C501



STORM STRUCTURE DATA TABLE											
STR #	CASTING	STRUCTURE TYPE / DETAIL	REFERENCE PROFILE	NORTHING	RIM ELEV	PIPE SIZE	PIPE INV (OUT)	DOWN STR #	PIPE LENGTH	PIPE SLOPE %	NOTES
STR-101	-	30" Metal Flared End Section	SD-1	1424555.08 3091882.08	-	30"	856.36	STR-102	43	1.65%	7
STR-102	EJW 1020 FRAME WITH SOLID LID	60" Concrete Manhole	SD-1	1424517.31 3091603.01	859.65	36"	854.67	STR-103	51	0.92%	7
STR-103	-	36" Metal Flared End Section	SD-1	1424467.79 3091517.01	-	-	854.18	-	-	-	7 A
STR-104	DOME GRATE	12" Nyloplast Basin	SD-1A	1424498.37 3091506.87	860.49	12"	858.50	STR-105	71	3.53%	
STR-105	DOME GRATE	12" Nyloplast Basin	SD-1A	1424518.43 3091574.76	857.69	12"	855.90	STR-102	28	3.49%	
STR-106	-	12" Metal Flared End Section	SD-1A	1424529.07 3091629.86	-	12"	855.50	STR-102	29	2.86%	7
STR-107	-	36" Metal Flared End Section	SD-1	1424272.46 3091644.95	-	36"	852.00	STR-108	52	1.10%	7
STR-108	EJW 1020 FRAME WITH SOLID LID	60" Concrete Manhole	SD-1	1424231.29 3091678.02	855.86	36"	851.23	STR-109	24	0.98%	
STR-109	-	36" Metal Flared End Section	SD-1	1424209.56 3091687.09	-	-	850.99	-	-	-	7 A
STR-110	DOME GRATE	12" Nyloplast Basin	SD-1B	1424249.80 3091489.96	858.89	12"	857.00	STR-111	79	4.13%	
STR-111	DOME GRATE	12" Nyloplast Basin	SD-1B	1424217.35 3091561.70	855.81	12"	853.50	STR-108	115	1.74%	
STR-112	DOME GRATE	12" Nyloplast Basin	SD-1B	1424275.88 3091713.85	857.36	12"	854.00	STR-108	58	4.27%	
STR-113	EXISTING	Existing Outlet Control Structure	SD-1	1423438.27 3091787.02	846.04	24"	842.54	STR-114	80	1.10%	2 3
STR-114	-	24" Metal Flared End Section	SD-1	1423377.99 3091839.84	-	-	841.66	-	-	-	7 B

STORM STRUCTURE DATA TABLE NOTES:
A RIPRAP OUTFALL DIMENSIONS: L' = 15 FT W' = 18 FT
B RIPRAP OUTFALL DIMENSIONS: L' = 13 FT W' = 15 FT



GENERAL NOTES

- A. REFER TO DEMOLITION PLANS FOR SEQUENCE OF UTILITY REPLACEMENT TO ENSURE CONTINUOUS SERVICE OF ALL UTILITIES.
- B. CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING AND PATCHING AS REQUIRED TO COMPLETELY INSTALL THE WORK INDICATED.
- C. CONTRACTOR SHALL COORDINATE EXACT UTILITY LOCATIONS WITH THE OWNER AND LOCAL UTILITY COMPANIES PRIOR TO COMMENCING ANY WORK. CONTACT THE INDIANA UNDERGROUND PLANT PROTECTION SERVICES, INC. AT 1-800-382-5544 AND OTHER UTILITIES PRIOR TO ANY EXCAVATION ON THE SITE.
- D. ALL WORK ASSOCIATED WITH WATER AND SEWER SYSTEMS SHALL COMPLY WITH THE STANDARDS & REQUIREMENTS OF THE INDIANA DEPT. OF ENVIRONMENTAL MANAGEMENT (IDEM), THE INDIANA STATE DEPARTMENT OF HEALTH (ISDH), THE AMERICAN WATER WORKS ASSOCIATION (AWWA), THE GREAT LAKES UPPER MISSISSIPPI BOARD OF STATE PUBLIC HEALTH AND ENVIRONMENTAL MANAGERS (GLUMMB), THE INDIANA PLUMBING CODE AND THE CITY OF BLOOMINGTON UTILITIES CONSTRUCTION SPECIFICATIONS.
- E. CONTRACTOR IS REQUIRED TO VERIFY FIELD CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO BEGINNING WORK.
- F. CONTRACTOR SHALL SET ALL EXISTING AND PROPOSED CASTINGS AND CLEANOUT COVERS TO FINAL FINISHED GRADE.
- G. A MINIMUM OF 38 INCHES VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER AND STORM SEWER UNLESS OTHERWISE INDICATED, OR UNLESS WRITTEN PERMISSION IS GIVEN BY THE ENGINEER. SEWERS CROSSING WATER MAINS SHALL BE LAID TO MAINTAIN A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND OUTSIDE OF THE SEWER MAIN. THIS SHALL BE THE CASE WHETHER THE WATER MAIN IS ABOVE OR BELOW THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE JOINTS IN THE SEWER MAIN WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE JOINTS IN THE WATER MAIN. THE CROSSING MUST BE AT A MINIMUM ANGLE OF 45° MEASURED FROM THE CENTERLINE OF THE SEWER AND WATER MAINS. WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO MAINTAIN LINE AND GRADE.
- H. A MINIMUM OF 10 FEET HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER AND STORM SEWER UNLESS OTHERWISE INDICATED, OR UNLESS WRITTEN PERMISSION IS GIVEN BY THE ENGINEER.
- I. ALL STORM MANHOLES AND STORM INLET STRUCTURES SHALL HAVE A MINIMUM SEPARATION OF 8' FROM WATER MAINS.
- J. ALL STORM LATERALS SHALL HAVE A MINIMUM COVER OF 12" UNLESS NOTED OTHERWISE.
- K. ALL STORM LATERALS SHALL HAVE A MINIMUM SLOPE OF 1/8" PER FOOT UNLESS NOTED OTHERWISE.
- L. ALL WATER LINES SHALL HAVE A MINIMUM COVER OF 48".
- M. WHERE DISSIMILAR PIPING MATERIALS ARE JOINED TOGETHER ALONG GRAVITY STORM LATERALS, THE CONTRACTOR SHALL USE A NON-SHEAR COUPLING EQUAL TO FERROCO.
- N. CONTRACTOR SHALL REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND LANDSCAPE PLANS FOR ADDITIONAL UTILITY MODIFICATIONS AND NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF CONSTRUCTION.

PLAN NOTES

- 1. REMOVE ACCUMULATED SEDIMENT WITHIN AREA INDICATED.
- 2. EXPOSE LOWEST 6" ORIFICE IN OUTLET CONTROL STRUCTURE AT ELEVATION 842.5 +/-, SET RIPRAP OR POLY CONCRETE APRON AROUND ORIFICE INVERT AND INSTALL STAINLESS STEEL TRASH RACK ON EXTERIOR OF THE EXISTING PRECAST STRUCTURE.
- 3. PLUG THE EXISTING TOP TWO 6" ORIFICES AT ELEVATION 843.5 +/- WITH NON-SHRINK GROUT.
- 4. TRAPEZOIDAL SPILLWAY CREST AT ELEVATION 849.40, 10-FOOT BOTTOM WIDTH WITH 5:1 SIDESLOPES AND TURF REINFORCEMENT MATTING. REFER TO DETAIL 11/C701.
- 5. EMERGENCY OVERFLOW SPILLWAY WITH TURF REINFORCEMENT MATTING.
- 6. REMOVE EXISTING TREES AND WOODY VEGETATION WITHIN EARTHEN EMBANKMENT. GRIND STUMPS TO 18 INCHES BELOW GRADE AND FILL VOIDS WITH COMPACTED CLAY SOIL. COVER WITH NATIVE SEED MIX AND BIODEGRADABLE EROSION CONTROL BLANKET NORTH AMERICAN GREEN 5150 BN.
- 7. INSTALL GALVANIZED TRASH RACK ON METAL FLARED END SECTION - REFER TO DETAIL 14/C701. REFER TO DETAIL 12/C701 FOR METAL FLARED END SECTION SIZING.
- 8. CONTRACTOR TO ENSURE THAT TOP OF EMBANKMENT REMAINS AT A MINIMUM ELEVATION OF 850.40 FEET. SUPPORT CLAY SOIL AND CONTRACT IN 4" LIFTS TO RAISE TOP OF EMBANKMENT TO MINIMUM ELEVATION OF 850.40 FEET.

LEGEND

- [Symbol] LIMITS OF SEDIMENT REMOVAL
- [Symbol] LIMITS OF VEGETATION REMOVAL AND EROSION CONTROL BLANKET
- [Symbol] LIMITS OF OVERFLOW SPILLWAY TURF REINFORCEMENT MATTING
- [Symbol] LIMITS OF NEW ASPHALT PAVING
- [Symbol] LIMITS OF NEW 4" THICK CONCRETE PAVING
- [Symbol] LIMITS OF RIPRAP OUTFALL - REFER TO DETAIL 13/C701



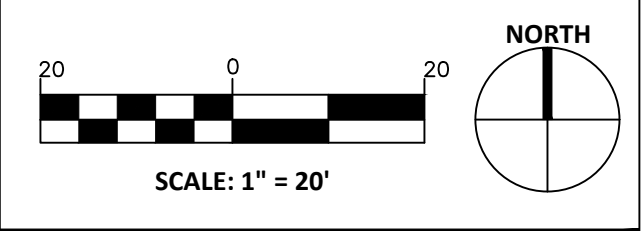
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 Phone: 812-336-8277 www.brcjvll.com

NOT FOR CONSTRUCTION

HIGHLAND PARK ELEMENTARY SCHOOL - STUDENT PICKUP IMPROVEMENTS
 900 S Park Square Dr, Bloomington, IN 47403

BRCJ Project No: 11187

SITE UTILITIES PLAN



Date: 08-22-2023 Issue: MONROE COUNTY REVIEW

REVISION SCHEDULE

Rev. #	Rev. Description:	Issue Date

Drawn By: KJP
 Designed By: KJP/AEK
 Checked By: WSR

C601



NOT FOR CONSTRUCTION

HIGHLAND PARK ELEMENTARY SCHOOL - STUDENT PICKUP IMPROVEMENTS
 900 S Park Square Dr, Bloomington, IN 47403

BRCJ Project No: 11187

SITE UTILITY PROFILES

HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 4'

Date: 08-22-2023 Issue: MONROE COUNTY REVIEW

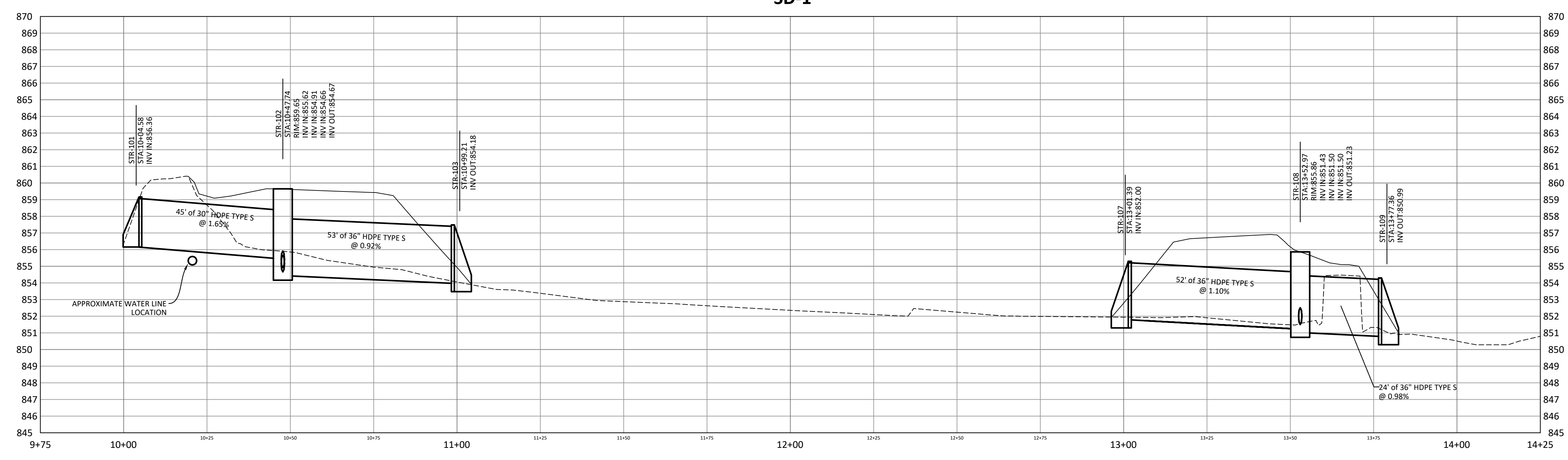
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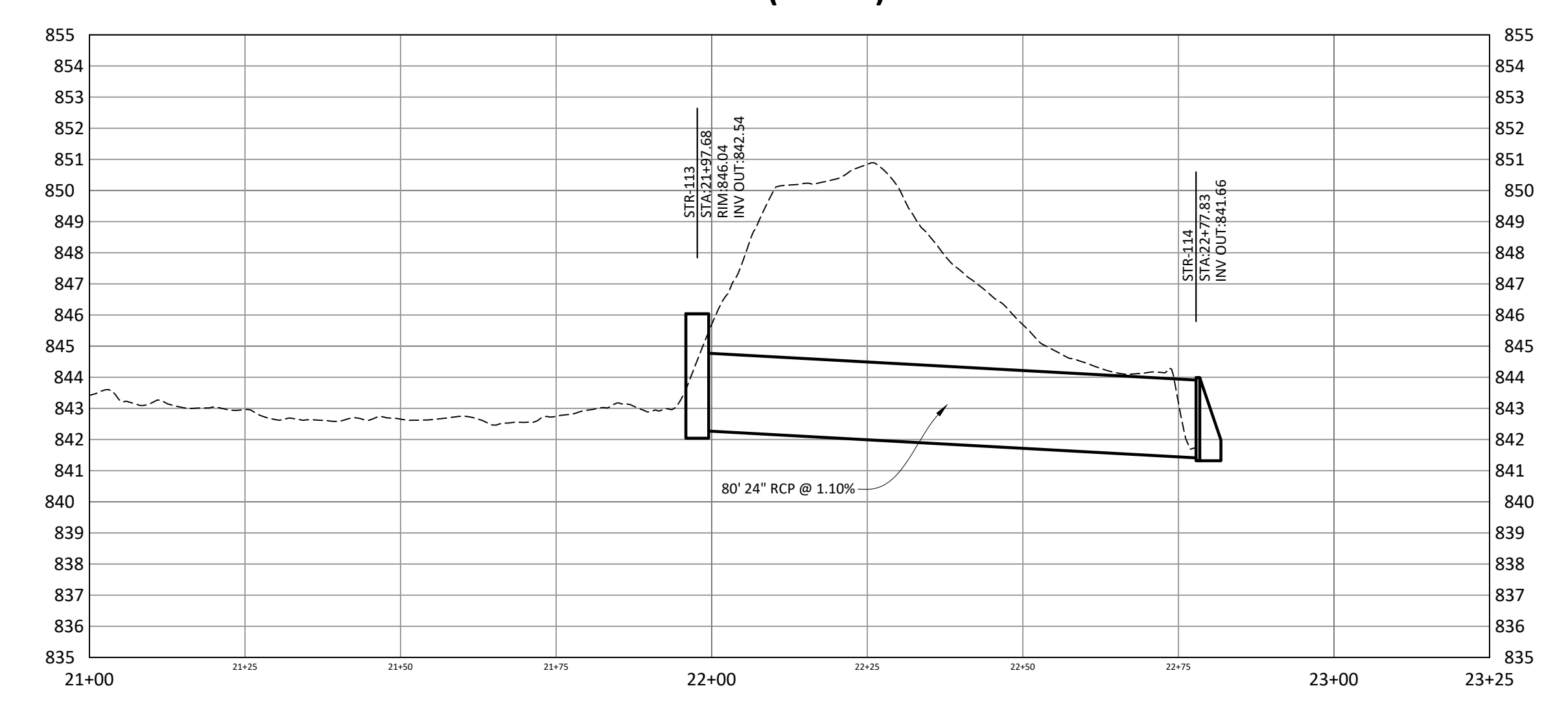
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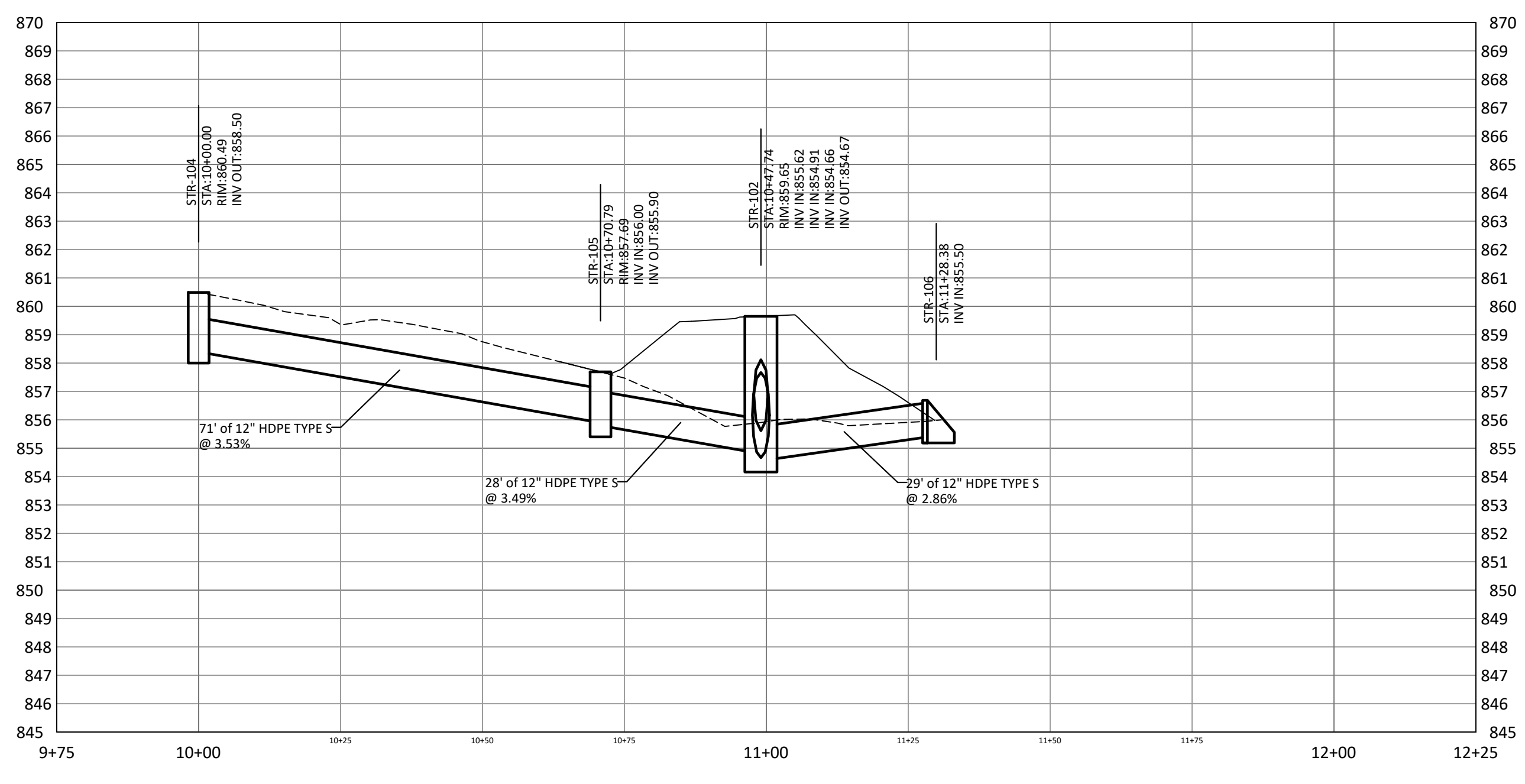
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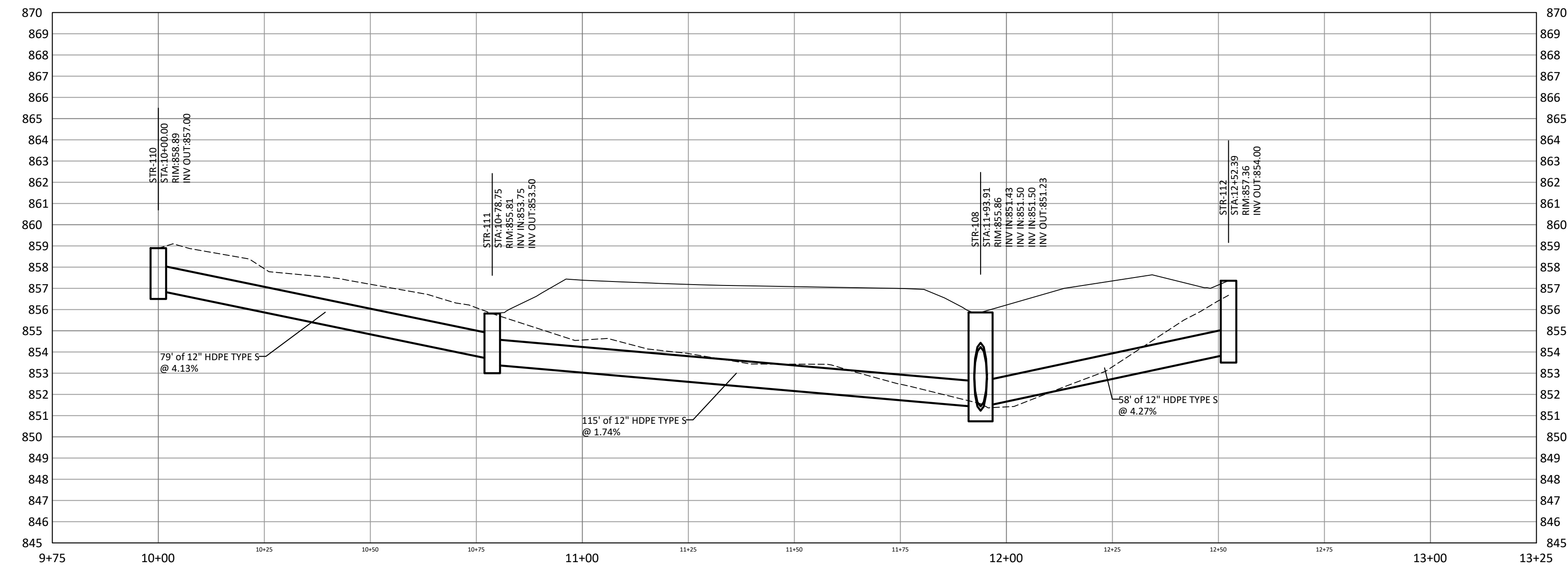
SD-1 (CONT.)



SD-1A



SD-1B



Highland Park Elementary School Student Pickup/Track Drainage Calculation Report

Prepared By: A. Knust, P.E.

August 2, 2023

Background & Purpose

The proposed project will expand the available queue length for vehicles waiting to pick up students after school as well as provide a running track for the students. New asphalt paving will be added to the west of the school and to the existing parking lot near the flag pole to allow cars to queue.

Existing Drainage Conditions

The existing Highland Park Elementary School site is situated on a parcel totaling about 20 acres. The school, parking lots, and playgrounds are located on the north part of the school site, where drainage is collected and conveyed to a detention pond in the southwest quadrant of the parcel. Offsite flows from residential and agricultural properties to the north and west also contribute to the detention pond, making the total drainage area 51 acres. The pond currently requires some maintenance as sediment has accumulated around the outlet structure, covering the lowest orifice. Several trees and woody shrubs are also growing in the earthen embankment and need to be removed.

Post-Project Drainage Conditions

The proposed project will construct a new running track and vehicle queuing area on the west side of the existing school building. New piping and inlets will be installed to collect runoff from the new asphalt surface and surrounding areas. 30" and 36" pipes will convey off-site drainage beneath the track surface along a pre-existing vegetated flow path running southward to the detention pond.

No modifications to existing drainage systems will be necessary to accommodate additional parking spaces added on the east side of the school building. Existing drainage piping will continue to convey storm flows to the detention pond.

Modeling Methodology

A rainfall-runoff model was developed for this study to simulate the post-project conditions in accordance with the Stormwater Technical Standards Manual for Monroe County, Indiana (Tech Stds).

The model was developed using the SCS TR-55 methodology within Autodesk Storm and Sanitary (SSA) software. Time of concentration (TOC) was calculated for each sub-watershed following SCS TR-55 methods with a minimum TOC of 5 minutes assumed for the smaller catchment areas. Hydrographs were developed from an SCS Type II 24-hour rainfall distribution.

Curve Numbers were assigned for each sub-watershed area based on soil type (HSG D), land use and percentage of impervious surface area. NRCS Soils data are included in Attachment A. The performance of the pre-existing detention basin and outlet control structure are simulated based on detailed field measurements collected during the topographic survey of the school property.

A stage-storage curve for the existing detention basin was developed based on 1-foot contours available from opentopography.org.

Since the project area represents a relatively small proportion of the total watershed contributing to the detention pond, the offsite bypass flow was calculated by creating a model scenario in which the sub-basin areas impacted by proposed project are deleted from the model. The output from this "Bypass" model, therefore, represents the peak flow and volume generated by the offsite catchment areas, as routed through the existing un-modified detention pond and outlet structure.

The "Post-Detention" model scenario includes all of the sub-basins within the project area in addition to the offsite areas. Subtracting the "Bypass" peak flow from the "Post-Detention" peak flow yields an estimate of the peak flow attributable to the project impact area, only.

Results & Discussion

Attachments B and C include complete model output for the "Bypass" and "Post-Detention" model scenarios for 10-yr and 100-year recurrence interval storm event. The following table summarizes model results at the detention pond (Stor-01), and at the pond outfall (Structure14). Results indicate that the 7.2 acre proposed project area (including the entire school building and north parking area) would contribute peak flows below the allowable critical watershed release rates.

Scenario	10-yr Peak			100-yr Storm		
	Peak Inflow to Stor-01 (cfs)	Max. Water Surface (ft)	Peak Outflow at STR-14 (cfs)	Peak Inflow to Stor-01 (cfs)	Max. Water Surface (ft)	Peak Outflow at STR-14 (cfs)
Bypass	82.36	847.15	20.42	116.7	848.52	28.23
Post-Detn	101.95	847.82	21.7	143.31	849.36	28.78
Post Project Peak Flow (minus bypass)			1.28			0.55

Per the current Technical Standards, the allowable release rates are calculated as follows:

Project Catchment Areas	Area (ac)	10-yr Rate (cfs/ac)	10-yr Allowable Peak Flow (cfs)	100-yr Rate (cfs/ac)	100-yr Allowable Peak Flow (cfs)
S-5	0.3635				
S-6	0.1983				
S-7	1.2104				
S-11	0.3462				
S-12	0.1399				
S-13A	4.9534				
Total Area	7.2117	0.25	1.80	0.45	3.25

In order to achieve project peak flows below the allowable release rates, two 6" orifices in the existing outlet control structure will be plugged. The project plans also include recommended maintenance activities at the detention pond and embankment to ensure that it continues to serve the school into the future and protect downstream properties from damage.

The proposed project would add an emergency overflow spillway to accommodate extreme events, and raise the top of the embankment to allow 1'-0" freeboard above the maximum 100-yr water surface elevation. The proposed spillway would crest at 849.40, just above the 100-yr WSE, with the proposed top of embankment elevated another 12" at 850.40.

Wetland Delineation

Highland Park Elementary School
900 South Park Square Drive
Bloomington, Indiana 47403



Prepared for:

Andy Knust, PE
Bledsoe Riggert Cooper James
1351 West Tapp Road
Bloomington, Indiana 47403

Prepared by:

VET Environmental Engineering, LLC
2335 West Fountain Drive
Bloomington, Indiana 47404



Date:

September 5, 2023

Project Number:

23-247

WETLAND DELINEATION

**HIGHLAND PARK ELEMENTARY SCHOOL
900 SOUTH PARK SQUARE DRIVE
BLOOMINGTON, INDIANA 47403**

VET ENVIRONMENTAL ENGINEERING, LLC PROJECT NUMBER 23-247

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- ATTACHMENT 1 – SITE PHOTOGRAPHS**
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- ATTACHMENT 3 – HISTORICAL AERIAL PHOTOGRAPHS**



1.0 INTRODUCTION

VET Environmental Engineering, LLC (VET) was retained by Mr. Andy Knust, PE of Bledsoe Riggert Cooper James (BRCJ, Client) to perform a wetland delineation at the Highland Park Elementary School (Highland Park) property located at 900 South Park Square Drive in Bloomington, Monroe County, Indiana (Site). The Site is comprised of approximately 20 acres of land owned by the Monroe County Community School Corporation (MCCSC) and is used as an elementary education facility. Highland Park is located along the west side of South Park Square Drive. A section of the Site, located at approximately the southwest quadrant of the 20-acre parcel, is utilized as a nature center complex by Highland Park. Client indicates that a planned sports facility development project located on the approximate southeast quadrant of the Site will likely impact a section of a potential wetland located within the nature center complex. VET's investigations were limited to the potential wetland area located inside the nature center complex on the Site. The proposed land use of the Site is for continued educational purposes.

VET was contracted to determine whether the potential wetland areas identified on the Site by BRCJ are regulated wetlands, and, if so, to delineate regulatory extents. VET representatives Ms. Sara Hamidovic, MS, PE, CHMM, CPESC, Mr. Daniel Elliott, and Ms. Emily Throop conducted wetlands and jurisdictional waterway delineations at the Site on August 25, 2023. VET evaluated soils, hydrology, and vegetation at two wetland data points at the Site: DP-1 and DP-2.

Based on Site investigations, VET identified and delineated one 0.33-acre regulated wetland adjacent to an intermittent stream with approximately 0.05 acres of adjoining fringe wetlands. The extents of the regulated wetland (Wetland #1), wetland data points, and jurisdictional streams and associated fringe wetlands (Streams #1 and #2) are displayed on **Exhibit 4**. Exhibits (1 – 4), photographs of the Site (**Attachment 1**), wetland field data sheets (**Attachment 2**), and a historical aerial photography package for the Site (**Attachment 3**) are included to aid in understanding context of the Site and evaluated features.

2.0 OBJECTIVE AND SCOPE

The objective of this study was to delineate the extents of regulated wetland areas at the Site to determine whether USACE and/or IDEM permitting or compensatory mitigation is required due to planned impacts at the Site. Information was collected from desktop reconnaissance and field investigations. The desktop reconnaissance includes a review of readily ascertainable information such as topographic contours, soils, floodplain, and wetland maps. VET's professional opinions stated herein are based on generally accepted wetland delineation methods and procedures conventional to the environmental field at the time the study was performed and with respect to due care. VET's opinions are not to be construed as legal advice. Legal counsel should be consulted when deemed necessary by the reader.

3.0 METHODS

3.1 WETLANDS

The USACE defines wetlands as: *“Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Wetlands generally include swamps, marshes, bogs, and similar areas”* (33 CFR 328.3).

Three criteria are used to evaluate the presence of wetlands: hydrophytic vegetation, hydric soils, and wetland hydrology. All three criteria must be met for an area to be identified as a wetland subject to



regulatory jurisdiction under Section 404 of the CWA. In certain instances, USACE may not claim jurisdiction over wetlands that are isolated from jurisdictional waterways. However, isolated wetlands are regulated by IDEM under Indiana's (2004) State Isolated Wetlands Law (IC 13-18-22).

Construction projects involving mechanical vegetation clearing, placing fill materials, excavation, bridges, culverts, or stream crossings that impact Waters of the U.S. may require a CWA Section 404 permit from the USACE and/or a CWA Section 401 permit from IDEM's Office of Water Quality (OWQ). Impacts to isolated wetlands require a permit from IDEM. Similar activities taking place in the floodway or floodplain of a waterway may require an additional permit from IDNR Division of Water.

3.1.1 HYDROPHYTIC VEGETATION

The presence of hydrophytic vegetation is "*readily observable evidence that episodes of inundation or soil saturation lasting more than a few days during the growing season have occurred repeatedly over a period of years and that the timing, duration and frequency of wet conditions have been sufficient to produce a characteristic wetland plant community and hydric soil morphology*" (USACE 1987).

Hydrophytic vegetation is classified under several subcategories that include Obligate Wetland, Facultative Wetland, Facultative, Facultative Upland, and Upland. Plants are classified based on the estimated probabilities of a particular species occurring in wetland conditions. The indicator status of each species identified as part of this wetland delineation was determined using the *National List of Plant Species that Occur in Wetlands: North Central (Region 3)*. Each indicator status is defined below:

- Obligate Wetland (OBL) – Occur almost exclusively in wetland areas under natural conditions (estimated probability >99%).
- Facultative Wetland (FACW) – Usually occur in wetlands but occasionally occur in non-wetland (upland) areas (estimated probability 67% to 99%).
- Facultative (FAC) – Equally likely to occur in both wetland and upland areas (estimated probability 33% to 67%).
- Facultative Upland (FACU) – Usually occur in upland areas, but occasionally occur in wetlands (estimated probability 1% to 33%).
- Obligate Upland (UPL) – Occur almost always in upland areas (estimated probability >99%).

OBL, FACW, and FAC species are considered wetland species. Areas are considered to meet hydrophytic vegetation criteria when more than 50% of the dominant plant species in each vegetation strata (tree, sapling/shrub, herb, and woody vine) within a plant community are wetland species (Dominance Test).

3.1.2 HYDRIC SOILS

Hydric soils are soils that "*formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part*" (USACE, 1987). Soils must be flooded, ponded or saturated for at least one week during the growing season when soil temperatures exceed 41°F. Anaerobic (oxygen deficient) conditions cause changes in the soil matrix color, mottling, structure, and chemistry. These properties are used to identify hydric soils from non-hydric soils.

3.1.3 WETLAND HYDROLOGY

"Wetland hydrology indicators provide evidence that the site has a continuing wetland hydrologic regime and that hydric soils and hydrophytic vegetation are not relics of a past hydrologic regime"



(USACE, 1987). Wetland hydrology is defined as the presence of water for a significant period of time at or near the surface during the growing season. If during the field investigation there is no evidence of water at the surface (12” to 18” below ground surface), wetland indicators (primary and/or secondary) may confirm periodic wetland hydrology.

3.2 JURISDICTIONAL WATERS

Jurisdictional waters, or waters of the United States (WOTUS) are regulated by the United States Army Corps of Engineers (USACE) and include (1) all waters currently or previously used for interstate or foreign commerce, (2) all interstate waters and interstate wetlands, (3) tributaries to navigable WOTUS, including adjacent wetlands, lakes, and ponds, (4) interstate waters and their tributaries, including adjacent wetlands; and, (5) all other waters of the U.S. not identified above, such as intrastate lakes, rivers, intermittent streams, and other waters that are not part of a tributary system to interstate waters or to navigable waters of the U.S., where the use, degradation or destruction of these waters could affect interstate or foreign commerce (40 CFR 230.3(s)). In Indiana, all WOTUS are also Waters of the State.

Section 404 of the Clean Water Act (CWA) defines the limit of jurisdiction as the OHWM. Therefore, any drainage channel that exhibits an OHWM is classified as jurisdictional and is subject to regulation. OHWM is defined as, “*the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas*” (USACE, 2005).

4.0 DESKTOP RECONNAISSANCE

4.1 WETLANDS AND FLOOD ZONES

Wetlands, flood zones, and waterways identified during the desktop reconnaissance are displayed on **Exhibit 2**. The National Wetland Inventory (NWI) identified wetlands on-Site. Floodplain data was obtained from the Federal Emergency Management Association (FEMA) Flood Rate Insurance Maps (FIRM). These data represent areas in Indiana that are located in a floodway or flood hazard zone. No floodways were identified on-Site. The entirety of the Site is located within Flood Zone X.

4.2 WATERWAYS

The desktop reconnaissance identified two intermittent streams on-Site according to the United States Geological Survey (USGS) National Hydrography Dataset (NHD). The main mapped intermittent stream (Stream #1) flows from north to south along the western side of Highland Park where it enters Wetland #1 on the northwest side. The second mapped intermittent stream (Stream #2) travels from west to east and is tributary to Stream #1. Reconnaissance of the Site indicates that the southern portion of the mapped flow path of Stream #1 is inaccurate. The actual flow path of Stream #1 wraps to the southeast around the basketball court complex, travels through a subsurface drainage structure under a fence line and path on the north side of the nature center and then proceeds nearly due south where it roughly bisects Wetland #1. The portion of Stream #1 within the nature center area north of Wetland #1 is flanked by fringe wetlands (**Exhibit 4**).

Review of historical aerial imagery shows that there is a dam structure running from southwest to northeast creating an impoundment in the area of investigations as early as 1967 (**Attachment 3**). The size



of the impoundment decreases through time with the most significant reduction occurring sometime between 2005 and 2016. The size of the impoundment pictured in the 2016 aerial photograph is generally consistent with what exists on-Site presently. Significant vegetative recovery took place on the Site between 2016 and the present day creating a generally cohesive tree canopy surrounding the impounded area within the nature center.

A riser pipe outlet structure is present on the southwest side of the impoundment that conveys water through a subsurface conduit beneath the dam structure where Stream #1 discharges to the general location of the mapped flow path. A formal jurisdictional waters delineation was not conducted on the Site as Client intends to declare that streams on the Site are jurisdictional. All mapped waterbodies are displayed on **Exhibit 2**.

4.3 SOIL SURVEY

The United States Department of Agriculture (USDA) Web Soil Survey (WSS) indicates that the Site is largely underlain by Hosmer Silt Loam (**Exhibit 3**). All soils present on the Site are included in **Table A**. The Stendal Silt Loam, frequently flooded soils mapped on-Site are classified as hydric soils according to the National Resources Conservation Service (NRCS) Hydric Soils List for Monroe County, Indiana.

TABLE A. SOIL SURVEY SUMMARY		
Map Symbol	Soil Type Name	Percent of Site (%)
HoB	Hosmer Silt Loam, 2-6% Slopes	44
HoC	Hosmer Silt Loam, 6-12% Slopes	34.5
HoA	Hosmer Silt Loam, 0-2% Slopes	14
HtB	Hosmer Urban Land Complex, 2-12% Slopes	6
St	Stendal Silt Loam, Frequently Flooded	1.5

5.0 FIELD INVESTIGATION

VET representatives Ms. Sara Hamidovic, MS, PE, CHMM, CPESC, Mr. Daniel Elliott, and Ms. Emily Throop conducted a wetland delineation at the Site on August 25, 2023. Select photos taken during the field investigation are included in **Attachment 1**.

The Site is located along the west side of South Park Square Drive adjacent to the intersection of South Park Square Drive and West Woodside Drive on the west side of Bloomington, Indiana in Monroe County. Access to the Site is provided on the eastern Site boundary from South Park Square Drive. The entrance to the nature center is located south of the playground and basketball court area through a locked gate. On-Site investigative work was limited to an area as defined by Client within the nature center. The ground surface of the investigative area slopes radially inward toward a concave depression that is the location of the suspected wetland. Stream #1 travels from north to south toward the concave depression. The depression is dominated by a prevalence of thick, biodiverse hydrophytic vegetation. Hydrophytic plant species present in the concave depression generally exist in concentric bands of decreasing wetland indicator status as you proceed from the center and lowest elevation point of the depression outward.

The portion of the Site that was delineated as part of this work, exists at an approximate surface elevation of 844' above mean sea level (MSL). The area exhibits limited relief draining radially inward toward a subtle concave depression that is drained by Stream #1. Discharge in the area is dominated by overland sheet flow toward Stream #1. Storm water ultimately discharges from the Site as channelized flow



via Stream #1 through an outlet riser structure that is present southeast of the delineated wetland area. The outlet structure serves to control discharge from the concave depression and allow for stormwater storage during times of high flow. No existing impacts to water resources such as relocation, path straightening, or filling were observed on the Site. VET delineated the wetland by excavating test pits at two locations on the periphery of the suspected wetland area. On-Site regulated wetlands delineated by VET are displayed on **Exhibit 4**.

5.1 WETLAND DELINEATION

VET performed a delineation of the suspected wetland area on August 25, 2023. The wetland delineation was not restricted by weather conditions. Weather conditions during the delineation were characteristic of the region. The weather was clear and sunny with high humidity and temperatures over 90°F. The potential wetland areas were identified during an initial site reconnaissance based on observed topography, geomorphic position, observed vegetative communities, and presence of hydrology indicators.

In order for an area to be identified as a wetland subject to regulatory jurisdiction under Section 404 of the Clean Water Act, it must exhibit hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland boundaries were delineated based on observed changes in vegetative stratum and condition, hydrology, and underlying soils. Based on field investigations, VET determined that there is one 0.33-acre regulated wetland at the Site adjacent to an intermittent stream flanked by approximately 0.05 acres of adjoining fringe wetlands.

VET utilized USACE Wetland Determination Data Forms for the Midwest Region to evaluate data points the in suspected wetland area. Descriptions of the regulated wetland and results of the field investigations are outlined below. Wetland data point locations and the delineated regulated wetland area are shown on **Exhibit 4**. Wetland Determination Data Forms are included as **Attachment 2**.

Wetland #1

Wetland #1 is located in the approximate southwest quadrant of the 20-acre parcel in a concave depression that is roughly bisected by Stream #1. VET evaluated two wetland data points (DP-1 and DP-2) during field investigations to delineate Wetland #1.

DP-1 and DP-2 were excavated along the suspected southwestern boundary of the wetland area based primarily on observed local topography coupled with presence or absence of a dominance of hydrophytic vegetation. DP-1 was excavated in an area suspected to be inside the wetland boundary. The wetland boundary along the east, south, and west sides appears to coincide with a slight increase in surface elevation. The gradually sloped area surrounding the concave depression is periodically mowed apparently to allow for access to the basin from the adjoining trails. A flatter fan-shaped area exists on the north side of the wetland area where Stream #1 enters the concave depression. At DP-1, VET observed a dominance of hydrophytic vegetation, presence of hydric soils, and wetland hydrology characteristics.

At DP-1, VET observed a dominance of hydrophytic vegetation and presence of both hydric soils and wetland hydrology characteristics. Vegetation in the immediate area of DP-1 was dominated by Shallow Sedge (*Carex lurida*) and Fox Sedge (*Carex vulpinoidea*) both classified as obligate hydrophytes. Soils in the test pit excavated at DP-1 exhibited characteristics that qualify for the Depleted Matrix (F3) Hydric Soil Indicator. VET further observed soil saturation (A3) and observed inundation on historical and current aerial imagery (B7) indicating presence of an ongoing wetland hydrologic regime. Based on the



presence of hydrophytic vegetation, hydric soils, and wetland hydrology, VET determined that DP-1 is located in a wetland.

DP-2 was excavated just southwest of DP-1 in an area suspected to be immediately outside the wetland boundary. At DP-2, VET observed presence of hydric soils, but the area did not exhibit characteristics of wetland hydrology or a dominance of a wetland plant community. Vegetation in the immediate area of DP-2 was dominated by Ground Ivy (*Glechoma hederacea*), Hairy Aster (*Symphyotrichum pilosum*), Japanese Honeysuckle (*Lonicera japonica*), and Large-Leaf Avenas (*Geum macrophyllum*) classified as either facultative upland or facultative wetland. Overall, the plant community in the area of DP-2 failed both the Dominance Test and Prevalence Index indicating a non-wetland plant community. VET did not observe indicators of presence of an ongoing wetland hydrologic regime as the area of DP-2 is located just outside the area of visible inundation on aerial photography. Further, the area of DP-2 is periodically mowed demonstrating that the underlying soils are adequately dry at times during the growing season to allow for use of mowing equipment. Soils in the test pit excavated at DP-2 exhibited characteristics that qualify for the Depleted Matrix (F3) Hydric Soil Indicator. Based on the absence of wetland hydrology and the absence of a dominance of hydrophytic vegetation, VET determined that DP-2 is located immediately outside the wetland.

6.0 RESULTS AND CONCLUSIONS

VET was contracted to determine if regulated wetlands exist on the Site, and if so, to delineate wetland extents. Based on the results of the wetland determinations for DP-1 and DP-2, it is VET's professional opinion that Wetland #1 is a palustrine emergent wetland. It is VET's opinion based on a combination of field investigations and desktop reconnaissance, that Wetland #1 is a 0.33-acre federally jurisdictional wetland feature as it is adjacent to a jurisdictional waterway on the Site (Stream #1). Fringe wetlands totaling approximately 0.05 acres are present along the banks of Stream #1 within the nature center.

If you have any questions or concerns regarding the information contained in this report, please contact VET at (812) 822-0400.

Respectfully submitted,



Sara R. Hamidovic, MS, PE, CHMM, CPESC
President/CEO, Principal Engineer

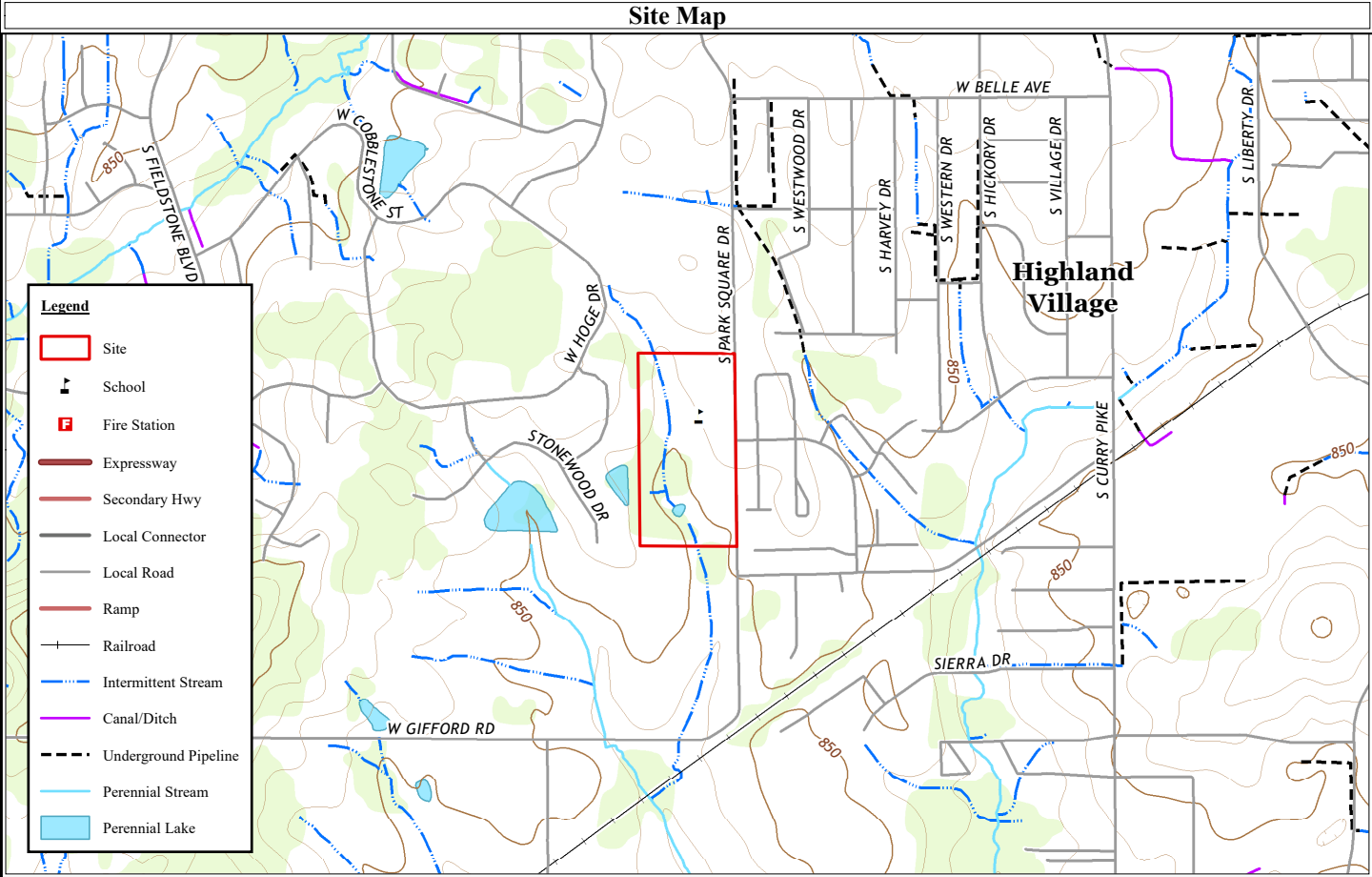
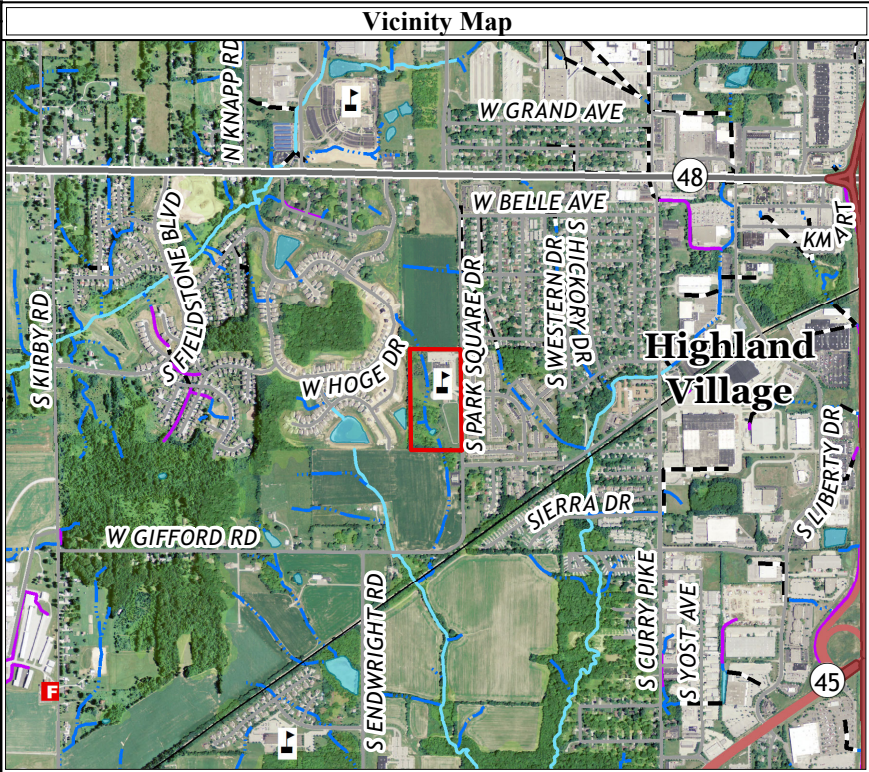
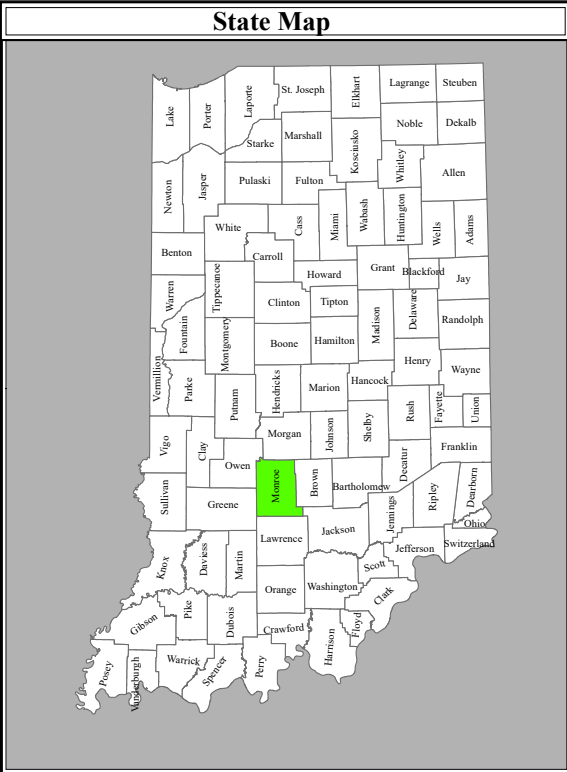


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EXHIBITS



VET Environmental Engineering, LLC

2335 W. Fountain Drive
Bloomington, IN 47404
Phone: (812) 822-0400
www.vet-env.com



1" = 1,250'



Project:	BRCJ Highland Park Wetland Delineation	
VET Project No.:	23-247	
NPDES Permit No.:	N/A	
Date:	9/5/2023	
Exhibit:	1	Drawn By: EMT
Notes:	Water wells shown: 0 in 1/4 mile radius of Site	

Title: Area Map

Location: 900 South Park Square Drive
Bloomington, Indiana 47403
Monroe County

Data Sources: Indiana Census TIGER 2000 and IGS Counties, 2016 NAIP Imagery, 2019 USGS TNM Topo Indiana 7.5'



Legend

- Site
- Parcel Boundary
- Local Road
- Intermittent Stream
- Underground Pipeline
- NWI Wetlands
- Perennial Lake

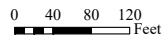


VET Environmental Engineering, LLC

2335 W. Fountain Drive
 Bloomington, IN 47404
 Phone: (812) 822-0400
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1" = 200'

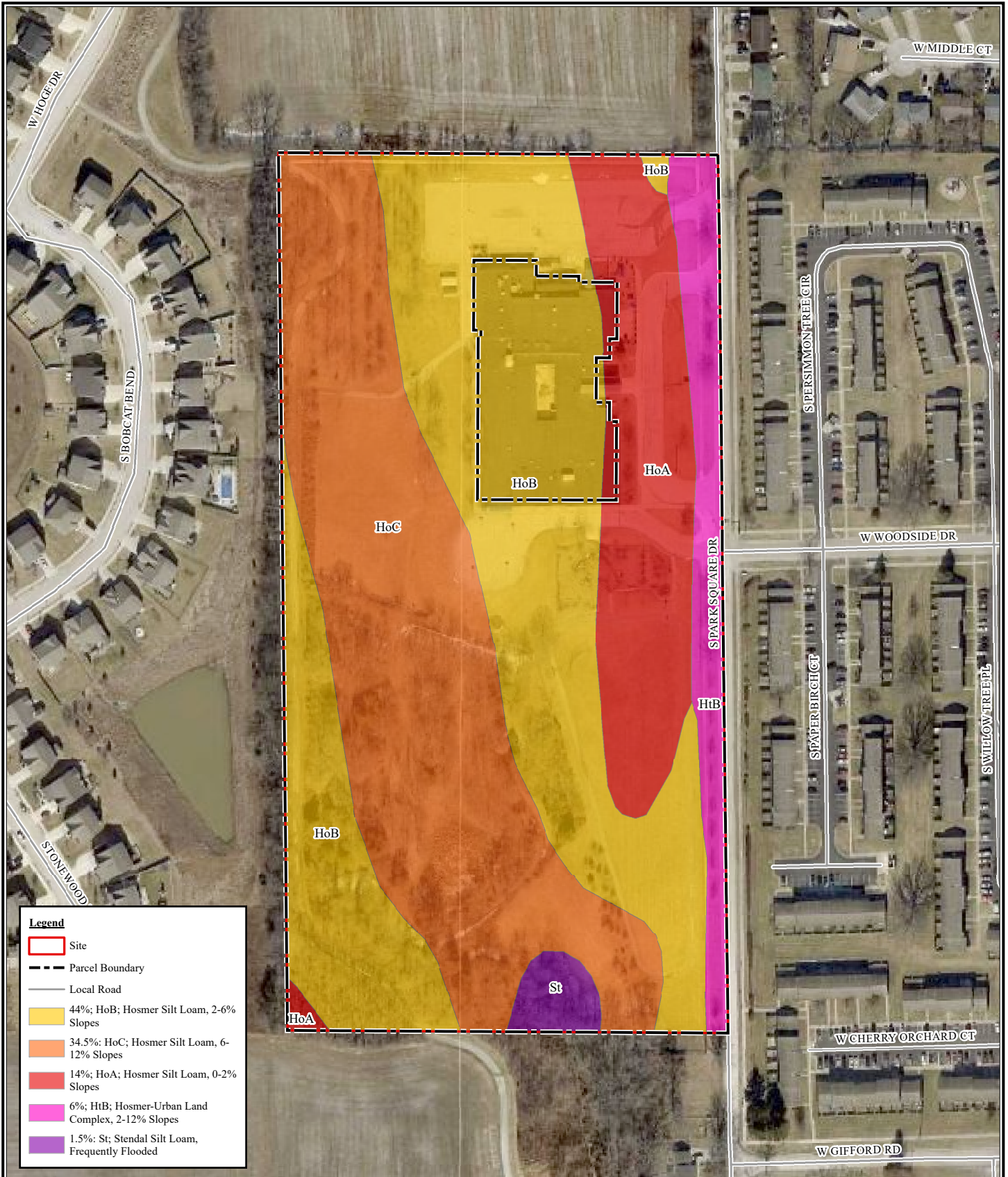


Title: Parcel Map

Location: 900 South Park Square Drive
 Bloomington, Indiana 47403
 Monroe County

Data Sources: 2022 Elevate Imagery, 2019 USGS TNM Topo Indiana Bloomington 7.5'

Project:	BRCJ Highland Park Wetland Delineation	
VET Project No.:	23-247	
NPDES Permit No.:	N/A	
Date:	9/5/2023	
Exhibit:	2	Drawn By: EMT
Notes:	Perennial Stream, Perennial Lake, & NWI Wetlands Reported On Site	



VET Environmental Engineering, LLC

2335 W. Fountain Drive
 Bloomington, IN 47404
 Phone: (812) 822-0400
 www.vet-env.com

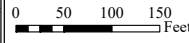
Title: Soils Map

Location: 900 South Park Square Drive
 Bloomington, Indiana 47403
 Monroe County

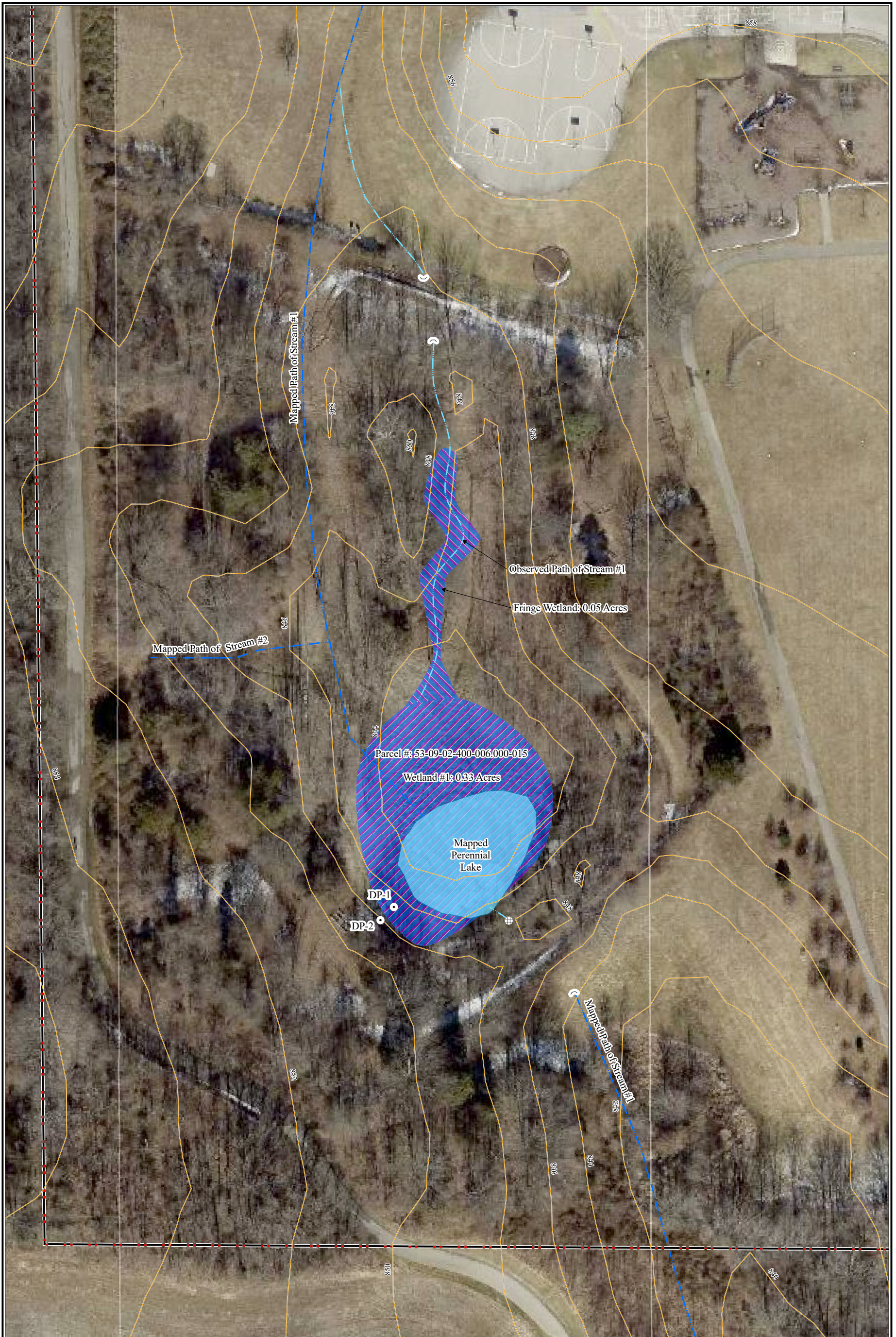
Data Sources: 2022 Elevate Imagery, 2016 USDA WSS Soils, 2019 USGS TNM Topo Indiana Bloomington 7.5'










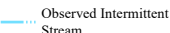
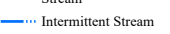
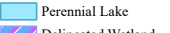
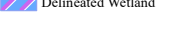


1" = 200'



Project:	BRCJ Highland Park Wetland Delineation	
VET Project No.:	23-247	
NPDES Permit No.:	N/A	
Date:	8/24/2023	
Exhibit:	3	Drawn By: EMT
Notes:	Hydric Soils St Reported On Site	



	VET Environmental Engineering, LLC	2335 W. Fountain Drive Bloomington, IN 47404 Phone: (812) 822-0400 www.vet-env.com	 1" = 58' 	Project: BRCJ Highland Park Wetland Delineation VET Project No.: 23-247 NPDES Permit No.: N/A Date: 9/5/2023 Exhibit: 4 Notes: N/A	Legend  Site  Parcel Boundary  Approximate Location of Culvert  Outlet Riser Structure  Wetland Data Point  2' Topographic Contour (2021)  Observed Intermittent Stream  Intermittent Stream  Perennial Lake  Delineated Wetland
	Title: Wetland Delineation Site Map Data Sources: 2022 Elevate Imagery, 2019 USGS TNM Topo Indiana Bloomington 7.5'	Location: 900 South Park Square Drive Bloomington, Indiana 47403 Monroe County		Drawn By: EMT	

ATTACHMENT 1

HIGHLAND PARK ELEMENTARY SCHOOL SITE PHOTOS 8/25/2023

Photo 1: Mapped perennial stream leading to Wetland #1; View to the south



Photo 2: View of mapped perennial stream from Wetland #1; View to the north



Photo 3: DP-1 Test Pit Showing Soil Saturation and Depleted Matrix; View down



Photo 4: DP-1 Test Pit Showing Soil Saturation and Depleted Matrix; View down



HIGHLAND PARK ELEMENTARY SCHOOL SITE PHOTOS 8/25/2023

Photo 5: Location of DP-1 test pit;
View to the north



Photo 6: Typical soil from DP-1 showing
depleted matrix



Photo 7: DP-2 Test Pit; View down



Photo 8: DP-2 Test Pit showing absence of
soil saturation; View down



ATTACHMENT 2

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Highland Park Elementary School City/County: Bloomington/Monroe Sampling Date: 8/25/2023
 Applicant/Owner: Bledsoe Riggert Cooper James/Monroe County Community School Corporation State: Indiana Sampling Point: DP-1
 Investigator(s): Sara Hamidovic, Dan Elliott, Emily Throop Section, Township, Range: S2 T8N R2W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 8.73% Lat: 39° 09' 19.71" N Long: 86° 35' 35.8476" W Datum: UTM 16N
 Soil Map Unit Name: HoC: Hosmer Silt Loam, 6-12% Slopes NWI or WWI classification: PUBGx Freshwater Pond

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>None Observed</u>				
2. _____				
3. _____				
4. _____				
5. _____				
				_____ = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u>)				
1. <u>None Observed</u>				
2. _____				
3. _____				
4. _____				
5. _____				
				_____ = Total Cover
<u>Herb Stratum</u> (Plot size: <u>5'</u>)				
1. <u>Vernonia gigantea</u>	5	N	FAC	
2. <u>Boehmeria cylindrica</u>	5	N	OBL	
3. <u>Euthamia graminifolia</u>	2	N	FACW	
4. <u>Impatiens capensis</u>	2	N	FACW	
5. <u>Mimulus ringens</u>	5	N	OBL	
6. <u>Carex lurida</u>	25	Y	OBL	
7. <u>Carex vulpinoidea</u>	25	Y	OBL	
8. <u>Ludwigia alternifolia</u>	2	N	OBL	
9. <u>Typha latifolia</u>	2	N	OBL	
10. <u>Symphotrichum pilosum</u>	5	N	FACU	
				78 = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u>)				
1. <u>Persicaria sagittata</u>	20	Y	OBL	
2. _____				
				20 = Total Cover

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
 Total % Cover of: Multiply by:
 OBL species 84 x 1 = 84
 FACW species 4 x 2 = 8
 FAC species 5 x 3 = 15
 FACU species 5 x 4 = 20
 UPL species 0 x 5 = 0
 Column Totals: 98 (A) 127 (B)
 Prevalence Index = B/A = 1.30

Hydrophytic Vegetation Indicators:
 ___ Dominance Test is >50%
 ___ Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks: (Include photo numbers here or on a separate sheet.)
 Central area of the delineated wetland is characterized by Typha latifolia and other OBL species. Central area likely exhibits standing water or shallow saturation nearly perennially.

SOIL

Sampling Point: DP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	7.5YR 4/3	100					SiCL	Root Mat Present; No Redox Observed
2-6	10YR 5/2	80	5YR 4/6	20	C	PL	SiCL	Prominent Redox
6-16	10YR 6/1	90	5YR 4/4	10	C	PL	SiCL	Prominent Redox
16-20	10YR 6/1	75	5YR 5/8	20	C	PL	SiCL	Prominent Redox
			5YR 2.5/1	5	C	PL	SiCL	Prominent Redox
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators:			Indicators for Problematic Hydric Soils³:					
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Iron-Manganese Masses (F12)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)					
<input type="checkbox"/> 2 cm Muck (A10)			<input checked="" type="checkbox"/> Depleted Matrix (F3)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)								
Restrictive Layer (if observed):								
Type: <u>None</u>								
Depth (inches): <u>None</u>						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations:			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>None</u>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>~4"</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Highland Park Elementary School City/County: Bloomington/Monroe Sampling Date: 8/25/2023
 Applicant/Owner: Bledsoe Riggert Cooper James/Monroe County Community School Corporation State: Indiana Sampling Point: DP-2
 Investigator(s): Sara Hamidovic, Dan Elliott, Emily Throop Section, Township, Range: S2 T8N R2W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave
 Slope (%): 8.03% Lat: 39° 09' 19.6272" N Long: 86° 35' 35.9556" W Datum: UTM 16N
 Soil Map Unit Name: HoC: Hosmer Silt Loam, 6-12% Slopes NWI or WWI classification: PUBGx Freshwater Pond

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer rubrum</u>	10	Y	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.4</u> (A/B)														
2. <u>Acer saccharinum</u>	10	Y	FACW															
3. _____																		
4. _____																		
5. _____																		
<u>20</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>22</u></td> <td>x 1 = <u>22</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>28</u></td> <td>x 3 = <u>84</u></td> </tr> <tr> <td>FACU species <u>75</u></td> <td>x 4 = <u>300</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>150</u> (A)</td> <td><u>456</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>3.04</u>	Total % Cover of:	Multiply by:	OBL species <u>22</u>	x 1 = <u>22</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>28</u>	x 3 = <u>84</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>150</u> (A)	<u>456</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>22</u>	x 1 = <u>22</u>																	
FACW species <u>25</u>	x 2 = <u>50</u>																	
FAC species <u>28</u>	x 3 = <u>84</u>																	
FACU species <u>75</u>	x 4 = <u>300</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>150</u> (A)	<u>456</u> (B)																	
<u>20</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																		
1. <u>None Observed</u>																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
<u>_____</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																		
1. <u>Vernonia gigantea</u>	2	N	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Boehmeria cylindrica</u>	10	N	OBL															
3. <u>Toxicodendron radicans</u>	2	N	FAC															
4. <u>Glechoma hederacea</u>	30	Y	FACU															
5. <u>Geum macrophyllum</u>	15	N	FACW															
6. <u>Taraxacum officinale</u>	5	N	FACU															
7. <u>Plantago rugelii</u>	10	N	FAC															
8. <u>Lycopus virginicus</u>	2	N	OBL															
9. <u>Symphotrichum pilosum</u>	20	Y	FACU															
10. <u>Prunella vulgaris</u>	4	N	FAC															
<u>100</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>)																		
1. <u>Persicaria sagittata</u>	10	N	OBL	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>														
2. <u>Lonicera japonica</u>	20	Y	FACU															
<u>20</u> = Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)

Area sampled located in a section that is periodically mowed suggesting further that the immediate area does not exhibit periods of extended saturation during growing season.

SOIL

Sampling Point: DP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 5/4	100					SiCL	Root Mat Present; No Redox Observed
3-6	10YR 5/3	95	5YR 5/8	5	C	PL	SiCL	Prominent Redox
6-12	10YR 5/2	85	5YR 4/6	15	C	PL	SiCL	Prominent Redox
12-16	10YR 6/1	75	5YR 5/8	25	C	PL	SiCL	Prominent Redox
16-20	10YR 6/1	70	5YR 5/8	25	C	PL	SiCL	Prominent Redox
			10YR 2/1	5	C	PL	SiCL	Prominent Redox

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: <u>None</u> Depth (inches): <u>N/A</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>N/A</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>N/A</u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>N/A</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

ATTACHMENT 3



1967 Aerial Photograph

Image: Indiana⁴⁴ Spatial Data Portal



1975 Aerial Photograph

Image: Indiana⁴⁵ Spatial Data Portal



1999 Aerial Photograph

Image: U.S. Geological Survey⁴⁶



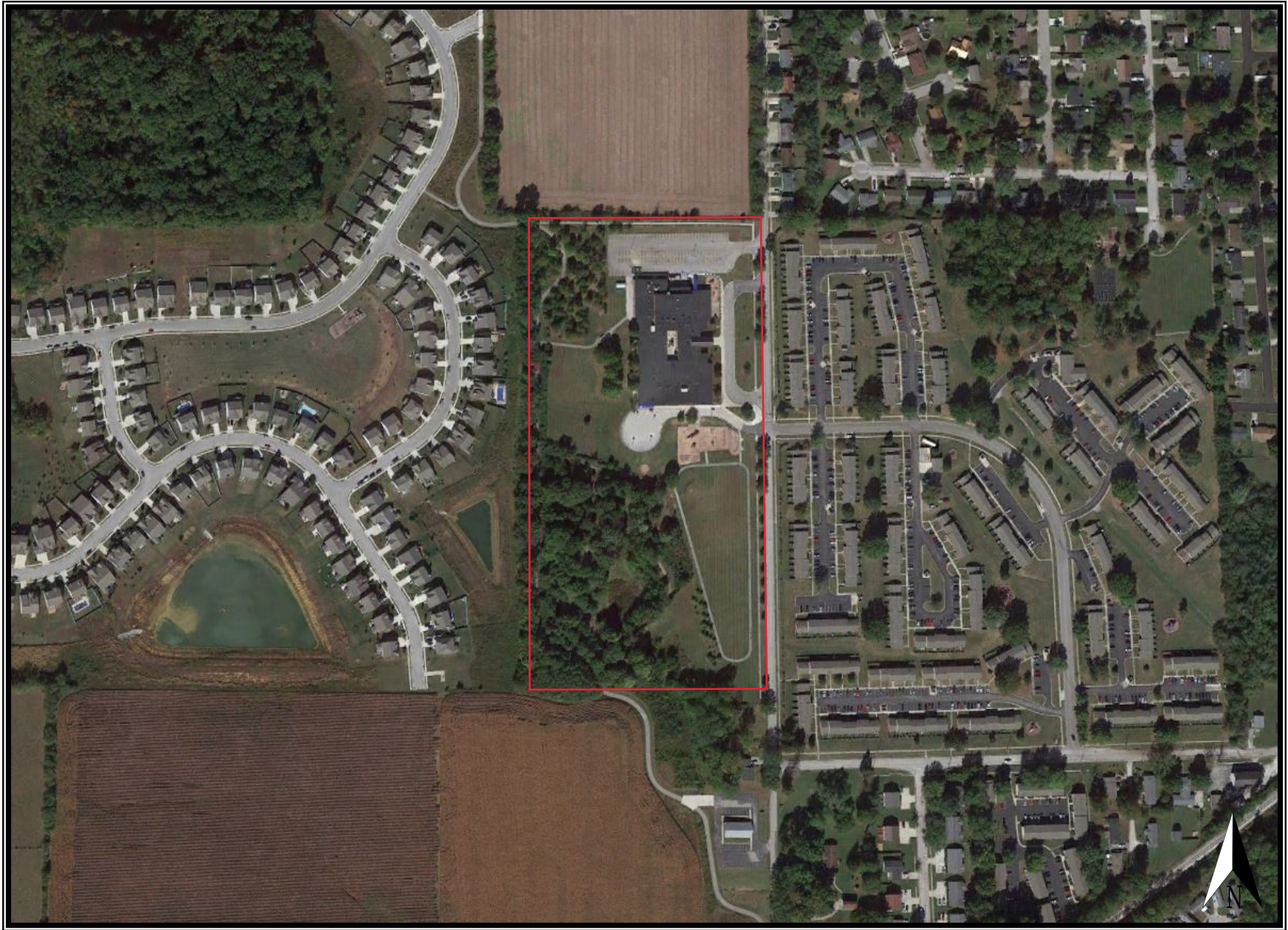
2005 Aerial Photograph

Image: Indiana⁴⁷Map Framework Data



2016 Aerial Photograph

Image: Landsat⁴⁸/Copernicus



2019 Aerial Photograph

Image: Google Earth⁴⁹



Monroe County Stormwater Services

Located at Monroe County Highway Department:
501 N. Morton Street, Suite 216, Bloomington, IN 47404

Phone: (812) 349-2565

Fax: (812) 349-2959

www.co.monroe.in.us

To: Monroe County Drainage Board
From: Kelsey Thetonia, MS4 Coordinator
Date: September 27, 2023
Re: 2024 Meeting Schedule for the Monroe County Drainage Board

Location: Room 106D, Showers Building with virtual attendance via Zoom (Hybrid format)

Time: 8:30 AM

Monthly Meeting Dates:

January 4, 2024
February 1, 2024
March 7, 2024
April 4, 2024
May 2, 2024
June 6, 2024
June 27, 2024*
August 1, 2024
September 5, 2024
October 3, 2024
November 7, 2024
December 5, 2024

If there is a change in the date, time, or location, we will issue a notice for the changes. If you have any questions or concerns with the above dates, please contact Kelsey Thetonia at (812) 349-2565.