

April 13, 2018

UPHS1504

Radnor Township
Attn: Mr. Robert Zienkowski
301 Iven Ave.
Wayne, PA19087

**RE: FINAL LAND DEVELOPMENT APPLICATION
PENN MEDICINE AT RADNOR
RADNOR TOWNSHIP, DELAWARE COUNTY, PENNSYLVANIA**

Dear Mr. Zienkowski:

On behalf of the Trustees of the University of Pennsylvania Health Systems, Pennoni is submitting the attached plans and documents for consideration of Final Land Development approval. As you are aware, The Trustees of the University of Pennsylvania Health Systems are proposing the re-development of 145 King of Prussia Road. The development will involve the demolition of existing buildings and construction of a mixed-use facility including a mixed medical use facility, office and hotel. Two parking garages are proposed in conjunction with a surface parking lot.

We are in receipt of the Township's consultants review letters, including Gilmore & Associates, Inc letter dated March 26, 2018, Gannett Fleming's letter dated March 22, 2018, and Ray Daly's Memorandum dated March 23, 2018. Below is a summary of the Township's consultants' comments in *italics* with our responses in **bold**. Please note that we will submit revised plans based on these comments as part of the Final Land Development process.

Comments from Gannett Fleming Letter dated March 26, 2018

Sewage Facilities Planning

1. *Final plan approval will not be granted until Planning Approval is received from the PA DEP.*

Pennoni Response: We are in the process of obtaining all necessary signatures and approval by PA DEP, we will provide DEP approval upon receipt.

Zoning

1. *§280-63.D(5) – Parking structures may be located wholly or partly within the principal building, attached to and made part of the principal building, or constructed as a detached accessory structure. Parking spaces within structures may be reduced to not less than nine feet in width by 19 feet in depth, exclusive of aisles, for each motor vehicle. Sheet PG-A0.3 indicates that the parking spaces will be 9' x 18'.*

Pennoni Response: The parking garage plans have been revised to provide 9-ft wide by 19-ft deep parking spaces.

- 2. §280-64.G(8) – The greatest dimension in length or depth of a building (as specified in §280.64.D) may be up to 350 feet provided that: (a) the façade is constructed of brick, stone, architectural concrete, architectural metal work, or articulated glass; (b) is constructed with vertical and horizontal articulation; (c) is approved by the Township. The applicant has provided architectural renderings and building elevations of the mixed use medical facility. Additional information will be provided for the office and hotel building in a future submission.*

Pennoni Response: Additional architectural information will be provided during Final Land Development applications for the office and hotel.

- 3. §280-105.E – The height of any luminary shall not exceed 25 feet. The parking lot light detail on sheet CS6001 indicates that the height will match the existing lights. This must be revised to indicate the actual height.*

Pennoni Response: The light detail has been updated to reflect the 25-ft max. height. Please refer to sheet CS6001.

- 4. A table must be provided that clearly indicates the breakdown of impervious coverage.*

Pennoni Response: An impervious coverage table has been added to sheet CS1001.

Subdivision and Land Development

- 1. §255.21.A(3) – Each plan sheet shall be numbered and shall show its relationship to the total number of sheets. Sheets L100, L44, PG-A0.3, PG-A1.1, PG-A1.2 and PG-A1.3 must be incorporated to be numbered as part of the plan set and all sheets must be listed in the sheet list on sheet CS0002.*

Pennoni Response: The plan sheets have been revised to be numbered as part of the overall plan set and all sheets are listed in the plan index on sheet CS0002.

- 2. §255.21.A(6) – Final plans shall be on a sheet having a minimum size of 18 inches by 30 inches and a maximum size of 24 inches by 34 inches, and all lettering shall be drawn as to be legible if the plan should be reduced to half size. The applicant has requested a waiver from this requirement.*

Pennoni Response: The waiver request is located on sheet CS1001.

- 3. §255-29.A(1) – The aisle width in the parking garage must be dimensioned on the plans.*

Pennoni Response: The parking garage plans have been revised to show the dimension of the aisles.

- 4. §255-29.B(1) – Calculations for the parking lot landscaping must be provided for conformance with this section.*

Pennoni Response: The landscaping plans have been revised to show the required calculation.

- 5. §255-37.E – Sidewalks and pedestrian paths shall be adequately lighted, if required by the Board of Commissioners. The applicant has updated the lighting plan to show lighting along the sidewalk and pedestrian paths. Photometrics must be submitted for the revised lighting plans.*

Pennoni Response: The lighting plans have been updated to provide photometric calculations for the sidewalk lighting. Please refer to sheet CS2201.

6. *§255-38.B – Calculations for the shade trees provided must be shown on sheet L400. All tree species provided must be in conformance with §255-38.H(1).*

Pennoni Response: The landscaping plans have been revised to show the required calculation. The plans do specify three trees that are not listed in the approved planting list for the Township; however, these trees were reviewed and approved by the Shade Tree Commission and Township Arborist. The plant schedule does list these trees with alternative plantings that would comply with the Townships approved planting list.

7. *§255-43.1.E(2) – Where, upon agreement with the applicant or developer, it is determined that the dedication of all or any portion of the land area required for park and recreation purposes is not feasible, the applicant or developer shall pay a fee in lieu of dedication of any such land to the Township. The fee for non-residential subdivisions or land developments shall be \$3,307 per 4,000 square feet of building area. The applicant has acknowledged they will submit the required fee upon Final Land Development approval.*

Pennoni Response: The required fee will be provided prior to plan recording.

8. *§255-54.B – The central water system should be designed with adequate capacity and appropriately spaced fire hydrants for fire-fighting purposes pursuant to the specification of the National Fire Protection Association. Review and approval by the Township Engineer and the Township Fire Marshall shall be required in order to ensure that adequate fire protection is provided. We note that the applicant is working with the Township Engineer and Township Fire Marshall.*

Pennoni Response: We have met with the Township Fire Marshall and the plans have been revised based on the meeting. Please refer to the comments below in regard to Ray Daly's review letter.

Stormwater

1. *It appears that on the Post Development Drainage Area Map DA-2 the proposed bio-retention basins for PDRA 2C and PDRA 2B are named incorrectly. Following the stormwater report, PDRA 2C drains to Bio-Retention Basin 2 and PDRA 2D drains to Bio Retention Basin 3. This inconsistency must be revised.*

Pennoni Response: The Post Development Drainage Area Map DA-2 has been revised to correctly label the drainage areas.

2. *The drainage area for the infiltration trench to be counted for water quality volume needs to be shown on the Post Development Drainage Area Map DA-2.*

Pennoni Response: The drainage area for the infiltration trench treating the water quality volume has been added to the Post Development Drainage Area Map DA-2.

3. *The two-year storm event for Bio-Retention Basin 1A shows a greater outflow (0.18 cfs) than inflow (0.15 cfs). This discrepancy must be revised (see Appendix B-69).*

Pennoni Response: Bio-Retention Basin 1A has been revised and the calculations have been

updated to correct for the greater outflow than inflow from the basin. The calculations have been revised in Appendix B.

- 4. The five-year storm event for Bio-Retention Basin 1A shows a greater outflow (0.26 cfs) than inflow (0.22 cfs). This discrepancy must be revised (see Appendix B-107).*

Pennoni Response: Bio-Retention Basin 1A has been revised and the calculations have been updated to correct for the greater outflow than inflow from the basin. The calculations have been revised in Appendix B.

- 5. The ten-year storm event for Bio-Retention Basin 1A shows a greater outflow (0.31 cfs) than inflow (0.29 cfs). This discrepancy must be revised (see Appendix B-145).*

Pennoni Response: Bio-Retention Basin 1A has been revised and the calculations have been updated to correct for the greater outflow than inflow from the basin. The calculations have been revised in Appendix B.

- 6. The areas listed in the dead storage volume for Bio-Retention Basin 1D does not appear to match the contour areas shown on the plan (see Appendix C-8). This discrepancy must be revised.*

Pennoni Response: The dead storage volume for Bio-Retention Basin 1D has been revised for consistency between the plans, rate calculations in Appendix B, and volume calculations in Appendix D.

- 7. Manufacturer data for the chambers must be provided to show the storage capacity of the chambers.*

Pennoni Response: The chambers for the subsurface basins are shown on drawings CS9503-CS9504. We have provided the manufacturer's volume calculation chart in Appendix C, which shows the volume storage capacities for the basin. Additionally, attached is the manufacturer's information sheet which provides additional detail.

- 8. Infiltration testing results including a depth to the limiting zone must be provided. Also, please show location of test pits on the plans.*

Pennoni Response: Infiltration testing results have been provided in the Post-Construction Stormwater Management Report, Appendix E. A table has also been provided on the Post-Construction Stormwater Management Plan, sheet CS9001.

- 9. Infiltration volume credits for water quality volume cannot be approved at this time as an infiltration test has not been completed.*

Pennoni Response: Infiltration testing results have been provided in the Post-Construction Stormwater Management Report, Appendix E.

- 10. The Subsurface Infiltration Trench Detail on Sheet CS9503 needs to show the overflow from the trench to MH-2.01 and in the overflow elevation.*

Pennoni Response: An overflow structure detail has been added to sheet CS9503, showing the overflow structure for the subsurface infiltration trench used for a component of the water quality volume.

11. *Please provide supporting calculations showing the water quality volume storage provided for each basin.*

Pennoni Response: The water quality volumes are given in Table 10 of the Post Construction Stormwater Management Report. The supporting calculations for the storage provided has been added to Appendix C.

12. *Please provide permeability/infiltration rates for the permeable pavers and permeable pavement.*

Pennoni Response: As part of our infiltration testing, we tested at several locations for the proposed permeable pavers and porous asphalt. Results of the infiltration testing are provided in the Post-Construction Stormwater Management Report, Appendix E. Although the permeable paver materials have not been determined at this point, we have provided manufacturer information for several of the options being considered.

13. *The following profiles must be revised to show all crossings:*

- a. *Missing a water, sewer, and fire service crossing between I-1.01 and MH-1.01 (CS4001).*
- b. *Missing two (2) existing underground communication crossings between MH-3.02 and MH-3.01 (CS4003).*
- c. *Missing a water crossing between MH-1.13 and MH-1.12 (CS4004).*
- d. *Missing a fire service crossing between MH-1.12 and I-1.32 (CS4004).*
- e. *Missing water, sewer, and fire service crossing between I-1.32 and EW-1.02 (CS4004).*
- f. *Missing fire service and duct bank crossing between I-1.35 and MH-1.12 (CS4004).*
- g. *No walls or gas line are shown on Utility Plan, missing communication crossing between SMH-2 and SMH-4 (CS4501).*
- h. *Missing second fire service line between SMH-4 and SMH-5 (CS4501).*

Pennoni Response: All profiles have been revised to provide all crossing utilities as required.

14. *Label the following on the Utility Plan: MH-1.06 and MH-1.09.*

Pennoni Response: MH-1.06 and MH-1.09 as well as any revised inlets and manholes have been labeled. For clarity, the sanitary manholes are shown on the CS1701 and the storm inlets and manholes are labeled on the CS9001.

15. *Final approval of the stormwater management plan will be required as part of the Grading Permit process. Any revisions to the size or location of the individual structures or other features will be addressed at that time.*

Pennoni Response: Acknowledged, a grading permit will be provided prior to commencement of earth moving activities.

Sanitary Sewer

1. *A minimum of 5 foot of coverage must be provided for all sanitary sewers.*

Pennoni Response: The sanitary sewer systems have been revised to provide a minimum of 5-ft of cover, please refer to sheet CS1701 and CS4501-4502.

- 2. The rim elevations must be labeled as such on the sanitary sewer profiles on sheet CS4501.*

Pennoni Response: The rim elevations have been added for the sanitary sewers, please refer to sheet CS1701 and CS4501-4502.

- 3. If the hotel will include a restaurant or food preparation area, a grease trap must be provided.*

Pennoni Response: At this time the hotel is only proposed to contain a small warming kitchen and therefore a grease trap is not necessary.

- 4. An explanation must be provided as to why there are two sanitary sewer connections to the parking garage connected to the mixed medical facility.*

Pennoni Response: The sanitary sewer connection at the south side of the garage in the loading area is to provide drainage for elevator pits from the garage and plumbing fixtures in a portion of the garage near the loading dock area. The second connection, previously shown on the northwest side of the garage has been removed from the plans.

- 5. All manholes not located in the paved areas must be equipped with watertight frames and covers to prevent the inflow of surface waters into the sanitary sewer.*

Pennoni Response: Sanitary Sewer Note #9 has been added to sheet CS0002 in regard to the watertight frames and covers for manholes located in vegetated areas.

- 6. There shall be no lateral connections into sanitary sewer manholes.*

Pennoni Response: The laterals have been revised so that they do not connect to sewer manholes as shown on sheet CS1701. Additionally, Sanitary Sewer Note #10 has been added to sheet CS0002.

- 7. A minimum 10-foot horizontal and 18-inch vertical separation must be maintained between the sanitary sewer and the water and storm sewer lines.*

Pennoni Response: The plans have been revised to provide a minimum of 10-ft horizontal and 18-in vertical separation between sanitary sewers, storm sewers and water lines.

- 8. The attached frame and cover detail must be used on the plans*

Pennoni Response: The frame and cover detail has been added to sheet CS6501.

- 9. It appears that there be a retaining wall crossing the sanitary sewer. All retaining walls must be shown on the utility plans. Details of the retaining walls must be provided to ensure adequate clearance with the sanitary sewer.*

Pennoni Response: The retaining walls will be designed, and a separate building permit application will be provided for the retaining walls. As part of the design additional detail will be provided in regard to the sanitary sewers.

General

1. *New deeds must be prepared and recorded at the Delaware County Court house at the time of plan recording for the consolidation of the lots.*

Pennoni Response: Deeds will be provided under separate cover for the consolidation of the lots.

2. *The applicant has provided detailed parking structure plans for the structure with 850 proposed spaces as sheets PG-A0.3, PG-A1.1, PG-A1.2 and PG-A1.3. Detailed plans must be provided for all parking structures.*

Pennoni Response: Plans have been provided to demonstrate the layout of the parking spaces for each parking structure. Additional building permit plans will be provided for the parking structures which will provide full detail of the garages.

3. *The plan located on the top right of sheet PG-A0.3 does not appear to be the current plan. That plan indicates 857 parking spaces and a garage height of 53.4". This must be revised to be consistent.*

Pennoni Response: The plans have been updated to reflect the proposed height of the parking garage. Please refer to sheet CS1001.

4. *Information regarding the proposed retaining walls must be provided including proposed height and structural calculations if required.*

Pennoni Response: The retaining walls will be designed, and a separate building permit application will be provided for the retaining walls.

Comments from Gilmore & Associates, Inc. Letter dated March 22, 2017

Zoning Comments

§280-63.D(5) – Revise the Parking Garage stall size to provide a minimum stall not less than nine feet in width by 19 feet in depth, exclusive of the aisles, for each motor vehicle. The comment must be addressed or a variance requested.

Pennoni Response: The parking garage plans have been revised to provide 9-ft wide by 19-ft deep parking spaces.

Subdivision and Land Development Ordinance:

- A. *§255-20.B(5) – The Applicant is required to provide a comprehensive Final Transportation Impact Study to the Township incorporating all sections provided during preliminary land development. Additional documents were provided to the Township separate from the Transportation Impact Study (TIS) must be a complete standalone document.*

Pennoni Response: A revised Transportation Impact Study has been provided with this submission. Additionally, a copy was provided to PennDOT on 4/10/2018.

- B. *§255-21 – The Applicant is responsible for providing roadway improvement plans including the following documents prior to Final Land Development approval:*

1. *Construction details related to ADA curb ramps, including spot elevations, dimensions and slopes; including ADA complaint curb ramps on all corners of Raider Road and King of Prussia Road at the proposed traffic signal.*

Pennoni Response: The curb ramp designs are included in the Street Occupancy Permit Plans.

2. *Traffic Signal Construction Plans, new and modified Traffic Signal Permit Plans, Traffic Signal System Plans, AutoCAD files of As-Built Plans, and a Traffic Signal Design Report must be provided to the Township and PennDOT for review and approval.*

Pennoni Response: The following items relating to the traffic signal design are included in this submission to the Township:

- **King of Prussia Road and Raider Road intersection Traffic Signal Permit Plan**
- **King of Prussia Road and Raider Road intersection Traffic Signal Construction Plan**
- **King of Prussia Road and Raider Road intersection Curb Ramp Plans**
- **Lancaster Avenue (SR 30) and I-476 Northbound Offramp / King of Prussia Road intersection Traffic Signal Permit Plan**
- **Traffic Signal System Permit Plan I-0010**
- **Traffic Signal Design Report**

The following items relating to the traffic signal design were submitted to PennDOT on 4/10/2018:

- **King of Prussia Road and Raider Road intersection Traffic Signal Permit Plan**
- **King of Prussia Road and Raider Road intersection Curb Ramp Plans**
- **Lancaster Avenue (SR 30) and I-476 Northbound Offramp / King of Prussia Road intersection Traffic Signal Permit Plan**
- **Traffic Signal System Permit Plan I-0010**
- **Traffic Signal Design Report**

3. *All new or modified signal permit plans and system plans require a completed PennDOT Traffic Engineering Form 160 (TE-160) Application for Traffic Signal Approval and resolution.*

Pennoni Response: The draft TE-160 form is included in this submission. This draft was also included in the PennDOT submission on 4/10/2018.

4. *Include a separate Pavement Marking and Signing Plan in the plan set:*
 - i. *Provide traffic control signage including existing, removed and proposed; we note that no signs were included in this plan set for the new auxiliary turn lanes on King of Prussia Road or the accesses to King of Prussia Road.*
 - ii. *Provide the geometry of the proposed (final) traffic lane patterns including the location and color of all pavement markings, the lane assignment and proposed signage.*
 - iii. *Eliminate from the Pavement Marking and Signing Plan any existing pavement markings that are to be removed.*
 - iv. *Include a key identifying line geometry, color indication and dimensions or if clarity permits, the line color and geometry may be identified on the Pavement Marking and Signing Plan.*
 - v. *Dimension all lane widths and lane and bay taper lengths along with crosswalks and stop bars.*

Pennoni Response: Separate Pavement Marking and Signing Plans are included in the Street Occupancy Permit Plans.

5. *Provide plans for the timber bridge and supporting documentation.*

Pennoni Response: Details for the timber bridge have been provided on sheet CS6002.

6. *Note 8 under GENERAL CONSTRUCTION AND GRADING NOTES does not adequately address the required Maintenance and Protection of Traffic plans for work along King of Prussia Road. It must be stated on the plan that "Maintenance and Protection of Traffic during construction shall be in accordance in PennDOT Publication 213, "Work Zone Traffic Control Guidelines", amended June 6, 2014, and Title 67 PA Code, Chapter 212, "Official Traffic Control Devices", dated February 4, 2006 or most current." A sequence of construction narrative must be added to the plans. Reference the appropriate MPT figures accordingly. If long-term traffic control is required, the narrative must also address the construction staging and differentiate between the use of short term and long term traffic control patterns.*

Pennoni Response: Separate Maintenance and Protection of Traffic Plans are included in the Street Occupancy Permit Plans and they satisfy these requirements.

- C. *§255-21B.(1)(I) – Sheet CS0901, identify the owner of the property between the two Legal Right-of-Way Lines at the southern property line and SR 0476. Clearly label which parcel is APN 36-02-01234-00 Block 16; it is currently shown within the SR 0476 right-of-way.*

Pennoni Response: The label for parcel APN 36-02-01234-00 Block 16 has been updated accordingly on sheet CS0901.

- D. *§255-29(C)5) – Revise the Parking Garage Plans to identify the proposed aisle widths for all levels of the Parking Garage Plans.*

Pennoni Response: The parking garage plans have been revised to include the aisle widths.

- E. *§255-30.A – Identify the area adjacent to the parking garage that is west of the loading area wall and is approximately 10'x 60'. If this area is intended for loading, it must meet the requirements for this section.*

Pennoni Response: The loading area has been updated in accordance with §255-30.A.

- F. *§255-37 – Sidewalks and pedestrians paths. Provide spot elevations, widths and slopes to show the connection from the proposed on-site sidewalk to the existing SEPTA facilities is ADA accessible. Provide ADA facilities for the trail crossing at the southern driveway.*

Pennoni Response: Spot elevations, widths and slopes have been added to the sidewalks and pedestrian paths to show conformance with ADA accessibility. Please refer to sheets CS1001 and CS1501.

- G. *§255-37.C – Provide an easement for the proposed pedestrian trail from driveway opposite of Raider Road to the southern property line.*

Pennoni Response: An easement has been added for the pedestrian trail as required. Please refer to sheet CS1001.

H. §255-37.D - Provide curb cuts at the southern driveway at King of Prussia Road.

Pennoni Response: Will Comply. Upon discussion with the Township Traffic Engineer, we are providing the handicap ramps where the sidewalk/trail intersect the driveway, rather than at the intersection of the driveway with King of Prussia Rd.

I. §255-37.E – Sidewalks and pedestrian paths shall be adequately lighted, if required by the Board of Commissioners. Revise the lighting plan for consistency between the proposed lights and illumination levels shown on Sheet CS2201.

Pennoni Response: The lighting plans have been updated to provide photometric calculations for the sidewalk lighting. Please refer to sheet CS2201.

J. §255-37.H – Where sidewalk grades exceed 5%, a nonslip surface texture shall be used. The Final Land Development plans should provide additional details regarding any proposed walking paths or sidewalks to ensure compliance with this section. Verify that the sidewalk connection at the rear of the site to the SEPTA station does not exceed a slope of 5% and does not require pedestrians to cross into parking stalls.

Pennoni Response: We have provided additional detail on the plans to demonstrate that proposed walkways do not exceed 5%. Please refer to the grading plan, sheet CS1501.

General Comments

A. *Truck Turning Templates:*

1. *The Applicant has demonstrated a WB-40 truck can adequately navigate turns into and out of the Northern/SEPTA driveway; however, the Applicant must verify the WB-40 truck is the largest truck anticipated to utilize this access and include a note and appropriate truck restriction signage restricting this driveway for vehicles no larger than a WB-40.*

Pennoni Response: The appropriate truck restriction signage is shown on the Pavement Marking and Signing plans that are included in the Street Occupancy Permit plans.

2. *Sheet CS9801 (Sheet 33): Provide WB-67 exit movements (left and right turns) and southbound left turns into the Southern Site Driveway at King of Prussia Road.*

Pennoni Response: The truck turning plan, sheet CS9801, has been revised to show the requested truck turning movements.

3. *The Applicant did not include a truck turning template for the intersection of King of Prussia Road and the proposed Center Driveway/Raider Road.*

- a. *If no trucks will be utilizing the Center Driveway, truck restriction signage must be provided.*
- b. *Minimally, bus turning templates must be provided for the Raider Road access to King of Prussia Road to ensure busses can enter and exit Raider Road without encroaching into opposing traffic lanes. Stop bars may need to be staggered on both Raider Road and King of Prussia Road to ensure maneuvers can be safely accommodated.*

Pennoni Response: The vehicle turning templates for the intersection of King of Prussia Road and Raider Road / Main Site Access have been included in this submission. Refer to sheet CS9801.

- B. *Show the location of the proposed bus shelter provided on King of Prussia Road southeast of the SEPTA Access/Northern Site Access. ADA accommodations must also be provided for access to the bus stop.*

Pennoni Response: The bus shelter location has been added to sheet CS1001. It is anticipated that the bus can pull to the curb and “kneel” to provide ADA accessibility.

- C. *Show the full extent of the proposed dedicated left turn lane on King of Prussia Road at the Northern Access/SEPTA Station Driveway. If necessary, provide a match line similar to the one included on Sheet CS1701 (sheet 11).*

Pennoni Response: The full extent of the dedicated left turn lane is shown on the Roadway Plans.

- D. *Sheet CS0002: Under GENERAL CONSTRUCTION AND GRADING NOTES; verify and update as need all dates and references included in note number 2.*

Pennoni Response: The dates and references for Note #2 of the General Construction and Grading Notes has been updated accordingly on sheet CS0002.

- E. *The following signage and striping revisions should be provided on the parking garages plans:*
- 1. Provide ONE WAY and/or DO NOT ENTER signs at the locations where appropriate.*
 - 2. Provide traffic flow left-turn or right-turn arrows where traffic must turn in only one direction.*
 - 3. Provide clearance height signs where appropriate.*
 - 4. Provide wayfinding guidance including additional parking signs along with exit signs were appropriate.*

Pennoni Response: Additional detail in regard to garage signage will be provided at a later date.

- F. *For consistency, verify the number of parking spaces available in both garages. The Northern Garage (Sheet PG-AO.3) indicates 857 spaces in the top right diagram while the chart on the same sheet indicates 850 spaces. The Southern Garage (Sheet PG-A1.1) indicates 955 spaces and Sheet CS1001 of the land development plan set indicates 1,000 spaces. The number of parking spaces must be consistent.*

Pennoni Response: The plans have been revised to provide the correct number of parking spaces and for consistency between the parking garage plans and the site plan.

- G. *Per PennDOT Publication 111 Traffic Control – Pavement Markings and Signing Standards TC-8600 and TC8700 Series, the following signage and striping revisions must be verified or updated in future submissions:*
- 1. Include a detail for the “ARROW/ONLY” pavement marking legend indicating the top of the arrow 60’ (20’ minimum) from the stop bar/stop location and the top of the “ONLY” spaced 32’ from the bottom of the arrow. A note must also be added indicating that the dimensions may be modified slightly in order to meet field conditions.*
 - 2. All stopbars are to be located a minimum 4 feet offset from crosswalks.*
 - 3. All crosswalks are to be a minimum width of 6’ feet. The crosswalks near the northern garage appear to be less than 6’ wide.*

Pennoni Response: The detail is shown on the Pavement Marking and Signing plans that are included in the Street Occupancy Permit Plans.

- H. *Include R7-302 NO PARKING SYMBOL/ARROW signs along the north side of the Northern/SEPTA driveway. Parking should not be permitted along this driveway.*

Pennoni Response: The required no parking signs have been added to the northern driveway, please refer to sheet CS1001.

- I. *Relocate the sign tabulation included on Sheet CS0002 to the required Pavement Marking and Signage sheet discussed above; exclude any unused signs from the sign tabulation set.*

Pennoni Response: A sign table is located on sheet CS1001.

- J. *The trail indicates a permeable walkway. If the trail is intended for ADA use, the applicant should verify and note the surface will be ADA compliant.*

Pennoni Response: Our intention is for the proposed trail to be constructed using porous asphalt, a detail of the asphalt is located on sheet CS9503 and the site plan has been revised to reflect this.

- K. *Prior to Final Approval, the Applicant is required to coordinate with Radnor Township School District to eliminate parking along the south side of Raider Road near King of Prussia Road. The onstreet parking along the south side of Raider Road will conflict with stacked vehicles awaiting a green traffic signal and this area must remain free of parked vehicles for a minimum of 150 feet unless additional information is provided to support a reduced parking prohibition.*

Pennoni Response: We are actively working with Radnor School District in regard to this comment.

- L. *All turn lanes should be revised and designed to meet whichever is the greater of the Turn Lane Warrant analysis or the 95th percentile queues.*

Pennoni Response: The turn lanes have been revised to accommodate the greater of the Turn Lane Warrant Analysis or the 95th Percentile Queuing Analysis

- M. *To assist the contractor during construction, modify the plan to include stationing on King of Prussia Road*

Pennoni Response: A construction baseline is provided on the Street Occupancy Permit Plans.

- N. *Revise the proposed 25 foot bay tapers to 75 foot minimum bay tapers.*

Pennoni Response: The bay tapers / opening transitions from two-way left turn lane to dedicated left turn lane are provided at 75 feet, as requested.

- O. *Provide spot elevations at the bottom of curb, top of curb, edge of pavement, and grade break locations at minimum 50' intervals along areas of widening, new curbing and at minimum 10' intervals along radius returns.*

Pennoni Response: Bottom of curb (gutter) elevations have been added to the plan at 50-foot intervals along the proposed roadway widening and at 10-foot intervals along proposed curb radii.

Please note that top of curb elevations are not shown since the proposed curb is to have a uniform 8" height. (PennDOT Publication 72M, RC-64M)

- P. *Given the extent of the roadway modifications and pavement marking revisions, the Township may want to request the Applicant provide a mill and overlay along the entire site frontage of King of Prussia Road.*

Pennoni Response: A mill and overlay is shown on the Street Occupancy Permit Plans along the entire site frontage of King of Prussia Road.

Ray Daly's Memorandum dated March 23, 2018

The main drive at the front of the Hospital building, by the canopy is a concern. The island configuration will not allow Radnor's ladder truck to make the left turn. The island restricts the turning radius as shown because it has the truck hugging the curb to complete the swing (turn). The overhang of the ladder will hit the canopy as the turn is being made. The island needs to be narrower and shorter in length to help facilitate the turn. If possible there should be mountable curbs on the island. The ladder truck cannot hug the curb to make turns, as the overhang is too great as it follows through. The turning radius for the ladder is 72' outside and 36' inside minimum, bumper to bumper, no overhang for the ladder.

In a meeting with Township Staff, including the Radnor Fire Department Chief we discussed the turning movements. Based on this meeting it was determined that the ladder truck does not necessarily need to complete the turn movement near the Medical Office Building drop-off area; however, we are now proposing an additional plaza area with mountable curb that would allow for the truck to maneuver in this area. Please refer to sheet CS9802 for truck turning movement.

The permeable asphalt drive/walk along the side of the main Hospital parking structure is too narrow for the ladder truck to use. The drive/walk width looks to be approximately 20' in width. The ladder truck is 10' wide and the out riggers extend 8'. So, when the truck is in service the minimum width required is 18'. With a 20' road width the Fire Company needs to be dead center of the road, that leaves 12" to spare. It also does not allow foot access around the truck. Please consider widening the road width to 25' minimum. Also, there should be a requirement that the drive/walk be plowed to allow access all year round, should it be needed.

The sidewalk in this area has been revised to 25-ft width.

The access entrance to the permeable drive/walk, at the end of the main road by the canopy is a concern. The left jog, into the access drive/walk is too tight for the truck to make. Also, there appears to be an ADA depressed sidewalk and curb, and what looks to be concrete sidewalk with curbs, all of which the truck will need to drive over. This needs to be reworked to make the jog flow more smoothly. Please remember the ladder truck length is approximately 41' and its wheel base is 21'. And the ladder will need to backup out of the space when finished, not an easy task with this configuration.

This area has been revised to incorporate an additional plaza area with mountable curb that would ease the truck maneuvering in this area. Please refer to sheet CS9802 for truck turning movement.

The projection at the corner of the hotel and parking lot exit drive. The ladder truck will not be able to make the corner to either enter or exit the front of the hotel. I do see an ADA depression for the walkway leading to the new parking garage at the location. The sidewalk should be reconfigured by adding a larger turning radius and the projection removed. Please consider mountable curbs in the parking area in front of the hotel to facilitate better maneuvering with any Fire equipment.

The plans have been revised to include mountable curb in this area. Also, the truck turning movement has been updated in this area, please refer to sheet CS9802.

What is the height of the Hospital parking structure inside, or at the basement level? I know the plans shows ambulances parking below and the deck is showing at 14'. Are there any projections lower than 14'? This should also include any piping or lighting. The new ambulances are measuring just 10' in height.

The first level of the parking garage will be 11-ft clear, the ground level will be 13-ft clear.

The last item, I have not been able to discern the new locations of the fire hydrants on the plan. I also have not been on site to see what hydrants will be remaining. May I request, if any additional hydrants need to be added, the site developer would consider placing them at the request of the Fire Marshal?

At the meeting with Township staff, hydrant locations were discussed. The plans have been revised to show the locations discussed with the Fire Chief.

I thank you in advance for your assistance on this project. Should you have any questions or need additional information please do not hesitate to contact me at (610) 422-2457 or mkissinger@pennoni.com.

Sincerely,

PENNONI ASSOCIATES INC.



Michael Kissinger, PE
Land Development Division Manager

Attachment

cc: Pat Dorris, The Trustees of the University of Pennsylvania Health Systems
David Falcone, Saul Ewing Arnstein & Lehr LLP