CIVIL ENGINEERING / SURVEYING / UTILITIES

February 9, 2024

Mike Weisenborn
Lee's Summit – Development Services
220 SE Green Street
Lee's Summit, MO 64063

RE: Application Number: PL2023334
Commercial Final Development Plan
John Knox Village Courtyards Building E
Response to Review Comments Sent 12/20/23

Dear Mike,

We are in receipt of Commercial Final Development Plan comments regarding the John Knox Village Courtyards Building E project located at 515 NW Moore Street. See below for your original comments and our respective responses.

Planning Review

1. DRIVE AISLE. Dimension the pavement width (excluding curb and gutter) of the proposed parking lot drive aisles. The drive aisles serving two-way traffic require a minimum 24' pavement width, whereas aisles serving one-way traffic require a minimum 10' pavement width.
   Response: The pavement width has now been labeled at the drive aisles on the dimension plan.

2. PAVEMENT DESIGN DETAIL. The asphalt pavement details provided on Sheet C7.0 do not meet City requirements. The City's light duty asphalt requirement is 1.5" surface course and 4" base course. The heavy-duty asphalt requirement is 1.5" surface course and 5" base course.
   Response: The pavement details have been revised to meet the city requirements.

3. TRASH ENCLOSURE. Please confirm that the proposed development will not include an exterior trash dumpster site. If an exterior dumpster will be located on the site, show and label the proposed location. Each trash enclosure shall be constructed of masonry walls or steel architecturally designed walls with either a solid steel opaque gate painted to be compatible with the color of the masonry or steel walls and building it is to serve or a steel framed semi-opaque gate with a screen mesh material approved by the Director that provides an appropriate visual barrier.
   Response: There is no exterior trash dumpster planned with the project.

4. COLORS. Label the proposed exterior building material colors on Sheet A5.1A.
   Response: The exterior building material colors have been labeled.

5. LIGHTING.
   - Show the proposed location of the relocated light poles.
   Response: The proposed location of the relocated light poles is now included.

   - Provide manufacturer specifications for all proposed exterior wall-mounted light fixtures for review. All exterior fixtures shall comply with the requirements of UDO Sections 8.220, 8.260 and 8.270.
   Response: Please find included with the resubmittal the proposed exterior wall-mounted light fixtures.

   - Provide a photometric plan in accordance with UDO Section 8.230.
   Response: A photometric plan is now included with the plans.

Engineering Review

1. A SWPPP is required for site disturbance over 1 acre. Please provide a SWPPP for the project.
   Response: A SWPPP will be provided prior to start of construction. Contact information for the contractor is usually included in this document and the project hasn't been bid out for construction at this time.

2. Even though the sanitary sewer is a private line, it has the potential to serve upstream developments that are not part of John Knox Village. There is concern about re-routing the 8-inch line around the building by providing an oversized 10-inch line (for the reason to make-up the needed slope of 0.8%), so this issue will need to be reviewed by Water Utilities. We expect an answer soon.
   Response: Acknowledged. The proposed sanitary sewer relocation routing has been revised to the suggested routing staff provided. This allows the pipe to be 8" and provide the required slope.

3. Utility Plan: Copper is required from the water main to the meter, and a minimum of 10 feet beyond the meter. Please revise.
   Response: The water piping material has been revised.

4. Utility Sheet: Show a gate valve immediately prior to the backflow vault. Please revise.
   Response: A gate valve has been added to the line prior to the backflow vault.

5. Utility Sheet: W14 note calls for connection of domestic service to building. This implies the line in question is the domestic service line from the water main, which is not the case. W6 denotes where the domestic service enters the building, not W14. W14 appears to be a separate line from the building to the dog park drinking fountain. Please clarify to eliminate any confusion.
   Response: The notes have been revised to avoid confusion.

6. Utility Sheet: The exterior backflow vault is not required since the building appears to be within 50 feet of the main. A gate valve is still required, however, on the private fire line. Please revise as appropriate.
   Response: We will utilize an exterior backflow vault as there is limited space in the interior of the building for an internal backflow preventer on the fire service.

7. Utility Sheet: If private fire hydrants are required as per Fire Department comments, they may require a backflow vault exterior to the building. Based on what is shown, however, exterior backflow vaults would not be required on the two (2) fire hydrants shown. Please evaluate Fire Department comments, and if additional hydrants are necessary, please evaluate whether exterior backflow vaults are necessary and revise as appropriate.
   Response: There is one private fire hydrant proposed on the east side, however this will come off the private water main which has a backflow preventor on it.

8. Please show the HGL for the design storm on the profile view of all storm lines greater than 10 inches diameter. If the pipe cannot manage the 100-year event without surcharging, a suitable overflow route shall be shown, and the HGL shall be a minimum of 2.0 feet below the lowest opening in any building. Please revise as appropriate.
   Response: The HGL has been added to the profile view of the storm lines. The only section of pipe without the capacity to carry the 100-year event is the most downstream section. This structure has an overflow route to the west away from the building and the HGL at this location is more than 2 feet below the building elevation.

9. Please label all storm lines as "PRIVATE" on the profile views. Please label all sanitary sewer lines as "PRIVATE" on the profile views. This will enable our GIS technicians to enter the data appropriately.
   Response: The words private had been added to the profile views.

10. Curb and gutter section view should be revised to show the subgrade material (i.e., aggregate and geogrid or chemically stabilized subgrade) a minimum of 1.0 feet beyond the back of curb. This can be done on the typical pavement section, or by revising the City standard detail for curb and gutter to show the extension of the subgrade a minimum of 1.0 feet beyond the back of curb. Please revise as appropriate.
    Response: The curb and gutter sections have been revised.

11. Pipe bedding detail for HDPE should be revised to show a minimum of 12 inches of aggregate cover over the top of pipe rather than 6 inches as shown. This requirement took effect in July 2020. Please revise as appropriate.
    Response: The detail has been revised.

12. Recommend a thorough review of the storm line being re-routed to ensure it can manage infrequent storm events. It appears a severe flooding event has the potential to flood buildings since there does not appear to be any overflow route. Please evaluate and revise the design if appropriate.
    Response: See response to comment 8 above. The east side of the building has an overflow path to the drive aisle to handle the green space at the southeast corner of the building.

13. Utility Plan: Sanitary sewer connections show a tee. This is not allowed in the City of Lee's Summit. A wye shall be installed as per the City of Lee's Summit standard detail. Please revise.
    Response: The connection for the dog park fountain has been revised to a wye. The standard detail has been added to the plans.

14. ADA-accessible ramp details: please remove the "wings" on the ADA-accessible ramps. Please grade to the ramp rather than constructing a concrete "wing". Please revise the plans as appropriate.
    Response: The wings have been removed from the ramps.

15. Calculations in the form of a table for the storm lines appeared to be missing from the plans. Please provide storm line calculations in table format within the plans. Ensure the HGL for the design storm is transcribed to the profile views of all storm lines greater than 10 inches diameter.
    Response: Calculations have been added to the plans along with a drainage map.

16. Recommend at an absolute minimum the new storm line being re-routed around the building be sized to manage the 100-year event for the gravity condition. Otherwise, the potential for structure flooding appears possible. Please evaluate and revise as appropriate.
    Response: See response to comment 8 above.

17. Pavement design does not meet the Unified Development Ordinance (UDO) in terms of pavement thickness, aggregate base, or chemically stabilized subgrade/geogrid. Please see the UDO for specific requirements. In lieu of using the standard pavement section specified in the UDO, a geotechnical study using on-site sampling may be used to show the alternate design is at least as good as the UDO version. If interested, please contact me and I will provide the specific parameters needed for a geotechnical study and report.
    Response: The pavement sections have been revised to follow the UDO.

18. Please be aware the UDO does not distinguish between parking aisles and drive aisles. The only distinction in pavement design is between 1) normal duty pavement including drive aisles and parking stalls, and 2) heavy duty pavement to support garbage trucks, emergency vehicles, etc. Please review and show on the site plan where heavy duty and light duty asphaltic concrete pavement will be constructed.
    Response: The title for each pavement section has been revised to indicate normal and heavy-duty pavements.

19. Sheet C7.0: Please remove the "wings" from the ADA-accessible ramp. As previously discussed in this comment letter, wings are not necessary as the area shown can be graded to the ramp. Please revise the details as appropriate.
    Response: The wings have been removed from the ramps and the detail has been revised.

20. Sheet C4.0: It is extremely difficult to determine where the retaining walls are located on this sheet. The legend shows a solid line. There appear to be several solid lines on this sheet. Please review and revise as appropriate so it is clear to everyone reading the plans where the retaining wall(s) are located.
Response: Spot grades have been added to the plan calling out the wall elevations to help with clarifying the locations.

21. Utility Sheet: SS-06 shows the new sanitary service line connecting directly to a manhole. This is not allowed in the City of Lee's Summit unless it is an 8-inch line. Please connect to the relocated line with a wye connection in accordance with the Lee's Summit standard detail. Please revise as appropriate.
Response: The proposed building sanitary service connection has been revised.

22. The City standard detail for sanitary sewer connection appeared to be missing from the plans. Please provide the City standard detail SAN-1.
Response: The detail has been added to the plans.

23. Truncated domes appeared to be missing from the ADA-accessible ramps along Moore St. Although this is a private road, it would appear truncated domes would be appropriate given the nature of the development. Please revise as appropriate.
Response: Truncated domes are now shown at the ramps along Moore Street.

24. An itemized and sealed Engineer's Estimate of Probable Construction Costs should accompany your final submittal drawings. Please do not include items such as the building, lighting, railing, trees, shrubs, or retaining walls.
Response: An updated cost estimate is provided with the resubmittal.

Fire Review

1. All issues pertaining to life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures, and premises, and to the safety to fire fighters and emergency responders during emergency operations, shall be in accordance with the 2018 International Fire Code and local amendments.
Response: Acknowledged.

2. IFC 507.1 - An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction. Work with Water Utilities to provide information on available fire flow in the area. Fire flow shall meet the requirements of IFC Table B105.1(2) for a V-B or V-A construction. A 50% reduction in fire flow is allowed per local amendment for the sprinkler system.
Response: The building construction type will be V-A and has a total square footage of 72,000 SF. Per Table B105.1(2), this would require a fire flow of 4,750 GPM. With the 50% reduction allowed, the project will require a fire flow of 2,375 GPM. Per correspondence with City staff on August 14, 2023, the Water Department completed an analysis of the existing system to confirm that the required fire flow of 2,375 GPM could be provided without needing to make any modifications to the system.

3. IFC 507.5.1 - Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 300 feet from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official. Show all available hydrants to meet the 300' requirement and required fire flow.
   Response: Response.

4. IFC 503.2.3 - Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities. Confirm the medium duty pavement will support 75,000-pounds.
   Response: The pavement section proposed for the fire lanes is based on the city required pavement section provided in the UDO for fire lanes.

5. IFC 503.4 - Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established in Section 503.2.1 shall be maintained at all times. How will access to be maintained to B building hydrant and FDC?
   Response: The existing hydrant and FDC for Building B will be outside of the construction fence for the project. The drive north of Building B will be maintained accessible and the trash area to the east can be utilized as a turnaround.

6. IFC 503.3 - 503.3 Marking. Where required by the fire code official, approved signs, or other approved notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility. Fire lanes may be marked in one or a combination of methods as approved by the fire code official. Curbs. All curbs and curb ends shall be painted red with four inch (4") white lettering stating, "FIRE LANE—NO PARKING". Wording may not be spaced more than fifteen feet (15') apart. Where no curb exists or a rolled curb is installed, a 6-inch (6") wide painted red stripe applied to the concrete or asphalt with four inch (4") white lettering stating "FIRE LANE—NO PARKING. "Signs. In areas where fire lanes are required, but no continuous curb is available, one of the following methods shall be used to indicate the fire lane. Option 1: A sign twelve inches (12") wide and eighteen inches (18") in height shall be mounted on a metal post set in concrete a minimum of depth of eighteen inches (18") set back one foot (1') in from the edge of the roadway with the bottom of the sign being seven feet (7') from finished grade. Signs shall face oncoming traffic. Spacing of signs shall not exceed fifty feet (50') between signs. Signs shall be reflective material with a white color background with symbols, letters, and border in red color. "FIRE LANE—NO PARKING". Option 2: A sign twelve inches (12") wide and eighteen inches (18") in height shall be mounted on the side of a structure or other permanent fixture approved by the Fire Code Official. The bottom of the sign being seven feet (7') from finished grade. Spacing of signs shall not exceed fifty feet (50') between signs. Signs shall be reflective material with a white color background with symbols, letters, and border in red color. "FIRE LANE—NO PARKING".
   Response: Notes have been added to the plan to paint the curbs of the fire lane per the notes above.

Building Codes Review

1. The water piping from the main to 10' past meter must be copper.
   Response: The water piping material has been revised.

2. Provide cleanout near where sanitary exits building.
   Response: A cleanout has been added to the sanitary service line.

If you have any questions on any of the above, please feel free to call me at 913-663-1900 or email me at eric.byrd@ibhc.com.

Sincerely,

Eric Byrd, P.E.
Senior Project Engineer