

Revise to Drainage
Letter

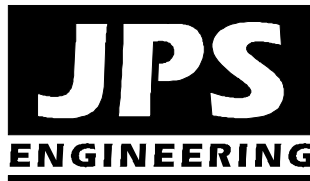
FINAL DRAINAGE REPORT
for
THE RESERVE AT CORRAL BLUFFS – FILING NO. 2

Prepared for:

Corral Ranch Development Company
6 S. Tejon, Suite 515
Colorado Springs, CO 80903

May 30, 2018

Prepared by:



19 E. Willamette Avenue
Colorado Springs, CO 80903
(719)-477-9429
(719)-471-0766 fax
www.jpsengr.com

JPS Project No. 081104
PCD File No. SF-18-010

DRAINAGE STATEMENT

Engineer's Statement:

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for liability caused by negligent acts, errors or omissions on my part in preparing this report.

John P. Schwab, P.E. #29891



Developer's Statement:

I, the developer have read and will comply with all of the requirements specified in this drainage report and plan.

By:

Printed Name: Jake Kunstle, Manager
Corral Ranch Development Company
6 South Tejon Street, Suite 515, Colorado Springs, CO 80903

Date

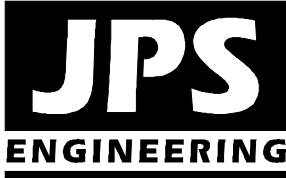
El Paso County's Statement

Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual, Volumes 1 and 2, and Engineering Criteria Manual as amended.

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

Date

Conditions:



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THE RESERVE AT CORRAL BLUFFS - FILING NO. 2 DRAINAGE LETTER REPORT May, 2018

I. INTRODUCTION

This Drainage Letter Report has been prepared in support of the final plat submittal for Filing No. 2 of The Reserve at Corral Bluffs Subdivision. The proposed Filing No. 2 consists of 6 single-family residential lots on 33.1 acres along Hoofprint Road and Solberg Court, with minimum lot sizes of 5 acres.

II. EXISTING AND PROPOSED DRAINAGE CONDITIONS

El Paso County previously approved the "Final Drainage Report for The Reserve at Corral Bluffs - Filing No. 1" prepared by JPS Engineering, dated October 24, 2013. As shown in the attached "Figure D1: Developed Drainage Plan," the area within Filing No. 2 lies within Basins A3, A4, B, and E. Basins A3, A4, and B generally sheet flows northerly to the north boundary of the subdivision. Basin E sheet flows northwesterly to the west boundary of the subdivision. As discussed in the previously approved subdivision drainage report, the developed drainage impact will be minimal based on the rural residential development plan for the site.

Development of this subdivision filing will include roadside ditches and culvert improvements to safely convey drainage through the site. This filing will include construction of proposed Culverts A2 and A3 to convey drainage across low points in Hoofprint Road and Solberg Court. Culvert sizing calculations for Culverts A2 and A3 were included in Appendix D of the previously approved Final Drainage Report for Filing No. 1, and the referenced calculations demonstrate that these culverts have been designed to County standards.

III. DRAINAGE PLANNING FOUR STEP PROCESS

El Paso County Drainage Criteria require drainage planning to include a Four Step Process for receiving water protection that focuses on reducing runoff volumes, treating the water quality capture volume (WQCV), stabilizing drainageways, and implementing long-term source controls.

As stated in DCM Volume 2, the Four Step Process is applicable to all new and re-development projects with construction activities that disturb 1 acre or greater or that disturb less than 1 acre but are part of a larger common plan of development. The Four Step Process has been implemented as follows in the planning of this project:

Step 1: Employ Runoff Reduction Practices

- Minimize Impacts: The proposed rural residential subdivision is an inherently low impact development. The proposed 5-acre minimum lot sizes and gravel rural roads with roadside ditches will minimize drainage impacts in comparison to higher density development alternatives.

Step 2: Stabilize Drainageways

- There are no major drainageways within or directly adjacent to this project site.

Step 3: Provide Water Quality Capture Volume (WQCV)

- Water quality detention is not required based on the rural residential development proposed (5-acre minimum lot sizes).

Step 4: Consider Need for Industrial and Commercial BMPs

- No industrial or commercial land uses are proposed as part of this development.

IV. COST ESTIMATE AND DRAINAGE FEES

The developer will finance all costs for proposed roadway and drainage improvements, and public facilities will be owned and maintained by El Paso County upon final acceptance.

This majority of this subdivision filing (Basins A-B) is located in the Curtis Ranch Drainage Basin (CHWS 1000), which is an unstudied basin with no drainage basin fee or bridge fee requirement.

The southwest part of this filing (Basin E) is located within the Jimmy Camp Creek Drainage Basin (FOFO 2000), which has a 2018 drainage basin fee of \$17,197 per impervious acre and a bridge fee of \$804 per impervious acre according to the current schedule of El Paso County Drainage Basin Fees.

For the Jimmy Camp Creek Drainage Basin, the County Basin Fee Schedule also includes a surety fee based on the DBPS currently being in the process of revision. The Basin Fee Schedule states that “In addition to the Drainage Fee, a surety in the amount of \$7,285 per impervious acre shall be provided to secure payment of additional fees in the event that the DBPS results in a fee greater than the current fee. Fees paid in excess of the future revised fee will be reimbursed.”

Applicable drainage basin fees within the Jimmy Camp Creek Drainage Basin are summarized as follows:

Average residential lot size = 5 acre/lot
Developed Residential Lot Area (Basin E) = 8.22 acres (Filing No. 2 area)
Percent impervious = 5.16%
(per Site-Specific Impervious Calculation in Appendix C of previously
approved subdivision drainage report)
Total Impervious area = (5.16% * 8.22 ac.) = 0.424 ac.
Adjusted Impervious area = (0.424 ac) * 75% = 0.318 ac.
(includes 25% reduction on drainage fees for 5-acre lots)

Drainage Basin Fee = (0.318 ac.) @ \$17,197 ac. = **\$5,468.65**

Bridge Fee = (0.318 ac.) @ \$804 ac. = **\$255.67**

Drainage Basin Surety Fee = (0.318 ac.) @ \$7,285 ac. = **\$2,316.63**

TOTAL DRAINAGE & BRIDGE FEES = \$8,040.95

V. SUMMARY

The Reserve at Corral Bluffs Filing No. 2 is a proposed rural residential subdivision consisting of 6 lots on a 33.1-acre parcel. The proposed rural residential subdivision of this parcel into 5-acre lots is consistent with the surrounding zoning and character of this site.

The proposed development of The Reserve at Corral Bluffs Filing No. 2 conforms to the previously approved drainage plan for this subdivision as detailed in the "Final Drainage Report for The Reserve at Corral Bluffs - Filing No. 1." This phase of development will include culverts and drainage channel improvements as detailed in the approved subdivision drainage report.

Development of the proposed subdivision is anticipated to result in a minimal increase in developed runoff from the site, and erosion control best management practices will be implemented to mitigate developed drainage impacts. The proposed drainage patterns will remain consistent with historic conditions, and new drainage facilities will be constructed on-site to El Paso County standards to safely convey runoff to adequate outfalls. Implementation and maintenance of proper erosion control measures will ensure that downstream properties are protected from potential adverse drainage impacts from this development.

DEVELOPED DRAINAGE PLAN



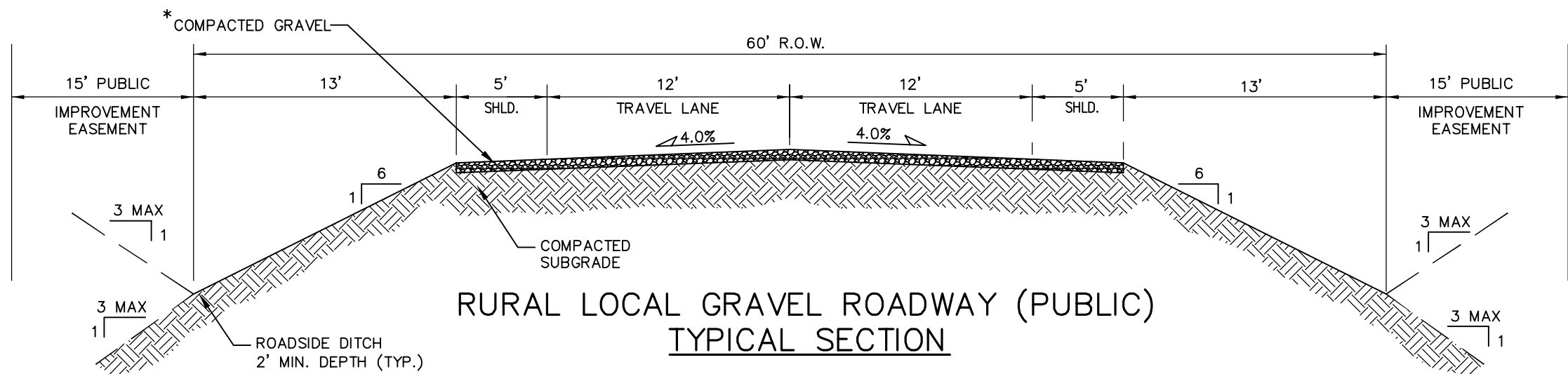
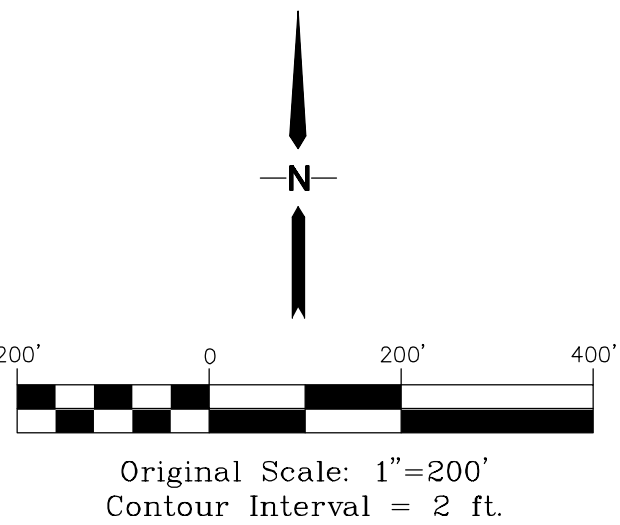
No.	REVISION	BY	DATE

HORIZ. SCALE: 1" = 200'	DRAWN: MSP
VERT. SCALE: N/A	DESIGNED: JPS
SURVEYED: LWA	CHECKED: JPS
CREATED: 01/30/12	LAST MODIFIED: 5/30/18
PROJECT NO: 081104	MODIFIED BY: MSP
SHEET:	

D1

--- FILING LIMITS
 ——— DRAINAGE BASIN BOUNDARY
 — 6520 — EXISTING CONTOUR
 X 82.0 PROPOSED SPOT ELEVATION (FLOWLINE)
 X 82.0 EXISTING SPOT ELEVATION (FLOWLINE)
 - - - - - DRAINAGE CHANNEL
 ← PROPOSED FLOW DIRECTION ARROW
 - - - - - PROPOSED CULVERT W/ FLARED END SECTIONS
 1
 20.6
 50.3
 DESIGN POINT
 Q₅ (cfs)
 Q₁₀₀(cfs)
 A
 26.30
 BASIN DESIGNATION
 BASIN AREA (ACRES)

1. INDIVIDUAL BUILDERS SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND ACCOUNT FOR POTENTIAL CROSS-LOT DRAINAGE IMPACTS WITHIN EACH LOT.
2. BUILDERS AND PROPERTY OWNERS SHALL IMPLEMENT & MAINTAIN EROSION CONTROL BEST MANAGEMENT PRACTICES FOR PROTECTION OF DOWNSTREAM PROPERTIES AND FACILITIES INCLUDING PROTECTION OF EXISTING GRASS BUFFER STRIPS ALONG THE DOWNSTREAM PROPERTY BOUNDARIES.



N.T.S.

* CLASS 6 BASE COURSE
OR ALTERNATIVE GRAVEL
MIX APPROVED BY EL PASO COUNTY

** DEPTH OF GRAVEL TO BE DETERMINE
PER COUNTY GENERAL NOTE #10, WI
6" MINIMUM DEPTH