MEMORANDUM

DATE: September 7, 2022

TO: Kari Parsons, PCD-Project Manager

FROM: Jeff Rice, PCD-Engineering CCES Responses in red
719-520-7877

SUBJECT: CDR-22-006 – Sterling Ranch Road Bridge
Second Submittal

Engineering Division
Planning and Community Development (PCD)-Engineering reviews plans and reports to ensure general conformance with El Paso County standards and criteria. The project engineer is responsible for compliance with all applicable criteria, including other governmental regulations. Notwithstanding anything depicted in the plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code (LDC), the Engineering Criteria Manual (ECM), the Drainage Criteria Manual (DCM), and the Drainage Criteria Manual Volume 2 (DCM2). Any deviations from regulations and standards must be requested, and approved by the ECM Administrator, in writing. Any modifications necessary to meet overlooked criteria after-the-fact will be entirely the developer's responsibility to rectify.

These comments include unresolved previous comments and new comments resulting from the re-submittal in **bold**. All previous comments that have been resolved have been noted or deleted. A written response to all comments and return of any redlines is required for review of the re-submittal. **A response to the comment memo was not received with this submittal.** Please arrange a meeting between the developer's team and County staff to review and discuss these comments and prepared revisions/responses prior to the next submittal. Additional comments may be generated on items added or revised after the original comments.

General / Letter of Intent

1. See letter of intent redlines/questions. **See updated LOI redlines.** Revised
2. Note: The FAE will be incorporated into the Sterling Ranch Filing No. 3 financial assurances and subdivision improvements agreement. Noted

Bridge Design Report

1. See design report redlines and combined drainage letter redlines. **See updated redlines.** Revised per comments
2. Include a scour analysis. **Unresolved.** Now provided in drainage letter
3. Provide all project specifications when available. **Unresolved.** All design info. and specs. included in design report.

Construction Drawings

1. Provide additional construction plans, including all necessary appurtenances and elevations, cross-sections, and a longitudinal profile. These plans need to be standalone assuming the channel design and Sterling Ranch Road CDs are approved for

simultaneous construction and include all of the necessary items. **Partially resolved; railings, guardrails, etc. need to be provided and addressed in the FAE.** Guardrail plan and railing details now provided and included on FAE.

2. See CD redlines. **Partially resolved; see updated CD redlines.** Revised
3. Note: Coordination with the Sterling Ranch Road construction plans will be required. Noted
4. **Resolved.**
5. Regarding sidewalk widths, the Sterling Ranch Road plans show 6-foot walks, but if one or both sides of the bridge connect to the regional Sand Creek trail, a wider trail/sidewalk (8' to 10') should be considered. **Unresolved.** Now show 8' sidewalk on south side of road adjacent to school for trail/ped. use.

<u>Grading and Erosion Control Plan / SWMP / Geotechnical Issues</u>

1. See GEC redlines. **Partially resolved; see updated GEC redlines.** Revised
2. **Resolved.**
3. Clarify whether the footings are to be constructed only on sandstone subgrade. Please provide a formal response to these comments. **Unresolved. Please include the memo from Entech in the EDARP submittal.** Entech Addendum provided with this submittal
   a. Section 5.1.1 of the Subsurface Soil Investigation states that extensive subgrade improvements are anticipated and a maximum ultimate bearing pressure of 5,000 psf is recommended, but for undisturbed sandstone, the allowable bearing capacity is 5,800 psi. The footing design report states that Ultimate Bearing Resistance is 14,500, resulting in a factored bearing resistance of 8,700 psf. Please clarify.
   b. Address how the footings will tie in to undisturbed sandstone if it is higher or lower than the bottom of the footings.

Response to comment 3. a and b below by Contech:

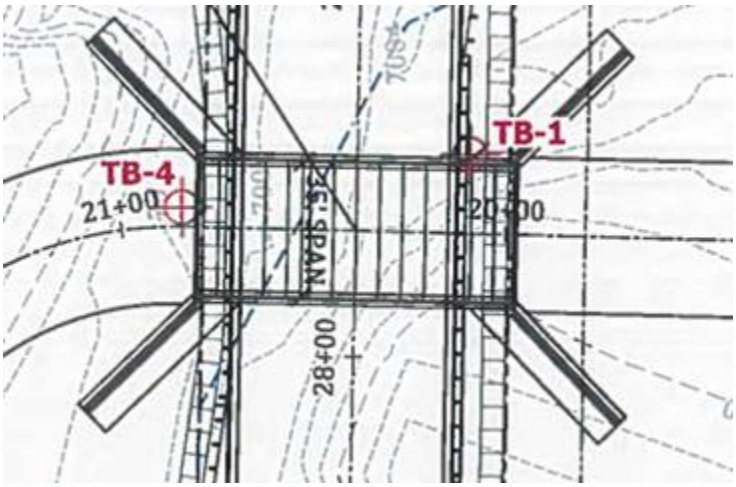
The foundations were designed based on Entech's Bearing Capacity Table with the bottom values. 5 foot embedment in rock with 8500 psf allowable bearing capacity. Per the test borings (TB1) sandstone is only 4' below grade.

Bottom of footings are at 6996.

ADDENDUM TABLE

BEARING CAPACITY

Soil Type	Minimum Embedment (from adjacent slab/grade)	Design Methodology		
		ASD	LRFD	
		Allowable Bearing (psf)	Ultimate Bearing (psf)	Resisting Factor
Sand (Native)	3 feet	2400	4000	0.45
Structural Fill	3 feet	3000	5000	0.45
Sandstone	3 feet	3500	5800	0.6
Sandstone	5 feet	8500	14,500	0.6



TEST BORING NO. 1
DATE DRILLED 10/2/2021
Job # 200045

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 1', 10/2/21						
SAND, SLIGHTLY SILTY, FINE TO COARSE GRAINED, GRAY BROWN, MEDIUM DENSE, WET				21	13.8	1
SANDSTONE, SLIGHTLY SILTY, FINE TO COARSE GRAINED, GRAY, VERY DENSE, WET	5			50	11.1	2
	10			50 / 6"	13.8	2

Tim Miller
CONTECH
307-631-5761

Financial Assurance Estimate (FAE) Form / Other

1. See cursory FAE redlines. The FAE will be reviewed in detail with the next submittal. **Partially resolved; see updated FAE redlines.** Revised
2. Note: The construction quality control, inspection and documentation requirements in ECM Section 5.10, especially 5.10.2.E, apply; any additional requirements in the specifications and on sheet 2 of the Contech plan set, specifically 7.4 and 7.5, shall also be provided to EPC Inspections Staff. Noted
3. Provide a PBMP Applicability Form. **See PBMP Applicability Form redlines.** Revised
4. Provide the required items listed in the Engineering Final Submittal Checklist, attached.

Engineering Final Submittal Checklist for Electronic Submittals	
Check Box	**Item: Report/Form**
☐	Drainage Report (signed)
☐	PBMP Applicability Form
☐	~~Traffic Impact Study (signed)~~
☐☐	Grading & Erosion Control Plan **and checklist** (signed)
☐☐	Construction Plans (signed)
☐	Deviation Request (signed)
☐	~~MS4 Post Construction Form and SDI worksheet~~
☐	~~Proof of embankment/pond submittal to State Engineer~~
☐	ESQCP (signed)
☐	* Financial Assurance Estimate, SIA (signed)
☐	~~* Pond /BMP Maint. Agreement and Easement (signed)~~
☐	~~* Operation & Maintenance Manual~~
☐	~~**AutoCAD base drawing (submitted to DPW)**~~
☐	~~Pre-Development Site Grading Acknowledgement and Right of Access Form (signed)~~
☐	Other: Offsite Easements, Deeds, Other Permits (FEMA CLOMR, LOMR, USACE, Floodplain…), Conditions of Approval, etc.
Pre-Construction Checklist:	
☐	Driveway/Access Permit (Temporary access permits to be obtained from EPC DPW)
☐	Work Within the ROW Permit (DPW or CDOT)
☐☐	* Stormwater Management Plan (SWMP) **and checklist** Submit to PCD-Inspections 2 weeks prior to precon.
☐	* Colorado Discharge Permit (COR:_____)
☐	* County Construction Activity Permit
☐	* CDPHE APEN – (if over 25 ac. or 6 mos.)
☐	* Financial Surety (Letter of Credit/Bond/Collateral/Check)
☐	Construction Permit Fee: **(Verify fees with Inspections Supervisor at time of scheduling)** $
☐	Other:

* - required items to obtain an ESQCP

** - after recordation

Permit Fee and Collateral must be separate checks

Post Construction Submittal Checklist: (ECM 5.10.6)	
☐	As-Built Drawings
☐	~~Pond Certification Letter~~
☐	~~Acceptance Letter for wet utilities~~

- ☐ = Need final / signed version
- ☒ = complete, in file
- ☐ = PCD Staff to provide
- ☐ = Undetermined at this time
- ☐ = Need later