STERLING RANCH DRAINAGE
COST AND FEE ANALYSIS

Prepared For:

SR Land, LLC
20 Boulder Crescent, Suite 200
Colorado Springs, CO 80903
(719) 491-3024

April 13, 2021
Project No. 25188.02
SP-20-003

Prepared By:
JR Engineering, LLC
5475 Tech Center Drive, Suite 235
Colorado Springs, CO 80919
719-593-2593

STERLING RANCH DRAINAGE COST AND FEE ANALYSIS

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 El Paso County for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors, or omissions on my part in preparing this report.

Mike Bramlett, Colorado P.E. 32314
For and On Behalf of JR Engineering, LLC

COLORADO LICENSED
MIKE BRAMLETT
MB
32314
3/11/21
PROFESSIONAL ENGINEER

DEVELOPER'S STATEMENT:

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

Business Name: SR Land, LLC

By: _____

Title: MANAGER

Address: 20 Boulder Crescent, Suite 200
Colorado Springs, CO 80903

El Paso County:

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:

Table of Contents

APPENDIX

PURPOSE AND OBJECTIVE

The purpose of this report is to compare the anticipated cost of "Reimbursable" drainage improvements associated with the development of Sterling Ranch versus the estimate of Drainage Fees due.

This report updates previous studies prepared by M&S Consultants with current estimates for Cost and Fees due. This report summarizes the reimbursable improvements as identified in the Sand Creek Drainage Basin Planning Study (SCDBPS) related to Sterling Ranch, compares those improvements with improvements shown in the Sterling Ranch Master Development Drainage Plan (SRMDDP) and subsequent Final Drainage Reports. Cost Estimates of those reimbursable improvements are then compared against the estimate of Drainage Fees due.

This objective of this analysis is to assist El Paso County in determining if Drainage and Bridge Fees are due at time of platting or if the fees can be deferred given the amount of reimbursable improvements that will be completed by Sterling Ranch as it continues development.

SITE GENERAL LOCATION AND DESCRIPTION

GENERAL LOCATION

Sterling Ranch is a 1444 acre parcel located in Sections 27, 28, 32, 33 & 34, Township 12 South, and Section 4, Township 13 South, Range 65 West of the 6th P.M., in El Paso County, Colorado.

DESCRIPTION OF PROPERTY

The project is located east of Vollmer Road, west of the proposed extension of Banning Lewis Parkway. The southern boundary of Sterling Ranch is approximately 1 mile north of Woodmen Road.

A sketch plan for the development was approved in 2008 and envisions 1,181 acres of residential development, 56 acres of commercial, 57 acres of schools and 150 acres of parks and open space which includes Sand Creek which bisects the site from north to south. The Master Development Drainage Plan for the property was approved in 2018. Refer to the vicinity map in Appendix A for additional information.

STERLING RANCH STATUS OF DEVELOPMENT

To date, development has been focused on major infrastructure and residential development west of Sand Creek. Residential plats have been approved for;

- Branding Iron at Sterling Ranch Filing No. 1 – 51 Single Family Lots
- Branding Iron at Sterling Ranch Filing No. 2 – 66 Single Family Lots
- Homestead at Sterling Ranch Filing No. 1 – 72 Single Family Lots

- Homestead at Sterling Ranch Filing No. 2 – 104 Single Family Lots

Residential Plats and Preliminary Plans are being reviewed for;

- Final Plat - Sterling Ranch Filing No. 2 – 49 Lots
- Preliminary Plan – Sterling Ranch Phase 2 – 212 Lots
- Preliminary Plan – Homestead North at Sterling Ranch – 147 Lots

A Preliminary Plan is being prepared for initial submittal to EPC for;

- Sterling Ranch Initial Phase East of Sand Creek 145 acres including 230 single family lots, 30 acres community park and 35 acre school site.

Construction Drawings for Briargate Parkway have been approved from Vollmer to Dines. CD's are being reviewed for;

- Sand Creek Channel Improvements – channel improvements and bridges at Briargate and Sterling Ranch Road. – 2nd review underway.
- Marksheffel Road from Vollmer to Sterling Ranch Road – 3rd review underway.
- Sterling Ranch Road from Marksheffel to Dines – 3rd review underway.
- Vollmer Road Improvements from south of Marksheffel to north boundary of Sterling Ranch Filing 2 – 3rd review underway.
- Briargate Parkway (2,800 ft.) and Sterling Ranch Road (5,100 ft.) from their current terminus to their planned intersection. – initial submittal being prepared

REIMBURSABLE IMPROVEMENTS, SCDBPS VS. SRMDDP

The "Sand Creek Drainage Basin Planning Study" (SCDBPS) was completed by Kiowa Engineering Corporation in January 1993 and revised March 1996. The Sand Creek Drainage Basin covers approximately 54 square miles and is divided into major sub-basins.

The "Master Development Drainage Plan" (SRMDDP) was completed by M&S Consultants in November 2018. The SRMDDP identified the existing and proposed runoff patterns and identified large scale drainage improvements needed to safely route stormwater to adequate outfall facilities.

Major differences between the SCDBPS and the approved MDDP are;

- Urban development has been approved by the sketch plan and subsequent projects as mentioned above, as compared to rural development assumed by the DBPS.

- Research Parkway has been relocated and renamed Sterling Ranch Road by the approved sketch plan for Sterling Ranch. Therefore, the bridges and culverts in the SCDBPS will be relocated to Sterling Ranch Road.

- A tributary crossing Banning Lewis Parkway (now Briargate Parkway) west of sand creek is no longer crossing Briargate Parkway, instead the flows from the tributary are being redirected to Sand Creek north of Briargate Parkway.

- At the southeast corner of Sterling Ranch, Research Parkway has been relocated and now Banning Lewis Parkway will be constructed near this location.

- The SCDBPS calls out for grade control, channel bank linings, and check structures. the current EPC criteria and design for the sand creek channel will comprise of check structures, drops and channel bank linings protection.

- The SCDBPS does not consider all land and tributaries within Sterling Ranch. The SCDBPS limit of study stops short of the total length of the tributaries.

- The SCDBPS does not provide a reimbursable cost for the 100-year capacity outlet control structures for the existing ponds, nor does it allow for costs to improve and stabilize the existing embankments.

- The SCDBPS shows to improve the existing tributaries with rip rap lined channels. however, the approved MDDP shows to replace the tributaries with reinforced concrete pipe.

- The SCDBPS does not show historic flows crossing Vollmer Road from north to south in all locations as currently exists.

- The SCDBPS does not agree with current EPC standards, including but not limited to water quality. The approved MDDP requires full spectrum detention ponds in lieu of regional ponds for water quality and detention.

SAND CREEK CHANNEL AND TRIBUTARY IMPROVEMENTS

The following paragraphs in this section include quotes from the approved MDDP for Sterling Ranch, pages 25-28;

SCDBPS Segment 159, & 164 (SCDBPS Pages 47-48, 50A) - Western Tributary to Sand Creek Channel

The existing swale is a western Tributary of the Sand Creek. The confluence of the tributary and the main stem exists within the Woodmen Heights master plan area, south of Sterling Ranch. These two existing channel segments are proposed in the SCDBPS as "Improved Riprap Channel, Bottom Width 25', Depth 3', Slope 1.2%, 3' Drops @ 270' intervals, Q100=600 cfs". The two segments are divided by "Proposed Research Parkway" (currently relocated, and known as Marksheffel Road & Sterling Ranch Road) The crossing is shown in the DPBS as; 2-8' High x 9' Wide Concrete Box Culverts. The MDDP does not propose a CBC crossing of the western tributary for Sterling Ranch Road at this location. The tributary will be crossed by Sterling Ranch Road using a ~66" RCP.

The SCDBPS does not continue the analysis northerly through the existing industrial property and does not account for flows from the west side of Vollmer Road. This MDDP, accounts for +300 acres of property on the west side of Vollmer Road that is tributary to Segment 159 & 164. The MDDP design uses RCP to convey the existing and developed storm water to Sand Creek, in lieu of Riprap

channels. Furthermore, the MDDP proposes Pond W-5, at the southeast side of Segment 159, to provide detention and water quality prior to discharge in Sand Creek. (See Detention Section of this report for more information on Pond FSD6)

**The facilities in this reach should be considered reimbursable since the proposed drainage improvements are to be constructed with RCP and FSD Pond W-4 and W-5 in lieu of an improved riprap channel. Also, the MDDP completes the tributary analysis after where the SCDBPS study terminated.*

SCDBPS Segment 163, 187, 170 & 171 (SCDBPS Pages 49-53) - Mainstem Sand Creek Channel

The SCDBPS for Sand Creek channel within Sterling Ranch proposes check structures, select riprap linings and grade control structures to improve the existing channel. The DPBS also states; "Areas within the exiting floodplain or the low flow zone of the drainageway where riparian or wetland vegetation exists
shall be preserved in its existing cross section. Areas disturbed by the construction of drops, grade control, culverts, or channel bank linings shall be revegetated with native species." The SCDBPS proposes two crossings of major roadways within Sterling Ranch. The southerly one is at "Proposed Research Parkway" (currently relocated and known as Marksheffel Road & Research Parkway), which is now shown on the approved Sketch Plan for Sterling Ranch as "Sterling Ranch Road". The second major crossing is at "Proposed Banning-Lewis Parkway" (Which is now shown on the approved Sketch Plan for Sterling Ranch as "Briargate Parkway"). Per the SCDBPS the southerly crossing is proposed as; 4-10' wide x 8' High Concrete Box Culverts). The northerly crossing of Briargate Parkway is proposed
as; 4-10' wide x 8' High concrete box culverts. Both these proposed crossings are shown in the SCDBPS as reimbursable bridges. A second crossing of "Research Parkway is shown on the SCDBPS (6'H x 8'W CBC) east of Sand Creek along the southern boundary of Sterling Ranch (6'H x 8'W CBC). This MDDP does not propose a CBC crossing for the eastern tributary for Research Parkway at this location).
The MDDP proposes to construct the Sand Creek main stem channel improvements as suggested by the SCDBPS and per current EPC criteria. The MDDP also proposes to construct the CBC box culverts under Sterling Ranch Road and Briargate Parkway. The final design of the Sand Creek channel and crossings will determine the total number and size of structures, drops, box culverts, etc...Refer to the detailed drainage discussion for preliminary size of the two crossing based upon the MDDP hydrology
Calculations have been provided in the appendix. Additional Reimbursable improvements along the Sand Creek Channel include, as shown in the SCDBPS are; Pond Outlet Structures (Segment 170 & 163). These structures and all others along Sand Creek will be re-analyzed in the final design stage.

**The proposed channel improvements are considered reimbursable in the SCDBPS, however the final design and current EPC criteria will deviate from the proposed improvements in the SCDPBS. It is generally assumed that the proposed improvement costs will exceed the SCDBPS costs.*

SCDBPS Segment 186 & 169 (SCDBPS Pages 51-52) - Western Tributary to Sand Creek Channel

The existing swale is a western Tributary of the Sand Creek. The confluence of the tributary and the main stem exists within the Sterling Ranch master plan area. These two existing channel segments are proposed in the SCDBPS as "Improved Riprap Channel, Bottom Width 20', Depth 3', Slope 1.3%, 3' Drops @ 450' intervals, Q100=500 cfs" (Segment 186) and Improved Riprap Channel,

Bottom Width 20', Depth 2', Slope 1.8%, 3' Drops, Q100=325 cfs" (Segment 169). The two Segments are divided by "Proposed Banning-Lewis Parkway" (currently known as Briargate Parkway). The crossing is shown in the DPBS as a; 6'High x 10' Wide Concrete Box Culverts. The MDDP does not propose a CBC crossing of Briargate Parkway at this location. The SCDBPS also shows a 60" CMP culvert across Vollmer Road at the terminus of Segment 169. The SCDBPS does not continue the analysis northerly across Vollmer Road. This MDDP, accounts for +300 acres of property on the west side of Vollmer Road that is tributary to Segment 186 & 169. The MDDP design uses RCP to convey the existing and developed storm water to Sand Creek, in lieu of riprap channels. The flows north of Briargate Parkway (Segment 169) will be diverted along the northerly right-of-way of Briargate Parkway to Sand Creek. The flows south of Briargate Parkway (Segment 186) will be conveyed to Sand Creek through the proposed development. The MDDP proposes to install a 60" RCP culvert under Vollmer Road along with Headwalls and Wing Walls. The construction of these improvements will occur with the widening of Vollmer Road and the construction of the adjacent development at Sterling Ranch. Construction drawings for RCP to replace Segment 186 were approved as a part of Sterling Ranch Filing No. 1, approved, January, 2017.

**The facilities in this reach should be considered reimbursable since the proposed drainage improvements are to be constructed with RCP in lieu of an improved riprap channel. Also, the MDDP completes the tributary analysis after where the SCDBPS study terminated west of Vollmer Road.*

SCDBPS Segment 92 (SCDBPS Page EF-34) - East Fork Tributary to Sand Creek Channel

The existing swale is a part of the Eastern Tributary of Sand Creek. The confluence of the tributary and the main stem exists several miles south of the Sterling Ranch master plan area. The existing channel segments are proposed in the SCDBPS as "Improved Riprap Channel, Bottom Width 15', Depth 3', select bank linings. (No other data was given) The Segment terminates at the southern boundary of Sterling Ranch at "Proposed Research Parkway", and continues southerly as Segment 84. These two Segments are divided by "Proposed Research Parkway" (currently shown on the approved Sketch Plan for Sterling Ranch as Banning-Lewis Parkway) The crossing is shown in the DPBS as a; 6'High x 10' Wide Concrete Box Culverts. The MDDP does not propose a CBC crossing of Banning-Lewis Parkway at this location.
The SCDBPS (Segment 92) does not continue the analysis more than a few thousand feet north of the south boundary of Sterling Ranch. This MDDP, accounts for +1,000 acres of property north of the SCDBPS studied area. The MDDP design uses RCP to convey the existing and developed storm water to the Eastern Tributary of Sand Creek, in lieu of Riprap channels. Furthermore, the MDDP proposes Pond FSD-E7, at the southeast corner of Sterling Ranch, to provide detention and water quality prior to
discharge in Eastern Tributary Channel of Sand Creek. (See Detention Section of this report for more information on Pond FSDE6).

**The facilities in this reach should be considered reimbursable since the proposed drainage improvements are to be constructed with RCP and FSD Pond E6 in lieu of an improved riprap channel. Also, the MDDP completes the tributary analysis after where the SCDBPS study terminated.*

PROPOSED MDDP VARIATIONS TO SCDBPS FOR REIMBURSEMENTS

The MDDP identifies regional improvements for Sterling Ranch and for existing land outside the limits of Sterling Ranch to the west, north & east. The SCDBPS limited study did not address these areas. Therefore, the MDDP requests that these regional public infrastructure components be reimbursable.

Sand Creek Regional Pond W3 north of Sterling Ranch Road
(See Detention Pond Section of this report for more information regarding detention ponds). The purpose of this sub-regional on-line detention facility is to control storm water events to discharge at historic levels downstream of Sterling Ranch. Therefore, the storm water flows exiting Sterling Ranch and conveyed into the Woodmen Heights development (City of Colorado Springs) to the south are consistent. The MDDP requests that the construction of this online sub-regional pond is reimbursable.

- *For this analysis, Pond W3 (inline pond above Sterling Ranch Road) is currently being restudied and the reimbursable status is considered "on hold" until further analysis and discussion occurs.*

FSD Ponds
There will be multiple Full Spectrum Detention and Water Quality Ponds (FSD Ponds) located within the Sterling Ranch development. (One off-site pond is proposed west of Vollmer Road and north of Marksheffel Road) These ponds will control both existing off-site and on-site developed storm water. The MDDP requests that the Sterling Ranch FSD Ponds (W4 and W5) be reimbursable. These ponds will also control the discharge of storm water across the Sterling Ranch development which will reduce the size and cost of public storm pipe between the ponds and discharge into Sand Creek or the Eastern Tributary of Sand Creek.

- *For this analysis, Pond W4 (west of Vollmer) is considered fully reimbursable and Pond W5 (East of Marksheffel Rd) is considered partially reimbursable based on offsite acreage served.*

Additional Culvert crossings of Vollmer Road
Additional culverts across Vollmer Road are required to convey the storm water from the west side to the east side. The existing Vollmer Road and roadside swales are inadequate to covey the 100-year storm. The culverts and improvements to Vollmer Road will drastically improve the current storm water public infrastructure. The culverts, FSD's, and downstream storm water pipe to convey these flows to Sand Creek will be requested to be reimbursable.

Un-named easterly tributary for the Sand Creek
A second crossing of "Research Parkway is shown on the SCDBPS east of Sand Creek along the southern boundary of Sterling Ranch (6'H x 8'W CBC). The MDDP does not propose a CBC crossing for the eastern tributary for Research Parkway at this location, because Research Parkway is no longer proposed along the southern boundary of Sterling Ranch. However, the tributary for this crossing was un-studied in the SCDBPS. The MDDP for Sterling proposed storm sewer pipe and open channel to convey the developed flows into the Sand Creek Channel. The existing flows rates will be reduced but remain present for the downstream properties. See Existing Basin section of this report. The MDDP request that this Un-named tributary be considered reimbursable.

- *For this analysis, the un-named easterly tributary diversion is currently being restudied and the reimbursable status is considered "on hold" until further analysis and discussion occurs.*

CHANNEL IMPROVEMENTS

Per the Sand Creek SCDBPS, Sand Creek and connected tributaries in the area of the site will require improvements. The east and west tributary reaches within the site boundary will not require improvements because the tributaries will no longer be present, as development in the areas will eliminate them, and replace them with full spectrum detentions ponds and storm sewer systems which will collect and control the discharge into Sand Creek. The western tributary reach within the site boundary will require some improvements in some areas but will also be eliminated by development and replaced with large diameter storm sewer and Pond FSD6 (Pond W5 as an example), to control the discharge into Sand Creek. However, Sand Creek itself will continue to be routed through the development.

In the existing condition the main branch of Sand Creek Channel measures ~9,850 linear feet. The existing channel bed is heavily vegetated, with native grasses and slopes typically ranging from 0.50% - 4.0%, with an average slope of 1.6%. The existing side slopes typically range from 1:1 to 10:1, and are composed of native grasses and exposed sand stone. The channel contains 3 existing stock ponds.

Per the SCDBPS, Reach SC-9, the recommended improvements to the channel include selective rip rap linings, grade control check structures, and drop structure improvements that are anticipated to stabilize the channel to prevent further degradation, scour and meandering. Offline Full Spectrum Detention will reduce peak flows within the channel there-by added to the integrity of the Sand Creek Channel. With stabilization and improvements to the outlet work and overflow routing paths, the existing stock ponds are proposed to be preserved as amenities for the adjacent development.

The concept design of the channel will initially be based upon the FEMA flow rate of 2,600 cfs. This is a conservative flow to allow for planning of trails and developed lots. The calculated max flow as determined with this report is ~ 2,200 cfs. This flow number will be used for the analysis of a CLOMR/LOMR for the design of the channel improvements and submittal to FEMA. Coordination with FEMA and the Army Corps of Engineers will occur prior to the submittal of the design drawings for the channel improvements. The FEMA flow rates, SCDBPS flow rates and those calculated by this analysis are provided in the appendix.

HEC-RAS input and output files that model the developed peak 100 year flows across the existing channel (LOMR X Sections) has been provided in the appendix as a cursory evaluation of some of the short comings of the existing channel that will need to be address with the future improvements. Based upon the model output velocities and shear in the 100 year developed condition range from 3.9 fps to 27.0 fps and 0.2 lbs/sf to 14.9 lbs/sf with depths between 0.7' and 8.0' in depth. The proposed channel improvements as shown in the SCDBPS will function to arrest erosion caused by the developed runoff while minimizing impacts to the existing vegetation. The above data is for information purposes only, the final design will provide actual data for the channel design.

Upstream and downstream channel improvements are proposed to be similar to what was anticipated in the SCDBPS. Check structures and rip-rap lining in some locations shall be installed to handle the increase in volume of flows from the full spectrum detention ponds. In the final design stage for the

Sand Creek Channel, the channel will be analyzed to verify the amount of improvements necessary. The existing culverts under Mustang Place are currently inadequate. They are recommended by the SCDBPS to be enlarged to 6'Hx8'W CBC. These culverts will be analyzed at the time of final design to determine the correct size in order to accommodate the developed flows, which will be discharged from Sterling Ranch less than historic.

REGIONAL DETENTION FACILITIES (MDDP PAGE 29-30)

A single regional online, onsite detention facility (Pond W3), upstream of Sterling Ranch Road (at DP68), is recommended to aid in the controlling of the total runoff leaving Sterling Ranch. Although the development of Sterling Ranch will require the implementation and construction of several FSD ponds to mitigate increase runoff and provide WQCV, the total amount of runoff reaching the Sand Creek Channel is greater than historic, due to the inter-basin transfer of drainage from East Fork of Sand Creek Watershed to Sand Creek Watershed. The roadway embankment, proximity to the southern boundary and the need for a culvert crossing at this location make the location practical. A separate design report for this facility will be necessary to verify the volumetric sizing requirements.

Prior to this analysis an online regional facility was also recommended within Sterling Ranch (on the Sand Creek Channel) upstream of Briargate Parkway at DP 69. The planned implementation of offline full spectrum detention for the developable ground upgradient of this location will alleviate the need for this facility. The culvert crossing at this location will be sized in a manner that allows for the free discharge of flow thought the structure.

**For the following Ponds (W3, W4 & E7) The construction of the Regional Detention Pond should be considered reimbursable due to the regional nature of the facility controlling the developed drainage to historic levels at the City / EPC boundary. The purpose to control the flow to a known number is to be consistent with downstream facilities and previous drainage analysis.*

POND W3

It should be noted that after the initial run of the Proposed Condition Model, it was determined that the peak developed 100-year flow reaching the subject reach were higher than the 100-year existing condition flow rates and higher than the 100-year peak flows anticipated by the Wilson Study. To reduce the runoff, a detention facility has been added to the model upstream of Sterling Ranch Road within the Sterling Ranch Development. The incorporation of this facility when coupled with multiple Full Spectrum Detention facilities will allow the development upstream of the City/County boundary to release developed discharge at a rate this is at or below the current existing flow rates. It should be noted that the location of the facility was previously planned as a regional pond /park site in the Sterling Ranch 2010 MDDP (Draft) and Sketch Plan. Stage storage and stage volume worksheets are included in the attachments for this pond. It is anticipated that this facility can be designed without having to be jurisdiction in nature. Based upon preliminary modeling the pond will reduce 100 year peak runoff rates from 2204 to less than 1400 cfs. The pond will detain a maximum of 78 acre feet at a depth of around 10 feet. The pond embankment containing the 100 year event will be separate from Sterling Ranch Road. An exhibit detailing the concept design is provided in the appendix of this report. It is important to note that this pond will allow for the free discharge of the 2 year storm and is not intended to provide water quality and will meet the state statue regarding the allowable release times.

Design point 61 is located on the maps between Sand Creek Regional Detention Pond 3 and south boundary of Sterling Ranch just upstream of Mustang Road. Future development in the watershed

should attempt to mimic the flow rates provided within the report with special consideration given to the flow at the City/County boundary line at Design Point 61. It should be noted that the hydrologic calculations contained in this memorandum are intended to aid in the design of the crossing structure at Marksheffel Road north of City Pond 3 (DP 60A) and as a planning resource to limit the amount of developed runoff discharged into the Sand Creek Channel. This report is not intended to be utilized for final design of stormwater storage facilities and infrastructure. It should also be noted, that this report did not include City Pond 3 in any of its models and was only used as a comparison point.

POND W4

Pond W4 is planned for the northwest corner of Marksheffel Road and Vollmer Road. The purpose of the pond is to provide some detention of stormwater flows for the land on the west side of Vollmer Road. Currently, no public stormwater improvements exist in the developments west of Vollmer Road. Therefore, Pond W4 will collect the flows on the west side, and convey to Sand Creek. These flows are discharged directly into sand creek, bypassing Pond W5. This facility provides 2.29 ac-ft of water quality treatment for Vollmer Road improvements and existing upstream development. Pond W4 is sized to maximize the area located in a tract of Land dedicated by the Final Plat for Highland Park Filing No. 2 - Tract G. The detention area could potentially be enlarged in the future if more land is purchased, and available to enlarge the pond. The design of Pond W4 will accommodate the extension of Marksheffel Road / Research Parkway and will be furthered in subsequent drainage reports. The construction of Pond W4 facilitates "solves" an existing drainage problem in the existing right-of-way of Vollmer Road. Pond W4 and its downstream facilities will be requested to be a reimbursable facility.

**The construction of this pond solves existing EPC drainage deficiencies on the west side of Vollmer Road. Therefore this should be considered a reimbursable facility as approved by the City/EPC drainage board.*

POND E7

Pond E7 will be required to at the southeast corner of Sterling Ranch to detain developed flows and release at or less than Historic. The pond is necessary and should be coordinated with downstream improvements accompanying the extension of Banning Lewis Parkway and property currently under the ownership of Norwood Development.

Pond W5

Pond W5 is located at the most southern end of Sterling Ranch west of Sand Creek. Pond W5 has a combined upstream developed runoff of Q5=217.4 cfs and Q100=517.9 cfs. The proposed Detention Pond functions to provide full spectrum detention and water quality for runoff calculated onsite and the existing area north of Sterling Ranch Filing 2. The pond is designed to treat approx 173.9 acres, and provide 3.29 ac-ft of water quality storage and 18.22 ac-ft of 100-year storage. The forebay, trickle channel micropool, outlet structure and pipehave been designed per the UDFCD manual and per the Detention Design-UD-Detention v3.05 workbook.

DBPS IMPROVEMENTS ESTIMATED COST

The DPBS improvements estimated cost (2020 dollars) is summarized below;

SAND CREEK DBPS COSTS RELATIVE TO STERLING RANCH - SUMMARY

DESCRIPTION OF DRAINAGE COSTS	DBPS COST (2020 Dollars)
1) West Side Tributarys 169, 186, 159, 164 Drainageway Conveyance Cost Estimate (pg. 73 DBPS)	$4,488,227
2) Roadway Culvert Crossing Cost Estimate (pg. 77 DBPS)	$210,478
3) East Side Sand Creek Tributary Drainageway Conveyance Cost Estimate (pg. 64 DBPS)	$1,815,069
4) Sand Creek Mainstem Drainageway Conveyance Cost Estimate (pg. 64 DBPS)	$1,869,502
5) Existing Pond Outlet Structures and Embankment Repairs Cost Estimate (pg. 50, 52, 53 DBPS)	$0
SUB-TOTAL DRAINAGE COSTS	**$8,383,276**
DESCRIPTION OF BRIDGE COSTS	
163 Research Pkwy - 4- 8'H x 10'W CBC	$377,408
167 Ban'g Lewis Pkwy - 4- 8'H x 10'W CBC	$377,408
SUB-TOTAL BRIDGE COSTS	**$754,817**

Additional detail regarding the cost estimate can be found in Appendix A.

ESTIMATED COST OF REIMBURSABLE IMPROVEMENTS

The Estimated Cost of Sterling Ranch Improvements (2020 dollars) is summarized below;

ESTIMATED CONSTRUCTION COST OPINION - SUMMARY

DRAINAGE FEE IMPROVEMENTS	REIMBURSABLE COST
Sand Creek Channel	$5,857,333
Seg 186 Tributary Replacement w/ Storm	$294,500
Seg 169 Tributary Replacement w/ Storm	$392,000
Seg 164 Tributary Replacement w/ Storm	$606,566
Seg 159 Tributary Replacement w/ Storm	$1,375,328
Seg 92 Tributary Replacement w/ Storm	$1,815,069
Unnamed Tributary East of Sand Creek Diversior	$0
SUB-TOTAL DRAINAGE FEE IMPROVEMENTS	**$10,340,796**
BRIDGE FEE IMPROVEMENTS	
BG PKWY and SR RD.	$2,635,282
SUB-TOTAL BRIDGE FEE IMPROVEMENTS	**$2,635,282**
TOTAL ESTIMATED REIMBURSABLE COST	**$12,976,078**

NOTES
1) See detail cost sheets that support these values

Segment 186 and Segment 159 costs include additional Vollmer crossings and pipe not in DBPS. Items not in DBPS but in MDDP include Pond W-5 (29% reimbursable), W-4 (100% reimbursable) an Outlet control for existing stock pond.
Additional detail regarding the cost estimate can be found in Appendix B.

STERLING RANCH DRAINAGE FEE ESTIMATE

The amount of Drainage and Bridge Fees associated with Sterling Ranch is summarized below;

	TOTAL DRAINAGE FEE ESTIMATE	TOTAL BRIDGE FEE ESTIMATE
Total Sterling Ranch Development	**$12,799,760**	**$5,235,439**

Additional detail regarding the cost estimate can be found in Appendix C.

SUMMARY

Per the analysis above and tables in the Appendix, the cost of the MDDP reimbursable improvements exceeds the improvement costs per the SCDBPS.

DBPS Drainage Improvement Estimate (2020 $'s)	= $ 8,383,276
Sterling Ranch Drainage Improvement Estimate (2020 $'s)	= $ 10,340,796
DBPS Bridge Improvement Estimate (2020 $'s)	= $ 754,817
Sterling Ranch Bridge Improvement Estimate (2020 $'s)	= $ 2,635,282

Based on the above, it is JR Engineering's recommendation that El Paso County allow Sterling Ranch to defer drainage and bridge fees at the time of platting as the necessary replacement DBPS improvements are approved and financially guaranteed with each subdivision.

Per the analysis above and tables in the Appendix, the total amount of Drainage and Bridge Fee's estimated to be due from Sterling Ranch development is;

Sterling Ranch Full Development Drainage Fee Estimate	= $ 12,799,760
Sterling Ranch Full Development Bridge Fee Estimate	= $ 5,235,439

Based on the above, it is JR Engineering's recommendation that each subsequent Sterling Ranch Final Drainage Report for plats within Sterling Ranch analyze the amount of deferred Drainage and Bridge fee's versus the necessary replacement DBPS improvements that have been approved and financially guaranteed with the plat and each prior subdivision.

REFERENCES

1. “Sand Creek Drainage Basin Planning Study”, prepared Kiowa Engineering Corporation, January 1993, revised March 1996.

2. "Master Development Drainage Plan for Sterling Ranch", (MMDP) prepared by M&S Civil Consultants, Inc., approved November 18, 2018.

3. "Master Development Drainage Report for Sterling Ranch Filing Nos. 1&2 and Final Drainage Report for Sterling Ranch Filing No. 1”, prepared by M&S Civil Consultants, Inc., approved January 30, 2018.

4. "Final Drainage Report for Branding Iron at Sterling Ranch Filing No 1", prepared by M&S Civil Consultants, Inc., approved November 21, 2018.

5. "Final Drainage Report for Branding Iron at Sterling Ranch Filing No 2", prepared by M&S Civil Consultants, Inc., approved June 23, 2020.

6. "Final Drainage Report for Homestead at Sterling Ranch Filing No 1", prepared by M&S Civil Consultants, Inc., dated November 21, 2018.

7. "Final Drainage Report for Homestead at Sterling Ranch Filing No 2", prepared by M&S Civil Consultants, Inc., approved October, 2020.

8. “Final Bridge and Channel Design Report CDR 20-204”, prepared by Kiowa Engineering Corporation, October, 2020 (not yet approved)

9. “Sterling Ranch Filing 2 Final Drainage Report”, prepared by JR Engineering, dated September 2020 (not yet approved)

Appendix A
Sand Creek DBPS Costs for Sterling Ranch

SAND CREEK DRAINAGE BASIN PLANNING STUDY COSTS RELATIVE TO STERLING RANCH

Bring DBPS Cost to 2020

	1996 DBPS	2020 FEES	DIFFERENCE	% INCREASE	X MULTIPLIER
DRAINAGE FEE	$4,895	$19,698	$14,803	302%	3.02
BRIDGE FEE	$323	$8,057	$7,734	2394%	23.94

CONSTRUCTION COST OPINION PER DBPS (For Information only)

1) West Side Tributary Drainageway Conveyance Cost Estimate (pg. 73 DBPS)

DBPS SEG/DESCRIPTION	UNIT	QUANTITY	UNIT COST	GRADE CONTROLS	LENGTH	DBPS REIMBURSABLE COST	X MULTIPLIER	2020 COST
SEGMENT 169 100 YR-RIPRAP	LF	650	$175	1	40	$120,950	3.02	$365,765.65
SEGMENT 186 100 YR-RIPRAP	LF	2250	$200	5	200	$486,000	3.02	$1,469,715.63
SEGMENT 159 100 YR-RIPRAP	LF	2100	$200	14	840	$571,200	3.02	$1,727,369.48
SEGMENT 164 100 YR-RIPRAP	LF	1350	$200	5	200	$306,000	3.02	$925,376.51
SUB-TOTAL (DBPS Dollars)	Segment 159 footage reduced to equal SR area length					$1,484,150		
* (2020 Dollars)							3.02	$4,488,227.26

2) Roadway Culvert Crossing Cost Estimate (pg. 76-77 DBPS)

DBPS SEG/DESCRIPTION	UNIT	QUANTITY	UNIT COST	SEE FOOTNOTES	DBPS REIMBURSABLE COST	X MULTIPLIER	2020 COST
Vollmer Road - 60" CMP	LF	80	$120	*2, 4, 5, 8	$9,600	3.02	$29,031.42
Ban'g Lewis Pkwy - 6'H x 10'W CBC	LF	120	$390	*11	$46,800	3.02	$141,528.17
Research Pkwy - 6'H x 8'W CBC	LF	40	$330		$13,200	3.02	$39,918.20
SUB-TOTAL (DBPS Dollars)					$69,600		
* (2020 Dollars)						3.02	$210,477.79

3) East Side Sand Creek Tributary Drainageway Conveyance Cost Estimate (pg. 66 DBPS)

DBPS SEG/DESCRIPTION	UNIT	QUANTITY	UNIT COST	GRADE CONTROLS	LENGTH	DBPS REIMBURSABLE COST	X MULTIPLIER	2020 COST
SEGMENT 92 Selective Linings (1 side)	LF	5400	$93	7	280	$600,200	3.02	$1,815,068.56
SUB-TOTAL (DBPS Dollars)						$600,200		
* (2020 Dollars)							3.02	$1,815,068.56

SAND CREEK DRAINAGE BASIN PLANNING STUDY COSTS RELATIVE TO STERLING RANCH

4) Sand Creek Mainstem Drainageway Conveyance Cost Estimate (pg. 64 DBPS)

DBPS SEG/DESCRIPTION	UNIT	QUANTITY	UNIT COST	GRADE CONTROLS	LENGTH	DBPS REIMBURSABLE COST	X MULTIPLIER	2020 COST
163 Selective Linings (1 side)	LF	2600	$127	15	1200	$546,200	3.02	$1,651,766.82
187 Selective Linings (1 side)	LF	0	$0	2	160	$28,800	3.02	$87,094.26
170 Selective Linings (1 side)	LF	0	$0	3	240	$43,200	3.02	$130,641.39
SUB-TOTAL (DBPS Dollars)	Segment 170 grade controls reduced to equal SR area number					$618,200		
* (2020 Dollars)							3.02	$1,869,502.47

5) Existing Pond Outlet Structures and Embankment Repairs Cost Estimate (pg. 50-54, 60 DBPS)

DBPS SEG/DESCRIPTION	UNIT	QUANTITY	UNIT COST	SEE FOOTNOTES	PROPOSED REIMBURSABLE COST	DBPS REIMBURSABLE COST	X MULTIPLIER	2020 COST
SEG 170 - Pond Outlet	EA	1	$20,000	*3, 10	$20,000	$0	3.02	$0.00
Embankment	EA	1	$35,000	*3, 10	$35,000	$0	3.02	$0.00
SEG 170 - Pond Outlet	EA	1	$20,000	*3, 10	$20,000	$0	3.02	$0.00
Embankment	EA	1	$35,000	*3, 10	$35,000	$0	3.02	$0.00
SEG 163 - Pond Outlet	EA	1	$20,000	*3, 10	$20,000	$0	3.02	$0.00
Embankment	EA	1	$35,000	*3, 10	$35,000	$0	3.02	$0.00
SUB-TOTAL (DBPS Dollars)						$0		
* (2020 Dollars)					$165,000			$0.00

TOTAL REIMBURSABLE DRAINAGE COSTS PER DBPS (2020 Dollars)	$8,383,276.09
ESTIMATED ACTUAL COSTS FOR REIMBURSABLE DRAINAGE FACILITIES (See Estimated Construction Cost Opinion)	$10,340,796.00
* DIFFERENCE	$1,957,519.91

SAND CREEK DRAINAGE BASIN PLANNING STUDY COSTS RELATIVE TO STERLING RANCH

6) Sand Creek Bridge Crossing Cost Estimate (pg. 83 DBPS)

DBPS SEG/DESCRIPTION	UNIT	QUANTITY	UNIT COST	DBPS REIMBURSABLE COST	X MULTIPLIER	2020 COST
163 Research Pkwy - 4- 8'H x 10'W CBC	LF	80	$1,560	$124,800	3.02	$377,408.46
167 Ban'g Lewis Pkwy - 4- 8'H x 10'W CBC	LF	80	$1,560	$124,800	3.02	$377,408.46
SUB-TOTAL (DBPS Dollars)				$249,600		
* (2020 Dollars)					3.02	$754,816.92

TOTAL REIMBURSABLE BRIDGE COSTS PER DBPS (2020 Dollars)	$754,816.92
ESTIMATED ACTUAL COSTS FOR REIMBURSABLE BRIDGE FACILITIES (See Estimated Construction Cost Opinion)	$2,635,282.00
* DIFFERENCE	$1,880,465.08

*Cost Difference Summary

1. The Sand Creek DBPS assumed a lower density of development for the proposed Sterling Ranch area.
2. Vollmer Road culverts are proposed as CMP in the SCDBPS, however RCP is the standard and therefore should be reimbursable.
3. No Costs for existing pond outlet structures or embankment repairs were given in the SCDBPS.
4. The Sand Creek bridge estimate is on 80 LF, however the Briargate ROW is 160 ft in width and including embankment the actual length will exceed 200 feet.
5. The Sand Creek roadway culvert estimate assumes CMP pipe, however RCP pipe is now the standard.
6. The Sand Creek drainageway estimate assumes grade control structures only, however drop structures will replace some of the check structures.
7. The Sand Creek drainageway assumes design for some 10-yr facilities, however 100-yr facilities will be constructed throughout the development.
8. The Sand Creek DBPS does not consider Vollmer Road as an improved arterial road, howver, Vollmer Road drainage improvements will be necessary.
9. The Sand Creek DBPS (page 50) 100-yr outlet control sturcture for the existing pond was not included in the cost estimate for eht Sand Creek improvements., however for the existing embankment to remain, a structure will be necessary.
10. Item Not included in Sand Creek DBPS Cost Estimate - But it should be included.
11. Banning Lewis Parkway actuall costs will far exceed Sand Creek DBPS budget.

Appendix B
Sterling Ranch Estimated Reimbursable Cost Estimate

ESTIMATED CONSTRUCTION COST OPINION - SUMMARY

DRAINAGE FEE IMPROVEMENTS	REIMBURSABLE COST
Sand Creek Channel	$5,857,333
Seg 186 Tributary Replacement w/ Storm	$294,500
Seg 169 Tributary Replacement w/ Storm	$392,000
Seg 164 Tributary Replacement w/ Storm	$606,566
Seg 159 Tributary Replacement w/ Storm	$1,375,328
Seg 92 Tributary Replacement w/ Storm	$1,815,069
Unnamed Tributary East of Sand Creek Diversion	$0
SUB-TOTAL DRAINAGE FEE IMPROVEMENTS	$10,340,796
BRIDGE FEE IMPROVEMENTS	
BG PKWY and SR RD.	$2,635,282
SUB-TOTAL BRIDGE FEE IMPROVEMENTS	$2,635,282
TOTAL ESTIMATED REIMBURSABLE COST	$12,976,078

NOTES
1) See detail cost sheets that support these values

ESTIMATED CONSTRUCTION COST OPINION - MAINSTEM SAND CREEK

1) Grading and Erosion Control

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	REIMBURSABLE COST
Earthwork	CY	45000	$3.50	$157,500	$157,500
Permanent Seeding	AC	22	$800	$17,600	$17,600
Mulching	AC	11	$750	$8,250	$8,250
Permanent Erosion Control Blanket	SY	6837	$6	$41,022	$41,022
Temp. Erosion Control BMPS	Varies			$123,293	$123,293
Maintenance of Const. BMPs (35%)				$43,153	$43,153
SUB-TOTAL Grading and Erosion Control					$390,818

2) Channel Improvements

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	REIMBURSABLE COST
Gravel Maintenance Trail	CY	1709	$15	$25,635	$25,635
MSE Walls	SF	250	$35	$8,750	$8,750
Riprap for Channel Benches	CY	23932	$80	$1,914,560	$1,914,560
Grouted Riprap Drops	CY	24540	$95	$2,331,300	$2,331,300
Geotextile TRM	SY	50180	$6	$301,080	$301,080
48" Grouted boulders	CY	1240	$120	$148,800	$148,800
Sheet Piling	SF	18960	$38	$720,480	$720,480
Misc (See FAE Estimate)	Varies			$15,910	$15,910
SUB-TOTAL Channel Improvments					$5,466,515

TOTAL MAINSTEM SAND CREEK REIMBURSABLE COST $5,857,333

NOTES

1) Quantities and Unit Costs from Channel Improvement Plans FAE, 2nd EPC submittal not yet approved

ESTIMATED CONSTRUCTION COST OPINION - TRIBUTARIES TO SAND CREEK

1) Drainage Improvements to Replace SCDBPS Tributary Segment 186 (South of Briargate Pkwy, East of Vollmer)

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	REIMBURSABLE COST
PIPE					
24" RCP	LF	612	$50	$30,600	$0
30" RCP	LF	1353	$65	$87,945	$0
36" RCP	LF		$75	$0	$0
42" RCP	LF		$85	$0	$0
48" RCP	LF		$150	$0	$0
54" RCP	LF	1130	$200	$226,000	$226,000
60" RCP	LF	214	$250	$53,500	$53,500
SUB-TOTAL PIPE					$279,500
HEADWALLS AND WINGWALLS					
60" HW / WW	EA	1	$15,000	$15,000	$15,000
SUB-TOTAL HW AND WW					$15,000
TOTAL SEGMENT 186 REPLACEMENT REIMBURSABLE COST					$294,500

NOTES

1) Quantities and Costs from Sterling Ranch F1 FDR, approved
2) Reimbursable Storm Length = 1,344 ft.; DBPS Segment 186 Length = 2,250 ft.

ESTIMATED CONSTRUCTION COST OPINION - TRIBUTARIES TO SAND CREEK

2) Drainage Improvements to Replace SCDBPS Tributary Segment 169 (North of Briargate Pkwy, East of Vollmer)

Segment 169 (north of Briargate Parkway) was redirected with a temporary swale parallel to BGP.
Once Homestead North constructs the temporary swale will be removed and flows will piped north of BGP to Sand Creek

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	REIMBURSABLE COST
PIPE					
54" RCP	LF	1710	$200	$342,000	$342,000
60" RCP	LF	80	$250	$20,000	$20,000
SUB-TOTAL PIPE					$362,000
HEADWALLS AND WINGWALLS					
60" HW / WW	EA	2	$15,000	$30,000	$30,000
SUB-TOTAL HW AND WW					$30,000
TOTAL SEGMENT 169 REPLACEMENT REIMBURSABLE COST					$392,000

NOTES
1) Quantities estimated from Homestead North PDR, Unit Costs from Sterling Ranch F1 FDR pipe costs
2) Reimbursable Storm Length = 1,790 ft.; DBPS Segment 169 Length = 650 ft.

ESTIMATED CONSTRUCTION COST OPINION - TRIBUTARIES TO SAND CREEK

3) Drainage Improvements to Replace SCDBPS Tributary Segment 164 (East of Sterling Ranch F2, South to Pond W-5)

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	REIMBURSABLE COST
PIPE					
48" RCP	LF	750	$195	$146,250	$146,250
66" RCP	LF	873	$332	$289,836	$289,836
72" RCP	LF	203	$380	$77,140	$77,140
84" RCP	LF	107	$520	$55,640	$55,640
SUB-TOTAL PIPE					$568,866

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	REIMBURSABLE COST 29%
Pond W-5 (W of Creek, South Boundary Sterling Ranch)					
Pond Grading	LS	1	$75,000	$75,000	$21,750
Forebay	EA	1	$15,000	$15,000	$4,350
Outlet Structure	EA	1	$15,000	$15,000	$4,350
Trickle Channel, Seeding, Misc	LS			$25,000	$7,250
SUB-TOTAL Pond W5				$130,000	$37,700

TOTAL SEGMENT 164 REPLACEMENT REIMBURSABLE COST $606,566

NOTES
1) Quantities from Sterling Ranch Phase 2 Preliminary Plan - Sht. 10 of 17, 1st EPC submittal not yet approved
2) Unit Costs from Sterling Ranch Filing 2 FDR, 2nd EPC submittal not yet approved
3) Reimbursable Storm Length = 1,933 ft.; DBPS Segment 164 Length = 1,350 ft.
4) Reimbursable Percentage based on Area served. Oniste area = 123.2 ac, offsite area = 50.7 ac. = 29%.

ESTIMATED CONSTRUCTION COST OPINION - TRIBUTARIES TO SAND CREEK

4) Drainage Improvements to Replace SCDBPS Tributary Segment 159 (East of Vollmer, South of Sterling Ranch Rd)

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	REIMBURSABLE COST
PIPE					
66" RCP	LF	1004	$332	$333,328	$333,328
72" RCP	LF	2400	$380	$912,000	$912,000
84" RCP	LF	222	$520	$115,440	$115,440
SUB-TOTAL PIPE					$1,245,328
HEADWALLS AND WINGWALLS					
84" HW / WW	EA	1	$10,000	$10,000	$10,000
SUB-TOTAL HW AND WW					$10,000

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	REIMBURSABLE COST 100%
Pond W-4 (W of Creek, W of Vollmer)					
Pond Grading	LS	1	$65,000	$65,000	$65,000
Forebay	EA	1	$15,000	$15,000	$15,000
Outlet Structure	EA	1	$15,000	$15,000	$15,000
Trickle Channel, Seeding, Misc	LS			$25,000	$25,000
SUB-TOTAL Pond W4					$120,000
TOTAL SEGMENT 159 REPLACEMENT REIMBURSABLE COST					$1,375,328

NOTES
1) Quantities and costs from Sterling Ranch Filing 2 Storm plans and FDR, 2nd EPC submittal not yet approved
3) Reimbursable Storm Length = 3,626 ft.; DBPS Segment 159 Length = 2,100 ft.

ESTIMATED CONSTRUCTION COST OPINION - TRIBUTARIES TO SAND CREEK

5) Drainage Improvements to Replace SCDBPS Tributary Segment 92 (East property line of Sterling Ranch)

Segment 92 is along the eastern boundary of Sterling Ranch property and is proposed to be replaced by storm sewer in the approved MDDP. The storm sewer sizing for this segment has not yet been designed, therefore the reimbursable cost estimate in the DBPS (2020 dollars) will be used to estimate the future improvements.

TOTAL SEGMENT 92 REPLACEMENT REIMBURSABLE COST	$1,815,069

ESTIMATED CONSTRUCTION COST OPINION - Unnamed Tributary Diversion to Mainstem

1) Detention Ponds

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	REIMBURSABLE COST 50%
Pond W-3 (E of Creek, N of Sterling Ranch Road)					
Pond Grading	LS	1	$150,000	$150,000	$75,000
Forebay	EA	1	$30,000	$30,000	$15,000
Outlet Structure	EA	1	$30,000	$30,000	$15,000
Trickle Channel, Seeding, Misc	LS			$50,000	$25,000
SUB-TOTAL Pond W3					$130,000
TOTAL DETENTION PONDS COST					$130,000

NOTES
1) Quantities and Costs for Pond W5 and W4 from Sterking Ranch Filing 2 FDR, 2nd EPC submittal not yet approved
2) Quantities and Costs for Pond W3 were assumed 2X Pond W5 since it is 2X the sizethey are similar size

ESTIMATED CONSTRUCTION COST OPINION - Unnamed Tributary Diversion to Mainstem

2) Provide Existing Pond in Sand Creek with Outlet Structure and Embankment improvements

Outlet Structure	EA	1	$15,000	$15,000	$7,500
Embankment Improvements	LS			$35,000	$17,500
			TOTAL POND IN SAND CREEK IMPROVEMENTS COST		$25,000

NOTES
1) Quantities and Costs assumed

3) Piping to divert the un-named easterly tributary to the Sand Creek mainstem

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	REIMBURSABLE COST
PIPE					
48" RCP	LF	2350	$195	$458,250	$458,250
54" RCP	LF	2300	$200	$460,000	$460,000
SUB-TOTAL PIPE					$918,250
HEADWALLS AND WINGWALLS					
54" HW / WW	EA	1	$10,000	$10,000	$10,000
SUB-TOTAL HW AND WW					$10,000
TOTAL DIVERT THE UN-NAMED EASTERLY TRIBUTARY TO SAND CREEK COST					$928,250

NOTES
1) Quantities and Costs assumed

TOTAL ITEMS Unnamed Tributary Diversion COST $1,083,250

ESTIMATED CONSTRUCTION COST OPINION - BRIDGES

1) Bridge Structures

DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	REIMBURSABLE COST
OS-535 Precast Bridge	EA	2		$2,569,576	$2,569,576
Guardrail Type 3	LF	910	$49	$44,590	$44,590
Guardrail Anchorage	EA	4	$2,098	$8,392	$8,392
Miscellaneous Cost				$12,724	$12,724
SUB-TOTAL Bridges					$2,635,282
			TOTAL BRIDGES REIMBURSABLE COST		$2,635,282

NOTES

1) Quantities and Unit Costs from Channel Improvement Plans FAE, 2nd EPC submittal not yet approved

Appendix C
Sterling Ranch Drainage and Bridge Fee Paid to Date And Total Estimate

STERLING RANCH ESTIMATE OF DRAINAGE AND BRIDGE FEE's

1) DRAINAGE AND BRIDGE FEES PAID TO DATE

SUBDIVISION	# OF LOTS	FEE ACRES	FEE YEAR	% IMP.	DRAINAGE FEE / IMP. AC	BRIDGE FEE / IMP. AC	DRAINAGE FEE	BRIDGE FEE	DRAINAGE FEE PAID	BRIDGE FEE PAID
Sterling Ranch Filing No. 1	0	134.379	2016	VARIED	$15,720	$4,762	$232,075.77	$70,301.83	Deferred	$70,301.83
Branding Iron at Sterling Ranch Filing No. 1	51	10.545	2017	50%	$16,270	$4,929	$85,783.58	$25,988.15	Deferred	$25,988.15
Homestead at Sterling Ranch Filing No. 1	72	19.574	2017	42%	$16,270	$4,929	$133,756.97	$40,521.70	Deferred	$40,521.70
Branding Iron at Sterling Ranch Filing No. 2	75	18.881	2019	53%	$18,940	$5,559	$189,531.25	$55,628.52	$189,531.25	$55,628.52
Homestead at Sterling Ranch Filing No. 2	104	29.658	2019	46%	$18,940	$5,559	$258,392.36	$75,839.66	$258,392.36	$75,839.66
SUB-TOTAL	302						$899,539.93	$268,279.87	$447,923.61	$268,279.87

Total Deferred Drainage Fees to date $451,616.32

2) ESCROW FOR SAND CREEK IMPROVEMENTS PAID TO DATE

# OF LOTS	ESCROW PER LOT	ESCROW AMOUNT	ESCROW AMOUNT PAID
302	$1,000	$302,000.00	$302,000.00

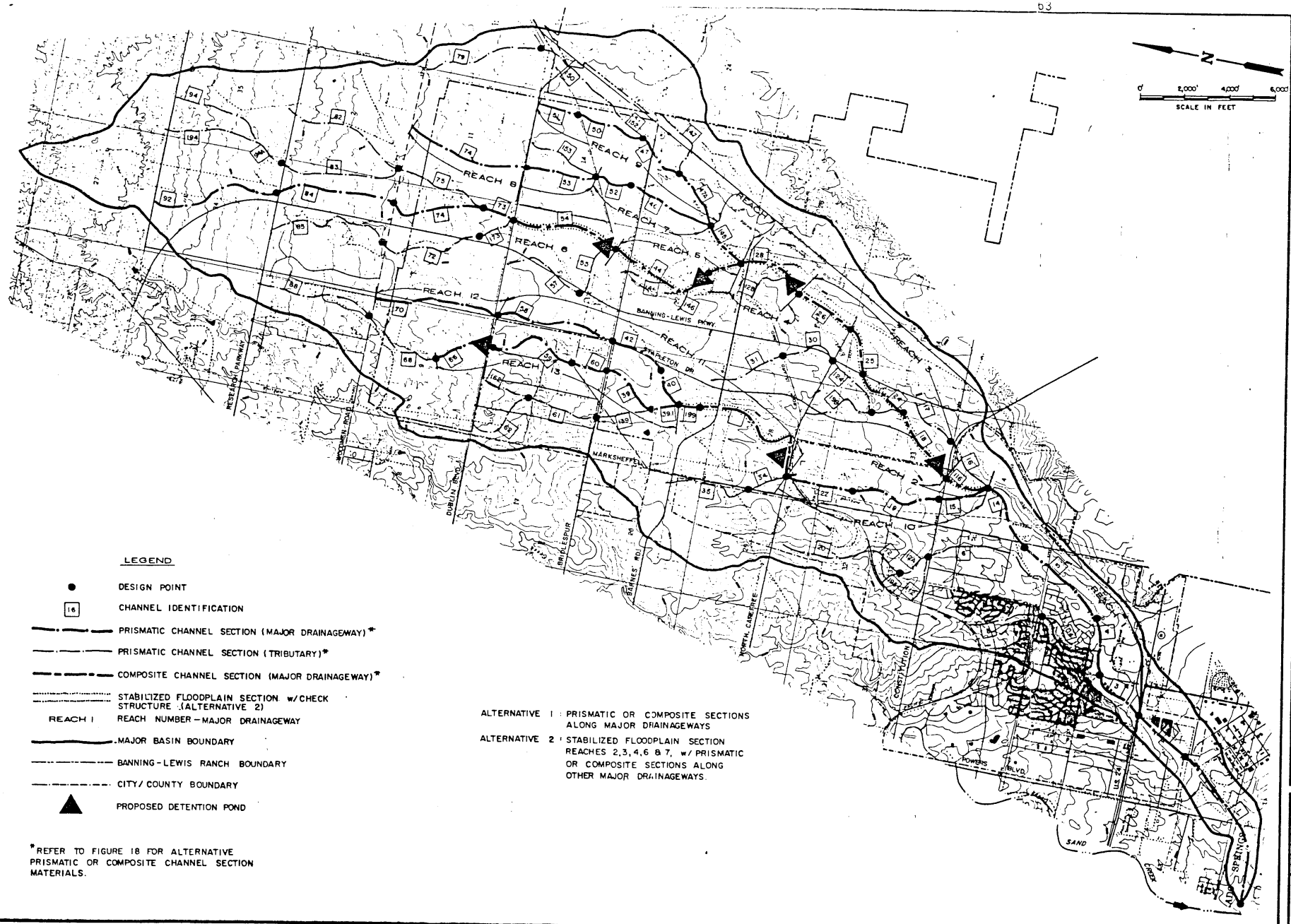
3) TOTAL STERLING RANCH ESTIMATE OF DRAINAGE AND BRIDGE FEE's

	FEE ACRES	FEE YEAR	% IMP.	DRAINAGE FEE / IMP. AC	BRIDGE FEE / IMP. AC	DRAINAGE FEE	BRIDGE FEE	TOTAL DRAINAGE FEE ESTIMATE	TOTAL BRIDGE FEE ESTIMATE
Total Sterling Ranch Development	1444	2020	45%	$19,698	$8,057	$12,799,760.40	$5,235,438.60	$12,799,760	$5,235,439

FOOTNOTES

1. Fees paid to date are from recorded plats
2. Escrow funding is a condition of the Subdvision Improvement Agreement established with Sterling Ranch Filing No. 1
3. Total Sterling Ranch Estimate of Drainage and Bridge fees assumed 45% impervious based on prior recorded plats.

Appendix D
SCDBPS Cost Estimate Excerpts



LEGEND

- DESIGN POINT
- [16] CHANNEL IDENTIFICATION
- PRISMATIC CHANNEL SECTION (MAJOR DRAINAGEWAY)*
- PRISMATIC CHANNEL SECTION (TRIBUTARY)*
- COMPOSITE CHANNEL SECTION (MAJOR DRAINAGEWAY)*
- STABILIZED FLOODPLAIN SECTION w/CHECK STRUCTURE (ALTERNATIVE 2)
- REACH 1 REACH NUMBER – MAJOR DRAINAGEWAY
- MAJOR BASIN BOUNDARY
- BANNING-LEWIS RANCH BOUNDARY
- CITY/COUNTY BOUNDARY
- PROPOSED DETENTION POND

*REFER TO FIGURE 18 FOR ALTERNATIVE PRISMATIC OR COMPOSITE CHANNEL SECTION MATERIALS.

ALTERNATIVE 1 : PRISMATIC OR COMPOSITE SECTIONS ALONG MAJOR DRAINAGEWAYS

ALTERNATIVE 2 : STABILIZED FLOODPLAIN SECTION REACHES 2,3,4,6 & 7, w/ PRISMATIC OR COMPOSITE SECTIONS ALONG OTHER MAJOR DRAINAGEWAYS.

Kiowa Engineering Corporation
419 W. Bijou Street
Colorado Springs, Colorado
80905-1308

EAST FORK SAND CREEK
DRAINAGE BASIN PLANNING STUDY

ALTERNATIVE CHANNELIZATION PLANS

Project No.	88.11.23
Date:	4-89
Design:	JYC
Drawn:	EAK
Check:	
Revisions:	

50

FIGURE VI-1

VII. PRELIMINARY DESIGN

The results of the preliminary design analysis are summarized in this section. The alternative improvements have been quantitatively and qualitatively evaluated, and presented to the City of Colorado Springs and other interested agencies and individuals. Field review of specific areas of concern have been conducted in order to refine the channel treatments suggested for use along Sand Creek, East Fork Sand Creek and their major tributaries. The preliminary plan for the recommended alternative is shown on the drawings contained at the rear of this report.

Criteria

The City of Colorado Springs, El Paso County Drainage Criteria Manual was used in the development of the typical sections and plans for the major drainageways within the Basin. The City/County manual was supplemented by various criteria manuals with more specific application. These were:

1. "Design Guidelines and Criteria for Channels and Hydraulic Structures on Sandy Soils," prepared by Simons, Li & Associates, Inc., 1981.

2. Urban Storm Drainage Criteria Manual, Volumes I, II, and III, prepared by the Urban Drainage and Flood Control District.

Various design plans for roadway and channel improvement projects, either proposed or already constructed were reviewed in order to prepare the preliminary design plans. Specifically, the project design plans for the Las Vegas Street and Galley Road bridge replacement projects were reviewed and the improvements incorporated in the preliminary design. The **proposed** Sand Creek Stabilization Project, AT&SF Railroad to Hancock Expressway and the **proposed** Sand Creek Stabilization Project at Fountain Boulevard design plans have been reviewed and incorporated into the preliminary design plan and profiles.

Hydrology

Presented on Table VII-1 is selected hydrologic data to be used for the sizing of major drainageway improvements within the Basin. **Peak flow rates for the 10- and 100-year frequency incorporating and the selected detention alternatives for the Sand Creek and East Fork Sand Creek Basin are summarized for key points along the major drainageways.** Contained within the The technical addenda of this report contains a complete listing of peak discharges for all the sub-basins, stream segments and design points shown on Exhibit 1.

The sizing the drainageway improvements for the tributaries will need to be verified during the final design and layout of the proposed drainageway facilities. Land development activities may alter the location of design points along the tributaries, and therefore slight alteration in a sub-basin's length, slope and area may occur. The methods outlined in the City/County Drainage Criteria Manual should be applied during final design analysis. The rational method should be used to check the peak flow rates for all tributary drainageways and storm sewers draining areas less than 100 acres in size.

Channels

The recommended channel sections for each reach of drainageway has been outlined in Section VI of this report. In general, the banks of Sand Creek channel, from the confluence with Fountain Creek to the proposed Sand Creek Detention Basin No. 2 are to be lined, or in some cases relined, with riprap to either a 10-year or 100-year flow depth, as shown on the preliminary design plans. Above the Sand Creek Detention Basin No. 2, selectively located riprap bank protection such as at outside bends, at bridge or culvert outlets, and at confluences with side tributaries have been recommended. In conjunction with the selective improvement measures, and the 10-year low flow concept, the 100-year floodplain should be preserved and regulated. Wherever existing bank linings were judged to be adequate, no improvements have been recommended at this time.

For the West Fork Sand Creek, 100-year riprap bank linings have been recommended in order to address the 100-year flooding hazard which exists at numerous locations along the West Fork. The final design improvements shown in the Palmer Park Bridge Replacement project drawings have been incorporated into the preliminary design plans. In the uppermost reaches of the West Fork, a short segment of rectangular concrete channel has been recommended because of right-of-way constraints.

For the Center Tributary of Sand Creek, 100-year riprap lined channels have been recommended from the confluence with East Fork to Platte Avenue. Above Platte Avenue, the existing concrete channels have adequate capacity except where the drainageway channel has yet to be improved. The final design plans for the US 24 Bypass Project, Phase II have been incorporated into the plans. As part of the bypass construction, it is proposed to line the Center Tributary using riprap. The location of the proposed roadway, new crossings, drops and channel as shown on the Phase II Bypass plans have been reflected on the preliminary design drawings.

For the East Fork Sand Creek drainageway, riprap lined channel banks have been recommended for the majority of the reaches. This is mainly because of the high level of development predicted for the basin in the area known as the Banning-Lewis Ranch development. Open space to accommodate the 100-year floodplains should be allowed for as the East Fork Sand Creek drainageways develop. This is consistent with the Banning-Lewis Ranch master development plan which was approved at the time of annexation of this property. Above Woodmen Road, selective channel lining improvements and grade control structures have been recommended.

For the most part the side tributaries have been recommended to be lined with riprap, however there are some locations in the upper basin which have been proposed to be grasslined. The location of the side drainageways should be considered approximate and may very likely be modified in the future because of land development.

The primary criteria used when sizing the proposed channel sections has been velocity. For all riprap lined channels, the average design velocity should be no greater than 9 feet per second. This criteria allows for the use of Type H riprap within the main flow area of the drainageway. For the case of a 10-year channel with an overall floodplain section, limiting the main channel velocity to 9 feet per second will result in overbank velocities in the five feet per second range. At this level of overbank velocity, native vegetation will be able to withstand the erosive forces which might result in a 100-year flow event. Velocities approaching 10 feet per second could occur at constrictions such as at roadway crossings and at culvert outlets.

Drop Structures and Check Structures

Drop and check structures have been sited along Sand Creek in order to slow the channel velocity to the recommended 7 feet per second, and to prevent localized and long-term stream degradation from affecting channel linings and overbanks. In the reaches to be selectively lined, drops and check structures will protect the native vegetation from the detrimental effects of stream invert headcutting. Several types of structures could be considered for the Sand Creek Basin. For channel bottom widths in excess of fifty feet, soil cement or sheet piling drops/checks are feasible. For channels narrower than this, reinforced concrete structures are probably the best alternative. **A maximum drop height of three feet is recommended. The methodology recommended for use when designing vertical structures is contained with Volume II of the Urban Storm Drainage Criteria Manual.**

Detention

The recommended plan calls for the construction of six regional detention basins within the Sand Creek basin, and six regional basins within the East Fork Sand Creek basin. The purpose of the Sand Creek detention basins is to limit peak discharges at Powers Boulevard to existing development condition levels. The detention basins in the upper portions of the Sand Creek basin will keep the majority of the existing channel sections and bridges below Powers Boulevard with adequate flow capacity in the future development condition. The detention basins within the East Fork Sand Creek basin have been sized to maintain the flow outfalling from the Banning-Lewis Ranch property at existing levels. This in turn will help to reduce flow to the mainstem of Sand Creek. The detention basins have been designed to accommodate the 100-year future condition volume without overtopping the overflow spillway. Sand Creek Basin Nos. 2 and 6, and East Fork Sand Creek Basin Nos. 1, 2, and 3 will be classified as jurisdictional structures, and their design and operation would be subject to State Engineer's office criteria. Sand Creek basins number 1 and 3 should be designed so as to take advantage of the adjacent roadway embankments, and therefore classifying as incidental storage and not subject State Engineer's regulations.

At Stetson Hills Boulevard, the roadway embankment has created a 2 acre open water wetland which was identified during the environmental review of the basin. It is recommended that this wetland be preserved. Accordingly, an outlet control structure will have to be constructed to pass the 100-year discharge to the downstream channel without overtopping the roadway. No floodwater storage or routing has been accounted for in the hydrology modelling at this roadway for the selected detention plan.

For the East Fork Sand Creek detention basin numbers 2, and 3, the existing embankment and outlet structure act to maintain a permanent pool at this time. It is recommended that the design of these detention basins be directed at maintaining the permanent pool when the flood control storage is to be added. The existence of a permanent pool may enhance the water quality aspects of these basins, and offer the opportunity of open space development conducive with open water.

Water Quality

Improvement of urban stormwater quality has become and important issue in drainage basin planning. Many pollutants are naturally associated with sediments that enter sensitive receiving waters. The pollutants are naturally occurring compounds that are carried to the drainageways in storm runoff. Other pollutants are the result of urbanization such as lawn chemicals, oil and grease, pet feces, lawn clippings and other items. Many pollutants can be limited by programs such as erosion control at construction sites, educational programs to inform the public as to the proper use of lawn chemicals, oil recycling programs and street sweeping programs. Even with these programs in place, erosion along the drainageways can generate large quantities of sediment that can settle out along the downstream channel bottoms.

Various methods of water quality enhancement have been identified for use in this preliminary design. One hundred year and 10-year flow channels are lined to prevent erosion, drop/check structures are used to control channel grade, and water quality pools within the detention basins have been proposed for sediment trapping. The water quality pools for the detention basins have been sized to store runoff generated by the 80th percentile storm. The 80th percentile storm was used as the criteria for this report because studies by the Urban Drainage and Flood Control District ("Sizing a Capture Volume for Stormwater Quality Enhancement", by Urbonas, Guo, and Tucker, published in the Flood Hazard News, December, 1989), shows a diminishing level of return for larger, scarcer storm events. The water quality pool within each detention basin is sized to retain the 80th percentile storm for 40-hours, assuming all of the detention basins will essentially have dry bottoms. This methodology has been shown graphically on Figure VII-1. Presented in Table VII-2 are the required water quality volumes for each of the regional detention basins.

The water quality measures for each regional detention basin includes an inlet forebay, a water quality storage area, a water quality outlet control structure and the introduction of water tolerant vegetation in the basin bottom. Permanent water quality pools may eventually form, however it has been assumed that the detention basins will remain dry.

Trails

As previously mentioned, Sand Creek has been identified as a primary trails corridor. Within the Banning Lewis Ranch, the major drainageway floodplains were designated for use as open space and trail corridors. Accordingly, a trail has been shown on the typical sections for the a majority of drainageways. The siting of a trail along a drainageway should be carried out taking into account hydraulic considerations, utilities in the area, access to dedicated parks and roadway crossings. Clear span bridges have been recommended for many of the major crossings over Sand Creek and East Fork Sand Creek which can be designed to accommodate a trail underpass. Maintenance access to the drainageway and to existing utilities within the drainageway corridor can offer a multiple use aspect to a trail project. Trails along the tributary drainageway will be required, however their size and location will be mostly dependent upon the type of development adjacent to the particular drainageway.

Maintenance and Revegetation

Maintenance of drainageway facilities is essential in preventing long term degradation of the creek and overbank areas. Along the drainageway, clearing of debris and dead vegetation should be considered within the low flow area of the creek and its tributaries. Trimming and thinning of shrubs and trees should be carried out if greater visual and physical access to the creek is desired. On the overbanks, limited maintenance of the existing vegetative cover is recommended. Yearly clearing of trash and debris at roadway crossings is also recommended to ensure the design capacity of the crossing, and to enhance the crossings for trail users if a trail exists. Caution should be taken when clearing culverts of sediment since it has been noted that in the past the dredgings have been left on the overbank. This disturbs the native vegetation and creates a potential water quality concern if the dredgings are subsequently washed into the drainageway by natural erosion. In those reaches designated to be selectively lined and the floodplain preserved, maintenance activities should be carried out while minimizing the disturbances to native vegetation.

Right-of-Way

For the most part the main channels within the basin which pass through the developed portions of the basin are contained within previously dedicated drainage tracts, easements or right-of-ways. Where appropriate right-of-ways have not as yet been dedicated such as within the undeveloped portions of the basin, the required right-of-way can be obtained through the land development process. For those segments of the drainageway where floodplain preservation is the recommended plan, a combination of open space dedication (such as parklands and greenbelts), in combination with a more narrow dedicated right-of-way along the low flow area of the drainageway should be obtained through the land development process.

Land acquisition will be required for the regional detention basins. For the purposes of cost and fee estimation, the land subject to acquisition for the regional detention basins was calculated to be the required structure area, less the area within the 100-year pool covered by the existing condition 100-year floodplain.

Roadway Bridge and Culvert Replacements

Bridge and culvert replacements shown of the preliminary design drawings have been sized in accordance with the City/County Drainage Criteria Manual. Bridges are defined as those structures conveying at least 1500 cubic feet per second, having a flow area of at least 200 square feet, or having a span of 20-feet or greater. Road crossings conveying flows less than 1500 cubic feet per second, smaller than 200 square feet in flow area, or less than 20-feet in span have been included in the drainage basin fee calculation. Structures defined as bridges have been included into the City and County bridge fee calculations.

Erosion and Sedimentation Control

Soils in the Sand Creek Basin vary widely and because of this, areas within the basin are subject to varying degrees of hazard resulting from sediment being transported to the drainageway(s). During the collection of field and drainage inventory data, numerous areas were noted which were being impacted by either erosion (of one form or another), or sediment deposition. The areas impacted ranged from localized bank failures to roadway embankments and slopes thousands of square feet in area. The soil make up of the basin is generally highly erodible, and this is particularly the case in the upper portions of the drainageway where the channel has a sand bottom and the watersheds have poor to fair vegetative cover. The disturbance of the native vegetation and failure to properly revegetate areas impacted by site development, utility, roadway and landscape construction activities has in some cases negatively affected downstream portions of the basin.

The City of Colorado Springs has enacted an erosion control ordinance to address these problems. In general, it is the responsibility of the entity conducting any land disturbance activity to properly control surface runoff, erosion and sedimentation during and after the activity. Technical criteria identifying measures which help mitigate the impacts of erosion and sedimentation is available and being used throughout the Front Range area. Minimum requirements must be developed to properly control erosion, as described in the following discussion.

General

Erosion control is necessary to prevent environmental degradation caused by wind or water-borne soil. The following minimum criteria and standards are intended to prevent excessive erosion. The City of Colorado Springs as well as other effected agencies reserve the right to enforce the Clean Water Act standards if the planned erosion control measures fail to perform satisfactorily. Evidence of visual erosion will determine the effectiveness (or lack of) of erosion control measures. Proper installation and maintenance is necessary to achieve the desired function of erosion control measures. By paying attention to quality, reinstallation can be avoided. The general requirements for erosion control are as follows:

1. Any land disturbing activity shall be conducted so as to effectively reduce unacceptable erosion and resulting sedimentation.

2. All land disturbing activities shall be designed, constructed, and completed in such a manner that the exposure time of disturbed land shall be limited to the shortest possible period of time.

3. Sediment caused by accelerated soil erosion and runoff shall be intercepted by sediment traps and contained within the site.

4. Any facility designed and constructed to convey storm runoff shall be designed to be non-erosive.

5. Erosion control measures will be used prior to and during construction. Temporary erosion control measures are required during construction, and permanent erosion control measures are required for all developments. Maintenance of erosion control measures is the responsibility of the property owner.

Various structures have been proposed in this plan to control localized erosion and sedimentation problems. It is important that the erosion control plan for any land disturbing activity be strictly adhered to, and maintained so that the above minimum criteria can be achieved in the Sand Creek Basin.

Table VIII-1: Unit Construction Costs

Item	Unit	Unit Cost	Comments
CHANNEL AND HYDRAULIC STRUCTURES			
Channel earthwork	CY	$8	
Filter material	Ton	$25	
Structural concrete	CY	$250	
Seeding and mulching	SF	$0.15	
Riprap Type H	CY	$30	
Riprap Type M	CY	$24	
12 foot wide gravel trail	LF	$15	Maintenance trail
Erosion netting	SY	$1.75	
Topsoil	CY	$12	
STORM SEWERS RCP/CMP			
18-inch	LF	$20	
24-inch	LF	$25	
30-inch	LF	$42	
36-inch	LF	$58	
42-inch	LF	$75	
48-inch	LF	$80	
60-inch	LF	$120	
ROADWAY CROSSINGS			
Structural Concrete, in-place	CY	$300	
Wingwalls/headwalls	EA	$5,000	
Bridges	SF	$80	Based on area of roadway deck.
4' high CBC, 4'-10' wide	LF	$210-320	
6' high CBC, 8'-12' wide	LF	$270-510	
7' x7' CBC	LF	$300	
Twin 4' high CBC, 4'-10' wide	LF	$480-650	
Twin 5'x 8' CBC	LF	$540	
Twin 6' high CBC, 8'-15' wide	LF	$600-1200	
Twin 8'x 10' CBC	LF	$750	
Triple 5'x 8' CBC	LF	$900	
Triple 6'x 14' CBC	LF	$1410	
Triple 6'x 16' CBC	LF	$1770	
Triple 8'x 10' CBC	LF	$1110	
Triple 10'x 10' CBC	LF	$1260	
4-bay 5' x 8' CBC	LF	$1200	
4-bay 8' x 10' CBC	LF	$1560	
DETENTION BASINS			
Outlet structures, non jurisdictional	EA	$10,000	
Outlet structures, jurisdictional	EA	$15,000	
Unit storage cost	AF	$10,000	
MITIGATION	AC	$4,000	
LAND ACQUISITION			
Detention basins	AC	$15,900	Based on park land fee.

TABLE VIII-2: SAND CREEK DRAINAGE BASIN PLANNING STUDY
DRAINAGEWAY CONVEYANCE COST ESTIMATE
WITH SELECTED DETENTION ALTERNATIVES

SEGMENT NUMBER	REACH NUMBER	SEGMENT LENGTH (FT)	IMPROVEMENT TYPE	IMP. LENGTH (FT)	UNIT COST ($/LF)	NUMBER OF GRADE CONTROLS	GRADE CONTROL LENGTH (FT)	TOTAL REIMBURSABL COSTS	TOTAL COST
148-2	"	2600	"	2150	127	5	620	$384,650	$384,650
151	SC-8	1700	10-YEAR RIPRAP	500	238	3	250	$164,000	$164,000
160	"	5100	SEL. LININGS (1 SIDE)	4400	127	6	720	$688,400	$688,400
			10-YR RIPRAP	600	238	0	0	$142,800	$142,800
	"								
163	"	6300	SEL. LININGS (1 SIDE)	2600	127	15	1200	$546,200	$546,200
			10-YR RIPRAP	350	238	0	0	$83,300	$83,300
187	"	1200	SEL. LININGS (1 SIDE)	0	0	2	160	$28,800	$28,800
170	SC-9	3200	"	0	0	4	320	$57,600	$57,600
171	"	5000	"	0	0	2	170	$30,600	$30,600
172	"	3650	"	0	0	2	150	$27,000	$27,000
TOTAL SAND CREEK DRAINAGEWAY								$15,560,220	$18,279,420

TABLE VIII-2: SAND CREEK DRAINAGE BASIN PLANNING STUDY
DRAINAGEWAY CONVEYANCE COST ESTIMATE
WITH SELECTED DETENTION ALTERNATIVES

SEGMENT NUMBER	REACH NUMBER	SEGMENT LENGTH (FT)	IMPROVEMENT TYPE	IMP. LENGTH (FT)	UNIT COST ($/LF)	NUMBER OF GRADE CONTROLS	GRADE CONTROL LENGTH (FT)	TOTAL REIMBURSABL COSTS	TOTAL COST
28	EF-5	4200	"	3500	185	6	480	$815,500	$815,500
45	EF-6	1800	"	1400	185	6	480	$427,000	$427,000
44	"	4880	"	4080	185	11	990	$1,101,300	$1,101,300
54	EF-7	5070	"	4220	228	15	1950	$1,644,660	$1,644,660
73	"	1600	100-YEAR RIPRAP	1600	205	1	60	$349,000	$349,000
74A	"	950	"	950	268	3	120	$296,600	$296,600
74	"	3000	"	3000	234	8	400	$842,000	$842,000
84	EF-8	5400	SELECTIVE LININGS	5300	93	5	200	$562,900	$562,900
92	"	5450	"	5400	93	7	280	$600,200	$600,200
TOTAL EAST FORK SAND CREEK DRAINAGEWAY								$15,674,470	$17,106,670

TABLE VIII-3: SAND CREEK DRAINAGE BASIN PLANNING STUDY
TRIBUTARY DRAINAGEWAY CONVEYANCE COST ESTIMATE
SAND CREEK, CENTER TRIBUTARY AND WEST FORK SAND CREEK

SEGMENT NUMBER	REACH NUMBER	IMPROVEMENT TYPE	IMP. LENGTH (FT)	UNIT COST ($/LF)	NUMBER OF GRADE CONTROLS	LENGTH OF GRADE CONTROL (FT)	TOTAL REIMBURSABLE COSTS	TOTAL COST
147-2	"	"	1150	200	1	30	$235,400	$235,400
153-1	"	"	600	150	0	0	$90,000	$90,000
153-2	"	"	450	150	0	0	$67,500	$67,500
152-1	SC-7	100-YEAR GRASSLINED	1650	150	0	0	$247,500	$247,500
152-2	"	"	800	150	2	100	$138,000	$138,000
150-1	"	100-YEAR STORM SEWER 36" RCP	800	58	0	0	$46,400	$46,400
150-2	"	100-YEAR RIPRAP	2400	200	0	0	$480,000	$480,000
161-1	"	100-YEAR GRASSLINED	550	150	0	0	$82,500	$82,500
154	SC-8	"	2100	200	10	600	$528,000	$528,000
157	"	"	2400	200	13	520	$573,600	$573,600
155-1	"	100-YEAR GRASSLINED	550	175	4	140	$121,450	$121,450
159	"	100-YEAR RIPRAP	3450	200	14	840	$841,200	$841,200
164	"	"	1350	200	5	200	$306,000	$306,000
186	"	"	2250	200	5	200	$486,000	$486,000
169	"	"	650	175	1	40	$120,950	$120,950
173	SC-9	"	950	175	8	320	$223,850	$223,850
WEST FORK SAND CREEK								
154-1	WF-1	100-YEAR RIPRAP	1550	223	2	100	$0	$363,650
161	"	"	600	223	2	80	$0	$148,200
164-2	"	100-YEAR GRASSLINED	500	150	0	0	$0	$75,000
164-4	"	100-YEAR RIPRAP	2500	175	9	280	$0	$487,900
165-1	"	"	1350	175	0	0	$0	$236,250
TOTAL SAND CREEK TRIBUTARY DRAINAGEWAYS							$7,420,650	$12,543,750

TABLE VIII-4: SAND CREEK DRAINAGE BASIN PLANNING STUDY
ROADWAY CULVERT CROSSING COST ESTIMATE
SAND CREEK BASINS

ROADWAY	REACH NUMBER	DRAINAGEWAY SEGMENT	CROSSING TYPE	LENGTH	UNIT	UNIT COST	TOTAL COST	TOTAL REIMBURSABLE COST
		SAND CREEK						
GRANADA DRIVE	SC-1	107	2-4'H x 10'W CBC	60	LF	$650	$39,000	$0
DELTA DRIVE	SC-1	"	"	80	LF	$650	$52,000	$0
SONOMA DRIVE	SC-1	"	"	60	LF	$650	$39,000	$0
SAN MARCOS ROAD	SC-1	"	"	80	LF	650	$52,000	$0
EL MORRO ROAD	SC-1	113	2-5'H x 8'W CBC	60	LF	$540	$32,400	$0
DELTA DRIVE	SC-1	"	"	90	LF	$540	$48,600	$0
WAYNOKA ROAD	SC-4	135-2	50' BRIDGE	3200	SF	$80	$256,000	$256,000
TUTT BLVD	SC-5	183	2- 6'Hx8'W CBC	80	LF	$600	$48,000	$48,000
PETERSON ROAD	SC-6	127	2- 6'Hx12'W CBC	120	LF	$870	$104,400	$104,400
JEDEDIAH SMITH RD.	SC-6	136	2- 8'Hx10'W CBC	120	LF	$750	$90,000	$90,000
PETERSON ROAD	SC-6	140	6'Hx7'W CBC	100	LF	$270	$27,000	$27,000
DUBLIN BOULEVARD	SC-6	142	6'Hx9'W CBC	100	LF	$360	$36,000	$36,000
JEDEDIAH SMITH RD.	SC-6	143	6'Hx10'W CBC	80	LF	$390	$31,200	$31,200
DUBLIN BOULEVARD	SC-6	145	"	120	LF	$390	$46,800	$46,800
PETERSON ROAD	SC-6	142	6'Hx9'W CBC	200	LF	$360	$72,000	$72,000
CALIFORNIA DRIVE	SC-6	152-1	4'Hx8'W CBC	40	LF	$270	$10,800	$0
"	SC-6	153	48-INCH RCP	40	LF	$80	$3,200	$0
VOLLMER ROAD	SC-6	155-1	2-60-INCH RCP	60	LF	$240	$14,400	$0
WOODMEN ROAD	SC-6	152-1	4'Hx6'W CBC	300	LF	$240	$72,000	$72,000
WOODMEN ROAD	SC-6	153-1	4'Hx4'W CBC	400	LF	$210	$84,000	$84,000
VOLLMER ROAD	SC-6	154	2-6'Hx10'W CBC	80	LF	$690	$55,200	$0
MUSTANG ROAD	SC-7	150-2	2-60-INCH CMP	60	LF	$240	$14,400	$0
KENOSHA ROAD	SC-7	161-1	2-48-INCH CMP	60	LF	$160	$9,600	$0
* → RESEARCH PARKWAY	SC-8	159	2-6'Hx9'W CBC	120	LF	$660	$79,200	$79,200
RESEARCH PARKWAY	SC-8	157	6'Hx12'W CBC	120	LF	$870	$104,400	$104,400
MUSTANG PLACE	SC-8	160	6'Hx8'W CBC	40	LF	$330	$13,200	$0
MUSTANG PLACE	SC-8	161-2	2-48-INCH CMP	40	LF	$160	$6,400	$0
** → RESEARCH PARKWAY	SC-8	"	6'Hx8'W CBC	40	LF	$330	$13,200	$13,200

** RESEARCH PARKWAY HAS BEEN RELOCATED. THIS CULVERT IS NOT NECESSARY.

* RESEARCH PARKWAY HAS BEEN RELOCATED. THIS CULVERT WILL CROSS STERLING RANCH ROAD.

TABLE VIII-4: SAND CREEK DRAINAGE BASIN PLANNING STUDY
ROADWAY CULVERT CROSSING COST ESTIMATE
SAND CREEK BASINS

ROADWAY	REACH NUMBER	DRAINAGEWAY SEGMENT	CROSSING TYPE	LENGTH	UNIT	UNIT COST	TOTAL COST	TOTAL REIMBURSABLE COST
BANNING-LEWIS PRKW	SC-8	186	6'Hx10'W CBC	120	LF	$390	$46,800	$46,800
ARROYO LANE	SC-9	171	6'Hx12'W CBC	80	LF	$510	$40,800	$0
VOLLMER ROAD	SC-8	169	60-INCH CMP	80	LF	$120	$9,600	$0
"	SC-9	173	"	80	LF	$120	$9,600	$0
BURGESS ROAD	SC-9	176	42-INCH CMP	80	LF	$75	$6,000	$0
"	SC-9	178	2-42-INCH CMP	80	LF	$150	$12,000	$0
		CENTER TRIBUTARY						
TERMINAL AVENUE	CT-2	144	4-5'Hx8'W CBC	60	LF	$1,200	$72,000	$0
OMAHA BOULEVARD	CT-2	146-2	3-4'Hx9'W CBC	80	LF	$900	$72,000	$0
		WEST FORK SAND CREEK						
WOOTEN ROAD	WF-1	153	2-4'Hx6'W CBC	100	LF	$480	$48,000	$0
EDISON AVENUE	WF-1	153	2-4'Hx6'W CBC	60	LF	$240	$14,400	$0
PALMER PARK BLVD.	WF-1	154-2	2-4'Hx10'W CBC	80	LF	$540	$43,200	$0
CHICAGO RI RR	WF-1	165-1	4'Hx8'W CBC	220	LF	$270	$59,400	$0
HALF MOON DRIVE	WF-1	165-2	4'Hx6'W CBC	60	LF	$240	$14,400	$0
TOTAL CULVERT CONSTRUCTION COSTS, SAND CREEK							$1,902,600	$1,111,000

Tributary →

MAP SAYS;
4- 8H x 10W CBC
FOR BRIDGE
- THIS SEG. 186
TRIBUTARY
- THIS TRIBUTARY
IS BEING REDIRE-
- CTED TO SAND
CREEK, NORTH OF
RESEARCH PARKWAY

TABLE VIII-4: SAND CREEK DRAINAGE BASIN PLANNING STUDY
CONT'D ROADWAY CULVERT CROSSING COST ESTIMATE
EAST FORK SAND CREEK BASINS

ROADWAY	REACH NUMBER	DRAINAGEWAY SEGMENT	CROSSING TYPE	LENGTH	UNIT	UNIT COST	TOTAL COST	TOTAL REIMBURSABLE COSTS
		EAST FORK SAND CREEK						
WESTERN DRIVE	EF-2	104	4'H x 7'W CBC	60	LF	$280	$16,800	$0
PALMER PARK BLVD	EF-2	6	6'H x 12'W CBC	80	LF	$380	$30,400	$30,400
FUTURE AKERS	EF-2	84	6'H x 10'W CBC	60	LF	$350	$21,000	$21,000
CHICAGO & RI RR	EF-2	20	8'H x 12'W CBC	120	LF	$800	$96,000	$96,000
BANNING LEWIS PRKWY	EF-4	17	2-5'H x 8'W CBC	450	LF	650	$292,500	$292,500
STAPLETON DRIVE	EF-4	17	2-5'H x 6'W CBC	180	LF	$500	$90,000	$90,000
STAPLETON DRIVE	EF-4	124A	2-6'H x 8'W CBC	200	LF	$600	$120,000	$120,000
STAPLETON DRIVE	EF-4	124A	6'H x 8'W CBC	175	LF	$270	$47,250	$47,250
STAPLETON DRIVE	EF-4	124A	6'H x 8'W CBC	175	LF	$270	$47,250	$47,250
NORTH CAREFREE	EF-4	30	8'H x 8'W CBC	150	LF	$400	$60,000	$60,000
BANNING-LEWIS PRKWY	EF-4	30	8'H x 8'W CBC	195	LF	$400	$78,000	$78,000
BARNES ROAD	EF-4	31	8'H x 8'W CBC	250	LF	$400	$100,000	$100,000
BRIDLESPUR RD	EF-5	144	6'H x 5'W CBC	150	LF	$250	$37,500	$37,500
BANNING-LEWIS PRKWY	EF-7	55	6'H x 10'W CBC	300	LF	$350	$105,000	$105,000
DUBLIN ROAD	EF-7	57	5'H x 10'W CBC	150	LF	$320	$48,000	$48,000
BANNING-LEWIS PRKWY	EF-7	173	8'H x 8'W CBC	350	LF	$270	$94,500	$94,500
WOODMEN ROAD	EF-8	84	8'H x 15'W CBC	100	LF	$750	$75,000	$75,000
RESEARCH PARKWAY	EF-7	83	8'H x 8'W CBC	180	LF	$270	$48,600	$48,600
* → RESEARCH PARKWAY	EF-8	84	8'H x 10'W CBC	180	LF	$350	$63,000	$63,000
		EAST FORK SUB-TRIB						
STAPLETON DRIVE	EFST-2	42	8'Hx9'W CBC	180	LF	$300	$54,000	$54,000
BRIDLESPUR RD	EFST-2	58	8'Hx8'W CBC	150	LF	$270	$40,500	$40,500
DUBLIN ROAD	EFST-2	70	5'Hx8'W CBC	150	LF	$250	$37,500	$37,500

* RESEARCH PARKWAY HAS BEEN RELOCATED. THIS CULVERT MAY NOT BE NECESSARY. BANNING LEWIS PARKWAY WILL BE CONSTRUCTED NEAR THE SAME LOCATION.

BRIDGES

Table VIII-7: SAND CREEK DRAINAGE BASIN PLANNING STUDY
BRIDGE CROSSING COST ESTIMATE
SAND CREEK DRAINAGE BASINS

ROADWAY	REACH NUMBER	DRAINAGEWAY SEGMENT	CROSSING TYPE	JURISDICTION CITY	JURISDICTION COUNTY	SIZE	UNIT	UNIT COST	TOTAL COST COUNTY	TOTAL COST CITY
		SAND CREEK								
CHELTON ROAD	SC-1	115	210' TWO-SPAN BRIDGE	X		16800	SF	$80	$0	$1,344,000
STETSON HILLS BLVD.	SC-6	130	3- 8'Hx10'W CBC	X		200	LF	$1,110	$0	$222,000
JEDEDIAH SMITH RD.	SC-6	137	3- 8'Hx10'W CBC	X		60	LF	$1,110	$0	$66,600
PETERSON ROAD	SC-6	141	80' CLEAR SPAN BRIDGE	X		6400	SF	$80	$0	$512,000
DUBLIN BOULEVARD	SC-7	141	80' CLEAR SPAN BRIDGE	X		6400	SF	$80	$0	$512,000
MARKSHEFFEL ROAD	SC-8	151	3- 10'Hx10'W CBC		X	80	LF	$1,260	$100,800	$0
* RESEARCH PARKWAY	SC-8	163	4- 8'Hx10'W CBC		X	80	LF	$1,560	$124,800	$0 = BRIDGE
** BANNING-LEWIS PKWY	SC-8	187	4- 8'Hx10'W CBC		X	80	LF	$1,560	$124,800	$0 = BRIDGE
		CENTER TRIBUTARY								
W. FRONTAGE ROAD	CT-1	142	3- 6'Hx16'W CBC		X	60	LF	$1,770	$106,200	$0
US 24 BYPASS	CT-1	142	3- 6'Hx14'W CBC		X	150	LF	$1,410	$211,500	$0
E. FRONTAGE RD, US 24	CT-1	142	3- 6'Hx14'W CBC		X	60	LF	$1,410	$84,600	$0
BIJOU STREET, US 24	CT-1	142	3- 6'Hx14'W CBC		X	60	LF	$1,410	$84,600	$0
PLATTE AVENUE, US 24	CT-2	142	3- 6'Hx14'W CBC		X	120	LF	$1,410	$169,200	$0
GALLEY ROAD	CT-4	144	3- 5'Hx6'W CBC		X	100	LF	$900	$90,000	$0
		WEST FORK SAND CREEK								
GALLEY ROAD	WF-2	155	54' CLEAR SPAN BRIDGE	X		5130	SF	$80	$0	$410,400
PALMER PARK BLVD.	WF-2	156	54' CLEAR SPAN BRIDGE	X		5130	SF	$80	$0	$410,400
CONSTITUTION AVE.	WF-3	159	40' CLEAR SPAN BRIDGE	X		3200	SF	$80	$0	$256,000
MAIZELAND ROAD	WF-3	170	30' CLEAR SPAN BRIDGE	X		2400	SF	$80	$0	$192,000
SO. CAREFREE	WF-3	170	2- 6'Hx15'W CBC	X		80	LF	$1,200	$0	$96,000
TOTAL BRIDGE CONSTRUCTION COSTS, SAND CREEK									$1,096,500	$4,021,400

* RESEARCH PARKWAY HAS BEEN RELOCATED. THIS BRIDGE WILL NOW BE LOCATED ON STERLING RANCH ROAD.

** BANNING-LEWIS PARKWAY IS NOW KNOWN AS BRIARGATE PARKWAY AT THIS LOCATION.

BRIDGE FEE

Table VIII-9: SAND CREEK DRAINAGE BASIN PLANNING STUDY
CITY BRIDGE FEE CALCULATION

ROADWAY	CROSSING TYPE	TOTAL COST	TOTAL CITY COST (1)	TOTAL REIMBURSABLE COST
SAND CREEK				
CHELTON ROAD	210' TWO-SPAN BRIDGE	$1,344,000	$101,600	$1,242,400
STERTON HILLS	3- 8'Hx10'W CBC	$222,000	$84,360	$137,640
HERSHAM SMITH RD.	3- 8'Hx10'W BOX CULVERT	$346,000	$9,990	$336,010
PETERSON ROAD	90' CLEAR SPAN BRIDGE	$513,000	$194,560	$317,440
DUBLIN BOULEVARD	80' CLEAR SPAN BRIDGE	$512,000	$194,560	$317,440
WEST FORK SAND CREEK				
GALLEY ROAD	54' CLEAR SPAN BRIDGE	$410,400	$410,400	$0
PALMER PARK BLVD.	54' CLEAR SPAN BRIDGE	$410,400	$410,400	$0
CONSTITUTION AVE.	40' CLEAR SPAN BRIDGE	$256,000	$256,000	$0
MAIZELAND ROAD	30' CLEAR SPAN BRIDGE	$192,000	$192,000	$0
SOUTH CAREFREE CIRCLE	2- 8'Hx15'W CBC	$96,000	$96,000	$0
EAST FORK SAND CREEK				
STAPLETON PARKWAY	2-10'H x 16'W CBC	$310,000	$138,400	$171,600
BANNING LEWIS PARKWAY	2-10'H x 14'W CBC	$727,000	$388,758	$338,250
NORTH CAREFREE CIRCLE	2-10'H x 14'W CBC	$417,500	$163,125	$254,375
BARNES ROAD	150' TWO SPAN BRIDGE	$720,000	$475,200	$244,800
MIDDLESPUR ROAD	2-8'H x 8'W CBC	$168,750	$58,813	$109,937
DUBLIN ROAD	130' TWO SPAN BRIDGE	$720,000	$396,000	$324,000
EAST FORK SUB-TRIBUTARY				
BARNES ROADWAY	2- 10'H x 12'W CBC	$253,000	$196,900	$56,020
NORTH CAREFREE CIRCLE	2- 8'H x 10'W CBC	$142,500	$78,375	$64,125
EAST HERSTADT CREEK				
UN-NAMED ROADWAY	2- 10'H x 14'W CBC	$312,500	$193,750	$118,750
WEST HERSTADT CREEK				
UN-NAMED ROADWAY	2- 10'H x 12'W CBC	$196,038	$122,760	$73,340
TOTAL ROADWAY CONSTRUCTION COSTS		$7,949,850	$4,973,268	$3,175,438
10% ENGINEERING		$794,985	$497,322	$317,543
5% CONTINGENCY		$342,453	$201,661	$139,771
TOTALS		$9,735,348	$5,684,206	$3,651,742
TOTAL UNPLATTED ACREAGE IN CITY				11513
CITY BRIDGE FEE ($/ACRE)				$323

(1) FEES HAVE BEEN CALCULATED PER CITY ORDINANCE 15-1-1001, ARTERIAL ROADWAY BRIDGES.
CITY IS RESPONSIBLE FOR COST OF BRIDGE IN EXCESS OF 60-FEET AS MEASURED PERPENDICULARLY TO THE ROADWAY CENTERLINE UP TO AND NOT EXCEEDING THE ROAD RIGHT-OF-WAY WIDTH.

Table VIII-10: SAND CREEK DRAINAGE BASIN PLANNING STUDY
COUNTY BRIDGE FEE CALCULATION

ROADWAY	CROSSING TYPE	TOTAL COST	TOTAL COUNTY COST	TOTAL REIMBURSABLE COST
SAND CREEK				
MARKSHEFFEL ROAD	3- 10'Hx10'W CBC	$100,800	$0	$100,800
RESEARCH PARKWAY	4-8'Hx10'W CBC	$126,800	$0	$126,800
BANNING-LEWIS PARKWAY	4-8'Hx10'W CBC	$126,800	$0	$126,800
CENTER TRIBUTARY SAND CREEK				
W. FRONTAGE US 24 (1)	3-6'Hx14'W CBC	$106,200	$0	$0
US 24 (POWERS) (1)	3-6'Hx14'W CBC	$211,500	$0	$0
E. FRONTAGE US 24 (1)	3-6'Hx14'W CBC	$84,600	$0	$0
BIJOU STREET (1)	3-6'Hx14'W CBC	$84,600	$0	$0
PLATTE AVENUE (1)	3-6'Hx14'W CBC	$169,200	$0	$0
GALLEY ROAD	3-5'Hx8'W CBC	$390,000	$56,700	$333,300
EAST FORK SAND CREEK				
UN-NAMED ROAD, PETERSON AFB	140' TWO SPAN BRIDGE	$336,000	$0	$0
PETERSON ROAD	3-6'H X 16'W CBC	$144,000	$0	$144,000
OMAHA BLVD EXTENDED	3-6'H X 16'W CBC	$144,000	$0	$144,000
MARKSHEFFEL ROAD	120' TWO SPAN BRIDGE	$672,000	$0	$672,000
EAST FORK SUBTRIBUTARY				
GENOA DRIVE	2-6'H X 14'W CBC	$84,000	$0	$84,000
TOTAL ROADWAY CONSTRUCTION COSTS		$2,476,500	$56,700	$1,427,700
10% ENGINEERING		$247,650	$5,670	$142,770
5% CONTINGENCY		$123,825	$2,835	$71,385
COUNTY BRIDGE OUTSTANDING CLAIMS				$1,083,133
TOTALS		$2,847,975	$65,205	$2,724,988
TOTAL UNPLATTED ACREAGE IN COUNTY				7497
COUNTY BRIDGE FEE ($/ACRE)				$363

(1) BRIDGES ON CENTER TRIBUTARY FUNDED THROUGH US 24 BYPASS PHASE II PROJECT.

Appendix E
Back up to Sterling Ranch Reimbursable Cost Estimate Tables

2019 Financial Assurance Estimate Form
(with pre-plat construction)

Updated: 7/16/2019

PROJECT INFORMATION		
Sand Creek at Sterling Ranch	11/20/2020	
Project Name	Date	PCD File No.

Description	Quantity	Units	Unit Cost		Total	(with Pre-Plat Construction) % Complete	Remaining	
SECTION 1 - GRADING AND EROSION CONTROL (Construction and Permanent BMPs)								
* Earthwork								*
less than 1,000; $5,300 min		CY	$ 8.00	=	$ -		$ -	*
1,000-5,000; $8,000 min		CY	$ 6.00	=	$ -		$ -	*
5,001-20,000; $30,000 min		CY	$ 5.00	=	$ -		$ -	*
20,001-50,000; $100,000 min	45,000	CY	$ 3.50	=	$ 157,500.00		$ 157,500.00	*
50,001-200,000; $175,000 min		CY	$ 2.50	=	$ -		$ -	*
greater than 200,000; $500,000 min		CY	$ 2.00	=	$ -		$ -	*
* Permanent Seeding (inc. noxious weed mgmnt.)	22.0	AC	$ 800.00	=	$ 17,600.00		$ 17,600.00	*
* Mulching	11.0	AC	$ 750.00	=	$ 8,250.00		$ 8,250.00	*
* Permanent Erosion Control Blanket	6,837.0	SY	$ 6.00	=	$ 41,022.00		$ 41,022.00	*
* Permanent Pond/BMP Construction		CY	$ 20.00	=	$ -		$ -	*
* Permanent Pond/BMP (Spillway)		EA		=	$ -		$ -	*
* Permanent Pond/BMP (Outlet Structure)		EA		=	$ -		$ -	
Safety Fence		LF	$ 3.00	=	$ -		$ -	
Temporary Erosion Control Blanket	6,837	SY	$ 3.00	=	$ 20,511.00		$ 20,511.00	
Vehicle Tracking Control	2	EA	$ 2,370.00	=	$ 4,740.00		$ 4,740.00	
Silt Fence	0	LF	$ 2.50	=	$ -		$ -	
Temporary Seeding	11.0	AC	$ 628.00	=	$ 6,908.00		$ 6,908.00	
Temporary Mulch	11.0	AC	$ 750.00	=	$ 8,250.00		$ 8,250.00	
Erosion Bales		EA	$ 25.00	=	$ -		$ -	
Erosion Logs/Straw Waddle	12,080	LF	$ 5.00	=	$ 60,400.00		$ 60,400.00	
Rock Check Dams		EA	$ 500.00	=	$ -		$ -	
Inlet Protection	2	EA	$ 167.00	=	$ 334.00		$ 334.00	
Sediment Basin		EA	$ 1,762.00	=	$ -		$ -	
Concrete Washout Basin	2	EA	$ 900.00	=	$ 1,800.00		$ 1,800.00	
Stabilized staging area	2	EA	$ 5,000.00	=	$ 10,000.00		$ 10,000.00	
Topsoil	414	EA	$ 25.00	=	$ 10,350.00		$ 10,350.00	
[insert items not listed but part of construction plans]				=	$ -		$ -	
	MAINTENANCE (35% of Construction BMPs)			=	$ 43,152.55		$ 43,152.55	
* - Subject to defect warranty financial assurance. A minimum of 20% shall be retained until final acceptance (MAXIMUM OF 80% COMPLETE ALLOWED)			**Section 1 Subtotal**	=	$ 390,817.55		$ 390,817.55	
SECTION 2 - PUBLIC IMPROVEMENTS *								
ROADWAY IMPROVEMENTS								*
Construction Traffic Control		LS		=	$ -		$ -	*
Aggregate Base Course (135 lbs/cf)		Tons	$ 28.00	=	$ -		$ -	*
Aggregate Base Course (135 lbs/cf)		CY	$ 50.00		$ -		$ -	*
Asphalt Pavement (3" thick)		SY	$ 14.00		$ -		$ -	*
Asphalt Pavement (4" thick)		SY	$ 19.00		$ -		$ -	*
Asphalt Pavement (6" thick)		SY	$ 29.00		$ -		$ -	*
Asphalt Pavement (147 lbs/cf) __" thick		Tons	$ 88.00	=	$ -		$ -	*
Raised Median, Paved		SF	$ 8.00	=	$ -		$ -	*
Regulatory Sign/Advisory Sign		EA	$ 300.00	=	$ -		$ -	*
Guide/Street Name Sign		EA		=	$ -		$ -	*
Epoxy Pavement Marking		SF	$ 13.00	=	$ -		$ -	*
Thermoplastic Pavement Marking		SF	$ 23.00	=	$ -		$ -	*
Barricade - Type 3		EA	$ 200.00	=	$ -		$ -	*
Delineator - Type I		EA	$ 24.00	=	$ -		$ -	*
Curb and Gutter, Type A (6" Vertical)		LF	$ 30.00	=	$ -		$ -	*
Curb and Gutter, Type B (Median)		LF	$ 30.00	=	$ -		$ -	*
Curb and Gutter, Type C (Ramp)		LF	$ 30.00	=	$ -		$ -	*
4" Sidewalk (common areas only)		SY	$ 48.00	=	$ -		$ -	*
5" Sidewalk		SY	$ 60.00	=	$ -		$ -	*
6" Sidewalk		SY	$ 72.00	=	$ -		$ -	*
8" Sidewalk		SY	$ 96.00		$ -		$ -	*
Pedestrian Ramp		EA	$ 1,150.00	=	$ -		$ -	*
Cross Pan, local (8" thick, 6' wide to include return)	4	LF	$ 61.00	=	$ 244.00		$ 244.00	*
Cross Pan, collector (9" thick, 8' wide to include return)		LF	$ 92.00		$ -		$ -	*
Curb Chase		EA	$ 1,480.00	=	$ -		$ -	*
Guardrail Type 3 (W-Beam)	910	LF	$ 49.00	=	$ 44,590.00		$ 44,590.00	*
Guardrail Type 7 (Concrete)		LF	$ 72.00	=	$ -		$ -	*
Guardrail End Anchorage	4	EA	$ 2,098.00	=	$ 8,392.00		$ 8,392.00	*
Guardrail Impact Attenuator		EA	$ 3,767.00	=	$ -		$ -	*
Sound Barrier Fence (CMU block, 6' high)		LF	$ 78.00		$ -		$ -	*
Sound Barrier Fence (panels, 6' high)		LF	$ 80.00	=	$ -		$ -	*
Electrical Conduit, Size =		LF	$ 16.00	=	$ -		$ -	*
Traffic Signal, complete intersection		EA	$ 425,000	=	$ -		$ -	*
					$ -		$ -	

Temp BMPS Are not Reimbusable

PROJECT INFORMATION		
Sand Creek at Sterling Ranch	11/20/2020	
Project Name	Date	PCD File No.

Description	Quantity	Units	Unit Cost		Total	(with Pre-Plat Construction) % Complete	Remaining	
OS-535 Precast bridge (see attachment A)	1	EA	$ 2,569,576	=	$ 2,569,576.00		$ 2,569,576.00	
[insert items not listed but part of construction plans]				=	$ -		$ -	*
STORM DRAIN IMPROVEMENTS								*
Concrete Box Culvert (M Standard), Size (W x H)		LF		=	$ -		$ -	*
18" Reinforced Concrete Pipe	180	LF	$ 65.00	=	$ 11,700.00		$ 11,700.00	*
24" Reinforced Concrete Pipe		LF	$ 78.00	=	$ -		$ -	*
30" Reinforced Concrete Pipe		LF	$ 97.00	=	$ -		$ -	*
36" Reinforced Concrete Pipe		LF	$ 120.00	=	$ -		$ -	*
42" Reinforced Concrete Pipe		LF	$ 160.00	=	$ -		$ -	*
48" Reinforced Concrete Pipe		LF	$ 195.00	=	$ -		$ -	*
54" Reinforced Concrete Pipe		LF	$ 245.00	=	$ -		$ -	*
60" Reinforced Concrete Pipe		LF	$ 288.00	=	$ -		$ -	*
66" Reinforced Concrete Pipe		LF	$ 332.00	=	$ -		$ -	*
72" Reinforced Concrete Pipe		LF	$ 380.00	=	$ -		$ -	*
18" Corrugated Steel Pipe		LF	$ 84.00	=	$ -		$ -	*
24" Corrugated Steel Pipe		LF	$ 96.00	=	$ -		$ -	*
30" Corrugated Steel Pipe		LF	$ 122.00	=	$ -		$ -	*
36" Corrugated Steel Pipe		LF	$ 147.00	=	$ -		$ -	*
42" Corrugated Steel Pipe		LF	$ 168.00	=	$ -		$ -	*
48" Corrugated Steel Pipe		LF	$ 178.00	=	$ -		$ -	*
54" Corrugated Steel Pipe		LF	$ 260.00	=	$ -		$ -	*
60" Corrugated Steel Pipe		LF	$ 280.00	=	$ -		$ -	*
66" Corrugated Steel Pipe		LF	$ 340.00	=	$ -		$ -	*
72" Corrugated Steel Pipe		LF	$ 400.00	=	$ -		$ -	*
78" Corrugated Steel Pipe		LF	$ 460.00	=	$ -		$ -	*
84" Corrugated Steel Pipe		LF	$ 550.00	=	$ -		$ -	*
Flared End Section (FES) RCP Size = 18 (unit cost = 6x pipe unit cost)	2	EA	$ 390.00	=	$ 780.00		$ 780.00	*
Flared End Section (FES) CSP Size = (unit cost = 6x pipe unit cost)		EA		=	$ -		$ -	*
End Treatment- Headwall		EA		=	$ -		$ -	*
End Treatment- Wingwall		EA		=	$ -		$ -	*
End Treatment - Cutoff Wall		EA		=	$ -		$ -	*
Curb Inlet (Type R) L=5', Depth < 5'		EA	$ 5,542.00	=	$ -		$ -	*
Curb Inlet (Type R) L=5', 5' ≤ Depth < 10'		EA	$ 7,188.00	=	$ -		$ -	*
Curb Inlet (Type R) L =5', 10' ≤ Depth < 15'		EA	$ 8,345.00	=	$ -		$ -	*
Curb Inlet (Type R) L =10', Depth < 5'		EA	$ 7,627.00	=	$ -		$ -	*
Curb Inlet (Type R) L =10', 5' ≤ Depth < 10'		EA	$ 7,861.00	=	$ -		$ -	*
Curb Inlet (Type R) L =10', 10' ≤ Depth < 15'		EA	$ 9,841.00	=	$ -		$ -	*
Curb Inlet (Type R) L =15', Depth < 5'		EA	$ 9,918.00	=	$ -		$ -	*
Curb Inlet (Type R) L =15', 5' ≤ Depth < 10'		EA	$ 10,633.00	=	$ -		$ -	*
Curb Inlet (Type R) L =15', 10' ≤ Depth < 15'		EA	$ 11,627.00	=	$ -		$ -	*
Curb Inlet (Type R) L =20', Depth < 5'		EA	$ 10,570.00	=	$ -		$ -	*
Curb Inlet (Type R) L =20', 5' ≤ Depth < 10'		EA	$ 11,667.00	=	$ -		$ -	*
Grated Inlet (Type C), Depth < 5'	0	EA	$ 4,640.00	=	$ -		$ -	*
Grated Inlet (Type D), Depth < 5'		EA	$ 5,731.00	=	$ -		$ -	*
Storm Sewer Manhole, Box Base		EA	$ 11,627.00	=	$ -		$ -	*
Storm Sewer Manhole, Slab Base		EA	$ 6,395.00	=	$ -		$ -	*
Geotextile TRM	0	SY	$ 6.00	=	$ -		$ -	*
Rip Rap, d50 size from 6" to 24"	0	Tons	$ 80.00	=	$ -		$ -	*
Rip Rap, Grouted	0	Tons	$ 95.00	=	$ -		$ -	*
Drainage Channel Construction, Size (W x H)		LF		=	$ -		$ -	*
Drainage Channel Lining, Concrete		CY	$ 570.00	=	$ -		$ -	*
Drainage Channel Lining, Rip Rap	0	CY	$ 112.00	=	$ -		$ -	*
Drainage Channel Lining, Grass		AC	$ 1,469.00	=	$ -		$ -	
Drainage Channel Lining, Other Stabilization				=	$ -		$ -	*
	0	CY	$ -	=	$ -		$ -	
	0	SF	$ -		$ -		$ -	
[insert items not listed but part of construction plans]				=	$ -		$ -	
Section 2 Subtotal				=	$ 2,635,282.00		$ 2,635,282.00	

* - Subject to defect warranty financial assurance. A minimum of 20% shall be retained until final acceptance (MAXIMUM OF 80% COMPLETE ALLOWED)

PROJECT INFORMATION		
Sand Creek at Sterling Ranch	11/20/2020	
Project Name	Date	PCD File No.

Description	Quantity	Units	Unit Cost		Total	(with Pre-Plat Construction) % Complete	(with Pre-Plat Construction) Remaining
SECTION 3 - COMMON DEVELOPMENT IMPROVEMENTS (Private or District and NOT Maintained by EPC)**							
ROADWAY IMPROVEMENTS							
Gravel maintenance trail	1,709	CY	$ 15.00	=	$ 25,635.00		$ 25,635.00
MSE Retaining wall	250	SF	$ 35.00	=	$ 8,750.00		$ 8,750.00
				=	$ -		$ -
STORM DRAIN IMPROVEMENTS (Exception: Permanent Pond/BMP shall be itemized under Section 1)							
Rip Rap, d50 size from 6" to 24" Channel benches	23,932	CY	$ 80.00	=	$ 1,914,560.00		$ 1,914,560.00
Grouted riprap drops	24,540	CY	$ 95.00	=	$ 2,331,300.00		$ 2,331,300.00
Geotextile TRM	50,180	SY	$ 6.00	=	$ 301,080.00		$ 301,080.00
48-inch grouted boulders	1,240	CY	$ 120.00	=	$ 148,800.00		$ 148,800.00
Sheet pliling PZ 22	18,960	SF	$ 38.00		$ 720,480.00		$ 720,480.00
Grated Inlet (Type C), Depth < 5'	2	EA	$ 4,640.00	=	$ 9,280.00		$ 9,280.00
18" Reinforced Concrete Pipe	90	LF	$ 65.00	=	$ 5,850.00		$ 5,850.00
Flared End Section (FES) RCP Size = 18 (unit cost = 6x pipe unit cost)	2	EA	$ 390.00	=	$ 780.00		$ 780.00
				=	$ -		$ -
WATER SYSTEM IMPROVEMENTS							
Water Main Pipe (PVC), Size 8"		LF	$ 64.00	=	$ -		$ -
Water Main Pipe (Ductile Iron), Size 8"		LF	$ 75.00	=	$ -		$ -
Gate Valves, 8"		EA	$ 1,858.00	=	$ -		$ -
Fire Hydrant Assembly, w/ all valves		EA	$ 6,597.00	=	$ -		$ -
Water Service Line Installation, inc. tap and valves		EA	$ 1,324.00	=	$ -		$ -
Fire Cistern Installation, complete		EA		=	$ -		$ -
				=	$ -		$ -
[insert items not listed but part of construction plans]				=	$ -		$ -
SANITARY SEWER IMPROVEMENTS							
Sewer Main Pipe (PVC), Size 8"		LF	$ 64.00	=	$ -		$ -
Sanitary Sewer Manhole, Depth < 15 feet		EA	$ 4,386.00	=	$ -		$ -
Sanitary Service Line Installation, complete		EA	$ 1,402.00	=	$ -		$ -
Sanitary Sewer Lift Station, complete		EA		=	$ -		$ -
				=	$ -		$ -
[insert items not listed but part of construction plans]				=	$ -		$ -
LANDSCAPING IMPROVEMENTS (For subdivision specific condition of approval, or PUD)							
		EA		=	$ -		$ -
		EA		=	$ -		$ -
		EA		=	$ -		$ -
		EA		=	$ -		$ -
		EA		=	$ -		$ -
** - Section 3 is not subject to defect warranty requirements			**Section 3 Subtotal**	=	$ 5,466,515.00		$ 5,466,515.00

PROJECT INFORMATION		
Sand Creek at Sterling Ranch	11/20/2020	
Project Name	Date	PCD File No.

Description	Quantity	Units	Unit Cost		Total	(with Pre-Plat Construction) % Complete	Remaining
AS-BUILT PLANS (Public Improvements inc. Permanent WQCV BMPs)		LS	$ 7,500.00	=	$ 7,500.00		$ 7,500.00
POND/BMP CERTIFICATION (inc. elevations and volume calculations)		LS		=	$ -		$ -

Total Construction Financial Assurance $ 8,500,114.55
(Sum of all section subtotals plus as-builts and pond/BMP certification)

Total Remaining Construction Financial Assurance (with Pre-Plat Construction) $ 8,500,114.55
(Sum of all section totals less credit for items complete plus as-builts and pond/BMP certification)

Total Defect Warranty Financial Assurance $ 571,930.80
(20% of all items identified as (*). To be collateralized at time of preliminary acceptance)

Approvals

I hereby certify that this is an accurate and complete estimate of costs for the work as shown on the Grading and Erosion Control Plan and Construction Drawings associated with the Project.

Engineer: Richard N. Wray, PE (P.E. Seal Required)
Kiowa Engineering Corporation

Approved by Owner / Applicant — Date

Approved by El Paso County Engineer / ECM Administrator — Date

infrastructure in the future. The full spectrum detention ponds will be owned & maintained by Sterling Ranch Metro District.

Sand Creek Drainageway Improvements

Per the Sand Creek DBPS, Sand Creek and connected tributaries in the area of the site will require improvements. The east tributary reaches within the site boundary (DBPS SEG: 169, 186, 164, 159) will not require improvements because they will no longer be present, as development in the areas will eliminate them, and replace them with, a storm sewer system to discharge into Sand Creek. Sand Creek itself will continue to be routed through the development. Per the DBPS, selective rip rap linings, grade control check structures, and drop structure improvements are required to stabilize the channel to prevent further degradation, scour and meandering. Full spectrum detention will also be used on its benefits to the integrity of the Sand Creek Drainageway. A separate analysis with detailed alternative sections, HEC-RAS analyses, and proposed improvements is currently being conducted by Kiowa Engineering. This analysis will outline the channel improvements that will be necessary for the section of Sand Creek Drainageway that is adjacent to the site.

Per the DBPS, the recommended improvements to reach SC-9 are selective rip rap linings, grade control check structures, and drop structure improvements. The peak flows to the channel are reduced due to the Full Spectrum Detention adding to the integrity of the channel.

Drainage & Bridge Fees

The site lies within the Sand Creek Drainage Basin. An approximate estimate is presented below, exact fees to be determined at time of final plat. See full Drainage and Bridge fee worksheet in Appendix D for the fee calculation spreadsheet.

2020 DRAINAGE AND BRIDGE FEES – Sterling Ranch Filing No. 2				
Impervious Acres (ac)	Drainage Fee (Per Imp. Acre)	Bridge Fee (Per Imp. Acre)	Sterling Ranch Drainage Fee	Sterling Ranch Bridge Fee
33.905	$19,698	$8,057	$667,871.33	$273,176.94

Construction Cost Opinion

The City of Colorado Springs Drainage Criteria Manual specifies a Cost Estimate of proposed drainage facility improvements be submitted with the Final Drainage Report. A construction cost opinion has been provided below. The below cost opinion is only an estimate of facility and drainage infrastructure cost and may vary.

Item	Description	Quantity	Unit Cost			Cost
1	18"RCP	731	$65	/LF	$	47,515.00
2	24" RCP	464	$78	/LF	$	36,192.00
3	30" RCP	492	$97	/LF	$	47,724.00

4	36" RCP	651	$120	/LF	$	78,120.00
5	42" RCP	598	$160	/LF	$	95,680.00
6	48" RCP	1266	$195	/LF	$	246,870.00
7	66" RCP	1915	$332	/LF	$	635,780.00
8	72" RCP	2738	$380	/LF	$	1,040,440.00
9	84" RCP	329	$520	/LF	$	171,080.00
10	18"FES	1	$390	/LF	$	390. 00
11	24" FES	1	$468	/EA	$	468.00
12	30" FES	2	$582	/EA	$	1,164.00
13	36" FES	2	$720	/EA	$	1,440.00
14	42" FES	2	$960	/EA	$	1,920.00
15	66" FES (Temp.)	1	$1992	/EA	$	1,992.00
16	84" Headwall	2	$10000	/EA	$	20,000.00
17	15' CDOT Type R At-Grade	6	$10633	/EA	$	63,798.00
18	10' CDOT Type R At-Grade	10	$7861	/EA	$	78,610.00
19	2.9'x5.5' CDOT TYPE D	1	$5731	/EA	$	5,731.00
20	Storm Sewer MH, box base < 15 feet	24	$11627	/EA	$	279,048.00
21	Storm Sewer MH,slab base ~ 15 feet-20 feet	2	$6395	/EA	$	12,790.00
22	Storm Sewer MH, box base > 20 feet	1	$20000	/EA	$	20,000.00
23	*Detention Pond W5	1	$75000	/EA	$	75,000.00
24	*Detention Pond W4	1	$65000	/EA	$	65,000.00
25	Forebay Structure	1	$15000	/EA	$	15,000.00
26	Mod CDOT Outlet Structure	2	$15000	/EA	$	30,000.00
			Total		**$**	**3,071,752.00**

SUMMARY

Development of this site will not adversely affect the surrounding development per this final drainage report and will have no negative impact of the neighboring developments. Assumptions were made for the offsite future developments that utilize the drainage infrastructure within this report. As the future sites develop, final drainage reports will be completed to confirm the assumptions made in this report. The proposed drainage facilities will adequately convey, detain and route runoff from the tributary and onsite flows to the Sand Creek Drainage channel. Full spectrum detention and water quality ponds W4 and W5 will be used to discharge developed flows into Sand Creek per the Urban Drainage criteria flow rates, which are at or less than the historic flow. Care will be taken during construction to accommodate overland flow routes onsite and temporary drainage conditions. The development of the Sterling Filing No. 2 project shall not adversely affect adjacent or downstream property.

STERLING RANCH FILING NO. 1

COUNTY OF EL PASO, STATE OF COLORADO

STORM SEWER PLANS

JANUARY 2018

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

AGENCIES

OWNER/DEVELOPER:	SR LAND, LLC 20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JIM MORLEY (719) 471-1742
CIVIL ENGINEER:	M & S CIVIL CONSULTANTS, INC 20 BOULDER CRESCENT, SUITE 110 COLORADO SPRINGS, CO 80903 VIRGIL A. SANCHEZ P.E. (719) 955-5485
COUNTY ENGINEERING:	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 JEFF RICE, P.E. (719) 520-6300
TRAFFIC ENGINEERING:	EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922 JENNIFER IRVINE, P.E. (719) 520-6460
WATER RESOURCES:	STERLING RANCH METRO DISTRICT ENGINEERS JDS-HYDRO CONSULTANTS 545 E. PIKES PEAK AVE., SUITE 300 COLORADO SPRINGS, CO 80903 JOHN MCGINN (719) 668-8769
FIRE DISTRICT:	BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300
GAS DEPARTMENT:	COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668-3556
ELECTRIC DEPARTMENT:	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495-2283
COMMUNICATIONS:	QWEST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922-1987 AT&T (LOCATORS) (719) 635-3674

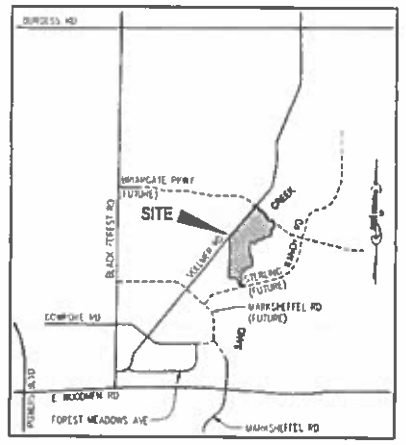
BENCHMARKS:

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82

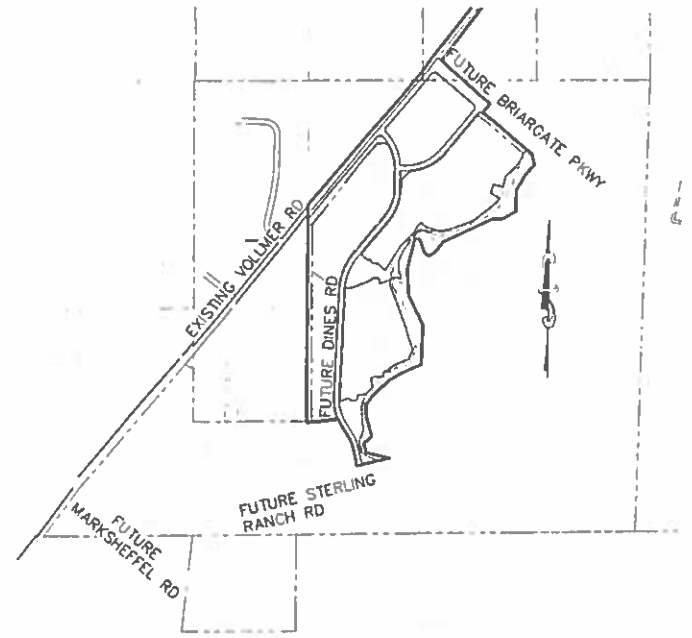
BASIS OF BEARINGS:

THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW1/4) OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N 89°14'14" E, A DISTANCE OF 2,722.56 FEET.

SHEET INDEX



VICINITY MAP
N.T.S.



SITE MAP
N.T.S.

APPROVALS:

ENGINEER'S STATEMENT:

DETAILED DRAINAGE CONSTRUCTION PLANS AND SPECIFICATIONS ENGINEER'S STATEMENT:
THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID DETAILED PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED DRAINAGE PLANS AND SPECIFICATIONS, AND SAID DETAILED PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH THE MASTER PLAN OF THE DRAINAGE BASIN. SAID DETAILED DRAINAGE PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR DRAINAGE FACILITY(S) IS DESIGNED. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARATION OF THE DETAILED IMPROVEMENT PLANS AND SPECIFICATIONS.

VIRGIL A SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC. — DATE

OWNER/DEVELOPER STATEMENT:

THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE DRAINAGE REPORT AND PLAN AND THIS SET OF CONSTRUCTION DOCUMENTS. THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE EROSION AND STORMWATER QUALITY CONTROL PLAN INCLUDING TEMPORARY BMP INSPECTION REQUIREMENTS AND FINAL STABILIZATION REQUIREMENTS. I ACKNOWLEDGE THE RESPONSIBILITY TO DETERMINE WHETHER THE CONSTRUCTION ACTIVITIES ON THESE PLANS REQUIRE COLORADO DISCHARGE PERMIT SYSTEM (CDPS) PERMITTING FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY.

JIM MORLEY, SR LAND, LLC
DIRECTOR OF PLANNING AND ENGINEERING — DATE

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 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, AND ENGINEERING CRITERIA MANUAL AS AMENDED.

JENNIFER IRVINE, P.E.
COUNTY ENGINEER / ECM ADMINISTRATOR — DATE 30 JAN 18

STERLING RANCH METROPOLITAN DISTRICT:

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

FOR AND ON BEHALF OF THE STERLING RANCH METRO. DISTRICT — DATE

ABBREVIATIONS

ACT	ACTUAL
BCR	BACK OF CURB RETURN
BOV	BLOWOFF VALVE ASSEMBLY
BRK	BREAK
BT	BEGINNING OF TRANSITION
CATV	CABLE TV
CL	CLASS, CENTERLINE
CLR	CLEARANCE
CONST	CONSTRUCT
CSU	COLORADO SPRINGS UTILITIES
ECC	ECCENTRIC
ECR	END CURB RETURN
EL	ELEVATION
EOA	EDGE OF ASPHALT
EOP	END OF PAVEMENT
EPC	EL PASO COUNTY
ESMT	EASEMENT
ET	END TRANSITION
EX/EXIST	EXISTING
G	GAS
GB	GRADE BREAK
FL	FLOW LINE
FT	FEET, FOOT
FUT	FUTURE
GRD	GRADE
HORIZ	HORIZONTAL
HP	HIGH POINT ELEVATION
INT	INTERSECTION
LP	LOW POINT ELEVATION
LT	LEFT
LOC	LOCATION
MIN	MINIMUM
N,S,E,W	NORTH,SOUTH,EAST,WEST
NTS	NOT TO SCALE
PC	POINT OF VERTICAL CURVATURE
PCC	POINT OF COMPOUND CURVE
PCR	POINT OF CURB RETURN
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVE
PUB	PUBLIC
PVI	POINT OF VERTICAL INTERSECTION
PVC	POINT OF VERTICAL CURVE
PVT	POINT OF VERTICAL TANGENT
PT	POINT OF TANGENCY
PROP	PROPOSED
REM	REMOVE
ROW	RIGHT OF WAY
RSMTS	RESTRAINTS
RT	RIGHT
SAN	SANITARY SEWER
SD	STANDARD DETAIL
STA	STATION
STM	STORM
COS	TOP CORNER OF BOX
TELE	TELEPHONE
TYP	TYPICAL
UNK	UNKNOWN
UG	UNDERGROUND POWER
UTL	UTILITY
VERT	VERTICAL
WTR	WATER LINE
XING	CROSSING
YD	YARD (CUBIC)
AIR & VACUUM VALVE STA	
ANCHOR, CONC. REVERSE	
ANODE	
CENTERLINE	
EXISTING FENCE	
PROPOSED GAS	
PROPOSED SANITARY SEWER	
PROPOSED WATER	
RIGHT-OF-WAY	
PROPERTY LINE	
FIRE HYDRANT (EXISTING)	
FIRE HYDRANT (PROPOSED)	
EXISTING STORM DRAIN	
FUTURE STORM DRAIN	
VALVE (PROPOSED)	
VALVE (EXISTING)	

LEGEND

BLOWOFF ASSY. (PROPOSED)
BLOWOFF ASSY. (EXISTING)
PLUG (PROPOSED)
PLUG (EXISTING)
CENTERLINE (W/ STATION) 1+00
FLOODPLAIN CR 100 YR WSE 1CO YR
EURV WSE EURV
EXISTING GROUND @ CENTERLINE
PROPOSED GRADE @ CENTERLINE
EDGE OF ASPHALT & GRAVEL SHOULDER
PERCENT GRADE @.70%
FINISHED GRADE SPOT ELEVATION 7082.15
PROPOSED RIPRAP
WETLANDS

STERLING RANCH FILING NO. 1
STORM SEWER PLANS
PROJECT NO 09-002 | FILE: V:\eng\Const Drg\Storm - District\ST01.dwg | DATE 01/02/2018 | SHEET 1 OF 28 | ST01
DESIGNED BY ET | SCALE HORIZ N/A | VERT N/A
DRAWN BY ELY
CHECKED BY VAS

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

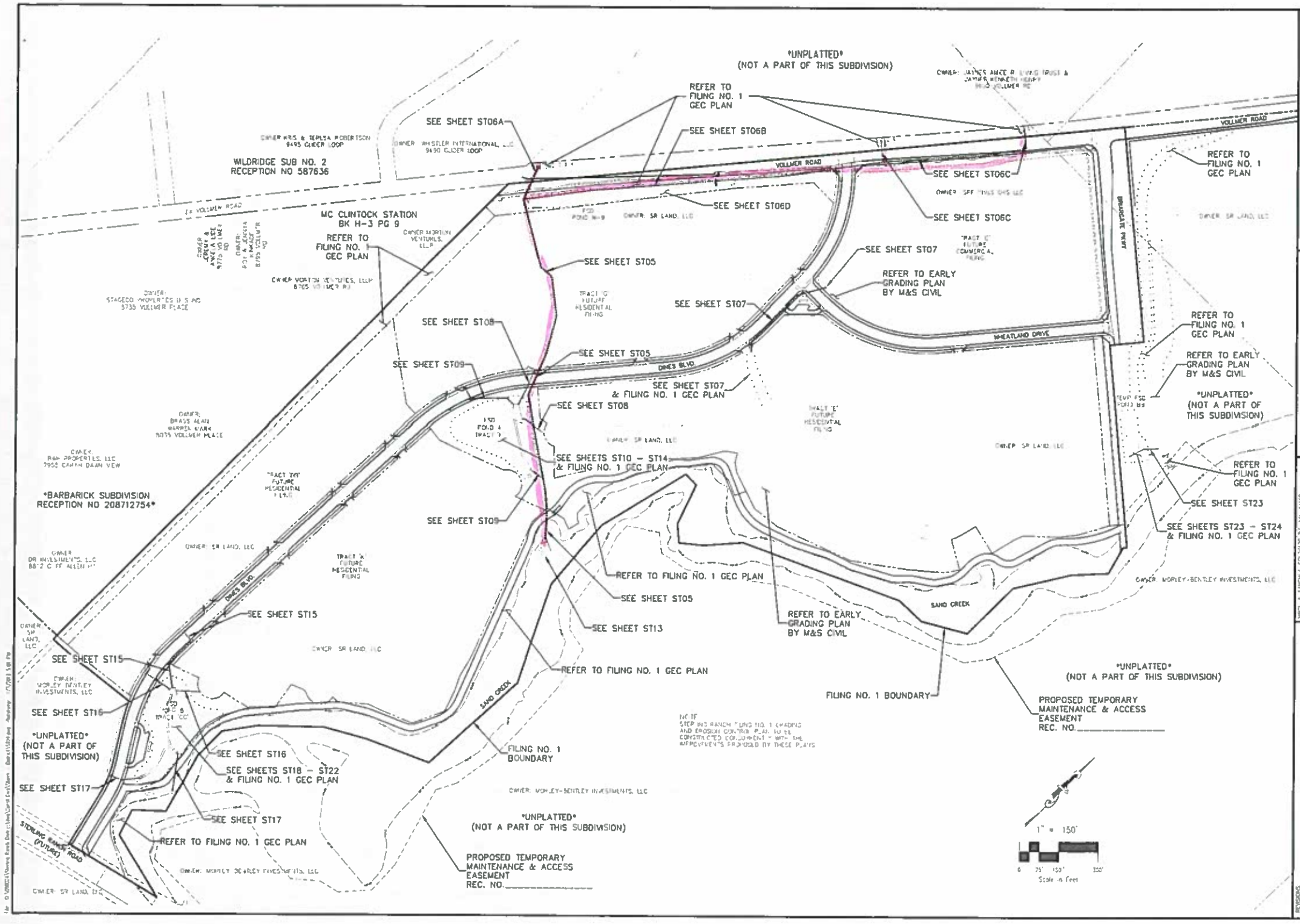
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
VIRGIL A. SANCHEZ, P.E. NO. 37160

REVISIONS:
NO | DATE | BY | DESCRIPTION

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE AT MEETING AND MUST BE APPROVED BY THE PREPARER OF THE PLANS.

CAUTION

SF-16-012



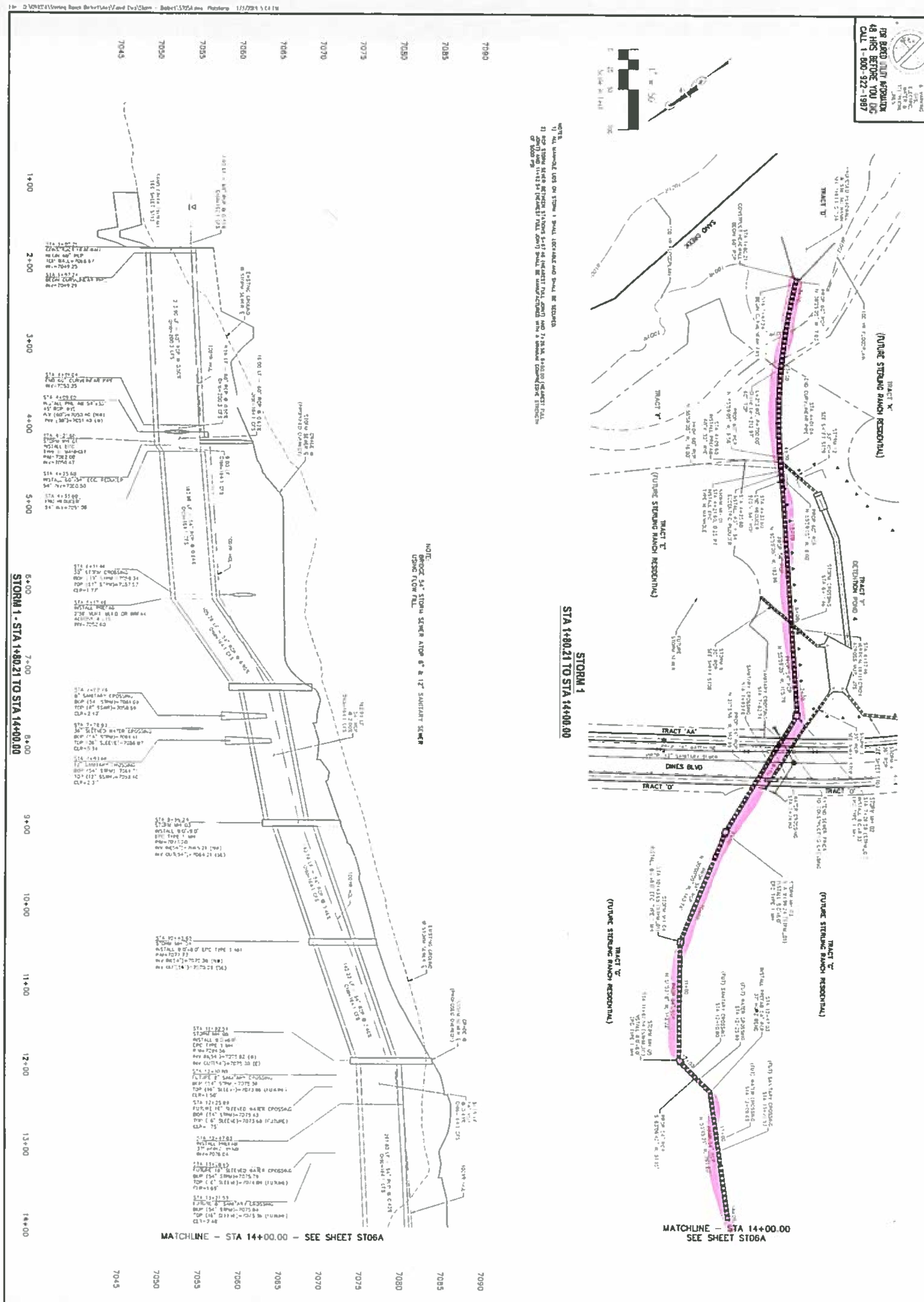
STERLING RANCH FILING NO. 1

STORM SEWER SHEET KEY

ST04

SHEET 5 OF 28

20 BOULDER CRESCENT SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: (719) 955-5485



REVISIONS

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

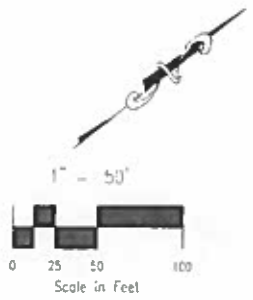
M&S

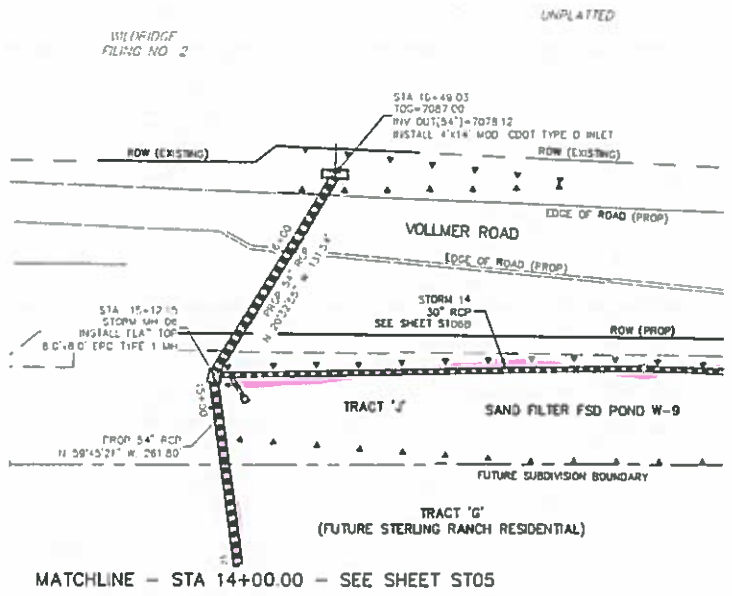
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

STERLING RANCH FILING NO. 1

STORM SEWER PLANS

PROJECT NO. 09-002	FILE:		
DESIGNED BY: ET	SCALE	DATE: 01/02/2018	
DRAWN BY: ELY	HORIZ: 1"=50'	SHEET 6 OF 28	ST05
CHECKED BY: VAS	VERT: 1"=5'		

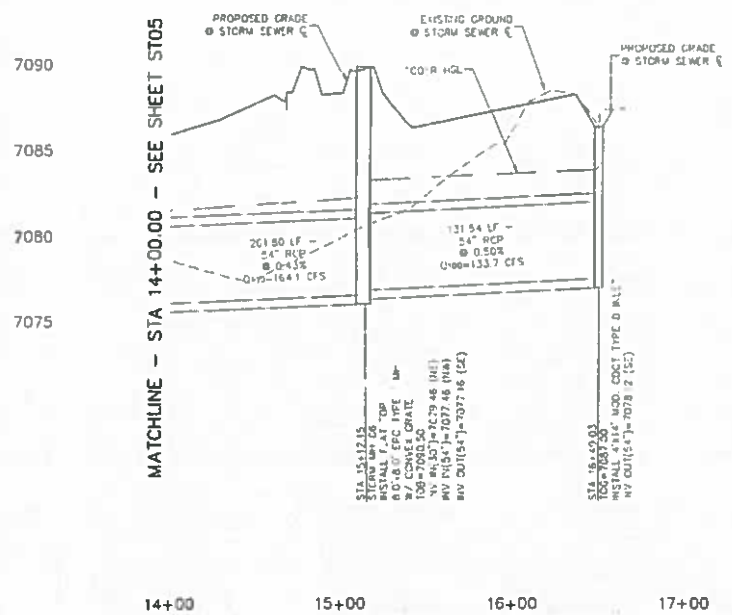




MATCHLINE – STA 14+00.00 – SEE SHEET ST05

STORM 1 - STA 14+00.00 TO STA 16+47.03

NOTE:
ALL MANHOLE LIDS ON STORM 1 SHALL LOCKABLE AND SHALL BE SECURED.



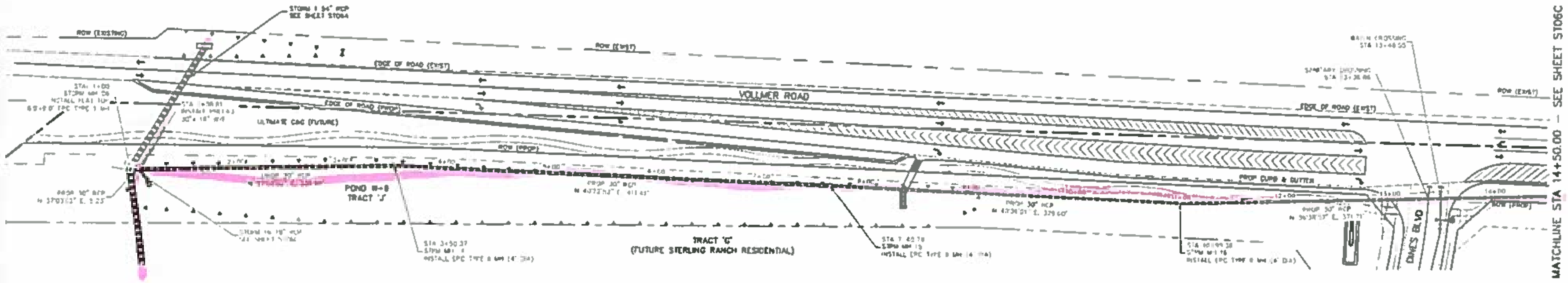
STORM 1 - STA 14+00.00 TO STA 16+49.03

STERLING RANCH FILING NO. 1
STORM SEWER PLANS
PROJECT NO 09-002 | FILE: V:\eng\Const Drwg\Storm - Data\ST06A.dwg | DATE: 01/02/2018
DESIGNED BY: ET | SCALE HORZ 1"=50' VERT 1"=5'
DRAWN BY: ELY
CHECKED BY: WAS
SHEET 7 OF 28
ST06A

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: (719)955-5485

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

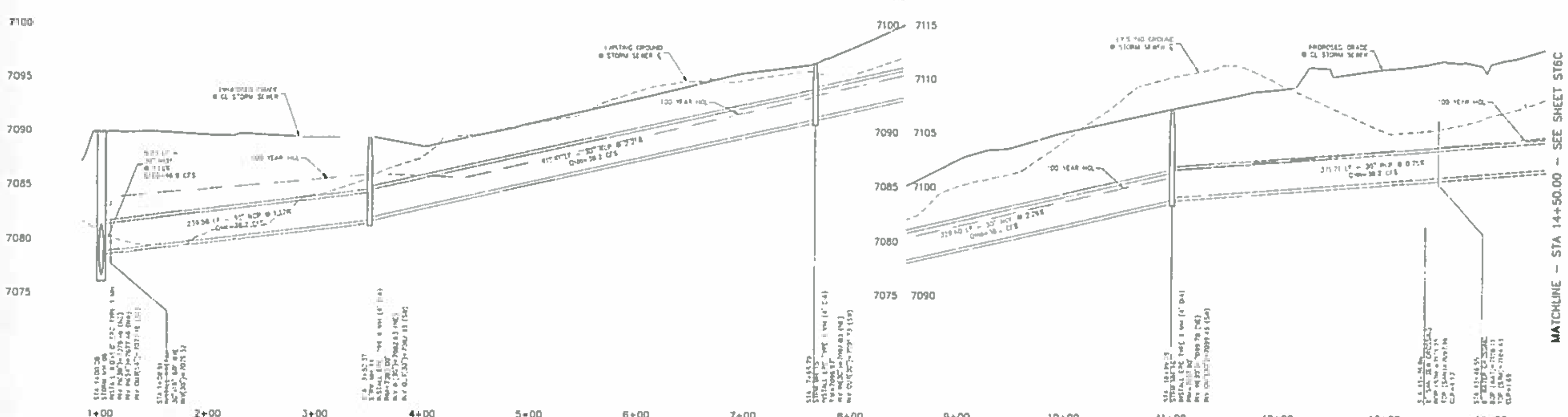
REVISIONS
NO. DATE BY DESCRIPTION



STORM 14 - STA 1+00.00 TO STA 14+50.00

MATCHLINE STA 14+50.00 – SEE SHEET ST06C

NOTE:
ALL MANHOLE LIDS ON STORM 14 SHALL LOCKABLE AND SHALL BE SECURED.



STORM 14 - STA 1+00.00 TO STA 14+50.00

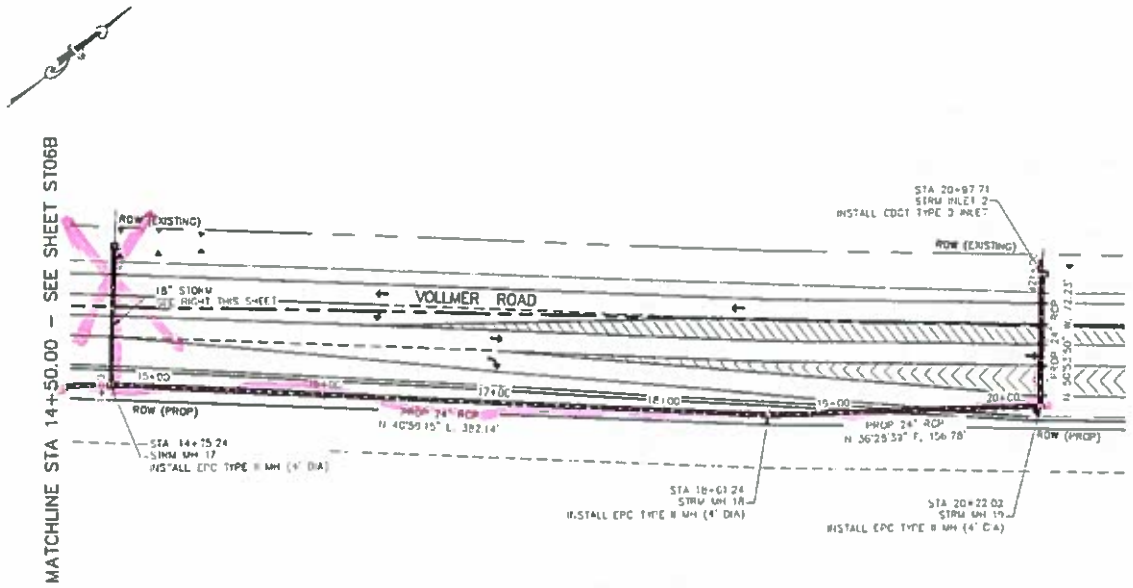
MATCHLINE – STA 14+50.00 – SEE SHEET ST6C

1" = 50'
0 25 50 100
Scale in Feet

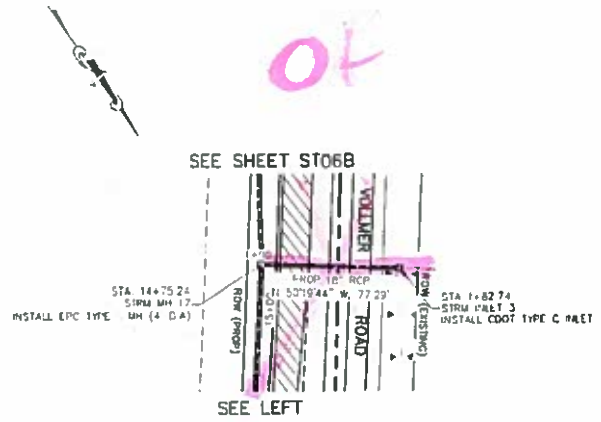
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

STERLING RANCH FILING NO. 1
STORM SEWER PLANS

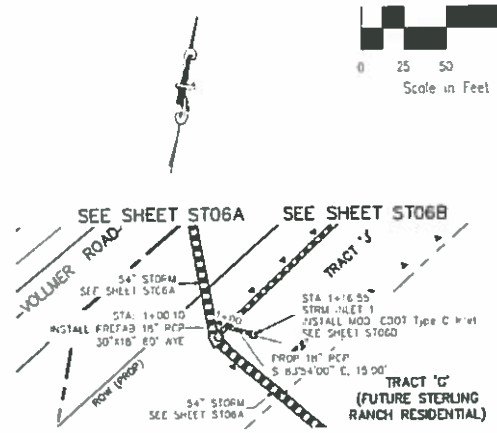
DATE 01/02/2018
SHEET 8 OF 28
ST06B



STORM 14 - STA 14+50.00 TO STA 20+97.71

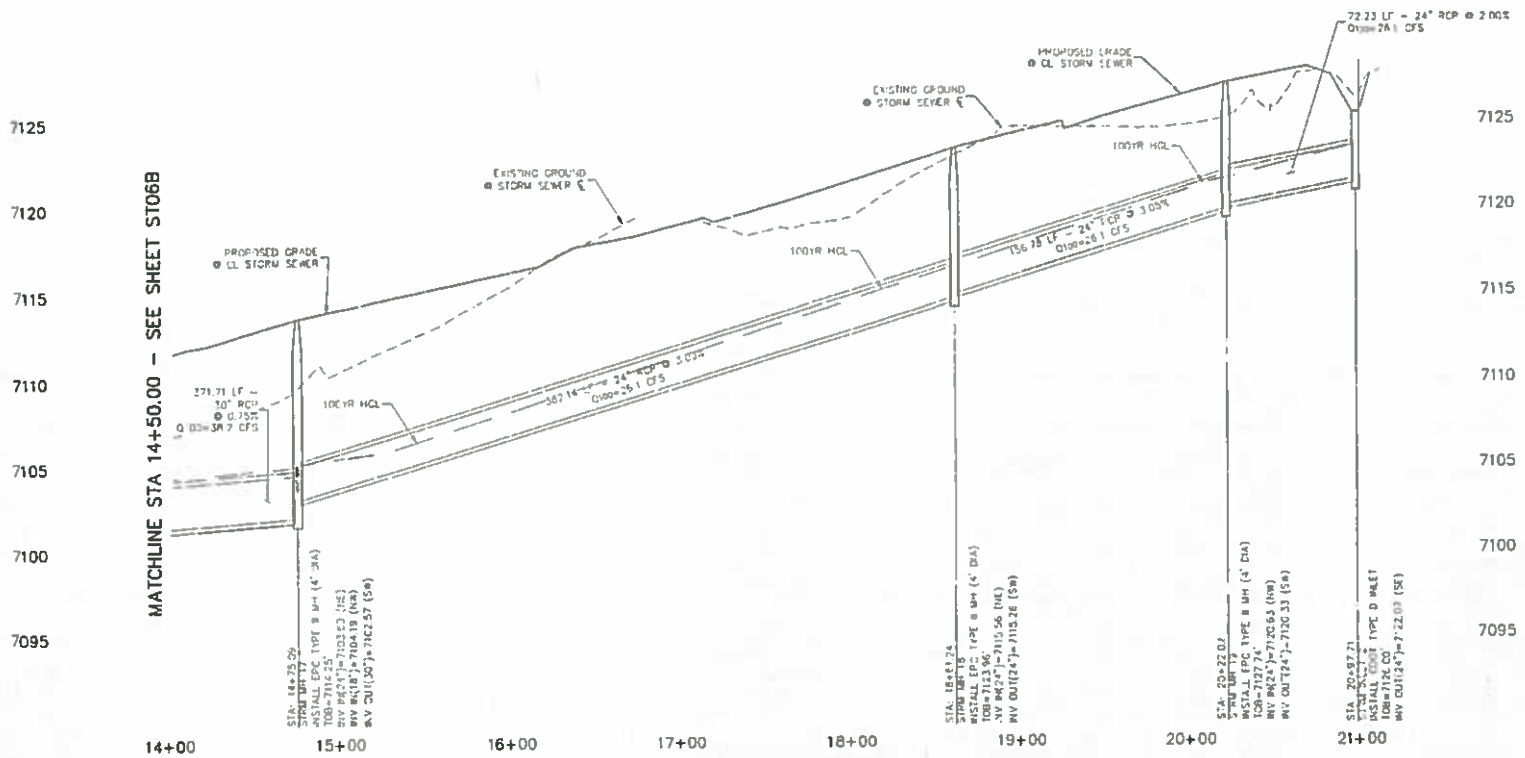


STORM 15 - STA 1+01.99 TO STA 1+82.74

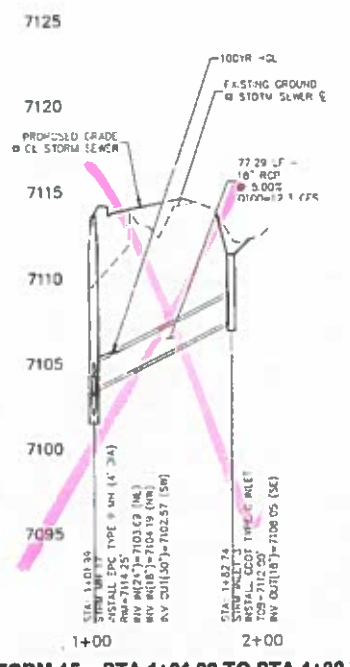


STORM 16 - STA 1+00.10 TO STA 1+16.55

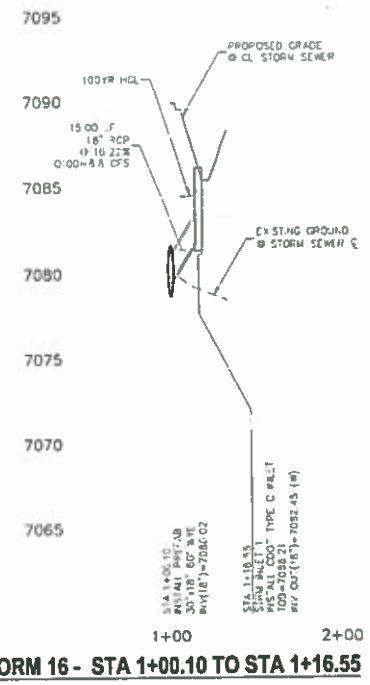
NOTE:
ALL MANHOLE LIDS ON STORM 14 SHALL LOCKABLE AND SHALL BE SECURED.



STORM 14 - STA 14+50.00 TO STA 20+97.71



STORM 15 - STA 1+01.99 TO STA 1+82.74



STORM 16 - STA 1+00.10 TO STA 1+16.55

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

1" = 50'
0 25 50 100
Scale in Feet

STERLING RANCH FILING NO. 1
STORM SEWER PLANS

PROJECT NO. 09-002 | PATH: V:\proj\Const Dwg\Storm - Detail\ST06C.dwg | SCALE: | SHEET 9 OF 28 | ST06C
DESIGNED BY ET | DRAWN BY ELY | CHECKED BY VAS | DATE: 01/02/2018 | HORIZ: 1"=50' | VERT: 1"=5'

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

REVISIONS
NO. | DATE | BY | DESCRIPTION

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE ENGINEER OF RECORD. ALL REVISIONS MUST BE DATED AND SIGNED BY THE PERMITTEE OR AUTHORIZED REPRESENTATIVE.

CAUTION

File: V:\proj\Const Dwg\Storm - Detail\ST06C.dwg Plotstamp: 1/2/2018 2:31 PM

STERLING RANCH FILING NO.2

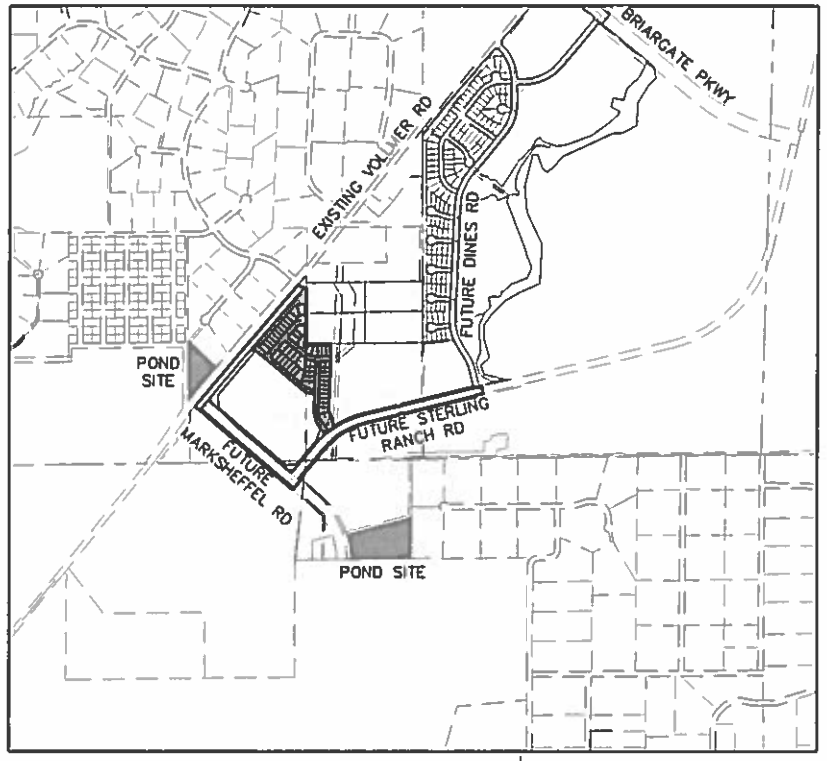
COUNTY OF EL PASO, STATE OF COLORADO

STORM SEWER PLANS

SEPTEMBER 2020

AGENCIES

OWNER/DEVELOPER:	SR LAND, LLC 20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 471-1742
CIVIL ENGINEER:	JR ENGINEERING, LLC 5475 TECH CENTER DRIVE COLORADO SPRINGS, CO 80919 MIKE BRAMLETT P.E. (303) 267-6240
COUNTY ENGINEERING:	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910 JEFF RICE, P.E. (719) 520-6300
TRAFFIC ENGINEERING:	EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922 JENNIFER IRVINE, P.E. (719) 520-6460
WATER RESOURCES:	STERLING RANCH METRO DISTRICT ENGINEERS JDS-HYDRO CONSULTANTS 545 E. PIKES PEAK AVE., SUITE 300 COLORADO SPRINGS, CO 80903 JOHN MCGINN (719) 668-8769
FIRE DISTRICT:	BLACK FOREST FIRE PROTECTION DISTRICT 11445 TEACHOUT ROAD COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300
GAS DEPARTMENT:	COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668-3556
ELECTRIC DEPARTMENT:	MOUNTAIN VIEW ELECTRIC 11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495-2283
COMMUNICATIONS:	QWEST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922-1987 AT&T (LOCATORS) (719) 635-3674
STORMWATER	STORMWATER ENTERPRISE 30 S. NEVADA AVENUE, SUITE 401 COLORADO SPRINGS, CO 80903
COMMUNICATIONS:	QWEST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922-1987 AT&T (LOCATORS) (719) 635-3674
STORMWATER:	STORMWATER ENTERPRISE 30 S. NEVADA AVENUE, SUITE 401 COLORADO SPRINGS, CO 80903 (719) 385-5980
TRAFFIC:	TRAFFIC AND TRANSPORTATION ENGINEERING 30 S. NEVADA AVE. COLORADO SPRINGS, CO 80903 (719)-385-5908
GAS:	STEPHEN BACON SR. ROW AGENT II COLORADO INTERSTATE GAS CO. (KINDER MORGAN) 2 N. NEVADA AVE. COLORADO SPRINGS, CO 80903 719-659-5936
GAS:	CRAIG KORSEY REAL ESTATE	MAGELLAN MIDSTREAM PARTNERS, L.P. ONE WILLIAMS CENTER, OTC-8, TULSA, OK 74172 918-574-7986



VICINITY MAP

SCALE : 1"=1,000'

SHEET INDEX

OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

JAMES F. MORLEY — DATE

SR LAND, LLC
20 BOULDER CRESCENT, SUITE 201
COLORADO SPRINGS, CO 80903

EL PASO COUNTY STATEMENT

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, VOLUMES 1 AND 2, 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. — DATE

COUNTY ENGINEER/ECM ADMINISTRATOR

ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECT 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 PLAN 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.

COLORADO REGISTERED MIKE A. BRAMLETT 32314 PROFESSIONAL ENGINEER

MIKE A. BRAMLETT, P.E. — DATE
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING

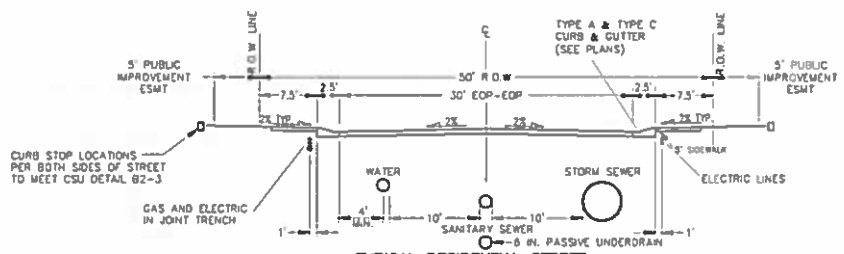
DISTRICT APPROVALS

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE CONSTRUCTION.

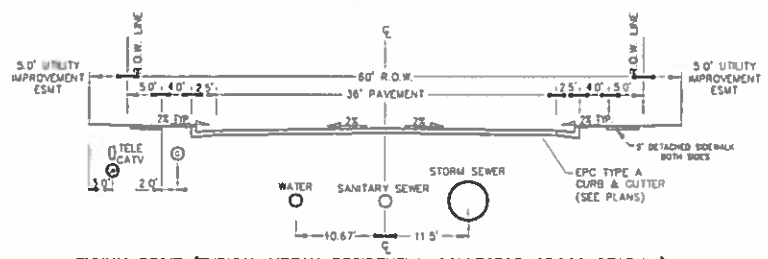
FOR AND ON BEHALF OF THE STERLING RANCH METRO DISTRICT — DATE

BENCHMARKS

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411416.273
   EASTING = 235167.071
   ELEVATION = 7023.42
2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION
   NORTHING = 410095.404
   EASTING = 235052.131
   ELEVATION = 7000.40
3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDIVISION
   NORTHING = 411399.962
   EASTING = 233849.817
   ELEVATION = 7030.82



TYPICAL RESIDENTIAL STREET
SCALE: NTS
DESIGN SPEED: 25 MPH POSTED SPEED: 25 MPH



BYNUM DRIVE (TYPICAL URBAN RESIDENTIAL COLLECTOR CROSS SECTION)
SCALE: NTS

Know what's below. Call before you dig.

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
SUITE 201
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 471-1742

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

NO.	REVISION	BY	DATE

H-SCALE N/A
V-SCALE N/A
DATE 09/01/20
DESIGNED BY RAB
DRAWN BY RAB
CHECKED BY

STERLING RANCH FILING NO.2

FUTURE STORM SEWER PLAN

SHEET 1 OF 25

JOB NO. 25188.01

STANDARD CONSTRUCTION NOTES:

1. 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.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD LOCATION 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).
3. 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 TIME INCLUDING THE FOLLOWING:
   3.1 EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
   3.2 CITY OF COLORADO SPRINGS/EL PASO COUNTY ENGINEERING CRITERA MANUAL VOLUMES 1 AND 2.
   3.3 COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARDS SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.
   3.4 CDOT M&S STANDARDS.
4. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ACCURACY SHOW EXISTING CONDITION BOTH ONSITE AND OFFSITE ON THE CONSTRUCTION PLANS. ANY MODIFICATION NECESSARY DUE TO CONFLICT OMISSIONS OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPERS RESPONSIBILITY TO RECTIFY.
5. IT IS THE CONTRACTORS 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 STORM WATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, US ARMY CORPS OF ENGINEER ISSUED 401 AND/OR 404 PERMITS AND COUNTY AND STATE FUGITIVE DUST PERMITS.
6. ANY TEMPORARY SIGNAGE AND STRIPING SHALL COMPLY WITH EL PASO COUNTY PCD AND MUTCD CRITERIA.
7. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DOT INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
8. 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 OFFSITE DISTURBANCE GRADING, OR CONSTRUCTION.

STORM SEWER GENERAL NOTES

1. ALL STATIONING IS ALONG STORM SEWER CENTERLINE UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE INVERT UNLESS OTHERWISE INDICATED.
2. ALL STORM SEWER BENDS AND WYES SHOWN ON THE PLAN SHALL BE PREFABRICATED.
3. HORIZONTAL AND VERTICAL BENDS ARE INDICATED ON THE PLANS.
4. JOINTS SHALL BE IN ACCORDANCE WITH ASTM C443 "STANDARD SPECIFICATIONS FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKET." IN NO CASE SHALL THE MAXIMUM JOINT OPENING FOR STRAIGHT ALIGNMENT EXCEED 1 INCH OR ONE AND ONE-HALF INCH ON CURVED ALIGNMENT.
5. INLET DIMENSIONS SHOWN ON PLANS REFER TO DISTANCES FROM INSIDE FACES OF BOX BETWEEN THE WIDTHS AND LENGTHS.
6. MANHOLE WIDTHS AND LENGTHS SHOWN ON PLAN REFER TO THE EXTERIOR WALL DIMENSIONS.
7. ALL STORM SEWER SHALL BE A MINIMUM OF CLASS III REINFORCED CONCRETE PIPE. SPECIFIC SEGMENTS OF STORM SEWER SHALL BE REQUIRED TO BE CONSTRUCTED OF A MINIMUM OF 5000 PSI CONCRETE DUE TO EXCESSIVE VELOCITIES. REFER TO ADDITIONAL NOTES WITHIN CONSTRUCTION PLANS.
8. SINCE ALL PIPE ENTRIES INTO THE BASE ARE VARIABLE, THE DIMENSIONS SHOWN ARE TYPICAL. ACTUAL DIMENSIONS AND QUANTITIES FOR CONCRETE AND REINFORCEMENT SHALL BE AS REQUIRED IN THE WORK.
9. THE MH RING (FRAME) SHALL BE SET IN A BED OF GROUT. THE FRAME SHALL BE SURROUNDED WITH A GROUT IN UNPAVED AREA, OR A CONCRETE COLLAR IN PAVED AREA.
10. PRECAST MANHOLES AND REINFORCEMENT SHALL CONFORM TO ASTM C 478 (AASHTO M 199).
11. CAST IN PLACE MANHOLES SHALL BE CLASS B CONCRETE.
12. STEPS SHALL BE REQUIRED WHEN THE MANHOLE DEPTH EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE WITH AASHTO M 199.
13. ALL REINFORCING STEEL SHALL HAVE A MINIMUM YIELD STRENGTH OF 60,000 PSI. VERTICAL STEEL SHALL BE PLACED AT ℄ OF WALL. ALL BARS SHALL HAVE A 2" MINIMUM CLEARANCE.
14. FLOW CHANNELS AND INVERTS SHALL BE FORMED BY SHAPING WITH CLASS B CONCRETE OR APPROVED GROUT.
15. STUB-OUTS SHALL EXTEND 4 FT MINIMUM BEYOND OUTSIDE WALL SURFACE OF MANHOLE AND BE SATISFACTORILY PLUGGED.
16. CHECK WITH THE LOCAL GOVERNMENT AUTHORITY FOR ANY ADDITIONAL STORM SEWER SPECIFICATIONS, DETAILS, OR REGULATIONS.
17. THE SLOPE OF THE MANHOLE COVER SHALL MATCH THE ROADWAY PROFILE AND CROSS SLOPE.
18. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ALL PREFABRICATED STRUCTURES TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

SOIL RIPRAP NOTES:

1. THE SOIL MATERIAL SHALL BE NATIVE OR TOPSOIL AND MIXED WITH SIXTY FIVE PERCENT (65%) RIPRAP AND THIRTY FIVE PERCENT (35%) SOIL BY VOLUME.
2. SOIL RIPRAP SHALL CONSIST OF A UNIFORM MIXTURE OF SOIL AND RIPRAP WITHOUT VOIDS.
3. CONTRACTOR SHALL COOPERATE WITH ENGINEER IN OBTAINING AND PROVIDED SAMPLES OF ALL SPECIFIED MATERIALS.
4. CONTRACTOR SHALL SUBMIT CERTIFIED LABORATORY TEST CERTIFICATES FOR ALL ITEMS REQUIRED FOR SOIL RIPRAP.
5. RIPRAP USED SHALL BE THE TYPE DESIGNATED ON THE DRAWINGS AND SHALL CONFORM TO TABLE SHOWN TO THE RIGHT.
6. THE RIPRAP DESIGNATION AND TOTAL THICKNESS OF RIPRAP SHALL BE AS SHOWN ON THE DRAWINGS. THE MAXIMUM STONE SIZE SHALL NOT LARGER THAN THE THICKNESS OF THE RIPRAP.
7. NEITHER WIDTH NOR THICKNESS OF A SINGLE STONE OF RIPRAP SHALL BE LESS THAN ONE-THIRD (⅓) OF ITS LENGTH
8. THE SPECIFIC GRAVITY OF THE RIPRAP SHALL BE TWO AND ONE-HALF (2.5) OR GREATER
9. MINIMUM DENSITY FOR ACCEPTABLE RIPRAP SHALL BE ONE HUNDRED AND SIXTY FIVE (165) POUNDS PER CUBIC FOOT.
10. RIPRAP SPECIFIC GRAVITY SHALL BE ACCORDING TO THE BULK-SATURATED, SURFACE-DRY BASIS, IN ACCORDANCE WITH AASHTO T85.
11. BROKEN CONCRETE OR ASPHALT PAVEMENT SHALL NOT BE ACCEPTABLE FOR USE IN THE WORK.
12. ROUNDED RIPRAP (RIVER ROCK) IS NOT ACCEPTABLE, UNLESS SPECIFICALLY DESIGNATED ON THE DRAWINGS.

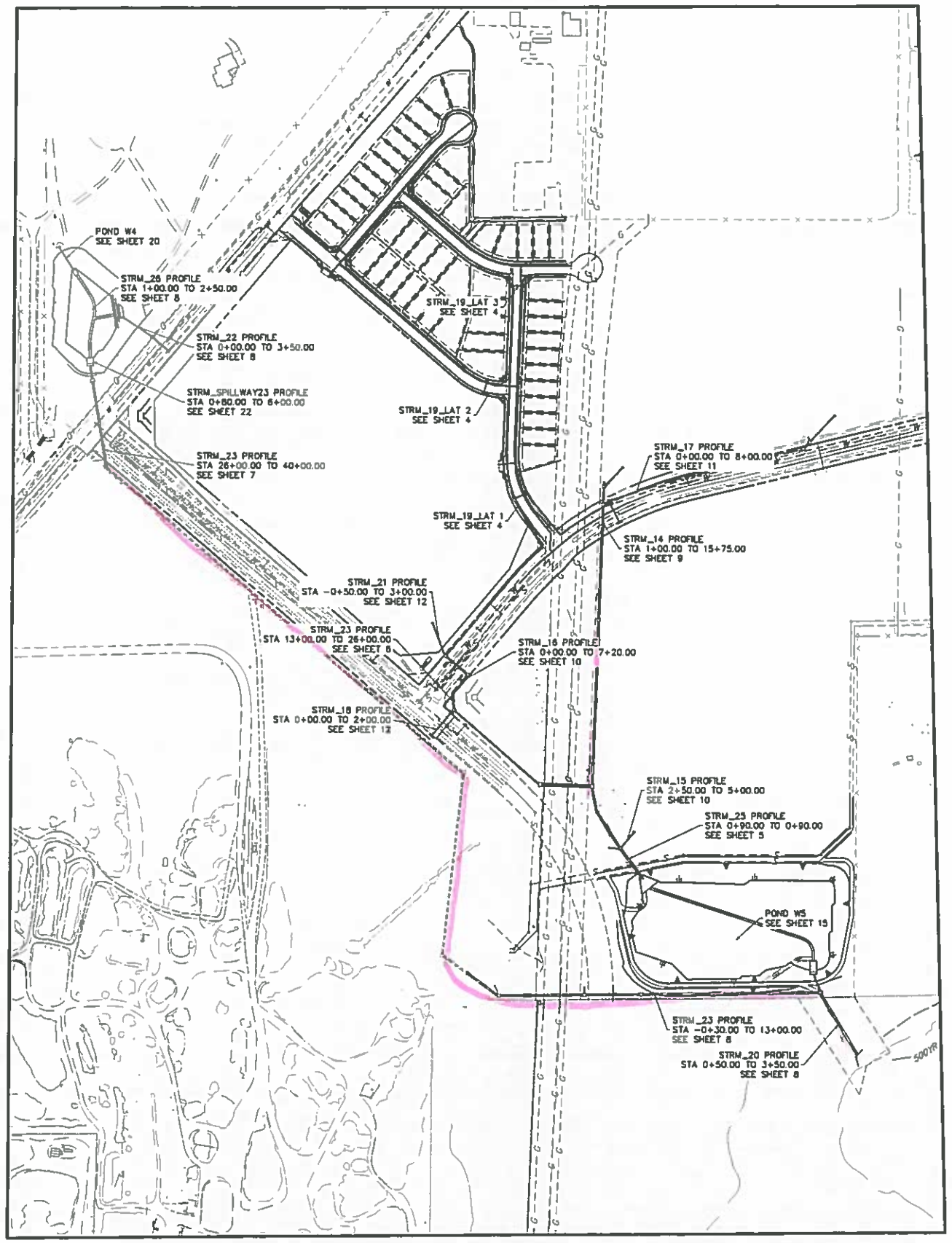
STRUCTURAL CONCRETE NOTES:

1. ALL CONSTRUCTION INVOLVING THE PLACEMENT OF STRUCTURAL CONCRETE SHALL BE COMPLETED IN ACCORDANCE WITH STANDARD SPECIFICATIONS, AND AS SUPPLEMENTED BY THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION.
2. STEEL REINFORCING SHALL BE GRADE 60 FOR ALL REINFORCING STEEL GREATER THAN #4. SPLICING, LAP SPLICING SHALL BE MINIMUM IN THE FOLLOWING TABLE UNLESS OTHERWISE SPECIFIED:

BAR SIZE	#4	#5	#6	#7	#8
SPLICE LENGTH	1'-9"	2'-2"	2'-7"	3'-4"	4'-3"

   ALL REINFORCING SHALL HAVE A 2-INCH MINIMUM COVER UNLESS OTHERWISE SPECIFIED. ALL REINFORCED STEEL TO BE EPOXY COATED.
3. CAST-IN-PLACE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f_c) OF 4,000 PSI AT 28 DAYS. ALL CONCRETE PLACED AGAINST SOIL SHALL BE TYPE II PORTLAND CEMENT. ALL EXPOSED CORNERS SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS OTHERWISE SPECIFIED.
4. EXPANSION JOINT MATERIAL SHALL MEET AASHTO SPECIFICATION M-213.
5. BACKFILL AGAINST STRUCTURES SHALL NOT COMMENCE UNTIL ALL SUPPORTING DIAPHRAGMS ARE IN PLACE AND CONCRETE HAS OBTAINED ITS FULL SEVEN DAY STRENGTH. BACKFILL SHALL BE PLACED EQUALLY ON EACH SIDE OF RETAINING WALL STRUCTURES AND CUTOFF WALLS UNTIL THE FINAL GRADE IS REACHED.
6. FOOTING EXCAVATIONS SHALL BE EXAMINED BY THE GEOTECHNICAL ENGINEER WITH A 24-HOUR MINIMUM NOTIFICATION FOR SOIL AND/OR CONCRETE TESTING. PLACEMENT OF CONCRETE IN THE ABSENCE OF TESTING SHALL BE COMPLETED AT THE SOLE RISK OF THE CONTRACTOR.
7. PRIOR TO THE PLACEMENT OF CONCRETE IN AREAS WHERE SOIL IS PRESENT, THE SOIL SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6-INCHES. THE MOISTURE CONTENT SHALL BE ADJUSTED TO WITHIN PLUS OR MINUS 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT AND RECOMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION (AASHTO-T-180).

ABBREVIATIONS
EC -- EPOXY COATED O.F. -- OUTSIDE FACE E.F. -- EACH FACE E.W. -- EACH WAY I.F. -- INSIDE FACE N.F. -- NEAR FACE
T.O.C. -- TOP OF CONCRETE B.O.C. -- BOTTOM OF CONCRETE CONT. -- CONTINUOUS



ENGINEER'S STATEMENT

STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT

32314

MIKE A. BRAMLETT, P.E. DATE
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, A WESTON COMPANY

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, ENGINEER APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
SUITE 201
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 471-1742

J·R ENGINEERING
A Westion Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

No.	REVISION	BY	DATE

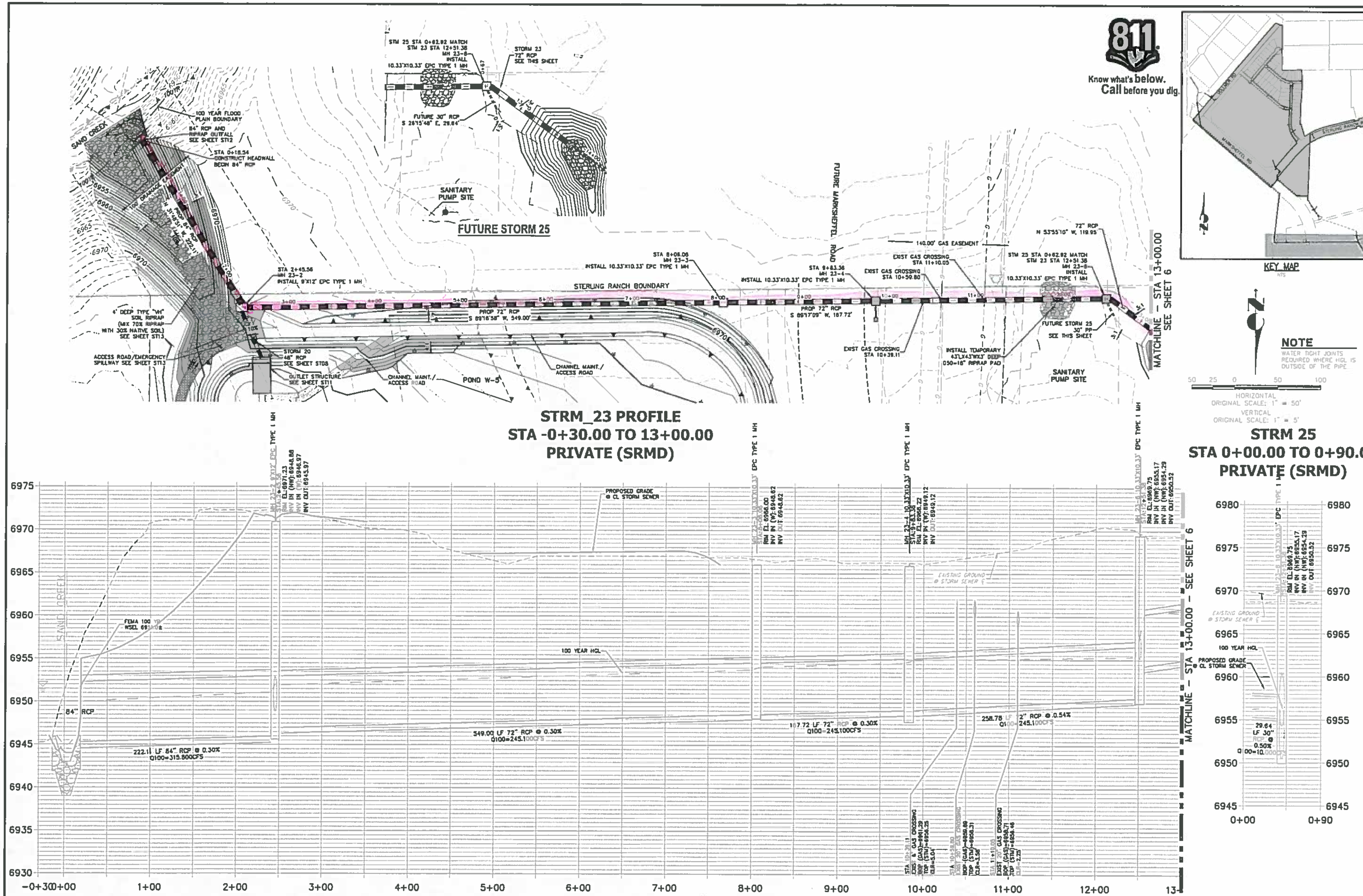
H-SCALE N/A | DESIGNED BY RAB
V-SCALE N/A | DRAWN BY KRW
DATE 09/01/20 | CHECKED BY

STERLING RANCH FILING NO.2

FUTURE STORM SEWER PLAN

SHEET 2 OF 25

JOB NO. 25188.01


SAND CREEK
100 YEAR FLOOD PLAIN BOUNDARY
84" RCP AND RIPRAP OUTFALL SEE SHEET ST12
STA 0+18.54 CONSTRUCT HEADWALL BEGIN 84" RCP
SANITARY PUMP SITE
FUTURE STORM 25
STA 2+45.56 MH 23-2 INSTALL 9'X12' EPC TYPE 1 MH
STERLING RANCH BOUNDARY
STA 8+08.08 MH 23-3 INSTALL 10.33'X10.33' EPC TYPE 1 MH
STA 9+83.38 MH 23-4 INSTALL 10.33'X10.33' EPC TYPE 1 MH
FUTURE MARKSHEFFEL ROAD
140.00' GAS EASEMENT
EXIST GAS CROSSING STA 11+10.05
EXIST GAS CROSSING STA 10+59.80
EXIST GAS CROSSING STA 10+39.11
PROP 72" RCP S 89°16'58" W, 549.00'
PROP 72" RCP S 89°17'09" W, 167.72'
72" RCP N 53°55'10" W, 118.95
STORM 20 48" RCP SEE SHEET ST08
OUTLET STRUCTURE SEE SHEET ST11
CHANNEL MAINT./ ACCESS ROAD
POND W-5
ACCESS ROAD/EMERGENCY SPILLWAY SEE SHEET ST13
INSTALL TEMPORARY 43'LX43'WX3' DEEP D50=18" RIPRAP PAD
FUTURE STORM 25 30" PP SEE THIS SHEET
MATCHLINE - STA 13+00.00 SEE SHEET 6
Know what's below. Call before you dig.
KEY MAP
NOTE
WATER TIGHT JOINTS REQUIRED WHERE HGL IS OUTSIDE OF THE PIPE
HORIZONTAL ORIGINAL SCALE: 1" = 50'
VERTICAL ORIGINAL SCALE: 1" = 5'
STRM_23 PROFILE
STA -0+30.00 TO 13+00.00
PRIVATE (SRMD)
STRM 25
STA 0+00.00 TO 0+90.00
PRIVATE (SRMD)
84" RCP
222.11 LF 84" RCP @ 0.30% Q100=315.800CFS
549.00 LF 72" RCP @ 0.30% Q100=245.100CFS
167.72 LF 72" RCP @ 0.30% Q100=245.100CFS
258.78 LF 72" RCP @ 0.54% Q100=245.100CFS
FEMA 100 YR WSEL 6951±
100 YEAR HGL
PROPOSED GRADE @ CL STORM SEWER
EXISTING GROUND @ STORM SEWER
MH 23-2 9'X12' EPC TYPE 1 MH STA:2+45.56 RIM EL:6971.23 INV IN (NW):6948.88 INV IN (W):6946.97 INV OUT:6945.97
MH 23-3 10.33'X10.33' EPC TYPE 1 MH STA:8+08.08 RIM EL:6966.00 INV IN (W):6948.62 INV OUT:6948.62
MH 23-4 10.33'X10.33' EPC TYPE 1 MH STA:9+83.38 RIM EL:6966.22 INV IN (W):6949.12 INV OUT:6949.12
MH 23-8 10.33'X10.33' EPC TYPE 1 MH STA:12+51.38 RIM EL:6969.75 INV IN (NW):6955.17 INV IN (NW):6954.29 INV OUT:6950.52
STA 10+39.11 EXIST 6" GAS CROSSING BOP (GAS)=6941.29 TOP (STM)=6956.25 CLR=5.04
STA 10+59.80 EXIST 20" GAS CROSSING BOP (GAS)=6959.89 TOP (STM)=6956.31 CLR=3.58
STA 11+10.05 EXIST 20" GAS CROSSING BOP (GAS)=6958.71 TOP (STM)=6956.46 CLR=2.25
29.64 LF 30" RCP @ 0.50% Q100=10.000CFS
MATCHLINE - STA 13+00.00 - SEE SHEET 6

ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION

MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING

H-SCALE	1"=50'
V-SCALE	1"=5'
DATE	09/01/20
DESIGNED BY	RAB
DRAWN BY	KRW
CHECKED BY	

No.	REVISION	BY	DATE

STERLING RANCH FILING NO.2

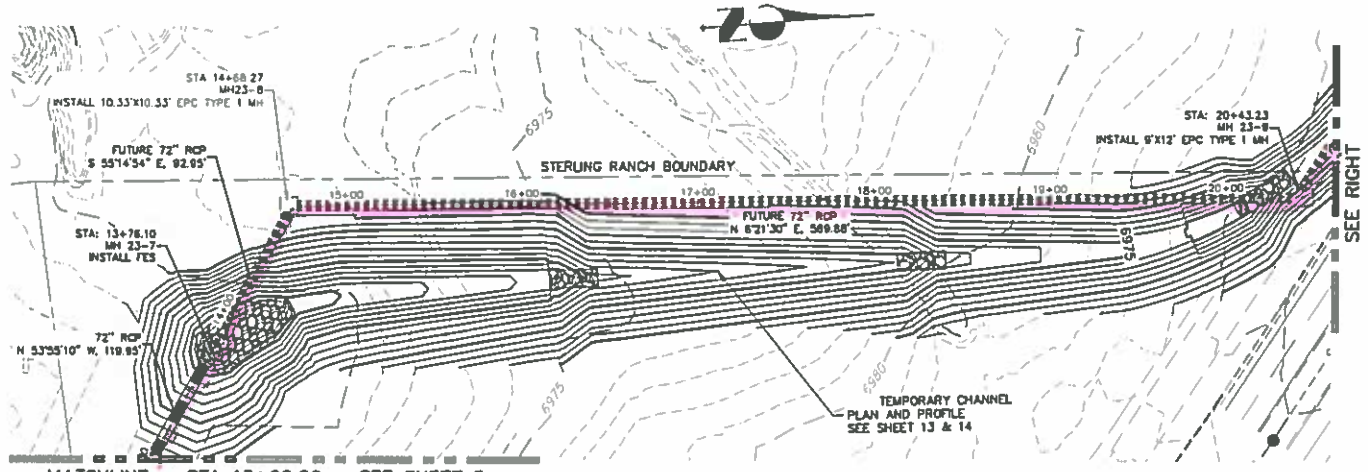
FUTURE STORM SEWER PLAN

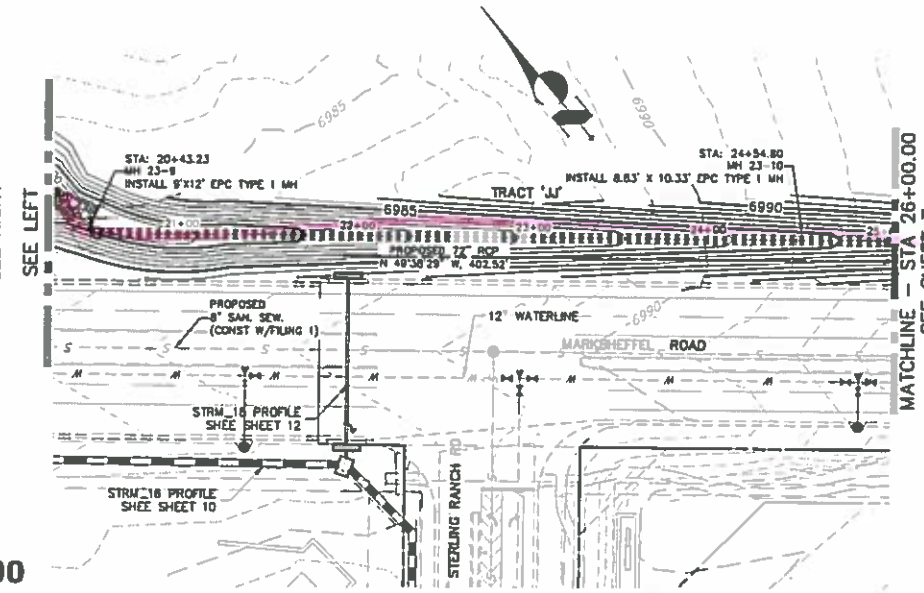
SHEET 5 OF 25

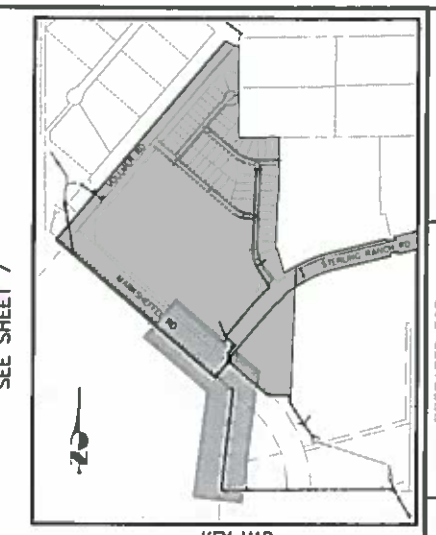
JOB NO. 25188.01

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

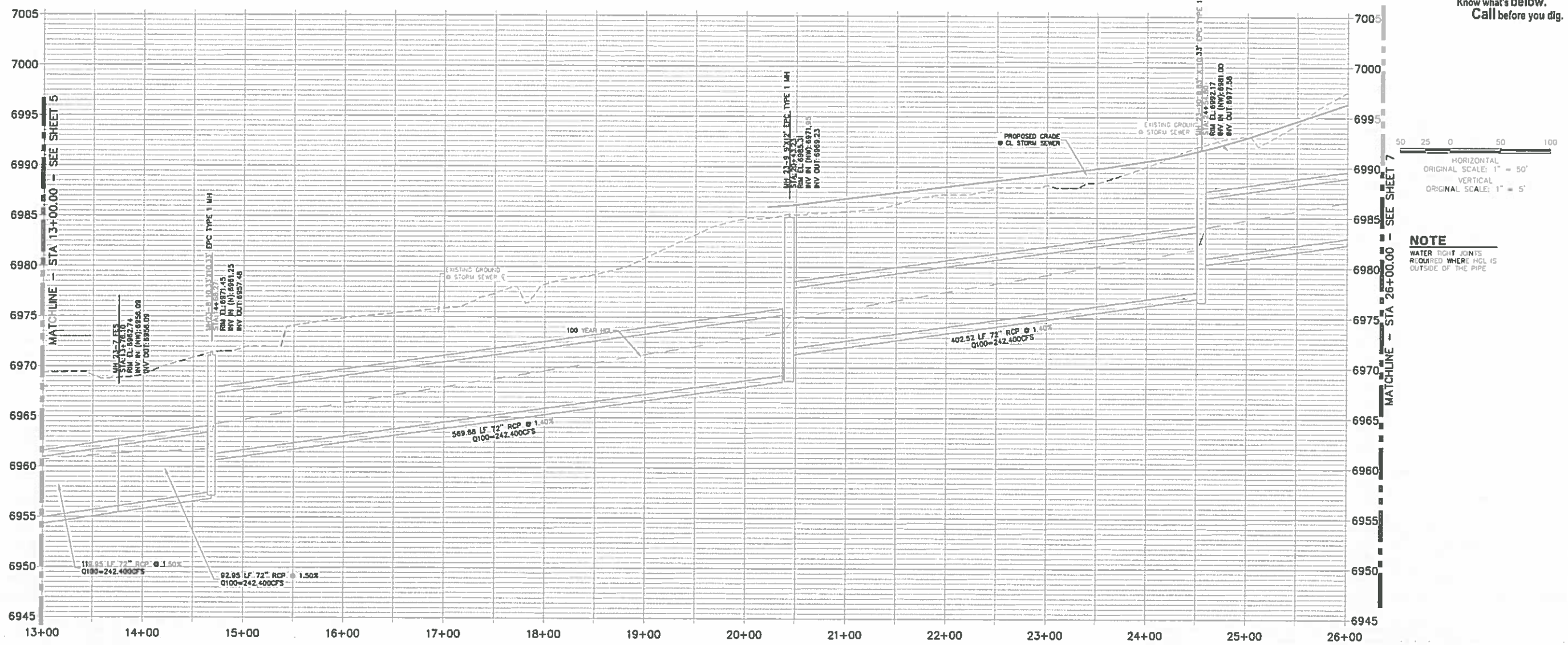
PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
SUITE 201
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 471-1742







STRM_23 PROFILE
STA 13+00.00 TO 26+00.00
PRIVATE (SRMD)



50 25 0 50 100
HORIZONTAL
ORIGINAL SCALE: 1" = 50'
VERTICAL
ORIGINAL SCALE: 1" = 5'

NOTE
WATER TIGHT JOINTS REQUIRED WHERE HGL IS OUTSIDE OF THE PIPE

ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION

MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, LLC

DATE

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
SUITE 201
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 471-1742

J.R. ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

811 Know what's below. Call before you dig.

NO.	REVISION	BY	DATE

H-SCALE	1"=50'
V-SCALE	1"=5'
DATE	09/01/20
DESIGNED BY	RAB
DRAWN BY	KRW
CHECKED BY	

STERLING RANCH FILING NO.2

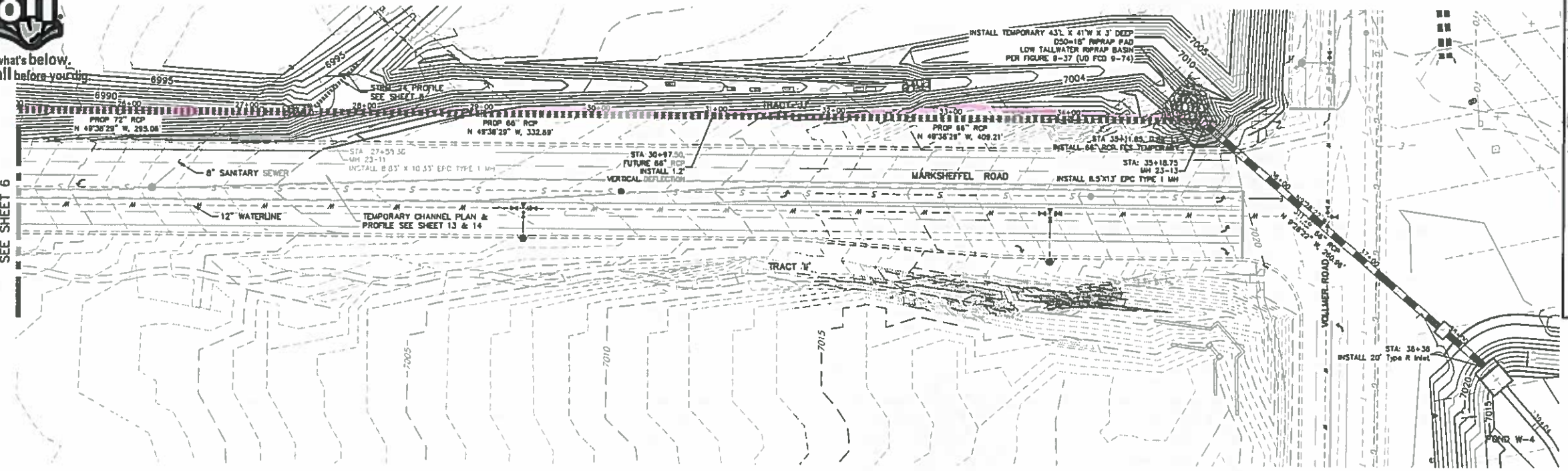
FUTURE STORM SEWER PLAN

SHEET 6 OF 25

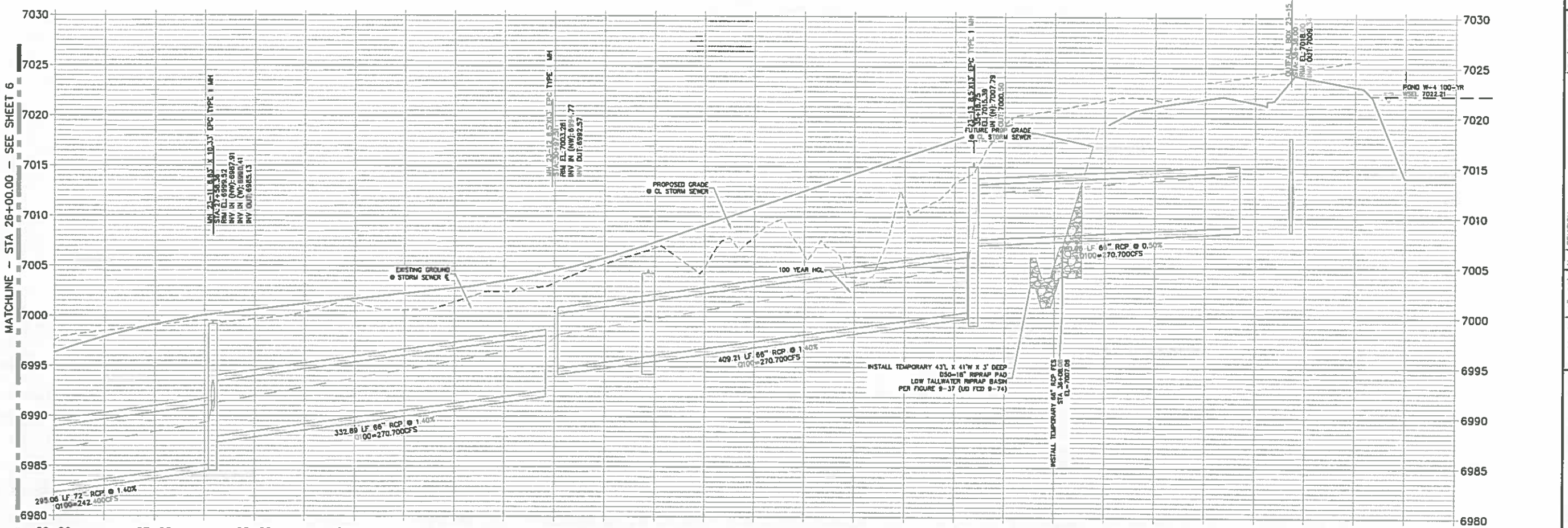
JOB NO. 25188.01

811 Know what's below. Call before you dig.

MATCHLINE – STA 26+00.00 SEE SHEET 6



STRM_23 PROFILE
STA 26+00.00 TO 40+00.00



NOTE
WATER TIGHT JOINTS REQUIRED WHERE HGL IS OUTSIDE OF THE PIPE.

ENGINEER'S STATEMENT
PREPARED UNDER MY DIRECT SUPERVISION

COLORADO REGISTERED PROFESSIONAL ENGINEER
MIKE A. BRAMLETT
32314
SPECIAL ENGINEER

MIKE A. BRAMLETT, P.E. DATE
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING

UNTIL SUCH TIME AS THESE DRAWINGS ARE FORMALLY APPROVED BY APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
SUITE 201
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 471-1742

J.R. ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengrcom.com

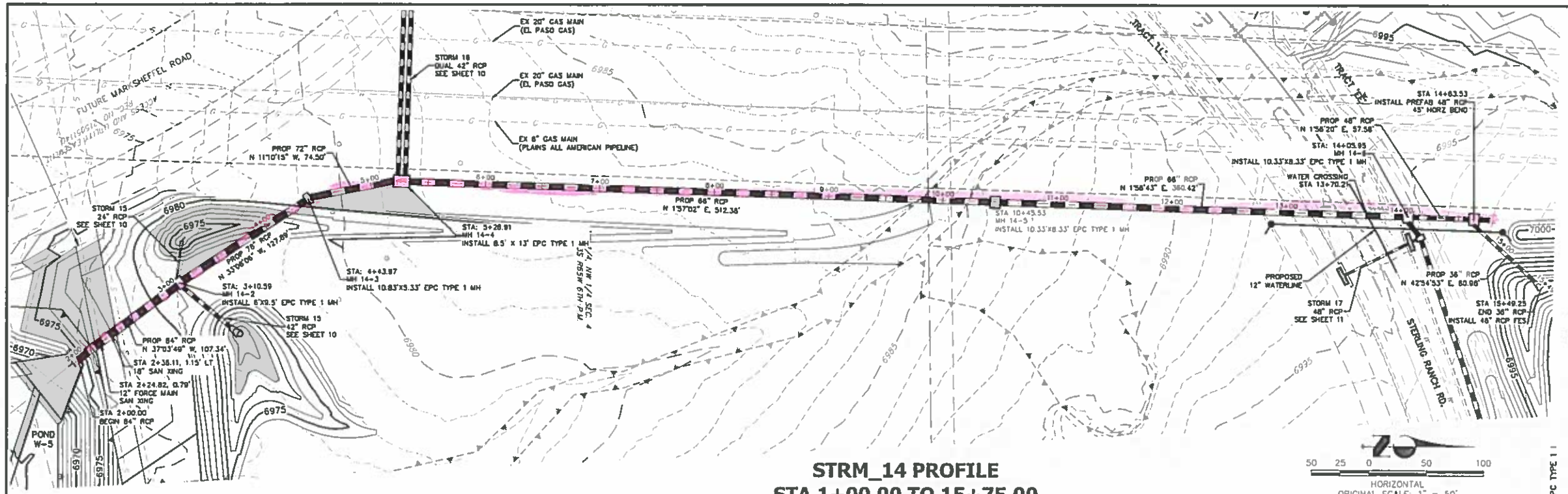
No.	REVISION	BY	DATE

H-SCALE 1"=50'
V-SCALE 1"=5'
DATE 09/01/20
DESIGNED BY RAB
DRAWN BY KRW
CHECKED BY

STERLING RANCH FILING NO.2

FUTURE STORM SEWER PLAN

SHEET 7 OF 25
JOB NO. 25188.01

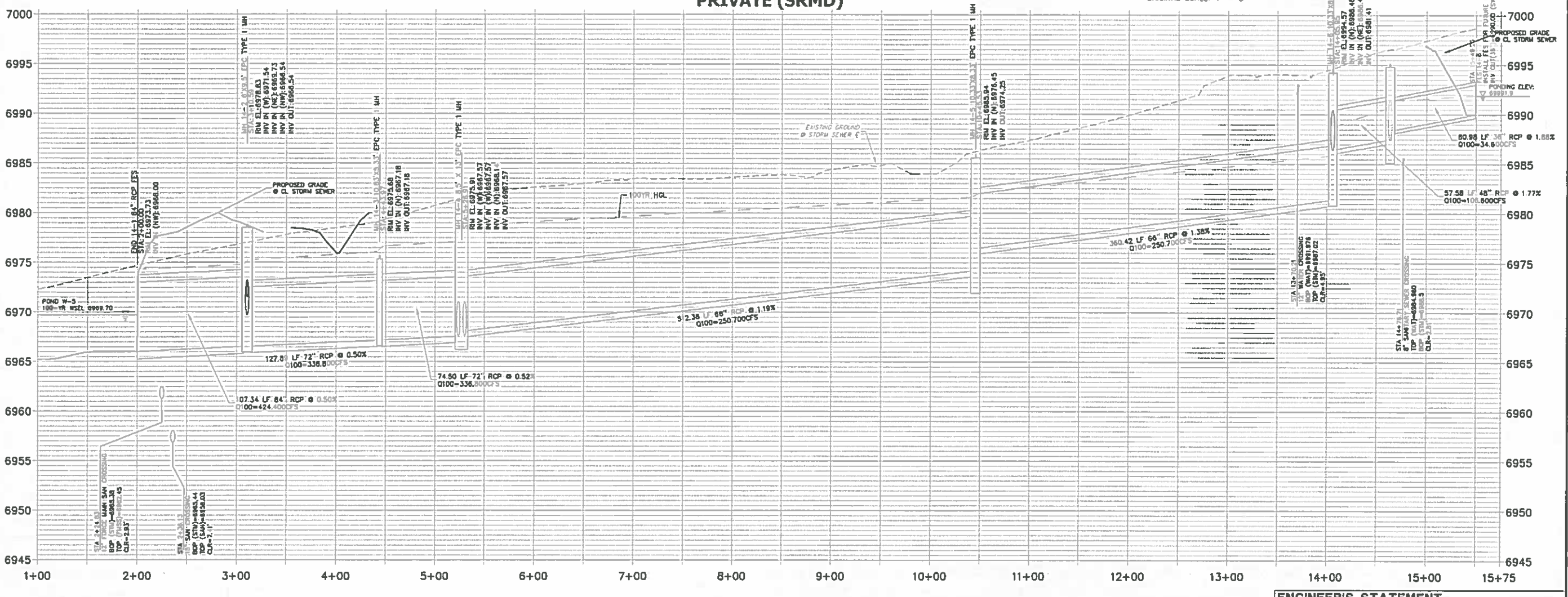


NOTE
WATER TIGHT JOINTS REQUIRED WHERE HOLES OUTSIDE OF THE PIPE.

811 Know what's below. Call before you dig.

50 25 0 50 100
HORIZONTAL ORIGINAL SCALE: 1" = 50'
VERTICAL ORIGINAL SCALE: 1" = 5'

STRM_14 PROFILE
STA 1+00.00 TO 15+75.00
PRIVATE (SRMD)



ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE

32314

MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, LLC/A

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE PERMITTING AGENCIES, JR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
SUITE 201
COLORADO SPRINGS, CO 80903
JAMES F MORLEY
(719) 471-1742

J.R. ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

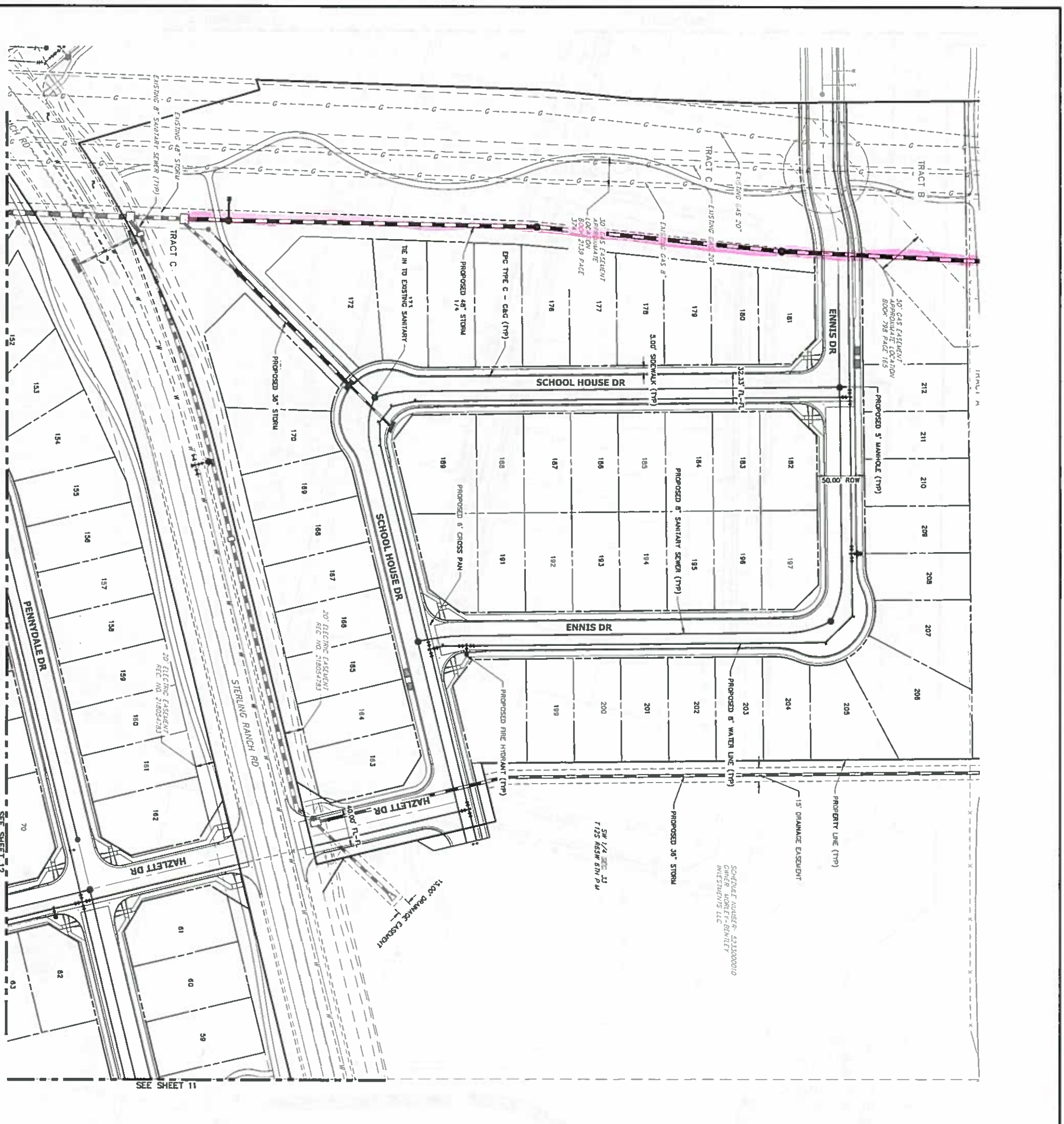
No.	REVISION	BY	DATE

H-SCALE 1"=50'
V-SCALE 1"=5'
DATE 09/01/20
DESIGNED BY RAB
DRAWN BY KRW
CHECKED BY

STERLING RANCH FILING NO.2

FUTURE STORM SEWER PLAN

SHEET 9 OF 25
JOB NO. 25188.01



Know what's below. Call before you dig. 811

50 25 0 50 100
ORIGINAL SCALE: 1" = 50'

KEY MAP
SCALE: NTS

JOB NO. 25188.02	SHEET 10 OF 17

STERLING RANCH PHASE 2

PRELIMINARY UTILITY PLAN

H-SCALE	1"=50'
V-SCALE	N/A
DATE	10/01/20
DESIGNED BY	JRM
DRAWN BY	JRM
CHECKED BY	

No.	REVISION	BY	DATE

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
SUITE 201
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 471-1742

Appendix F
Back up to Sterling Ranch Drainage and Bridge Fees Paid to Date Estimate

STERLING RANCH FILING NO. 1 - TRACTS AND RIGHT-OF-WAY - DRAINAGE & BRIDGE FEES

TRACT	SIZE/ACRE	USE	MAINTENANCE	OWNERSHIP	% Impervious	DRAINAGE FEE	FEE	BRIDGE FEE	FEE
A	0.112	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 35.21	$ 4,762	$ 10.67
B	0.987	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY/TIER IV TRAIL	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 310.31	$ 4,762	$ 94.00
C	14.816	FUTURE COMMERCIAL PAD SITES/TIER IV TRAIL	SR LAND, LLC	SR LAND, LLC	N/A				
D	14.785	OPEN SPACE/FLOODPLAIN/TIER 1 TRAIL	SRMD #1/EPC	SRMD #1/EPC	5.0%	$ 15,720	$ 11,621.01	$ 4,762	$ 3,520.31
E	29.658	FUTURE SINGLE FAMILY LOTS	SR LAND, LLC	SR LAND, LLC	N/A				
F	3.987	OPEN SPACE/DRAINAGE POND/FLOODPLAIN/PUB. IMPROVEMENTS/PUB. UTILITY/TIER 1 TRAIL	SRMD #1	SRMD #1	50.0%	$ 15,720	$ 31,337.82	$ 4,762	$ 9,493.05
G	19.607	FUTURE SINGLE FAMILY LOTS	SR LAND, LLC	SR LAND, LLC	N/A				
H	0.329	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	35.0%	$ 15,720	$ 1,810.16	$ 4,762	$ 548.34
I	0.063	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 19.81	$ 4,762	$ 6.00
J	1.727	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 542.97	$ 4,762	$ 164.48
K	18.887	FUTURE SINGLE FAMILY LOTS	SR LAND, LLC	SR LAND, LLC	N/A				
L	2.734	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY/TRAIL	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 859.57	$ 4,762	$ 260.39
M	0.168	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY/TRAIL	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 52.82	$ 4,762	$ 16.00
N	0.075	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 23.58	$ 4,762	$ 7.14
O	0.153	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 48.10	$ 4,762	$ 14.57
P	0.057	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 17.92	$ 4,762	$ 5.43
Q	0.051	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 16.03	$ 4,762	$ 4.86
R	0.064	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 20.12	$ 4,762	$ 6.10
S	0.064	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 20.12	$ 4,762	$ 6.10
T	0.057	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 17.92	$ 4,762	$ 5.43
U	0.031	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 9.75	$ 4,762	$ 2.95
V	0.052	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 16.35	$ 4,762	$ 4.95
W	0.064	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 20.12	$ 4,762	$ 6.10
X	0.064	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 20.12	$ 4,762	$ 6.10
Y	0.051	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 16.03	$ 4,762	$ 4.86
Z	0.027	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 8.49	$ 4,762	$ 2.57
AA	0.181	LANDSCAPE/PUB. IMPROVEMENTS/PUB. UTILITY	SRMD #1	SRMD #1	2.0%	$ 15,720	$ 56.91	$ 4,762	$ 17.24
BB	10.545	FUTURE SINGLE FAMILY LOTS	SR LAND, LLC	SR LAND, LLC	N/A				
CC	2.727	OPEN SPACE/DRAINAGE POND/PARK/PUB. IMPROVEMENTS/PUB. UTILITY/T	SRMD #1	SRMD #1	5.0%	$ 15,720	$ 2,143.42	$ 4,762	$ 649.30
R.O.W.	12.256	ROAD RIGHTS OF WAY	EPC	EPC	95.0%	$ 15,720	$ 183,031.10	$ 4,762	$ 55,444.92
	134.379	TOTAL AREA			TOTAL FEES		$ 232,075.77		$ 70,301.83

STERLING RANCH FILING NO. 1

A PORTION OF THE SOUTH ONE-HALF OF SECTION 28 AND A PORTION OF SECTION 33,
TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN,
COUNTY OF EL PASO, STATE OF COLORADO

14151

BE IT KNOWN BY THESE PRESENTS:

THAT SR LAND, LLC, AND SR COMMERCIAL, LLC, BEING THE OWNERS OF THE FOLLOWING DESCRIBED TRACT OF LAND TO WIT:

LEGAL DESCRIPTION:

A TRACT OF LAND LOCATED IN A PORTION OF THE SOUTH ONE-HALF (S1/2) OF SECTION 28 AND A PORTION OF SECTION 33, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, STATE OF COLORADO, AND BEING MORE PARTICULAR DESCRIBED AS FOLLOWS:

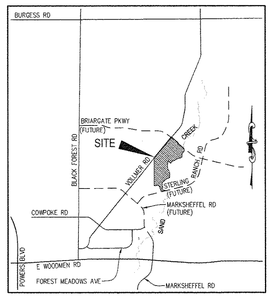
BASIS OF BEARINGS: THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW1/4) OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N 89°14'14" E, A DISTANCE OF 2,722.56 FEET.

COMMENCING AT SAID SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) OF SAID SECTION 34; THENCE N 46°19'08" W, A DISTANCE OF 5321.79 FEET TO THE POINT OF INTERSECTION OF THE SOUTHEASTERLY RIGHT-OF- WAY LINE OF VOLLMER ROAD WITH THE WEST LINE OF THE EAST ONE-HALF OF THE NORTHWEST ONE-QUARTER OF SAID SECTION 33 SAID POINT BEING THE POINT OF BEGINNING OF THE TRACT OF LAND HEREIN DESCRIBED;

THENCE N 39°33'48" E ON SAID SOUTHEASTERLY RIGHT-OF-WAY LINE OF VOLLMER ROAD, A DISTANCE OF 2355.81 FEET;

THENCE S 50°26'12"E. , A DISTANCE OF 810.00 FEET;
THENCE S 39°33'48" W, A DISTANCE OF 130.00 FEET;
THENCE S 50°26'12" E, A DISTANCE OF 766.13 FEET;
THENCE S 39°33'48" W, A DISTANCE OF 15.00 FEET;
THENCE S 14°40'14" E, A DISTANCE OF 112.26 FEET;
THENCE S 42°37'17" W, A DISTANCE OF 138.57 FEET;
THENCE S 31°50'18" W, A DISTANCE OF 229.19 FEET;
THENCE S 00°14'13" W, A DISTANCE OF 243.48 FEET;
THENCE S 59°31'52" W, A DISTANCE OF 178.71 FEET;
THENCE S 87°30'37" W, A DISTANCE OF 117.08 FEET;
THENCE S 65°02'48" W, A DISTANCE OF 632.56 FEET;
THENCE S 40°27'16" W, A DISTANCE OF 150.60 FEET;
THENCE S 50°58'40" W, A DISTANCE OF 94.24 FEET;
THENCE N 50°40'25" W, A DISTANCE OF 72.52 FEET;
THENCE N 19°39'33" W, A DISTANCE OF 163.51 FEET;
THENCE N 88°53'18" W, A DISTANCE OF 56.14 FEET;
THENCE S 13°28'59" W, A DISTANCE OF 371.46 FEET;
THENCE S 04°22'24" E, A DISTANCE OF 296.69 FEET;
THENCE S 26°06'12" E, A DISTANCE OF 393.42 FEET;
THENCE S 02°44'27" W, A DISTANCE OF 452.46 FEET;
THENCE S 65°39'18" W, A DISTANCE OF 252.42 FEET;
THENCE S 60°18'33" W, A DISTANCE OF 166.84 FEET;
THENCE S 46°04'45" W, A DISTANCE OF 252.38 FEET;
THENCE S 35°47'33" W, A DISTANCE OF 139.61 FEET;
THENCE S 00°53'19" E, A DISTANCE OF 131.63 FEET;
THENCE S 15°27'56" E, A DISTANCE OF 241.77 FEET;
THENCE S 46°52'24" W, A DISTANCE OF 128.28 FEET;
THENCE S 17°53'47" E, A DISTANCE OF 105.91 FEET;
THENCE S 76°13'42" E, A DISTANCE OF 278.31 FEET;
THENCE S 76°19'20" W, A DISTANCE OF 391.51 FEET;
THENCE N 13°40'40" W, A DISTANCE OF 218.90 FEET TO A POINT OF CURVE;
THENCE ALONG THE ARC OF A 420.00 FOOT RADIUS CURVE TO THE LEFT, THROUGH A CENTRAL ANGLE OF 18°23'00", AN ARC LENGTH OF 134.76 FEET (THE LONG CHORD OF WHICH BEARS N 22°52'10" W, A LONG CHORD DISTANCE OF 134.18 FEET);
THENCE N 32°03'40" W, 152.06 FEET TO A POINT OF CURVE;
THENCE ALONG THE ARC OF A 595.00 FOOT RADIUS CURVE TO THE RIGHT, THROUGH A CENTRAL ANGLE OF 8°11'54" (THE LONG CHORD OF WHICH BEARS N 27°57'43", A LONG CHORD DISTANCE OF 85.07 FEET);
THENCE S 83°22'30" W, A DISTANCE OF 194.64 FEET;
THENCE S 80°21'06" W, A DISTANCE OF 59.99 FEET;
THENCE S 85°53'10" W, A DISTANCE OF 59.92 FEET;
THENCE S 85°09'36" W, A DISTANCE OF 54.23 FEET;
THENCE N 04°50'24" W, A DISTANCE OF 20.00 FEET TO A POINT ON SAID WEST LINE OF THE EAST ONE-HALF OF THE WEST ONE-HALF OF SAID SECTION 33;
THENCE N 00°07'25" W ALONG SAID WEST LINE, A DISTANCE OF 2414.11 FEET TO THE POINT OF BEGINNING;

SAID TRACT OF LAND CONTAINS A CALCULATED AREA OF 5,853,541 SQUARE FEET (134.379 ACRES) MORE OR LESS.



VICINITY MAP
N.T.S.

OWNERS CERTIFICATE / DEDICATION STATEMENT:

THE ABOVE OWNERS HAVE CAUSED SAID TRACT OF LAND TO BE SURVEYED AND PLATTED INTO TRACTS, STREETS, AND EASEMENTS AS SHOWN ON THE ACCOMPANYING PLAT, WHICH PLAT IS DRAWN TO A FIXED SCALE AS INDICATED THEREON AND ACCURATELY SETS FORTH THE BOUNDARIES AND DIMENSIONS OF SAID TRACT AND LOCATIONS OF SAID EASEMENTS, AND WHICH TRACT SO PLATTED SHALL BE KNOWN AS STERLING RANCH FILING NO. 1, EL PASO COUNTY, COLORADO.
ALL STREETS HEREBY PLATTED ARE HEREBY DEDICATED TO PUBLIC USE AND SAID OWNER DOES HEREBY PERSONALLY COVENANT AND AGREE THAT ALL PLATTED STREETS WILL BE CONSTRUCTED TO EL PASO COUNTY STANDARDS, AND THAT PROPER DRAINAGE FOR SAME WILL BE PROVIDED AT HIS OWN EXPENSE, ALL TO THE SATISFACTION OF THE BOARD OF COUNTY COMMISSIONERS OF EL PASO COUNTY, COLORADO, AND UPON ACCEPTANCE BY RESOLUTION, ALL STREETS SO DEDICATED WILL BECOME MATTERS OF MAINTENANCE BY EL PASO COUNTY, COLORADO.

THE AFOREMENTIONED, SR LAND, LLC HAS EXECUTED THIS INSTRUMENT THIS 21st DAY OF MAY, 2018, A.D.

BY: James F. Morley

PRINTED NAME: JAMES F. MORLEY

AS: Manager OF SR LAND, LLC

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS THIS 21st DAY OF MAY, 2018, A.D. BY JAMES F. MORLEY AS Manager, OF SR LAND, LLC.

WITNESS MY HAND AND OFFICIAL SEAL:
MY COMMISSION EXPIRES:
NOTARY PUBLIC

ERIC S HOWARD
Notary Public
State of Colorado
Notary ID # 20144021884
My Commission Expires 05-30-2022

THE AFOREMENTIONED, SR COMMERCIAL, LLC HAS EXECUTED THIS INSTRUMENT THIS 21st DAY OF MAY, 2018, A.D.

BY: James F. Morley

PRINTED NAME: JAMES F. MORLEY

AS: Manager OF SR COMMERCIAL, LLC

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS THIS 21st DAY OF MAY, 2018, A.D. BY JAMES F. MORLEY AS Manager, OF SR COMMERCIAL, LLC.

WITNESS MY HAND AND OFFICIAL SEAL:
MY COMMISSION EXPIRES:
NOTARY PUBLIC

ERIC S HOWARD
Notary Public
State of Colorado
Notary ID # 20144021884
My Commission Expires 05-30-2022

ACCEPTANCE CERTIFICATE FOR TRACTS:

THE DEDICATION OF TRACTS A, B, D, F, H, I, J, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AND CC ARE FOR LANDSCAPE PURPOSES, DRAINAGE, FLOODPLAIN, PEDESTRIAN ACCESS, OPEN SPACE, AND UTILITIES PURPOSES AND ARE HEREBY ACCEPTED FOR OWNERSHIP AND MAINTENANCE BY STERLING RANCH METROPOLITAN DISTRICT NO. 1.

BY: James F. Morley

PRINTED NAME: JAMES F. MORLEY

AS: Manager OF STERLING RANCH METROPOLITAN DISTRICT NO. 1

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

ACKNOWLEDGED BEFORE ME THIS THIS 21st DAY OF MAY, 2018, A.D.
BY: JAMES F. MORLEY

PRINTED NAME: JAMES F. MORLEY

AS: Manager OF STERLING RANCH METROPOLITAN DISTRICT NO. 1

WITNESS MY HAND AND OFFICIAL SEAL:
MY COMMISSION EXPIRES: MAY 30, 2022
NOTARY PUBLIC

ERIC S HOWARD
Notary Public
State of Colorado
Notary ID # 20144021884
My Commission Expires 05-30-2022

ACCEPTANCE CERTIFICATE FOR TRACTS:

THE DEDICATION OF TRACT C IS FOR FUTURE COMMERCIAL DEVELOPMENT PURPOSES AND ARE HEREBY ACCEPTED FOR OWNERSHIP AND MAINTENANCE BY SR COMMERCIAL, LLC.

BY: James F. Morley

PRINTED NAME: JAMES F. MORLEY

AS: Manager OF SR COMMERCIAL, LLC

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

ACKNOWLEDGED BEFORE ME THIS THIS 21st DAY OF MAY, 2018, A.D.
BY: James F. Morley JAMES F. MORLEY

PRINTED NAME: JAMES F. MORLEY

AS: Manager OF SR COMMERCIAL, LLC

WITNESS MY HAND AND OFFICIAL SEAL:
MY COMMISSION EXPIRES: MAY 30, 2022
NOTARY PUBLIC

ERIC S HOWARD
Notary Public
State of Colorado
Notary ID # 20144021884
My Commission Expires 05-30-2022

ACCEPTANCE CERTIFICATE FOR TRACTS:

THE DEDICATION OF TRACTS E, G, K, AND BB ARE FOR FUTURE RESIDENTIAL DEVELOPMENT PURPOSES AND ARE HEREBY ACCEPTED FOR OWNERSHIP AND MAINTENANCE BY SR LAND, LLC.

BY: James F. Morley

PRINTED NAME: JAMES F. MORLEY

AS: Manager OF SR LAND, LLC

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

ACKNOWLEDGED BEFORE ME THIS THIS 21st DAY OF MAY, 2018, A.D.
BY: James F. Morley

PRINTED NAME: JAMES F. MORLEY

AS: Manager OF SR LAND, LLC

WITNESS MY HAND AND OFFICIAL SEAL:
MY COMMISSION EXPIRES: MAY 30, 2022
NOTARY PUBLIC

ERIC S HOWARD
Notary Public
State of Colorado
Notary ID # 20144021884
My Commission Expires 05-30-2022

SURVEYOR'S CERTIFICATION:

I, VERNON P. TAYLOR, A DULY LICENSED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THIS PLAT TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE ON DATE OF SURVEY, BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL MONUMENTS EXIST AS SHOWN HEREON: THAT MATHEMATICAL CLOSURE ERRORS ARE LESS THAN 1:10,000; AND THAT SAID PLAT HAS BEEN PREPARED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO DEALING WITH MONUMENTS, SUBDIVISION, OR SURVEYING OF LAND AND ALL APPLICABLE PROVISION OF THE EL PASO COUNTY LAND DEVELOPMENT CODE.

I ATTEST THE ABOVE ON THE 21st DAY OF MAY, 2018.

Vernon P Taylor

VERNON P. TAYLOR
PLS NO. 25966.
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903

COLORADO REGISTERED VERNON P. TAYLOR 25966 PROFESSIONAL LAND SURVEYOR 5/21/18

NOTICE:

ACCORDING TO COLORADO LAW, YOU **MUST** COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

PCD DIRECTOR CERTIFICATE:

THIS PLAT FOR "STERLING RANCH FILING NO. 1" WAS APPROVED FOR FILING BY THE EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT DIRECTOR ON THIS 21 DAY OF MAY, 2018, SUBJECT TO ANY NOTES OR CONDITIONS SPECIFIED HEREON.

DIRECTOR, PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT — 5/21/18 DATE

BOARD OF COUNTY COMMISSIONERS CERTIFICATE:

THIS PLAT FOR "STERLING RANCH FILING NO. 1" WAS APPROVED FOR FILING BY THE EL PASO COUNTY, COLORADO BOARD OF COUNTY COMMISSIONERS ON THIS 13 DAY OF February 2018. SUBJECT TO ANY NOTES SPECIFIED HEREON AND ANY CONDITIONS INCLUDED IN THE RESOLUTION OF APPROVAL. THE DEDICATIONS OF LAND TO THE PUBLIC (STREETS AND EASEMENTS) ARE ACCEPTED, BUT PUBLIC IMPROVEMENTS THEREON WILL NOT BECOME MAINTENANCE RESPONSIBILITY OF EL PASO COUNTY UNTIL PRELIMINARY ACCEPTANCE OF THE PUBLIC IMPROVEMENTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE AND ENGINEERING CRITERIA MANUAL AND THE SUBDIVISION IMPROVEMENTS AGREEMENT.

PRESIDENT, BOARD OF COUNTY COMMISSIONERS — DATE

CLERK AND RECORDER:

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD IN MY OFFICE AT 11:51 O'CLOCK A.M., THIS 30th DAY OF May, 2018, A.D., AND DULY RECORDED UNDER RECEPTION NO. 218714151 OF THE RECORDS OF EL PASO COUNTY, COLORADO.

Fees $10
S.C. $3

BY: Charles D Broerman
CHUCK BROERMAN, EL PASO COUNTY CLERK AND RECORDER

FEES:

DRAINAGE FEE: $232,075.77 Pre-Credit used prior to Drainage Bank
BRIDGE FEE: $70,301.83 Sand Creek
SCHOOL FEE: NONE (NO LOTS)
PARK FEE: NONE (NO LOTS)

SUMMARY:

29 TRACTS	122.020 ACRES	90.80%
RIGHTS-OF-WAY	12.359 ACRES	9.20%
TOTAL	134.379 ACRES	100.00%

FINAL PLAT
STERLING RANCH FILING NO. 1
JOB NO. 09-002
DATE PREPARED: 12/7/2016
DATE REVISED: 05/17/2018

M&S CIVIL CONSULTANTS, INC.
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

SHEET 1 OF 7

File: O:\09002A\Sterling Ranch District\dwg\Survey\Plat\09002-PLAT-SR FIL1.dwg Plotstamp: 5/17/2018 6:10 PM

BRANDING IRON AT STERLING RANCH FILING NO. 1

A REPLAT OF TRACT BB, "STERLING RANCH FILING NO. 1", SAID TRACT BEING A PORTION OF THE E ½ W ½ OF SECTION 33, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO

BE IT KNOWN BY THESE PRESENTS:

THAT SR LAND, LLC, BEING THE OWNER OF THE FOLLOWING DESCRIBED TRACT OF LAND TO WIT:

LEGAL DESCRIPTION:

A REPLAT OF TRACT BB, "STERLING RANCH FILING NO. 1", AS RECORDED UNDER RECEPTION NO. 218714151 IN THE EL PASO COUNTY RECORDS,

SAID TRACT BEING A PORTION OF THE E ½ W ½ OF SECTION 33, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO;

CONTAINING A CALCULATED AREA OF 459,341 SQUARE FEET (10.545 ACRES) MORE OR LESS.

ACCEPTANCE CERTIFICATE FOR TRACTS:

THE DEDICATION OF TRACTS A, B, C, D, E, F, G, H, I, AND J ARE FOR LANDSCAPE PURPOSES, DRAINAGE, PEDESTRIAN ACCESS, OPEN SPACE, AND UTILITIES PURPOSES AND ARE HEREBY ACCEPTED FOR OWNERSHIP AND MAINTENANCE BY STERLING RANCH METROPOLITAN DISTRICT NO. 1.

[signature]

BY JAMES F. MORLEY

AS PRESIDENT OF STERLING RANCH METROPOLITAN DISTRICT NO. 1

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

ACKNOWLEDGED BEFORE ME THIS THIS 12TH DAY OF DECEMBER, 2018, A.D.
BY JAMES F. MORLEY
AS PRESIDENT OF STERLING RANCH METROPOLITAN DISTRICT NO. 1

WITNESS MY HAND AND OFFICIAL SEAL:

MY COMMISSION EXPIRES: MAY 30, 2022

NOTARY PUBLIC [signature]

ERIC S HOWARD
Notary Public
State of Colorado
Notary ID # 20144021886
My Commission Expires 05-30-2022

OWNERS CERTIFICATE/DEDICATION STATEMENT:

THE UNDERSIGNED, BEING ALL THE OWNERS, MORTGAGEES, BENEFICIARIES OF DEEDS OF TRUST AND HOLDERS OF OTHER INTERESTS IN THE LAND DESCRIBED HEREIN, HAVE LAID OUT, SUBDIVIDED, AND PLATTED SAID LANDS INTO LOTS, TRACTS, STREETS, AND EASEMENTS AS SHOWN HEREON UNDER THE NAME AND SUBDIVISION OF "BRANDING IRON AT STERLING RANCH FILING NO. 1". ALL PUBLIC IMPROVEMENTS SO PLATTED ARE HEREBY DEDICATED TO PUBLIC USE AND SAID OWNER DOES HEREBY COVENANT AND AGREE THAT THE PUBLIC IMPROVEMENTS WILL BE CONSTRUCTED TO EL PASO COUNTY STANDARDS AND THAT PROPER DRAINAGE AND EROSION CONTROL FOR SAME WILL BE PROVIDED AT SAID OWNER'S EXPENSE, ALL TO THE SATISFACTION OF THE BOARD OF COUNTY COMMISSIONERS OF EL PASO COUNTY, COLORADO. UPON ACCEPTANCE BY RESOLUTION, ALL PUBLIC IMPROVEMENTS SO DEDICATED WILL BECOME MATTERS OF MAINTENANCE BY EL PASO COUNTY, COLORADO. THE UTILITY EASEMENTS SHOWN HEREON ARE HEREBY DEDICATED FOR PUBLIC UTILITIES AND COMMUNICATION SYSTEMS AND OTHER PURPOSES AS SHOWN HEREON. THE ENTITIES RESPONSIBLE FOR PROVIDING THE SERVICES FOR WHICH THE EASEMENTS ARE ESTABLISHED ARE HEREBY GRANTED THE PERPETUAL RIGHT OF INGRESS AND EGRESS FROM AND TO ADJACENT PROPERTIES FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF UTILITY LINES AND RELATED FACILITIES.

THE AFOREMENTIONED, SR LAND, LLC HAS EXECUTED THIS INSTRUMENT THIS 12TH DAY OF DECEMBER, 2018, A.D.

BY: [signature]

PRINTED NAME: JAMES F. MORLEY

AS: MANAGER OF SR LAND, LLC

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS THIS 12TH DAY OF DECEMBER, 2018, A.D. BY JAMES F. MORLEY AS MANAGER, OF SR LAND, LLC.

WITNESS MY HAND AND OFFICIAL SEAL:
MY COMMISSION EXPIRES: [signature]
NOTARY PUBLIC

ERIC S HOWARD
Notary Public
State of Colorado
Notary ID # 20144021886
My Commission Expires 05-30-2022

PLAT NOTES:

1. BASIS OF BEARINGS:
BEARINGS ARE BASED ON THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW1/4) OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.56 FEET. THE UNITS OF MEASUREMENT IS U.S. SURVEY FEET.

2. FLOODPLAIN STATEMENT:
NO PORTION OF THIS SITE IS LOCATED WITHIN A DESIGNATED FEMA FLOODPLAIN AS DETERMINED BY THE FLOOD INSURANCE RATE MAP, COMMUNITY MAP NUMBER 08041C0535F, EFFECTIVE DATE MARCH 17, 1997.

3. TITLE COMMITMENT:
THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY M&S CIVIL CONSULTANTS. INC., TO TO DETERMINE THE COMPATIBILITY OF THIS DESCRIPTION WITH THAT OF ADJACENT TRACTS OF LAND, OWNERSHIP OR EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHT-OF-WAY OR TITLE OF RECORD, M&S CIVIL CONSULTANTS, INC., RELIED UPON TITLE COMMITMENT FILE NO. SC55074007, PREPARED BY LAND TITLE GUARANTEE COMPANY, REPRESENTING OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, DATED NOVEMBER 30, 2018 AT 5:00 P.M.

4. WATER SERVICE SHALL BE SUPPLIED BY STERLING RANCH METROPOLITAN DISTRICT NO. 1. (RESOLUTION RECORDED UNDER RECEPTION NO. 218134276 OF THE RECORDS OF EL PASO COUNTY.

5. SEWER SERVICE SHALL BE SUPPLIED BY STERLING RANCH METROPOLITAN DISTRICT NO. 1. (RESOLUTION RECORDED UNDER RECEPTION NO. 218134277 OF THE RECORDS OF EL PASO COUNTY.

PLAT NOTES: (CONTINUED)

6. ELECTRIC SERVICE SHAL BE PROVIDED BY MOUNTAIN VIEW ELECTRIC ASSOCIATION.

7. NATURAL GAS SERVICE SHALL BE PROVIDED BY COLORADO SPRINGS UTILITIES.

8. FIRE PROTECTION BY THE BLACK FOREST FIRE PROTECTION DISTRICT.

9. ALL STRUCTURAL FOUNDATIONS SHALL BE LOCATED AND DESIGNED BY A PROFESSIONAL ENGINEER, CURRENTLY LICENSED IN THE STATE OF COLORADO.

10. THE FOLLOWING REPORTS HAVE BEEN SUBMITTED IN ASSOCIATION WITH THE PRELIMINARY PLAN OR FINAL PLAT FOR THIS SUBDIVISION AND ARE ON FILE AT THE COUNTY DEVELOPMENT SERVICES DEPARTMENT: TRANSPORTATION IMPACT STUDY; DRAINAGE REPORT; WATER RESOURCES REPORT; WASTEWATER DISPOSAL REPORT; NATURAL HAZARDS REPORT; GEOLOGY AND SOILS REPORT; WETLAND STUDY/404 PERMIT.

11. ALL PROPERTY OWNERS ARE RESPONSIBLE FOR MAINTAINING PROPER STORM WATER DRAINAGE IN AND THROUGH THEIR PROPERTY. PUBLIC DRAINAGE EASEMENTS AS SPECIFICALLY NOTED ON THE PLAT SHALL BE MAINTAINED BY THE INDIVIDUAL LOT OWNERS UNLESS OTHERWISE INDICATED. STRUCTURES, FENCES, MATERIALS OR LANDSCAPING THAT COULD IMPEDE THE FLOW OF RUNOFF SHALL NOT BE PLACED IN DRAINAGE EASEMENTS.

12. UNLESS OTHERWISE INDICATED, ALL SIDE LOT LINES ARE HEREBY PLATTED ON EITHER SIDE WITH A 5 FOOT PUBLIC UTILITY AND DRAINAGE EASEMENT, EXCEPT WHEN THE SIDE YARD IS ADJACENT TO A PUBLIC STREET AND THEREFORE A 10 FOOT SIDE YARD SHALL BE PLATTED AS A PUBLIC IMPROVEMENT, PUBLIC UTILITY AND DRAINAGE EASEMENT. ALL FRONT LOT LINES ARE HEREBY PLATTED WITH A 10 FOOT PUBLIC IMPROVEMENT, PUBLIC UTILITY AND DRAINAGE EASEMENT, AND ALL REAR LOT LINES ARE HEREBY PLATTED WITH A 10 FOOT PUBLIC UTILITY AND DRAINAGE EASEMENT. ALL EXTERIOR SUBDIVISION BOUNDARIES ARE HEREBY PLATTED WITH A 7 FOOT PUBLIC IMPROVEMENT, PUBLIC UTILITY AND DRAINAGE EASEMENT. EASEMENTS ARE HEREBY PLATTED IN THE LOCATIONS ON SHEET 3 OF THIS PLAT. THE SOLE RESPONSIBILITY FOR THE SURFACE MAINTENANCE OF EASEMENTS IS HEREBY VESTED WITH THE INDIVIDUAL PROPERTY OWNER UNLESS OTHERWISE NOTED.

13. SIDE-LOT DRAINAGE SWALES SHALL BE CONSTRUCTED WHERE NECESSARY AT THE TIME OF HOME CONSTRUCTION.

14. DEVELOPER SHALL COMPLY WITH FEDERAL AND STATE LAWS, REGULATIONS, ORDINANCES, REVIEW AND PERMIT REQUIREMENTS, AND OTHER AGENCY REQUIREMENTS, IF ANY, OF APPLICABLE AGENCIES INCLUDING, BUT NOT LIMITED TO, THE COLORADO DIVISION OF WILDLIFE, COLORADO DEPARTMENT OF TRANSPORTATION, U.S. ARMY CORPS OF ENGINEERS AND THE U.S. FISH AND WILDLIFE SERVICE REGARDING THE ENDANGERED SPECIES ACT, PARTICULARLY AS IT RELATES TO THE LISTED SPECIES.

15. THE ADDRESSES EXHIBITED ON THIS PLAT ARE FOR INFORMATIONAL PURPOSES ONLY. THEY ARE NOT THE LEGAL DESCRIPTION AND ARE SUBJECT TO CHANGE.

16. NO DRIVEWAY SHALL BE ESTABLISHED UNLESS AN ACCESS PERMIT HAS BEEN GRANTED BY EL PASO COUNTY.

17. NO LOT OR INTEREST THEREIN, SHALL BE SOLD, CONVEYED, OR TRANSFERRED WHETHER BY DEED OR BY CONTRACT, NOR SHALL BUILDING PERMITS BE ISSUED, UNTIL AND UNLESS EITHER THE REQUIRED PUBLIC AND COMMON DEVELOPMENT IMPROVEMENTS HAVE BEEN CONSTRUCTED AND COMPLETED AND PRELIMINARILY ACCEPTED IN ACCORDANCE WITH THE SUBDIVISION IMPROVEMENTS AGREEMENT BETWEEN THE APPLICANT/OWNER AND EL PASO COUNTY AS RECORDED UNDER RECEPTION NUMBER 218145998 IN THE OFFICE OF THE CLERK AND RECORDER OF. EL PASO COUNTY, COLORADO OR, IN THE ALTERNATIVE, OTHER COLLATERAL IS PROVIDED TO MAKE PROVISION FOR THE COMPLETION OF SAID IMPROVEMENTS IN ACCORDANCE WITH THE EL PASO COUNTY LAND DEVELOPMENT CODE AND ENGINEERING CRITERIA MANUAL. ANY SUCH ALTERNATIVE COLLATERAL MUST BE APPROVED BY THE BOARD OF COUNTY COMMISSIONERS OR, IF PERMITTED BY THE SUBDIVISION IMPROVEMENTS AGREEMENT, BY THE PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT DIRECTOR AND MEET THE POLICY AND PROCEDURE REQUIREMENTS OF EL PASO COUNTY PRIOR TO THE RELEASE BY THE COUNTY OF ANY LOTS FOR SALE, CONVEYANCE OR TRANSFER.

THIS PLAT RESTRICTION MAY BE REMOVED OR RESCINDED BY THE BOARD OF COUNTY COMMISSIONERS OR, IF PERMITTED BY THE SUBDIVISION IMPROVEMENTS AGREEMENT, BY THE PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT DIRECTOR UPON EITHER APPROVAL OF AN ALTERNATIVE FORM OF COLLATERAL OR COMPLETION AND PRELIMINARY ACCEPTANCE BY THE EL PASO BOARD OF COUNTY COMMISSIONERS OF ALL IMPROVEMENTS REQUIRED TO BE CONSTRUCTED AND COMPLETED IN ACCORDANCE WITH SAID SUBDIVISION IMPROVEMENTS AGREEMENT. THE PARTIAL RELEASE OF LOTS FOR SALE, CONVEYANCE OR TRANSFER MAY ONLY BE GRANTED IN ACCORDANCE WITH ANY PLANNED PARTIAL RELEASE OF LOTS AUTHORIZED BY THE SUBDIVISION IMPROVEMENTS AGREEMENT.

18. NOTICE: THIS PROPERTY MAY BE ADVERSELY IMPACTED BY NOISE, DUST, FUMES, AND LIGHT POLLUTION CAUSED BY ADJACENT INDUSTRIAL PROPERTIES AND ACTIVITIES. THE BUYER SHOULD RESEARCH AND BE AWARE OF THIS POTENTIALITY AND THE RAMIFICATIONS THEREOF.

19. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OR LAND BOUNDARY MONUMENT OR ACCESSORY, COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO CRS 18-4-508.

20. ALL PROPERTY WITHIN THIS SUBDIVISION IS INCLUDED IN STERLING RANCH METROPOLITAN DISTRICT NO. 2. [TC#11]

21. THE STERLING RANCH METROPOLITAN DISTRICT NO. 1 WILL BE RESPONSIBLE FOR MAINTENANCE OF THE ROADS UNTIL PRELIMINARY ACCEPTANCE OF THE PUBLIC IMPROVEMENTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, AND THE SUBDIVISION IMPROVEMENTS AGREEMENT.

22. ALL PROPERTY WITHIN THIS SUBDIVISION IS SUBJECT TO A DECLARATION OF COVENANT AS RECORDED AT RECEPTION NO. 218146000 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER.

23. SPECIAL DISTRICT DISCLOSURE:
A TITLE 32 SPECIAL DISTRICT ANNUAL REPORT AND DISCLOSURE FORM SATISFACTORY TO THE DEVELOPMENT SERVICES DEPARTMENT SHALL BE RECORDED WITH EACH PLAT.

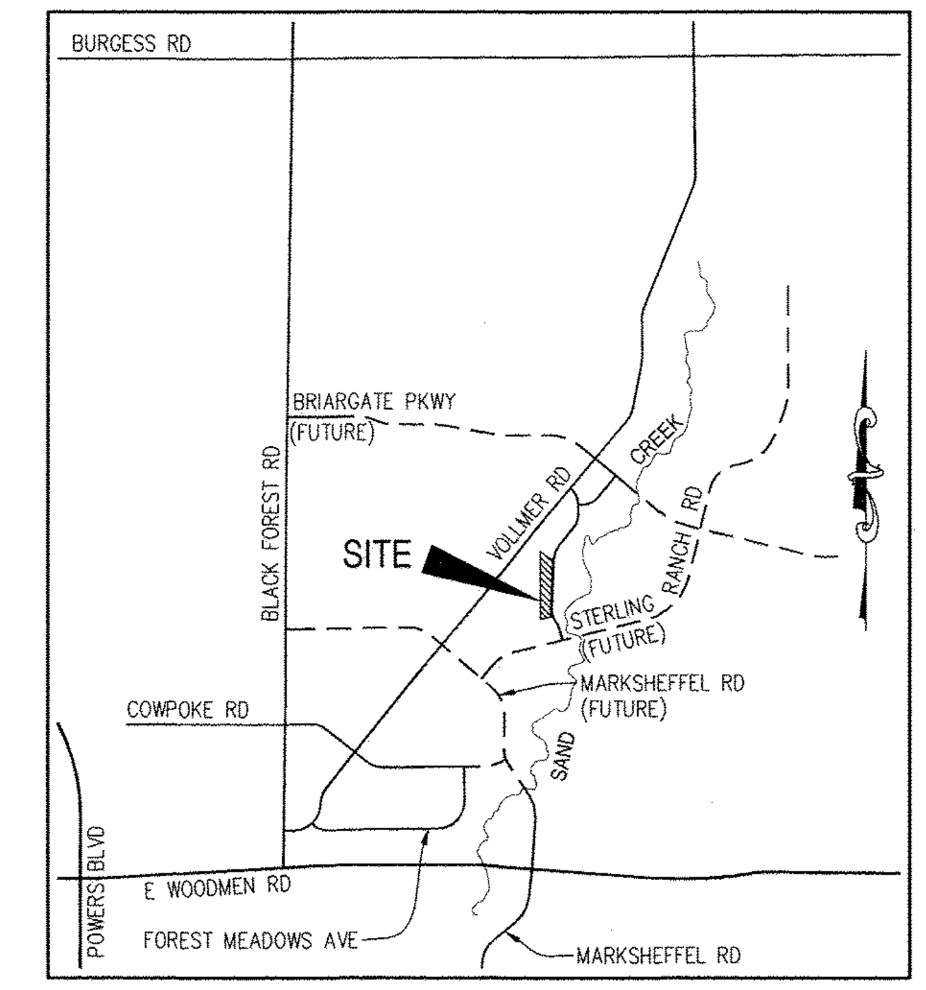
24. MAILBOXES SHALL BE INSTALLED IN ACCORDANCE WITH ALL EL PASO COUNTY AND UNITED STATES POSTAL SERVICE REGULATION.

25. THE SUBDIVIDER(S) AGREES ON BEHALF OF HIM/HERSELF AND ANY DEVELOPER OR BUILDER SUCCESSORS AND ASSIGNEES THAT SUBDIVIDER AND/OR SAID SUCCESSORS AND ASSIGNS SHALL BE REQUIRED TO PAY TRAFFIC IMPACT FEES IN ACCORDANCE WITH THE EL PASO COUNTY ROAD IMPACT FEE PROGRAM RESOLUTION (RESOLUTION NO. 16-454), OR ANY AMENDMENTS THERETO, AT OR PRIOR TO THE TIME OF BUILDING PERMIT SUBMITTALS. THE FEE OBLIGATION, IF NOT PAID AT FINAL PLAT RECORDING, SHALL BE DOCUMENTED ON ALL SALES DOCUMENTS AND ON PLAT NOTES TO ENSURE THAT A TITLE SEARCH WOULD FIND THE FEE OBLIGATION BEFORE SALE OF THE PROPERTY. TRANSPORTATION IMPACT FEES ARE TO BE PAID AT BUILDING PERMIT. This Property is included in The PID No. 2 as recorded at Reception No. ______.

26. THE FOLLOWING LOTS HAVE BEEN FOUND TO BE IMPACTED BY GEOLOGIC HAZARDS. MITIGATION MEASURES AND A MAP OF THE HAZARD AREA CAN BE FOUND IN THE REPORT GEOLOGIC HAZARD REPORT BY ENTECH ENGINEERING, INC, DATED JANUARY 2009, IN FILE SP-14-015 AVAILABLE AT THE EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT. THE THE FOLLOWING LOTS ARE IMPACTED: POTENTIALLY SEASONAL SHALLOW GROUNDWATER: LOTS 25, 32, 33, 34, 37, 38, 41, 42, 48, 49, AND 50

27. THERE SHALL BE NO DIRECT RESIDENTIAL LOT ACCESS TO DINES BOULEVARD.

28. A PRIVATE DETENTION POND MAINTENANCE AGREEMENT FOR PONDS, W9, 4 & 8 IS RECORDED UNDER RECEPTION NO. 218061178, RECEPTION NO. 218061179, & RECEPTION NO. 218061180, OF THE RECORDS OF EL PASO COUNTY. [TC#24, TC#25, TC#26]



VICINITY MAP
N.T.S.

PLAT NOTES: (CONTINUED)

29. A RIGHT-OF-WAY LANDSCAPE LICENSE AGREEMENT IS RECORDED UNDER RECEPTION NO. 218061176, OF THE RECORDS OF EL PASO COUNTY. [TC#23]

30. A LANDSCAPE EXHIBIT IS RECORDED UNDER RECEPTION NO. 218061176, OF THE RECORDS OF EL PASO COUNTY. [TC#23]

31. A MOUNTAIN VIEW ELECTRIC ASSOCIATION GRANT OF RIGHT-OF-WAY EASEMENT IS RECORDED UNDER RECEPTION NO. 218054783, OF THE RECORDS OF EL PASO COUNTY. [TC#21]

32. A RIGHT OF WAY AGREEMENT IS RECORDED UNDER RECEPTION NO. 205161563, OF THE RECORDS OF EL PASO COUNTY.

33. A PERMANENT EASEMENT AGREEMENT IS RECORDED UNDER RECEPTION NO. 201034022, OF THE RECORDS OF EL PASO COUNTY. [TC#7]

34. AN AGREEMENT TO GRANT ACCESS AND UTILITY EASEMENTS IS RECORDED UNDER RECEPTION NO. 214100440, OF THE RECORDS OF EL PASO COUNTY. [TC#12]

35. AN AGREEMENT TO GRANT ACCESS AND UTILITY EASEMENTS IS RECORDED UNDER RECEPTION NO. 214100441, AND AMENDED UNDER RECEPTION NO. 216043584, OF THE RECORDS OF EL PASO COUNTY. [TC#13]

36. AN AGREEMENT TO GRANT OF EASEMENTS IS RECORDED UNDER RECEPTION NO. 214100442, AND AMENDED UNDER RECEPTION NO. 216043585, OF THE RECORDS OF EL PASO COUNTY. [TC#16]

37. A CONSOLIDATED SERVICE PLAN FOR STERLING RANCH METROPOLITAN DISTRICTS 1, 2 AND 3 IS RECORDED UNDER RECEPTION NO. 214042782, OF THE RECORDS OF EL PASO COUNTY. [TC#11]

38. THE PROPERTY IS SUBJECT TO RESTRICTIONS AS DEFINED BY TRUSTEE'S SPECIAL WARRANTY DEED UNDER RECEPTION NO. 206045408, OF THE RECORDS OF EL PASO COUNTY. [TC#8]

39. AN OFFSITE EMERGENCY ACCESS EASEMENT IS RECORDED UNDER RECEPTION NO. 218146001, OF THE RECORDS OF EL PASO COUNTY.

40. To Fulfill BoCC Condition of Approval No. 13, Owner/Developer agrees that the El Paso County Road Impact Fee amount effective January 1, 2019 shall apply to all building permits obtained Prior to January 1, 2019.

41. AN OFFSITE PRIVATE DETENTION POND MAINTENANCE AGREEMENT IS RECORDED UNDER RECEPTION NO. 218145999, OF THE RECORDS OF EL PASO COUNTY. THIS POND MAY BE REMOVED WHEN THE DOWNSTREAM PONDS ARE CONSTRUCTED.

TRACT TABLE				
TRACT	SIZE (ACRES)	USE	MAINTENANCE	OWNERSHIP
A	0.005	LANDSCAPE/PUBLIC IMPROVEMENTS/PUBLIC UTILITY/TRAIL	SRMD#1	SRMD#1
B	0.005	LANDSCAPE/PUBLIC IMPROVEMENTS/PUBLIC UTILITY/TRAIL	SRMD#1	SRMD#1
C	0.005	LANDSCAPE/PUBLIC IMPROVEMENTS/PUBLIC UTILITY/TRAIL	SRMD#1	SRMD#1
D	0.005	LANDSCAPE/PUBLIC IMPROVEMENTS/PUBLIC UTILITY/TRAIL	SRMD#1	SRMD#1
E	0.005	LANDSCAPE/PUBLIC IMPROVEMENTS/PUBLIC UTILITY/TRAIL	SRMD#1	SRMD#1
F	0.005	LANDSCAPE/PUBLIC IMPROVEMENTS/PUBLIC UTILITY/TRAIL	SRMD#1	SRMD#1
G	0.005	LANDSCAPE/PUBLIC IMPROVEMENTS/PUBLIC UTILITY/TRAIL	SRMD#1	SRMD#1
H	0.005	LANDSCAPE/PUBLIC IMPROVEMENTS/PUBLIC UTILITY/TRAIL	SRMD#1	SRMD#1
I	0.005	LANDSCAPE/PUBLIC IMPROVEMENTS/PUBLIC UTILITY/TRAIL	SRMD#1	SRMD#1
J	0.005	LANDSCAPE/PUBLIC IMPROVEMENTS/PUBLIC UTILITY/TRAIL	SRMD#1	SRMD#1

*SRMD#1 = STERLING RANCH METROPOLITAN DISTRICT NO. 1

SURVEYORS CERTIFICATE

14262

I VERNON P. TAYLOR, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE ON DATE OF SURVEY, BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL MONUMENTS EXIST AS SHOWN HEREON; THAT MATHEMATICAL CLOSURE ERRORS ARE LESS THAN 1:10,000 ; AND THAT SAID PLAT HAS BEEN PREPARED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO DEALING WITH MONUMENTS, SUBDIVISION, OR SURVEYING OF LAND AND ALL APPLICABLE PROVISIONS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE.

I ATTEST THE ABOVE ON THIS 12th DAY OF December, 2018.

Vernon P. Taylor
VERNON P. TAYLOR
COLORADO PLS NO. 25966, FOR AND
ON BEHALF OF M&S CIVIL CONSULTANTS, INC
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, COLORADO 80903

COLORADO REGISTERED PROFESSIONAL LAND SURVEYOR VERNON P. TAYLOR 25966

NOTICE:

ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT DIRECTOR CERTIFICATE:

THIS PLAT FOR "HOMESTEAD AT STERLING RANCH FILING NO. 1" WAS APPROVED FOR FILING BY THE EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT DIRECTOR ON THIS 11th DAY OF December, 2018, SUBJECT TO ANY NOTES OR CONDITIONS SPECIFIED HEREON.

Mark Gebhart for — 12/12/18
DIRECTOR, PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT — DATE

BOARD OF COUNTY COMMISSIONERS CERTIFICATE:

THIS PLAT FOR "BRANDING IRON AT STERLING RANCH FILING NO. 1" WAS APPROVED FOR FILING BY THE EL PASO COUNTY, COLORADO BOARD OF COUNTY COMMISSIONERS ON THIS 11th DAY OF December 2018. SUBJECT TO ANY NOTES SPECIFIED HEREON AND ANY CONDITIONS INCLUDED IN THE RESOLUTION OF APPROVAL. THE DEDICATIONS OF LAND TO THE PUBLIC (STREETS AND EASEMENTS) ARE ACCEPTED, BUT PUBLIC IMPROVEMENTS THEREON WILL NOT BECOME MAINTENANCE RESPONSIBILITY OF EL PASO COUNTY UNTIL PRELIMINARY ACCEPTANCE OF THE PUBLIC IMPROVEMENTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE AND ENGINEERING CRITERIA MANUAL AND THE SUBDIVISION IMPROVEMENTS AGREEMENT.

[signature]
PRESIDENT, BOARD OF COUNTY COMMISSIONERS — DATE

CLERK AND RECORDER:

ASSESSOR
[signature]
EL PASO County Assessor

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD IN MY OFFICE AT 3:30 O'CLOCK P.M., THIS 20 DAY OF Dec, 2018, A.D., AND DULY RECORDED UNDER RECEPTION NO. 218714262 OF THE RECORDS OF EL PASO COUNTY, COLORADO.

BY: [signature]
CHUCK BROERMAN, EL PASO COUNTY CLERK AND RECORDER

FEES:

precredit Deferment to Drainage fees ______. Bridge fees paid.

DRAINAGE FEE: $25,988.15 Sand Creek
BRIDGE FEE: $85,783.58 Sand Creek
SCHOOL FEE: $12,240.00 Dist 20
PARK FEE: Regional $21,930 - Area 2
Urban $13,872 - Area 3

SUMMARY:

51 LOTS	8.334 ACRES	79.03%
10 TRACTS	0.050 ACRES	0.47%
RIGHTS-OF-WAY	2.161 ACRES	20.50%
TOTAL	10.545 ACRES	100.00%

FINAL PLAT
BRANDING IRON AT
STERLING RANCH FILING NO. 1
JOB NO. 09-006
DATE PREPARED: 10/30/2017
DATE REVISED: 12/12/2018

M&S CIVIL CONSULTANTS, INC.
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

14279

HOMESTEAD AT STERLING RANCH FILING NO. 1

A REPLAT OF TRACT G, "STERLING RANCH FILING NO. 1", SAID TRACT BEING A PORTION OF THE E ½ NW ¼ OF SECTION 33, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO

BE IT KNOWN BY THESE PRESENTS:

THAT SR LAND, LLC, BEING THE OWNER OF THE FOLLOWING DESCRIBED TRACT OF LAND TO WIT:

LEGAL DESCRIPTION:

A REPLAT OF TRACT G, "STERLING RANCH FILING NO. 1", AS RECORDED UNDER RECEPTION NO. 218714151 IN THE EL PASO COUNTY RECORDS,

SAID TRACT BEING A PORTION OF THE E ½ NW ¼ OF SECTION 33, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO;

CONTAINING A CALCULATED AREA OF 852,634 SQUARE FEET (19.574 ACRES) MORE OR LESS.

ACCEPTANCE CERTIFICATE FOR TRACTS:

THE DEDICATION OF TRACTS A IS FOR LANDSCAPE PURPOSES, DRAINAGE, PEDESTRIAN ACCESS, OPEN SPACE, AND UTILITIES PURPOSES AND ARE HEREBY ACCEPTED FOR OWNERSHIP AND MAINTENANCE BY STERLING RANCH METROPOLITAN DISTRICT NO. 1.

BY James F. Morley

AS President OF STERLING RANCH METROPOLITAN DISTRICT NO. 1

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

ACKNOWLEDGED BEFORE ME THIS THIS 12TH DAY OF DECEMBER, 2018, A.D.
BY James F. Morley
AS President OF STERLING RANCH METROPOLITAN DISTRICT NO. 1

WITNESS MY HAND AND OFFICIAL SEAL:

MY COMMISSION EXPIRES: MAY 30 2022
NOTARY PUBLIC

ERIC S HOWARD
Notary Public
State of Colorado
Notary ID # 20144021894
My Commission Expires 05-30-2022

OWNERS CERTIFICATE/DEDICATION STATEMENT:

THE UNDERSIGNED, BEING ALL THE OWNERS, MORTGAGEES, BENEFICIARIES OF DEEDS OF TRUST AND HOLDERS OF OTHER INTERESTS IN THE LAND DESCRIBED HEREIN, HAVE LAID OUT, SUBDIVIDED, AND PLATTED SAID LANDS INTO LOTS, TRACTS, STREETS, AND EASEMENTS AS SHOWN HEREON UNDER THE NAME AND SUBDIVISION OF "HOMESTEAD AT STERLING RANCH FILING NO. 1". ALL PUBLIC IMPROVEMENTS SO PLATTED ARE HEREBY DEDICATED TO PUBLIC USE AND SAID OWNER DOES HEREBY COVENANT AND AGREE THAT THE PUBLIC IMPROVEMENTS WILL BE CONSTRUCTED TO EL PASO COUNTY STANDARDS AND THAT PROPER DRAINAGE AND EROSION CONTROL FOR SAME WILL BE PROVIDED AT SAID OWNER'S EXPENSE, ALL TO THE SATISFACTION OF THE BOARD OF COUNTY COMMISSIONERS OF EL PASO COUNTY, COLORADO. UPON ACCEPTANCE BY RESOLUTION, ALL PUBLIC IMPROVEMENTS SO DEDICATED WILL BECOME MATTERS OF MAINTENANCE BY EL PASO COUNTY, COLORADO. THE UTILITY EASEMENTS SHOWN HEREON ARE HEREBY DEDICATED FOR PUBLIC UTILITIES AND COMMUNICATION SYSTEMS AND OTHER PURPOSES AS SHOWN HEREON. THE ENTITIES RESPONSIBLE FOR PROVIDING THE SERVICES FOR WHICH THE EASEMENTS ARE ESTABLISHED ARE HEREBY GRANTED THE PERPETUAL RIGHT OF INGRESS AND EGRESS FROM AND TO ADJACENT PROPERTIES FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF UTILITY LINES AND RELATED FACILITIES.

THE AFOREMENTIONED, SR LAND, LLC HAS EXECUTED THIS INSTRUMENT THIS 12TH DAY OF DECEMBER, 2018, A.D.

BY: James F. Morley

PRINTED NAME: James F. Morley

AS: MANAGER OF SR LAND, LLC

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS THIS 12TH DAY OF DECEMBER, 2018, A.D. BY James F. Morley
AS MANAGER, OF SR LAND, LLC.

WITNESS MY HAND AND OFFICIAL SEAL
MY COMMISSION EXPIRES:

ERIC S HOWARD
Notary Public
State of Colorado
Notary ID # 20144021894
My Commission Expires 05-30-2022

NOTARY PUBLIC

PLAT NOTES:

1. BASIS OF BEARINGS:
BEARINGS ARE BASED ON THE SOUTH LINE OF THE SOUTHWEST QUARTER (SW1/4) OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER (SW1/4) BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89°14'14"E, A DISTANCE OF 2,722.56 FEET. THE UNITS OF MEASUREMENT IS U.S. SURVEY FEET.

2. FLOODPLAIN STATEMENT:
NO PORTION OF THIS SITE IS LOCATED WITHIN A DESIGNATED FEMA FLOODPLAIN AS DETERMINED BY THE FLOOD INSURANCE RATE MAP, COMMUNITY MAP NUMBER 08041C0535F, EFFECTIVE DATE MARCH 17, 1997.

3. TITLE COMMITMENT:
THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY M&S CIVIL CONSULTANTS, INC., TO DETERMINE THE COMPATIBILITY OF THIS DESCRIPTION WITH THAT OF ADJACENT TRACTS OF LAND, OWNERSHIP OR EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHT-OF-WAY OR TITLE OF RECORD, M&S CIVIL CONSULTANTS, INC., RELIED UPON TITLE COMMITMENT FILE NO. SC55074009, PREPARED BY LAND TITLE GUARANTEE COMPANY, REPRESENTING OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, DATED DECEMBER 2, 2018 AT 5:00 P.M.

4. WATER SERVICE SHALL BE SUPPLIED BY STERLING RANCH METROPOLITAN DISTRICT NO. 1. (RESOLUTION RECORDED UNDER REC. NO. 218134276 OF THE RECORDS OF EL PASO COUNTY.)

PLAT NOTES: (CONTINUED)

5. SEWER SERVICE SHALL BE SUPPLIED BY STERLING RANCH METROPOLITAN DISTRICT NO. 1. (RESOLUTION RECORDED UNDER REC. NO. 218134277 OF THE RECORDS OF EL PASO COUNTY.)

6. ELECTRIC SERVICE SHALL BE PROVIDED BY MOUNTAIN VIEW ELECTRIC ASSOCIATION.

7. NATURAL GAS SERVICE SHALL BE PROVIDED BY COLORADO SPRINGS UTILITIES.

8. FIRE PROTECTION BY THE BLACK FOREST FIRE PROTECTION DISTRICT.

9. ALL STRUCTURAL FOUNDATIONS SHALL BE LOCATED AND DESIGNED BY A PROFESSIONAL ENGINEER, CURRENTLY LICENSED IN THE STATE OF COLORADO.

10. THE FOLLOWING REPORTS HAVE BEEN SUBMITTED IN ASSOCIATION WITH THE PRELIMINARY PLAN OR FINAL PLAT FOR THIS SUBDIVISION AND ARE ON FILE AT THE COUNTY DEVELOPMENT SERVICES DEPARTMENT: TRANSPORTATION IMPACT STUDY; DRAINAGE REPORT; WATER RESOURCES REPORT; WASTEWATER DISPOSAL REPORT; NATURAL HAZARDS REPORT; GEOLOGY AND SOILS REPORT; WETLAND STUDY/404 PERMIT.

11. ALL PROPERTY OWNERS ARE RESPONSIBLE FOR MAINTAINING PROPER STORM WATER DRAINAGE IN AND THROUGH THEIR PROPERTY. PUBLIC DRAINAGE EASEMENTS AS SPECIFICALLY NOTED ON THE PLAT SHALL BE MAINTAINED BY THE INDIVIDUAL LOT OWNERS UNLESS OTHERWISE INDICATED. STRUCTURES, FENCES, MATERIALS OR LANDSCAPING THAT COULD IMPEDE THE FLOW OF RUNOFF SHALL NOT BE PLACED IN DRAINAGE EASEMENTS.

12. UNLESS OTHERWISE INDICATED, ALL SIDE LOT LINES ARE HEREBY PLATTED ON EITHER SIDE WITH A 5 FOOT PUBLIC UTILITY AND DRAINAGE EASEMENT, EXCEPT WHEN THE SIDE YARD IS ADJACENT TO A PUBLIC STREET AND THEREFORE A 10 FOOT SIDE YARD SHALL BE PLATTED AS A PUBLIC IMPROVEMENT, PUBLIC UTILITY AND DRAINAGE EASEMENT. ALL FRONT LOT LINES ARE HEREBY PLATTED WITH A 10 FOOT PUBLIC IMPROVEMENT, PUBLIC UTILITY AND DRAINAGE EASEMENT, AND ALL REAR LOT LINES ARE HEREBY PLATTED WITH A 10 FOOT PUBLIC UTILITY AND DRAINAGE EASEMENT. ALL EXTERIOR SUBDIVISION BOUNDARIES ARE HEREBY PLATTED WITH A 7 FOOT PUBLIC IMPROVEMENT, PUBLIC UTILITY AND DRAINAGE EASEMENT. EASEMENTS ARE HEREBY PLATTED IN THE LOCATIONS ON SHEETS 3 AND 4 OF THIS PLAT. THE SOLE RESPONSIBILITY FOR THE SURFACE MAINTENANCE OF EASEMENTS IS HEREBY VESTED WITH THE INDIVIDUAL PROPERTY OWNER UNLESS OTHERWISE NOTED.

13. SIDE-LOT DRAINAGE SWALES SHALL BE CONSTRUCTED WHERE NECESSARY AT THE TIME OF HOME CONSTRUCTION.

14. DEVELOPER SHALL COMPLY WITH FEDERAL AND STATE LAWS, REGULATIONS, ORDINANCES, REVIEW AND PERMIT REQUIREMENTS, AND OTHER AGENCY REQUIREMENTS, IF ANY, OF APPLICABLE AGENCIES INCLUDING, BUT NOT LIMITED TO, THE COLORADO DIVISION OF WILDLIFE, COLORADO DEPARTMENT OF TRANSPORTATION, U.S. ARMY CORPS OF ENGINEERS AND THE U.S. FISH AND WILDLIFE SERVICE REGARDING THE ENDANGERED SPECIES ACT, PARTICULARLY AS IT RELATES TO THE LISTED SPECIES.

15. THE ADDRESSES EXHIBITED ON THIS PLAT ARE FOR INFORMATIONAL PURPOSES ONLY. THEY ARE NOT THE LEGAL DESCRIPTION AND ARE SUBJECT TO CHANGE.

16. NO DRIVEWAY SHALL BE ESTABLISHED UNLESS AN ACCESS PERMIT HAS BEEN GRANTED BY EL PASO COUNTY.

17. NO LOT OR INTEREST THEREIN, SHALL BE SOLD, CONVEYED, OR TRANSFERRED WHETHER BY DEED OR BY CONTRACT, NOR SHALL BUILDING PERMITS BE ISSUED, UNTIL AND UNLESS EITHER THE REQUIRED PUBLIC AND COMMON DEVELOPMENT IMPROVEMENTS HAVE BEEN CONSTRUCTED AND COMPLETED AND PRELIMINARILY ACCEPTED IN ACCORDANCE WITH THE SUBDIVISION IMPROVEMENTS AGREEMENT BETWEEN THE APPLICANT/ OWNER AND EL PASO COUNTY AS RECORDED UNDER RECEPTION NUMBER 219019374 IN THE OFFICE OF THE CLERK AND RECORDER OF EL PASO COUNTY, COLORADO OR, IN THE ALTERNATIVE, OTHER COLLATERAL IS PROVIDED TO MAKE PROVISION FOR THE COMPLETION OF SAID IMPROVEMENTS IN ACCORDANCE WITH THE EL PASO COUNTY LAND DEVELOPMENT CODE AND ENGINEERING CRITERIA MANUAL. ANY SUCH ALTERNATIVE COLLATERAL MUST BE APPROVED BY THE BOARD OF COUNTY COMMISSIONERS OR, IF PERMITTED BY THE SUBDIVISION IMPROVEMENTS AGREEMENT, BY THE PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT DIRECTOR AND MEET THE POLICY AND PROCEDURE REQUIREMENTS OF EL PASO COUNTY PRIOR TO THE RELEASE BY THE COUNTY OF ANY LOTS FOR SALE, CONVEYANCE OR TRANSFER.

THIS PLAT RESTRICTION MAY BE REMOVED OR RESCINDED BY THE BOARD OF COUNTY COMMISSIONERS OR, IF PERMITTED BY THE SUBDIVISION IMPROVEMENTS AGREEMENT, BY THE PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT DIRECTOR UPON EITHER APPROVAL OF AN ALTERNATIVE FORM OF COLLATERAL OR COMPLETION AND PRELIMINARY ACCEPTANCE BY THE EL PASO BOARD OF COUNTY COMMISSIONERS OF ALL IMPROVEMENTS REQUIRED TO BE CONSTRUCTED AND COMPLETED IN ACCORDANCE WITH SAID SUBDIVISION IMPROVEMENTS AGREEMENT. THE PARTIAL RELEASE OF LOTS FOR SALE, CONVEYANCE OR TRANSFER MAY ONLY BE GRANTED IN ACCORDANCE WITH ANY PLANNED PARTIAL RELEASE OF LOTS AUTHORIZED BY THE SUBDIVISION IMPROVEMENTS AGREEMENT.

18. NOTICE: THIS PROPERTY MAY BE ADVERSELY IMPACTED BY NOISE, DUST, FUMES, AND LIGHT POLLUTION CAUSED BY ADJACENT INDUSTRIAL PROPERTIES AND ACTIVITIES. THE BUYER SHOULD RESEARCH AND BE AWARE OF THIS POTENTIALITY AND THE RAMIFICATIONS THEREOF. (USE WHEN RESIDENTIAL IS ADJACENT TO INDUSTRIAL)

19. ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OR LAND BOUNDARY MONUMENT OR ACCESSORY, COMMITS A CLASS TWO (2) MISDEMEANOR PURSUANT TO CRS 18-4-508.

20. ALL PROPERTY WITHIN THIS SUBDIVISION IS INCLUDED IN STERLING RANCH METROPOLITAN DISTRICT NO. 2. [TC#8].

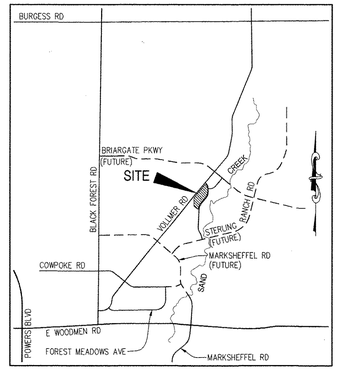
21. THE STERLING RANCH METROPOLITAN DISTRICT NO. 1 WILL BE RESPONSIBLE FOR MAINTENANCE OF THE ROADS UNTIL PRELIMINARY ACCEPTANCE OF THE PUBLIC IMPROVEMENTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, AND THE SUBDIVISION IMPROVEMENTS AGREEMENT.

22. ALL PROPERTY WITHIN THIS SUBDIVISION IS SUBJECT TO A DECLARATION OF COVENANT AS RECORDED AT RECEPTION NO. 218146000 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER.

23. SPECIAL DISTRICT DISCLOSURE:
A TITLE 32 SPECIAL DISTRICT ANNUAL REPORT AND DISCLOSURE FORM SATISFACTORY TO THE DEVELOPMENT SERVICES DEPARTMENT SHALL BE RECORDED WITH EACH PLAT.

24. MAILBOXES SHALL BE INSTALLED IN ACCORDANCE WITH ALL EL PASO COUNTY AND UNITED STATES POSTAL SERVICE REGULATION.

25. THE SUBDIVIDER(S) AGREES ON BEHALF OF HIM/HERSELF AND ANY DEVELOPER OR BUILDER SUCCESSORS AND ASSIGNEES THAT SUBDIVIDER AND/OR SAID SUCCESSORS AND ASSIGNS SHALL BE REQUIRED TO PAY TRAFFIC IMPACT FEES IN ACCORDANCE WITH THE EL PASO COUNTY ROAD IMPACT FEE PROGRAM RESOLUTION (RESOLUTION NO. 16-454), OR ANY AMENDMENTS THERETO, AT OR PRIOR TO THE TIME OF BUILDING PERMIT SUBMITTALS. THE FEE OBLIGATION, IF NOT PAID AT FINAL PLAT RECORDING, SHALL BE DOCUMENTED ON ALL SALES DOCUMENTS AND ON PLAT NOTES TO ENSURE THAT A TITLE SEARCH WOULD FIND THE FEE OBLIGATION BEFORE SALE OF THE PROPERTY. TRANSPORTATION IMPACT FEES ARE TO BE PAID AT BUILDING PERMIT. This property is included in the PID No. 2 as recorded at Reception No. ———.



VICINITY MAP
N.T.S.

PLAT NOTES: (CONTINUED)

26. THE FOLLOWING TRACT AND LOTS HAVE BEEN FOUND TO BE IMPACTED BY GEOLOGIC HAZARDS. MITIGATION MEASURES AND A MAP OF THE HAZARD AREA CAN BE FOUND IN THE REPORT GEOLOGIC HAZARD REPORT BY ENTECH ENGINEERING, INC, DATED JANUARY 2009, IN FILE SP-14-015 AVAILABLE AT THE EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT. THE THE FOLLOWING TRACT AND LOTS ARE IMPACTED: POTENTIALLY SEASONAL SHALLOW GROUNDWATER: TRACT A, LOTS 1, 2, 3, 15-27, 64, 65, 66, AND 72

27. THERE SHALL BE NO DIRECT RESIDENTIAL LOT ACCESS TO DINES BOULEVARD.

28. A PRIVATE DETENTION POND MAINTENANCE AGREEMENT FOR PONDS, W3, 4 & 8 IS RECORDED UNDER REC. NO. 218061178, REC. NO. 218061179, & REC. NO. 218061180, OF THE RECORDS OF EL PASO COUNTY. [TC#23, TC#24, TC#25]

29. A RIGHT-OF-WAY LANDSCAPE LICENSE AGREEMENT IS RECORDED UNDER REC. NO. 218061176, OF THE RECORDS OF EL PASO COUNTY. [TC#21]

30. A LANDSCAPE EXHIBIT IS RECORDED UNDER REC. NO. 218061176, OF THE RECORDS OF EL PASO COUNTY. [TC#21]

31. A NON-EXCLUSIVE STORM BYPASS SYSTEM EASEMENT IS RECORDED UNDER REC. NO. 218054785 AND REC. NO 218061177, OF THE RECORDS OF EL PASO COUNTY. [TC#18, TC#22]]

32. A MOUNTAIN VIEW ELECTRIC ASSOCIATION GRANT OF RIGHT-OF-WAY EASEMENT IS RECORDED UNDER REC. NO. 218054783, OF THE RECORDS OF EL PASO COUNTY. [TC#18]

33. AN AGREEMENT TO GRANT ACCESS AND UTILITY EASEMENTS IS RECORDED UNDER REC. NO. 214100440, OF THE RECORDS OF EL PASO COUNTY. [TC#9]

34. AN AGREEMENT TO GRANT ACCESS AND UTILITY EASEMENTS IS RECORDED UNDER REC. NO. 214100441, AND AMENDED UNDER REC. NO. 216043584, OF THE RECORDS OF EL PASO COUNTY. [TC#10]

35. AN AGREEMENT TO GRANT OF EASEMENTS IS RECORDED UNDER REC. NO. 214100442, AND AMENDED UNDER REC. NO. 216043585, OF THE RECORDS OF EL PASO COUNTY. [TC#13]

36. A CONSOLIDATED SERVICE PLAN FOR STERLING RANCH METROPOLITAN DISTRICTS 1, 2 AND 3 IS RECORDED UNDER REC. NO. 214042782, OF THE RECORDS OF EL PASO COUNTY. [TC#8]

37. THE PROPERTY IS SUBJECT TO RESTRICTIONS AS DEFINED BY TRUSTEE'S SPECIAL WARRANTY DEED UNDER REC. NO. 206045408, OF THE RECORDS OF EL PASO COUNTY. [TC#5]

38. AN OFFSITE EMERGENCY ACCESS EASEMENT IS RECORDED UNDER RECEPTION NO. 219019375, OF THE RECORDS OF EL PASO COUNTY.

TRACT TABLE				
TRACT	SIZE (ACRES)	USE	MAINTENANCE	OWNERSHIP
A	0.067	LANDSCAPE/PUBLIC IMPROVEMENTS/ PUBLIC UTILITY	SRDM#1	SRDM#1
*SRMD#1 = STERLING RANCH METROPOLITAN DISTRICT NO. 1				

SURVEYORS CERTIFICATE

I VERNON P. TAYLOR, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS PLAT TRULY AND CORRECTLY REPRESENTS THE RESULTS OF A SURVEY MADE ON DATE OF SURVEY, BY ME OR UNDER MY DIRECT SUPERVISION AND THAT ALL MONUMENTS EXIST AS SHOWN HEREON; THAT MATHEMATICAL CLOSURE ERRORS ARE LESS THAN 1:10,000 ; AND THAT SAID PLAT HAS BEEN PREPARED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS OF THE STATE OF COLORADO DEALING WITH MONUMENTS, SUBDIVISION, OR SURVEYING OF LAND AND ALL APPLICABLE PROVISIONS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE.

I ATTEST THE ABOVE ON THIS 12TH DAY OF December, 2018.

Vernon P. Taylor
VERNON P. TAYLOR
COLORADO PLS NO. 25966, FOR AND
ON BEHALF OF M&S CIVIL CONSULTANTS, INC
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, COLORADO 80903

COLORADO REGISTERED VERNON P. TAYLOR 25966 PROFESSIONAL LAND SURVEYOR

NOTICE:

ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT DIRECTOR CERTIFICATE:

THIS PLAT FOR "HOMESTEAD AT STERLING RANCH FILING NO. 1" WAS APPROVED FOR FILING BY THE EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR ON THIS 11TH DAY OF December 2018, SUBJECT TO ANY NOTES OR CONDITIONS SPECIFIED HEREON.

DIRECTOR, PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT — DATE 12/10/18

BOARD OF COUNTY COMMISSIONERS CERTIFICATE:

THIS PLAT FOR "HOMESTEAD AT STERLING RANCH FILING NO. 1" WAS APPROVED FOR FILING BY THE EL PASO COUNTY, COLORADO BOARD OF COUNTY COMMISSIONERS ON THIS 11TH DAY OF December 2018. SUBJECT TO ANY NOTES SPECIFIED HEREON AND ANY CONDITIONS INCLUDED IN THE RESOLUTION OF APPROVAL. THE DEDICATIONS OF LAND TO THE PUBLIC (STREETS AND EASEMENTS) ARE ACCEPTED, BUT PUBLIC IMPROVEMENTS THEREON WILL NOT BECOME MAINTENANCE RESPONSIBILITY OF EL PASO COUNTY UNTIL PRELIMINARY ACCEPTANCE OF THE PUBLIC IMPROVEMENTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE AND ENGINEERING CRITERIA MANUAL AND THE SUBDIVISION IMPROVEMENTS AGREEMENT.

PRESIDENT, BOARD OF COUNTY COMMISSIONERS — DATE

CLERK AND RECORDER:

ASSESSOR
EL PASO COUNTY ASSESSOR

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD IN MY OFFICE AT 3:40 O'CLOCK P.M., THIS 25TH DAY OF February, 2019 A.D., AND DULY RECORDED UNDER RECEPTION NO. 219714279 OF THE RECORDS OF EL PASO COUNTY, COLORADO.

BY:
CHUCK BROERMAN, EL PASO COUNTY CLERK AND RECORDER

FEES: Pre-Credit Reinvestment Of Drainage Fees $ — Bridge fees paid.

SUMMARY:

DRAINAGE FEE: $133,756.97 Sand Creek
BRIDGE FEE: $40,521.70 Sand Creek
SCHOOL FEE: $17,280 - District 2
PARK FEE: Regional Area $30,960.00
Urban Area 3 $19,584.00

Fee: 40.00
SC: 3.00

22 LOTS	15.871 ACRES	81.08%
1 TRACT	0.067 ACRES	0.34%
RIGHTS-OF-WAY	3.636 ACRES	18.58%
TOTAL	19.574 ACRES	100.00%

FINAL PLAT
HOMESTEAD AT STERLING RANCH
FILING NO. 1
JOB NO. 09-005
DATE PREPARED: 10/30/2017
DATE REVISED: 12/12/2018

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485
CIVIL CONSULTANTS, INC.

File: O:\09005A\Sterling Ranch No 2\dwg\Survey\Plat\09-005 Homestead Plat.dwg Plotstamp: 12/12/2018 9:23 AM

Appendix G
Maps

SAND CREEK DBPS IMPROVEMENTS

LEGEND

REACH IDENTIFIER ●

DBPS CHANNEL IMPROVEMENTS SEGMENT NO. 163

PROPERTY BNDRY ———

NOTE:

* CHECK STRUCTURES MAY BE RELOCATED THROUGHOUT SAND CREEK CHANNEL UPON FINAL ENGINEERING DESIGN

STERLING RANCH BOUNDARY

MDDP PROP. Q_{100}=1518.6

171

CHECK

DBPS Q_{100}=2264.0
MDDP EX. Q_{100}=1637.9
MDDP PROP. Q_{100}=1612.2

170

SAND CREEK REACH SC-9

REMOVE EX 24" CMP

NEW 60" CMP w/FES 100-YR CAPACITY

100YR RUNOFF TO BE CONVEYED IN PIPE OR SWALE TO CHANNEL UPSTREAM OF BRIARGATE PARKWAY

IMPROVED RIPRAP CHANNEL BW=20' D=2, S=1.8% 3' DROP Q100=325 CFS

169

GRADE CONTROL

MDDP PROP. Q_{100}=1636.7

PROP 6'Hx10' CBC 100-YR CAPACITY

DROP STRUCTURE

PROP 8'H x10'W CBC 100-YR CAPACITY

CHECK

MDDP EX. Q_{100}=1870.4
MDDP PROP. Q_{100}=1775.7

186

187

BRIARGATE PKWY

NORTHWESTERN TRIBUTARY

VOLLMER ROAD

PROP (4) 8.5'X10' CBC 100-YR STRUCTURE TO BE RELOCATED BASED UPON REVISED ROADWAY ALIGNMENT

FUTURE STERLING RANCH RD.

PROP. STORM SEWER TO REPLACE CHANNEL

IMPROVED RIPRAP CHANNEL BW=20', D=3', S=1.3% 3' DROPS @450' INTERVALS Q100=500CFS

SAND CREEK REACH SC-8

163

FUTURE BRIARGATE PKWY

MDDP PROP. Q_{100}=1905.9

STERLING RANCH BOUNDARY

EX. POND

CHECK RELOCATE

PROP. STORM SEWER

EASTERN TRIBUTARY NOT ANALYZED

EASTERN TRIBUTARY

PROP (2) 8'X8' CBC 1OO-YR STRUCTURE

PROP. STORM SEWER

164

DPBS Q_{100}=2630.0
MDDP EX. Q_{100}=1911.5
MDDP PROP. Q_{100}=1385.1

IMPROVED RIPRAP CHANNEL BW=25', D=3', S=1.2% 3' DROPS @ 270' INTERVALS Q100=600CFS

PROP 4'W x10'H CBC 100-YR CAPACITY

PROP 6'H x8'W CBC 100-YR CAPACITY

PROP DETENTION POND

RESEARCH PARKWAY

STERLING RANCH BOUNDARY

MARKSHEFFEL RD.

NEW 2 - 8'H x 9'W CBC 100-YR CAPACITY

159

SOUTHWESTERN TRIBUTARY

PROP. DETENTION POND

160

SAND CREEK REACH SC-8

161

161-2

MDDP PROP. Q_{100}=1620.1

PROP 10'W x8'H CBC 100-YR CAPACITY

92

84

85

88

500 250 0 500 1000

ORIGINAL SCALE: 1" = 500'

DBPS MAP OVERLAY
STERLING RANCH
JOB NO. 25188.00
3-11-2021
SHEET 1 OF 1

J·R ENGINEERING
A Westrian Company

Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

0 500 1000 2000
Scale in Feet

LEGEND

REACH IDENTIFIER 92

REACH IDENTIFIER 170

PROPERTY BNDRY

CHANNEL IMPROVEMENTS

SEGMENT NO.	BOTTOM WIDTH (FT)	CHANNEL TYPE
84	20	SELECTIVE BANK LININGS 3' DEPTH
92	15	SELECTIVE BANK LININGS 3' DEPTH
92	10	SELECTIVE BANK LININGS 2' DEPTH
81	15	SELECTIVE BANK LININGS 2' DEPTH

FOR PROFILE SEE SHEETS EFP-12, EFP-13, WBP-3, WBP-4

UPSTREAM LIMIT OF STUDY

STA 721+00 CHECK

STA 714+00 CHECK

STA 707+00 CHECK

7100

STA 700+00 CHECK

34

STA 692+50 CHECK

92

STA 684+50 CHECK

UPSTREAM LIMIT OF STUDY

RESEARCH PARKWAY

STA 676+50 CHECK

NEW 10' x 8' CBC

7031

UPSTREAM LIMIT OF STUDY

CHECK

Gravel Pit

SELECTIVE BANK LININGS & GRADE CONTROL

CHECK

KENOSHA RD.

86

CHECK

CHECK

7000

STA 662+50 CHECK

CHECK

STA 653+50 CHECK

SELECTIVE BANK LININGS & GRADE CONTROL

CHECK

3

STA 644+50 CHECK

CHECK

CHECK

STA 636+00 CHECK

85

CHECK

CHECK

6900

WOODMEN RD.

MUSTANG RD

MAVERICK RD.

PONCA RD

PAWNEE RD

BRULE RD.

EAST FORK SAND CREEK

MATCH SHT EF 32

M&S CIVIL CONSULTANTS, INC.
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

2018 STERLING RANCH MDDP

DBPS MAP OVERLAY

PROJECT NO. 08-035	FILE: \dwg\Eng Exhibits\2018-MDDP-PROPCOND.dwg		
DESIGNED BY: JD DRAWN BY: JD CHECKED BY: VAS	SCALE HORIZ: 1"=2400' VERT: 1"=2400'	DATE: 06-26-2018	DBPS-1

0 500 1000 2000
Scale in Feet

LEGEND

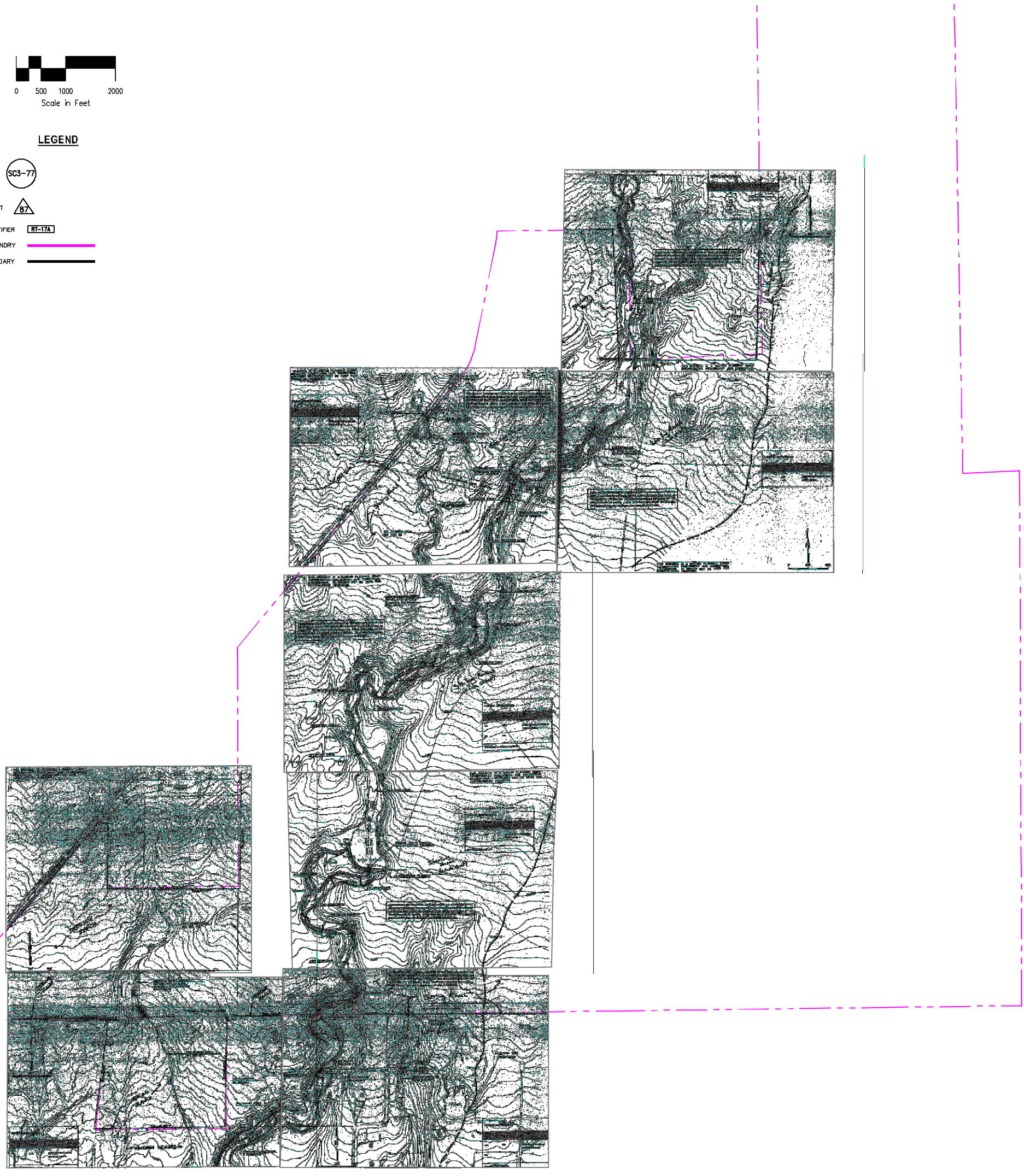
BASIN ID SC3-77

DESIGN POINT B7

REACH IDENTIFIER RT-17A

PROPERTY BNDRY

BASIN BOUNDARY



M&S CIVIL CONSULTANTS, INC.

20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

2018 STERLING RANCH MDDP

DBPS MAP OVERLAY

PROJECT NO. 09-002	FILE: \dwg\Eng Exhibits\DPBS overlay.dwg		
DESIGNED BY: DLM	SCALE	DATE: 08-26-2018	
DRAWN BY: DLM	HORIZ: 1"=1000'		DPBS-2
CHECKED BY: VAS	VERT: N/A		

STERLING RANCH
OVERALL POND/ DRAIANGE EXHIBIT

LEGEND

- MDDP BASINS
- HISTORIC DBPS SC/EFSC BNDRY LINE
- PROPOSED SC/EFSC BNDRY LINE
- BASIN DIVERSION AREA (EAST FORK SAND CREEK TO SAND CREEK) * ~267.3 AC

MDDP BASIN

DBPS BASIN

MDDP 1,468 CFS
DBPS 2,262 CFS
FEMA 2,600 CFS

MDDP 1,612 CFS
DBPS 2,260 CFS

POND FSD 17B

POND FSD 17A
Q100 OUT = 86.1 CFS

POND FSD 18
Q100 OUT = 69.6 CFS

POND 1
Q100 OUT = 103.1 CFS

POND 4
/FSD 12
Q100 OUT = 200.3 CFS

POND FSD 16
Q100 OUT = 156.4 CFS

POND FSD 14B

POND FSD 14A
Q100 OUT = 142.2 CFS

POND 8
FSD 13
Q100 OUT = 47.2 CFS

POND FSD 11B
Q100 OUT = 69.5 CFS

POND W-4
FSD 9

POND W-5/
FSD 6
Q100 OUT = 149.7 CFS

Q100 OUT = 289.90 CFS

MDDP 1,385 CFS
DBPS 2,630 CFS
FEMA 2,600 CFS

MDDP 1,620.1 CFS
FEMA 2,600 CFS

ASPEN VALLEY RD.
VOLLMER ROAD
WHEATLAND DR.
WHEATLAND DRIVE
BRIARGATE PARKWAY
STERLING RANCH ROAD
DINES BLVD
BYNUM DRIVE
BEAVERHEAD CIRCLE
ALZADA DRIVE
MARKSHEFFEL ROAD

HOMESTEAD AT STERLING RANCH FILING NO. 1
HOMESTEAD AT STERLING RANCH FILING NO.2
BRANDING IRON AT STERLING RANCH FILING NO.2
BRANDING IRON AT STERLING RANCH FILING NO. 1
AMENDED PLAT BARBARICK SUBDIVISION
UNPLATTED REC. NO. 217051682
PAWNEE RANCHEROS FILING NO. 2 PLAT BOOK U-2 PAGE 45
BAR J-B ACRES SECOND FILING PLAT BOOK A-2, PAGE 56
PAWNEE RANCHEROS FILING NO. 1 PLAT BOOK I-2, PAGE 28

100YR

DRAINAGE EXHIBIT
STERLING RANCH
JOB NO. 25188.00
04-15-2021
SHEET 1 OF 1

400 200 0 400 800
ORIGINAL SCALE: 1" = 400'

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

STERLING RANCH
EAST DIVERSION BASIN EXHIBIT

LEGEND

- MDDP BASINS
- HISTORIC DBPS SC/EFSC BNDRY LINE
- PROPOSED SC/EFSC BNDRY LINE
- BASIN DIVERSION AREA (EAST FORK SAND CREEK TO SAND CREEK) * ~267.3 AC

MDDP BASIN

DBPS BASIN

100YR

77
MDDP 1,468 CFS
DBPS 2,262 CFS
FEMA 2,600 CFS

ASPEN VALLEY RD.

POND FSD 17B

71
MDDP 1,612 CFS
DBPS 2,260 CFS

VOLLMER ROAD

WHEATLAND DR.

POND FSD 17A

Q100 OUT = 86.1 CFS

POND FSD 18

Q100 OUT = 69.6 CFS

WHEATLAND DRIVE

BRIARGATE PARKWAY

HOMESTEAD AT STERLING RANCH FILING NO. 1

HOMESTEAD AT STERLING RANCH FILING NO.2

POND FSD 16
Q100 OUT = 156.4 CFS

POND 1
Q100 OUT = 103.1 CFS

POND 4
/FSD 12
Q100 OUT = 200.3 CFS

DINES BLVD

BRANDING IRON AT STERLING RANCH FILING NO.2

BRANDING IRON AT STERLING RANCH FILING NO. 1

POND 8/
FSD 13
Q100 OUT = 47.2 CFS

POND FSD 14A
Q100 OUT = 142.2 CFS

POND FSD 14B

STERLING RANCH ROAD

POND FSD 11B
Q100 OUT = 69.5 CFS

PAWNEE RANCHEROS FILING NO. 2 PLAT BOOK U-2 PAGE 45

BAR J-B ACRES SECOND FILING PLAT BOOK A-2, PAGE 56

PAWNEE RANCHEROS FILING NO. 1 PLAT BOOK I-2, PAGE 28

63
MDDP 1,385 CFS
DBPS 2,630 CFS
FEMA 2,600 CFS

61
MDDP 1,620.1 CFS
FEMA 2,600 CFS

EAST DIVERSION BASIN EXHIBIT
STERLING RANCH
JOB NO. 25188.00
04-14-2021
SHEET 1 OF 1

N

400 200 0 400 800
ORIGINAL SCALE: 1" = 400'

J·R ENGINEERING
A Westrian Company

Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

STERLING RANCH
PONDS W4 & W5 TRIBUTARY AREA EXHIBIT

LEGEND

- MDDP BASINS
- POND W4 TRIBUTARY AREA
- POND W5 TRIBUTARY AREA
- HISTORIC DBPS SC/EFSC BNDRY LINE
- PROPOSED SC/EFSC BNDRY LINE
- BASIN DIVERSION AREA (EAST FORK SAND CREEK TO SAND CREEK) * ~267.3 AC

MDDP BASIN

DBPS BASIN

100YR

77
MDDP 1,468 CFS
DBPS 2,262 CFS
FEMA 2,600 CFS

ASPEN VALLEY RD.

POND FSD 17B

71
MDDP 1,612 CFS
DBPS 2,260 CFS

VOLLMER ROAD

WHEATLAND DR.

POND FSD 17A
Q100 OUT = 86.1 CFS

POND FSD 18
Q100 OUT = 69.6 CFS

WHEATLAND DRIVE

BRIARGATE PARKWAY

HOMESTEAD AT STERLING RANCH FILING NO. 1

HOMESTEAD AT STERLING RANCH FILING NO.2

POND FSD 16
Q100 OUT = 156.4 CFS

POND 1
Q100 OUT = 103.1 CFS

POND 4
/FSD 12
Q100 OUT = 200.3 CFS

DINES BLVD

BRANDING IRON AT STERLING RANCH FILING NO.2

BRANDING IRON AT STERLING RANCH FILING NO. 1

AMENDED PLAT BARBARICK SUBDIVISION

POND 8
FSD 13
Q100 OUT = 47.2 CFS

POND FSD 14A
Q100 OUT = 142.2 CFS

POND FSD 14B

STERLING RANCH ROAD

POND W-4/
FSD 9

BEAVERHEAD CIRCLE

ALZADA DRIVE

BYNUM DRIVE

MARKSHEFFEL ROAD

POND FSD 11B
Q100 OUT = 69.5 CFS

UNPLATTED REC. NO. 217051682

PAWNEE RANCHEROS FILING NO. 2 PLAT BOOK U-2 PAGE 45

BAR J-B ACRES SECOND FILING PLAT BOOK A-2, PAGE 56

PAWNEE RANCHEROS FILING NO. 1 PLAT BOOK I-2, PAGE 28

63
MDDP 1,385 CFS
DBPS 2,630 CFS
FEMA 2,600 CFS

POND W-5/
FSD 6
Q100 OUT = 149.7 CFS

Q100 OUT = 289.90 CFS

61
MDDP 1,620.1 CFS
FEMA 2,600 CFS

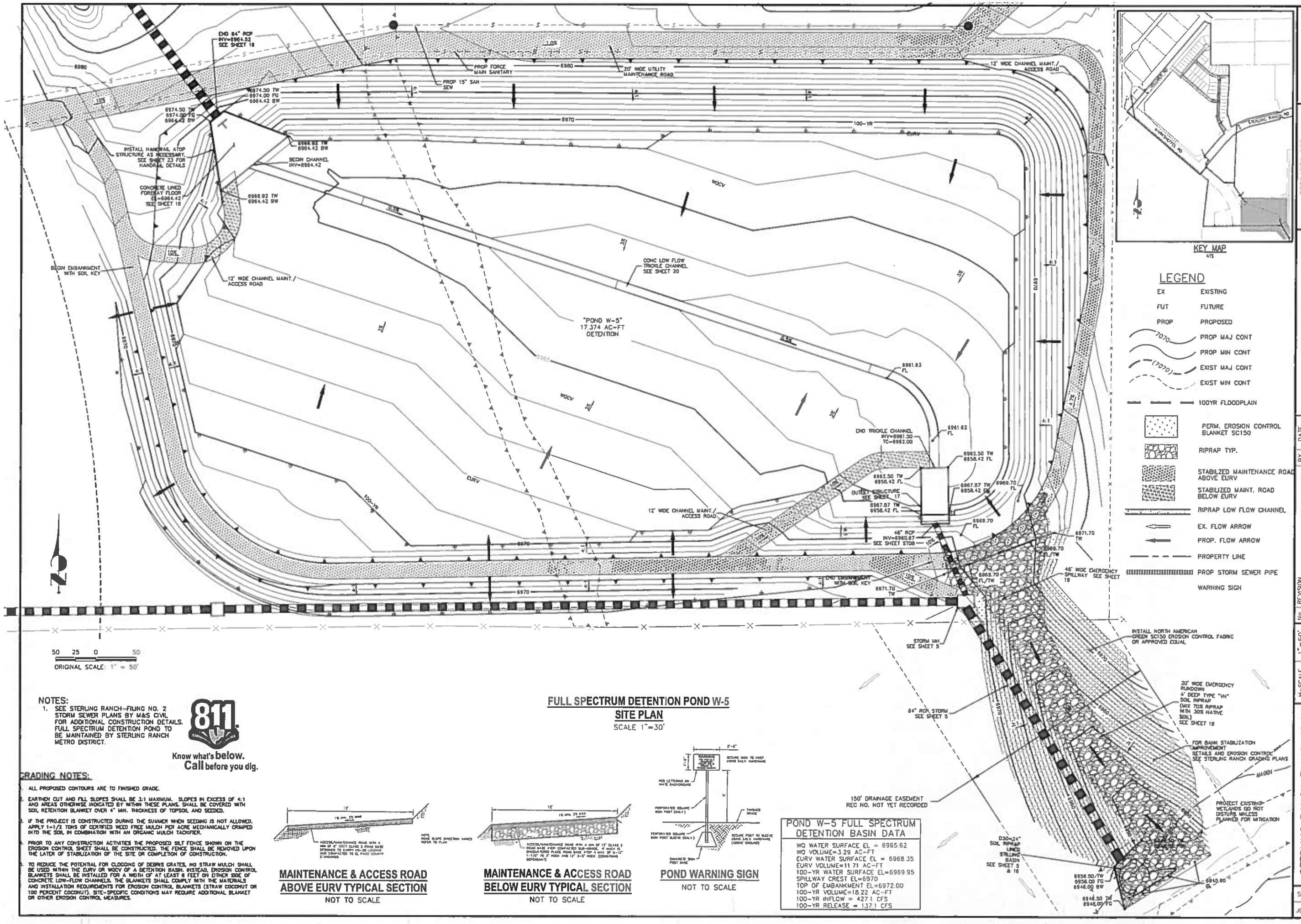
POND FSD 14B

PONDS W4 & W5 TRIBUTARY AREA EXHIBIT
STERLING RANCH
JOB NO. 25188.00
04-14-2021
SHEET 1 OF 1

400 200 0 400 800
ORIGINAL SCALE: 1" = 400'

J·R ENGINEERING
A Westrian Company

Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com



LEGEND

EX	EXISTING
FUT	FUTURE
PROP	PROPOSED
7070	PROP MAJ CONT
	PROP MIN CONT
(7070)	EXIST MAJ CONT
	EXIST MIN CONT
	100YR FLOODPLAIN
	PERM. EROSION CONTROL BLANKET SC150
	RIPRAP TYP.
	STABILIZED MAINTENANCE ROAD ABOVE EURV
	STABILIZED MAINT. ROAD BELOW EURV
	RIPRAP LOW FLOW CHANNEL
	EX. FLOW ARROW
	PROP. FLOW ARROW
	PROPERTY LINE
	PROP STORM SEWER PIPE
	WARNING SIGN

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
SUITE 201
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 471-1742

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

NOTES:
1. SEE STERLING RANCH-FILING NO. 2 STORM SEWER PLANS BY M&S CIVIL FOR ADDITIONAL CONSTRUCTION DETAILS. FULL SPECTRUM DETENTION POND TO BE MAINTAINED BY STERLING RANCH METRO DISTRICT.

811 Know what's below. Call before you dig.

FULL SPECTRUM DETENTION POND W-5 SITE PLAN
SCALE 1"=30'

GRADING NOTES:
1. ALL PROPOSED CONTOURS ARE TO FINISHED GRADE.
2. EARTHEN CUT AND FILL SLOPES SHALL BE 3:1 MAXIMUM. SLOPES IN EXCESS OF 4:1 AND AREAS OTHERWISE INDICATED BY WITHIN THESE PLANS. SHALL BE COVERED WITH SOIL RETENTION BLANKET OVER 4" MIN. THICKNESS OF TOPSOIL AND SEEDED.
3. IF THE PROJECT IS CONSTRUCTED DURING THE SUMMER WHEN SEEDING IS NOT ALLOWED, APPLY 1-1/2 TONS OF CERTIFIED WEED FREE MULCH PER ACRE MECHANICALLY CRIMPED INTO THE SOIL IN COMBINATION WITH AN ORGANIC MULCH TACKIFIER.
4. PRIOR TO ANY CONSTRUCTION ACTIVITIES THE PROPOSED SILT FENCE SHOWN ON THE EROSION CONTROL SHEET SHALL BE CONSTRUCTED. THE FENCE SHALL BE REMOVED UPON THE LATER OF STABILIZATION OF THE SITE OR COMPLETION OF CONSTRUCTION.
5. TO REDUCE THE POTENTIAL FOR CLOGGING OF DEBRIS GRATES, NO STRAW MULCH SHALL BE USED WITHIN THE EURV OR WQCV OF A DETENTION BASIN. INSTEAD, EROSION CONTROL BLANKETS SHALL BE INSTALLED FOR A WIDTH OF AT LEAST 8 FEET ON EITHER SIDE OF CONCRETE LOW-FLOW CHANNELS. THE BLANKETS SHALL COMPLY WITH THE MATERIALS AND INSTALLATION REQUIREMENTS FOR EROSION CONTROL BLANKETS (STRAW COCONUT OR 100 PERCENT COCONUT). SITE-SPECIFIC CONDITIONS MAY REQUIRE ADDITIONAL BLANKET OR OTHER EROSION CONTROL MEASURES.

MAINTENANCE & ACCESS ROAD ABOVE EURV TYPICAL SECTION
NOT TO SCALE

MAINTENANCE & ACCESS ROAD BELOW EURV TYPICAL SECTION
NOT TO SCALE

POND WARNING SIGN
NOT TO SCALE

POND W-5 FULL SPECTRUM DETENTION BASIN DATA

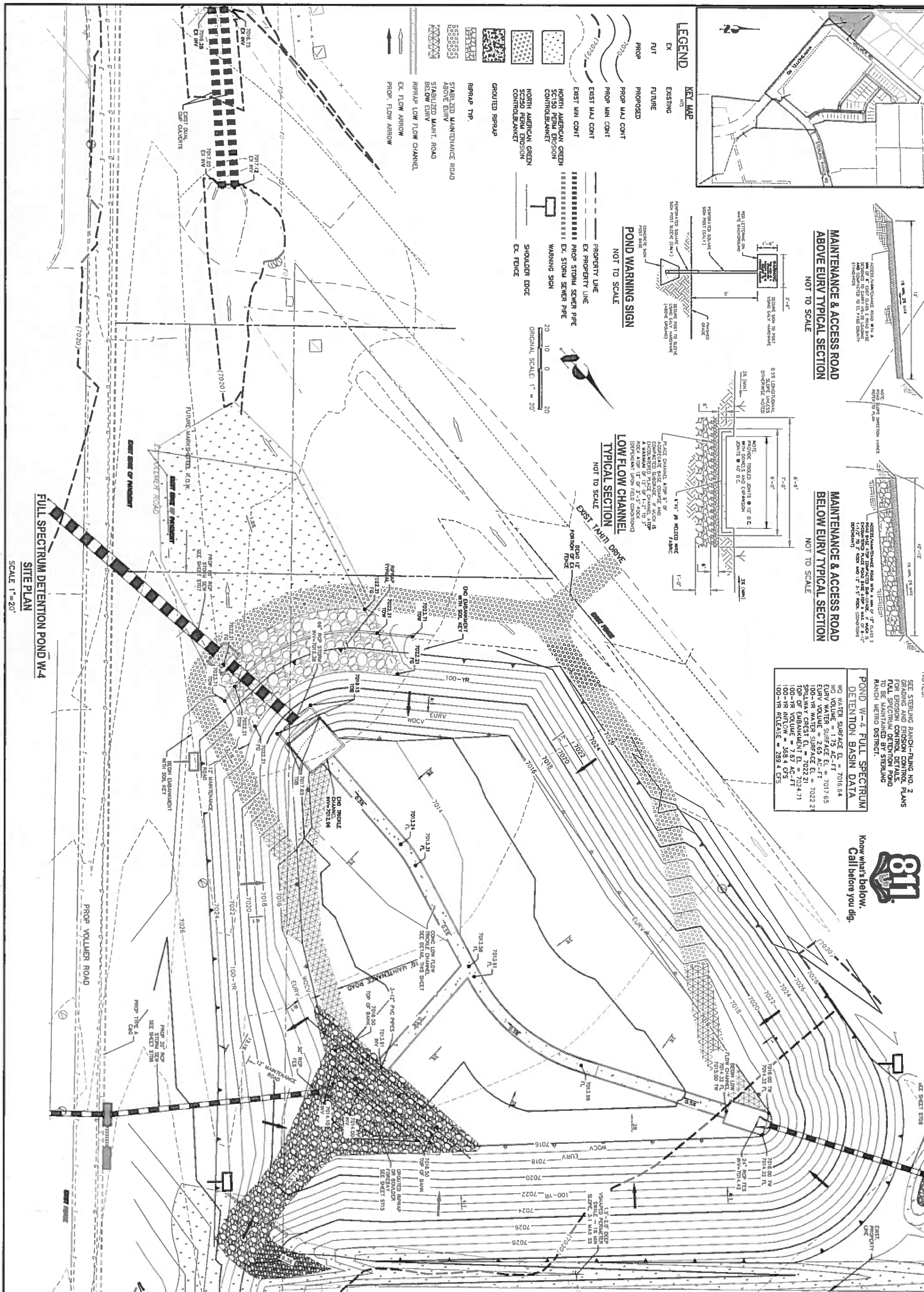
WQ WATER SURFACE EL = 6965.62
WQ VOLUME=3.29 AC-FT
EURV WATER SURFACE EL = 6968.35
EURV VOLUME=11.71 AC-FT
100-YR WATER SURFACE EL=6969.95
SPILLWAY CREST EL=6970
TOP OF EMBANKMENT EL=6972.00
100-YR VOLUME=18.22 AC-FT
100-YR INFLOW = 427.1 CFS
100-YR RELEASE = 137.1 CFS

No.	REVISION	BY	DATE

H-SCALE	1"=50'
V-SCALE	1"=5'
DATE	09/01/20
DESIGNED BY	RAB
DRAWN BY	KRW
CHECKED BY	

STERLING RANCH FILING NO.2
FUTURE STORM SEWER PLAN

SHEET 15 OF 25
JOB NO. 25188.01


LEGEND
KEY MAP
EX EXISTING
FUT FUTURE
PROP PROPOSED
PROP MAJ CONT
PROP MIN CONT
EXIST MAJ CONT
EXIST MIN CONT
NORTH AMERICAN GREEN SC150 PERM EROSION CONTROLBLANKET
NORTH AMERICAN GREEN SC250 PERM EROSION CONTROLBLANKET
GROUTED RIPRAP
RIPRAP TYP.
STABILIZED MAINTENANCE ROAD ABOVE EURV
STABILIZED MAINT. ROAD BELOW EURV
RIPRAP LOW FLOW CHANNEL
EX. FLOW ARROW
PROP. FLOW ARROW
PROPERTY LINE
EX PROPERTY LINE
PROP STORM SEWER PIPE
EX. STORM SEWER PIPE
WARNING SIGN
SHOULDER EDGE
EX. FENCE
ORIGINAL SCALE: 1" = 20'
POND WARNING SIGN
NOT TO SCALE
LOW FLOW CHANNEL
TYPICAL SECTION
NOT TO SCALE
MAINTENANCE & ACCESS ROAD
ABOVE EURV TYPICAL SECTION
NOT TO SCALE
MAINTENANCE & ACCESS ROAD
BELOW EURV TYPICAL SECTION
NOT TO SCALE
NOTES:
SEE STERLING RANCH-FILING NO. 2 GRADING AND EROSION CONTROL PLANS FOR EROSION CONTROL DETAILS.
FULL SPECTRUM DETENTION POND TO BE MAINTAINED BY STERLING RANCH METRO DISTRICT.
POND W-4 FULL SPECTRUM DETENTION BASIN DATA
WQ WATER SURFACE EL = 7016.64
WQ VOLUME = 1.75 AC-FT
EURV WATER SURFACE EL = 7017.65
EURV VOLUME = 2.65 AC-FT
100-YR WATER SURFACE EL = 7022.21
SPILLWAY CREST EL = 7022.21
TOP OF EMBANKMENT EL = 7024.71
100-YR VOLUME = 7.67 AC-FT
100-YR INFLOW = 368.4 CFS
100-YR RELEASE = 289.4 CFS
811
Know what's below.
Call before you dig.
EXIST TAHITI DRIVE
PROP VOLLMER ROAD
FUTURE MARKSHEFFEL R.O.W.
EXIST DUAL CMP CULVERTS
FULL SPECTRUM DETENTION POND W-4
SITE PLAN
SCALE 1"=20'

STERLING RANCH FILING NO.2	H-SCALE	1"=50'	No.	REVISION	BY	DATE
FUTURE STORM SEWER PLAN	V-SCALE	1"=5'				
	DATE	09/01/20				
	DESIGNED BY	RAB				
	DRAWN BY	KRW				
	CHECKED BY					

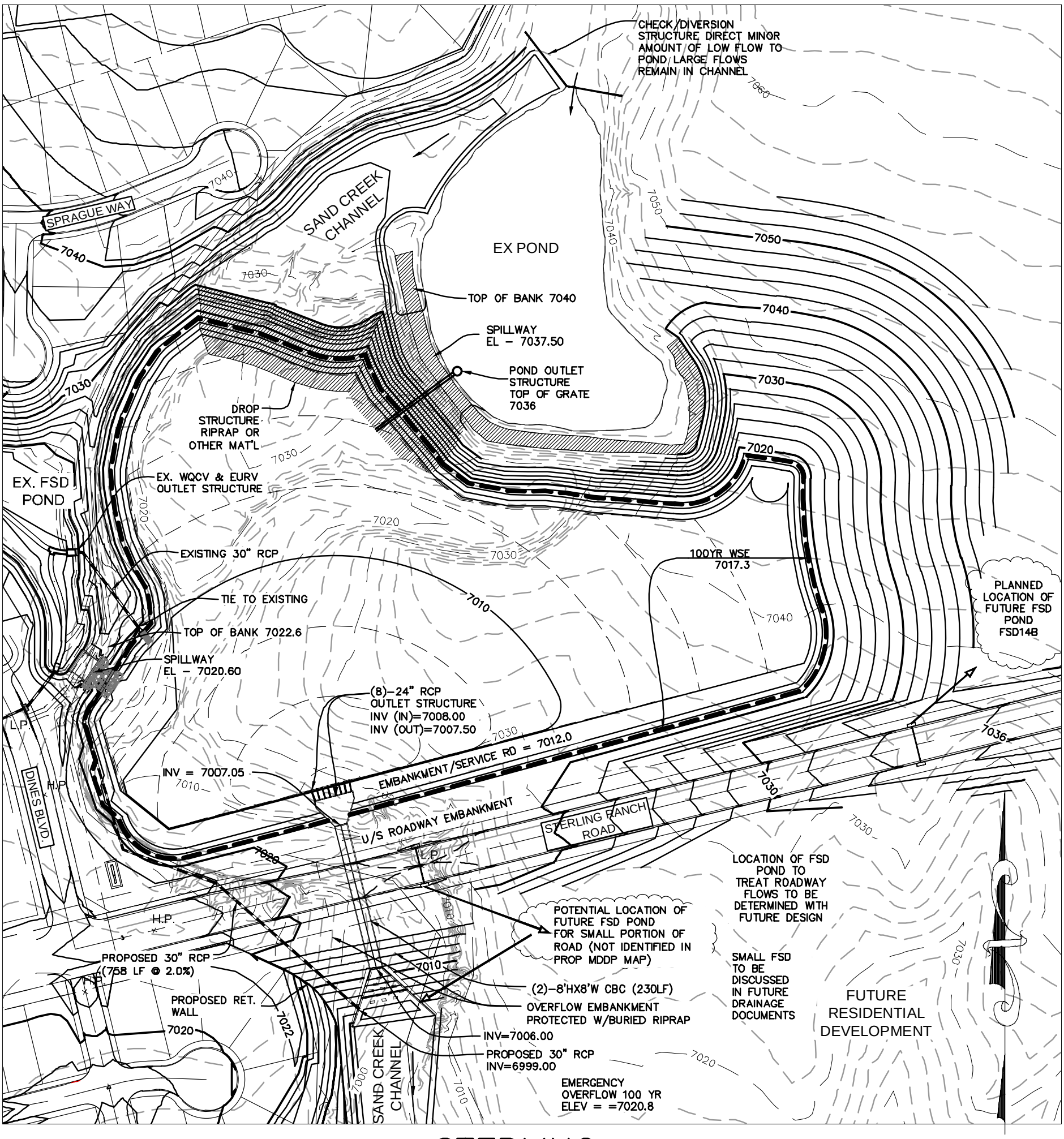
SHEET 20 OF 25

JOB NO. 25188.01

J·R ENGINEERING
A Westrian Company
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

PREPARED FOR
SR LAND, LLC
20 BOULDER CRESCENT
SUITE 201
COLORADO SPRINGS, CO 80903
JAMES F. MORLEY
(719) 471-1742

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.



Q_{100}= 2204.1 CFS (IN)

Q_{100}= 1350.6 CFS (OUT)

100YR= 78.2 AC-FT

STERLING RANCH POND PNDW3

SCALE 1"=200'

CONCEPT

100YR WSE= 7017.3

TOP OF EMBANKMENT = 7019 US / 7018.5 DS

100 YR OVERFLOW WSE= 7021.3 US / 7020.8 DS (2.3*)

*BASED UPON REVISED FEMA FLOW RATE TO ~ 2200 CFS

CIVIL CONSULTANTS, INC.
15 NORTH NEVADA AVENUE
COLORADO SPRINGS,
COLORADO 80903
v 719.255.5485
f 719.444.3427