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October 21, 2024

Mr. Colton Leonard, City Planner
City of Bryant, Arkansas
Community Development
210 SW 3rd Street
Bryant, Arkansas 72022

Re: Preliminary Plat
3927 Springhill Road, Bryant, AR
Parcel # 840-11855-000

Dear Mr. Leonard:

Enclosed you will find the revised Civil Plans, and Drainage Report as pertaining to the referenced project. A brief summary of the revisions are as follows. Please review the attached revised plans, and include this project on the agenda of the next available City of Bryant Planning Commission Meeting.

Public Works

1. Discuss where the sewer will tie in. ***Connection is planned within the Hurricane Gardens development. See plans.***
2. Will roads be Public or Private? ***Public.***
3. Discuss Half Street Improvements. ***Half Street Improvements have been added to the revised plans as per the City's Master Plan.***
4. Core Sample Test will be required per Bryant Minimum Street Specifications. ***The test results shall be provided to the city upon receipt.***
5. ADA Compliant Ramps will be required at Crosswalk. ***References to this requirement have been added to the revised plans.***
6. Additional "No Parking" signs will be required beyond the two that are listed. ***See revised plans showing the placement of such signs.***

Stormwater

1. Discuss downstream drainage issues into Hurricane Gardens Subdivision? ***Since the original submittal, we have added a swale along the South property line of the subject tract, which is near***

the North subdivision line of Hurricane Gardens. This is shown on the revised plan and is taken into account with the revised Drainage Report. With the construction of the street within Hillcrest Addition, along with the swale along the South, the amount of discharge into the rear of the lots of Hurricane Gardens will be tremendously reduced, and in most cases, completely removed.

2. Discuss Storm Plans in detail (Piping, detention, retention, street inlets).

- ***a. As the City is aware, the property to the North of Hurricane Gardens drains directly into the rear of the lots along the North side of that development. The source of this stormwater is not only that which falls on the vacant land of the proposed Hillcrest Addition, but also a large area located to the North of the proposed Hillcrest Addition. In short, the Hurricane Gardens area is receiving approximately 10 acres of runoff into the rear of said lots. There are two items planned that should help the residents of Hurricane Gardens. First, the construction of the proposed street in the Hillcrest Addition development will help divert the stormwater away from the Hurricane Gardens lots by diverting it to the proposed detention pond near the Southwest corner of Hillcrest. Second, the addition of the swale along the South line of Hillcrest should catch the stormwater that will be falling on the rear of the lots in Hillcrest, to the same detention pond.***
- ***b. The piping and inlets are design to accommodate a 25 year storm as opposed to the required 10 year storm. Again, attention is called to the Revised Drainage Report.***

3. Detention basin outflow pipe is shown to be ADS. It is required to be RCP. ***This has been revised as requested.***

Engineering

1. Verify drainage area. Topography and eye witness accounts indicate the site receives runoff from north and east off-site and Springhill road. ***This has been verified.***

2. 0890-DRN-03.PDF

a. This off-site drainage plan shows the drainage basins that exist are apparently based upon the contours from Bryant's GIS, even though there is no reference to the source of the base map and contours***. Information added to the Drainage Report.***

b. There does not appear to be any basins delineated which extend to the south property line of the proposed subdivision. Provide a map showing the pre-development basins for the site, with checkpoints at all locations where flows leave the site. ***Information and maps added to the Drainage Report.***

3. 0890-PLN-02.PDF

a. On sheet 1, some of the lot dimensions are obscured on the drawing. ***This has been revised.***

b. On sheet 2:

i. the curb and gutter detail does not match the detail show in the City of Bryant's standard curb and gutter section, Detail 7; ***This has been revised.***

ii. The typical street section does not match Detail 1 of the City of Bryant's typical section for Local 1 / Residential Streets; ***This has been revised.***

iii. The pavement structure detail shown does not match the typical street section, see 3.b.ii. above. ***This has been revised.***

c. On sheet 3:

i. The grading plan shows that grades will continue to slope south from the south curb and gutter on the street, unlike shown in the drainage calculations (see section 4 below). ***Grading Plan has been revised.***

ii. Significant stormwater is being allowed to drain off of the site to the south, it is recommended that the engineer look at diverting flow to the detention pond. ***A swale has been added along the South property line to assist in diverting flow away from homes within Hurricane Gardens. See revised plans.***

iii. Will a separate drainage plan be developed for the plans? Profiles for the storm drainage? ***Drainage profiles have been added to the plans.***

iv. How will the discharge to Springhill Road be detained so that there is no increase in runoff from that part of the project? ***Due to the relatively small area flowing into the culvert system near the Southeast corner of the proposed development, no detention is being provided. However, the existing culvert does appear to have the capacity to accept the small increase in flow. This is further explained in the Drainage Report under the "Culvert Sizing Section (Junc Box 3)".***

d. On sheet 4:

i. Include a trickle channel in the pond; ***Added.***

ii. Include an emergency overflow for the pond, designed for the 100-year flow. This overflow must be 1-ft below the top of the levee. ***Added as applicable (see comment vii below).***

iii. Verify that the slopes inside and outside of the pond are no steeper than 3 horizontal : 1 vertical. ***All slopes have been verified.***

iv. The outfall structure detail of the pond shown on the drawing is not labeled or titled. Show slopes, elevations, etc. ***Information added as requested.***

v. Provide solid sodding inside of the pond. ***A note pertaining to this item has been added to the plans.***

vi. How far will the closest building be to the pond? ***Approximately 50 feet.***

vii. The top of the levee on the detention pond must be 2-ft above the outfall box, include 1-ft of freeboard, and be 1-ft higher than the 100-year elevation inside of the pond. ***Based on our present model, we can only provide 18" of the requested 2'. We ask that the City grant a waiver on the 6" difference.***

viii. What downstream scour protection will there be below the outfall pipe? ***Rip rap is planned for the discharge culvert from the pond.***

ix. What checks have been performed in the drain to the southwest? Verify that the flows will not exceed the current flows in this area. ***See Drainage Report under "Downstream Considerations".***

x. Provide Scour protection from the inflow pipe on the east end of the pond. ***A concrete trickle channel has been added to the end of the inflow FES.***

e. On sheet 5:

i. The main water line must be at least 8" up to the last fire hydrant, see city specifications. ***This has been revised.***

ii. The last fire hydrant shown on the west side of the cul-de-sac should be moved to the east side of the cul-de-sac. ***Revised as requested.***

4. Drainage Calculations:

a. For the runoff coefficient calculations on pages 5 and 6, please explain which basins A1, A2, A3, and A4 reflect. What about Basins B1 thru D3 and Ao thru Do2? **We have completely revised the attached Drainage Report for clarity. Please review.**

b. Each return storm has it's own C-factor. Show the C-factor used for each of the return storms, on each basin***. This was shown in the previous revised report.***

c. Detention pond design volume must be increased by 25% as a safety factor. ***At the 25 year storm elevation (in the pond) the volume is 21,300.7 cf. At the 100 year storm elevation, the volume is 31,596.5 cf. That is above the 25% safety factor.***

d. The emergency overflow spillway must be designed for the 100-year storm + 50% for blockage. ***Emergency spillway has the required capacity of 44.22 cfs. See Drainage Report "Overflow Structure Detail", sheet 33.***

e. The map on page 9 does not show the pre-development basins, including the current discharge locations from the site. ***Study Points have been added to all maps.***

f. Determine pre-development basins from the same discharge points for both pre-development and post-development conditions. ***The comparison between Pre and Post flowrates are shown near the end of the Drainage Report under "Study Point Summary".***

g. The basins shown on the map on page 10 does not reflect what the grading plan shows, see sheet 3 in the plans. It shows drainage of half of the lots going to the street, when the grading plan shows that flows will go to the south. ***This has been corrected. See revised Drainage Report and attached Maps.***

h. Show check points for each basin so calculations can be followed. ***Check points have been added to the maps within the Drainage Report.***

i. Show the hydraulic grade calculations for all of the storm drainage on the project (see section 600 in the stormwater manual). ***This has been added to the Drainage Report.***

j. Adjust drainage calculations for all flows for a 28-ft street instead of a 27-ft street. ***Revised.***

k. Show calculations for emergency spillway (include 50% blockage). ***See previous comment and response.***

l. Are the time of concentration calculations on pages 16 and 17 showing that there is the same velocity for all basins? Which basins do these graphs apply to for the pond? ***This is a comprehensive analysis using the entire watershed. However, individual tc values have been computed for each pre construction watershed (see revised Drainage Report).***

m. On page 15 it refers to the C-factor for the detention facility was shown on pages 5 and 6 but the C-factor is different for each storm event, and that is not reflected on pages 5 and 6***. This was revised in an earlier submittal (See sheets 6 and 7 of the Drainage Report).***

n. For the detention pond calculations, what basin(s) did you use for the pre- and post-development peak flows? ***The areas behind the proposed houses in this new development were not included in the Detention computations. However, we have added a sod swale along the South of this development that will assist in sending most, if not all of the area to the Detention facility. See revised plans.***

o. Sheet 4 in the plans shows a detail for a box with a slotted weir topped with a 5" high rectangular weir. Please verify that calculations reflect the correct weir type***. Yes the calculations are based on this type of weir.***

p. Refer to section 1000.4.3 of the stormwater manual for multi-stage outlet design considerations. ***After reviewing this section, it is our opinion that the design does meet this consideration.***

q. Refer to section 1000.5.6 of the stormwater manual for configuration of the outlet structure. ***After reviewing this section, it is our opinion that the design does meet said section.***

r. Note allowable computer software in section 600.6 of the stormwater manual***. Our program is based on the City of Rogers Drainage Manual which has been used by basically all municipalities in Northwest Arkansas, and is considered an acceptable method.***

Com Dev

1. Cul-de-sac turnarounds must have a 50ft radius. Currently the plans show 49' to BOC. ***This has been revised as requested.***

2. According to Subdivision Code, Cul-de-sac streets or courts designed to have one end permanently closed shall be no more than 550' long. This will have to be met or a modification from the subdivision code for a waiver on this requirement will have to be requested. ***Considering that all properties adjacent to this development have been developed, we formally ask for this waiver.***
3. Half-Street improvements to Springhill are required as part of this development. Springhill is designated as a minor arterial with a trail along the East Side. ***Plans have been modified to show this.***
4. Typical street cross section shown on page 3 of plans does not meet our street specifications. City Street specification for local road shown below. ***This has been corrected. Please see attached revised plans.***
5. Will this street be privately owned/maintained? ***Street shall be public.***
6. Discuss stormwater and outfall of detention pond area. ***See previous responses in this letter.***
7. Preliminary Plat application fees required to be paid $664. ***I will inform the owner.***

Please let me know if you need anything additional.

Sincerely,



Tim Lemons, PE