



January 30, 2020

Daniel Torres
Arthur Gonzales
El Paso County
2880 International Cir.
Colorado Springs, CO 80910

RE: Legacy Church – Green Mountain Falls CDOT and El Paso County Comments

Thank you for the comments on December 4th and 28th, 2019 for the above-mentioned project. In an effort to address your comments concisely and simplify your review process, we have summarized your comments and our responses below.

Comments from El Paso County

GEOTECH REPORT

1. This report does not provide recommendations for the detention facility. Per Chapter 11, section 11.3.3 of the El Paso County Drainage Criteria Manual a Geotechnical report with recommendations for the foundation preparation and embankment construction shall be submitted with the complete design analysis for all permanent detention facilities. Please provide the appropriate recommendations for the detention facilities per DCM Vol. 1 Section 11.3.3.

Response: Recommendations for the detention facilities have been added to the report.

GEC PLAN

1. Please update the dates accordingly.

Response: These dates have been updated to reflect the new timeline.

2. Please fix typo. Did you mean 7890?

Response: Typo has been fixed.

3. Provide detail for this forebay.

Response: Detail has been provided on the corresponding sheet.

4. This note indicates that the CMP will be relocated yet the note below indicates this culvert as an RCP. Please revise so that they match.

Response: Note has been updated to call out relocation as well as replacing with RCP.

5. This does not match the design calculations (calcs show 3' by 3'). Revise either the calculations or the detail so that they match.

Response: Calculations have been revised to reflect 4' by 4'.

6. The % slope text is difficult to read. Please relocate or fix the hatch so that the text is readable.

Response: Wipeouts have been added behind the corresponding slope text callouts.

7. ? (flow arrows)

Response: These arrows have been relocated to show the current drainage patterns.

8. Please fix the contour lines. It appears that there are conflicting/overlapping lines.

Response: Base linework has been removed so the contours accurately reflect the grading.

9. Indicate the surface material of the access road.

Response: Callouts have been updated as "gravel maintenance roads."

DRAINAGE REPORT

1. Please address the CDOT comments

Response: Please see the corresponding sections below for responses to the CDOT comments.

2. Please revise to just indicate "CRITERIA" as the subsequent paragraphs only identify "CRITERIA."

Response: This verbiage has been updated.

3. Please update this last sentence so that it does not indicate that the site is in a FEMA floodplain

Response: This sentence has been updated.

4. The drainage plan shows proposed grading in this area to divert the offsite flow away from the pond. Also, the drainage plan indicates that the existing culvert will be relocated and there appears to be protection provided downstream. Please include a description of this in the narrative.

Response: The descriptions of the flows and protection have been added to this section.

5. Please update this paragraph to reflect the new design.

Response: The ultimate outfall description has been updated.

6. Directs flow from the ponds to the CDOT ROW and ultimately....

Response: This text has been added.

7. Per DCM Vol. 1 Ch 6 Section 3.2.1 (City criteria adopted by County) length of overland flow shall be a max. 300 ft. This comment is consistent with the comment provided by CDOT.

Response: Overland flow has been revised to reflect a 300' max length, with the remaining length showing as flow for travel time.

8. Having such a small opening will be susceptible to clogging. Consider revising the outlet designs. If you decide to keep this design, additional text shall be provided in the drainage report and the O&M indicating that you are aware that the small opening is susceptible to clogging, that additional maintenance will be required and that the pond should be closely monitored.

Response: Text has been added to both the report and O&M Manual.

9. The pond details indicate 4 ft. Please revise so that they match (TYP.).

Response: Weir sides have been updated to reflect 4'.

10. The pond detail shows the invert at 0.33" below the basin bottom. Revise so that they match (TYP.).

Response: Invert has been updated.

11. See comment on east pond calculation.

Response: This comment has been reflected in the west pond.

12. Per comments from CDOT, please shown the location of the proposed septic system.

Response: Septic system is now shown on the plans.

ADDITIONAL EL PASO COUNTY COMMENTS

1. Please move location of lining calculations so proposed drainage plans are at the end.

Response: Calculations have been moved in the report so plans show at the end.

2. Please add section of additional outlet structure maintenance to the O&M Manual.

Response: Additional language has been added to the O&M Manual.

3. Update proposed flows for Basin O-2 to reflect flows from lining calculations.

Response: These flows have been updated in the table on the proposed drainage report.

4. Ensure adequate erosion control measures are taken on the ditch running along the southern border of the east detention pond, to Design Point O-2.

Response: With the addition of Check Dams to this ditch, adequate measures are in place for erosion.

Comments from CDOT

ACCESS

1. No additional access will be allowed to the development from SH24A according to the unofficial Access Control Plan.

Response: Noted, thank you.

2. Recommendations from the Traffic Impact Study by Kimley-Horn dated 06/20/19 will be required. The requirement is a right turn accel/decel lane along the WB lane of SH24.

Response: Noted, thank you.

3. Slope mitigation may be required along the right of way.

Response: Noted, thank you.

ROW

1. Right of Way donation may be required to construct the recommended WB acceleration/deceleration lanes along SH24.

Response: It does not seem ROW donation will be needed at this time.

TRAFFIC OPERATIONS

1. The Traffic Impact Study by Kimley-Horn dated 06/20/19 should include analysis of the adjacent crossover intersections with SH24 (Lucky 4 Rd and Green Mtn Falls).

Response: We respectfully request CDOT reconsideration to evaluate additional intersections along US-24. This project is already undertaking significant improvements along the state highway by constructing acceleration and deceleration lanes for the existing access intersection. Peak hour traffic volumes at adjacent intersections would not be anticipated to be highest on Sunday mornings, when the Church traffic will be added to the surrounding street network. The overall traffic volume at these intersections on Sunday morning is anticipated to be less than during the typical weekday peaks.

2. Recommendations and conclusions from said TIS will be required, design criteria and guidelines will need to be taken from the State Highway Access Code for the westbound continuous accel/decel lane to 10460 West Highway 24.

Response: Full design of the acceleration and deceleration lanes will be provided with a separate permit. They are shown on the plans for representational purposes.

CDOT HYDRAULICS

1. A request for the Final Stamped Drainage Study to be provided to CDOT as part of the Access Permit Process.

Response: Noted, thank you.

2. Update to the Drainage Study by Kimley-Horn, dated 10/18/19 with comments below.

Response: Noted, thank you.

3. Existing 24" pipe draining to the southwest is shown connecting to a pipe that appears to be proposed by this project, sheet 4. Details are missing. Please provide.

Response: Our storm plan has been added to the drainage report, which details the location, size, length and slope of the proposed pipe that connects to the existing 24" pipe.

4. Riprap rundown shown at the outlet of the proposed pipe run CO1. Need to see construction details and calcs that show the proposed riprap design is adequate. Drainage report mentions that this is a concrete rundown. Which is it? Need to ensure that it extends to the bottom of the CDOT ditch and up the ditch backslope to ensure the ditch is not eroded.

Response: The riprap rundown in reference has been extended to the CDOT ROW. It consists of a concrete forebay and riprap pad at the outlet of the proposed pipe (see Grading and Erosion Control Plan). Riprap calculations have been provided as an appendix in the drainage report. Please note the riprap pad is sized to handle additional flow dissipation.

5. Need plans for construction site BMPs so that CDOT ROW isn't inundated with sediment from the construction project site. Significant grading on the project has high potential of erosion.

Response: Our grading and erosion control plan has been provided to El Paso County on the EDARP site and will be provided to CDOT.

6. Looks like there may be a conflict with the proposed septic system and the proposed detention pond and drainage system. Please confirm. The septic system and drainage system are not shown on each other's plans, so there is no way of knowing if there is a conflict. Proposed septic shown in plan, no profiles for the storm system to ensure the no conflicts with the septic system is not shown.

Response: Septic system has been shown on the necessary plans. A cross section has been added to display the crossing between the 8" outlet structure pipe and septic line near the East pond, on the proposed drainage plan.

7. Is there a need for environmental mitigation for Stormwater detention pond being place in location of old septic seepage beds?

Response: Due to the proximity of the East pond to the old septic seepage beds, the ponds will be lined with an impermeable synthetic liner to ensure proper hazard mitigation.

8. Existing channel carrying flows from culvert that crosses bend in access road may need to be stabilized. Higher flows from paving of access road could cause this steep channel to erode. Please provide channel lining calculations showing whether or not this channel needs to be stabilized.

Response: A section has been added to the drainage report that outlines that the existing 24" CMP has the capacity for the flow for the tributary basin. It also gives a provision for adding Type M riprap to the culvert near the CDOT ROW. CIA calculations, pipe capacity calculations, and the corresponding code sections have been included as appendices in the Report.

9. Page 6, under "Major Drainage Basin Characteristics", revise last sentence which states that the property is in the floodplain. Change sentence to: "The Property lies in the FEMA flood plain 08041C0467G, eff. 12/7/2018 indicating this parcel of land is in Zone D (area determined to be out of the 100-year and 500-year flood plain)." to "The Property lies in the

FEMA FIRM Panel 08041C0467G, eff 12/7/2018 indicating this parcel of land is in Zone D (area determined to be out of the 100-year and 500-year floodplain).

Response: This has been updated.

10. Time of concentration calculations: Travel time should not be zero, also initial/overland time lengths should never be more than 300 feet.

Response: All lengths over 300 feet have been added to the travel time columns, as well as to travel times showing as zero.

11. Hydraulics report needs to take into account for the proposed acceleration and deceleration lanes to the development for slopes to the state highway.

Response: Preliminary design of the accel/decel lanes are shown on the Grading and Erosion Control Plan (C2.1), which has been included as an appendix to the drainage report. A section to the report has also been added that describes the improvements. The lanes are to follow native drainage patterns with the highway and will not require additional hydraulic studies.

12. A culvert and ditch were added southeast of the east detention basin. This ditch outfall onto church access road. This concentrated flow outfall condition will cause erosion along the edge of the proposed drive and likely undermine the pavement as well as cause icing issues in winter. Please provide a way for this water to drain either in a ditch along the access road or another culvert under the access road to prevent erosion.

Response: The proposed ditch southeast of the east detention pond outfalls into an existing ditch. Additional linework has been added to clarify this ditch location. Additionally, a detail has been provided on the Proposed Drainage Plan that outlines additional construction measures to ensure the ditch provides adequate capacity to the outfall at Design Point O-2.

13. Provide silt fence between proposed septic system and property line to ensure no sedimentation of CDOT drainage system.

Response: Silt fence has been extended between the septic system and property line.

14. Provide check dams perpendicular to flow within all rundowns and ditches along both sides of the access.

Response: Check dams have been added to the rundowns and proposed ditches. Please reference the Grading and Erosion Control Plan submitted to EDARP for locations and details. Thank you!

ADDITIONAL ITEMS

1. On-premise and off-premise signing shall comply with the current Colorado Outdoor Advertising Act, section 43-1-401 to 421, C.R.S., and all rules and regulations pertaining to outdoor advertising. Please contact Mr. Todd Ausbun at 719-696-1403 for any questions regarding advertising devices

Response: Noted, thank you.

2. Any utility work within the state highway right of way will require a utility permit from the CDOT. Information for obtaining a utility permit can also be obtained by contacting Mr. Ausbun.

Response: Noted, thank you.

Please contact me at (719) 453-0180 or eric.gunderson@kimley-horn.com should you have any questions.

Sincerely,
KIMLEY-HORN AND ASSOCIATES, INC.



Eric Gunderson P.E.
Project Manager