



# Karins and Associates

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May 11, 2016

Constance C. Holland, AICP, Director  
State of Delaware  
Office of State Planning  
122 Martin Luther King Jr. Boulevard South  
Haslet Armory, Third Floor  
Dover, Delaware 19901

RE: **Colony at Summit Bridge East**  
**New Castle County Application #2016-0073**  
**Tax Parcel #11-037.00-002 P/O**  
**Karins Project No. 2492.02.000**

Dear Ms. Holland:

This letter is in response to the PLUS review report dated April 20, 2016 for the above-referenced project. The following items have been addressed in accordance with your comments:

*Strategies for State Policies and Spending*

- *This project is located in Investment Level 3 according to the Strategies for State Policies and Spending. Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. State investments may support future growth in these areas, but please be advised that the State has other priorities for the near future. We encourage you to design the site with respect for the environmental features which are present.*

**Acknowledged.**

*Code Requirements/Agency Permitting Requirements*

*Department of Transportation – Contact Bill Brockenbrough 760-2109*

- *The site access and the internal subdivision streets must be designed in accordance with DelDOT's Development Coordination Manual. A copy of the Manual is available at <http://www.deldot.gov/information/business/subdivisions/changes/index.shtml>.*

**Acknowledged.**

- Pursuant to Section P.3 of the Manual, DelDOT staff held a Pre-Submittal Meeting with the applicant and their engineer on January 26, 2016, regarding a plan similar to the one presented with the PLUS application. The current plan addresses the points raised at that meeting.

**Acknowledged.**

- Section P.5 of the Manual addresses fees that are assessed for the review of development proposals. DelDOT anticipates collecting the Initial Stage Fee when the record plan is submitted for review and the Construction Stage Fee when construction plans are submitted for review.

**Acknowledged.**

- Per Section 2.2.2.1 of the Manual, Traffic Impact Studies (TIS) are warranted for developments generating more than 500 vehicle trip ends per day or 50 vehicle trip ends per hour in any hour of the day. As shown in the table below, the subject development would meet these warrants. However, as the table also shows, a TIS was done in 2014 addressing both this development and a related development on the west side of Delaware Route 896, Colony at Summit Bridge West. As currently approved and proposed, both developments, and especially the subject development, will generate less traffic than what was evaluated in the TIS.

Our review of the 2014 TIS (see attached letter) identified seven items to be incorporated into the site designs and reflected on the record plans for the two developments. A summary of those items and how they have been addressed follows:

- 1) Construct the realignment of Mansion House Road to local road standards. – The current plan makes the realignment unnecessary. The plan adds no traffic to this dead-end road but dedicates rights-of-way and easements to allow future improvements by others.

**Acknowledged. No improvements to Mansion House Road are proposed with this plan.**

- 2) Construct right-in/right-out entrances for both developments at the existing Summit Bridge Road and Mansion House Road intersection. – The current plans for both developments have shifted the right-in/right-out entrances farther south. In our opinion the new location is better for traffic operations on Route 896 and coincidentally allows Mansion House Road to remain undisturbed.

**Acknowledged.**

- 3) Construct a right-in/right-out entrance for the subject development about 3,600 feet south of Glasgow Avenue/Porter Road. – The current plan combines the two entrances previously proposed. Having one access rather two will mean longer

*delays for residents exiting the development but better operations for through traffic on Route 896.*

**Acknowledged.**

- 4) *Connect the subject development's street system to Mansion Farm Drive. – The current plan does that in an acceptable manner.*

**Acknowledged.**

- 5) *Fund part of DelDOT's planned improvements at the intersection of Delaware Route 896 and Porter Road. – This work has since been completed; a contribution to it is no longer needed.*

**Acknowledged. No contribution is required for the Route 896/Porter Road intersection.**

- 6) *Fund part of DelDOT's planned improvements to Howell School Road from Delaware Route 896 to Delaware Route 71. – We have received a contribution from the developer sufficient for the current plan.*

**Acknowledged. No additional contributions are required.**

- 7) *Provide bicycle and pedestrian facilities in accordance with the Development Coordination Manual. – The facilities associated with the current plan necessarily differ somewhat from what was discussed in the TIS review letter because the plan has changed, but the current plan shows a good effort at compliance. We address this subject further elsewhere in these comments.*

**Acknowledged.**

- *Section 3.2.4.2 of the Manual addresses the placement of right-of-way monuments (markers) along the roads on which a property fronts, in this case Summit Bridge Road. Monuments sufficient to re-establish the permanent rights-of-way after the dedication discussed below should be shown on the plan and provided in the field in accordance with this section.*

**Monuments shall be added to the plan.**

- *As necessary, in accordance with Section 3.2.5 and Figure 3.2.5-a of the Manual, DelDOT will require dedication of right-of-way along the site's frontage on Summit Bridge Road. By this regulation, this dedication is to provide a minimum of 40 feet of right-of-way from the road centerline on Summit Bridge Road. The following right-of-way dedication note is required, "An X-foot wide right-of-way is hereby dedicated to the State of Delaware, as per this plat." The plan presented appears to meet this requirement.*

**The right-of-way note shall be added to the plan.**

- *Section 3.2.5.1.1 of the Manual provides DelDOT's requirements regarding easements for signs and structures at neighborhood entrances. In accordance with this section, if this development is proposing a neighborhood sign or structure, then a permanent easement shall be established at the entrance. The easement shall be located outside of any existing and/or proposed right-of-way. It will also need to be verified that the sign or structure does not pose a sight distance and/or safety hazard.*

**Acknowledged.**

- *In accordance with Section 3.2.5.1.2 of the Manual, DelDOT will require the establishment of a 15-foot wide permanent easement across the property frontage on Summit Bridge Road. The location of the easement shall be outside the limits of the ultimate right-of-way. The easement area can be used as part of the open space calculation for the site. The following note is required, "A 15-foot wide permanent easement is hereby established to the State of Delaware, as per this plat." The 15-foot wide easement shall be added to the plan.*
- *In accordance with Section 3.4 of the Manual, a record plan shall be prepared prior to issuing "Letter of No Objection". The following information will be required for the "Letter of No Objection" review:*
  - o *Initial Stage Fee Calculation Form*
  - o *Initial Stage Review Fee*
  - o *Gate-Keeping Checklist – Site Plan*
  - o *Design Checklist - Record Plan*
  - o *Sight Distance Spreadsheet*
  - o *Owners and Engineers' name and e-mail address*
  - o *Record Plan*
  - o *Conceptual Entrance Plan*
  - o *Submission of the Area-Wide Study Fee (If applicable)*

**Acknowledged. The above-mentioned information shall be included on the Record Plan.**

- *Referring to Section 3.4.2.1 of the Manual, the following items, among other things, are required on the Record Plan:*
  - o *A Traffic Generation Diagram. See Figure 3.4.2-a for the required format and content.*
  - o *Depiction of all existing entrances within 600 feet of the proposed entrance.*
  - o *Notes identifying the type of off-site improvements, agreements (signal, letter) contributions and when the off-site improvements are warranted.*

**Acknowledged.**

- *Section 3.5 of the Manual provides DelDOT's requirements with regard to connectivity. The requirements in Sections 3.5.1 through 3.5.3 shall be followed for all development projects having access to state roads or proposing DelDOT maintained public road for subdivisions.*

**Acknowledged.**

- *Section 3.5.4.2 of the Manual addresses requirements for shared-use paths and sidewalks. Projects located in Level 3 Investment Areas are required to install a shared-use path or sidewalk along the State-maintained road frontage if the project abuts an existing facility. The Subdivision Engineer may waive the requirement where there is no facility on an abutting parcel but has not done so in this instance. The path shown appears to meet our requirements.*

**Acknowledged.**

- *Section 3.5.4.4 of the Manual addresses requirements for access-ways (pedestrian paths). An access-way should be provided to connect Road B to Mansion House Road. For the purpose of connecting residents of Mansion House Road to the subject development, a location near the northeast corner of the development would be optimal but it would be acceptable to use the open space adjoining Lot 64. If the access-way is built in the open space next to Lot 64, it should avoid the sanitary sewer easement to the extent possible. Pedestrian improvements along the length of the Mansion House Road frontage are not required.*

**Acknowledged. A path connection from Mansion House Road to Road B shall be added to the plan.**

- *Section 3.5.5 of the Manual addresses transit facilities and connectivity to them from proposed developments. Such facilities and connections to them may be required by the Delaware Transit Corporation or DelDOT in consultation with New Castle County. Presently, there is no local transit service on Summit Bridge Road but facilities may be required to serve school buses.*

**Acknowledged. No facilities for public transportation or school busses were required of the Colony at Summit Bridge West subdivision. We shall check with both DART and the Appoquinimink to determine if facilities are required.**

- *Section 3.5.6 of the Manual addresses requirements for subdivision street intra-connectivity and specifies a minimum Connectivity Ratio, the ratio of street sections to intersections, of 1.4 or greater. We calculate that the plan presented meets that requirement with a ratio of 1.6.*

**Acknowledged.**

- *Section 3.5.7.1 of the Manual addresses requirements for connections to existing adjacent developments that do not have linkage street stubs. In this context, the vacant field owned by Cornerstone United Methodist Church immediately south of the subject development is, in our view, potentially redevelopable. The plan presented provides an acceptable connection in this regard.*

**Acknowledged.**

- *Section 3.5.7.2 of the Manual addresses requirements for connections to streets in adjacent subdivisions. The proposed connection to Mansion Farm Drive, mentioned above addresses this requirement.*

**Acknowledged.**

- *In accordance with Section 3.8 of the Manual, storm water facilities, excluding filter strips and bioswales, shall be located a minimum of 20 feet from the ultimate State right-of-way along Summit Bridge Road. The plan presented meets this requirement.*

**Acknowledged.**

- *Referring to Section 4.3 of the Manual, an entrance plan shall be prepared prior to issuing entrance approval. The following information will be required for Entrance Plan review:*
  - o *Construction Stage Fee Calculation Form*
  - o *Construction Review Fee*
  - o *Gate-Keeping Checklist – Entrance Plan*
  - o *Design Checklist - Entrance Plan*
  - o *Auxiliary Lane Spreadsheet*
  - o *Entrance Plan*
  - o *Pipe/Angle Spreadsheet (If applicable)*
  - o *SWM Report and Calculations (If applicable)*

**Acknowledged.**

- *At intersections of subdivision streets, Section 5.1.4 of the Manual requires, a minimum distance of 40 feet between the edge of the radius return and the closest driveway. The intention is to separate parking maneuvers from turning movements at intersections. While the distances are not dimensioned, these distances appear to be short for Lots 24 and 25 and the Typical Lot illustration on Sheet 2 of the plans. They may be short for Lots 1 and 49 as well. We require that any driveway locations be moved as necessary to meet this minimum distance and recommend that the distance be dimensioned on the Typical Lot illustration. While our regulation does not address it specifically, we have a similar concern about the driveway for Lot 7.*

**The driveways on Lots 24 & 25 can be relocated so that the driveway is greater than 40 feet from the edge of the radius. Driveways for Lots 1 & 49 comply with the**

**Manual, but may be relocated further from the radius based upon the proposed grading.**

- *In accordance with Section 5.2.5.6 of the Manual, Turning Movement Diagrams shall be provided to verify vehicles can safely enter and exit the site entrance. As per Section 5.2.3 of the Manual, the entrance shall be designed for the largest vehicle using the entrance.*

**Acknowledged. The entrance shall be designed for the largest vehicle.**

- *In accordance with Section 5.2.9 of the Manual, the Auxiliary Lane Worksheet should be used to determine whether auxiliary lanes are warranted at the site entrance and how long those lanes should be. The worksheet can be found at [http://www.deldot.gov/information/business/subdivisions/auxiliary\\_lane\\_worksheet.xls](http://www.deldot.gov/information/business/subdivisions/auxiliary_lane_worksheet.xls).*

**Acknowledged.**

- *In accordance with Section 5.4 of the Manual, sight distance triangles are required and shall be established in accordance with American Association of State Highway and Transportation Officials (AASHTO) standards. A spreadsheet has been developed to assist with this task. It can be found at <http://www.deldot.gov/information/business/subdivisions/Intersection-Sight-Distance.xls>.*

**Acknowledged. Sight triangles shall be added to the plan.**

- *In accordance with Section 5.14 of the Manual, all existing utilities must be shown on the plan and a utility relocation plan will be required for any utilities that need to be relocated.*

**Acknowledged.**

- *Section 7.7.2 of the Manual addresses the need to provide 20-foot wide drainage easements for all storm drainage systems, open or closed, that fall outside the existing right-of-way or the drainage/utility easement. In accordance with this section, metes and bounds and total areas need to be shown for any drainage easements. The easements should be shown and noted on the record plan.*

**Acknowledged.**

*Department of Natural Resources and Environmental Control – Contact Michael Tholstrup  
735-3352*

- *Waters of the U.S. Waters of the U.S regulated by the U.S. Army Corps of Engineers are likely to be located on this property based on a review of aerial photographs, SWMP maps, Soil Surveys and/or USGS topographic maps. According to our GIS SWMP maps, there are wetlands regulated by the U.S. Army Corps of Engineers on this parcel. The*

*application states the wetlands have been delineated and signed off by the U.S. Army Corps of Engineers (USACE) and there will be no impact.*

*Waters of the United States include the following: navigable waters of the United States; wetlands; tributaries to navigable waters of the United States, including adjacent wetlands and lakes and ponds; interstate waters and their tributaries, including adjacent wetlands; and all other waters of the United States not identified above, such as isolated wetlands, intermittent streams, and other waters that are not part of a tributary system to interstate waters or to navigable waters of the United States, where the use, degradation or destruction of these waters could affect interstate or foreign commerce. The extent of Federal jurisdiction over Waters of the United States is determined by the U.S. Army Corps of Engineers and is based on site specific conditions. Therefore, an on-site inspection by an environmental consultant is recommended to determine if Waters of the U.S. are located on the property and the limits of Federal jurisdictional. The U.S. Army Corps of Engineers can be contacted at (215) 656-6728 or online at <http://www.nap.usace.army.mil/cenap-op/regulatory/regulatory.htm>.*

**No navigable water of the United States exist on the property.**

- *TMDLs. This project is located in the greater Piedmont drainage area, specifically within the greater Christina River Basin. In the Christina River Basin, post-development nitrogen and phosphorus loading must be capped at the pre-development or baseline loading rate (or a 0 percent post-construction increase in N & P in Delaware's portion of the Christina River Basin) to meet the required TMDL for each nutrient. Moreover, reductions in bacteria that range from 29 percent to 95 percent (High Flow) is also required (depending upon location). The specific required nutrient and bacterial requirements for the various stream segments in the Basin, and background information is outlined in the report entitled "Christina River Basin High-Flow TMDL" by the EPA. This report can viewed here: [http://www.epa.gov/reg3wapd/tmdl/pa\\_tmdl/ChristinaMeetingTMDL/index.htm](http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/ChristinaMeetingTMDL/index.htm)*

*Total Maximum Daily Loads (TMDLs) for nitrogen, phosphorus, and bacteria have been promulgated through regulation in most of the State of Delaware's water bodies. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited waterbody" can assimilate and still meet State water quality standards (e.g., dissolved oxygen, nutrients, and bacteria; State of Delaware Surface Water Quality Standards, as amended July 11, 2004) to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. TMDLs are required by federal law (Section 303(d) of the 1972 Clean Water Act), and the states are charged with developing and implementing specific land use practices that support these goals.*

*A nutrient management plan is required under the Delaware Nutrient Management Law (3 Del.C., Chapter 22) for all persons or entities who apply nutrients to lands or areas of open space in excess of 10 acres. This project's open space proposal exceeds this 10-acre threshold. Please contact the Delaware Nutrient Management Program at (302) 739-*

4811 for further information concerning compliance requirements, or view additional information here: <http://dda.delaware.gov/nutrients/index.shtml>

**Acknowledged.**

- Water Supply. The project information sheets state water will be provided to the project by Artesian Water Company via a central water system. DNREC's 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 85-WS-03.

*Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the DNREC 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 take approximately four weeks to process, which allows the necessary time for technical review and advertising. Should you have any questions concerning these comments, please contact Rick Rios, at (302) 739-9944.*

**Acknowledged.**

- Source Water Protection. The DNREC Ground-Water Protection Branch (GPB) has determined that a portion of the western side of project falls within an area of excellent groundwater recharge potential. In addition, a significant portion of the northern and eastern sides of the project fall within Level 1 and Level 2 Source Water Protection Area for New Castle County. No wellhead protection areas were identified.

*Level 1 Source Water Protection Areas are defined as flood plains and steep slopes. Land Use or Land Activity within this area has the potential to influence water quality or quantity to the system.*

*Level 2 Source Water Protection Areas are the delineated watershed upstream from a surface water intake that supplies water to a drinking water system. Land Use or Land Activity within this area has the potential to influence water quality or quantity to the system.*

*Excellent Ground-Water Recharge Areas are those areas mapped by the Delaware Geological Survey where the first 20 feet of subsurface soils and geologic materials are exceptionally sandy. These soils are able to transmit water very quickly from the land surface to the water table. This map category (excellent) is an indicator of how fast contaminants will move and how much water may become contaminated (Andres, 2004). Land use activities or impervious cover on areas of excellent ground-water recharge potential may adversely affect ground water in these areas.*

*DNREC recommends referring to NCC Unified Development Code for regulations regarding development in these areas.*

**Acknowledged.**

- *Sediment and 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. 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 New Castle County Department of Land Use Engineering Section. Contact the Department of Land Use at (302) 395-5470 for details regarding submittal requirements and fees.*

**Acknowledged.**

- *Tank Management.* *No environmental impacts are anticipated by the DNREC Tank Management Section (TMS); however, per the UST Regulations: Part E, § 1. Reporting Requirements:  
Any indication of a Release of a Regulated Substance that is discovered by any Person, including but not limited to environmental consultants, contractors, utility companies, financial institutions, real estate transfer companies, UST Owners or Operators, or Responsible Parties shall be reported within 24 hours to:+*
  - o *The Department's 24-hour Release Hot Line by calling (800) 662-8802; and*
  - o *The DNREC Tank Management Section by calling (302) 395-2500.*

**Acknowledged.**

- *Air Quality.* *DNREC encourages developers and builders to consider all sustainable growth practices in their design, but we believe, however, that the air quality impacts associated with the project should be completely considered. The applicant shall comply with all applicable Delaware air quality regulations.*

*For a complete listing of all Delaware applicable regulations, please look at our website:  
<http://www.dnrec.delaware.gov/Air/Pages/Air-Regulations.aspx>.*

*DNREC encourages sustainable growth practices that:*

- o *Control sprawl;*
- o *Preserve rural and forested areas;*
- o *Identify conflicting land use priorities;*

- o *Encourage growth on previously developed sites and denser communities while at the same time protect our diminishing land base;*
- o *Coordinate transportation, housing, environment, and climate protection plans with land use plans; and*
- o *Demonstrate that communities can achieve the qualities of privacy, community, and contact with nature without degrading the natural environment or generating unacceptable environmental costs in terms of congestion, use of natural resources, or pollution.*

**Acknowledged.**

*State Historic Preservation Office – Contact Terrence Burns 736-7404*

- *There is a known 19th century house with outbuildings on this parcel. According to the Pomeroy and Beers Atlas of 1868, it was known as the M. H. Paxon House (N03986), and formerly the Roger Williams and Charles Boulden house. Although the Paxon House is not a National Register-listed property, it was determined eligible for listing in 1987 under Criterion A of the National Register of Historic Places. We encourage the developer to maintain the house and reuse it adaptively as part of the complex. We also encourage the developer to put landscaping between the house and rest of the development, to block adverse noise or visual effects. If any development or construction project proceeds, the developer should be aware of the Unmarked Human Burials and Human Skeletal Remains Law, in Chapter 54, of Title 7, of the Delaware Code.*

**In a report dated April 2, 2013, the New Castle County Historic Review Board concluded “that the dwelling is not a good candidate for preservation due to the need to replace so much material in order to make it habitable to modern standards” and “does not object to the eventual demolition of the building complex as shown on this plan, due to the very poor condition of the buildings.”**

- *Abandoned or unmarked family cemeteries are very common in the State of Delaware. They are usually in rural or open space areas, and sometimes near or within the boundary of an historic farm site. Even a marked cemetery can frequently have unmarked graves or burials outside of the known boundary line or limit. Disturbing unmarked graves or burials triggers the Delaware’s Unmarked Human Burials and Human Skeletal Remains Law (7 Del. C. Ch. 54), and such remains or discoveries can result in substantial delays while the procedures required under this law are carried out. If there is a discovery of any unmarked graves, burials or a cemetery, it is very costly to have them archaeologically excavated and the burials moved. The Division of Historical & Cultural Affairs recommends that owners and/or developers have a qualified archaeological consultant investigate their project area, to the full extent, to see if there is any unmarked cemetery, graves, or burial sites. In the event of such a discovery, the Division of Historical & Cultural Affairs also recommends that the plans be re-drawn to leave the full extent of the cemeteries or any burials on its own parcel or in the open*

space area of the development, with the responsibility for its maintenance lying with the landowner association or development. If you would like to know more information pertaining to unmarked human remains or cemeteries, please go to the following websites for additional information: [www.history.delaware.gov/preservation/umhr.shtml](http://www.history.delaware.gov/preservation/umhr.shtml) and [www.history.delaware.gov/preservation/cemeteries.shtml](http://www.history.delaware.gov/preservation/cemeteries.shtml).

Therefore, prior to any demolition or ground-disturbing activities, the developer should hire an archaeological consultant, to examine the parcel for archaeological resources, especially a cemetery or unmarked human remains. Furthermore, if there is any federal involvement with the project, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. Owners and developers who may plan to apply for an Army Corps of Engineers permit or for federal funding, such as HUD or USDA grants, should be aware of the National Historic Preservation Act of 1966 (as amended). Regulations promulgated for Section 106 of this Act stipulate that no ground-disturbing or demolition activities should take place before the Corps or other involved federal agency determines the area of potential effect of the project undertaking. These stipulations are in place to allow for comment from the public, the Delaware State Historic Preservation Office, and the Advisory Council for Historic Preservation about the project's effects on historic properties. Furthermore, any preconstruction activities without adherence to these stipulations may jeopardize the issuance of any permit or funds. If you need further information or additional details pertaining to the Section 106 process and the Advisory Council's role, please review the Advisory Council's website at [www.achp.gov](http://www.achp.gov).

#### **Acknowledged.**

*Delaware State Fire Marshall's Office – Contact John Rudd 739-4394*

*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:*

- *Fire Protection Water Requirements:*
  - o *Where a water distribution system is proposed for single family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required.*
  - o *The infrastructure for fire protection water shall be provided, including the size of water mains.*
  
- *Accessibility:*
  - o *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 the main thoroughfare must be constructed so fire department apparatus may negotiate it. If a "center island" is placed at an entrance into the subdivision, it shall be arranged in such a manner that it will not adversely affect quick and unimpeded travel of fire apparatus into, or through, the subdivision.*

- o 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.*
  - o The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.*
  - o 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.*
- *Gas Piping and System Information:*
    - o Provide type of fuel proposed, and show locations of bulk containers on plan.*
  - *Required Notes:*
    - o 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"*
    - o Name of Water Supplier*
    - o Proposed Use*
    - o National Fire Protection Association (NFPA) Construction Type*
    - o Maximum Height of Buildings (including number of stories)*
    - o Provide Road Names, even for County Roads*

### **Acknowledged.**

### Recommendations/Additional Information

*This section includes a list of site specific suggestions that are intended to enhance the project. These suggestions have been generated by the State Agencies based on their expertise and subject area knowledge. These suggestions do not represent State code requirements. They are offered here in order to provide proactive ideas to help the applicant enhance the site design, and it is hoped (but in no way required) that the applicant will open a dialogue with the relevant agencies to discuss how these suggestions can benefit the project.*

*Department of Transportation – Contact Bill Brockenbrough 760-2109*

- *The applicant should expect a requirement that any substation and/or wastewater facilities will be required to have access from the internal subdivision street with no direct access to Summit Bridge Road.*

**Acknowledged. No substations or wastewater facilities are proposed with this subdivision.**

- *The applicant should expect a requirement that all PLUS comments be addressed prior to submitting the plans for review.*

**Acknowledged.**

- *Section 3.2.4.1 of the Manual addresses the placement of right-of-way monuments (markers) along subdivision streets. We recommend that monuments be furnished and placed along the proposed streets in accordance with this section.*

**Acknowledged. Right-of –way monuments shall be placed in accordance with the Manual.**

- *Please be advised that DelDOT is about to advertise for adoption, in the April Register of Regulations, an update of the Development Coordination Manual. The effective date will be April 11, 2016. While in most respects, the changes are incremental, they are located throughout the Manual and could have some effect on the entrance and subdivision street designs.*

**Acknowledged.**

- *Please be advised that as of August 1, 2015, all new plan submittals and re-submittals, including major, minor and commercial plans, shall now be uploaded via the PDCA (Planning Development Coordination Application) with any review fee paid online via credit card or electronic check. Guidance on how to do this is available on our website at <http://www.deldot.gov/information/business/subdivisions/>*

**Acknowledged.**

- *Be advised that the Standard General Notes have been updated and posted to the DelDOT website. Please begin using the new versions and look for the revision date of January 28, 2016. The notes can be found at [http://www.deldot.gov/information/business/subdivisions/Sheet\\_Notes.doc?012816](http://www.deldot.gov/information/business/subdivisions/Sheet_Notes.doc?012816).*

**Acknowledged.**

*Department of Natural Resources and Environmental Control – Contact Michael Tholstrup 735-3352*

*Soils Assessment.*

- *Based on soils survey mapping update, the soil mapping unit with the most limitations for development on this parcel is Fallsington (FgA; Figure 1).*

*Fallsington is a poorly-drained wetland associated (hydric) soil mapping unit that has severe limitations for development (considered unsuitable). We strongly discourage building on hydric soils because they are functionally important source of water storage (functions as a "natural sponge"); the loss of water storage through excavation, filling, or grading of intact native hydric soils increases the probability for more frequent and destructive future flooding events. The probability for flooding is compounded by increases in surface imperviousness as building density in the area increases over time. Moreover, destruction of hydric soils increases the amount pollutant runoff (i.e., hydric soils sequester and detoxify pollutants) which contributes to lower water quality in regional waterbodies and wetlands.*

*We strongly recommend the applicant contact a licensed (Delaware Class D) soil scientist to make a site specific assessment (i.e., soil survey mapping) of the soils on this site. A list of licensed soil scientists can be obtained from the Ground Water Discharges Branch; the Branch can be reached by phone at 739-9947.*

**Acknowledged.**

*Forest Preservation.*

- *If there are plans to impact the forest, we request the opportunity to conduct a survey to evaluate habitat and determine the potential for species of conservation concern. Please note that our scientists have extensive knowledge of the flora and fauna of the state. The survey will be conducted at no expense to the landowner. Please contact Kate Fleming at (302) 735-8658 or [Kate.Fleming@state.de.us](mailto:Kate.Fleming@state.de.us) to schedule a site visit.*

*If forest is to be removed as a component of this project, New Castle County may require a tree survey to be conducted and/or a Woodland Management Plan to be developed. If a tree survey or Woodland Management Plan are an aspect of this project, the DNREC Wildlife Species Conservation and Research Program would like an opportunity to review these documents to confirm that appropriate forest resources are being retained. Please contact our plant biologist, Bill McAvoy, with this information (302-735-8668, [William.McAvoy@state.de.us](mailto:William.McAvoy@state.de.us)).*

**Acknowledged. No forest shall be disturbed with this subdivision.**

*Bog Turtle.*

- *A review of DNREC's database has revealed that there may be suitable habitat for the federally listed bog turtle (*Glyptemys muhlenbergii*) within the project area. Bog turtles typically occur in freshwater wetlands with open canopies, mucky soils, and tussock vegetation. However, they can occur in more marginal habitats as well. Because the bog turtle is a federally listed species, protected under the Endangered Species Act, its presence can affect the scope of work. To ensure that the project will not impact bog turtles or their habitat, Phase I surveys for bog turtle habitat should be conducted.*

*Phase I surveys can be conducted any time of year when ice and/or snow cover is not present. If potential habitat is found, however, please note there is a time of year restriction during which Phase II surveys for bog turtles must be conducted. A Delaware approved bog turtle surveyor must be used to conduct the surveys. Please contact Holly Niederriter at (302) 735-8670, to obtain a list of contacts to conduct Phase I and, if necessary, Phase II surveys.*

*If potential bog turtle habitat is found during Phase I surveys, you are required to either:*

- 1. Completely avoid all direct and indirect project impacts to the wetland, in consultation with the U.S. Fish and Wildlife Service and Delaware Division of Fish and Wildlife; OR*
- 2. Have Phase II surveys conducted to determine if bog turtles are present. In accordance with Delaware's bog turtle site survey procedures, surveys must be conducted by a State-approved bog turtle surveyor between April 15 and June 15.*

*Additional information on TMDL compliance and the PCS.*

**Acknowledged.**

- *A Pollution Control Strategy (PCS) to achieve the required TMDL nutrient and bacterial load reduction requirements has been established for the Christina Basin. The web link for the Christina watershed PCS strategies is as follows:  
<http://www.dnrec.delaware.gov/swc/wa/Pages/WatershedManagementPlans.aspx>*

*DNREC strongly encourages the applicant to reduce nutrient and bacterial pollutants on their parcel through voluntary implementation of the following recommended BMPs:*

- o Maintain as much of the existing open space as possible; we suggest additional native tree, shrub and/or native herbaceous vegetation plantings in this parcel, wherever possible.*
- o Based on NRCS soil survey mapping, this parcel contains poorly-drained wetland-associated hydric soils (e.g., Fallsington); hydric soils are considered unsuitable for development and should be avoided. Consequently, we strongly recommend that the applicant contact Licensed Class D soil scientist to verify/disprove the presence of hydric soils in this parcel. A list of licensed Class D soil scientists can be obtained from the following weblink:  
<http://www.dnrec.delaware.gov/wr/Information/GWDInfo/Pages/GroundWaterDischargesLicensesandLicensees.aspx>*

- o *Based on a review of existing buffer research, 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 strongly recommends that the applicant maintain/establish an upland buffer width of at least 100 feet from all waterbodies and wetlands (as determined by USACE approved wetlands delineation).*
- o *We strongly recommend the applicant calculate all post-construction surface imperviousness with all forms of created (or constructed) surface imperviousness (e.g., rooftops, driveways, parking lots, sidewalks, ponds, and/or "pond-like" open-water storm water management structures, and roads) included.*
- o *We strongly encourage the use of green-technology storm water management structures (in lieu of open-water management structures) and raingardens as BMPs to reduce nutrient pollutant impacts. Please contact Lara Allison at (302) 739-9939 for further information about siting raingardens on this parcel.*
- o *We strongly encourage the applicant to voluntarily assess nutrient and bacterial pollutant loading at the preliminary project design phase. To this end, the Watershed Assessment Section has developed a methodology known as the "Nutrient Load Assessment protocol." The protocol is a tool used to assess changes in nutrient loading (e.g., nitrogen and phosphorus) that result from the conversion of individual or combined land parcels to a different land use, while providing applicants with quantitative information about their project's impact(s) on baseline water quality. We strongly encourage the applicant/developer use this protocol to help design and implement the most effective BMPs. Please contact John Martin or Jen Walls at (302) 739-9939 for more information on the protocol.*

**Acknowledged.**

*Additional information on tank management.*

- *When contamination is encountered, PVC pipe materials should be replaced with ductile steel and nitrile rubber gaskets in the contaminated areas. If any aboveground storage tanks (ASTs) less than 12,500 gallons are installed, they must be registered with the DNREC Tank Management Section (TMS). If any ASTs greater than 12,500 gallons are installed, they are also subject to installation approval by the TMS. For more information, please visit online: <http://www.dnrec.delaware.gov/tanks/Pages/default.aspx> or contact Ross D. Elliott at TMS with further questions, at (302) 395-2500 or [Ross.Elliott@state.de.us](mailto:Ross.Elliott@state.de.us).*

## **Acknowledged.**

*Information on hazardous waste.*

- *DNREC strongly recommends that the land owner perform environmental due diligence of the property by performing a Phase I Environmental Site Assessment (including a title search to identify environmental covenants) in accordance to Section 9105(c) (2) of the Delaware Hazardous Substance Cleanup Act (HSCA). While this is not a requirement under HSCA, it is good business practice and failure to do so will prevent a person from being able to qualify for a potential affirmative defense under Section 9105(c) (2) of HSCA.*

*Additional remediation may be required if the project property or site is re-zoned by the county.*

*Should a release or imminent threat of a release of hazardous substances be discovered during the course of development (e.g., contaminated water or soil), construction activities should be discontinued immediately and DNREC should be notified at the 24-hour emergency number (800) 662-8802. SIRS should also be contacted as soon as possible at (302) 395-2600 for further instructions.*

## **Acknowledged.**

*Additional information on air quality.*

- *New homes may emit, or cause to be emitted, air contaminants into Delaware's air, which will negatively impact public health, safety and welfare. These negative impacts are attributable to:*
  - o *Emissions that form ozone and fine particulate matter; two pollutants relative to which Delaware currently violates federal health-based air quality standards,*
  - o *The emission of greenhouse gases which are associated with climate change, and*
  - o *The emission of air toxics.*

*Air emissions generated from new homes include emissions from the following activities:*

- o *Area sources such as painting, maintenance equipment and the use of consumer products like roof coatings and roof primers.*
- o *The generation of electricity needed to support the new homes, and*
- o *All transportation activity.*

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

- o *Constructing with only energy efficient products. Energy Star qualified products are up to 30% more energy efficient. 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 energy efficiency translates into a percent reduction in pollution. The Energy Star Program is an excellent way to save on energy costs and reduce air pollution.*
- o *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.*
- o *Constructing with high albedo, high solar reflectance materials. This includes roofing and hardscape. These materials help to reduce heat island impacts and, by extension, help to minimize the potential for localized ground-level ozone formation. These materials also help reduce demands on air conditioning systems and save on energy costs.*
- o *Encouraging the use of safe multimodal transportation. This measure can significantly reduce mobile source emissions. For every vehicle trip that is replaced by the use of a sidewalk or bike path, 7 pounds of VOC and 11.5 pounds of NOx are reduced each year.*
- o *Using retrofitted diesel engines during construction. This includes equipment that is on-site as well as equipment used to transport materials to and from site.*
- o *Using pre-painted/pre-coated flooring, cabinets, fencing, etc. These measures can significantly reduce the emission of VOCs from typical architectural coating operations.*
- o *Planting trees in vegetative buffer areas. Native trees reduce emissions by trapping dust particles and replenishing oxygen. Trees also reduce energy emissions by cooling during the summer and by providing wind breaks in the winter, whereby reducing air conditioning needs by up to 30 percent and saving 20 to 50 percent on fuel costs.*

*This is a partial list, and there are additional things that can be done to reduce the impact of the project. The applicant should submit a plan to the DNREC Division of Air Quality (DAQ) which address the above listed measures, and that details all of the specific emission mitigation measures that will be incorporated into the Colony at Summit Bridge East. The DAQ point of contact is Deanna Cuccinello; she may be reached at (302) 739-9402.*

*Delaware State Fire Marshall's Office – Contact John Rudd 739-4394*

- *Although not a requirement of the State Fire Prevention Regulations, the Office of the State Fire Marshal encourages home builders to consider the benefits of home sprinkler protection in dwellings. The Office of the State Fire Marshal also reminds home builders of the requirements of Subchapter III of Chapter 36 of Title 6 of the Delaware Code*

which can be found at the following website:  
<http://delcode.delaware.gov/title6/c036/sc03/index.shtml>

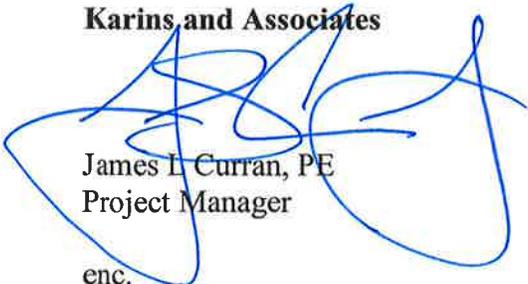
**Acknowledged.**

- *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.statefiremarshal.delaware.gov](http://www.statefiremarshal.delaware.gov), technical services link, plan review, applications or brochures.*

**Acknowledged.**

If you have any questions or require any additional information, please do not hesitate to call or email.

Sincerely yours,  
**Karins and Associates**



James L. Curran, PE  
Project Manager

enc.

cc: Chris Gillen (via email)  
Stephen Mansfield (via email)  
Larry Tarabicos (via email)  
Mike Hoffman (via email)  
Marco Boyce (via email)