

June 18, 2018

El Paso County Planning and Community Development

Attn: Jeff Rice

2880 International Circle

Colorado Springs, CO 80910

Re: Falcon Marketplace Preliminary Plan (SP-17-001) Response 4

Mr. Rice,

Please accept this response letter to your review comments dated July 7, 2017.

Our response comments to follow are in ***Bold Italics*** following each original review comment.

Preliminary Drainage Report (PDR) / Drainage Plans

1. Provide all required PDR checklist items (~~attached~~). The known missing/incomplete items have been highlighted. Comment remains; see remaining items and redlines for clarification. Existing conditions and proposed on-site conditions need to be fully addressed. See remaining items and redlines. Note: revisions and additional reviews will be required to address the access from Woodmen Road if that design is proposed. Partially resolved;
 - a. See remaining redlines and redlines on new design; address WQCV issues.
 - b. Provide approximate flow rates entering the subdivision with all necessary calculations (checklist item #28). Label Pond SR4 release rates (96" pipe flows) for each design storm. ***Plans updated as requested.***
 - c. Regarding checklist item #30, alignment, material and structure type, the roundabout designs will require additional details at the final design stage to ensure that drainage facilities do not conflict with the required roundabout attributes (grading, sight distance control, etc.). ***Acknowledged. Will be addressed at the final drainage report stage.***
6. Address how the proposed design accommodates the existing petroleum pipeline and other utilities along the south and east property lines. Provide documentation that the easement holders have no objections to the proposed drainage design. Comment remains. *Provide documentation when available. Comment remains. ***We have communicated many times both by phone and over email with Nustar, and still have no official response back from them.****
10. Provide preliminary storm drain, channel, headwater, freeboard and spillway sizing calculations. Partially resolved;
 - a. Additional detail and clarification will be required for features to be constructed with the overlot grading or in the FDR for subdivision construction items. See redlines. *See remaining/updated redlines.*
 - b. *Ensure that all inlet calculations are provided/updated ("IC" inlets). ***Inlet calcs have been revised, but design will be finalized with the subsequent construction documents and final drainage report.****
11. Geotechnical issues (also see Geotech. study comments below)

- a. Page 31 of the geotech. study states that "In no case should water be allowed to pond near or adjacent to foundation elements, hardscaping, utility trench alignments, etc." Discuss how the proposed drainage design accomplishes this. Partially resolved; final *liner* details need to be provided with FDR or in this report prior to pond construction. *Comment remains. Partially resolved see redlines regarding liner details. Requirements for quality control, testing and final certifications for the pond liner will need to be discussed and agreed to prior to construction. The thickness of topsoil mixture above the liner (liner depth) needs to be discussed and verified. Acknowledged.*
- b. Consider replacing the proposed area drain and pipe at the northwest corner with a swale along the north property line to the proposed rundown. Maintenance access appears likely to be difficult as proposed and the geotech. study recommends "properly designed drainage swale" at the tops of excavation slopes. Partially resolved; stabilization of and maintenance access to the 3:1 (and steeper?) excavated slope along the north side of Pond SR4 will need to be further addressed with the final pond design. *(If the extent of overlot grading includes the slopes, this needs to be addressed with overlot grading.) Comment remains; access road design, offsite grading (requiring easements) sheet flow locations and rundowns and the concrete rundown need additional detail to ensure adequate access and functioning. Plan sheets amended per redlines. Maintenance/stabilization road added at the bottom of the pond.*
- c. Discuss the required geotechnical and dam analyses appropriate for detention pond SR4. See DCM Sections 6.6, 11.3.3, and Attachment A (Chapter 11). Partially resolved; provide additional study and construction requirements when available. *Partially resolved with PSI memo; provide copies of State Engineer correspondence and additional geotechnical requirements (if applicable) when available. See redlines regarding details and material at downstream edge of spillway. Redlines addressed.*

12. Drainage Plan:

- a. Provide an Existing Conditions drainage plan. Show and label design points as appropriate for comparison to the proposed plan. Partially resolved; see redlines regarding local basins and design points. *Resolved; show existing Meridian Road storm drains at the south end as shown on Meridian Road bid set. Last portion of comment remains. Existing storm in Meridian is shown on both existing and proposed drainage plans.*
- b. Show and label all proposed maintenance access roads and easements on the Developed Conditions Plan. Partially resolved; see GEC redlines regarding this. Provide stabilized access roads along the west and north sides of the pond. *See additional redlines; due to the rundown along the north side of the pond, pond bottom stabilization is required which could be incorporated into an access road design through that area. Comment remains. Stabilization of the pond bottom has been incorporated into the design.*
- c. Provide a design point summary of 5- and 100-year flow rates at all surface and pipe design points on both the existing and proposed plans. Partially resolved; address per local basin and DP redlines. *Comment remains; see redlines regarding flows from the north. Comment remains. Offsite flow note added to proposed plan.*
- d. *Note: The determination of crown location and inlet or sheet flow for the additional paving on Meridian Road (and at other offsite locations if required*

*due to approval of the Woodmen Road right-in) will need to be determined with the Final Drainage Report and offsite CDs. **Acknowledged***

17. All runoff from Falcon Market Place (road) needs to be treated for WQCV or a deviation approved for areas that are not treated (southwest area?). See redlines regarding Pond #3. Of course this will all need to be revised if the Woodmen Road access with roundabout is approved. *Comment remains (the drainage plan shows some inlets draining directly to the channel area). **Drainage layout at the SW roundabout has been revised, but is still pending final design. This will be addressed fully in the Final Drainage Report.***
18. Adequate separation of the inlet and outlet for Pond #2 needs to be provided. Reference UDFCD USDCM Volume 3 EDB Design Procedure and Criteria, page EDB-3. Consider shifting the inlet to the west and/or the outlet to the east. Another option would be to construct a wall directing flows toward the end of the pond before reaching the outlet. *Comment remains for both Pond #2 and Pond #3. Note that the location of Pond #3 in existing County right-of-way is not able to be approved until resolution of the overall road design issues. **Ponds 2 and 3 will be addressed in the Final Drainage Report, but inflow/outflow points are restricted by existing utilities and/or tie-in points to the storm system.***
19. *Note: If any of the CLOMR excerpts have been revised with the design (i.e. StormCAD), provide revised versions in the report calculations. **No changes have been made to any CLOMR related items.***

Grading and Erosion Control Plan / SWMP / Geotechnical Issues

1. Note: Regarding the request for pre-development site grading ("early grading"), a checklist of final submittal requirements *was previously provided*. The separate Construction Drawing review (CDR-16-007) **(comments incorporated below)** needs to be complete and those plans approved along with the GEC plans prior to overlot grading. The PDR will need final-level details as well, including complete pipe and pond design, if the Final Drainage Report is not to be submitted and approved prior to overlot grading.
2. GEC Plan:
 - a. Provide all required GEC checklist items (attached). The known missing/incomplete items have been highlighted. You may need to split sheet 2 into two sheets (north and south) or more to show all information and detail required. *Comment remains. See remaining items. For the overlot/early grading permit, an interim plan will be necessary showing only the grading and drainage improvements necessary for the overlot grading. This will exclude work outside of the property lines and storm drains that serve the future lots. If the Pond SR4 embankment will be completed, the pond outlet and downstream storm drain (or interim channel) will need to be installed. Partially resolved; see updated checklist.*
 - k. *See new redlines and incorporate applicable drainage plan redlines. **Plans updated to reflect redline changes.***
3. Ground Engineering Geotechnical Report dated October 18, 2016:
 - a. Resolved
 - b. There is only one boring in the SR4 pond area, which indicates very shallow groundwater. Recommendations on how to keep the groundwater from infiltrating the pond (which is to be excavated approximately 10 feet deeper

than the groundwater level) need to be provided. If a separate geotech. study will be provided for pond construction, let us know. Comment remains; provide additional study when available.

- c. Note: Comments regarding pavement design for the proposed spine road will be provided with the Final Plat review, dependent on final design/layout and determination of public or private maintenance. Final geotechnical study and review of construction plans by the geotechnical P.E. will be required at the Final Plat stage.

4. **SWMP:**

- a. *Provide remaining items highlighted in blue on attached checklist. Comment remains.*
- b. *Items highlighted in yellow need to be provided in the on-site SWMP when construction begins. **Acknowledged.***

CLOMR Report and Construction Plans (#1-#13 from CLOMR comments)

- 2. Include utility locations on all plans and cross-sections. Partially resolved; show or note locations of non-potable water and electric on the cross-sections of the construction drawings per the comment response. 2/17: *Comment remains.* 5/30: *Comment remains.* 7/6: *Comment remains.* **Cross sections updated to show all utility crossings.**
- 11. Note: A soils/geotechnical investigation as appropriate for detention pond and embankment construction will be required with the Construction drawings submitted for County approval. Reference ECM Section 2.2.6. For the complete construction drawing review, all County submittal requirements need to be met, including the following: (to be revised with CDs) 2/17: *Comment remains.* 5/30: *Comment remains.* 7/6: *Partially resolved:*
 - a. Survey horizontal and vertical control points (*not found*) **Added to GESC plan.**
 - b. All necessary onsite and offsite drainage and access easements. *Comment remains.* **No additional easements are anticipated.**
 - c. *Resolved*
 - d. *Liner design specifications and details. Comment remains (to be agreed upon with County Engineer).*
- 13. *Annotated FIRM contains some illegible text (PDF scrambled). 5/30: Provide final (approved version) CLOMR CD when available.*
- 14. *Add to the title of the CDs: "POND SR4/OVERLOT GRADING & UTILITIES". Partially resolved; Pond SR4 needs to be included in the document title. **Title revised as requested.***
- 15. *Resolved*
- 16. *Reference attached UDFCD outlet structure design details. Specific items that need to be incorporated into the project's outlet structure designs include the orifice plate design and notes, water quality plate details (type and thickness), stainless steel well screen (page OS-9) and neoprene gasket. Complete review of sheet C7.9 will be provided after revisions. Sheets C7.11 and C7.12 will be reviewed with the subdivision CDs. Partially resolved; see redline regarding specific calculations for trash rack (now sheet C7.5). **Trash rack calculations specifications included in appendix of drainage report.***

17. Provide a detailed liner design drawing with elevations and extents. Ensure that conflicts with the other pond features are addressed. Partially resolved; see redlines regarding conflicts and cover depth. **See updated details.**

Financial Assurance Estimate Form/Other

1. Provide a Financial Assurance Estimate form including all required GEC items. Comment remains. *Partially resolved; Clarification needs to be provided on the extent of construction with the overlot grading, to be as shown on the Interim GEC Plan. All improvements required, included the following need to be included on the FAE form: rundowns, low-flow channels, forebays, outlet structure, pipes, stabilized access roads, etc. Partially resolved; add clay liner and add description to the "other" channel stabilization line for which feature it applies to. **Complete as requested.***
2. *Resolved*
3. *Provide PDB/BMP agreement exhibits A and B when available. If an access easement other than the to-be platted pond tracts/easements is desired, an Exhibit "C" can be provided. Provide when available.*

We trust you find our responses to the latest review of the Falcon Marketplace Early Grading items acceptable. We look forward to working with the County in processing the submittal. Please call if you have any questions or require any additional information.

Respectfully,

Drexel, Barrell & Co.



Tim D. McConnell, P.E.