

**DEPARTMENT OF ENGINEERING**  
**PUBLIC WORKS – STORMWATER MANAGEMENT**  
**CITY OF PLYMOUTH, INDIANA**  
**900 OAKHILL AVENUE - P.O. BOX 492**  
**PLYMOUTH, IN 46563**

Philip R. 'Rick' Gaul, P.E.  
City Engineer

PHONE 574-936-3614  
FAX 574-936-3017

**TRC MEETING NOTES:**

**DATE: October 22, 2019**

=====

**AGENDA ITEMS:**

Centennial Crossings - Bernie Feeney

---

**ATTENDANCE:**

See attached Attendance Sheet for 2019-10-22

**MEETING NOTES:**

**Centennial Crossings - Bernie Feeney**

Plymouth-Goshen Trail

**Project Summary:**

The developer is interested in developing 59 – 2 to 3 bedroom single family homes (12 possible home layouts), 2 buildings for senior living that will contain 48 units, 3 villa buildings containing 24 units, 9 apartment buildings (3 story) containing 132 units and a club house.

A Secondary plan we received and distributed to the TRC members on Monday October 22, 2019 for their review. A revised plan was received the previous day before the meeting.

The plans are still being developed, many areas of the plans are not complete, difficult to read or contain errors.

**Planning:**

- Secondary Plan approval is on the Plan Commissions agenda for November 6, 2019.
- The flood plain elevation has been determined and will be incorporated into the plan set.
- Wetland delineation has been completed and will be incorporated into the plan set.
- Notations on the plans that reference "Preliminary Plan" will be changed to "Secondary Plan".
- Ralph read from Section 5 Item C of the Plymouth Zoning Ordinance outlining the information that is required for a Secondary Plan approval.
- The secondary plans need to include the Landscaping Plan and final landscaping details.
- Finalize the tabulation of the parking spaces on page 3 of the plans.

- No covenants were presented with the plans and are still under development. Burke will be developing the covenants that will be made part of the secondary plans prior to Plan Commission approval.
- All financial guarantees need to be in place before a building permit can be issued. Bonds are required for anything public owned as well as the SWPPP and privately owned drainage features
- Plans need to indicate dimensions surrounding each apartment building.
- Once plans are approved by the Plan Commission the documents will need to be recorded.
- The current set of plans are using street names that are temporary. Street name will need to be finalized prior to Plan Commission approval.
- A signature area will need to be added to the plans for the Plan Commission.

### **Emergency Services:**

- The Plymouth Fire Chief has okayed the placement of the fire hydrants within the development.
- Previously the Plymouth Fire Chief expressed concerns with the dead end private street that services building 1, 2 and 3 and its ability to accommodate emergency services. The dead end remains unchanged.

### **Transportation:**

- Street sections have been developed and will be incorporated into the plan set.
- Street signs locations need to be shown on the plans.
- There is a concern with the non-standard angled intersections and the ability to visually see oncoming traffic due to the odd intersection angle and the close proximity of the homes / buildings to the intersection.
- Collector streets will be 38' wide, local streets will be 28' wide.
- Street curbs in the residential section of the development will be rolled curbs. Rolled curbs at the end of a driveway may present a challenge for low profile vehicles and motorcycles.
- Curbs within the non-residential section will be chair-back curbs.
- The presented plan set did not contain a street lighting plan / control system and should be made part of the plan set especially for the streets being accepted by the City.
- Adjustments to the presented plan will be needed to address the ADA ramps / crosswalks to ensure they meet ADA standards and are install properly.
- Revisions to the proposed street section will be revised on the plans.
  - Collector: 2" HMA Surface on, 6" HMA Base on, 6" Compacted Stone
  - Local: 2" HMA Surface on, 4" HMA Base on, 6" Compacted Stone
- Concrete curb thickness will be 10".
- The "groove" detail shown on the ADA ramp detail is no longer required.
- The City of Plymouth no longer uses detectable warning brick as a detectable warning device. Instead use a 2', by sidewalk width, red polymer detectable warning device. See the Street Department for more information.
- Individual driveways will not have access directly onto Plymouth-Goshen Trail.
- The street grade represented on the profiles is not likely to be altered any further.

- Red Street ends at the intersection of Green Street. This may cause some confusion with emergency services and deliveries.

**Utilities:**

- Utilities need to be completed and approved prior to Plan Commission meeting. Please provide plans as early as possible to avoid delays in the approval.
- Page 3 of the plans indicates the sanitary sewer servicing units 1, 2 and 3 do not connect into the developments sanitary infrastructure.
- Donnie needs to know exactly where the liftstation will be located and its invert elevation and depth so he can have the liftstation and the associated force main designed.
- Water and Sanitary sewer plans will need to be clear and include all necessary design information to be submitted to IDEM. If plans are unreadable or do not have enough information on them IDEM will kick them back causing delays.
- Street names should also be placed on the plan sheets.
- Page #5 needs to have information not relative to the waterlines removed to make it easier to read and locate the waterlines.
- Page #5, and other utility plans, need to be a scale of 1:50.
- It was noticed that several sanitary manholes receive intersection pipes that are above the flow line. This is not City practice and the intersecting pipes entering the manholes need to enter near the flow line / grouted bottom.
- Sanitary sewer lines placed at 3' to 4' deep are not acceptable due to this is the same depth as communication line directional drillers. Sanitary sewer lines shall be below the depth indicated.
- Final topo has not been developed but is necessary for final review.
- Water lines need to have a minimum of 5' cover over the pipe based on final grade.
- Page 28 of the plans contains specifications that are NOT City of Plymouth specifications. Use City of Plymouth specifications.
- The three structure castings typed being used on the plans need to be City of Plymouth standard utility castings.
- The waterline plan is extremely hard to visually follow the design. If we are having trouble following the plans IDEM will also have trouble. This could delay IDEM's approval.
- The existing water main that is located along Plymouth-Goshen Trail has a 12" diameter stub under the roadway to the North.
- Page #28, the note that outlines As-built drawings needs to include the City of Plymouth receiving a copy of As-built drawing. The City requires a paper set of As-built drawings and a digital set, both to scale.
- Per Bernie, sewer and water laterals will be installed to the setback line of each building site.
- Storm sewer piping with less than 36" of cover is required to be reinforced concrete pipe (RCP). Storm sewer piping with cover greater than 36" can be ADS pipe with water tight joints but must be submitted to the City of Plymouth Utility Department for approval.

## Drainage:

- Drainage needs to be completed and approved prior to Plan Commission meeting. Please provide plans as early as possible to avoid delays in the approval.
- The 100 Year flood elevation will be incorporated into the plan set.
- The use of 4" diameter stormwater outlet pipe is not recommended due to the potential for the pipe to plug and its limited ability for the pipe to be cleaned out. Stormwater outlet pipe shall be a minimum of 8" in diameter, limited in length and fitted with a cap containing a designed orifice cutout. This allows the cap to be removed if cleaning is needed. Securely mount the orifice cap so it will not be accidentally removed.
- Basin 'A' shown on the plans appear to be have a level bottom. A level bottom basin will not completely drain of stormwater and will cause the bottom section of the basin to be unmaintainable. The bottom of the basin should have a realistic and construable sloped so it drains.
- Basin 'B' is shown outletting to the U.S. 30 Right-of-Way. A letter, from the State, should accompany the plan set acknowledge permission to drain into State Right-of-Way.
- It was noted the stormwater outlets on the provided plans contain outlets with filter socks. Perforated pipe with filter socks are not recommended due to their need for continued maintenance. The City wants to see solid outlet pipes with water tight joints.
- Stormwater discharge from basins should utilized a constructed outlet control structure so the flow can be controlled.
- Basin 'C', see note above regarding the use of a 4" diameter outlet pipe.
- Basin 'D' shown on the plans appear to be have a level bottom. A level bottom basin will not completely drain of stormwater and will cause the bottom section of the basin to be unmaintainable. The bottom of the basin should have a realistic and construable sloped so it drains.
- Basin 'E' appears to have been designed to overflow the top of the basin as its outlet. Using this method of discharge does not allow the discharge to be controlled and is susceptible to continued erosion problems. The design should utilize a controllable outlet structure.
- Detailed calculations need to include all the developments hard surface.
- Typical unit layouts do not show any of the units associated driveways or sidewalks, this will need to be addressed in the drainage calculations.
- The plans indicate the use of swales will be used to convey stormwater from basin to basin. Calculations need to be provided indicating that the proposed swales will handle the volume of stormwater and its associated velocity with sufficient freeboard.
- A profile view of the swale was not provided with the plan set although it was stated that all swales will have a wide flat bottom with 4:1 side slopes.
- Stormwater calculations should address each individual watershed. This includes parking lot drainage.
- It was noted there are several errors within the stormwater plans and there is more work that needs to be done.
- Slope arrows need to added to the plans to indicate what is being expected of the contractor to ensure stormwater is being directed into the correct basin / watershed.

- We were informed that top of casting (TOC) elevations will be finalized prior to the Plan Commission meeting.
- Rick indicated that the second part of the drainage application is a check list of all the items that need to be complete before submitting the drainage plan. The drainage plan will be reviewed by a consultant. Submit plans / calculations and all three sections of the application. The application may be found on the City's website under Storm Water Management.

**General:**

- Cut / Fill balancing of the site has not been performed.
- As discussed, since the City of Plymouth has a financial investment in this project and wants to be transparent multiple construction quotes need to be obtained.
- The City will assign mailing addresses along dedicated City streets and will work with the developer to assign addresses within the private areas.

**END OF MEETING**

