

**Final Bridge and Channel Design Report**

**East Fork Jimmy Camp Creek at Fontaine Boulevard  
Lorson Ranch Development**

**CDR-16-009  
El Paso County, Colorado**

Prepared for:  
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Kiowa Project No. 16031  
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## I. General Location and Description

This report serves to summarize the design of the East Fork Jimmy Camp Creek (EFJCC), drainageway and for the bridge at Fontaine Boulevard within the Lorson Ranch Development. It is proposed to construct four low flow rock drops, low flow channels, a grouted rock check and soil riprap bank linings at selective locations along a 3,400-lineal foot segment of the EFJCC. The work along the drainageway will begin approximately 200 feet south of the centerline for future Fontaine Boulevard and extend upstream to the northern property line of the Lorson Ranch development. To provide for a continuous design, at the northern property line a short portion of the EFJCC drainageway that lies within the Banning-Lewis Ranch property has been included in the drawings. Banning Lewis-Ranch lies within the City of Colorado Springs. The location of the site is shown on Figure 1.

Upon the completion of the drainageway facilities and acceptance by El Paso County easements and or tracts will be dedicated for the purposes of maintenance access. Tract E, a tract of land dedicated as an area for future development was created when Pioneer Landing at Lorson Ranch Filing 2B was platted. Most of the proposed drainageway facilities shown on the plans are confined to Tract E. There is a short length within the upper segment of drainageway will drainageway that will abut a future Lorson East filing. With the platting of the first filing within Lorson East, Tract E will be re-platted and enlarged to contain the drainage facilities shown on the plans within a new tract dedicated for open space, floodplain preservation and drainage maintenance access. Operation and maintenance of the drainageway will be the responsibility of the Lorson Ranch Metropolitan District. Upon completion of a LOMR that accounts for the channel and bridge structures subject to this design, there will be no residential lots within future Lorson East filings will be platted into the 100-year floodplain.

The bridge over EFJCC at Fontaine Boulevard is also included within the design plans. The bridge will be a clear-span precast structure that has the capacity to pass the 100-year discharge. The ultimate roadway right-of-way is proposed to be 130-feet. The structure will be 126 feet out-to-out. The roadway section shown on the design plans includes four lanes with a 16-foot median and 5-foot detached sidewalks. Protective guardrails as shown on the drawings have been designed in conformance with Colorado Department of Transportation M-standards. The use of a clear-span structure is consistent with the US Army Corps of Engineers 404 permit issued for the Lorson Ranch Development that requires that a natural invert be constructed. Once the bridge and roadway facilities are completed and accepted by El Paso County, El Paso County will assume maintenance responsibility for the structure and roadway.

The developer intends to request reimbursement for the cost to construct the bridge and drainageway facilities, or request credit against future drainage and bridge fees. Reimbursement will be processed in accordance with sections 1.7 and 3.3 of the Drainage Criteria Manual (DCM). The drainageway facilities will be operated and maintained by ~~El Paso County~~

and Lorson  
Ranch Metro  
District

LRMD

## II. Project Background

EFJCC is a natural drainageway that was shown to be stabilized in the Lorson Ranch Master Development Drainage Plan (MDDP). The MDDP as last updated showed the EFJCC drainageway to be reconfigured into a trapezoidal channel section capable of conveying the 100-year discharge as listed in the MDDP as derived from the Jimmy Camp Creek Drainage Basin Planning Study (DBPS), that was prepared in 1988. Between future Lorson Boulevard and the downstream limits of this project, the channel has been stabilized into a trapezoidal section with buried grouted rock checks

A geotechnical investigation was conducted to support the design of the foundation for the bridge at Fontaine. The geotechnical report is included within the Appendix. Two soil borings were drilled at near the location of the proposed footings for the bridge. Because of the depth to bedrock, deep foundations are proposed using driven H-piles. A precast bridge section has been chosen that has a 48-foot clear span and a 13-foot rise. The 100-year discharge can be passed through the bridge at a headwater to depth ratio of 1. Bridge velocity during a 100-year event is estimated at between 10.5 and 14.5 feet per second. The Geotechnical Report has been included in this report within Appendix C.

The construction of the improvements shown on the plans will result in a long-term stable drainageway corridor and prevent damages that could arise from bank sloughing related to the erosion of the drainageway's invert. Because the low flow channel will be stabilized both horizontally and vertically the potential for negative impacts upon the native vegetative habitat will be minimized. A stabilized floodplain corridor will result from the construction of the proposed drainageway structures and over the long-term, the environmental quality of the corridor will be enhanced and preserved.

Maintenance access to the proposed drops will be provided via platted tracts within Pioneer Land Filing 2 and from tracts or easements within the future Lorson East filings. The locations of the maintenance roads are shown on the design plans. The benches of the channel are relatively flat and will allow for access to the crest of each drop. Access to the floodplain bench will allow for maintenance of proposed storm sewer outfalls from the adjacent Pioneer Landing Filing 2B and future Lorson East filings. Access points to the 100-year floodplain will be identified in the Lorson East MDDP and subsequent subdivision plat(s). Access roadways will have an all-weather surface and be a minimum of 12-feet in width.

**VIII. Construction Permitting**

The following permits are anticipated to allow for the construction of the project as shown on the design plans. A copy of the Lorson Ranch 404 Permit is included within the Appendix.

- Notification of project in conformance with 404 permit - USACOE
- Floodplain Development Permit – Regional Building Department
- Grading and Erosion Control Permit (ESQCP) – El Paso County
- Construction Stormwater Discharge Permit – CDPHE
- Construction Dewatering Permit - CDPHE
- Conditional Letter of Map Revision - FEMA

**IX. Drainage and Bridge Fees**

The Lorson Ranch Development and specifically Lorson Ranch East lies wholly within the Jimmy Camp Creek drainage basin. Drainage and bridge fees have been established by the County for the Jimmy Camp Creek drainage basin for assessment against platted land within the watershed. The drainageway structures will be public and are considered reimbursable or creditable against drainage fees owed when land within Lorson East is platted pending approval through the DCM reimbursement process. Construction of the bridge at Fontaine Boulevard will be creditable against bridge fees owed pending approval through the DCM reimbursement process.

The current 2017 drainage and bridge fees for the Jimmy Camp Creek drainage basin are as follows:

, to be maintained by the Lorson Ranch Metro District,

Drainage Fee:	\$16,270 per all impervious acres
Drainage Fee Escrow (BOCC Reas.16-320)	<u>\$7,285 per acre</u>
Total Drainage Fee	\$23,555 per acre
Bridge Fee:	\$735 per acre

**X. Phasing**

Construction of the drainage and bridge facilities shown on the plans is to be completed all at once and no phasing of the construction is proposed. The construction will commence prior to or concurrent with the development of the first filing within Lorson East. Plans are to commence with construction in Winter 2018 with substantial completion in Summer 2018. Completion of the roadway may initially involve only the two westbound lanes on an interim basis until such time that traffic warrants completing the entire future east bound lanes of Fontaine Boulevard. The full bridge length has been shown on the plans.

Address what will be constructed.

