

**Brooklyn Inland Wetlands Commission  
Regular Meeting Minutes  
December 10, 2019**

**Call to Order:** The meeting was called to order at 6:05 p.m.

**Members Present:** Jeffrey Arends, Demian Sorrentino, George Sipila, Richard Oliverson.

**Absent:** James Paquin with notice.

**Staff Present:** Margaret Washburn, Wetlands Agent, Audrey Cross-Lussier, Recording Secretary.

**Also Present:** Attorney Harry Heller, David Held, Madilyn Smith, Richard Desrosiers, Bill Carver, Joe Szarkowicz, Aaron Kerouac, public in attendance.

**Roll Call:** All members present stated their name for the record.

**Seating of Alternates:** None.

**Public Commentary:** Joe Szarkowicz, 103 Tatnic Road, voices his concerns with regards to the ongoing project at the Veazie property located at 117 Tatnic Road. Verbal communications given by the former Wetlands Agent, Martha Fraenkel, to Mr. Szarkowicz and Mr. Veazie were not the same. Chairman Arends asked Mr. Szarkowicz to provide a list of issues in writing to Ms. Washburn. Ms. Washburn met with Mr. Szarkowicz on 11/22/19 in the office and on 11/25/19 at his residence. Mr. Szarkowicz measured the limit of work being about 70 feet from one of his iron property boundary pins. The approved plan showed the limit of work at 120 feet. Mr. Szarkowicz said the box trailer on the Veazie's property is now 70 feet from his boundary pin. Szarkowicz feels that work being done at the site is not to the approved plan.

Ms. Washburn met with Mr. Veazie 11/25/19 on his property, photos taken. Veazie stated that Ms. Fraenkel had approved the location of the sediment controls and the box trailer location a long time ago. Ms. Washburn reached out to Ms. Fraenkel, who confirmed that she had inspected and approved the location of the box trailer and the silt fence closer to the Szarkowicz property line than shown on the plan. Ms. Fraenkel also stated there has been a long-standing feud between Szarkowicz and Veazie. When Ms. Fraenkel approved the locations of the box trailer and silt fence, there were no sediment/erosion problems at that time.

Ms. Washburn told Szarkowicz that if and when sediment/erosion problems occurred, she would address them. Szarkowicz has tried to get Ms. Washburn to override Ms. Fraenkel's decisions to approve the location of the box trailer and the silt fence. Ms. Washburn told Szarkowicz that she did not feel the need to rescind Ms. Fraenkel's decision.

Ms. Washburn sent a letter on 12/4/19 to Veazie regarding Szarkowicz's complaint that Veazie has been living in the camp trailer at the site. As requested, Veazie met with Ms. Washburn in office on 12/9/19. Veazie said that he does not use the camp trailer as a residence; he lives with his son at 145 Tatnic Road, leaves lights on in the trailer at night and works nights at Electric Boat. He leave his truck at 117 Tatnic Road. There are a lot of building materials on the site and fears it could be robbed. There is a porta-john on site. He has goats and chickens in sheds and pens. On 12/9/19, Veazie said that he will remove both the box trailer and camp trailer before a certificate of occupancy is issued. The last complaint from Szarkowicz came when cement trucks poured the foundation. They supposedly dumped cement truck wash-water in the upland review area near the box trailer. Along with this latest complaint, Szarkowicz emailed Ms. Washburn fuzzy photographs from which she could discern nothing. Veazie confirmed that the driver of the last cement truck washed his windshield with hot water from a garden house near the trailer. Veazie is adamant that no wash water has been or will be dumped on the property.

Mr. Sorrentino asked Ms. Washburn what are the outstanding issues at this time? Ms. Washburn commented that there are no outstanding wetland issues at this time. Mr. Sorrentino asked if the house is currently under construction? Ms. Washburn commented the foundation has just been poured, Veazie is his own GC on the project. Mr. Sorrentino asked if the wetlands permit for the crossing still active. Chairman Arends commented the permit was dated 2017. Discussion ensued.

Chairman Arends commented at this time he feels the Commission does not have any jurisdiction over any of this. As long as they are in compliance with the plan and comply by the end of the permit, however, Mr. Arends feels that zoning may have concerns with what is going on at the site. Ms. Washburn wrote Veazie a letter on behalf of the Zoning Department last week and he came in and addressed the issues.

Mr. Sorrentino commented that Ms. Washburn can respond to complaints if there are breaches in erosion controls. The Commission thanks Mr. Szarkowicz for his comments and concerns.

#### **Additions to Agenda:**

A motion was made by Demian Sorrentino to add under New Business Item #2 DR19-009 Daniel Boothroyd/Owner, William Carver, II/Forest Products Harvester; 167 Stetson Road, Map 3, Lot 1A, Cut all dead gypsy moth trees and mature hemlocks. George Sipila seconds this motion. No discussion held. All in favor. The motion passes unanimously.

#### **Approval of Minutes:**

1. Regular Meeting Minutes November 12, 2019. The minutes were accepted as written, no recommended changes.

**Public Hearings:**

**1. 102219B Strategic Commercial Realty, Inc., d/b/a Rawson Materials, Maynard Road, Map 29, Lot 5, RA Zone; Excavation of approximately 1.2 million cubic yards of sand and gravel.**

Attorney Harry Heller represents the applicant along with David Held, P.E., from Provost and Rovero, as well as Madilyn Smith, in-house counsel for Rawson Materials. The application for permit to conduct regulated activities in conjunction with proposed excavation of earth products on a 29.9-acre parcel located on the southeasterly side of Maynard Road. The property abuts on the Canterbury/Brooklyn town line to the southwest and is abutted to the southeast by the Quinebaug River. The proposal is to excavate approximately 1.2 million cubic yards of structural earth product material from the site with the proposal designed by the project engineer to be conducted in (5) five phases labeled 1-5 on the phasing plan sheets 3 of 15. The methodology is to excavate from Maynard Road into the site. The downcutting technique is shown on sheet 10 of 15. Throughout the proposed excavation the operator will always be operating to the interior of the site so the material will be pulled down into the site as excavation progresses and will be loaded/removed from the site which is depicted on the phasing plan. This methodology will ensure that there will never be any operation conducted on the exterior slope of the proposed excavation, which is the best erosion and sedimentation control methodology because the site becomes completely self-contained. The property is abutted to the east by a small swamp of land owned by Tilcon, Inc., and adjacent to that is the Quinebaug River which is boundary line between the Town of Brooklyn and Town of Plainfield. There is an alluvial plain which by Statute Regulation is defined as a regulated resource under the IWWC Regulations, which is the alluvial plain associated with the Quinebaug River portrayed by the flag numbers noted on the phasing plan. There is a kettle wetland located on the southerly boundary of the property. The kettle wetland has a small outlet flowing out to another kettle wetland on the adjoining property owned by the State of Connecticut to the south in the Town of Canterbury. The applicant is proposing to conduct the excavation in (5) phases. As phases are completed, areas that are required for stockpiling will be stabilized and vegetated in accordance with the restoration plan which is incorporated into the narrative prepared by design engineer. Because they are structural materials and highly permeable materials, the design engineer is proposing that when an area is excavated the slopes are shaped and ready for stabilization, a 12-inch layer of silty material will be placed in order to ensure adequate hydrology is maintained in order to establish a vegetative layer. After the silty layer is placed then the area will be loam, seeded and stabilized.

Attorney Heller reviews with the Commission the permitting criteria for the operation and how the application complies with the permitting criteria and warrants a permit to be issued. There is no proposal of direct impact to wetlands and watercourses in conjunction with this excavation operation. As delineated on the site development and phasing plan, they are proposing activities in the upland review areas adjacent to kettle wetland and to the alluvial plain associated with the Quinebaug River. These activities will not result in adverse consequences to either resource based upon the methodology to conduct the operation.

There are two potential impacts to wetlands and watercourses as a result of this proposed excavation. The first is an erosion and sedimentation event that could result from the disturbance

of soil and excavation in the upland review area adjacent to the wetlands. It is believed they have mitigated this concern by developing a methodology which will prohibit the operation of equipment or excavation on the interior slope of kettle wetland or slope down to the alluvial plain of the Quinebaug River. The second adverse impact that could occur to the kettle wetland is a potential hydrologic impact as a result of this excavation depriving this kettle wetland of the source of hydrology that supports the hydrology of the wetland. These are the only two potential impacts that can result from this proposed operation. This is a highly permeable, structural earth product material, it is very coarse material as indicated by the boring logs. The permeability in the soils is rapid.

The evaluation of criteria for a permit is contained in section 10.6 of the IWWC Regulations. In order for a permit to be issued, the Commission has to be satisfied by substantial evidence in the record that the applicant has complied with each and every one of the permitting criteria. The first criteria for decision is the environmental impacts of the proposed regulated activity on wetlands or watercourses. As far as environmental impacts to the wetlands and watercourse, two potential impacts are erosion and sediment control impacts and second is hydrologic impact to wetland. The soil and erosion control has been mitigated by the methodology by which this operation will be conducted so there are not disturbed areas that slope to either of the resources within the IWWC jurisdiction. The hydrologic impact will be explained by David Held, based upon his evaluation of the site. This application, and the excavation to the depths contemplated by the application, will not result in adverse hydrologic impact to the kettle wetland resource. The second criteria is the applicant's purpose for any feasible and prudent alternatives to the proposed regulated activity, which alternatives would cause less or no environmental impact to wetlands or watercourses. Feasible and prudent statutory terms are defined in the IWWC Regulations and Connecticut State Statutes 22 page 38, the definitions are the same. Feasible means able to be constructed or implemented consistent with sound engineering principles, and prudent means economically and otherwise reasonable in light of the social benefits to be derived from the proposed regulated activity provided cost may be considered in deciding what is prudent and provided further in their showing of expense will not necessarily mean an alternative is improved.

The proposal is to excavate 1.2 cubic yards of structural earth product material. Aggregate is used in highways, manufacture of bituminous concrete, asphalt, the manufacture of concrete; it is utilized in paints, plastics, medicine, glass, driveways, bridges, wallboard, vinyl, brick, stone building and homes, roofing tiles, asphalt shingles and minerals for agriculture. Aggregate is an essential component of everyday life. Every year more than 2.14 billion tons of aggregate are utilized in the USA. That is approximately 8 tons for every American, an average 120 tons of aggregate are used in the construction of a new house and about 10,000 tons of aggregate are used in the construction of one mile of four-lane highway. This aggregate material is a valuable natural resource. In considering the feasible and prudent alternatives, feasible goes to the construction methodology, how this plan is being implemented in order to excavate the material without an adverse impact on wetlands and watercourses. When the plan is reviewed and testimony given by Mr. Held, the Commission will concur that this is a self-contained site and that this excavation can be implemented without any damage to the adjacent resources either the kettle wetland or the Quinebaug River. Prudent is an economic analysis. It is the balancing act that the Wetlands Agency is charged with every time hearing an application that has the potential

for impact to wetlands and watercourses. What is done in the exercise of statutory duty is to balance the economic need for the activity against the potential harm to the wetland and watercourse. The evidence has been given to satisfy the requirement that this excavation is a required activity that aggregate is an essential component of virtually every phase of life and that it is irresponsible in order to not mine aggregate in any responsible or conscientious way if it can be done without adverse impacts for resources. The testimony elicited this evening will indicate that this excavation can be conducted without erosion and sediment concerns and that the excavation of this site to the elevations proposed will not have an adverse impact on the hydrology of the kettle wetland on the site. The third criteria is the relationship between the short term and long-term impacts of the proposed regulated activity on wetlands or watercourses and the maintenance and enhancement of long-term productivity of wetlands and watercourses. The short-term impacts that could occur would occur as a result of improper excavation techniques, not following the plan, not maintaining the methodology which has been designed by the project engineer to the excavation of this site. The project engineer has proposed installation of perimeter silt fence around the entire excavation, although the silt fence has a very limited purpose because of the excavation methodology, it will prevent any migration of sediments when the clearing and grubbing is occurring.

Once the excavation is underway interior to the site and the site drains to the middle of the site, there will be no potential for erosion. The long-term maintenance and productivity of the kettle wetland and the alluvial plain associated with the Quinebaug River is related to the hydrology of the site. In conjunction with this application the project engineer has determined the anticipated limit of ground water in this area and has kept the proposed bottom of the excavation minimum of 5 feet and probably 7 feet above his determination of the ground water level, which 5-feet is required by the municipal zoning regulations. It is the applicant's position that the design of this project, the limits which have been imposed by the engineer will maintain the site hydrology and will maintain the hydrology of the kettle wetland located around the southeasterly portion of the site. The next consideration is irreversible and irretrievable loss of wetlands or watercourse resources which would be caused by the proposed regulated activity, including the extent to which such activity would foreclose the future ability to protect, enhance or restore such resources and any mitigation measures which maybe considered as a condition of issuing a permit for such activity, including but not limited to measures to prevent or minimize pollution or other environmental damage, maintain or enhance existing environmental quality, or in the following order of priority: restore, enhance or create productive wetlands or watercourse resources.

The plan shows steep banks that slope down to the kettle wetland as well as from the Tilcon boundary line down to the alluvial plain. The plan is proposing to maintain a significant buffer area around that kettle wetland which will not be disturbed. It is currently a wooded environment. It will be maintained as a wooded environment having two functions; (1) a wooded environment and leaf litter is an excellent filter of any pollutant which may migrate down the slope to the wetland; (2) the maintenance of a vegetative story of hardwoods along the periphery of the wetland will make sure the temperature regime in the wetland is maintained as it currently exists today. Because no direct impacts are being proposed, because a buffer is being maintained around the wetland and because the whole methodology on the excavation of the site has been



designed to eliminate the potential for any erosion situation, there will be no irreversible or irretrievable loss of wetland resources as a result of this excavation.

The next consideration is the character and degree of injury to or interference with safety, health or the reasonable use of property, which is caused or threatened by the regulated activity; the applicant submits that there is none. The project site has residential neighbors to the west and to the northwest. The phasing of the project has been designed to leave the northwesterly periphery of the excavation undisturbed until the fifth/final phase of the operation. This will maintain a vegetative buffer between the operation and the neighbors to the northwest throughout the entire excavation operation until the final phase is completed when the bank is excavated. Because the property is abutted to the south by land of the State of Connecticut and southeast by the Quinebaug River, and because adequate buffers are being maintained, we do not envision there will be any interference with the reasonable use of adjacent property or any health or safety concerns as a result of this operation. By looking at the phasing plan, a significant undisturbed buffer is being maintained along the southerly boundary of the property. The final consideration is the impacts of the proposed regulated activity on wetlands or watercourses outside the area for which the activity is proposed and future activities associated with or reasonably related to the proposed regulated activity, which are made inevitable by the proposed regulated activity, and which may have an impact on wetlands and watercourses. Because no activity is proposed on the exterior slopes of the excavation on this property, and the excavation will be self-contained, they do not envision there is any potential for an event to occur which could result in the migration of pollutants to the kettle wetlands or the alluvial plain associated with the Quinebaug River, which could then flow off site and impact off site wetland. The permitting criteria contained both in the IWWC regulations and in the Statutes is satisfied by this application.

David Held, P.E., Land Surveyor with Provost and Rovero reviews the site plan with Commission Members; Page 9 excavation cross section B-B, edge of wetland, existing grade, proposed grade and the water elevations. A detailed survey of the water elevation in the wetland was done approximately 3 weeks ago and it was 130.5 feet. The lowest point of the excavation is 138 feet. Mr. Held demonstrates on the site plan the soil borings and monitoring wells. There were 5 borings to cover a 20-acre work area. The purpose of the borings was to ensure there was marketable material and to characterize what the ground conditions are and how they may impact the wetlands and hydrology supporting the wetlands. It is Mr. Held's opinion that the wetland can function in both a recharge and a discharge capacity as far as ground water goes depending on what the underlying groundwater table is at. This is supported by what is in the borings and what is seen in the monitor well. The intention was to install monitor wells in all five boring locations, but this was not possible. With the exception of one location they hit refusal at the bottom of the borings and did not encounter groundwater in any of them except for one location (demonstrated on site plan). A conservative assumption was made that the bottom of the borings where they hit refusal was something that ground water would flow on as a relatively impermeable surface. The elevation grades were kept well above that. This is a sand and gravel operation and there is no intention of excavating material that is not suitable for end use as construction aggregate. Any of the impermeable layers that would be creating a hydrologic gradient have absolutely no value to the applicant and there is no intention of digging or disturbing those layers. If the wetland is supported by a regional groundwater table as opposed to surface hydrology which would percolate through the permeable soils and break out, there is no

possible way that any excavation, regardless of what is being dug out, would impact this. It would be supported by the groundwater in the entire aquifer around it. Mr. Held feels that it can function in that capacity or it can be supported by surface hydrology depending what the underlying water table elevation is. If it is supported by surface run-off that percolates through the soil and breaks out, which is a likely possibility under a lot of circumstances for a majority of the year, that is supported by a boring which has refusal and impermeable layers essentially the same elevation as the wetland as well as what is seen in the boring with the monitor well, and what is seen for water elevations in the water elevation in the river right next to it. Mr. Held's opinion on how it functions is there will be a significant depth of permeable soil removed, but they are also going to be leaving 5 to 6 feet at a minimum of permeable sand and gravel on top of what impermeable layer is below there, assuming that is a water table. The breakout of the water into the wetland it supports hydrology is mainly a function of the boundary layer around it. If there is a hydrologic gradient to this, it would be on an impermeable layer; they have no intention of impacting that. The only difference that could be made instead of precipitation percolating through 40 to 50 feet of material over a portion of this site, if that area is feeding an impermeable layer which breaks out, it will now be going through a lower thickness; the horizontal movement of that water is going to be controlled by the boundary layer, leaving it undisturbed. The sand and gravel material in the whole site is relatively consistent, relatively homogeneous so it is a reasonable statement to make that the sand and gravel is going to have the same hydrologic characteristics as the sand and gravel that is not being touched. In Mr. Held's opinion, they do not have the opportunity to impact the hydrology that would be supporting this wetland regardless of this material being removed over the top, as long as they are not excavating the impermeable layer underneath. The water would basically be flowing into the wetland. As of any subsurface, one hundred borings could be done and still not have a perfect picture of what the subsurface conditions are like. Ms. Washburn has requested if this application moves forward and as we approach what is the floor of the excavation, when we get to about 20-feet of the proposed grades, if they can excavate a series of test pits in whatever expected phase they are working in to verify that the assumptions are accurate and this has been agreed upon. Mr. Held feels there is no concerns with hydrologic impacts to the wetlands.

Chairman Arends opens the floor for public commentary.

Tim Foster, 77 Maynard Road west of the subject property, asks how close this is to the Quinebaug River. Mr. Sorrentino commented the riparian wetland lies about 60 feet from the edge of the watercourse, and the proposed grading activity is about 30 feet from the wetland. Mr. Held commented that this is from delineated flood plain wetland, not the actual edge of river water. Mr. Sorrentino commented that it is about 90 feet from the edge of the water.

Mr. Foster lives next door to the proposed sand and gravel pit. Mr. Foster objects to the approval of the permit for numerous reasons and shares his concerns on the environment and geography of this location.

- The property line from the proposed site is only 230 feet from his well. What assurances does Mr. Foster have that this will not contaminate the well or make it go dry and if it does happen what is the recourse? Who would be responsible? The landowner or the Town for approving it?

- The Eastern Connecticut Environmental Review Team Report in 2007 said from this area of the Quinebaug River Valley and the natural diversity database also has records for State endangered species -eastern spade foot toad and the blue spotted salamander population. From a cursory look at the topography and soils map, suitable habitat for these two species may exist on this property. The DEEP wildlife division recommends a herpetologist familiar with the habitat requirements of these species should conduct surveys and submit a report summarizing the results of such surveys including habitat descriptions, a reptile and amphibian species list a resume giving the herpetologists qualifications. Mr. Foster believes they are talking about the kettle area shown on the site map. The property abuts approximately 1,300 acres of the DEEP property including the Quinebaug Fish Hatchery and the Quinebaug River Wildlife Management Area. The size of the parcel in review comes to approximately 30 acres. The lowest point is in the southeast corner in a small wetland. With everything on the parcel generally sloping towards this corner is the natural way things flow. The wetland is located within what is called a glacial kettle. The proposal indicates removal the 50 feet of material from the hillside adjacent to the existing wetland. The removal of this much material could negatively impact the existing water infiltration process of this particular wetland. The impacts of the excavation on the hydrology of the site should be carefully investigated. Mr. Foster comments a pool will be made in the middle to drain all the water. The natural flow would go toward the wetlands. There is a potential to dry out the wetlands. or letting the water from the created low spot flow into the kettle could contaminate it. Mr. Foster commented that we cannot risk damaging the wildlife habitats and the natural resources on and around the location. This is a delicate environment.

Mr. Sorrentino commented that the Town has contracted with GZA Geo Environmental for a geohydrological study that is not complete. The cost of that study is paid for by the applicant and they have already submitted payment to cover the cost. They are working for the Town, IWWC and the PZC Commission. The concerns related to the hydrology and the effect on that kettle wetland are being investigated by qualified professionals. There will be testimony provided by Attorney Heller and the project engineer; we will also have the professional report to submit it to the record and utilize the testimony as well.

Mr. Sorrentino asked Mr. Foster was that an ERT report from a prior application or was that an NDDB screening request for this application. Mr. Foster commented it was an Eastern Connecticut Environmental Review Team Report in 2007.

Ms. Washburn commented that the current NDDB letter recommends no further excavation of sand and gravel on the site. Discussion ensued.

Carol Kiley, 675 Allen Hill Road. Ms. Kiley owns property at 18 Maynard Road.

- Ms. Kiley would like to know if this permit is approved, who regulates the applicant to follow the 5- phase plan. Mr. Sorrentino commented that the IWWC jurisdiction is strictly related to wetlands. Mr. Sorrentino commented that the PZC component of this application is directed to that Commission. Mr. Sorrentino commented that there is oversight when a permit is granted. The agent will take the plan out there and



review what is going on and make sure that it is consistent. There are conditions also placed by PZC, there is enforcement after the permits are issued.

Marion Kervin, 48 Maynard Road, property owner.

- Ms. Kervin shares Mr. Foster's concerns with regards to what happens if there is a problem and the wells are affected. Who would be responsible for these things? Ms. Kervin's house is on the peak of the road. The truck traffic is horrendous. Chairman Arends commented that this issue would be under the PZC application portion of this; it is beyond the purview of IWWC. Ms. Kervin is also concerned with the run-off regarding to this project. What happens when there is a heavy rain, will this affect the residents on this road? Ms. Washburn commented that it is proposed to be an enclosed bowl-type gravel pit where it does not have the potential for run off to leave the site. It will all be dug from the inside towards the edges. There will be a high berm around the entire edge. Discussion ensued.

Richard Desrosiers, LEP, P.G. with GZA Geo Environmental, Inc., Associate Principal/Hydrogeologist and a Licensed Environmental Professional as well as a Licensed Professional Geologist. Mr. Desrosiers discusses preliminary findings with regards to the application. (see attached). GZA was asked by the Town to assess the hydrologic productivity of the underlying groundwater with the kettle wetland. The kettle wetland located on the southern portion of the site has two areas of recharge. One, the natural ground water and two, likely recharge from precipitation infiltrating through the sands and gravels into the wetland. The history of the kettle wetland is from a geologic standpoint, 8,000 to 10,000 years ago the ice was retreating from this portion of Connecticut which left behind large blocks of ice and around that ice sands and gravels were deposited, the ice melted and left the kettle. The kettles are fairly unique features in the New England environment. A couple of borings, shallow hand dug wells were done in the wetland. The wetland contains about 2 to 3 feet of organic silts, peat in some areas, underlined by a fine sand of about 6 to 12 inches. Underlying that was refusal from field staff not able to auger any deeper. That refusal was on gravel or some other dense material. A couple other points were looked at in the vicinity and found generally the same characteristics of the material within and adjacent to the wetland.

A secondary area looked at just to the north within a small depression. This area was evaluated to determine the soil consistencies. There were organic materials, more leaf mat about 2-feet thick, underlined by a similar type of fine sand, underlined by a dense material either, gravel or something else. In the kettle wetland they went down to about 40 inches, in the low-lying depression to the north about 36 inches. This was looked at to see where the water table was. To the north there was no water table seen. There was water seen in the kettle wetland because it is saturated.

As a hydrogeologist, there are a couple of things evaluated to look in terms of how the ground water flows. They look at contour. Similar to a topographical map, they look at how that ground water is flowing; is the water flowing towards the Quinebaug River which is believed it is. How does it flow in and adjacent to the kettle wetland itself; this is difficult to do at this time as there is one monitoring well and one point on the site that shows where ground water is. There is one

reference point to the north on the property line to evaluate how ground water is going to interact with the kettle wetland. They looked at the kettle and went ahead and did a cross section through the kettle. The concern is the kettle wetland. The dark marks indicate where the wetland flags are, the edge of wetlands. The section called AA-prime that includes the monitoring well that is MW-4. Through the kettle there is one hand boring to the east and one closer to the southern portion of the kettle wetland. A variety of models can be used in order to estimate where seasonal high ground water may be. As Mr. Held pointed out they did an excellent job in monitoring water. They found water at 125.8 feet up to a high of 129.3 feet. The highest groundwater reading measured from the monitoring well was 129.3 feet for the period in measurement which was generally from February 2018 through November 2019. They were provided a total of three measurements in order to complete this assessment. It is preferred to have a nest of monitoring wells so they can evaluate where the seasonal high would be in all the wells that contain ground water using what is referred to as the Frimpter method, a USGS model developed in Massachusetts that allows you to predict where the seasonal high ground water might be. How the model works: it references a USGS well, for this purpose they are referencing a Scotland well that USGS installed in sand and gravels. They are looking at a historical trend over a period of time, in this case over 10 years of data in terms of where the highwater level was and where the low ground water was. The drought period a few years ago is where the low water table was. This can be used to reference how those changes in the USGS well apply data to come evaluate the data on site. The measured data on site and compare it with a USGS well that has the same measurement on the same date. USGS wells have a monitoring well network with transducers in them; it is real-time measurements are collected continuously every day. The data can be compared and using the model they can estimate what might be the seasonal highwater table. In this case, using that model, we have estimated the seasonal highwater level might be as high as 134.9 feet. The monitoring well is located on the other side of the hydraulic divide. There is a wetland on one side of the hydraulic divide, a monitoring well on the other side of the hydrologic divide. They do not know exactly how that groundwater is interacting between the two divides. From the model they have estimated the seasonal highwater table would be 139.9 feet. The applicant has indicated that the sand and gravel would be excavated to 138 feet. If you add 5 feet to that it would be slightly above the proposed bottom of the excavation at 140 feet versus 138 feet. However, that does not answer the question in terms of is it completely hydrologically connected without having a groundwater contour map, and without knowing parameters that are looked at in terms of hydraulic connectivity. When evaluating hydraulic connectivity, the ease of which water is moving through, they have to look at hydraulic gradients that slope, the same as looking at the topography map. What are the soils? They have heard there is dense material, but not really sure what that dense material is underneath. It could be refusal on a rock, a boulder, or it could be glacial till. The wetland itself has a capacity of storing water, there are almost 2-3 feet where there is peat and silt. That has a low permeability, that is going to be slow to drain. If drainage were removed in the area it may run faster. In the wetland there is perched conditions. If there are measurements in November of elevation 125.8 feet and water level in the wetland at approximately elevation 130, that would say that the water table in the observation well is 5-feet lower than the water level in the wetland. The wetland either has a different groundwater system not known, or it is perched above the water table that was observed in the monitoring well. The distinction must be made, and without data collected they cannot make that distinction at this time. They also looked at if the wetland could be perched or connected to the ground water, that there is a second portion. Is the wetland being recharged

from the adjacent soil precipitation? They ran some calculations to look at one basis they have. Mr. Desrosiers reviews a map showing drainage basins to the low point in the north. The kettle wetland and the lower saturated kettle on and off property in Canterbury. The existing kettle itself is about 7.53 acres outlined on the site plan. The water that is from the drainage area coming in makes up about 7.53 acres. Looking at the proposed development in terms of the removal, this is the area of infiltration from precipitation, this is assuming 75-foot offset that now reduces the area of infiltration down to 4.6 acres. Looking at the 125-foot offset there is 5.61 acres remaining. There is still a difference what is recharging through the wetland area from precipitation.

Ms. Washburn asks what is the difference between the 4.6 and the 5.61? Mr. Desrosiers commented that the 4.6 is a 75-foot offset and the 5.6 is a 125-foot offset to edge of wetlands. Mr. Sorrentino asked 75 feet is what the plan proposes now? Mr. Desrosiers commented that is correct.

Looking at the western basin, you can look at the difference between the existing condition, which is 3.9 acres versus a 75-foot offset which is 2.03 acres and if using a 125-foot offset it would be at 2.46, acres. The difference in that is how much water is actually going through the soils. If you think about the kettle wetland as a system, connected seasonally to groundwater, but also potentially perched separately from the ground water, without having any immediate data, they would have to say currently the system is perched based upon the ground water levels at 5 feet deeper. Looking at the system in whole, how does the whole system work? Looking at the area to the north they wanted to see whether or not they would find ground water at below 40 inches below grade, they did not. They found a similar type of hydrology here, demonstrated on the site plan. It is feasible that it is consistent with the ERT Report, that water recharging the individual basins is slowly percolating through the sands and gravels. Sand and gravel are permeable, but we have to remember the glacial ice and how the ice retreated. There are not consistent layers; it is not homogeneous. There are layers in the sand and gravel; some of the layers may be sand, some of them may be sand and gravel, some of them might be silt. Sand and gravel have rapid infiltration. The sand would have a lower infiltration and the silt lower than that. It's been measured that beneath the system there is a silty unit so that has a low permeability. As infiltration of gray water is infiltrated through the sands it will percolate through the sands and gravels. Silty layers will retard the rate the water is moving through, and then that slow rate will then move down into the system and recharge the wetland showing the type of perched condition, maintaining that system the way it is. Without having good information in terms of hydraulics, it is difficult to say where is ground water, is it actually perched, is this intersecting a water table? The applicant has indicated that there was refusal up by the driveway, that was very shallow refusal, that could have been on bedrock; that could have been glacial till. It needs to be understood how the ground water will follow along the impermeable units and how that ground water will recharge this basin itself. Is this basin directly connected to ground water? Is it operating seasonally based on seasonal high water periodically, and recharged by the surrounding soils through the infiltration through these soils? These two things need further evaluation. The information provided is insufficient to make that determination (see attached e-mail 12/10/19).

Ms. Washburn reviews Syl Pauley, P.E., NECCOG Regional Engineer's Plan Review dated 12/9/19 (see attached). "Mr. Pauley strongly recommends several additional soil boring locations be examined within the proposed deep excavation area, since the locations that were tested were mostly outside of the proposed excavation. Of the six (6) locations with boring logs, two (2) were very shallow due to a bedrock formation, five (5) encountered some form of refusal (bedrock or other) and only one (1) recorded groundwater but was not shown on the plan."

Chairman Arends asked if the amount of excavation going on to the north side, will this have a potential to affect people's wells? Mr. Desrosiers commented they would have to further evaluate the conditions of the wells. This is something that could be evaluated if asked for.

Mr. Desrosiers commented that within the kettle wetland are wetland species. Moving up the slope they start going into upland type vegetation. They want to make sure that the system, if hydrologically connected whether through precipitation or ground water, that they do not change the characteristics of the wetlands species themselves. There will be a separate item within the report that discusses this. They have not looked at any native amphibian species as to whether they are present or not; this is a springtime activity. The lower kettle wetland shows an outlet between the upper and lower, elevation at 132 feet. They know periodically that water does fill up within the kettle to at least 132 feet or higher. That then flows out into the lower more wet unit. Having a seasonal highwater table potentially at 134.9 feet, the edge of the wetlands is still about 130, but potentially that outlet it controls where the edge of wetlands is. There is water that comes in; however, the lower wetlands has no outlet; that recharges back to the groundwater.

Chairman Arends asked if the kettle is a watercourse, a wetland or both. Mr. Desrosiers commented that it is probably both. Whether it is a vernal pool or a wetland, he would have to have his wetland agent look at this further. There is no inlet or no outlet between the two systems. Mr. Desrosiers reviews and discusses this on the site plan. Discussion ensued.

Mr. Sorrentino asked is GZA not able to draw conclusions the Commission would likely base a decision on without further site exploration? Mr. Desrosiers answers yes.

Ms. Washburn asks if Mr. Desrosiers if he can make a general statement as to whether removing the vertical feet of material proposed on the site is likely to change the timing of the water recharging the kettle wetland. Mr. Desrosiers stated based upon the lack of data they have they cannot make that statement. Discussion ensued.

Chairman Arends asks if the proposed 75-foot buffer around the kettle wetland sufficient for shade for the water source to not evaporate at a faster rate than it already does; and would the temperature of the water be affected also. Mr. Desrosiers does not have an answer.

Ms. Washburn reviews Mr. Desrosiers comments received today, 12/10/19 via e-mail, which says "Our initial assessment suggests that the Town may wish to adhere to the 125-foot setback of the edge of the kettle wetland to maintain adequate precipitation recharge to the kettle wetland." He has already addressed the 75-foot. Mr. Sorrentino asks what recommendations the Commission will have to base their decisions upon; are you intending to draw conclusions on the information that GZA has or is it a report that says they do not know because more information

is necessary. Mr. Desrosiers commented both. This is a summation of what the report will look like, once finalized there will be a few other things included. Without having the contour of the impervious layer that shows how the groundwater is flowing on this site, without having an understanding of the vertical migration of flow there will be unanswered questions. Those soils were not homogeneous, if they were this would be a different story. As Ms. Washburn pointed out they are stratified, therefore layered. Ms. Washburn asked how long would it take to get the answers needed? Mr. Desrosiers commented that he would have to provide an estimate. Mr. Sorrentino commented the Commission is under a time constraint. Mr. Sorrentino commented that the applicant would have to agree to either provide the information that the consultant is requesting or pay additional fees to cover the proposal that he would generate. Ms. Washburn commented that is correct.

Chairman Arends asked Mr. Held to describe what refusal in a well means. Mr. Held commented that refusal in a boring is where the drill cannot drill any further. If a large boulder was hit that would be considered refusal. Discussion ensued.

Chairman Arends asked when talking about impermeable soils, are you talking about something that water cannot go through. Mr. Held commented not essentially like concrete or stone. When he says impermeable it maybe stone, bedrock, but also maybe very dense glacial till which would be very slowly permeable. Impermeable would be a relative statement versus sand and gravel which is very rapid and permeable. If you dig a test whole and see hardpan layer it would be a dense till layer that water would sit on top of and flow horizontally on as it cannot go through it vertically very quickly. Chairman Arends commented when talking about water tables, they are talking about water going through the ground, hits a hardpan and starts shedding off into another direction. Mr. Held discusses the water tables, regional ground water table and a perched water table. Chairman Arends asked when excavating in the phases, leaving 5-6 feet of sand and gravel in the bottom of the impermeable soil that is hit, how do you leave 5-6 feet without knowing where the impermeable layer is. Mr. Held commented the proposed layers shown on the plan are based on the boring data and where the groundwater is in the surrounding areas, kettle wetland and Quinebaug River. This is no different than any other sand and gravel operation, where you don't have an exact picture of subsurface conditions until you are actually exposing those soils. Ms. Washburn has requested as they approach these bottom elevations, that they excavate a series of test pits to verify that the assumptions were correct. There may be a couple of feet of variation between what is predicted based on boring data and what is actually out there on a particular location. Digging the test holes as approaching the bottom elevation is a reasonable approach to be sure they keep the 5 feet. Ms. Washburn commented they are required to keep 5 feet separation from ground water and 6 feet separation from ledge by the zoning regulations that were in place when they applied. They are not asking for a pond.

Ms. Washburn reviews Syl Pauley's review dated 12/9/19 (see attached). Page 1, #3 will material be processed on the site. Mr. Held commented no. Page 2 of 2, comment #1, Ms. Washburn asked if Mr. Held brought in hard copies of his responses to Mr. Pauley's comments? Mr. Held stated he has not responded to Mr. Pauley's comments as a plan revision will be forthcoming. Discussion ensued.

Ms. Washburn comments that she feels that there is a potential impact for fugitive dust on this site which could blow in the kettle wetland and Quinebaug River. Ms. Washburn commented that there is a note in the plan that the applicant is responsible to keep fugitive dust under control and using water trucks.

Mr. Sorrentino reiterates his concerns about where the Commission will be after the applicant has spent \$20,000 on a hydrogeologist and what will they have to base their deliberations on. What is germane to the Commission's jurisdiction at this time is to know if they are going to have specific recommendations and analysis to base their decision on, or are they going to get a set of best management practices. Discussion ensued.

Chairman Arends commented that if there is a lack of data and they do not have any hard information to make decisions on, then the applicant will have to produce the data. Mr. Sorrentino asked if the Commission is comfortable, based on GZA's analysis, should they be looking to expect 125-foot non disturbance area around the kettle wetland, or based on additional information that may increase to 150-foot or the 75 foot may be okay.

Chairman Arends asks Mr. Held where does the 75-foot buffer come from? Mr. Held felt this would be a prudent offset. Chairman Arends asked based on what? Mr. Held commented based on arbitrary, or common-sense approach based on prior experience, that that is adequate to protect a wetland.

Mr. Desrosiers commented that one of the concerns between the 75-foot and 125-foot offset is the slope of the kettle wetland. You would be cutting into some of that upper slope area. Given the sensitivity to the wetland itself, you would have to ensure the erosion control measures. If you were to cut the vegetation along the edge of the cut has the potential of the roots being exposed, those vegetation collapsing back in along the edge. That could potentially run back down into the wetland itself. There is a valley area through there where some of it would be caught. They should not be getting any of the sediment in there. By pushing back the setback further back so that you are capturing closer to the top of the kettle wetland, than you are going to be preserving that leaf mat, mature vegetation that is present along the slope itself and preventing any type of potential erosion. From an observation having been out there looking at the kettle where its probably 40 to 50 feet worth of relief at a 2:1 angle of repose for sand and gravel, anything you do on top has the potential for collapsing back down into the kettle. One of the reasons they push further out is not only for recharge for precipitation, but also from the erosion and potential slope issues that you might have given how steep the slopes are. Mr. Desrosiers commented that GZA has spent pretty much everything up to the final report. Mr. Desrosiers would have to look at how much it would cost to do the additional three wells. Mr. Sorrentino commented that the applicant would have to be willing to pay for the additional work. Further discussion was held with regards to the 75-foot/125-foot buffer offset.

Mr. Sorrentino asked if GZA had additional information would he find that what is proposed is adequate, or that the additional protection is necessary. Mr. Desrosiers commented that based on the data at hand today, the bottom of the proposed pit, assuming 5-foot offset to the water table is probably a couple feet too low based upon the seasonal high ground water estimated. The 125-foot offset, they would like to keep the whole drainage area, but understand this is a sand and



gravel operation. The amount of precipitation going in would be reduced. The applicant is not going to be able to recharge or resupply that same amount of water that is being lost. The water would then go into the center, pooling there and recharging. The only thing not understood is the dense layer at the bottom in terms of how that interacts with the kettle wetland.

David Held commented there is no intention of digging into whatever the slowly or impermeable stratum is underneath. They are not going to change the hydrologic gradient of that. If anything precipitated falls into the excavated area or it falls in the undisturbed area, if it percolates through the soil and hits that impermeable layer, it is going to go to the same place that it goes to today, whether it goes through 40 feet of sand gravel or whether it goes through 5 feet of sand and gravel. As far as the recharging from water that infiltrates, they are not having any impact on the volume of water. Ms. Washburn commented that there is a potential for an impact of the timing of the recharging of the water. Mr. Held understands this as part of the vertical movement, as far as the horizontal movement he would say that is not realistic as there is 75-feet of undisturbed area there creating a boundary condition which controls horizontal movement of water which is not being touched. Ms. Washburn commented that the hydrologist has told the Commission that 75-feet is not adequate, and that 125-feet would be better. Discussion ensued.

Mr. Sorrentino commented on a former sand and gravel operation that was required to set fence to clearly mark where the operators were not to go. Mr. Sorrentino is concerned with the minimal setback at the bottom of the slope. Ms. Washburn commented there are other ways of doing visual barriers than fences. Mr. Sorrentino commented he is not recommending that be done here but stating there has been precedent for respecting the upland review area adjacent to the Quinebaug River. Discussion ensued.

Attorney Heller commented they cannot authorize more work if they do not what is authorized or what the cost is. If there is a proposal it should be submitted, and the applicant will consider it.

Mr. Sorrentino asked Mr. Desrosiers if he would be willing to prepare the estimate and forward it to Ms. Washburn. Ms. Washburn will in turn relay the estimate to the applicant.

Attorney Heller asked Mr. Desrosiers, suppose you do these additional monitoring wells and they come up dry as several of Rawson's wells did. Does that give you information that they can use to draw conclusions? Mr. Desrosiers commented the impermeable layer on site is not defined. They have defined boring refusal, but from a hydrologic conductivity to define it as an impermeable layer, additional depths of borings might be able to define where that impermeable layer is. There is information that they could obtain with additional subsurface investigations. This would have to be done wisely so as the boring that was put in gets the data out that they want. Ms. Washburn asked if they have a rig that can pull up the sediment. Mr. Desrosiers commented yes.

Mr. Sorrentino asked what is the current size slope in the kettle? Mr. Held commented between 1.5 and 2:1.

A five-minute recess was taken.

Attorney Heller's Rebuttal: comments there are three things to be addressed. Wildlife has nothing to do with the permitting jurisdiction of the IWWC. As the hearing progresses, Attorney Heller requests that the Commission keep the testimony to things that may affect the particular resources under the IWWC jurisdiction.

The second point, for clarity, there was some comment about the applicant not doing what he says he does or what the plans may require. Attorney Heller makes clear that the applicant before you is Strategic Commercial Realty, a wholly owned subsidiary of O & G Industries, it is not Allan Rawson.

The third point with regards to fugitive dust. One, because of the methodology of excavation where the entire operation is going to be conducted in the bowl, you are not going to have banks as exposed to wind as you would in other types of excavation. There will be less propensity for fugitive dust. Two, the plan specifically provides that the applicant is required to control fugitive dust through watering or other means required. This is an enforcement issue. Three, because they are proposing to conduct the activity in phases, the amount of open excavation area will be controlled at all times, so the site is not opened up all at once.

A motion was made by Demian Sorrentino to continue the public hearing to January 14<sup>th</sup>, 2020 at 6:00 p.m. to be held at the Clifford B. Green Meeting Center. George Sipila seconds this motion. No discussion held. All in favor. The motion passes unanimously.

David Held asked Ms. Washburn to request Mr. Desrosiers for copies of the exhibits that he reviewed within the meeting. The documents need to be certified as part of the record per Attorney Heller. Ms. Washburn will contact Mr. Desrosiers. Ms. Washburn called Mr. Desrosiers regarding this. He said that they were drafts, he will finalize them, stamp them and get them to the office this week. Mr. Sorrentino commented the original documents need to be part of the record. Attorney Heller commented that there was testimony taken on the documents presented and must be part of the record. Ms. Washburn will forward copies of the records to Attorney Heller and Mr. Held once received.

#### **Old Business:**

##### **1. DR19-008 FCR Realty LLC/Owner, Ben Landry/Forest Products Harvester, Day Street, Map 19, Lots 6 and 7; Timber Harvest.**

A motion was made by Demian Sorrentino to table application DR19-008 to the next regularly scheduled meeting January 14, 2020. Richard Oliverson seconds this motion. No discussion held. All in favor. The motion passes unanimously.

##### **2. 102219B Strategic Commercial Realty, Inc., d/b/a Rawson Materials, Maynard Road, Map 29, Lot 5, RA Zone; Excavation of approximately 1.2 million cubic yards of sand and gravel.**

The public hearing was continued to January 14, 2020.

A motion was made by Demian Sorrentino to table discussion to next month's meeting January 14, 2020. Richard Oliverson seconds this motion. No discussion held. All in favor. The motion passes unanimously.

**3. 102219A Strategic Commercial Realty, Inc., d/b/a/ Rawson Materials, 200 acres +/- on the south side of Rukstela Road (Map 21, Lot 7 and Map 30, Lot 16) in the RA Zone; Excavation of approximately 1.9 million cubic yards of sand and gravel. All excavated material will be transported off site to a processing facility in Canterbury.**

Attorney Harry Heller represents the applicant. An extensive discussion was held at last month's meeting with the respect to some classifications of some areas that are shown on the site plan as to whether or not they were watercourses. The Commission requested the 175-foot upland review area be shown on the revised plan which was done.

On the westerly excavation area, the entire area falls outside the 175-foot upland review area. On the easterly excavation area there is the 175-foot setback line, which is a conservative line. They have measured it from the edge of the delineated wetland because they do not have the exact location of the stream within that wetland. It is safe to say that it is not right at the edge of the wetland. Using the delineated wetland boundary, this is the 175-foot upland review area. There is a small portion of the easterly excavation area about 15-feet of the proposed excavation area which falls within the upland review area. Applying this they are about 160 feet from the limit of the delineated wetland. The small encroachment into the upland review area will not have an adverse impact on the adjacent wetland and watercourse.

Ms. Washburn asked what is the vegetation like inside the upland review area? Mr. Held discusses this with Ms. Washburn, comments it is brush and scrub.

Chairman Arends asked there are going to be two ponds? Attorney Heller commented yes, they have removed the request to backfill one of the ponds.

Ms. Washburn and Mr. Held discussed erosion control measures.

Chairman Arends polls the Commission as to whether this is a significant activity. Discussion ensued. Chairman Arends, Demian Sorrentino, Richard Oliverson and George Sipila do not feel there is a significant impact therefore no public hearing is required.

Ms. Washburn commented that a reports have been received from Joe Theroux, Soil Scientist dated 12/5/19. David Held, P.E. responded to Mr. Pauley's comments, letter dated 12/10/19 (see attached).

Mr. Sorrentino asked if they are crossing over into Laframboise's big operation across the street? Attorney Heller commented yes, the haul road comes out through the south to Wauregan Road.

Chairman Arends asked what is the average elevation of the current wetland/watercourse, is there a significant grade on this starting on the far north end? Attorney Heller commented it is 166 feet. Mr. Arends asked what is the elevation of the bottom of the pond? Attorney Heller

commented 124feet. Mr. Arends commented that the pond is 42 feet deeper than the northern highest point of the wetland. Attorney Heller commented yes. Discussion ensued.

Attorney Heller will e-mail an extension request to Ms. Washburn tomorrow morning 12/11/19.

A motion was made by Demian Sorrentino to table application 102219A Strategic Commercial Realty, with the applicant's 35-day extension consent, to the next regularly schedule meeting January 14, 2020. George Sipila seconds this motion. No discussion held. All in favor. The motion passes unanimously.

**New Business:**

A motion was made by Demian Sorrentino to move item #2 New Business DR19-009 Daniel Boothroyd, 167 Stetson Rd/Owner, William Carver II/Supervising Forest Products Harvester, Map 3, Lot 1A, cut all dead gypsy moth trees and mature hemlocks, to Item #1. Richard Oliverson seconds this motion. No discussion held. All in favor. The motion passes unanimously.

**2. DR19-009 Daniel Boothroyd, 167 Stetson Rd/Owner, William Carver II/Supervising Forest Products Harvester, Map 3, Lot 1A, cut all dead gypsy moth trees and mature hemlocks.**

William Carver, II represents the applicant. The location is 167 Stetson Road. There is a power line easement. There is a ford in place where they are going to enter with the trucks. The decking area has existing water control in place. They will be working just outside of this area. Chairman Arends asked if there are bridges there. Mr. Carver commented there is a stone ford with water running through it. They will be going through the off-set property of Bill Donner who has granted permission to go through his property. The power line has stone pads, the trucks will be entering there. The decking will be done from the opposite side. Mr. Arends asked of CL&P gave permission. Mr. Carver commented that it is land-owner's property, CL&P has an easement. Mr. Sorrentino asked if poles would be affected. Mr. Carver commented no. Ms. Washburn commented that the trees are not marked and there are no best management practices. Mr. Carver commented they are removing mostly the gypsy moth affected trees. Ms. Washburn asked if the wetland area is relatively flat. Mr. Carver reviews the map and discusses the project with the Commission members and Ms. Washburn.

A motion was made by Demian Sorrentino to approve application DR19-009 Daniel Boothroyd, 167 Stetson Rd/Owner, William Carver II/Supervising Forest Products Harvester, as a declaratory ruling for use as of right. Richard Oliverson seconds this motion. No discussion held. All in favor. The motion passes unanimously.

**1. (Application 121019A) Hearing for violation at 260 Woodward Road, Owner Richard and Sandra Duval. Cease and Desist order on 12/2/19 for site work consisting of excavating material from the channel of Sandy Brook, excavating material from an existing ford in Sandy Brook, and depositing excavated material on the bank of Sandy Brook, in the upland review area and/or wetlands.**

Ms. Washburn reviews the cease and desist order. The applicant has dug up an existing ford, and breached it. The applicant would like to make it into a higher dam using inappropriate materials. He started the work with no permits. Ms. Washburn feels the applicant should hire an engineer and have the wetlands flagged. The applicant wishes to raise the elevation of the ford and make a dam in the perennial stream. He also wishes to use 2-inch to 4-inch stone on top of it. Discussion ensued. Chairman Arends asked Ms. Washburn to craft a letter from the Commission telling him he needs to hire a wetlands soil scientist, have the wetlands flagged and hire an engineer for his plan.

A motion was made by Demian Sorrentino to table application 121019A Owner Richard and Sandra Duval, Cease and Desist order to next month's meeting January 14, 2020. George Sipila seconds this motion. No discussion held. All in favor. The motion passes unanimously.

**Communications:**

**1. Budget Update:** Reviewed.

**2. CT Council Letter dated November 14, 2019.** A meeting will be held at the Community Center on Tiffany Street, January 14, 2020, starting at 3 p.m. with public commentary 6:30 p.m. on the solar farm project.

**3. Wetlands Agent Monthly Report:** Tabled to next month's meeting 1/14/20.

Ms. Washburn updated the Commission on the letter sent with regards to the remediation plan of Allan Rawson, Rukstela Road, Map 29, Lot 1.

**Public Commentary:** None.

**Adjourn:** A motion was made by Demian Sorrentino to adjourn the meeting at 9:23 p.m. Richard Oliverson seconds this motion. No discussion held. All in favor. The motion passes unanimously.

  
Audrey Cross-Lussier, Recording Secretary

# FLAR

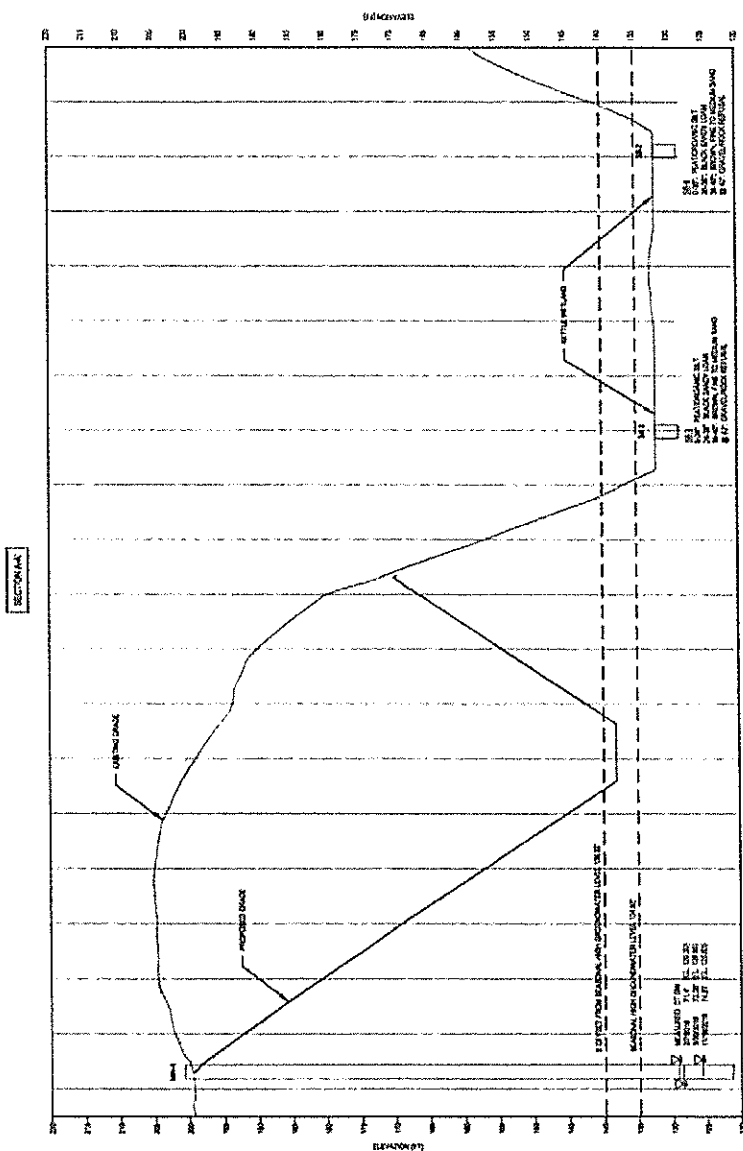


Figure 1 is a line graph titled "VERTICAL STRESS IN PILE". The vertical axis is labeled "VERTICAL STRESS (psi)" and ranges from 0 to 120 in increments of 20. The horizontal axis is labeled "DEPTH (ft)" and ranges from 0 to 12 in increments of 2. A single line starts at (0, 0) and goes linearly up to (12, 120). The text "12 FT PILE" is written near the top right of the graph.

DATE	11-10-78	BY	W. J. HARRIS
PROJECT	KITTLE HYDRAULIC CONNECTIVITY ASSESSMENT CHERRY CREEK P&L		
LOCATION	TOWN OF MADISON, WY		
SCALE	AS SHOWN ON MAP		
FIGURE	2		
DATE	11-10-78		

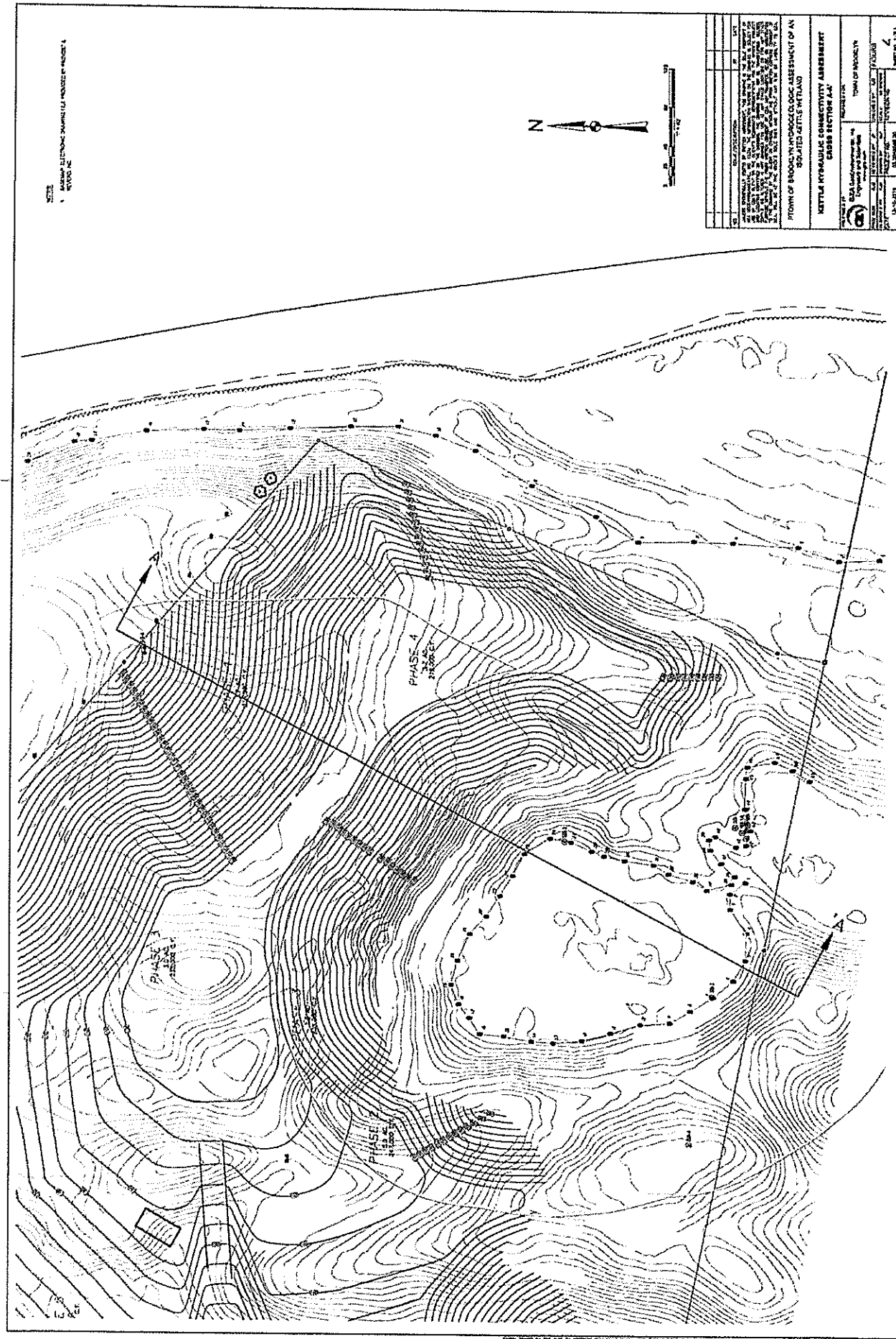


DRAFT

Drainage area (acres)			
	Kettle wetland		Western basin
Existing		7.53	3.94
75' offset		4.64	2.03
125' offset		5.61	2.46

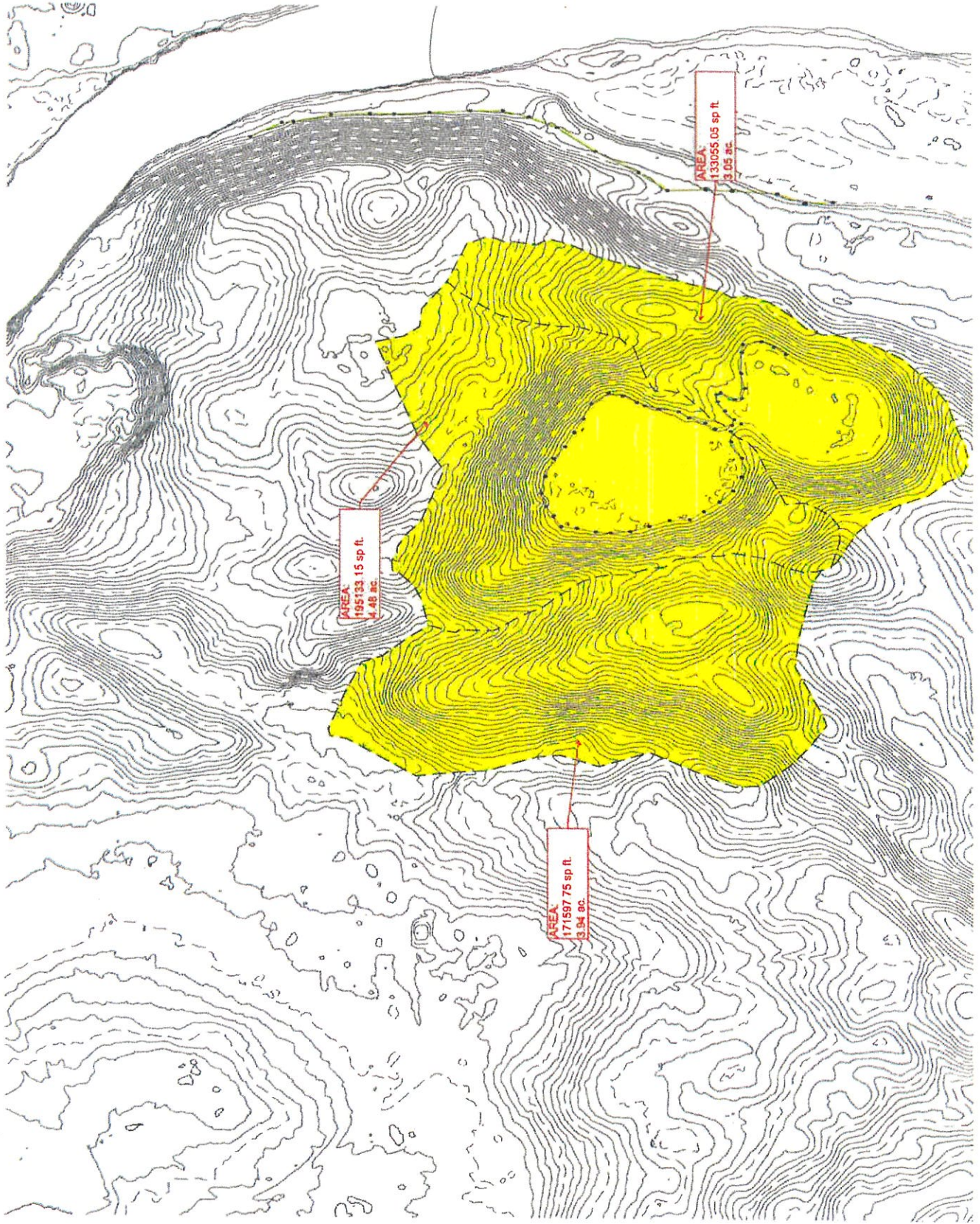
Annual Watershed Inflow (ac-ft)			
	Kettle wetland		Western basin
Existing		0.9	0.4
75' offset		0.5	0.2
125' offset		0.6	0.3

LEAD



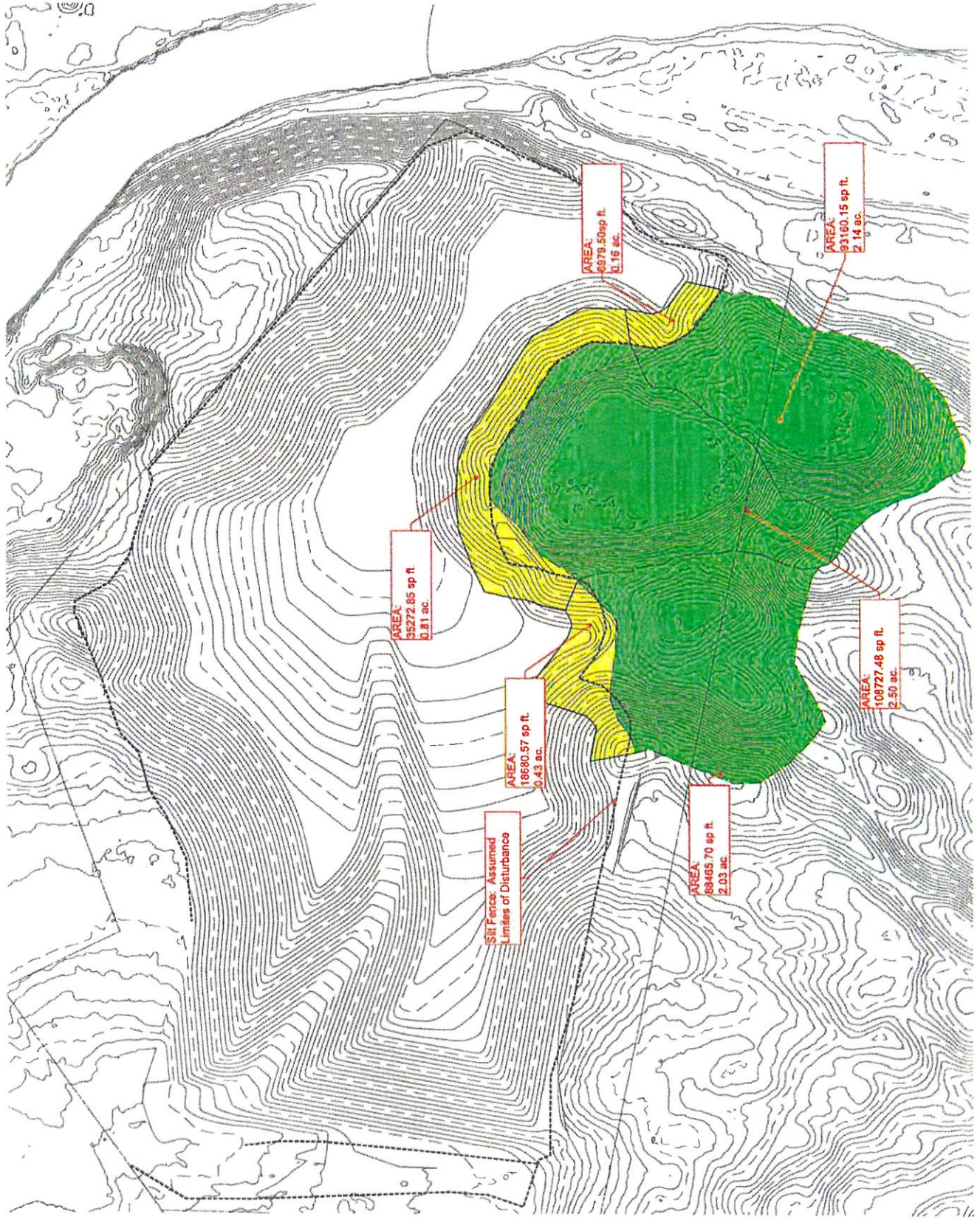


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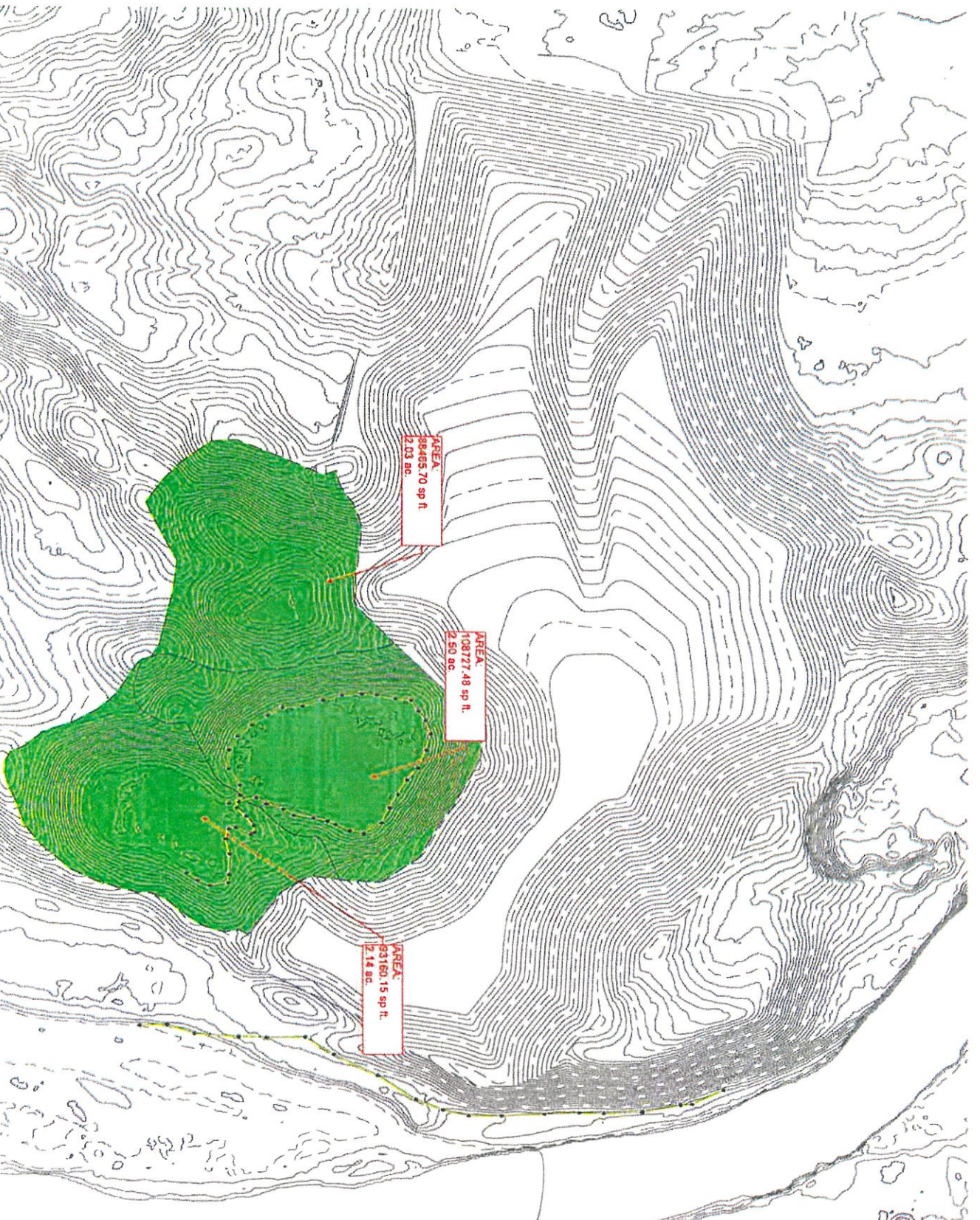




DRAFT







**From:** Richard Desrosiers <[Richard.Desrosiers@gza.com](mailto:Richard.Desrosiers@gza.com)>  
**Sent:** Tuesday, December 10, 2019 2:25 PM  
**To:** Margaret Washburn <[M.Washburn@Brooklynct.org](mailto:M.Washburn@Brooklynct.org)>  
**Cc:** John Paquin <[john.paquin@gza.com](mailto:john.paquin@gza.com)>  
**Subject:** Kettle Wetland

Margaret

While we will not have our report finalized; however, we wanted to give you an overview our progress and initial recommendations, as presented below:

- Our rough high groundwater estimate suggests that the high groundwater water level, at MW-4, could be at elevation 135.0 ft msl. This is based only on the very limited field data (1 monitoring well and borings terminating on refusal). This well is not located near the kettle wetland resulting in uncertainties at the wetland and for site-wide conditions related to hydraulic connectivity to the kettle wetland.
- Additional borings and monitoring wells are needed to properly assess the hydraulic connectivity at the wetland concerning high/low seasonal groundwater levels, hydraulic gradients, hydraulic conductivity and groundwater flow directions.
- Long term groundwater measurements are required to assess seasonal high groundwater conditions. We recommend deployment of transducers, in each well, to automatically record water levels. These instruments will provide a solid, defensible, database of actual site groundwater conditions.
- The bottom of the excavation may have to be raised, dependent on additional data.
- Our initial assessment suggests that the Town may wish to adhere to the 125-foot setback from the edge of the kettle wetland to maintain adequate precipitation recharge to the kettle wetland.
- Additional erosion controls should be used on any slopes to the kettle wetland.
  - These slopes are very steep, and disturbances could result in sediment impacts to the kettle wetland.

Regards,

Rich



**Richard J. Desrosiers, PG** (TN,NH), **CT-LEP**

Associate Principal, Hydrogeologist

GZA GeoEnvironmental

95 Glastonbury Boulevard, 3<sup>rd</sup> Floor

Glastonbury, CT 06033

email: [richard.desrosiers@gza.com](mailto:richard.desrosiers@gza.com)

# **NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS**

## **ENGINEERING PLAN REVIEW PERTAINING TO STRATEGIC MATERIALS REALTY, INC. PROPOSED GRAVEL EXCAVATION PLAN (ASSESSOR'S MAP 29, LOT 5) MAYNARD ROAD BROOKLYN, CT (December 9, 2019)**

The comments contained herein pertain to my review of plans to be submitted with an application to the Inland Wetlands and Water Courses Commission and the Brooklyn Planning and Zoning Commission for special exception for a gravel excavation permit identified as Lot No. 5 on Assessor's Map 29. The plan set reviewed consists of fifteen (15) sheets prepared for Strategic Materials Realty, Inc. by Provost & Rovero, Inc., dated October 2, 2019 with revision date of November 14, 2019. This review was made in accordance with Town of Brooklyn Zoning and Inland Wetlands and Watercourses Regulations.

### **SHEETS 4 THRU 7 OF 15**

1. The site plans show locations for boring locations B-1, B-2, B-3 and B-5. However, plan sheets 11 and 12 contain boring logs for additional locations that are not recorded on the site plans. This omission should be explained by the Applicant's engineer.
2. It is recommended that several benchmarks be shown on the plans to aid in monitoring gravel removal and site restoration operations.

### **SHEET 10 OF 15**

1. Under the heading "Permanent Vegetative Cover," Note 5 states "Apply the chosen grass seed mix." Should a reference to Note 5 under "Restoration Notes" be included here instead?
2. Under the heading "Restoration Notes," Note 3 states that silt or washing fines will be used as a 12" thick underlayment for the final application of topsoil. The plans do not show stockpile area(s) for this type of material or whether it will be derived from the onsite gravel operation or imported from any offsite source. This should be clarified.
3. Under the heading "Restoration Notes," the first unnumbered paragraph state, in part, "*When excavation of the site has been completed, all processing equipment and appurtenances, stockpiles, scales and other equipment shall be removed within months from the termination of operations.*" Does the Applicant intend on processing material on site with the utilization of scales and other equipment? If so, this is not indicated on any of the site plans.

## **SHEETS 11 & 12 OF 15**

1. Soil boring logs for six (6) locations (B-1, B-1A, B-2, B-3, B-4 & B-5) can be found on Sheets 11 & 12. However, in reviewing Site Plans 1 thru 4, the only locations that could be found were B-1, B-2, B-3 and B-5. Location B-1A is inconsequential as it encountered bedrock at a depth of 4.5'. Location B-4, which was not found on any plan, is an interesting one as groundwater was recorded at a depth of 71.4' (Elev. = 128.6' after 24 hours) and should be shown on the plan.
2. Boring log for location B-3 indicates that groundwater was recorded at a depth of 71.4' after 24 hours, yet, the log shows a total depth of boring that is only 44' deep. Furthermore, the log indicates that bedrock was encountered at a depth of 39'. This discrepancy needs to be explained.

## **ADDITIONAL COMMENTS/QUESTIONS**

1. Silt and washing fines are highly erodible according to the "2002 Connecticut Guidelines for Soil Erosion and Sediment Control." This being so, how will compacted silt or washing fines be stabilized to minimize erosion and sediment transport on the slopes of the pond prior to topsoil being applied?
2. I strongly recommended several additional soil boring locations be examined within the proposed deep excavation area since the locations that were tested were mostly outside of the proposed excavation. Of the six (6) locations with boring logs, two (2) were very shallow due to a bedrock formation, five (5) encountered some form of refusal (bedrock or other) and only one (1) recorded groundwater, but was not shown on the plan.
3. Under "Excavation Notes," a note should be included stipulating that no stumps, trimmings, brush, or other deleterious materials shall be buried on site and that any such material shall be transported to an acceptable offsite disposal facility.
4. There is no indication on the plan that the haul road entrance at Maynard Road will be gated. If there is to be a gate, it should be shown on the plan and a construction detail included on Sheet 10 of 15.
5. MUTCD compliant warning signs should be required in both directions on Maynard Road indicating trucks entering the roadway from the gravel operation.

By: \_\_\_\_\_  
Syl Pauley, Jr., P.E., NECCOG Regional Engineer

# **NORTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS**

## **ENGINEERING PLAN REVIEW PERTAINING TO STRATEGIC MATERIALS REALTY, INC. PROPOSED GRAVEL EXCAVATION PLAN (ASSESSOR'S MAP 21, LOT 7 AND MAP 30, LOT 16) RUKSTELLA ROAD BROOKLYN, CT (December 5, 2019)**

The comments contained herein pertain to my review of plans to be submitted with an application to the Inland Wetlands and Water Courses Commission and the Brooklyn Planning and Zoning Commission for special exception for a gravel excavation permit identified as Lot No. 7 on Assessor's Map 21 and Lot No. 16 on Assessor's Map 30. The plan set reviewed consists of fifteen (15) sheets prepared for Strategic Materials Realty, Inc. by Provost & Rovero, Inc., dated September 27, 2019 with revision date of November 5, 2019. This review was made in accordance with Town of Brooklyn Zoning and Inland Wetlands and Watercourses Regulations.

### **SHEET 2 OF 15**

1. Several soil borings (7) are depicted on the plan, however, no boring logs have been included with the plan set. Without this information the depth to the water table is unknown (See Zoning Regulation 13.3.1, Item 3 and 13.5.1.1).
2. There are five (5) soil borings located around the periphery of the east pond but only two (2) in the vicinity of the west pond. Installation of addition borings around the proposed perimeter of the west pond will give a better understanding on how surrounding wetlands may be impacted by the creation of this deep pond.
3. It is recommended that several benchmarks be located around the proposed excavation areas to aid in monitoring gravel removal and site restoration operations.

### **SHEETS 10 THRU 13 OF 15**

1. There is no information as to how the "anticipated water surface elevation" was determined, e.g. boring logs. An explanation on how the designer arrived at the water surface elevations ( $\pm$ ) indicated should be provided.

## **SHEET 14 OF 15**

1. Under the heading "Permanent Vegetative Cover," Note 5 states "Apply the chosen grass seed mix." Should a reference to Note 5 under "General Restoration Notes" be included here instead?
2. Under the heading "Excavation Notes," Note 10 states that "All material excavated below the water table shall be sufficiently dewatered within the active excavation area ...." An explanation on how this will be accomplished with the excavated material remaining within the pond area. There is no sedimentation basin(s) shown on any plan sheet that could be used for the dewatering process outside the pond if that becomes necessary.
3. Under the heading "General Restoration Notes," Note 3 states that silt or washing fines will be imported to the site to be used as a 12" thick underlayment for the final application of topsoil. The plans do not show stockpile area(s) for this type of material.

### **ADDITIONAL COMMENTS/QUESTIONS**

1. Has there been any detailed scientific evaluation by a hydrogeologist of what, if any, impact the proposed deep ponds may have on the surrounding wetlands and, particularly, Cold Spring Brook?
2. Since there is no outlet from the proposed ponds that could provide circulation throughout the water column, and apparently the only source of water to fill it is groundwater and surface water runoff, what is the potential of putrefaction occurring in stagnant pond water and possibly creating a mosquito breeding ground, especially from a biologist's point of view? If there is a potential for this, what measures should be incorporated in the design to avoid this? What are the consequences of not being able to control this?
3. Silt and washing fines are highly erodible according to the "2002 Connecticut Guidelines for Soil Erosion and Sediment Control." This being so, how will compacted silt or washing fines be stabilized to minimize erosion and sediment transport on the slopes of the pond prior to topsoil being applied?

By: \_\_\_\_\_  
Syl Pauley, Jr., P.E., NECCOG Regional Engineer

# Provost & Rovero, Inc.

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December 10, 2019

Margaret Washburn  
ZEO/WEO  
Town of Brooklyn  
P.O. Box 356  
69 South Main Street  
Brooklyn, CT 06234

**RE: Rawson Materials – River Junction Estates, LLC Property – Brooklyn, CT**  
**P&R Job No. 183028**

Dear Ms. Washburn:

We are in receipt of the December 5, 2019 review comments on the above noted application prepared by Syl Pauley, P.E. The comments have been addressed on plans revised December 10, 2019 and as noted below:

Sheet 2 of 15

1. Soil boring data has been submitted under separate cover.
2. We don't anticipate any impact to surrounding wetlands as a result of excavating either of the proposed ponds. As the ponds will only be excavated in highly permeable sand and gravel, and annual evaporative losses will be negligible, no impacts to the hydrology supporting the wetlands will be created.
3. Benchmarks will be provided at locations to be coordinated with the ZEO/WEO prior to the start of any excavation work.

Sheets 10 thru 13 of 15

1. The anticipated water surface elevation of the proposed ponds was derived from the available boring logs and observed water levels in the monitor wells around the easterly project area. We believe that minor variations in the actual elevation of the water in each pond from that shown is immaterial to the overall project. If desired, the applicant can excavate test pits on the excavation floor as the anticipated water elevation is approached.

Sheet 14 of 15

1. Note 5 under "Permanent Vegetative Cover" now includes a reference to Note 5 under "General Restoration Notes" as suggested.



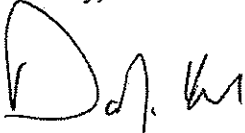
2. The typical process to excavate the ponds will be to stockpile raw material removed with an excavator immediately adjacent to the work area (within the boom reach of the excavator). This material will be allowed to sit for a sufficient period of time; typically 2-3 days, to allow water to seep out and drain back into the pond. We do not anticipate the need for any dewatering areas or sediment basins outside of the proposed limits of work. If such additional facilities are needed, Town approvals will be sought as required.
3. Note 3 under "General Restoration Notes" has been revised to indicate that all imported silt or washing fines will be stockpiled within the excavation area to ensure stormwater containment. We do not anticipate the need for silt stockpiles outside of the limits of work as this material is typically dumped from a truck in the area it will be used to minimize handling of the material.

#### Additional Comments/Questions

1. As stated above, we do not anticipate any impact on the wetlands as a result of the pond excavations. A detailed evaluation of this by a hydrogeologist has not been undertaken. We note that a nearly identical project was approved by both the Inland Wetlands Commission and Planning and Zoning Commission in the same location and work was allowed to continue on that project for approximately five years prior to work stopping.
2. Based on our experience and that of the applicant in successfully completing numerous similar projects including groundwater fed ponds ranging in depth from 20 feet to 35 feet, we have no concerns related to putrefaction resulting from either stagnation or thermal stratification. Similarly, we have no concerns related to mosquito breeding. A permanent deep water habitat will allow for rapid establishment of natural mosquito control through predation by other species. As noted above, both ponds will only be excavated in areas of marketable sand and gravel. Any hydraulic gradient below the deposit which results in the flow of groundwater will likewise allow flow of water through the ponds.
3. During restoration, silt is typically spread followed closely by topsoil. The limited amount of time that such silt is exposed will minimize erosion. Any erosion that did occur would only be deposited within the excavation. We also note that the phased restoration of excavation side slopes will minimize any erosion into the pond as it's created since the side slopes will be nearly completely stabilized before excavation of either pond is started.

If you have any questions or need additional information, please do not hesitate to contact us at your convenience.

Sincerely,



David J. Held, P.E., L.S.  
Provost & Rovero, Inc.

CC: Harry Heller (via email)  
Madilyn Smith (via email)  
Jeff Rawson (via email)  
Syl Pauley, P.E. (via email)