



October 19, 2009

Constance C. Holland, ACIP
The Delaware Office of State Planning Coordination
122 William Penn Street, Third Floor
Dover, DE 19901

RE: Response to Preliminary Land Use Services (PLUS) Meeting – Twin Cedars

Dear Connie:

We have received and reviewed your PLUS comment letter dated June 16, 2008. The overall site plan has been modified to address some of the concerns, as specified below. Please find enclosed a revised site layout plan for your reference. Our responses to your comments are in [blue](#).

Office of State Planning Coordination - Contact: Bryan Hall 739-3090

This project represents a major land development that will result in 224 residential units plus commercial space in an Investment Level 4 area according to the 2004 *Strategies for State Policies and Spending*. This proposal is located in Investment Level 4 according to the *Strategies for State Policies and Spending*, and is within the Low Density area according to the Sussex County certified comprehensive plan. Investment Level 4 indicates where State investments will support agricultural preservation, natural resource protection, and the continuation of the rural nature of these areas. New development activities and suburban development are not supported in Investment Level 4 areas. These areas are comprised of prime agricultural lands and environmentally sensitive wetlands and wildlife habitats, which should be, and in many cases have been preserved.

From a fiscal responsibility perspective, development of this site is likewise inappropriate. The cost of providing services to development in rural areas is an inefficient and wasteful use of the State's fiscal resources. The project as proposed is likely to bring more than 540 new residents to an area where the State has no plans to invest in infrastructure upgrades or

additional services. These residents will need access to such services and infrastructure as schools, police, and transportation. To provide some examples, the State government funds 100% of road maintenance and drainage improvements for the transportation system, 100% of school transportation and paratransit services, up to 80% of school construction costs, and about 90% of the cost of police protection in the unincorporated portion of Sussex County where this development is proposed. Over the longer term, the unseen negative ramifications of this development will become even more evident as the community matures and the cost of maintaining infrastructure and providing services increases.

Because the development is inconsistent with the *Strategies for State Policies and Spending*, the State is opposed to this proposed subdivision.

- **The applicant understands the State’s position on development in Level 4 investment areas, and appreciates the State’s concerns regarding preservation of natural resources and funding for future infrastructure and associated service institutions. However, the State’s comments do not reflect the current and future growth plans of the County in the subject area and are somewhat contradictory. First, and foremost, this area is zoned GR and C-1 (discussed in detail below). Clearly, GR and C-1 zoning does not reflect the County position of no or low growth. Secondly, the County has created the Johnsons Corner Sanitary Sewer District encompassing the area of the subject site along with other future development areas along Route 20. The creation of the Johnsons Corner Sanitary Sewer District, enacted with the support of the Delaware Department of Natural Resources and Environmental Control (DNREC) and by a referendum of the residents within the area, is another broader indication that the site area is not anticipated to be either a no or low growth area. The applicant intends to develop this property meeting all of the requirements of the current codes and regulations, and with all applicable permits and approvals.**
- **The current zoning of the property (C-1 and GR) allows for growth in this area. GR, General Residential zoning, per Chapter 115, Article VI §115-36 states that “the purpose of this district is to provide for medium density residential use...” C-1, General Commercial District, per Chapter 115, Article XI §115-76 states that “the purpose of this district is to provide for retail shopping, personal services and a wide variety of commercial and miscellaneous service activities generally serving a community-wide area. Such uses are generally located along major arterial roadways where a general mixture of commercial and service activity now exists...” The uses shown on the Preliminary Plan are consistent with the purposes outlined in the zoning code of Sussex County.**

Department of Transportation - Contact: Bill Brockenbrough 760-2109

Charles Black Companies, LLC seeks to develop 24 single-family detached houses, 80 townhouses, 120 apartments and 35,000 square feet of commercial space on a 64.34-acre

parcel (Tax Parcel 5-33-11.00-42.00). The subject land fronts on the west side of Delaware Route 20 between Deer Run Road (Sussex Road 388) and Bayard Road (Sussex Road 384). The land is zoned split-zoned C-1 and GR. An RPC overlay zoning would be needed to permit the proposed development.

Because this development is proposed for a Level 4 Area, it is inconsistent with the *Strategies for State Policies and Spending*. As part of our commitment to support the *Strategies*, DelDOT refrains from participating in the cost of any road improvements needed to support this development and is opposed to any road improvements that will substantially increase the transportation system capacity in this area. DelDOT will only support taking the steps necessary to preserve the existing transportation infrastructure and make whatever safety and drainage related improvements are deemed appropriate and necessary. The intent is to preserve the open space, agricultural lands, natural habitats and forestlands that are typically found in Level 4 Areas while avoiding the creation of isolated development areas that cannot be served effectively or efficiently by public transportation, emergency responders, and other public services.

DelDOT strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in approved Comprehensive Plans. We encourage the use of transfer of development rights where this growth management tool is available.

If this development proposal is approved, notwithstanding inconsistencies with the relevant plans and policies, DelDOT will provide further technical review and comments.

- **The applicant repeats its position regarding the anticipated growth potential of this project site as recited above in its comments responding to the Office of State Planning Coordination, yet understands DelDOT's position on development in Level 4 areas and the Department's unwillingness to participate in cost sharing or participation of infrastructure upgrades in a Level 4 area.**
- **The applicant will work with DelDOT to improve the existing infrastructure only to the extents necessary to handle the additional traffic created by the development of this site. In addition, no frontage for individual lots or commercial units on Sussex County Road 382 is proposed.**
- **The reconfiguration of the C-1 zone to provide access only from the proposed boulevard entrance will reduce the number of future potential entrances onto Zion Church Road.**
- **This development is not "isolated", as there is a recorded subdivision on the wooded parcel immediately to the west of the subject property. To the east there are at least two residential subdivisions of similar size. In addition, this development is a mere five miles from Fenwick Island and six miles from Bethany Beach. From a review of the surrounding areas, the proposed development is consistent with character of the area.**

The Department of Natural Resources and Environmental Control - Contact: Kevin Coyle 739-9071

Investment Level 4 Policy Statement

This project is proposed for an Investment Level 4 area as defined by the *Strategies for State Policies and Spending* and is also located outside of a designated growth area in the relevant municipal and County certified comprehensive plans. According to the *Strategies*, this project is inappropriate in this location. In Investment Level 4 areas, the State's investments and policies, from DNREC's perspective, should retain the rural landscape and preserve open spaces and farmlands. Open space investments should emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies. Open space investments should also provide for recreational activities, while helping to define growth areas. Additional State investments in water and wastewater systems should be limited to existing or imminent public health, safety or environmental risks only, with little provision for additional capacity to accommodate further development.

- **While this development lies within a Level 4 area, the proposed use and density is in accordance with the zoning prescribed by the County. The proposed use will meet the intentions outlined above by the following means:**
 - **Both active and passive open space is being created by this project.**
 - **The existing Tax Ditch drainage system in this area is non-contiguous and inefficient. The proposed reconfiguration will improve drainage, provide in-line storage, create a riparian buffer, and create valuable habitat far in excess of the functional ability of the existing piecemeal tax ditch system currently in place. It will emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies.**
 - **An existing community septic system serving three 2 and 3 story apartment buildings will be taken out of service. This non-point source of pollution to the watershed will be replaced by sanitary sewerage from a planned conveyance system currently under design. As mentioned previously in our comments, this area is included in the Johnsons Corner Sanitary District.**

With continued development in Investment Level 4 areas, the State will have a difficult, if not impossible, time attaining water quality (e.g., TMDLs) and air quality (e.g., non-attainment areas for ozone and fine particulates) goals. Present and future investments in green infrastructure, as defined in Governor Minner's Executive Order No. 61, will be threatened. DNREC strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in certified Comprehensive Plans. We

encourage the use of transfer of development rights where this growth management tool is available.

- **A TMDL analysis has been performed for the proposed development. The model provides that the pollutant reductions necessary for this watershed will be attained through use of BMP's.**
- **This development, while not immediately adjacent to a Town or municipality, is surrounded by Selbyville, Fenwick Island, Bethany Beach, Ocean View, and Millville.**

This particular development certainly compromises the integrity of the State Strategies and the preservation goals inherent in many of DNREC's programs. Of particular concern are the increase in impervious cover, the loss/fragmentation of forest (22 out of 38 acres or 58%), potential impacts to wetlands, and tax ditch rights-of-way issues. While mitigating measures such as conservation design, central wastewater systems instead of individual on-site septic systems, and other best management practices may help mitigate impacts from this project, not doing the project at all is the best avenue for avoiding negative impacts. As such, this project will receive no financial, technical or other support of any kind from DNREC. Any required permits or other authorizations for this project shall be considered in light of the project's conflict with our State growth strategies.

- **The applicant acknowledges DNREC's position on this development but notes that the policy of the State Strategies defining the subject area as a Level 4 is at odds with the property's zoning designation and the creation of the Johnsons Corner Sewer District encompassing this property and the surrounding area.**

Soils

Based on the Sussex County soil survey mapping update, Klej, Hurlock, and Mullica--Berryland complex were mapped on subject parcel. Klej is a somewhat poorly-drained transitional soil that is likely to contain both wetland (hydric) and upland soil components. Hurlock and Mullica-Berryland complex are poorly to very poorly-drained wetland associated (hydric) soils considered unsuitable for development. Approximately 95% of the soils mapped on this parcel are Hurlock and Mullica soils.

- **The applicant acknowledges the soils indicated in the updated soil survey mapping, but submits that the prior mapping showed the site containing a majority of Pocomoke Sandy Loam. The applicant will have extensive geotechnical exploration performed and the design will be based on the findings and recommendations contained in the report.**

Note: The Pocomoke soil mapping unit from the original soil survey was recorrelated and is analogous to the Mullica-Berryland complex soil mapping unit in the soil survey update. Both of these soil mapping units have similar limitations (i.e., very poorly drained hydric soils with severe limitations) making them equally unsuitable for development.

Wetlands

According to the Statewide Wetland Mapping Project Mapping (SWMP) maps, palustrine forested and palustrine scrub-shrub wetlands were mapped over most of the southern one-half of the parcel. Palustrine forested wetlands were also mapped in the northeastern portion of the parcel. Additionally, much of this parcel is bisected by an extensive network of ditches and their associated wetlands.

The applicant is responsible for determining whether any State-regulated wetlands (regulated pursuant to 7 Del.C. Chapter 66 and the Wetlands Regulations) are present on the property. This determination can only be made by contacting the Division of Water Resources' Wetlands and Subaqueous Lands Section at 302/739-9943 and consulting the State's official wetland regulatory maps, which depict the extent of State jurisdiction. The area regulated by State law may be very different from the area under federal authority. No activity may take place in State-regulated wetlands without a permit from DNREC's Wetlands Section.

In addition, most perennial streams and ditches and many intermittent streams and ditches are regulated pursuant to the Subaqueous Lands Act (7 Del.C. Chapter 72) and the Regulations Governing the Use of Subaqueous Lands. Ponds which are connected to other waters are also regulated, while isolated ponds are not. Any work in regulated streams, ditches or ponds requires a permit from the Wetlands and Subaqueous Lands Section. An on-site jurisdictional determination is recommended in order to determine whether any regulated watercourses exist on the property. Please contact the Wetlands and Subaqueous Lands Section at 302/739-9943 to schedule an on-site visit. Such appointments can usually be scheduled within 2 to 3 weeks.

The applicant should also be reminded that they must avoid construction/filling activities in those areas containing wetlands or wetland associated hydric soils as they are subject to regulatory jurisdiction under Federal 404 provisions of the Clean Water Act. A site-specific field wetlands delineation using the methodology described in the 1987 United States Army Corps of Engineers (USACE, or "the Corps") manual is the only acceptable basis for making a jurisdictional wetland determination for nontidal wetlands in Delaware. The applicant is forewarned that the Corps views the use of the National Wetlands Inventory (NWI) mapping or the Statewide Wetlands Mapping Project (SWMP) mapping as an unacceptable substitute for a field-based jurisdictional wetland delineation (i.e., 1987 USACE manual). To ensure compliance with said Corps regulatory requirements, it is strongly recommended that a field

wetlands delineation using the above-referenced methodology be performed on this parcel before commencing any construction activities. It is further recommended that the Corps be given the opportunity to officially approve the completed delineation. In circumstances where the applicant or applicant's consultant delineates what they believe are nonjurisdictional isolated (SWANCC) wetlands (as asserted by the applicant in the PLUS application form), the Corps must be contacted to evaluate and assess the jurisdictional validity of such a delineation. The final jurisdictional authority for making isolated wetlands determinations rests with the Corps; they can be reached by phone at 736-9763.

- **A wetlands investigation report was performed by Stephens Environmental Consulting, Inc. in July, 2006 and was field verified by JCM-ECI in February, 2008. Many of the areas indicated as palustrine wetlands on the SWMP maps were delineated as non-jurisdictional isolated wetlands. As the wetlands found on the site were field delineated as non-jurisdictional and isolated, the applicant believes that these areas may be developed. A jurisdictional determination is being sought to verify this belief. A request for jurisdictional determination by the ACOE has been filed on behalf of the applicant by JCM-ECI on February 13, 2008. A State of Delaware Subaqueous Lands Jurisdictional Determination will also be conducted.**

Based on a review of existing buffer research by Castelle et al. (Castelle, A.J., A.W. Johnson and C. Conolly. 1994. *Wetland and Stream Buffer Requirements - A Review*. 1. Environ. Qual. 23: 878-882), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from the landward edge of all wetlands and water bodies (including all ditches).

- **As the wetlands found on the site were delineated as non-jurisdictional and isolated, the applicant believes that these areas may be developed and are not subject to the recommended 100 foot vegetated buffer. A jurisdictional determination is being sought to verify this belief. Any jurisdictional non-tidal wetlands will not be disturbed and will not be included within subdivision lot lines.**

As mentioned previously, a significant portion of this parcel contains poorly to very poorly-drained hydric Hurlock and Mullica-Berryland complex soils (an estimated 95% of the parcel). Hydric soils typically have a seasonal high water table at or near the soil surface (within one-foot of soil surface or less). Building in such soils is likely to leave prospective residents of this and adjoining properties susceptible to future flooding problems from groundwater-driven surface water ponding, especially during extended periods of high-intensity rainfall events such as tropical storms/hurricanes or "nor'easters." This is in addition to increased flooding probabilities from surface water runoff emanating from future created

forms of structural imperviousness (rooftops, roads, sidewalks, and stormwater management structures).

Based on the Chapter 99, Section 16A of the Sussex County Code (paraphrased), lands compromised by improper drainage or flooding potential pose significant threats to the safety and general welfare of future residents and, therefore, shall not be developed. Soils mapped as Hurlock and Mullica-Berryland fit the criterion for improper drainage or high flooding potential, and should be avoided. The Watershed Assessment Section believes permitting development on such soils would be inconsistent with the above-mentioned regulatory guidelines in the Sussex County Code.

Impervious Cover

Based on information provided by the applicant in the PLUS application form, the applicant's projected estimate of post-construction surface imperviousness should not exceed 40 percent. However, given the scope and density of this project, this estimate appears to significantly understate the actual amount of created post-construction surface imperviousness. The applicant should realize that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks, open-water stormwater management structures, and roads) should be included in the calculation for surface imperviousness; this will ensure a realistic assessment of this project's likely post-construction environmental impacts. The applicant's estimate for surface imperviousness should be recalculated to include all of the above-mentioned forms of constructed surface imperviousness. Failure to do so will significantly understate this project's true environmental impacts.

Studies have shown a strong relationship between increases in impervious cover to decreases in a watershed's overall water quality. It is strongly recommended that the applicant implement best management practices (BMPs) that reduce or mitigate some of its most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings are some examples of practical BMPs that could easily be implemented to help reduce surface imperviousness.

The impervious area calculations have been verified. The table below accurately represents the proposed impervious areas contained on the current site plan.

Proposed Surface	Area (acres+/-)
Townhouse Building (w/ driveways)	4.01
Single Family Houses (w/ driveways)	2.07
Apartment & Commercial Buildings	2.26

SWM Ponds	2.70
Amenities (Clubhouse, Pool & Basketball Ct.)	0.26
Sidewalks	1.31
Parking areas, roadway & curbing	10.22
TOTAL:	22.83

The 22.83+/- acres of proposed impervious accounts for 35.5% of the entire parcel. Therefore, our original conservative estimate of 40% is not a significant understatement of the actual amount of post-construction surface imperviousness.

ERES Waters

This project is located adjacent to receiving waters of the Little Assawoman Bay designated as having waters of Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/ or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 5.6 of Delaware's "Surface Water Quality Standards" (as amended July 11, 2004), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of pollutants through implementation of Best Management Practices (BMPs). Best Management Practices as defined in subsection 5.6.3.5 of this section, expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree achievable and, where practicable, implementation of a standard requiring no discharge of pollutants.

- **This project is proposing to relocate and enhance an existing tax ditch which contributes to the receiving waters of Little Assawoman Bay in an effort to uphold the standards of being designated as ERES. The ditch will be widened and landscaped with natural vegetation in an effort to provide both stormwater management and aesthetic appeal. Run-off due to additional impervious areas on the developed portion of the site will be managed and treated in stormwater management ponds before discharging into the enhanced tax ditch.**

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Little Assawoman watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are required by federal law, states are charged with developing and implementing standards to

support these desired use goals. The TMDL nutrient reduction requirements for the Little Assawoman watershed require a 40 percent reduction in nitrogen and phosphorus. Additionally, the TMDL reduction requirement for bacteria is 40 percent.

- **A TMDL analysis has been conducted using the spreadsheet developed by DNREC. The results indicate that the post-development condition will meet the reduction requirements.**

Compliance with TMDLs through the Pollution Control Strategy (PCS)

As stated above, TMDLs for nitrogen and phosphorus have been promulgated through regulation for the Little Assawoman watershed. The TMDL calls for a 40% reduction in nitrogen and phosphorus from baseline conditions. Additionally, a 40 percent reduction in bacteria will also be required from baseline conditions. Additional nutrient reductions may be possible through the implementation of Best Management Practices (BMPs) such as wider vegetated buffers along watercourses or ditches, increasing passive, wooded open space, use of pervious paving materials to reduce surface imperviousness, and the use of green-technology stormwater management treatment trains. The Department has developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

- **The TMDL assessment tool has been utilized using an appropriate amount of impervious area and has demonstrated that this submission will provide the required overall reduction in the amount of TMDLs in post-development conditions.**

Water Supply

The project information sheets state water will be provided to the project by Artesian Water Company via a public water system. Our records indicate that the project is located within the public water service area granted to Artesian Water Company under Certificate of Public Convenience and Necessity 03-CPCN-26.

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well

permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Potential Contamination Sources exist in the area, and any well permit applications will undergo a detailed review that may increase turnaround time and may require site specific conditions/recommendations. In this case there is a Large On-Site Septic System associated with the existing Twin Cedars Apartments located within 1000 feet of the proposed project.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

- **The applicant and site engineer have noted the criteria listed for construction of on-site wells and the potential hazards that exist due to nearby potential contamination sources. Furthermore, it shall be noted that the large on-site septic system will be removed as a part of this project.**

Water Resource Protection Areas

The Water Supply Section, Ground Water Protection Branch has determined that the northeast portion of the proposed development falls within a wellhead protection area for Twin Cedars (see following map and attached map). Wellhead protection areas are surface and subsurface areas surrounding a public water supply well where land use activities or impervious cover may adversely affect the quantity and quality of ground water moving toward the well.

The Water Supply Section recommends that the portion of the new development within the wellhead protection area not exceed 20% impervious cover (DNREC, 2005). Some allowance for augmenting ground-water recharge should be implemented if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within this area. However, the development should not exceed 50% regardless. The purpose of an impervious cover threshold is to minimize loss of recharge (and associated increases in storm water) and protect the quality and quantity of ground water and surface water supplies.

The proposed development would change the impervious over from 1.89% to approximately 40%. The applicant provided these percentages on the PLUS Application form. Based on the site plan provided by the applicant it appears that impervious cover within the wellhead protection area is significantly higher. In addition, the well appears to be located under Commercial Building #2.

According to the DHSS Office of Drinking Water, the Twin Cedars well is inactive. DNREC Well Permitting Branch does not have an Abandonment Report for the well. Given that information, it is assumed that the well is still in place and is not providing water.

Ground Water Protection Branch recommends:

Relocate the commercial space and reduce the impervious cover within 150 feet of the well to 0%

Or

Have a Delaware licensed well driller abandon the well and submit the proper documentation to the DNREC Well Permitting Branch

- **The applicant intends to abandon the well per the State regulations and submit the proposed documentation, should said documentation not already exist.**

Sediment and Erosion Control/Stormwater Management

- A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. Contact the reviewing agency to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan as soon as practicable. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson at the Sussex Conservation District at (302) 856-2105 for details regarding submittal requirements and fees.
- Because of the parcel's location in an impaired watershed and the amount of impervious surface, green technology BMPs and low impact development practices should be considered a priority to reduce stormwater flow and to meet water quality goals. The Sediment and Stormwater Management Program ensures sediment and erosion control plans and stormwater plans comply with local land use ordinances and policies, including the siting of stormwater management facilities. However, we do not support placement in resource protection areas or the removal of trees for the sole purpose of placement of a stormwater management facility/practice.
- **The site engineer will provide a detailed sediment and stormwater management plan and is prepared to work with the Sussex Conservation District for review and approval.**

Drainage

- This project is located within the Bear Hole Tax Ditch and the Batson Branch Tax Ditch. The Drainage Program conducted a review of the Tax Ditch rights-of-way for this project and the results submitted to Mr. Steve Bissett of McCrone, Inc. A copy of the review findings is included at the end of these comments. The placement of permanent obstructions within tax ditch rights-of-way is prohibited. Any change to the location of the tax ditch, or the existing tax ditch rights-of-way, will require a change to the Batson Branch Tax Ditch court order. Please contact Brooks Cahall of the Drainage Program to resolve the issues with the tax ditch. It is suggested to include Brooks Cahall in the pre-application meeting with the Sussex Conservation District to discuss drainage, stormwater management, tax ditch maintenance, and the release of stormwater into the tax ditch.
- The Drainage Program requests that the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of onsite storm water. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. Notify downstream landowners of the change in volume of water released on them.
- Have all drainage easements recorded on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future reconstruction. Future property owners may not be aware of a drainage easement on their property if the easement is only on the record plan. However, by recording the drainage easement on the deed, the second owner, and any subsequent owner of the property, will be fully aware of the drainage easement on their property.
- **The drainage easement information will be clearly shown on the Record Plan and recorded.**

Results of Tax Ditch Right-of-Way Review

RE: **Parcel # 533-11.00-42.00 Inquiry #902**

- This parcel is located in the Bear Hole Tax Ditch watershed; however, it is not affected by a Tax Ditch right-of-way.
- This parcel is located in the Batson Branch Tax Ditch watershed and is affected by Prong I and Sub 2 of Prong I with the following rights-of-way.

BATSON BRANCH TAX DITCH	LEFT	RIGHT
Prong I (PI)	80' 250'	80'
Sub 2 of Prong I (P1S2) <i>Note: *16.5' right-of way around the upper end, measured from top of ditch bank</i>	80' 250'	250'

- These rights-of-way are measured from the centerline of the ditch looking upstream.
- Please see attached map; the light blue lines indicate the approximate tax ditch rights-of-way (light blue lines directly adjacent to blue ditch lines represent approximate top of ditch bank).
- **McCrone, Inc. has met with DNREC regarding the proposed realignment of the tax ditch and creation of the habitat corridor. The applicant and engineer will continue to consult with DNREC and other agencies regarding the Tax Ditches and their associated rights-of-way.**

Floodplains

This parcel is not located in a FEMA Special Flood Hazard Area. However, from a floodplain perspective, we recommend taking a watershed-wide approach to the analysis of this project since wetlands will be filled, forest will be removed and the tax ditch will be relocated. We commend the applicant's decision to create a naturalized water course with in-line compensatory storage, but encourage coordination with surrounding development.

- **The comment is noted.**

Rare Species

Our program staff have never surveyed this site for the presence of rare animal species; therefore, it is unknown if there are State-rare or federally listed animals that would be impacted by this project.

The DNREC program botanist, Bill McAvoy, surveyed the vegetation on this parcel on October 1, 2006 and reported the following: "The natural areas on the property are found in the southern half of the site and consist of about 38 acres of forest. The majority of the forest appears to be poorly drained and could be classified as forested wetland, with the remainder being moist to well drained uplands. The poorly drained areas of forest are mid-to-late successional (about 50 to 75 years of age), and the moist to well drained areas are early-to-mid successional (about 25 to 50 years of age). The forested wetland areas are likely older in

age due to the fact that it is more difficult to clear trees in poorly drained soils than in moist or well drained soils. The forest canopy is composed of a variety of deciduous [red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*), willow oak (*Quercus phellos*), scarlet oak (*Q. coccinea*), white oak (*Q. alba*), black gum (*Nyssa sylvatica*)] and evergreen [loblolly pine (*Pinus taeda*)] tree species. In the lower strata, the following shrubs and small trees were encountered: sweet pepper bush (*Clethra alnifolia*), high bush blueberry (*Vaccinium corymbosum*), arrow-wood (*Viburnum dentatum*), and sweet bay magnolia (*Magnolia virginiana*). The dominant herbaceous plants of the forest floor included: netted chain fern (*Woodwardia areolata*), Virginia chain fern (*W. virginica*), cinnamon fern (*Osmunda cinnamomea*), and Indian cucumber root (*Medeola virginiana*). There is good structural diversity within this forest, with areas of dense to sparse shrub cover, and scattered canopy gaps. Coarse woody debris is evident throughout the forest with many standing dead trunks observed. A few drainage ditches in the northeast portion of the forest appear to be quite old in age and may only have a limited effect on the overall hydrology of the site. Found infrequently scattered through the forested wetland area, were small pockets containing large individuals (30 to 40 inches in diameter) of willow oak and loblolly pine. These trees are likely to be at least 100 years of age or greater. The forested southern half of the property is somewhat isolated ecologically, with only limited connectivity to early successional woodlands in the southwest and southeast corners. Overall, I would rank the quality of this forest as fair, although the forested wetland portions of the site are of good quality. No state rare plant species of concern, or federally listed plants were discovered on this day and the potential for future discoveries is low. However, based on the ecological characteristics of the site, it is likely a valuable area for wildlife species, particularly songbirds that may be utilizing the area for breeding and foraging, and also for species of reptiles and amphibians, especially salamanders."

Forested Habitat Loss

Cumulative forest and wildlife habitat loss throughout the State is of utmost concern to the Division of Fish and Wildlife which is responsible for conserving and managing the State's wildlife (see www.fw.delaware.gov and the Delaware Code, Title 7). Because of an overall lack of habitat protection, we have to rely on applicants and/or the entity that approves the project (i.e., counties and municipalities) to consider implementing measures that will aid in habitat loss reduction.

Recommendations:

1. DNREC recommends the applicant consider preservation of the forested wetlands at this site, especially the area containing mature trees. This would entail downsizing the proposed site plan or redesigning the site so that impacts to valuable wildlife habitat can be minimized. There are incentive-based programs for wildlife management

available to private landowners through our agency. Please contact Shelley Tovell at (302) 735-3600 if the landowner/developer is interested in additional information.

- **The revised plan has been designed to preserve 9.63 of 38.1 acres of forest. The remaining forest will be part of one contiguous forested area. Notes will be added to the plan limiting clearing between April 1 and July 31 to minimize impacts to breeding wildlife. If a reduction in the number of stormwater management ponds is recommended by the Sussex Conservation District, then the applicant will consider a reduction.**

Air Quality

Housing developments may unnecessarily emit, or cause to be emitted, significant amounts of air contaminants into Delaware's air, which will negatively impact public health, safety and welfare. These negative impacts are attributable to:

- Emissions that form ozone and fine particulate matter; two pollutants relative to which Delaware currently violates federal health-based air quality standards,
- The emission of greenhouse gases which are associated with climate change, and
- The emission of air toxics.

Air emissions generated from housing developments include emissions from:

- Area sources like painting, lawn and garden equipment and the use of consumer products like roof coatings and roof primers.
- The generation of electricity needed to support the homes in your development, and
- Car and truck activity associated with the homes in your new development.

These three air emissions components (i.e., area, electric power generation, and mobile sources) are quantified below, based on a per household/residential unit emission factor that was developed using 2002 Delaware data. These emissions in the table represent the actual impact the Twin Cedars development may have.

Emissions Attributable to Twin Cedars Subdivision (Tons per Year)

	Volatile Organic Compounds (VOC)	Nitrogen Oxides (NO _x)	Sulfur Dioxide (SO ₂)	Fine Particulate Matter (PM _{2.5})	Carbon Dioxide (CO ₂)
Direct Residential	6.9	0.8	0.6	0.8	28.1
Electrical Power Generation	ND*	2.7	9.6	ND*	1,409.9
Mobile	17.2	14.2	10.5	0.9	1,438.0
Total	24.1	17.7	20.7	11.1	2,876.0

(*) Indicates data is not available.

Note that emissions associated with the actual construction of the subdivision, including automobile and truck traffic from working in, or delivering products to the site, as well as site preparation, earth moving activities, road paving and other miscellaneous air emissions, are not reflected in the table above.

Recommendations:

The applicant shall comply with all applicable Delaware air quality regulations. These regulations include:

Regulation 6 – Particulate Emissions from Construction and Material Handling	<ul style="list-style-type: none">• Using dust suppressants and measures to prevent transport of dust off-site from material movement and use of unpaved roads.• Using covers on trucks that transport material to and from site to prevent visible emissions.
Regulation 1113 – Open Burning	<ul style="list-style-type: none">• Prohibiting open burns statewide during the Ozone Season from May1-Sept. 30 each year.• Prohibiting the burning of land clearing debris.• Prohibiting the burning of trash or building materials/debris.
Regulation 1145 – Excessive Idling of Heavy Duty Vehicles	<ul style="list-style-type: none">• Restricting idling time for trucks and buses having a gross vehicle weight of over 8,500 pounds to no more than three minutes.

Additional measures may be taken to substantially reduce the air emissions identified above. These measures include:

- **Constructing only energy efficient homes.** Energy Star qualified homes are up to 30% more energy efficient than typical homes. These savings come from building envelope upgrades, high performance windows, controlled air infiltration, upgraded heating and air conditioning systems, tight duct systems and upgraded water-heating equipment. Every percentage of increased energy efficiency translates into a percent reduction in pollution. The Energy Star Program is excellent way to save on energy costs and reduce air pollution.
- **Offering geothermal and/or photo voltaic energy options.** These systems can significantly reduce emissions from electrical generation, and from the use of oil or gas heating equipment.

- **Providing tie-ins to the nearest bike paths and links to any nearby mass transport system.** These measures can significantly reduce mobile source emissions.
- **Funding a lawnmower exchange program.** New lawn and garden equipment emits significantly less than equipment as little as 7 years old, and may significantly reduce emissions from this new development. The builder could fund such a program for the new occupants.

Additionally, the following measures will reduce emissions associated with the actual construction phase of the development:

- **Using retrofitted diesel engines during construction.** This includes equipment that are on-site as well as equipment used to transport materials to and from site.
- **Using pre-painted/pre-coated flooring, cabinets, fencing, etc.** These measures can significantly reduce the emission of VOCs from typical architectural coating operations.
- **Planting low VOC emitting trees at residential units and in vegetative buffer areas.** Trees reduce emissions by trapping dust particles and by replenishing oxygen. Trees also reduce energy emissions by cooling during the summer and by providing wind breaks in the winter, thereby reducing air conditioning needs by up to 30 percent and saving 20 to 50 percent on fuel costs. We are in the process of developing a list of appropriate trees which would address this mitigation measure.

The applicant should submit a plan to the DNREC Air Quality Management Section which address the above listed measures, and that details all of the specific emission mitigation measures that will be incorporated into the Twin Cedars development. Air Quality Management Section points of contact are Phil Wheeler and Deanna Morozowich, and they may be reached at (302) 739-9402.

- **The comment is noted.**

State Fire Marshal's Office - Contact: Duane Fox 856-5298

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

- a. **Fire Protection Water Requirements:**

- Water distribution system capable of delivering at least 1500 gpm for 2- hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Mercantile)
- Water distribution system capable of delivering at least 1000 gpm for 1- hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Apartments and Townhouses)
- Where a water distribution system is proposed for the site, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.

b. Fire Protection Features:

- All structures over 10,000 Sq. Ft. aggregate will require automatic sprinkler protection installed.
- Buildings greater than 10,000 sq. ft., 3-stories of more or over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements.
- Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.
- Show Fire Lanes and Sign Detail as shown in DSFPR
- For townhouse buildings, provide a section / detail and the UL design number of the 2-hour fire rated separation wall on the Site plan.

c. Accessibility

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Zion Church Rd must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.

- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

d. Gas Piping and System Information:

- Provide type of fuel proposed, and show locations of bulk containers on plan.

e. Required Notes:

- Provide a note on the final plans submitted for review to read " All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"
- Proposed Use
- Alpha or Numerical Labels for each building/unit for sites with multiple buildings/units
- Square footage of each structure (Total of all Floors) National Fire Protection Association (NFPA) Construction Type ~ Maximum Height of Buildings (including number of stories)
- Townhouse 2-hr separation wall details shall be shown on site plans ~ Note indicating if building is to be sprinklered
- Name of Water Provider
- Letter from Water Provider approving the system layout
- Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.delawarestatefiremarshal.com. technical services link, plan review, applications or brochures.

- **The applicant acknowledges the requirements for submittal to the State Fire Marshal's office and intends to submit code-compliant plans to meet these requirements.**

Department of Agriculture - Contact: Scott Blaier 739-4811

The Department is opposed to development in areas designated as Investment Level 4 under the Strategies for State Policies and Spending. The Strategies do not support isolated development of these areas. The intent of this plan is to preserve the agricultural lands, forestlands, recreational uses, and open spaces that are preferred uses in Level 4 areas. The Department of Agriculture opposes development which conflicts with the preferred land uses,

making it more difficult for agriculture and forestry to succeed, and increases the cost to the public for services and facilities.

More importantly, the Department of Agriculture opposes this project because it negatively impacts those land uses that are the backbone of Delaware's resource industries agriculture, forestry, horticulture - and the related industries they support. Often new residents of developments like this one, with little understanding or appreciation for modern agriculture and forestry, find their own lifestyles in direct conflict with the demands of these industries. Often these conflicts result in compromised health and safety; one example being decreased highway safety with farm equipment and cars competing on rural roads. The crucial economic, environmental and open space benefits of agriculture and forestry are compromised by such development. We oppose the creation of isolated development areas that are inefficient in terms of the full range of public facilities and services funded with public dollars. Public investments in areas such as this are best directed to agricultural and forestry preservation.

Section 1. Chapter 99, Code of Sussex Section 99-6 may apply to this subdivision. The applicant should verify the applicability of this provision with Sussex County. This Section of the Code states:

G. Agricultural Use Protections.

- (1) Normal agricultural uses and activities conducted in a lawful manner are preferred. In order to establish and maintain a preference and priority for such normal agricultural uses and activities and avert and negate complaints arising from normal noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations, land uses adjacent to land used primarily for agricultural purposes shall be subject to the following restrictions:
 - (a) For any new subdivision development located in whole or in part within three hundred (300) feet of the boundary of land used primarily for agricultural purposes, the owner of the development shall provide in the deed restrictions and any leases or agreements of sale for any residential lot or dwelling unit the following notice:

"This property is located in the vicinity of land used primarily for agricultural purposes on which normal agricultural uses and activities have been afforded the highest priority use status. It can be anticipated that such agricultural uses and activities may now or in the future involve noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations. The use and enjoyment of this property is expressly conditioned on acceptance of

any annoyance or inconvenience which may result from such normal agricultural uses and activities."

- (b) For any new subdivision development located in whole or in part within fifty (50) feet of the boundary of land used primarily for agricultural purposes no improvement requiring and occupancy approval for a residential type use shall be constructed within fifty (50) feet of the boundary of land used primarily for agricultural purposes.

The Department would also remind the developer to comply with the County's forested buffer requirement. This buffer is essential for separating inherently disparate land uses (agriculture and residential) and mitigating the conflict that often arises as a result.

The Delaware Department of Agriculture supports growth which expands and builds on existing urban areas and growth zones in approved State, county and local plans. Where additional land preservation can occur through the use of transfer of development rights, and other land use measures, we will support these efforts and work with developers to implement these measures. If this project is approved we will work with the developers to minimize impacts to the agricultural and forestry industries.

This site overlaps with the State's Green Infrastructure Investment Strategy Plan. The Crop Land layer is present on the entire site. This designation identifies areas of the state that have viable and valuable agricultural cropland, as discussed in Governor Minner's Executive Order Number 61. Areas such as these should be preserved as such, and not developed for residential use.

Right Tree for the Right Place

The Delaware Department of Agriculture Forest Service encourages the developer to use the "Right Tree for the Right Place" for any design considerations. This concept allows for the proper placement of trees to increase property values in upwards of 25% of appraised value and will reduce heating and cooling costs on average by 20 to 35 dollars per month. In addition, a landscape design that encompasses this approach will avoid future maintenance cost to the property owner and ensure a lasting forest resource. To further support this concept the Delaware Forest Service does not recommend the planting of the following species due to the high risk of mortality from insects and disease:

Callery Pear
Leyland Cypress

Ash Trees
Red Oak (except for Willow Oak)

If you would like to learn more about the potential problems or impacts associated with these trees, please contact the Delaware Forest Service for more information at (302) 698-4500.

Native Landscapes

The Delaware Department of Agriculture and the Delaware Forest Service encourages the developer to use native trees and shrubs to buffer the property from the adjacent land use activities near this site. A properly designed forested buffer can create wildlife habitat corridors and improve air quality to the area by removing six to eight tons of carbon dioxide annually and will clean our rivers and creeks of storm-water run-off pollutants. To learn more about acceptable native trees and how to avoid plants considered invasive to our local landscapes, please contact the Delaware Department of Agriculture Plant Industry Section at (302) 698-4500.

- **The applicant understands the Department of Agriculture's position on development in Level 4 investment areas, but reiterates its position regarding the anticipated growth potential of this project site as recited above in its comments responding to the Office of State Planning Coordination. The applicant recognizes the agricultural sensitivity of the area and assures the Department that all construction will be carried out in accordance with current regulations and with all applicable permits obtained. Drinking water will be provided by Artesian Water Co. and will not draw upon ground-water in the immediate vicinity of the project site. The revised plan attempts to preserve forested land and will maintain a forested buffer between the developed areas and surrounding agricultural parcels. Any re-planting of vegetation shall consist of native species to the extents practical.**

Public Service Commission - Contact: Andrea Maucher 739-4247

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

- **The applicant acknowledges this requirement and shall follow these guidelines should natural gas or propane systems be expanded.**

Delaware State Housing Authority - Contact Vicki Powers 739-4263

This proposal is for a site plan review of 224 residential units and 35,000 sq. feet of commercial space on 64 acres located on Zion Church Road 3,500 feet west of Bayard/Johnson Road near Fenwick Island. According to the State Strategies Map, the proposal is located in an Environmentally-Sensitive Area. As a general planning practice, DSHA encourages residential development only in areas where residents will have proximity

to services, markets, and employment opportunities. DSHA supports the fact that this proposal targets first-time homebuyers. According to the most recent real estate data collected by DSHA, the median home price in Sussex County is \$279,000. However, families earning respectively 100% of Sussex County's median income only qualify for mortgages of \$173,056, thus creating an affordability gap of \$105,944. The provision of units within reach of families earning at least 100% of Sussex County's median income will ensure housing that is affordable to first-time homebuyers.

- **The Twin Cedars community will provide a diversified selection of residential units to potential buyers (Apartments, Townhouses, and Single Family Homes). The selection will allow for less expensively priced units. The commercial area in the front of the development will have the opportunity to provide services and employment opportunities to the area residents.**

Department of Education - Contact: John Marinucci 735-4055

DOE recognizes that this development project is in level 4 of the State Strategies for Policies and Spending and as such, DOE does not support projects located in level 4. The DOE comments have not changed significantly from the May 3, 2006 comments.

This proposed development is within the Indian River School District boundaries. DOE offers the following comments on behalf of the Indian River School District.

1. Using the DOE standard formula, this development will generate an estimated 123 students.
2. DOE records indicate that the Indian River School Districts' elementary schools **are at or beyond** 100% of current capacity based on September 30, 2007 elementary enrollment.
3. DOE records indicate that the Indian River School Districts' secondary schools **are not at or beyond** 100% of current capacity based on September 30, 2007 secondary enrollment.
4. In multiple correspondences from the Indian River School District administration, the district asserts that while the Indian River High Schools have capacity, the Indian River Middle Schools' student population exceeds student capacity.
5. This development will create additional elementary school and middle school student population growth which will further compound the existing shortage of space. The developer is strongly encouraged to contact the Indian River School District Administration to address the issue of elementary and middle school over-crowding that this development will exacerbate.
6. DOE appreciates the developer's recognition of the May 3, 2006 PLUS comments as evidenced by the inclusion of a school bus stop being incorporated into the design of the site plan.

- **The comments are noted.**

Sussex County - Contact: Richard Kautz 855-7878

The Sussex County Engineer Comments:

The project proposes to connect to the Johnson's Corner Sanitary Sewer District (JCSSD). The project is within the boundary of the JCSSD that was approved by voters in a referendum held on July 21, 2007. The preliminary schedule indicates sewer service could become available as early as the summer of 2010. Developers could install off-site infrastructure to an approved connection point to expedite service.

The project is within planning study assumptions for sewer service. The proposed development will require a developer installed collection system in accordance with Sussex County standard requirement and procedures. The Sussex County Engineer must approve the connection point. In addition, the developer will be required to complete or participate in offsite sewer construction and upgrades, at the developer's expense.

The project shall limit wetland impact similar to the April 2006 plan that was submitted to the Sussex County Engineering Department. The Sussex County Engineering Department requires that a Sewer Concept Plan be submitted for review and approval. Attached is a checklist for preparing conceptual plans. Sussex County anticipates adopting new road cross section in June 2008. This project will be required to comply with those adoptee standards.

- **The applicant will work with Sussex County Engineering to obtain all necessary approved plans and permits. The plans will use the current construction standards and details as applicable.**

The applicant appreciates the comments from the above agencies. The applicant has found many of the comments useful. The current site layout provides an environmentally sensitive design in addition to creating an aesthetically pleasing Residential Planned Community for the local residents. The community will provide residents with various amenities and commercial services while maintain the character of the surrounding lands. Safe pedestrian travel pathways have been provided to enhance this convenient community. Twin Cedars will be a model development which will provide smooth transitions to the surroundings, thus enhancing Sussex County. Should you have any further questions or comments, please feel free to contact Jason Palkewicz, P.E. or myself.

Sincerely,

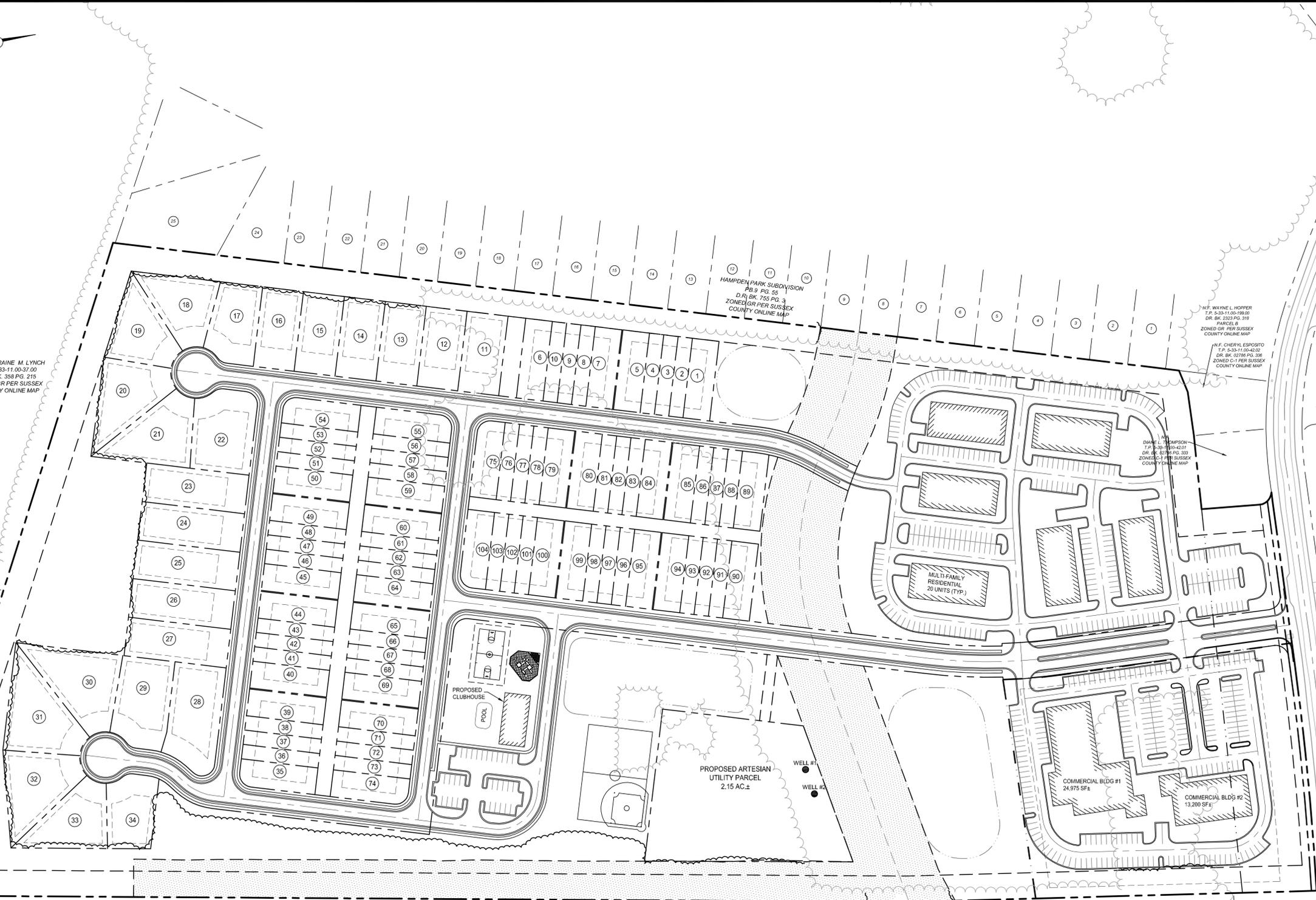
McCrone, Inc.

Hollis Hearne, E.I.T.



N.F. LORRAINE M. LYNCH
T.P. 5-33-11.00-37.00
DR. BK. 358 PG. 215
ZONED GR PER SUSSEX
COUNTY ONLINE MAP

N.F. WILLIAM D. AND
KAREN L. SIMPSON
T.P. 5-33-11.00-36.00
DR. BK. 02106 PG. 264
ZONED AR PER SUSSEX
COUNTY ONLINE MAP



N.F. E.H. AND M.E. LONG FARMS LIMITED
PARTNERSHIP
T.P. 5-33-11.00-44.00
DR. BK. 02908 PG. 152
AND AN UNRECORDED PLAT
BY LAWRENCE R. LONG DATED 3-01-1994
PARCEL #3
ZONED GR PER SUSSEX
COUNTY ONLINE MAP

N.F. E.H. AND M.E. LONG FARMS
LIMITED PARTNERSHIP
T.P. 5-33-11.00-43.00
DR. BK. 02908 PG. 152
AND AN UNRECORDED PLAT BY
LAWRENCE R. LONG DATED
3-01-1994
PARCEL #1
ZONED GR PER SUSSEX
COUNTY ONLINE MAP

N.F. CSM, LLC
T.P. 5-33-16.00-43.01
DR. BK. 02771 PG. 068
ZONED GR PER
SUSSEX COUNTY
ONLINE MAP

N.F. CSM, LLC
T.P. 5-33-11.00-80.00
DR. BK. 02771 PG. 068
LOT 1
ZONED G-1 PER SUSSEX
COUNTY ONLINE MAP

N.F. DAVID J. LONG III
T.P. 5-33-11.00-79.01
DR. BK. 03131 PG. 044
PARCEL "B"
PB 92 PG 278
ZONED AR-1 PER SUSSEX
COUNTY ONLINE MAP

N.F. ROLAND BRUCE SCOTT
T.P. 5-33-11.00-79.00
DR. BK. 03131 PG. 044
PARCEL "A"
PB 92 PG 278
ZONED AR-1 PER SUSSEX
COUNTY ONLINE MAP

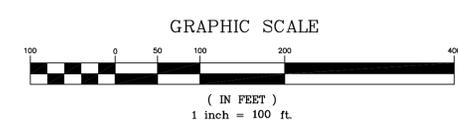
N.F. MICHAEL WILSON
TOWNSEND
T.P. 5-33-11.00-78.03
DR. BK. 2128 PG. 217
ZONED AR-1 PER
SUSSEX COUNTY
ONLINE MAP

N.F. MICHAEL WILSON
AND MARGO
TOWNSEND
T.P. 5-33-11.00-78.01
DR. BK. 1047 PG. 126
ZONED AR-1 PER
SUSSEX COUNTY
ONLINE MAP

N.F. WAYNE L. HOPPER
T.P. 5-33-11.00-195.00
DR. BK. 2303 PG. 318
PARCEL 8
ZONED GR PER SUSSEX
COUNTY ONLINE MAP

DWANE L. SIMPSON
T.P. 5-33-11.00-42.07
DR. BK. 02106 PG. 263
ZONED GR PER SUSSEX
COUNTY ONLINE MAP

HAMPDEN PARK SUBDIVISION
PB 9 PG. 55
DR. BK. 765 PG. 3
ZONED GR PER SUSSEX
COUNTY ONLINE MAP



REV. #	DATE	DESCRIPTION

M:CRONE

- Engineering
- Environmental Sciences
- Construction Services
- Land Planning & Surveying

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DATE:	10-19-09
JOB NUMBER:	DS070018
SCALE:	1" = 100'
DRAWN BY:	H/H
DESIGNED BY:	H/H
APPROVED BY:	J/P
FOLDER REFERENCE:	N/A

SITE LAYOUT FOR
TWIN CEDARS
SUSSEX COUNTY, DELAWARE
Prepared For: CB TWIN CEDARS, LLC