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## MEMORANDUM

**TO:** Greg P. Hannan, AICP, City of Hudson, Ohio

**FROM:** Jason Miller, PE  
jmiller@rettew.com

**CC:** Mark Richardson, City of Hudson, Ohio  
Thomas J. Sheridan, PE, PS, City of Hudson, Ohio

**DATE:** 5/1/15

**PROJECT NAME:** Final Improvement Plan & Plat Review    **PROJECT NO.:** 093312002  
- Phase 2, Review #1

**SUBJECT:** The Reserve at River Oaks Phase 2 Final Improvement Plan, Hudson, OH - Engineering Review Comments

RETTEW has reviewed The Reserve at River Oaks Phase 2 Final Improvement Plan dated March 2015, for the referenced project and offers the following engineering review comments:

### GENERAL

1. Sheet 37 is missing from plans provided for review. Please provide with the next plan set provided for review.
2. It shall be the applicant's responsibility to determine and comply with all applicable City, County, State and Federal Ordinances or Regulations governing land development activities. Section 1,1,1.1.C
3. Clearly Show limits of Phase 2 improvements including limits of grading, storm/sanitary sewer extensions, etc. outside and beyond Lots 48-108.
4. Submittal Requirements – Appendix A
  - a. Name and address, including telephone number of legal owner and citation number shall be included on the plan.
  - b. All existing plat notes shall be included on the plan.
  - c. The location, dimensions, and area of all parcels of land proposed to be set aside for open space shall be identified on the plan.
  - d. A Tree and Vegetation Plan and Landscaping Plan/Buffer Yard Plan shall be submitted
  - e. A map of existing topography shall be submitted – show grading done as part of Phase 1 improvements.
5. The limits of the FEMA 100 year floodplain need to be shown on the plans (LDC Appendix A).
6. If open space or other common areas within the subdivision are to be owned and maintained by a homeowners association, the Applicant needs to file a declaration of covenants and restrictions as described in LDC § 1208.13.
7. A cost estimate and Improvement Guarantees need to be provided (LDC § 1208.14.a, 1208.15, Appendix A). Labor shall be calculated at 110% of prevailing wages.
8. Show all delineated wetlands that are located in close proximity to Phase 2 project area.



9. More clearly show and label wetlands. Labels should be consistent with the wetlands report prepared by Chagrin Valley Engineering and as referenced in USACE permit correspondence.
10. Add a note to the plans that contractor is to ensure dust control is maintained throughout construction.
11. Per City Engineer, profile of Boston Mills Road shall be included in plan set. In addition, cross sections every 50' along Boston Mills Rd shall be provided.
12. Review comments are subject to change once additional information is provided for review.

#### **LAND DEVELOPMENT/ENGINEERING**

1. Proposed sidewalks along Boston Mills Road and open areas shall be installed with roadway improvements.
2. In reference to Land Development Code section 1207.13(c)5B, the distance from the proposed intersection at Boston Mills Rd shall be 400 feet or more from the nearest intersecting roadways.
3. A multipurpose path is required on the north side of Boston Mills Rd to connect Executive Parkway and Executive Parkway West. Developer shall further discuss the installation of path with Community Development.
4. Manholes shall be located in tree lawn and not within proposed sidewalks or pavement.
5. The City recommends a left turn lane on Boston Mills Rd into the proposed developed. This recommendation is consistent with other recent developments in this area of Boston Mills Rd.
6. Add the following note to Sheet 6: 'Boston Mills Road: One way traffic shall be maintained at all times with approved temporary signals or/and flaggers shall be used if the roadway is opened to two way traffic and all equipment and work is removed and plated. The City shall approve the day of the week and time for this work'.
7. A 30' detention/retention pond easement shall be provided around all ponds. Section 6, 1, 6.6.
8. Existing Phase 1 - Pond 2 easement will need to be revised based on pond being enlarged/modified.
9. 30' pond easement will encroach onto 50' wetland buffer in several areas. City requires adequate room is provided for construction and maintenance of ponds without impacting wetland areas.
10. The major flow path must be evaluated for the entire subdivision to ensure the 100-yr storm event can be safely routed through the subdivision. Please provide calculations.
11. Several stub streets are proposed as part of Phase 2. Provide a temporary cul-de-sac or 27'x20' turnaround area at each stub that will connect to a future phase. (LDC Section 1207.13.c.3, Engineering Standards Section 7.13)
12. Minimum five (5) foot utility easements need to be provided on the sides and rear of all lots (Section 1207.13.c.8).
13. Identify 'Snow Piling Areas' in all cul-de-sacs. No driveways, trees, street lights, fire hydrants, etc. shall be located in such designated areas.
14. Clear sight triangles shall be shown at all street intersections. Section 1207.04.s
15. Controlled access median on Timberline Trail shall be installed pursuant to 1207.c.4. The Fire Chief shall approve pavement widths at access median.
16. In addition to the aforementioned comments, the following should be noted:
  - a. A detail of the buffer yard plantings/screenings shall be provided on the plan. Section 1207.04.g
  - b. Existing land uses that surround this development should be identified to assist in determining the appropriate buffer yard type. 1207.04.f.
  - c. Zoning district, density, setbacks, open spaces, and other requirements shall be provided on the coversheet of the subdivision plans.

- d. An exterior lighting plan shall be submitted that meets the functional security needs of the proposed community. Section 1207.14.

## **UTILITIES**

1. Pump station at Hudson Crossing must be reviewed by an Ohio Professional Engineer and necessary modifications be made since the proposed connection point may be at a lower HGL and since the distance is reduced. All pump station modifications shall be at Developer's sole expense.
2. The manhole the force main is tying into must be a drop manhole to ensure that pressurized sewage is not discharging into the manhole barrel.
3. All proposed sanitary sewer outside of Phase 2 must be placed in a 30' wide easement to the City of Hudson until subsequent phases are platted, developed, and approved.
4. Profile 'A' is mislabelled on Sheet 17. Please correct.
5. A 12" diameter waterline is required to be installed in Phase 2. This line shall run from the Boston Mills Rd. connection to the end of Phase 2 and will be required to extend to SR303 as a loop connection in future phases.
6. Similar to Phase 1, water main stubs should be detailed and provide a plug and cast-in-place concrete thrust block due to high water pressure common in this area. Provide thrust block calculations.
7. Trench dewatering notes must be added to the plans. (Engineering Standards Section 1.17)
8. Receiving pit for water line main connection is in close proximity to the O/H electric utility line. Applicant will need to coordinate work with the electric utility company accordingly. All incurred costs shall be at Developer's cost.
9. Ensure all hydrants are located a minimum of 6' from proposed driveways and out of snow piling areas.
10. Clearly show existing 30' utility easement as it relates to the proposed subdivision. Will this easement remain?
11. Proposed sanitary sewer shall be tested and accepted by the City.
12. Existing force main shown to be abandoned is required to be removed. The portion along Boston Mills Rd under Phase 1 roadway is permitted to be abandoned in place and grout filled.
13. Existing force main shall be shown in profiles as applicable.
14. Show all house storm connections on plan and profile sheets.
15. Show existing and proposed gas well lines on sheet 8. Label sizes and materials. Show easement associated with existing line and new line. Existing gas line easement shall be removed and new gas line easement dedicated prior to final plan approval.
16. Relocate proposed sanitary manhole 'K' on sheet 9 into tree lawn. It is currently located in travel path and in line with h/c ramps.
17. Proposed sanitary sewer on sheet 10 (Profile 'K') shall be centered in 30' wide easement. Easement as shown varies in width from 20' to 40'. Minimum easement width is 30'.
18. Show existing force main in Profile 'A' on sheet 17.
19. Identify all repairs that need to be made within the public r/w as part of the sanitary sewer shown on Sheet 17, Profile 'B'. Provide connection detail to existing sanitary sewer manhole.
20. Show existing and proposed gas well lines in Profile 'I', sheet 22.
21. Add the following note to the plans: 'Contractor shall install and maintain construction staking for all proposed utilities every 50'. Staking shall include cut/fill finish grade, proposed utility depth, and stationing'.

### **STORMWATER MANAGEMENT**

1. All houses shall be proposed at a minimum elevation of 18" above base flood elevation.
2. The proposed detention basins discharges will directly or indirectly affect wetlands, and work is proposed within 100' of wetland areas, so protections/construction methods of LDC Section 1207 and ES Section 1.18 apply. The requirements of ES Sections 1.18.1 through 1.18.4 need to be included as plan notes.
3. A manufacturer's affidavit for the pipe, fittings, and appurtenances will need to be provided as a shop drawing prior to construction. An affidavit from the manhole manufacturer needs to be provided stating that the storm manholes are appropriately sized for the sizes and angles of storm pipes used (ES § 4.1.A, 4.6.A).
4. The maximum trench width chart from Section EX 4.1.C needs to be provided on the plans. In addition, a note needs to be added stating that the trench width shall not be less than 12 inches greater in width than the outside diameter of the pipe barrel (ES § 4.10).
5. The catch basin detail(s) needs to show the invert poured to the crown of pipe. The manhole detail(s) needs to show the inverts poured to ½ pipe diameter and shall slope upward toward the manhole walls approximately 3 inches (ES § 4.5.A, 4.6.B).
6. Verification needs to be provided that the catch basins and manholes will meet H-20 loadings if located within any pavement (ES § 4.5.A, 4.6.C)
7. Soil borings need to be provided to determine if the water table will be an issue during construction of the storm sewer system. This may also be a factor for the basement proposed for some of the dwellings. Manholes and catch basins may require anti-floatation pads upon review of the soil borings. PVC pipe below the water table needs to be flotation proof or will need to be anchored. A note needs to be added to the plan stating that water in the trenches at the time of pipe laying needs to be dewatered at the Contractor's expense (ES § 4.6.A, 4.10, LDC Appendix A). Soil borings are also required at the sites of Pond #1 to #3 to determine if there are any limiting zones that would affect the design (ES § 5.6).
8. A detail needs to be provided showing the connection of the downspouts (and foundation drains if applicable) to the storm sewer. Cleanouts are recommended at all horizontal or vertical changes in direction of the roof/foundation drain leaders (ES § 4.8).
9. Concentrated discharge from the side yard ditches between lots needs to enter an inlet or pipe instead of flowing across the sidewalk (ES § 5.2, 7.5, 7.6).
10. The major flood paths need to be established and shown on the plans for a 100 year peak flow. Where the street is to be used as the major flood path the depth of flow needs to be no more than 8 inches at the face of the curb. When located outside of the street right of way, utility and floodway easements need to be provided (ES § 5.2). Review all road sags to ensure these locations are designed to adequately handle the 100-yr flood path.
11. The lowest window well elevations need to be provided, and windows, garages, and first floors need to be one (1) foot above all major flood path routes. Additional comments may apply when the conveyance and major flood path calculations are provided (§ 5.2).
12. The soil to be used in the pond embankments, and the compaction specifications, need to be provided on the plans. It is recommended that an impervious core be provided along the entire embankment and that the embankment be keyed in to the existing grade.
13. Evidence of approval of the Erosion and Sedimentation Control Practices by the Summit Soil and Water Conservation District needs to be provided and a Notice of Intent needs to be filed with the

Ohio EPA prior to the start of construction (ES § 5.10.C, 5.10.D, 9.5, LDC 1207.07.d.4, LDC Appendix A).

14. The storm sewer and channel easements need to indicate the rights of ingress and egress for City of Hudson personnel. The Developer is responsible for maintaining the storm sewer system within these easements. Also, a note needs to be provided on the plan indicating that the developer/owner grants the City the right of access to all storm water management easements on the subject tract via the access drives, driveways, parking areas, and similar features within the site (ES § 6.3, 6.5).
15. A long term maintenance agreement with the City is required for all stormwater management facilities. Add a note indicating the City of Hudson reserves the right to assess the responsible entity for any necessary maintenance and/or improvements that must be performed by the City (LDC § 1207.7.d.5).
16. Bicycle safe grates need to be provided for the street inlets.
17. Adequate signage, to be approved by the City, needs to be conspicuously displayed to declare the intended use of Ponds #2,#6, and #7, along with appropriate warnings about storms (LDC § 1207.7.d.1.A).

#### **Final Plat**

- 1) Continuation sheet number incorrect on Sheet 8/9 — should be 7.
- 2) Spelling of the word continuation on Sheet 7/8 and 8/8. Please check all sheets for consistency.
- 3) Proposed monuments need to be shown at all lot corners per Ohio Minimum Standards and Hudson Requirements.
- 4) Basis of bearing must be Ohio State Plane per Hudson Requirements.
- 5) Include State Plane coordinates at a minimum of four corners of the proposed subdivision per Hudson Requirements.
- 6) Bearing and distance missing from Sheet 7/8 courses near page break — N 0° 37'21" E -530.34' and S 12° 18'48" E -2,136.72'.
- 7) L24 segment on Sheet 7/8 equals 35.58' per closure sheets — Table on Sheet 8/8 showing 1026.78', revise table to reflect closure sheets.
- 8) L22 segment on Sheet 7/8 equals 35.67' per closure sheets — Table on Sheet 8/8 showing 553.24', revise table to reflect closure sheets.
- 9) Add bearing on Sheet 3/8 for Timberline Trail —S 12° 12' 23"W.
- 10) Add bearing on Sheet 4/8 for Kingswood Drive — N 89° 33' 31" E.
- 11) Add bearing on Sheet 6/8 for Ridgeline Drive —N 89° 33' 31" E.
- 12) Provide Closure Sheets for the Storm Water Management Easement Areas being generated.
- 13) Curve C80 is not consistent with Closure Sheets for Block 2D — Tangent – Infinity?
- 14) North Arrow in the title block on sheets 4/8, 5/8, 6/8 needs rotated 90°.
- 15) Bearing of segment #2 of the Closure Sheet for Lot 60 does not match plat.
- 16) Bearing missing from east line of Lot # 71 on Sheet 4/8.
- 17) Distance of segment #53 of the Closure Sheet for Block "C" does not match plat.
- 18) Distance of segment #64 of the Closure Sheet for Block "C" does not match plat.
- 19) Similar to Phase 1, Plan notes shall be added to the final plat (LDC Section 1207.07.5)

Please note that all instances of the apparent errors will need to be addressed on all of the sheets in which the noted corrections take place. This review has attempted to document all of the sheets in which the apparent errors occur. Please contact me if you have any further questions or comments.

