

FONTAINE BOULEVARD BRIDGE & EAST FORK JIMMY CAMP CREEK CHANNEL DESIGN

EL PASO COUNTY, COLORADO PREPARED FOR LORSON DEVELOPMENT

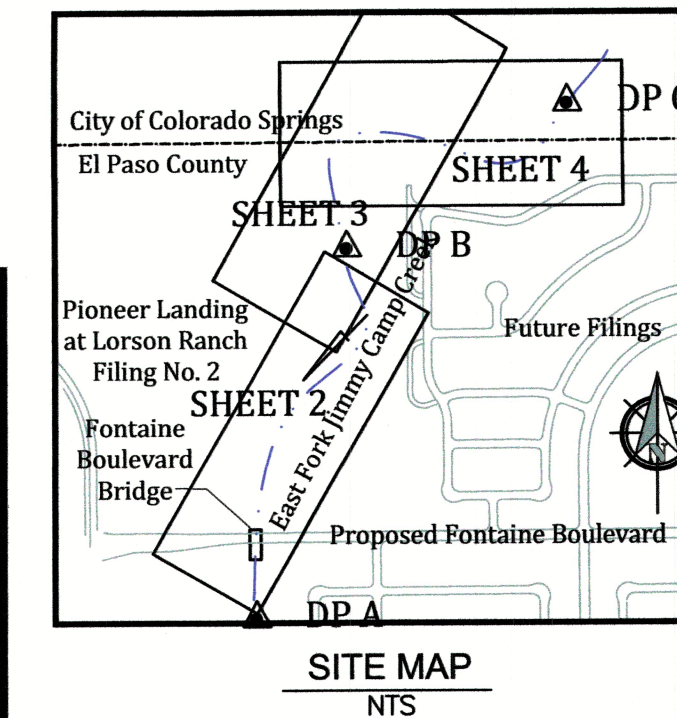
GENERAL NOTES

- Profile design lines are based on centerline, as shown, unless otherwise noted.
- All new construction to conform to the specifications of El Paso County Department of Public Works. Any asphalt removed is to be replaced to meet the specifications of the El Paso County Public Works Department.
- For pavement design, curb and gutter, and sidewalks see individual plan and profile sheets. Pavement design to be based on Resistance Value "R" derived from Hveem tests and are to be approved by the Engineering Division of the El Paso County Planning and Community Development prior to work above subgrade.
- At intersections, all curb returns will have 20-foot radius unless otherwise noted.
- All existing utilities have been shown according to the best available information. The contractor is responsible for field location and verification prior to beginning work. If it appears that there could be a conflict with any utilities, whether indicated on the plans or not, the contractor is to notify the engineer and owner immediately. The contractor is responsible for the protection and repair (if necessary) of all utilities.
- A Pre-Construction meeting shall be held with the El Paso County Planning and Community Development and Widefield Water and Sanitation District prior to any construction.
- Approved plans, Engineering Criteria Manual, etc. is required to be on-site at all times during construction.
- All necessary permits, such as SWMP, ESQCP, Fugitive Dust, Access, C.O.E. 404, etc. shall be obtained prior to construction.
- All handicap ramps to be per El Paso County Standard SD_2-40.
- The contractor shall coordinate locations and layout with the El Paso County Planning and Community Development on the placement of any pedestrian ramps prior to construction of the curb.
- Where appropriate, neatly saw cut all existing concrete and asphalt. Repair/replace all disturbed existing items with like materials and thicknesses.
- All disturbed areas shall be revegetated with native grasses within 21 days of excavation per Erosion Control Plan.
- The prepared Erosion/Sediment Control Plan is to be considered a part of these plans and its requirements adhered to during the construction of this project.
- All storm and sanitary sewer pipe lengths and slopes are figured from center of manhole or bend. Pipe lengths are given as a horizontal length.
- All storm sewer bedding to be per CDoT Standards.
- All storm sewer pipe shall be Class III B Wall unless otherwise shown on the storm sewer plan and profile sheets.
- All wyes and bends used in construction of storm sewer facilities shall be factory fabricated, unless approved by the El Paso County Development Services Department.
- Construction and materials used in all storm and sanitary sewer manholes shall be per specifications. Storm sewer radial deflections to be grouted or installed per manufacturer's recommendations.
- Storm sewer manholes sizes as follows unless otherwise shown:
18" thru 36" use 48" I.D. manhole
42" thru 48" use 60" I.D. manhole
54" thru 60" use 72" I.D. manhole
NOTE: Manhole sizes tabulated here shall be increased, if necessary, to accommodate incoming laterals.
- All horizontal stationing is based on the "Face of Curb", unless otherwise shown.
- All vertical design and top of curb are based on the design point shown in the typical cross section.
- The curb line design point is located at the intersection of the face and top of curb for the Type III Standard 6-inch vertical curb. See typical street section for design point locations.
- Vertical curb to be used between curb returns (CR) and at curb inlets. Transitions from ramp to vertical curb shall be 10-feet unless otherwise approved by the El Paso County Public Services Department. All other curb & gutter to be ramp curb & gutter.
- Cross pans to be per El Paso County Standard Detail SD_2-26.
- Contractor responsible for meeting all Widefield Water and Sanitation District criteria when connecting to existing stubs.
- Curb returns shall be straight graded from CR to CR unless otherwise noted.
- Inlets are Type "R" inlets (CDOT STD M-604-12) unless otherwise noted.

BENCHMARK: Monument is located at the Northwest corner of the intersection of Powers Boulevard and Fontaine Street. The monument is a 3-inch aluminum cap (FIMS ID #206). Located 51.3 feet west of the west edge of asphalt of Powers Blvd and 65.5 feet north of the north edge of asphalt of Fontaine Street. Elevation=5897.89 feet (NGVD 1929, 1960 Adj.)
Basis of Bearing: All bearings used herein are based on an assumed bearing of N89°42'02" E, a distance of 1873.45 feet between the northeasterly corner of Pioneer Landing at Lorson Ranch Filing No. 1, as recorded under Reception No. 210713013 of the records of the El Paso County Clerk and Recorder, as monumented by a rebar and orange surveyors cap stamped "Rampart PLS 26965", from which the east one-quarter corner (E₁) of said section 14, as monumented by a 2-1/2" pipe with galvanized screw on cap only partially stamped.

EL PASO COUNTY STANDARD NOTES

- All drainage and roadway construction shall meet the standards and specifications of the City of Colorado Springs/El Paso County Drainage Criteria Manual, Volumes 1 and 2, and the El Paso County Engineering Criteria Manual.
- Contractor shall be responsible for the notification and field notification of all existing utilities, whether shown on the plans or not, before beginning construction. Location of existing utilities shall be verified by the contractor prior to construction. Call 811 to contact the Utility Notification Center of Colorado (UNCC).
- Contractor shall keep a copy of these approved plans, the Grading and Erosion Control Plan, the Stormwater Management Plan (SWMP), the soils and geotechnical report, and the appropriate design and construction standards and specifications at the job site at all times, including the following:
 - El Paso County Engineering Criteria Manual (ECM)
 - City of Colorado Springs/El Paso County Drainage Criteria Manual, Volumes 1 and 2
 - Colorado Department of Transportation (CDOT) Standard Specifications for Road and Bridge Construction
 - CDOT M & S Standards
- Notwithstanding anything depicted in these 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, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations from regulations and standards must be requested, and approved, in writing. Any modifications necessary to meet criteria after-the-fact will be entirely the developer's responsibility to rectify.
- It is the design engineer's responsibility to accurately show existing conditions, both onsite and offsite, on the construction plans. Any modifications necessary due to conflicts, omissions, or changed conditions will be entirely the developer's responsibility to rectify.
- Contractor shall schedule a pre-construction meeting with El Paso County Planning and Community Development (PCD) - Inspections, prior to starting construction.
- It is the contractor's responsibility to understand the requirements of all jurisdictional agencies and to obtain all required permits, including but not limited to El Paso County Erosion and Stormwater Quality Control Permit (ESQCP), Regional Building Floodplain Development Permit, U.S. Army Corps of Engineers-issued 401 and/or 404 permits, and county and state fugitive dust permits.
- Contractor shall not deviate from the plans without first obtaining written approval from the design engineer and PCD. Contractor shall notify the design engineer immediately upon discovery of any errors or inconsistencies.
- All storm drain pipe shall be Class III RCP unless otherwise noted and approved by PCD.
- Contractor shall coordinate geotechnical testing per ECM standards. Pavement design shall be approved by El Paso County PCD prior to placement of curb and gutter and pavement.
- All construction traffic must enter/exit the site at approved construction access points.
- Sight visibility triangles as identified in the plans shall be provided at all intersections. Obstructions greater than 18 inches above flowline are not allowed within sight triangles.
- Signing and striping shall comply with El Paso County Department of Public Works and MUTCD criteria. [If applicable, additional signing and striping notes will be provided.]
- Contractor shall obtain any permits required by El Paso County Department of Public Works, including Work Within the Right-of-Way and Special Transport permits.
- The limits of construction shall remain within the property line unless otherwise noted. The owner/developer shall obtain written permission and easements, where required, from adjoining property owner(s) prior to any off-site disturbance, grading, or construction.



INDEX OF SHEETS

- | | |
|----|---|
| 1 | Cover Sheet |
| 2 | Plan and Profile - Sta 9+33 to Sta 21+00 |
| 3 | Plan and Profile - Sta 21+00 to Sta 34+00 |
| 4 | Plan and Profile - Sta 34+00 to Sta 39+18 |
| 5 | Grade Control Plan and Details |
| 6 | Drainageway Details |
| 7 | Bridge Structure Layout |
| 8 | Bridge Structure Plans |
| 9 | Grading & Erosion Control Plan |
| 10 | Grading & Erosion Control Plan |
| 11 | Erosion Control Details |
| 12 | Roadway Details |
| 13 | Drainageway Cross-Sections |

STATEMENTS

Design Engineer's Statement:

These detailed plans and specifications were prepared under my direction and supervision. Said plans and specifications have been prepared according to the criteria established by the County for detailed roadway, drainage, grading and erosion control plans and specifications, and said plans and specifications are in conformity with applicable master drainage plans and master transportation plans. Said plans and specifications meet the purposes for which the particular roadway and drainage facilities are designed and are correct to the best of my knowledge and belief. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparation of these detailed plans and specifications.

Richard N. Wray, P.E.
Richard N. Wray, P.E. #19310
For and on behalf of Kiowa Engineering Corp.

2/5/18
Date

Owner/Developer's Statement:

I, the owner/developer have read and will comply with all of the requirements specified in these detailed plans and specifications.

Jeff Mark
Jeff Mark
Lorson Development
212 N. Wahsatch Ave. Suite 301
Colorado Springs, Colorado 80903

2/5/18

El Paso County:

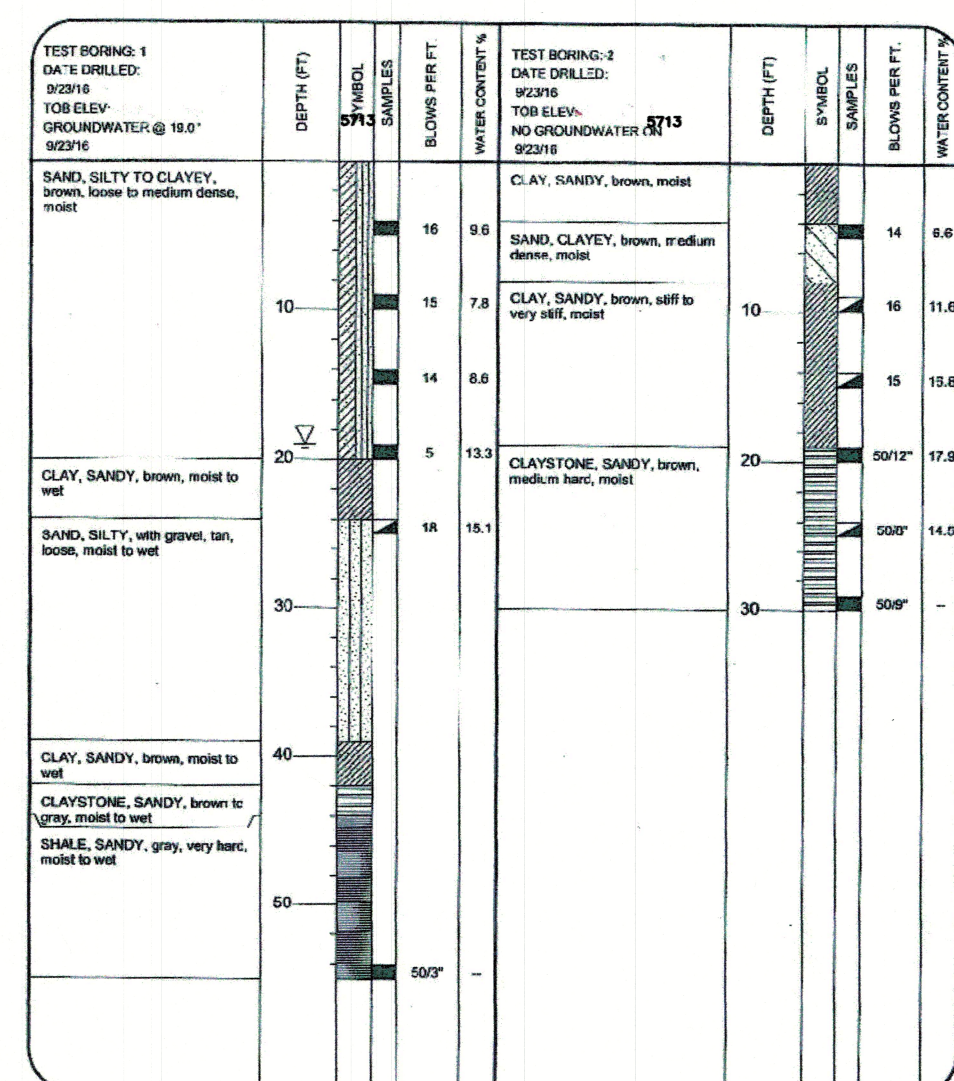
County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/or accuracy of this document.

Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual, and Engineering Criteria Manual as amended.

In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Directors discretion.

Jennifer Irvine, P.E.,
County Engineer / ECM Administrator

Date



SOILS DESCRIPTION

- CLAYEY SAND
- CLAYSTONE
- SANDY CLAY
- SHALE
- SILTY SAND
- SILTY TO CLAYEY SAND

SYMBOLS AND NOTES

- STANDARD PENETRATION TEST - MADE BY DRIVING A SPLIT BARREL SAMPLER INTO THE SOIL BY DROPPING A 140 LB. HAMMER 30" IN GENERAL ACCORDANCE WITH ASTM D-1586. NUMBER INDICATES NUMBER OF HAMMER BLOWS PER FOOT (UNLESS OTHERWISE INDICATED).
- UNDISTURBED CALIFORNIA SAMPLE - MADE BY DRIVING A RING-LINED SAMPLER INTO THE SOIL BY DROPPING A 140 LB. HAMMER 30" IN GENERAL ACCORDANCE WITH ASTM D-3025. NUMBER INDICATES NUMBER OF HAMMER BLOWS PER FOOT (UNLESS OTHERWISE INDICATED).
- FREE WATER TABLE
- DEPTH AT WHICH BORING CAVED
- RULK DISTURBED BULK SAMPLE
- AUG AUGER "CUTTINGS"
- 4.5 WATER CONTENT (%)

ABBREVIATIONS

- | | |
|-------------------------------|--------------------------------------|
| ASSY = ASSEMBLY | MIN. = MINIMUM |
| BNDY = BOUNDARY | NTS = NOT TO SCALE |
| BOP = BOTTOM OF PIPE | OD = OUTSIDE DIAMETER |
| CL = CENTERLINE | PC = POINT OF HORIZONTAL CURVATURE |
| CRA = CONCRETE REVERSE ANCHOR | PP = PROPOSED |
| CTRB = CONCRETE THRUST BLOCK | PJ = POINT OF HORIZONTAL TANGENCY |
| CR = POINT OF CURB RETURN | PVC = POLY VINYL CHLORIDE PIPE |
| DIP = DUCTILE IRON PIPE | PVC = POINT OF VERTICAL CURVATURE |
| EL = ELEVATION | PVI = POINT OF VERTICAL INTERSECTION |
| ESMT = EASEMENT | PVT = POINT OF VERTICAL TANGENCY |
| EX. = EXISTING | RCB = REINFORCED CONCRETE BOX |
| FC = FACE OF CURB | RCP = REINFORCED CONCRETE PIPE |
| FES = FLARED END SECTION | ROW = RIGHT OF WAY |
| FLG = FLANGE | RT = RIGHT |
| FL = FLOWLINE | SHT = SHEET |
| GB = GRADE BREAK | SS = SANITARY SEWER |
| HP = HIGH POINT | STA = STATION |
| HORIZ = HORIZONTAL | STD = STANDARD |
| HYD = HYDRANT | TA = TOP OF ASPHALT |
| I.D. = INSIDE DIAMETER | TC = TOP OF CURB |
| LT = LEFT | TOP = TOP OF PIPE |
| LF = LINEAR FEET | TOR = TOP OF ROCK |
| LP = LOW POINT | TYP = TYPICAL |
| MAX = MAXIMUM | VC = VERTICAL CURVE |
| MH = MANHOLE | VERT = VERTICAL |



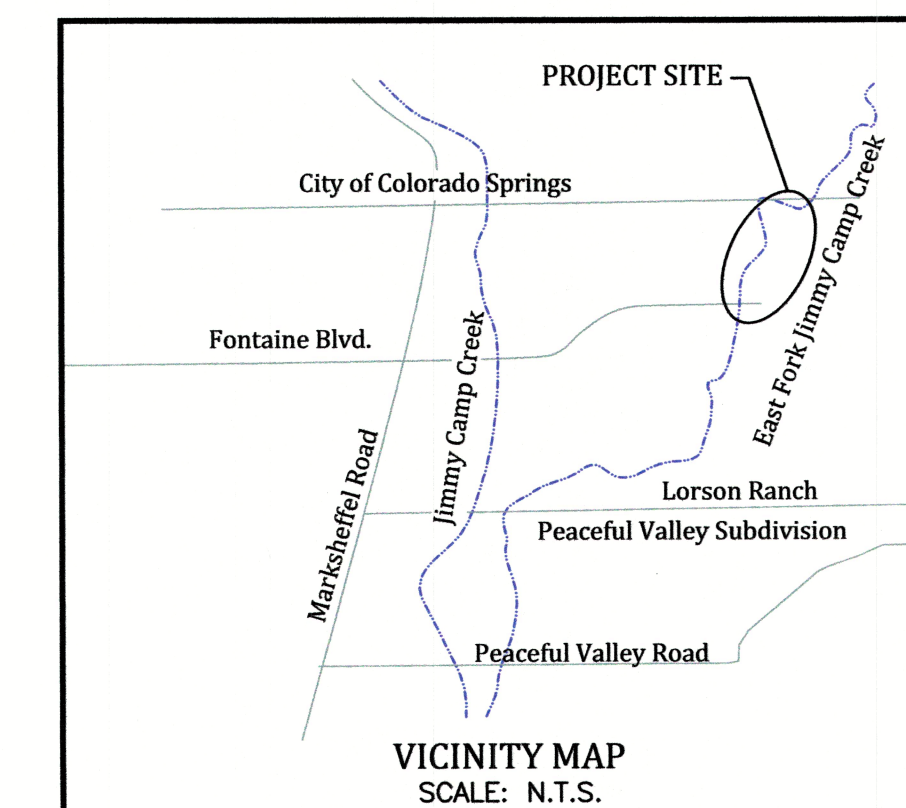
Kiowa Project No. 16031
January 26, 2018

SUMMARY OF DESIGN FLOWS (cfs)

| DP | EPC FIS ⁽¹⁾ | | | 2014 DPBS | | |
|----|------------------------|------|-------|-----------|------|-------|
| | 5yr | 10yr | 100yr | 5yr | 10yr | 100yr |
| A | NR | 2400 | 4750 | 100 | 1850 | 4260 |
| B | NR | 2200 | 4400 | 100 | 1830 | 4220 |
| C | NR | 2200 | 4400 | 100 | 1830 | 4220 |

(1) DESIGN OF MAJOR DRAINAGEWAYS AND FONTAINE BRIDGE BASED ON 100-YEAR FIS DISCHARGES.

(2) ALL DISCHARGES REPRESENT EXISTING BASIN DEVELOPMENT CONDITIONS.



DEVELOPER:

Lorson Development
212 N. Wahsatch #301
Colorado Springs, CO
80903

PREPARED BY:

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

PCD FILE # CDR-16-009