Plainsboro Township
Preliminary/Final Major Site Plan
Application: P24-04
Memo Date: 9/18/24
DRC Meeting Date: 10/15/24

Development Review Committee
Project Review Memo

Applicant:	Princeton Healthcare System (d/b/a Penn Medicine Princeton Health)
Property Owner:	Same
Type of Application:	Preliminary/Final Major Site Plan
Name of Project:	Penn Medicine Princeton Health Cancer Center and Imaging Center
Property Location:	One Plainsboro Road (Block 1701, Lot 3.01)
Zone:	Princeton Healthcare System Redevelopment Area
Present Use of Property:	Hospital Building, Medical Office Building, Education Building, Former Fitness Center Building, Parking Lot and Parking Garage (under construction)
Adjacent Land Uses:	North: Parking Lot, Parking Garage (under construction), Hospital Drive, and Crescent Parking Lot South: Parking Lot, Retention Pond, Plainsboro Road and Millstone River Park East: Punia Boulevard, CHOP Facility, Temporary Parking Lot, and Princeton Maplewood Assisted Living West: Education Building, Medical Office Building, Hospital Building, Central Utility/COGEN Plants, and Route 1

BACKGROUND

Since the adoption of the Amended Redevelopment Plan (Redevelopment Plan) in March of 2013, all eight districts of the Princeton HealthCare System Redevelopment Area have

been partially or fully developed. Only the southern portion of the ORC-Office Residential Complex district, which is located on Punia Boulevard between the CHOP Specialty Care Facility and the Maplewood at Princeton facility, remains undeveloped. The Redevelopment Area was approved to include three phases of development. Except for the undeveloped portion of the ORC District, along with the two additional phases associated with the CHOP facility, the only remaining phase of the Redevelopment Plan to be completed involves the 50± acre HMOC-Hospital Medical Office district where the hospital is located. The final phase of the Plan, which is also recognized as phase two of the HMOC, was to include expansion of the hospital (maximum 322,000 sq. ft.), a possible second medical office building (maximum 93,000 sq. ft.), and a parking garage.

In August 2023, the applicant received site plan approval for the new 1,161 space six-level parking garage and temporary parking lot (P23-03). This site plan application is for a proposed new Cancer Center and Imaging Center (CCIC) building addition to the existing hospital, which will consolidate all primary cancer treatment into one building. The applicant decided to separate the parking garage approval from the proposed CCIC addition to allow the construction sequencing of the proposed garage first, to be followed by the CCIC, to minimize the impact on the existing operation of the HMOC.

CCIC PROJECT DESCRIPTION

CCIC Building Addition

The proposed CCIC building is located on the east side of the Education Building. Placing the CCIC in this location requires the demolition of the existing pool and locker room structure associated with the former Fitness Center. Approximately 16,101 SF, of which 12,000 SF is considered Gross Floor Area, will be demolished to accommodate the proposed new building. The new CCIC building will comprise 200,876 SF of total building area, which includes 154,559 SF of Gross Floor Area (i.e., identified as active clinical and clinical support space) and 46,317 SF of non-active space (i.e., mechanical, electrical and building infrastructure). Together, the demolition and new construction result in a net increase of 142,559 (154,559-12,000) SF of Gross Floor Area on the campus.

The CCIC contains four floors for patient care, a subgrade level and a mechanical level. The floor elevation of Level 1 aligns with the adjacent Education Building and remaining hospital facility to provide universal access throughout all campus buildings. There are direct pedestrian connections to the existing campus buildings on Levels 1 and 2. There is also a tunnel connecting the Education Building to the new building for the transport of materials and infrastructure in and refuse out of the building on the lower level of the CCIC.

Both the Cancer and Imaging Centers have recognizable front entries marked by distinctive canopies and signage over the vehicular drop-off as well as a glass vestibule equipped with weapons detection for general safety. At each entry, there is extensive clear glazing to

allow arriving patients visibility to activity within and departing patients may see when their ride or the Valet arrives with their car.

To complement the existing campus palette, the CCIC is clad with a high-performance envelope composed of terracotta rainscreen, metal panel and glass curtain-wall systems. A dark stone base encircles the building, grounding it into the landscape.

LEED (Leadership in Energy and Environmental Design) certification provides a framework for the design of healthy, highly efficient, and cost-saving green buildings; it is the world's most widely used green building rating system. In response to PMPH's sustainability goal, this project will be using the LEED guidelines and is currently tracking LEED Gold. Pursuing the most conservative sustainable design guidelines wherever possible, the CCIC is being designed with high-performing mechanical, electrical, and plumbing systems that will work in concert with the high-performing exterior envelope. While the high roofs will be light in color, green roofs are strategically used over each entry canopy and on the linear accelerator vaults on Level 1. Not only do the green roofs assist in mitigating the heat island effect and meet the requirements of the Amended Redevelopment Plan, but they also provide visual interest for patients and staff looking down on to those roofs.

CCIC Site Improvements

The proposed Cancer Center will have access from Punia Boulevard and the existing driveway will be utilized to provide vehicular access directly to the main entrance at the proposed patient drop-off area. A small portion of the existing P2 Parking Lot will be reconstructed to accommodate the drop-off and provide additional accessible parking. Both existing driveways that currently serve the P2 parking area will be utilized to provide vehicular access to the proposed Cancer Center parking area, which will maintain the existing vehicular circulation. A new pedestrian walkway is proposed from the reconstructed P2 parking area to the Cancer Center Entry. Handicap accessible parking is provided adjacent to the pedestrian walkways leading to the entrance. Ten parking spaces will be land-banked in P2, should there be a need in the future for additional parking spaces in the proximity of the Cancer Center entrance. The P3 Parking Lot will be expanded and reconfigured, and Electrical Vehicle charging spaces will be available along the west side of the P3 Parking Lot. The patient drop-off area along the front of the proposed Cancer Center will be constructed with depressed curbs, bollard lighting and integrally colored concrete sidewalks that lead the patients to the entry. On the east side of the building, there will be an ambulette parking area so that patients from other facilities may be admitted for treatment.

Delivery and solid waste management will be the same as the hospital's current operation. The deliveries will be received at the main loading area on the west side of the existing hospital building. Refuse and recycling will be managed at the existing main loading area as well.

The landscaping for the CCIC has been designed to be complimentary to the campus aesthetic and in accordance with the requirements of the Amended Redevelopment Plan with shade trees throughout the parking areas and along the access driveways, foundation plantings around the building and a variety of landscape plantings along the pedestrian walkways. The front of both the Cancer and Imaging Centers will include integral colored concrete sidewalks leading patients to the main entrances. From the Cancer Center Entry there are views into the existing Healing Garden to provide continuity. Evergreen trees and shrubs are proposed to screen the ambulette parking area from view as much as possible. A small terrace will be situated on the east side of the building directly adjacent to the Café to provide a visitor amenity. Defined by a trellis structure, this outdoor space, with controlled access from the interior, allows those visiting or waiting the opportunity to take a rest outside beneath the shade trees.

The site lighting design includes a combination of pole mounted light fixtures, bollard lighting and recessed linear lighting for both canopies. The site lighting will be LED cut-off style fixtures that are Dark Sky compliant in accordance with the requirements of the Amended Redevelopment Plan. The proposed light fixtures will be the same style and color as the existing light fixtures on the Hospital site.

During the construction of the Parking Garage and CCIC, parking spaces will be displaced. To help manage this displacement of parking spaces and to minimize the impact of the parking garage project and the CCIC project on the overall hospital campus, construction on the proposed CCIC will not commence until the new parking garage is completed and operational.

For further information on the applicant's proposed application, see the detailed Project Narrative submitted with the application, dated July 17, 2024.

REDEVELOPMENT PLAN SUPPLEMENTAL PLANS AND INFORMATION

Pursuant to Section 9.2.1 of the Redevelopment Plan, in addition to submitting plans and information required under the site plan regulations, applications for new development in the Redevelopment Area are also required to provide specific supplemental plans and information; including plans and information that fall under the following categories:

A. General Land Use Plan
B. Circulation Plan and Traffic Impact Analysis
C. Open Space Plan
D. Utility Plan
E. Stormwater Management Plan
F. Environmental Inventory
G. Community Facility Plan
H. Housing Plan

I. Local Service Plan
J. Fiscal Impact
K. Phasing Plan

It is staff's opinion that the applicant's response fulfills the submission requirement for such information pursuant to the requirement for same in the Redevelopment Plan.

For further information on the applicant's response to this requirement, see letter submitted with this application prepared by Andrew L. French, PE, French & Parrello Associates, dated July 17, 2024.

CONSISTENCY WITH THE REDEVELOPMENT PLAN

The applicant has documented how the proposed development complies with all relevant provisions in the Redevelopment Plan.

The applicant's consistency review of the Redevelopment Plan includes compliance with the following areas of the Plan:

- Goals and Objectives
- Land Use Plan, including permitted uses and bulk standards
- Circulation and Open Space
- Design Guidelines and Standards, including general design standards related to the HMOC district; building design and materials; parking, including required parking ratios and surface and structured parking design; outdoor storage and mechanical equipment screening; green design, including buildings and lighting; signage; landscaping; and utilities, stormwater, solid waste/recycling, and infrastructure standards.
- Phasing

It is the staff's opinion that the applicant's response demonstrates that the proposed application is substantially consistent with the applicable provisions in the Redevelopment Plan.

For further information on the applicant's response to the issue of Consistency of the proposed CCIC with the Redevelopment Plan, see letter submitted with this application prepared by Chris S. Cosenza, AICP, PP, LEED AP, of LRK dated July 18, 2024.

WAIVER OF SITE PLAN CHECK LIST SUBMISSION ITEMS

The applicant has submitted the required site plan review checklist (Form 14). A total of four submission checklist waivers have been requested, with a brief description and justification provided for each. Staff have reviewed such information and are of the opinion that such waivers are reasonable and support their being granted.

STAFF COMMENTS AND RECOMMENDATIONS

A. SITE PLAN ISSUES

1. Signage:

a) In October 2017, the applicant obtained minor site plan approval to install new monument signs, building mounted signs, and to reface the then existing wayfinding signs (directional and informational signs) in response to the partnership of Penn Medicine and Princeton HealthCare System (P17-10). In association with the new parking garage and the temporary parking lot (P23-03), the applicant proposed further changes to such signs, intended to update the information of the existing wayfinding signs intended to improve their "readability" and add new destination information related to the parking garage and the temporary parking lot. At that time, the applicant agreed to submit details related to further changes that would be required in association with the CCIC site plan application. Those changes are included in the current submission for the proposed CCIC, which staff finds acceptable.

b) Staff has noticed over time that some of the existing wayfinding signs have become faded and in need of refacing (e.g., the sign on the east side of Plainsboro Road just south of the intersection of Plainsboro Road and Campus Road). While some of these signs are ones that will be refaced in association with this application, some, particularly those located beyond the immediate boundaries of the redevelopment area, need to be assessed for their condition and whether they need to be updated and refaced.

c) The applicant's plans indicate that all traffic signage shall comply with the MUTCD standards. All such signage shall also comply with the Princeton Forrestal Center (PFC) sign details for such signage, including the use of the Type A PFC sign detail for all two-sided MUTCD signs and the Type B PFC sign detail for all other such signs.

d) The applicant has proposed limited corporate branding (Penn Medicine) and identification (Cancer Center and Imaging Center) signage on the exterior of the proposed CCIC building. Staff has reviewed such signage against the standard found in the Redevelopment Plan (Section 5.5 Signage) and finds the applicant's proposal consistent with such standard. If additional building mounted signage is proposed by the applicant in the future (e.g., building naming in response to major donor), such signage shall be considered in association with a minor site plan application.

2. <u>Traffic and Parking Issues</u>

a) Staff has the following comments regarding the traffic study:

i. The Applicant's Engineer shall calculate trip generation for the approved but not yet developed portions of the CHOP and ARC sites utilizing rates published by the Institute of Transportation Engineers in the Trip Generation Manual and then compare them to the calculated trip generation sets to evaluate if the local trip generation is more conservative than the rates found in the Trip Generation Manual. The more conservative rates shall be utilized.

ii. The Applicant's Engineer indicated that no improvements are required at the off-site intersections analyzed in the traffic study as all movements are projected to be Level of Service D or better. Staff takes no exception to the conclusions pending the results of the comparison of trip generation for adjacent developments noted above.

b) Staff has the following comments regarding the parking study:

i. The Application for the Cancer Center and Imaging Center results in a displacement of an additional 9 parking spaces when compared to the Parking Garage and Temporary Parking Lot Application. However, the total parking calculations submitted with the current application indicate a parking supply surplus in excess of 70 spaces. In addition, it should be noted the Applicant has proposed an additional ten (10) land banked parking spaces should they be deemed necessary.

3. Stormwater Management Issues

a) The Applicant's Engineer shall confirm there are no existing utility easement restrictions preventing the construction of the improvements.

b) The Applicant shall provide a blanket Drainage, Conservation, Maintenance, and Access Easement in favor of Plainsboro Township and the County of Middlesex for the stormwater management systems. The deed of easement shall be subject to the review and approval of the Township Attorney and Township Engineer.

c) In accordance with the NJDEP Stormwater Management BMP Manual – Chapter 8, an Operations & Maintenance Manual shall be provided for all stormwater management measures proposed on-site.

d) The Maintenance Plan and any future revisions shall be recorded upon the deed of record for the property on which the maintenance described in the maintenance plan must be undertaken. The form of which shall be approved by the Township Attorney prior to recording the same with the Middlesex County Clerk's Office per Section 85-28 J.

4. Sanitary Sewer and Solid Waste Disposal Issues

a) The applicant indicates that no new solid waste facilities are proposed, noting that there is a tunnel connecting the Education Building to the new building for the transport of materials and infrastructure in and refuse out of the building on the lower level of the CCIC. Therefore, solid waste and recycling will be managed through the existing facilities and arrangements at the hospital.

b) All sanitary sewer piping and appurtenances shall be installed in accordance with the requirements of the Plumbing Subcode Official.

c) A report prepared by a licensed N.J. Professional Engineer shall be provided, including a calculation of the anticipated sanitary flows to be generated by the proposed development in accordance with N.J.A.C. 7:14A-23.3. The Applicant shall submit information to confirm the adequacy of the downstream conveyance system to accept the proposed flows and the availability of facilities to accept and treat the flow.

d) The Applicant is responsible for obtaining Treatment Works Approval from the NJDEP, if applicable.

5. Potable Water and Fire Protection Issues

a) It is preferable that the hot box be removed from the proposed plans. However, if the water company is not amenable to a water main extension, the Applicant's Engineer shall provide a detailed plan including the hot box color (Sherwin Williams Rock Garden Green (SW 6195) or equivalent, and proposed landscape screening for further review by Township Staff.

b) A report prepared by a licensed N.J. Professional Engineer shall be provided, including calculations of the anticipated non-residential water demands in accordance with N.J.A.C. 7:10-12.6(b).

c) All water distribution system improvements shall be installed in accordance with the requirements of the water utility and the Plumbing Subcode Official.

d) The design of the on-site water distribution system shall be adequate to provide fire protection as per ISO standard, Fire Suppression Rating Schedule, or per AWWA M31, Manual of Water Supply Practices.

e) The Applicant is responsible for obtaining a permit from the NJDEP BWSE, if applicable.

f) Test data and calculations shall be provided demonstrating that the required domestic and fire demands and pressures can be provided from the existing system.

g) The design and adequacy of fire suppression systems and the delineation of the fire lanes are subject to the review of the Fire Subcode Official.

h) The Applicant's Engineer shall identify the material of all proposed water service lines on the plans.

i) The Applicant's Engineer shall identify the size and material of the existing water mains on the plans.

6. Other Utility Issues

a) The applicant shall discuss the availability of essential gas and electrical service to the site. Intent to service letters from the respective utility companies shall be provided.

7. Construction Issues

a) All structures including retaining walls are subject to review and approval of the Township Construction Official.

b) The following construction notes shall be added on the plans:

i. "A detailed sequence of construction and contractor's staging plan shall be provided to separate and manage construction traffic and public traffic. This will further establish contractor's work and staging areas for each phase of construction and shall include but not be limited to items related to the placement of construction office and/or construction trailers, outdoor equipment and materials storage, safety and security fencing, vehicular and pedestrian circulation, installation of underground utilities, parking area construction and construction related signage."

ii. "A hauling plan shall be submitted to the Township for review and approval for the movement of any construction materials or demolition debris on roadways leading from the Township border and vice versa".

8. <u>Barrier Free Access, Landscaping, and Lighting Issues</u>

a) The barrier free accessibility requirements, including the required number of handicapped parking spaces, shall be as determined by the Township Construction Official. All sign details for handicapped parking spaces shall be consistent with the current sign design details applicable to the Princeton Forrestal Center.

b) The Applicant's Engineer shall clarify the hours of operation for the proposed light fixtures and modify the plans accordingly.

c) The plans indicate seventy (77) replacement trees are required for the trees to be removed. Per Woodland Management Plan Note 2 on the plan, the trees will be replaced with deciduous trees at a 2.5" minimum caliper and/or evergreen trees with a minimum installed height of seven (7) feet. The locations of these trees shall be determined at the time of planting in consultation with Planning Board Staff. Staff takes no exception to the provided list of replacement trees, which shall be native species, depicted on the plan.

9. <u>Miscellaneous Comments</u>

a) The Applicant's Engineer shall provide a note on the proposed plans stating that any imported fill meets the definition of Clean Fill as stated in the NJDEP's Technical Requirements for Site Remediation (as found at N.J.A.C. 7:26E-1.8).

b) Per the Statewide EVSE requirements at least five (5) percent of the Electric Vehicle Supply Equipment shall be accessible for people with disabilities. Each parking space shall comply with the size requirements of the Uniform Construction Code (UCC) but are not required to have handicap parking signage. Accessible EVSE spaces cannot be used to address the general accessible parking requirements of the UCC. The Applicant's Engineer shall confirm that this will not affect the parking counts for the proposed project.

c) All roof-mounted HVAC units and other equipment, as well as all ground level service and equipment areas shall be effectively screened pursuant to the provisions in the Redevelopment Plan.

d) The applicant shall discuss the project phasing and construction duration of the proposed CCIC project.

e) The applicant has submitted an Environmental Impact Assessment prepared by French & Parrello Associates, dated July 31, 2024, for this application as required in §20-10 of the Township Code. As noted in Section G of the report (Alternatives to the Proposed Project), the No Building Option is not considered viable because the proposed project will result in significant health benefits to the community by providing needed medical services. The Alternative Site Location Option concludes that the proposed location is best suited for the project because the site has been approved for such use pursuant to the current Redevelopment Plan, and that the proposed project area has already been disturbed in association with the existing hospital complex of buildings and site improvements. Lastly, the Alternative Design Option concludes that, while this assessment considered various designs for the proposed site, it was determined that the current design is deemed best suited to the property's constraints and to minimize any environmental impacts, while satisfying the overall goals of the project.

f) All easements and rights in favor of the Township shall be expressed in deeds and grants suitable for recording at the County Clerk's Office, the form of which shall be approved by the Planning Board Attorney and the description in which shall be approved by the Township Engineer.

10. <u>Agency Approvals and Other Requirements</u>

a) The applicant shall discuss the need for approvals or amended approvals by all outside agencies, including the following:

i. Delaware and Raritan Canal Commission
ii. Freehold Soil Conversation District
iii. Middlesex County Planning Board
iv. All other agencies having jurisdiction

b) Copies of applications and approvals, certifications, waivers or letters of no concern as may be required by all agencies having jurisdiction, shall be provided as a condition of final approval and prior to the site disturbance and/or construction.

c) Township offices and staff that have review jurisdiction involving this application or improvements related thereto, include:

- Planning and Zoning Department: Contact Ron Yake, Planner and Zoning Officer at 609-799-0909, ext. 1503.
- Planning Board Engineer's Office: Contact Louis Ploskonka, CME Associates at 732-727-8000.
- Code Enforcement/Building Division: Contact Brian Miller, Construction Official at 799-0909, ext. 2545; Bill Gorka, Fire Official at 609-799-0909, ext. 1208.

Any approval shall be conditioned upon the submission of revised plans in accordance with the above comments; proof of approval or waivers from all other agencies having jurisdiction; the construction of offsite improvements, if deemed necessary by the Township Committee; the payment of any outstanding escrow fees; compliance with all applicable state and local affordable housing requirements; and the applicant's engineer providing an estimate for the cost of improvements to the Township in order that performance guarantees and inspection fees can be calculated.

MLUL Clock:	Application Completeness:	October 6, 2024
	Planning Board Action:	January 9, 2025

APPENDIX TO

APPLICATION P24-04

DRC REVIEW MEMO

FOR

PRELIMINARY & FINAL MAJOR SITE PLAN

Princeton Healthcare System (d/b/a Penn Medicine Princeton Health
Penn Medicine Princeton Health Cancer Center and Imaging Center
Block 1701, Lot 3.01
Princeton Healthcare System Redevelopment Area

September 18, 2024

A. Site Plan Comments

1. The Applicant's Engineer shall revise the cut, fill, and net cut/fill calculations within the bottom table of the Cancer Center and Imaging Center Earthwork Calculations dated July 31, 2024, to match the sum of the numbers provided within the three (3) tables above same.

2. The Construction Detail Sheets shall be amended as follows:

    a) The Typical Conduit Ductbank for Telecommunication Service Detail shall be revised to provide dense graded aggregate for backfill within all pavement areas.
    b) The Type 'A', Type 'E' and 2'x2' Yard Inlet Details shall be revised to provide NJDOT Class 'B' concrete.
    c) A water service connection detail for the proposed wet taps shall be provided on the proposed plans.
    d) The Rain Garden – Underdrain Layout Detail and Rain Garden – Typical Section Detail shall be revised to include the 2-year and 10-year water surface elevations in accordance with the NJ Stormwater BMP Manual – Chapter 9.6.

B. Traffic, Parking, Signage, Pedestrian and Circulation Issues

1. The Applicant's Engineer should provide the circulation paths for a Plainsboro fire apparatus in order to verify there is adequate on-site circulation during emergencies.

C. Grading, Drainage and Stormwater Management Issues

1. The Enlarged Grading Plan, sheet C205, shall be amended as follows:

    a) Top of curb elevations shall be provided at all points of curvature, points of tangency, where curbing changes direction horizontally, transitions from full depth curb to depressed curb, and where proposed curb meets existing curb.
    b) There appears to be a trench drain that is not labeled at the low point of the Ambulette Parking Area on the proposed plans. The Applicant's Engineer shall clarify this on the plans.
    c) The lawn area between the existing hospital and the proposed Cancer Center and Imaging Center on the westerly side of the building shall be amended to provide a minimum slope of 2.0% in order to demonstrate positive drainage away from same.

2. The Enlarged Grading Plan 2, sheet C206, shall be amended as follows:

    a) Top of curb elevations shall be provided at all points of curvature, points of tangency, where curbing changes direction horizontally, transitions from full depth curb to depressed curb, and where proposed curb meets existing curb.

b) Spot elevations shall be provided at the proposed building corners in order to demonstrate positive drainage away from same.
c) Spot elevations shall be provided at all high and low points throughout the proposed plan.
d) The Pollinator/Rain Garden Planting areas shall be revised to provide the 3-inch diameter perforated underdrain and inspection ports on the plan. Additionally, the inspection ports shall be labeled with rim and invert elevations.

3. The Stormwater Management Profiles, sheet C207, shall be amended as follows:

a) The proposed chilled water, hot water, and fire service pipes shall be included within the Inlet H-1 to Inlet A-10 and the Inlet B-1 to Inlet A-4 profiles.
b) A 24-inch HDPE is depicted on the Grading & Drainage Plan, sheet C204, and a 24-inch RCP is depicted on the profile sheet for the pipe run between Inlet B-4 and Inlet A-4. The Applicant's Engineer shall amend the plan and profile for consistency.
c) A 6-inch RCP for the pipe run between Cleanout A-8A and Cleanout A-8B and a 12-inch RCP for the pipe run between Cleanout A-8B and Inlet A-8C are depicted on the profile sheet. The Grading & Drainage Plan, sheet C204, depicts these pipes with HDPE. The Applicant's Engineer shall amend the plan and profile for consistency.
d) The Applicant's Engineer shall add Cleanout D-1 to the Cleanout D-1 to Existing Inlet profile.
e) A majority of the pipe runs in the Cleanout D-1 to Existing Inlet profile depict RCP within the profile sheet. However, the Grading & Drainage Plan, sheet C204, depicts these pipes as HDPE. The Applicant's Engineer shall amend the plan and profile for consistency.

4. The Stormwater Management Profiles, sheet C208, shall be amended as follows:

a) The invert elevations of Cleanout E-0 shall be provided on the Inlet E-1 to MH E-2 profile.
b) A 12-inch HDPE is depicted on the Grading & Drainage Plan, sheet C204, and a 12-inch RCP is depicted on the profile sheet for the pipe run between Cleanout G-0 and the 2'x2' Yard Drain G-1. The Applicant's Engineer shall amend the plan and profile for consistency.
c) The proposed sanitary sewer shall be included within the Cleanout G-0 to Existing Storm MH profile.
d) Proposed Inlet C-1 is depicted on the Grading & Drainage Plan, sheet C204, with a grate elevation of 91.21 and depicted with a grate elevation of 91.43 on the profile. The Applicant's Engineer shall amend the plan and profile for consistency.
e) The pipe runs in the Inlet C-3 to Inlet C-1 profile depict an RCP pipe. However, the Grading & Drainage Plan, sheet C204, depicts these pipes as HDPE. The Applicant's Engineer shall amend the plan and profile for consistency.

5. The Applicant's Engineer shall revise the proposed plans to include the underdrains and inspection ports depicted on the Rain Garden Basin Typical Cross Section and Polllinator/Rain Garden Planting Detail within Landscaping Notes and Details, sheet C216.

6. The proposed plans shall be revised to show the weir and orifice sizes and invert elevations for the proposed outlet control structure.

7. The Stormwater Management Report shall be amended as follows:

   a) The time of concentration segment calculations do not add up to the total time of concentration values provided at the bottom of the spreadsheets within Appendix B. The Applicant's Engineer shall revise the total at the bottom of the spreadsheets to match the sum of the segment calculations provided above.
   b) The Applicant's Engineer shall amend the time of concentration calculations provided for conformance with the current methodologies described in Chapter 15 of Part 630 Hydrology National Engineering Handbook. There is no minimum Tc value that can be assumed. Refer to the NJ Stormwater BMP Manual – Chapter 5 for guidance.
   c) Curve number computations shall be provided in order to verify the composite curve numbers depicted in the hydrologic computations for each drainage area.
   d) The Applicant's Engineer shall revise Tables 3.1, 3.2, and 5.3 within the Stormwater Management Report for conformance with the hydrologic computations provided in Appendix B and C of same.
   e) The hydrologic modeling computations depict a 9-inch diameter orifice with an invert elevation of 82.40 and the Outlet Control Structure Detail on sheet C224 depicts an invert elevation of 82.45 for same. The Applicant's Engineer shall amend the plan, detail, and report for consistency.
   f) The Applicant's Engineer shall amend the Storm Sewer Design Work Sheet to provide the invert in, invert out, and manning's 'n' value for each pipe run in order to verify the computations provided.

8. The Applicant's Engineer is proposing two (2) Pollinator/Rain Gardens connected in series by dual flat 18-inch HDPE pipes. However, the hydrologic computations provided in the Stormwater Management Report model these two (2) rain gardens as if they are one (1) facility without accounting for the storage that will occur within the dual 18-inch pipes connecting these systems. Staff notes that there appears to be a point in time during runoff events that the dual HDPE pipes will convey runoff under pressure flow. The Applicant's Engineer shall demonstrate the first Pollinator/Rain Garden will not overtop in the current or future design storm events before runoff is conveyed into the second Pollinator/Rain Garden.

D. Landscaping Issues

1. An alternative species shall be proposed in lieu of the FGS (European Weeping Beech) due to health complications with Beech Leaf Disease (BLD). Also, an alternative in lieu of the BD (Butterfly Bush) shall be proposed within the rain gardens, as this is an invasive species and is not recommended to be utilized.
2. The planting schedule, sheet C215, shall be revised to provide additional groundcover species to prevent monoculture, which can lead to the spread of diseases and insect infestations. Currently, 3,000 PC (Green Carpet Pachysandra) are proposed.

3. The plant schedule on sheet C215 does not have an associated symbol for the Convex Japanese Holly. The landscape plans shall be revised accordingly.

4. The plans shall be revised to provide an accurate scale and scale bar for the complete landscaping plans in order to avoid confusion during the construction phase.

5. The plans shall be revised to shift proposed NS (Blackgum) to be further back from the concrete sidewalk, located between the proposed rain gardens.

6. Nine (9) ICH are called out within the lawn space located near the southeast corner of the Cancer Center. However, graphics are not depicted, and the label ICH is not indicated within the plant schedule. The landscape plans shall be revised accordingly.

E. Lighting Issues

1. The plans shall be revised to provide the complete ordering information for all proposed light fixtures and poles in order to prevent confusion during construction.

F. As-Built Plans

As-built grading plans are required to be submitted by the developer to the Township Engineer's Office prior to occupying the site. At a minimum the following shall be provided:

1. Storm System:

    a) Pipe sizes, types and classes.
    b) Manhole rim and invert elevations.
    c) Inlet grate and invert elevations.
    d) Capacity calculations for deficient pipe slopes and velocity calculations for excessive pipe slopes.
    e) Any other pertinent information.
    f) A certification shall be provided from the stormwater management facilities design engineer indicating that same have been constructed in

accordance with the final plans and specifications and that the facilities will function as originally designed prior to site occupancy.

2. Roadway Systems:

   a) Roadway location relative to the Right-of-Way.
   b) As-Built elevations at 50-foot stations throughout the development (top of curb, gutter, and centerline grades shall be provided).

3. Buildings:

   a) Submit as-built grading plans for each phase of the building(s) prior to the issuance of certificates of occupancy.

4. Parking Areas:

   a) Where parking area slopes are less than 1% provide as-built top of curb and gutter elevations at breaks and angle points and sufficient pavement elevations to establish positive drainage to the nearest storm sewer system.

5. Water Distribution System:

   a) Pipe sizes, types, and classes.
   b) Three (3) ties to all valves (in-line and services).
   c) Stationing of all corporations on the main.
   d) Sizes of services.
   e) Location of all fittings and caps.
   f) Any other pertinent information.

6. Sanitary Sewer System:

   a) Pipe sizes, types, classes, and slopes.
   b) Manhole rim and invert elevations.
   c) Stationing of all tee-wyes.
   d) Three (3) ties to all cleanouts.
   e) Capacity calculations for deficient pipe slopes and velocity calculations for excessive pipe slopes.
   f) Any other pertinent information.