FINAL DRAINAGE REPORT
FOR
VILLAGES AT STERLING RANCH
(EARLY GRADING AND EROSION CONTROL PLAN)

JANUARY 2025

Prepared for:
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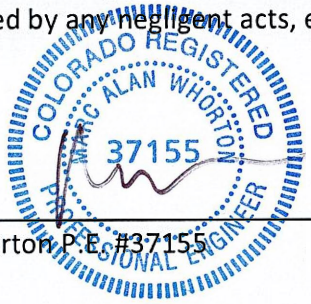
PCD Project No.
PUDSP-226

FINAL DRAINAGE REPORT FOR
VILLAGES AT STERLING RANCH (Early Grading and Erosion Control Plan)

ENGINEER'S STATEMENT:
The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the applicable 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.



Marc A. Whorton, P.E. #37155

1/16/2025
Date

OWNER'S/DEVELOPER'S STATEMENT:
I, the owner/developer, have read and will comply with all of the requirements specified in this drainage report and plan.

Business Name: CLASSIC SRJ LAND, LLC

By: Loren J. Mercurio

Title: Vice President

Address: 2138 Flying Horse Club Drive

Colorado Springs, CO 80921

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

For County Engineer, / ECM Administrator

Date

Conditions:

CLASSIC CONSULTING ENGINEERS & SURVEYORS

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PURPOSE

The purpose of this Final Drainage Report is to support the Early Grading and Erosion Control Plan and address the proposed early on-site and off-site grading efforts and associated erosion control/stormwater quality measures required to minimize impacts to the adjacent properties.

GENERAL DESCRIPTION

The subject site is Villages at Sterling Ranch which consists of a total PUD area of 39.06 acres and includes the proposed Right-of-way extension of Briargate Pkwy. It is located in portions of section 34, township 12 south, range 65 west of the sixth principal meridian. The site is bounded on the north, east and south by future Sterling Ranch East property (zoned for future urban development) and to the west by the proposed Sterling Ranch Road. The site is in the upper portion of Sand Creek East Fork Drainage Basin. Urban single family residential development including four different product types and a total of 227 lots is proposed within this PUD. However, the request for early grading also covers the adjacent developments to the immediate south and west (Sterling Ranch East Filing No. 5 – 47.17 ac. - PCD File: SF2430 and Sterling Ranch East Filing No. 3 74.75 ac. - PCD File: SF2438) Both of these projects are currently under Final Plat/CDs review per the file numbers described above. Also covered under this request is the proposed Pond FSD-16 Tract I within the Foursquare at Sterling Ranch development due north of the Villages property. This pond tract is 11.16 ac. The reason for this inclusion for off-site grading is due the fact of drainage and wet utility outfalls needing to be routed and connected through these developments to the south in order to serve the proposed Villages at Sterling Ranch property and a material borrow area from the proposed Pond FSD-16 used for the significant fill areas throughout the site. A total of approximately 152 ac. of disturbance is proposed with this early grading request.

The average soil condition reflects Hydrologic Group “A” (Blakeland loamy sand and Columbine gravelly sandy loam) as determined by the “Web Soil Survey of El Paso County Area,” prepared by the Natural Resources Conservation Service (see map in Appendix).

EXISTING DRAINAGE CONDITIONS

This property is located in the upper portion of the Sand Creek Drainage Basin with the majority of the site in the East Fork Sand Creek. Small portions of the site are undisturbed and covered with native grasses with no trees or other vegetation. However, the majority of the property has been recently disturbed with the construction of the temporary detention pond (FSD-11B), initial grading of the future ponds FSD-16 and FSD-14B, utility installations through the site, material borrow/fill areas in the central portion of the site and gravel access roads from to and from the site at the north end. A gravel access road also exists along the south boundary within several public utility and access easements. Sterling Ranch Road has also recently been constructed which cuts off much of the historic drainage from the north.

This site has been previously studied in the "2018 Sterling Ranch MDDP", prepared by M&S Civil Consultants, Inc., June 2018 and most recently by "MDDP Amendment for Sterling Ranch", prepared by JR Engineering, LLC, dated September 2022 and "Sterling Ranch MDDP Amendment No. 2 & Preliminary Drainage Report for Sterling Ranch East Preliminary Plan 1", prepared by Classic Consulting, dated January 2023. The latter report analyzed the pre-development conditions for the flows off-site to the south. The entire site currently drains as sheet flow in a southerly direction within the previously studied pre-development basins EX-4A, EX-7, EX-7A, EX-8, EX-8A, EX-9, EX-9A and EX-10. These are referenced in the Appendix.

Ex-8A and EX-10A

The following basins are within the proposed disturbance area and also within the Sand Creek main basin boundary:

Basin EX-4A (Q_5 = 19 cfs, Q_{100} = 50 cfs) consists of the smaller portion of the property (44.2 acres) south of the Briargate Pkwy. crossing that currently sheet flows in a southwesterly direction directly into the Sand Creek main channel. These sheet flows are then conveyed downstream as channel flow towards the south property boundary. This basin differs from the MDDP as it only represents the on-site existing flows from the east side of the channel as defined by the current ownership boundary and does not include the off-site flows from the development along the west side of the channel or the significant existing off-site channel flow itself. Recent

improvements within this basin include: construction of Sterling Ranch Road and its associated culvert crossing of Sand Creek (CDR-226).

Basin EX-7 (Q_5 = 46 cfs, Q_{100} = 105 cfs) consists of approximately 152.8 acres of property that sheet flows in a southerly direction. This basin is similar to the MDDP and the east basin line defines the westerly edge of the East Fork basin. The sheet flows become more concentrated towards the south end of the basin as the topography becomes steeper and more defined south of the proposed Sterling Ranch Road crossing. The existing flows exit the property along the south Sterling Ranch boundary within the well-defined natural channel at **Design Point 4**. Given the difference in hydrologic modeling (SWMM 5.1 vs. HEC-HMS) these flows are fairly consistent with the flows determined by the MDDP at DP-4 (Q_5 = 21.5 cfs, Q_{100} = 107.4 cfs). Recent improvements within this basin include: construction of Sterling Ranch Road, along with the overlot grading of much of Sterling Ranch East Filing No. 1 (SF2235), the construction of Pond FSD-14A just north of Sterling Ranch Road and the on-site interim Pond FSD-11B. With the introduction of these improvements, nearly all of the tributary area for this existing basin is now being captured and treated, which is consistent with Sterling Ranch MDDP Amendment 2 & PDR for Sterling Ranch East Prelim. Plan Filing 1-4. Thus, the downstream natural channel corridor through the existing rural lots within the Pawnee Rancheros Filing 2 Subd. and south of Mustang Place, just east of Mustang Road will continue to handle these off-site flows adequately.

Basin EX-7A (Q_5 = 1 cfs, Q_{100} = 5 cfs) consists of a small basin of only 2.4 ac. that sheet flows in a southerly direction. The MDDP included this small basin as a part of Basin EX-7. However, a more detailed look at this area finds that the larger basin EX-7 seems to all be tributary to the defined natural channel while Basin EX-7A appears to sheet flow off-site towards the Mustang Place cul-de-sac. These minor sheet flows ultimately combine with the pre-developed flows from Basin EX-7 south of Mustang Place within the natural channel. Again, with the construction of the Pond FSD-11B, the majority of the tributary area for this existing basin will be captured and treated. Thus, the downstream natural channel corridor will continue to handle these off-site flows adequately.

Sand Creek East Fork

Basin EX-8 (Q_5 = 5 cfs, Q_{100} = 23 cfs) consists of approximately 32.2 acres of property that sheet flows in a southerly direction. This basin is similar to the MDDP and the north portion of the west basin line defines the westerly edge of the East Fork basin. This basin incorporates the majority of MDDP basins EX-8. The flows seem to remain as sheet flows as they exit the property along the south boundary at **Design Point 5**. Again, these flows seem consistent with the flows determined by the MDDP at DP-5 (Q_5 = 1.7 cfs, Q_{100} = 20.5 cfs). Upon grading within this basin, the majority of the tributary area to this basin will be routed towards Pond FSD-11B. The remaining future large lot rear yard sheet flows planned (future Sterling Ranch East Filing No. 3) from Basin EF-A will be treated by runoff reduction techniques through long buffer areas and then continue to sheet flow off-site where the downstream properties will continue to adequately handle these less than historic sheet flows.

Basin EX-8A (Q_5 = 2 cfs, Q_{100} = 9 cfs) consists of a small basin of 6.6 ac. that sheet flows in a southerly direction. The MDDP included this small basin as a part of Bain EX-8. However, a more detailed look at this area finds that the larger basin EX-8 seems to sheet flow through properties east of Cochise Road while Basin EX-8A sheet flows off-site along the south boundary at **Design Point 5A** directly down the Cochise Road corridor. These off-site flows seem to ultimately combine further south within the Cochise Road corridor. Upon grading within this basin, the majority of the tributary area will be routed towards Pond FSD-11B. The remaining future large lot rear yard sheet flows planned (future Sterling Ranch East Filing No. 3) from Basin EF-A will be treated by runoff reduction techniques through long buffer areas and then continue to sheet flow off-site where the downstream properties will continue to adequately handle these less than historic sheet flows.

Basin EX-9 (Q_5 = 59 cfs, Q_{100} = 122 cfs) consists of approximately 139.3 acres of property that sheet flows in a southerly direction. This basin is similar to the MDDP with the northern portion of the west basin line defining the westerly edge of the East Fork basin. The flows seem to remain as sheet flows as they exit the property along the south boundary at **Design Point 6**. Again, these

flows seem consistent with the flows determined by the MDDP at DP-6 (Q_5 = 23.9 cfs, Q_{100} = 125.2 cfs). Recent improvements within this basin include: construction of Sterling Ranch Road, along with the overlot grading of much of Sterling Ranch East Filing No. 1 (SF2235), the construction of Pond FSD-14A just north of Sterling Ranch Road. With the introduction of these improvements, much of the tributary area for this existing basin is now being captured and treated, which is consistent with Sterling Ranch MDDP Amendment 2 & PDR for Sterling Ranch East Prelim. Plan Filing 1-4. Upon grading within the rest of this basin, the majority of the tributary area to this basin will be routed towards Pond FSD-11B. The remaining future large lot rear yard sheet flows planned (future Sterling Ranch East Filing No. 3) will be treated by runoff reduction techniques through long buffer areas and then continue to sheet flow off-site where the downstream properties within the Pawnee Rancheros Filing 1 Subd. will continue to adequately handle these less than historic sheet flows.

Basin EX-9A (Q_5 = 7 cfs, Q_{100} = 19 cfs) consists of a smaller basin of 21.8 ac. that sheet flows in a southerly direction. The original MDDP included this basin as a part of Basin EX-10A. However, a more detailed look at this area finds that the larger basin EX-10A seems to be tributary to Oto Circle east of the high point in the road while Basin EX-9A appears to sheet flow off-site along the south boundary at **Design Point 6A** west of the high point, towards the intersection of Brule Road and Oto Circle. These sheet flows seem to ultimately combine with the pre-developed flows from Basin Ex-10A further south and east of Brule Road. Upon grading within the rest of this basin, the majority of the tributary area to this basin will now be routed towards Pond FSD-14B, in the interim functioning as a temporary sediment basin.

Basin EX-10 (Q_5 = 105 cfs, Q_{100} = 222 cfs) consists of approximately 265.9 acres of property at the extreme top of the Sand Creek East Fork Basin. The off-site northern portion of this basin is within the Black Forest, heavily treed area. The off-site eastern portion of the basin contains existing 5 ac. lot development (Indian Wells Subd. Filing 1). The flows from this large basin sheet flow in a southerly direction across the northern portion of the Sterling Ranch property and enter Basin EX-10A.

Basin EX-10A (Q_5 = 46 cfs, Q_{100} = 103 cfs) consists of approximately 153.5 acres of property that sheet flows in a southerly direction through the Sterling Ranch property. The combined flows from both basins EX-10 and EX-10A seem to remain as sheet flow traveling in a southerly direction towards **Design Point 7 (Q_5 = 110 cfs, Q_{100} = 249 cfs)** At this location the flows exit the property along the south boundary. Again, these flows are fairly consistent with the flows determined by the original MDDP at DP-7 (Q_5 = 57.1 cfs, Q_{100} = 277.9 cfs).

PROPOSED DRAINAGE CONDITIONS

The intent of this report is to allow for early grading only along with some underground wet utility installations on the property with no further development without future Final Plat and CD approval by El Paso County. No significant impervious surfaces are being added to the property with this plan. Thus, the following hydrologic drainage calculations will continue to be based on the "undeveloped agriculture" land use characteristic and the runoff coefficients matching the particular hydrologic soil type in accordance with Table 6-6.

Basin A (Q_5= 2.4 cfs and Q_{100} = 16.0 cfs) is a 11.5 ac. basin made up of future development property that is not intended on being disturbed at this time along with the future Pond FSD-16. This facility was approved under the Foursquare at Sterling Ranch Filing No. 1 FDR and CDs (SF2236) The north side of this basin will have a diversion berm installed to route existing sheets flows from the north towards the east around the site. A temporary sediment basin will be installed just east of the intersection of Sterling Ranch Road and Briargate Parkway to handle flows during grading operations in the interim prior to the installation of sump inlets at this location per the approved Sterling Ranch East Filing No. 1 CDs (SF2235). The existing 36" RCP storm system within the intersection, also designed under SF2235, is the outfall for these future sump inlets. The temporary sediment basin will connect to this system as an outlet.

Basin B (Q_5= 2.5 cfs and Q_{100} = 16.8 cfs) is a 9.9 ac. basin made up of future development property that is not intended on being disturbed at this time along with the future Pond FSD-16 that was

designed with Foursquare at Sterling Ranch Filing No. 1 (SF2236). The material removed for this facility is being used on the Villages site with this early grading plan. The north side of this basin will have a diversion berm installed to route existing sheets flows from the north towards the east around the site. This future pond will act as a temporary sediment basin to handle flows during grading operations in the interim prior to the formal construction of the pond structures. The release for this area will be directly into the existing 48" RCP storm system (CDR221) that was recently constructed along with Sterling Ranch Road. This system is also the ultimate outfall for the future Pond FSD-16 as designed under CDR221.

Basin C (Q_5= 1.9 cfs and Q_{100} = 13.1 cfs) is a 8.1 ac. basin made up of the northwest corner of the Villages site. This graded area will drain in a southerly direction to an on-site proposed temporary sediment basin. This facility will remain in place to handle the flows from this basin until the formal Final Plat FDR and CDs for the Villages site are approved by El Paso County. Release from this temporary facility will be due south into basin E.

Basin D (Q_5= 3.2 cfs and Q_{100} = 21.7 cfs) is a 13.3 ac. basin made up of the east half of the Villages site. This graded area will drain in a southerly direction to another on-site proposed temporary sediment basin. This facility will remain in place to handle the flows from this basin until the formal Final Plat FDR and CDs for the Villages site are approved by El Paso County. Release from this temporary sediment basin will be due south onto future development property owned by Sterling Ranch.

Basin E (Q_5= 3.3 cfs and Q_{100} = 22.1 cfs) is a 12.7 ac. basin made up of the west half of the Villages site. This graded area will drain in a southerly direction to a third on-site proposed temporary sediment basin. This facility will remain in place to handle the flows from this basin until the formal Final Plat FDR and CDs for the Villages site are approved by El Paso County. Release from this temporary sediment basin will be to the southeast onto future development property owned by Sterling Ranch.

Basin F (Q_5= 4.3 cfs and Q_{100} = 29.1 cfs) is a 17.1 ac. basin made up of the northwest corner of the proposed Sterling Ranch East Filing No. 5 site, currently under review (SF2430). This graded area will drain in a southerly direction to an on-site proposed temporary sediment basin. This facility will remain in place to handle the flows from this basin until the formal Final Plat FDR and CDs for this subdivision are approved by El Paso County. Release from this temporary sediment basin will be due south directly into Basin G.

Basin G (Q_5= 4.4 cfs and Q_{100} = 29.8 cfs) is a 20.2 ac. basin made up of the southern portion of the proposed Sterling Ranch East Filing No. 5 site. This graded area will drain in a southerly direction directly into the future Pond FSD-14B, designed under SF2430. This facility will act as an on-site temporary sediment basin until the formal Final Plat FDR and CDs for this subdivision are approved by El Paso County. Release from this temporary sediment basin will be to the southwest towards the existing Mohawk Road public ROW along the southern property line.

Basin H (Q_5= 1.7 cfs and Q_{100} = 11.3 cfs) is a 7.9 ac. basin made up of the northeast corner of the proposed Sterling Ranch East Filing No. 5 site along with the adjacent undisturbed future Sterling Ranch development property to the east. Only the west portion of this basin within the Sterling Ranch East Filing No. 5 site will be graded. This entire basin then drains in a southerly direction to an off-site proposed temporary sediment basin. This facility will remain in place to handle the flows from this basin until future development takes place further east which is planned to be Sterling Ranch East Filing No. 7. Release from this temporary sediment basin will be to the south onto the future development property within Basin I owned by Sterling Ranch.

Basin I (Q_5= 1.4 cfs and Q_{100} = 9.3 cfs) is a 6.0 ac. basin made up of the southeast corner of the proposed Sterling Ranch East Filing No. 5 site along with the adjacent undisturbed future Sterling Ranch development property to the east. Only the west portion of this basin within the Sterling Ranch East Filing No. 5 site will be graded. This entire basin then drains in a southerly direction to an off-site proposed temporary sediment basin. This facility will remain in place to handle the flows from this basin until future development takes place further east which is also planned to

be Sterling Ranch East Filing No. 7. Release from this temporary sediment basin will be to the south onto the future development property owned by Sterling Ranch.

Basin J (Q_5= 5.3 cfs and Q_{100} = 35.9 cfs) is a 22.8 ac. basin made up of the east half of the proposed Sterling Ranch East Filing No. 3 site, currently under review (SF2428). This graded area will drain in a southwest direction to an on-site proposed temporary sediment basin. This facility will remain in place to handle the flows from this basin until the formal Final Plat FDR and CDs for this subdivision are approved by El Paso County. Release from this temporary sediment basin will be due south.

Basin K (Q_5= 5.4 cfs and Q_{100} = 36.3 cfs) is a 23.6 ac. basin made up of the west half of the proposed Sterling Ranch East Filing No. 3 site. This graded area will drain in a southwest direction to an on-site proposed temporary sediment basin. This facility will remain in place to handle the flows from this basin until the formal Final Plat FDR and CDs for this subdivision are approved by El Paso County. Release from this temporary sediment basin will be to the southwest directly into the existing interim Pond FSD-11B that was constructed under CDR221. This facility is planned to be expanded to its ultimate condition with the Sterling Ranch East Filing No. 3 development. The release from this interim pond is an existing concrete outlet box and 18" RCP storm to the west directly into Sand Creek (CDR221).

Basin L (Q_5= 3.5 cfs and Q_{100} = 23.3 cfs) is a 14.6 ac. basin made up of the future elementary school site and Pond FSD-11B. The school site is not intended on being graded at this time. The Sterling Ranch East Filing No. 3 Overlot GEC Plan, currently under review, will provide further plans for the future grading of this area. The only disturbance to take place with this proposed plan is within the Pond FSD-11B area. This facility will remain in place to handle the flows from this basin until the formal Final Plat FDR and CDs for this subdivision are approved by El Paso County. As described earlier, the release from this interim pond is an existing concrete outlet box and 18" RCP storm to the west directly into Sand Creek (CDR221).

No disturbance within Sand Creek or the existing 100 yr. floodplain are proposed with this plan. All adjacent Sand Creek Channel Improvements required for Sterling Ranch have been approved in the prior report "Final Design Report for Sand Creek Restoration", JR Engineering, LLC, dated October 21, 2021.

DRAINAGE CRITERIA

Hydrologic calculations were performed using the City of Colorado Springs/El Paso County Drainage Criteria Manual, as revised in November 1991 and October 1994 with County adopted Chapter 6 and Section 3.2.1 of Chapter 13 of the City of Colorado Springs/El Paso County Drainage Criteria Manual as revised in May 2014. Individual basin design
was calculated using the Rational Method. Runoff Coefficients are based on the imperviousness of the particular land use and the hydrologic soil type in accordance with Table 6-6. The average rainfall intensity, by recurrence interval found in the Intensity-Duration-Frequency (IDF) curves in Figure 6-5. (See Appendix)

The City of Colorado Springs/El Paso County DCM requires the Four Step Process for receiving water protection that focuses on reducing runoff volumes, treating the water quality capture volume (WQCV), stabilizing drainage ways, and implementing long-term source controls. The Four Step Process pertains to management of smaller, frequently occurring storm events, as opposed to larger storms for which drainage and flood control infrastructure are sized. Implementation of these four steps helps to achieve storm water permit requirements.
This site adheres to this **Four Step Process** as follows:

1. **Employ Runoff Reduction Practices:** As described in this report, no formal development is proposed at this time. Only early grading is being requested on these properties. Thus, no impervious area will be introduced yet that would require formal runoff reduction. However, runoff reduction has been proposed within the FDR's for the following three projects contained within the proposed early grading area: Villages at Sterling Ranch

Filing No. 1 (SF2439), Sterling Ranch East Filing No. 3 (SF2428) and Sterling Ranch East Filing No. 5 (SF2430). Upon these Final Plat development approvals by El Paso County, these sites will then provide the required runoff reduction practices in the following manner: *All proposed lot impervious area (roof tops, patios, etc.) will sheet flow across landscaped portions of front and rear yards and through open space areas to slow runoff and increase time of concentration prior to being conveyed to the proposed public streets or detention facilities. This will minimize directly connected impervious areas within the project site.* Please reference the Appendix for the Water Quality Treatment Maps proposed within the previously mentioned FDR's.

2. **Stabilize Drainageways:** As mentioned above, no formal development is proposed at this time. Only early grading is being requested on these properties. Thus, no impervious area will be introduced yet that would require stabilization of drainageways. However, upon Final Plat of these areas, developed flows utilize the runoff reduction practices through the front and rear yards, developed flows will travel via curb and gutter within the public streets and eventually public storm systems. These collected flows are then routed directly to the proposed extended detention basins, FSD-14B and FSD-11B (full-spectrum facilities). Where developed flows are not able to be routed to public street or the proposed ponds, sheet flows will travel across landscaped rear yards and then through undeveloped property prior to being released off-site via runoff reduction.

3. **Provide Water Quality Capture Volume (WQCV):** As mentioned above, no formal development is proposed at this time. Only early grading is being requested on these properties. Thus, no impervious area will be introduced yet that would require water quality capture volume. However, upon Final Plat of these areas, Runoff from these developments will be treated through capture and slow release of the WQCV and excess urban runoff volume (EURV) in the proposed Full-Spectrum permanent Extended Detention Basins (FSD-14B and FSD-11B) designed per current El Paso County drainage criteria. For the acreage that is not able to be captured and routed to one of the

permanent EDB's, Runoff Reduction practices are required and provided in the rear setbacks of the lots or within the open space tract within these specific basins. Reference Runoff Reduction Calculations will be provided for these areas that show a 100% WQCV Reduction and meets El Paso County standards as provided in the FDR's for the three projects mentioned above.

4. **Consider need for Industrial and Commercial BMPs**: No industrial or commercial uses are proposed within this development. However, a site-specific storm water quality and erosion control plan and narrative along with the grading and erosion control plan will be submitted with the future Final Plat submittals. Details such as site-specific sediment and erosion control construction BMP's as well as temporary and permanent BMP's will be detailed in this plan and narrative to protect receiving waters. BMP's will be constructed and maintained as the development has been graded and erosion control methods employed.

FLOODPLAIN STATEMENT

A portion of this site is located within a floodplain as determined by the Flood Insurance Rate Maps (F.I.R.M.) Map Numbers 08041C0533G and 08041C0535G with effective dates of December 7, 2018 and the previously mentioned LOMR 08-08-0541P with an effective date of July 23, 2009. (See Appendix). However, no grading will take place within the current floodplain.

DRAINAGE AND BRIDGE FEES

This site lies entirely within the Sand Creek Drainage Basin boundaries.

This report is for early grading only and no development. Any and all drainage and bridge fees will be paid at Final Plat for these development areas.

SUMMARY

The proposed properties are all within the Sand Creek Drainage Basin. As described in this report, no formal development is proposed at this time. Only early grading is being requested on these properties. Thus, no impervious area will be introduced yet. Recommendations are made within this report concerning necessary temporary sediment basins that will be required as a result of early grading of this property. The points of storm water release from these temporary sediment basins are required to be at or below the calculated historic flow quantities. The early grading of the proposed site does not significantly impact any downstream facility or property to an extent greater than that which currently exists in the pre-development conditions.

PREPARED BY:

Classic Consulting Engineers & Surveyors, LLC

Marc A. Whorton, P.E.
Project Manager

REFERENCES

1. City of Colorado Springs/County of El Paso Drainage Criteria Manual as revised in November 1991 and October 1994 with County adopted Chapter 6 and Section 3.2.1 of Chapter 13 of the City of Colorado Springs/El Paso County Drainage Criteria Manual as revised in May 2014.

2. "Urban Storm Drainage Criteria Manual Volume 1, 2 & 3" Urban Drainage and Flood Control District, dated January 2016.

3. "Sand Creek Drainage Basin Planning Study," Kiowa Engineering Corporation, dated March 1996.

4. "2018 Sterling Ranch MDDP", M&S Civil Consultants, Inc., June 2018

5. "Final Drainage Report for Retreat at TimberRidge Filing No. 1", Classic Consulting, approved November, 2020.

6. "Final Drainage Report for Retreat at TimberRidge Filing No. 2", Classic Consulting, dated March, 2022

7. "Drainage Letter for Sterling Ranch Road and Briargate Pkwy. Interim Plan", prepared by JR Engineering, LLC, dated December 2021

8. "Sterling Ranch MDDP Amendment No. 2 & Preliminary Drainage Report for Sterling Ranch East Preliminary Plan No. 1", prepared by Classic Consulting, approved January 2023.

9. "Preliminary Drainage Report for Sterling Ranch East Filing No. 5 Preliminary Plan", prepared by Classic Consulting, approved January 2024.

10. "Final Drainage Report for Sterling Ranch East Filing No. 1", prepared by Classic Consulting, approved July 2024.

11. "Final Drainage Report for Sterling Ranch East Filing No. 3", prepared by Classic Consulting, dated October 2024.

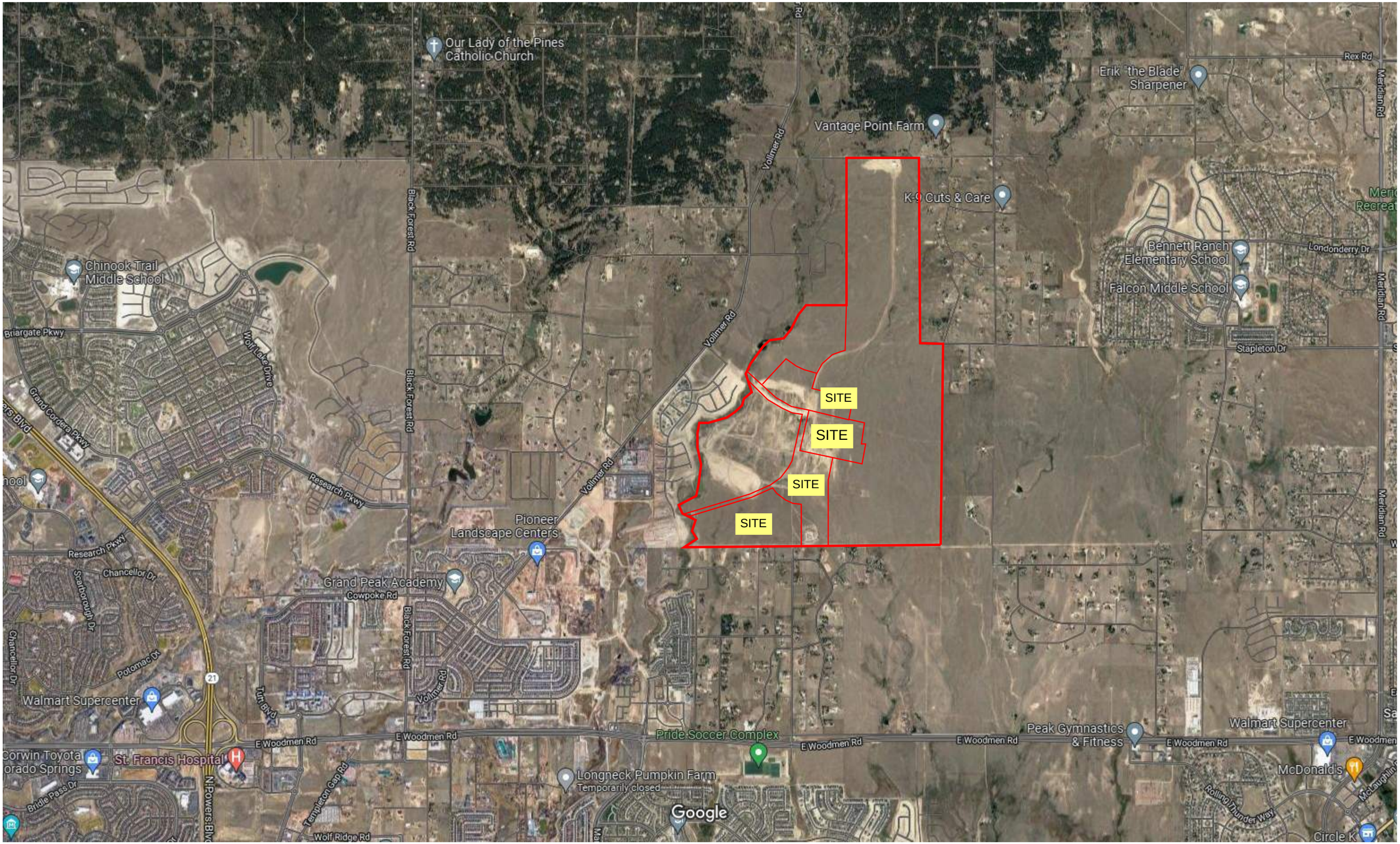
12. "Final Drainage Report for Sterling Ranch East Filing No. 5", prepared by Classic Consulting, dated December 2024.

13. "Final Drainage Report for Villages at Sterling Ranch Filing No. 1", prepared by Classic Consulting, dated December 2024.

APPENDIX

VICINITY MAP

CLASSIC SM
CONSULTING
ENGINEERS & SURVEYORS

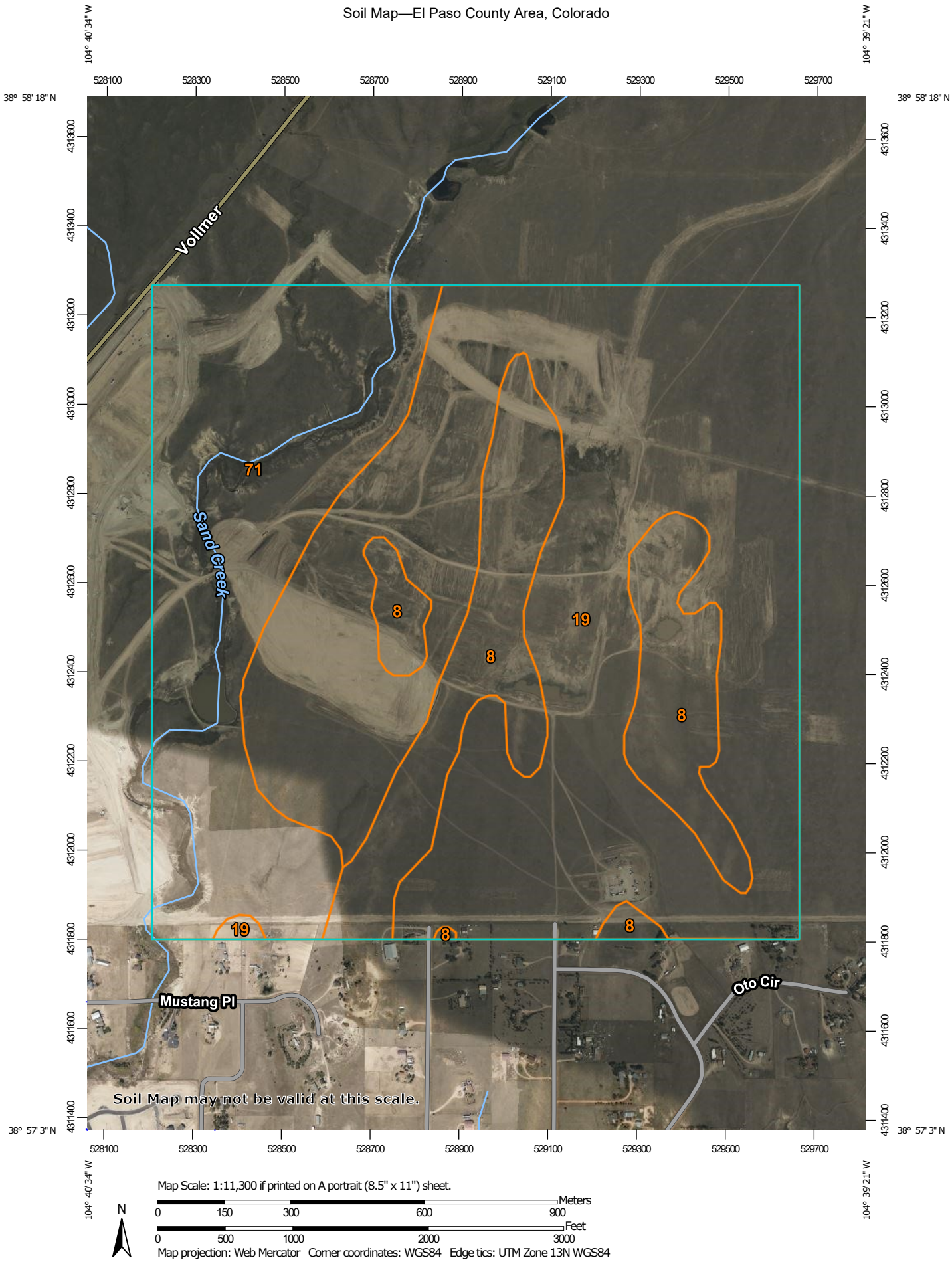


Imagery ©2022 Landsat / Copernicus, Maxar Technologies, USDA/FPAC/GEO, Map data ©2022 2000 ft

VICINITY MAP

SOILS MAP (S.C.S SURVEY)

CLASSIC SM
CONSULTING
ENGINEERS & SURVEYORS



Map Scale: 1:11,300 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 150 300 600 900

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

El Paso County Area, Colorado

8—Blakeland loamy sand, 1 to 9 percent slopes

Map Unit Setting

National map unit symbol: 369v
Elevation: 4,600 to 5,800 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Blakeland and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blakeland

Setting

Landform: Flats, hills
Landform position (three-dimensional): Side slope, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock and/or eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 11 inches: loamy sand
AC - 11 to 27 inches: loamy sand
C - 27 to 60 inches: sand

Properties and qualities

Slope: 1 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 1 percent
Hydric soil rating: No

Pleasant

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

El Paso County Area, Colorado

19—Columbine gravelly sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 367p
Elevation: 6,500 to 7,300 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Columbine and similar soils: 97 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Columbine

Setting

Landform: Fans, fan terraces, flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 14 inches: gravelly sandy loam
C - 14 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XY214CO - Gravelly Foothill
Hydric soil rating: No

Minor Components

Fluvaquentic haplaquolls

Percent of map unit: 1 percent

Landform: Swales
Hydric soil rating: Yes

Other soils
Percent of map unit: 1 percent
Hydric soil rating: No

Pleasant
Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

El Paso County Area, Colorado

71—Pring coarse sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 369k
Elevation: 6,800 to 7,600 feet
Farmland classification: Not prime farmland

Map Unit Composition

Pring and similar soils: 85 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pring

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Arkosic alluvium derived from sedimentary rock

Typical profile

A - 0 to 14 inches: coarse sandy loam
C - 14 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R048AY222CO - Loamy Park
Hydric soil rating: No

Minor Components

Pleasant

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Other soils

Percent of map unit:
Hydric soil rating: No

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 19, 2018—May 26, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	89.6	16.9%
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	299.8	56.5%
71	Pring coarse sandy loam, 3 to 8 percent slopes	141.1	26.6%
Totals for Area of Interest		**530.6**	**100.0%**

F.E.M.A. MAP / LOMR (08-08-0541P)

CLASSIC SM
CONSULTING
ENGINEERS & SURVEYORS

EL PASO COUNTY
UNINCORPORATED AREAS
080059

SUBLETTE RD
IC FERRAN RD
TOLTEC LN
THOMAS RD
HUNTSMAN RD
RD
ON RD
GLENSIDE DR
WILDFLOWER RD
POCO RD
PINE MEADO
PINE CONE LN
FAWN LN
TANGLEWILD LN
BUCKSKI
21
22
29
28
32
33
27
SHIPMAN LN
VOLLMER RD
TAIGA LN
DERRINGTON CT
BENNISON TER
MILLARD WAY
RAYGOR RD
PINE PARK TRL
ROCKI LN
SALBECK LN
RODGWICK HEIGHTS
FLAMING SUN DR
LIMIT OF STUDY
ARROYA LN
ZONE AE
7242
7235
DU
7231
DT
7225
DS
7220
7216
7210
DR
7205
7198
7192
DQ
7187
7183
DP
7177
7169
7162
DO
Sand Creek
7156
DN
7152
7149
7146
7143
7140
7137
7133
7131
7128
DK
DL
DM
DJ
7120
7116
7111
DI
7125
7107
7103
DH
7099
7095
DG
7088
7084
DF
7080
7075
7071
DE
7065
DC
7060
7056
DB
7049
DA
7045
7041
CY
7037
7033
CZ
7029
7025
CX
7020
7017
7012
CW
7008
7004
CV
6999
6995
CU
6991
6987
6979
6972
6967
CT
6963
6959
6954
6949
CS
6944
6940
6935
CR
6928
6924
6920
6915
6910
CQ
6906
6902
6900
6896
6891
CP
6886
6885
SITE
SITE
SITE
GLIDER LOOP
VOLLMER PL
COCHISE RD
MUSTANG RD
MUSTANG PL
KENOSHA DR
PONCA RD
MAVERICK RD
MOHAWK RD
BRULE RD
OTIS CIR
UNEL 0535
T. 12 S.
T. 13 S.
ASO COUNTY
RPORATED AREAS
080059
O COUNTY
ORADO SPRINGS
CITY OF COLORADO SPRINGS
080060
EL PASO COUNTY
UNINCORPORATED AREAS
080059

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A — No Base Flood Elevations determined.
- ZONE AE — Base Flood Elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR — Special Flood Hazard Area Formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D Boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A — A — Cross section line
- 23 — 23 — Transect line
- 97° 07' 30.00" / 32° 22' 30.00" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4325000mN — 1000-meter Universal Transverse Mercator grid ticks, zone 13
- 6000000 FT — 5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
DECEMBER 7, 2018 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

For community map revision history prior to countywide mapping, refer to the Community Map History Table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
150 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0533G

FIRM
FLOOD INSURANCE RATE MAP
EL PASO COUNTY, COLORADO
AND INCORPORATED AREAS

PANEL 533 OF 1300
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
COLORADO SPRINGS, CITY OF	080060	0533	G
EL PASO COUNTY	080059	0533	G

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
08041C0533G

MAP REVISED
DECEMBER 7, 2018

Federal Emergency Management Agency

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0535G

FIRM
FLOOD INSURANCE RATE MAP
EL PASO COUNTY, COLORADO
AND INCORPORATED AREAS

PANEL 535 OF 1300
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
COLORADO SPRINGS, CITY OF	080060	0535	G
EL PASO COUNTY	080059	0535	G

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
08041C0535G

MAP REVISED
DECEMBER 7, 2018

Federal Emergency Management Agency

HYDROLOGIC DRAINAGE CALCULATIONS

(GRADING ONLY – NO DEVELOPMENT)

CLASSIC SM
CONSULTING
ENGINEERS & SURVEYORS

JOB NAME: *VILLAGES AT STERLING RANCH (Early GEC Plan)*
JOB NUMBER: *1183.26*
DATE: *01/15/25*
CALCULATED BY: *MAW*

PROPOSED BASIN RUNOFF COEFFICIENT SUMMARY (EARLY GRADING ONLY - NO DEVELOPMENT)

		C VALUE DCM TABLE 6-6						WEIGHTED "C" VALUE			WEIGHTED CA			WEIGHTED IMP.
BASIN	TOTAL AREA (AC)	LAND USE	PERCENT IMP.	AREA (AC)	C(2)	C(5)	C(100)	C(2)	C(5)	C(100)	CA(2)	CA(5)	CA(100)	PERCENT
A	11.50	UNDEVELOPED	2.0%	11.50	0.03	0.09	0.36	0.03	0.09	0.36	0.35	1.04	4.14	2.0%
B	9.90	UNDEVELOPED	2.0%	9.90	0.03	0.09	0.36	0.03	0.09	0.36	0.30	0.89	3.56	2.0%
C	8.10	UNDEVELOPED	2.0%	8.10	0.03	0.09	0.36	0.03	0.09	0.36	0.24	0.73	2.92	2.0%
D	13.30	UNDEVELOPED	2.0%	13.30	0.03	0.09	0.36	0.03	0.09	0.36	0.40	1.20	4.79	2.0%
E	12.70	UNDEVELOPED	2.0%	12.70	0.03	0.09	0.36	0.03	0.09	0.36	0.38	1.14	4.57	2.0%
F	17.10	UNDEVELOPED	2.0%	17.10	0.03	0.09	0.36	0.03	0.09	0.36	0.51	1.54	6.16	2.0%
G	20.20	UNDEVELOPED	2.0%	20.20	0.03	0.09	0.36	0.03	0.09	0.36	0.61	1.82	7.27	2.0%
H	7.90	UNDEVELOPED	2.0%	7.90	0.03	0.09	0.36	0.03	0.09	0.36	0.24	0.71	2.84	2.0%
I	6.00	UNDEVELOPED	2.0%	6.00	0.03	0.09	0.36	0.03	0.09	0.36	0.18	0.54	2.16	2.0%
J	22.80	UNDEVELOPED	2.0%	22.80	0.03	0.09	0.36	0.03	0.09	0.36	0.68	2.05	8.21	2.0%
K	23.60	UNDEVELOPED	2.0%	23.60	0.03	0.09	0.36	0.03	0.09	0.36	0.71	2.12	8.50	2.0%
L	14.60	UNDEVELOPED	2.0%	14.60	0.03	0.09	0.36	0.03	0.09	0.36	0.44	1.31	5.26	2.0%

JOB NAME: *VILLAGES AT STERLING RANCH (Early GEC Plan)*
JOB NUMBER: *1183.26*
DATE: *03/28/03*
CALC'D BY: *MAW*

Return Period	1-Hour Depth
2	1.19
5	1.50
10	1.75
25	2.00
50	2.25
100	2.52

$$t_i = \frac{0.395(1.1 - C_5)\sqrt{L}}{S^{0.33}} \qquad V = C_v S_w^{0.5} \qquad Tc = L/V$$

Table 6-7. Conveyance Coefficient, C_v

Type of Land Surface	C_v
Heavy meadow	2.5
Tillage/field	5
Riprap (not buried)*	6.5
Short pasture and lawns	7
Nearly bare ground	10
Grassed waterway	15
Paved areas and shallow paved swales	20

$t_c = \frac{L}{180} + 10$

*For buried riprap, select C_v value based on type of vegetative cover.

PROPOSED BASIN RUNOFF SUMMARY (EARLY GRADING ONLY - NO DEVELOPMENT)

BASIN	WEIGHTED			OVERLAND				STREET / CHANNEL FLOW				Tc	INTENSITY			TOTAL FLOWS		
	CA(2)	CA(5)	CA(100)	C(5)	Length (ft)	Height (ft)	Tc (min)	Length (ft)	Slope (%)	Velocity (fps)	Tc (min)	TOTAL (min)	I(2) (in/hr)	I(5) (in/hr)	I(100) (in/hr)	Q(2) (cfs)	Q(5) (cfs)	Q(100) (cfs)
A	0.35	1.04	4.14	0.09	300	10	21.2	750	1.0%	1.0	12.5	33.7	1.85	2.31	3.87	0.6	**2.4**	**16.0**
B	0.30	0.89	3.56	0.09	200	6	17.9	450	1.5%	1.2	6.1	24.1	2.25	2.81	4.72	0.7	**2.5**	**16.8**
C	0.24	0.73	2.92	0.09	230	5	21.4	375	1.5%	1.2	5.1	26.5	2.13	2.67	4.48	0.5	**1.9**	**13.1**
D	0.40	1.20	4.79	0.09	300	8	22.9	230	1.5%	1.2	3.1	26.0	2.16	2.70	4.53	0.9	**3.2**	**21.7**
E	0.38	1.14	4.57	0.09	200	6	17.9	375	1.5%	1.2	5.1	23.0	2.30	2.88	4.83	0.9	**3.3**	**22.1**
F	0.51	1.54	6.16	0.09	200	4	20.5	300	2.0%	1.4	3.5	24.1	2.25	2.81	4.72	1.2	**4.3**	**29.1**
G	0.61	1.82	7.27	0.09	300	5	26.7	350	2.0%	1.4	4.1	30.8	1.96	2.44	4.10	1.2	**4.4**	**29.8**
H	0.24	0.71	2.84	0.09	300	8	22.9	800	2.0%	1.4	9.4	32.3	1.90	2.37	3.98	0.5	**1.7**	**11.3**
I	0.18	0.54	2.16	0.09	300	7	23.9	400	2.0%	1.4	4.7	28.6	2.04	2.55	4.28	0.4	**1.4**	**9.3**
J	0.68	2.05	8.21	0.09	200	4	20.5	600	2.0%	1.4	7.1	27.6	2.09	2.61	4.38	1.4	**5.3**	**35.9**
K	0.71	2.12	8.50	0.09	200	4	20.5	700	2.0%	1.4	8.2	28.8	2.04	2.54	4.27	1.4	**5.4**	**36.3**
L	0.44	1.31	5.26	0.09	300	8	22.9	350	2.0%	1.4	4.1	27.0	2.11	2.64	4.43	0.9	**3.5**	**23.3**

REFERENCE APPROVED FINAL DRAINAGE REPORT FOR

STERLING RANCH EAST FILING NO. 1

CLASSIC CONSULTING ENGINEERS & SURVEYORS

FINAL DRAINAGE REPORT
FOR
STERLING RANCH EAST FILING NO. 1

November 2022

Prepared for:
CLASSIC SRJ LAND, LLC
2138 Flying Horse Club Dr.
COLORADO SPRINGS CO 80921
(719) 592-9333

Prepared by:
CLASSIC CONSULTING ENGINEERS & SURVEYORS
619 N. CASCADE AVENUE, SUITE 200
COLORADO SPRINGS CO 80903
(719) 785-0790

Job no. 2183.30
PCD File # SF2235

ENGINEER'S STATEMENT:

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the 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.

COLORADO LICENSED KYLE RAYE CAMPBELL 29794 PROFESSIONAL ENGINEER

Kyle R Campbell, Colorado P.E. #29794 — Date 02/28/24

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: Classic SRJ Land, LLC

By:

Title: VICE PRESIDENT

Address: 2138 Flying Horse Club Dr.

Colorado Springs, CO 80921

EL PASO COUNTY ONLY:

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

Gilbert LaForce, P.E. Digitally signed by Gilbert LaForce, P.E. Reason: On Behalf of the County Engineer Date: 2024.07.02 15:58:09-06'00' — Date 07/02/2024

For County Engineer / ECM Administrator — Date

Conditions:

CLASSIC CONSULTING ENGINEERS & SURVEYORS

JOB NAME: *Sterling Ranch East Filing No. 1*
JOB NUMBER: *1183.30*
DATE: *08/04/22*
CALCULATED BY: *MAL*

FINAL DRAINAGE REPORT ~ BASIN RUNOFF COEFFICIENT SUMMARY (DEVELOPED CONDITIONS)

		IMPERVIOUS AREA / STREETS			LOTS/LANDSCAPE/UNDEV. AREAS (NOT PAVEMENT)				WEIGHTED		WEIGHTED CA	
BASIN	TOTAL AREA (AC)	AREA (AC)	C(5)	C(100)	AREA (AC)	LAND USE	C(5)	C(100)	C(5)	C(100)	**CA(5)**	**CA(100)**
TT	1.63	0.08	0.90	0.96	1.55	OPEN	0.08	0.35	0.12	0.38	**0.20**	**0.62**
CH-1	27.11	0.00	0.90	0.96	27.11	OPEN	0.08	0.35	0.08	0.35	**2.17**	**9.49**
CH-2	10.62	0.00	0.90	0.96	10.62	OPEN	0.08	0.35	0.08	0.35	**0.85**	**3.72**
P1-A1	4.45	3.12	0.90	0.96	1.33	OPEN	0.08	0.35	0.65	0.78	**2.91**	**3.46**
P1-A2	6.59	4.20	0.90	0.96	2.01	OPEN	0.08	0.35	0.62	0.75	**4.11**	**4.96**
					0.38	S/F	0.45	0.59				
P1-A3	1.83	1.37	0.90	0.96	0.46	OPEN	0.08	0.35	0.69	0.81	**1.27**	**1.48**
P1-A4	1.64	1.22	0.90	0.96	0.42	OPEN	0.08	0.35	0.69	0.80	**1.13**	**1.32**
P1-A5	1.86	1.01	0.90	0.96	0.85	OPEN	0.08	0.35	0.53	0.68	**0.98**	**1.27**
					0.00	S/F	0.45	0.59				
P1-A6	3.55	1.97	0.90	0.96	1.58	OPEN	0.08	0.35	0.54	0.69	**1.90**	**2.44**
P1-A7	3.11	1.06	0.90	0.96	1.11	OPEN	0.08	0.35	0.47	0.63	**1.47**	**1.96**
					0.94	S/F	0.45	0.59				
P2-B1	1.82	1.19	0.90	0.96	0.63	OPEN	0.08	0.35	0.62	0.75	**1.12**	**1.36**
P2-B2	1.87	1.17	0.90	0.96	0.70	OPEN	0.08	0.35	0.59	0.73	**1.11**	**1.37**
P2-B3	1.55	0.98	0.90	0.96	0.57	OPEN	0.08	0.35	0.60	0.74	**0.93**	**1.14**
P2-B4	1.64	1.00	0.90	0.96	0.64	OPEN	0.08	0.35	0.58	0.72	**0.95**	**1.18**
P2-B5	0.97	0.66	0.90	0.96	0.31	OPEN	0.08	0.35	0.64	0.77	**0.62**	**0.74**
P2-B6	1.07	0.67	0.90	0.96	0.40	OPEN	0.08	0.35	0.59	0.73	**0.64**	**0.78**
P2-B7	1.62	0.80	0.90	0.96	0.82	OPEN	0.08	0.35	0.48	0.65	**0.79**	**1.06**
P2-B8	1.21	0.80	0.90	0.96	0.41	OPEN	0.08	0.35	0.62	0.75	**0.75**	**0.91**
P2-B9	2.08	1.60	0.90	0.96	0.48	OPEN	0.08	0.35	0.71	0.82	**1.48**	**1.70**
P2-B10	2.31	1.64	0.90	0.96	0.67	OPEN	0.08	0.35	0.66	0.78	**1.53**	**1.81**
P2-C2	1.73	1.26	0.90	0.96	0.47	OPEN	0.08	0.35	0.68	0.79	**1.17**	**1.37**
P2-S1	36.59	0.00	0.90	0.96	36.59	SCHOOL	0.42	0.61	0.42	0.61	**15.37**	**22.32**
P2-S1 (UNDEV)	36.59	0.00	0.90	0.96	36.59	OPEN	0.08	0.35	0.08	0.35	**2.93**	**12.81**

JOB NAME: **Sterling Ranch East Filing No. 1**
JOB NUMBER: **1183.30**
DATE: **8/4/2022**
CALC'D BY: **MAL**

FINAL DRAINAGE REPORT ~ BASIN RUNOFF SUMMARY (DEVELOPED CONDITIONS)

BASIN	WEIGHTED		OVERLAND				STREET / CHANNEL FLOW				Tc	INTENSITY		TOTAL FLOWS	
	CA(5)	CA(100)	C(5)	Length (ft)	Height (ft)	Tc (min)	Length (ft)	Slope (%)	Velocity (fps)	Tc (min)	TOTAL (min)	I(5) (in/hr)	I(100) (in/hr)	Q(5) (cfs)	Q(100) (cfs)
RR	0.48	2.10	0.08	100	25	6.4	360	1.0%	3.5	1.7	8.1	4.45	7.47	**2.1**	**15.7**
SS	0.27	0.43	0.45	60	7	4.0	150	2.0%	4.9	0.5	5.0	5.17	8.68	**1.4**	**3.7**
TT	0.20	0.62	0.08	40	1	8.6	400	2.0%	4.9	1.3	10.0	4.14	6.94	**0.8**	**4.3**
CH-1	2.17	9.49	0.08	100	18	7.1	3050	1.6%	4.4	11.5	18.6	3.20	5.37	**6.9**	**51.0**
CH-2	0.85	3.72	0.08	100	25	6.4	475	0.5%	2.5	3.2	9.6	4.20	7.04	**3.6**	**26.2**
P1-A1	2.91	3.46	0.08	10	0.5	3.4	2350	0.9%	3.3	11.8	15.2	3.50	5.87	**10.2**	**20.3**
P1-A2	4.11	4.96	0.08	10	0.5	3.4	2350	0.9%	3.3	11.8	15.2	3.50	5.87	**14.4**	**29.1**
P1-A3	1.27	1.48	0.08	10	0.5	3.4	780	0.9%	3.3	3.9	7.3	4.59	7.71	**5.8**	**11.4**
P1-A4	1.13	1.32	0.08	10	0.5	3.4	780	0.9%	3.3	3.9	7.3	4.59	7.71	**5.2**	**10.2**
P1-A5	0.98	1.27	0.08	10	0.5	3.4	600	1.0%	3.5	2.9	6.3	4.83	8.10	**4.7**	**10.3**
P1-A6	1.90	2.44	0.08	10	0.5	3.4	1250	1.0%	3.5	6.0	9.4	4.23	7.09	**8.0**	**17.3**
P1-A7	1.47	1.96	0.08	10	0.5	3.4	650	1.0%	3.5	3.1	6.5	4.77	8.01	**7.0**	**15.7**
P2-B1	1.12	1.36	0.08	10	0.5	3.4	1100	2.2%	5.2	3.5	7.0	4.67	7.85	**5.2**	**10.7**
P2-B2	1.11	1.37	0.08	10	0.5	3.4	1100	2.2%	5.2	3.5	7.0	4.67	7.85	**5.2**	**10.7**

JOB NAME: **Sterling Ranch East Filing No. 1**
JOB NUMBER: **1183.30**
DATE: **8/4/2022**
CALC'D BY: **MAL**

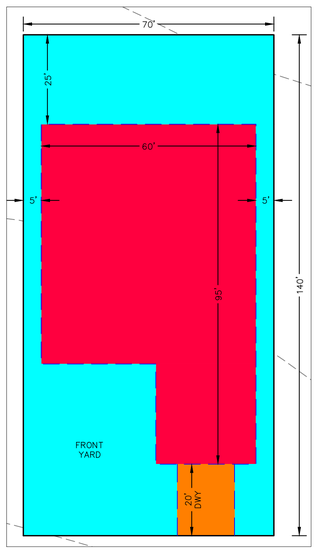
FINAL DRAINAGE REPORT ~ BASIN RUNOFF SUMMARY (DEVELOPED CONDITIONS)

BASIN	WEIGHTED		OVERLAND				STREET / CHANNEL FLOW				Tc	INTENSITY		TOTAL FLOWS	
	CA(5)	CA(100)	C(5)	Length (ft)	Height (ft)	Tc (min)	Length (ft)	Slope (%)	Velocity (fps)	Tc (min)	TOTAL (min)	I(5) (in/hr)	I(100) (in/hr)	Q(5) (cfs)	Q(100) (cfs)
P2-B3	0.93	1.14	0.08	10	0.5	3.4	980	1.6%	4.4	3.7	7.1	4.64	7.79	**4.3**	**8.9**
P2-B4	0.95	1.18	0.08	10	0.5	3.4	980	1.6%	4.4	3.7	7.1	4.64	7.79	**4.4**	**9.2**
P2-B5	0.62	0.74	0.08	10	0.5	3.4	615	1.6%	4.4	2.3	5.7	4.96	8.33	**3.1**	**6.2**
P2-B6	0.64	0.78	0.08	10	0.5	3.4	615	1.6%	4.4	2.3	5.7	4.96	8.33	**3.2**	**6.5**
P2-B7	0.79	1.06	0.08	10	0.5	3.4	760	1.6%	4.4	2.9	6.3	4.83	8.10	**3.8**	**8.5**
P2-B8	0.75	0.91	0.08	10	0.5	3.4	760	1.6%	4.4	2.9	6.3	4.83	8.10	**3.6**	**7.4**
P2-B9	1.48	1.70	0.08	10	0.5	3.4	770	2.3%	5.3	2.4	5.8	4.94	8.29	**7.3**	**14.1**
P2-B10	1.53	1.81	0.08	10	0.5	3.4	770	2.3%	5.3	2.4	5.8	4.94	8.29	**7.5**	**15.0**
P2-C2	1.17	1.37	0.08	10	0.5	3.4	610	3.4%	6.5	1.6	5.0	5.17	8.68	**6.1**	**11.9**
P2-S1	15.37	22.32									16.5	3.38	5.67	**51.9**	**126.6**
P2-S1 (UNDEV)	2.93	12.81	0.08	300	8	23.1	1760	1.4%	4.1	7.1	30.2	2.47	4.15	**7.2**	**53.2**

JOB NAME: *Sterling Ranch East Filing No. 1*
JOB NUMBER: *1183.30*
DATE: *08/04/22*
CALCULATED BY: *MAL*

FINAL DRAINAGE REPORT ~ SURFACE ROUTING SUMMARY (DEVELOPED CONDITIONS)

Design Point(s)	Contributing Basins	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity		Flow		Inlet Size
					I(5)	I(100)	Q(5)	Q(100)	
1	BASIN P1-A1	2.91	3.46	15.2	3.50	5.87	10.2	20.3	EX. 20' AT-GRADE
2	BASIN P1-A2	4.11	4.96	15.2	3.50	5.87	14.4	29.1	EX. 20' AT-GRADE
3	BASIN P1-A4 + Flow-By DP-1	1.13	1.90	7.3	4.59	7.71	5.2	14.7	EX. 15' AT-GRADE
4	BASIN P1-A3 + Flow-By DP-2	1.61	3.08	15.2	3.50	5.87	5.6	18.1	EX. 15' AT-GRADE
5	BASIN P1-A7	1.47	1.96	6.5	4.77	8.01	7.0	15.7	FUT. 15' AT-GRADE
6	BASIN P1-A5 + BASIN P1-C2 + Flow-By DP-4 + Flow-By DP-5	2.15	3.94	6.5	4.77	8.01	10.3	31.6	20' SUMP
7	BASIN P1-A6	1.90	2.44	9.4	4.23	7.09	8.0	17.3	15' SUMP
8	BASIN P2-B2	1.11	1.37	7.0	4.67	7.85	5.2	10.7	EX. 10' AT-GRADE
9	BASIN P2-B1 + Flow-By DP-3	1.12	1.75	7.0	4.67	7.85	5.2	13.7	EX. 10' AT-GRADE
10	BASIN X	1.54	1.91	11.7	3.90	6.54	6.0	12.5	15' SUMP



TYPICAL HOME LOT

UIA = 55% OF LOT AREA
DCIA = 0.72% OF LOT AREA
RPA = 44.28% OF LOT AREA

- FUTURE SCHOOL SITE – ESTIMATED 13.94 AC. DCIA, 1.51 AC. UIA, 3.46 AC. RPA, 17.68 AC. SPA
- HOME LOTS (SEE BREAKDOWN ABOVE)
- SPA – SEPARATE PERVIOUS AREA
- UIA – UNCONNECTED IMPERVIOUS AREA
- DCIA – DIRECTLY CONNECTED IMPERVIOUS AREA
- RPA – RECEIVING PERVIOUS AREA

VOLLMER ROAD
BRIARGATE PARKWAY
SAND CREEK
FUTURE BRIARGATE PARKWAY
POCATELLO TRAIL
CLEARLAKE WAY
SANTA CLARA PL
NEWPORT BEACH DRIVE
LONG BEACH TERRACE
SAN DIEGO WAY
WESTMONT DRIVE
PALO ALTO TRAIL
STERLING RANCH ROAD
POND 14A

250 125 0 250 500

SCALE: 1" = 250'

CLASSIC CONSULTING SM
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799(Fax)

STERLING RANCH EAST FILING NO. 1

FINAL DRAINAGE REPORT
TRIBUTARY AREA TO PROPOSED POND 14A

CLASSIC CONSULTING

DESIGNED BY	MAL	SCALE	DATE 10/27/22
DRAWN BY	MAL	(H) 1"= 250'	SHEET 1 OF 1
CHECKED BY		(V) 1"= N/A	JOB NO. 1183.30

N:\1183\01\DRAWINGS\DEVELOPMENT\TRIB-AREA-IMPERVIOUS.dwg, 4/3/2023 10:28:26 AM, 1:1

MATCHLINE ~ SEE SHEET 3

MATCHLINE ~ SEE SHEET 3

MATCHLINE ~ SEE SHEET 2

KEY MAP
1" = 1000'

BRIARGATE PKWY.
SITE
SHEET 1
STERLING RANCH RD.

BRANDING IRON AT STERLING RANCH FILING NO. 1
BRANDING IRON AT STERLING RANCH FILING NO. 2
SAND CREEK RESTORATION PROJECT BY JR ENGINEERING, EL PASO COUNTY CDR-20-004
AMPITHEATRE STEPS/WALLS/ SEATING
EXISTING STOCK POND
TRACT A
TRACT B
TRACT C
PROPOSED FSD POND 14A
SAND CREEK REACH SC-8
STERLING RANCH ROAD
SANTA CLARA PLACE
SAN DIEGO WAY
WESTMONT DRIVE
LONG BEACH TERRACE
NEWPORT BEACH DRIVE
PALO ALTO TRAIL
EXISTING SWALE FROM STERLING RANCH ROAD IMPROVEMENTS
UNPLATTED
OWNER: CLASSIC SRJ LAND LLC
PARCEL 5233000018
UNPLATTED
OWNER: CLASSIC SRJ LAND LLC
PARCEL 5233000017
PIPE DRAINS TO A DOWNSTREAM TEMPORARY DETENTION/SWQ FACILITY BY OTHERS (NOT PER THIS PROJECT)
SAND CREEK RESTORATION PROJECT BY JR ENGINEERING, EL PASO COUNTY CDR-20-004 BOX CULVERT UNDER STERLING RANCH ROAD (38'-1" X 11'-11")

LEGEND

- EXISTING GROUND CONTOUR
- PROPOSED FINISHED GRADE CONTOURS
- SUBDIVISION BOUNDARY
- 100-YR FLOODPLAIN LIMITS
- EXISTING STORM SEWER
- EXISTING STORM INLET
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- FUTURE STORM SEWER
- PROPOSED BASIN BOUNDARY
- BASIN IDENTIFIER / AREA IN ACRES
- DIRECTION OF DRAINAGE
- DESIGN POINT
- PIPE RUN
- EXISTING RIPRAP
- PROPOSED RIPRAP

100 50 0 100 200
SCALE: 1" = 100'

48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS
811
UTILITY NOTIFICATION CENTER OF COLORADO
IT'S THE LAW

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NO.	REVISION	DATE

REVIEW:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

KYLE R. CAMPBELL, COLORADO P.E. #29794 DATE

CLASSIC CONSULTING SM
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799(Fax)

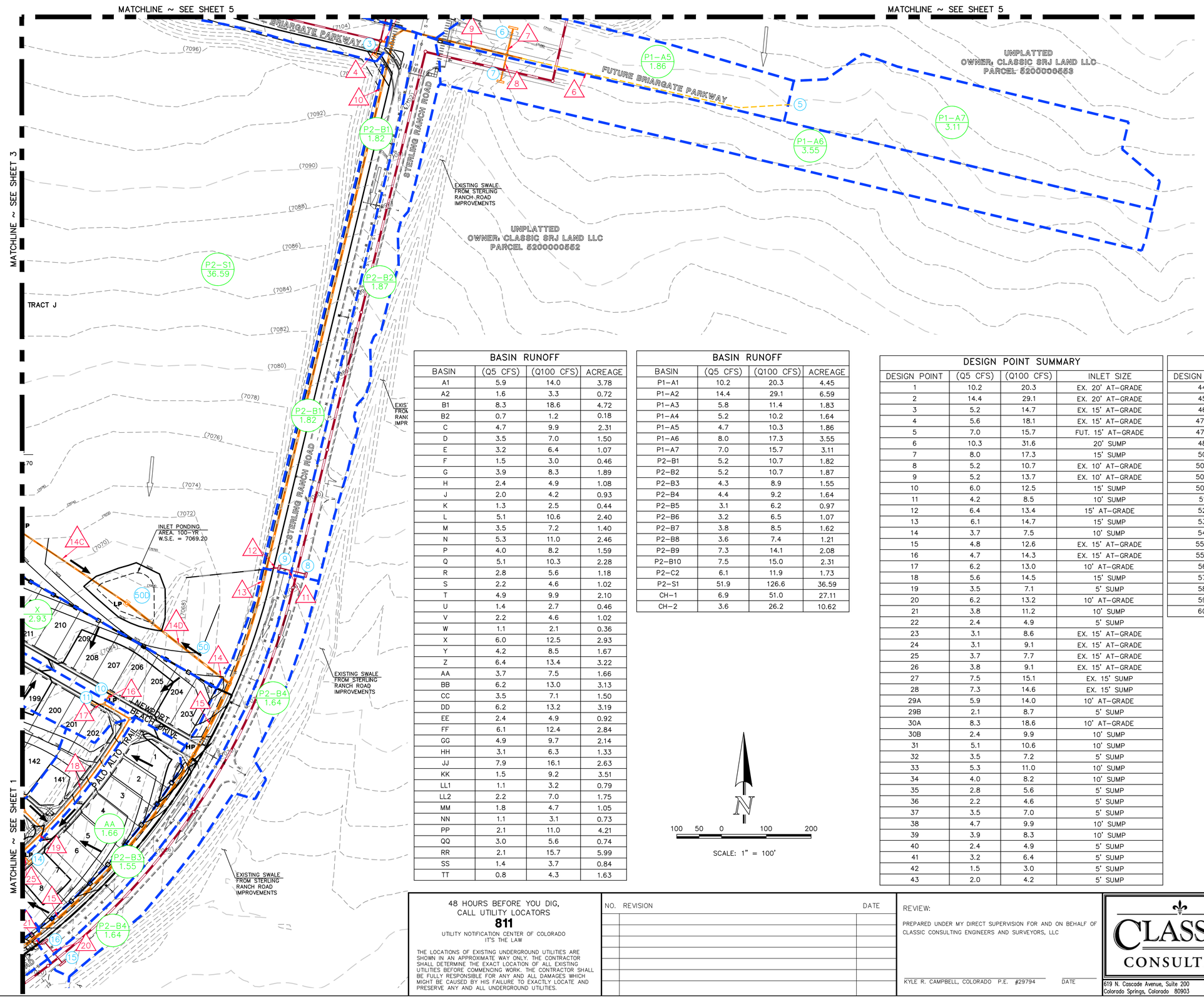
STERLING RANCH EAST FILING NO. 1

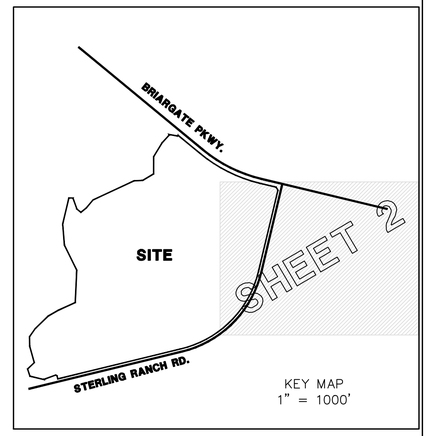
FINAL DRAINAGE REPORT
DEVELOPED CONDITIONS DRAINAGE MAP

CLASSIC CONSULTING

DESIGNED BY	MAL	SCALE		DATE	11/04/22
DRAWN BY	MAL	(H) 1"= 100'		SHEET	1 OF 5
CHECKED BY		(V) 1"= N/A		JOB NO.	1183.30

N:\1183\01\DRAWINGS\DEVELOPMENT\FIL-1-FDR-REV.dwg, 9/23/2023 4:12:20 PM, 1:1





BASIN RUNOFF			
BASIN	(Q5 CFS)	(Q100 CFS)	ACREAGE
A1	5.9	14.0	3.78
A2	1.6	3.3	0.72
B1	8.3	18.6	4.72
B2	0.7	1.2	0.18
C	4.7	9.9	2.31
D	3.5	7.0	1.50
E	3.2	6.4	1.07
F	1.5	3.0	0.46
G	3.9	8.3	1.89
H	2.4	4.9	1.08
J	2.0	4.2	0.93
K	1.3	2.5	0.44
L	5.1	10.6	2.40
M	3.5	7.2	1.40
N	5.3	11.0	2.46
P	4.0	8.2	1.59
Q	5.1	10.3	2.28
R	2.8	5.6	1.18
S	2.2	4.6	1.02
T	4.9	9.9	2.10
U	1.4	2.7	0.46
V	2.2	4.6	1.02
W	1.1	2.1	0.36
X	6.0	12.5	2.93
Y	4.2	8.5	1.67
Z	6.4	13.4	3.22
AA	3.7	7.5	1.66
BB	6.2	13.0	3.13
CC	3.5	7.1	1.50
DD	6.2	13.2	3.19
EE	2.4	4.9	0.92
FF	6.1	12.4	2.84
GG	4.9	9.7	2.14
HH	3.1	6.3	1.33
JJ	7.9	16.1	2.63
KK	1.5	9.2	3.51
LL1	1.1	3.2	0.79
LL2	2.2	7.0	1.75
MM	1.8	4.7	1.05
NN	1.1	3.1	0.73
PP	2.1	11.0	4.21
QQ	3.0	5.6	0.74
RR	2.1	15.7	5.99
SS	1.4	3.7	0.84
TT	0.8	4.3	1.63

BASIN RUNOFF			
BASIN	(Q5 CFS)	(Q100 CFS)	ACREAGE
P1–A1	10.2	20.3	4.45
P1–A2	14.4	29.1	6.59
P1–A3	5.8	11.4	1.83
P1–A4	5.2	10.2	1.64
P1–A5	4.7	10.3	1.86
P1–A6	8.0	17.3	3.55
P1–A7	7.0	15.7	3.11
P2–B1	5.2	10.7	1.82
P2–B2	5.2	10.7	1.87
P2–B3	4.3	8.9	1.55
P2–B4	4.4	9.2	1.64
P2–B5	3.1	6.2	0.97
P2–B6	3.2	6.5	1.07
P2–B7	3.8	8.5	1.62
P2–B8	3.6	7.4	1.21
P2–B9	7.3	14.1	2.08
P2–B10	7.5	15.0	2.31
P2–C2	6.1	11.9	1.73
P2–S1	51.9	126.6	36.59
CH–1	6.9	51.0	27.11
CH–2	3.6	26.2	10.62

DESIGN POINT SUMMARY			
DESIGN POINT	(Q5 CFS)	(Q100 CFS)	INLET SIZE
1	10.2	20.3	EX. 20' AT–GRADE
2	14.4	29.1	EX. 20' AT–GRADE
3	5.2	14.7	EX. 15' AT–GRADE
4	5.6	18.1	EX. 15' AT–GRADE
5	7.0	15.7	FUT. 15' AT–GRADE
6	10.3	31.6	20' SUMP
7	8.0	17.3	15' SUMP
8	5.2	10.7	EX. 10' AT–GRADE
9	5.2	13.7	EX. 10' AT–GRADE
10	6.0	12.5	15' SUMP
11	4.2	8.5	10' SUMP
12	6.4	13.4	15' AT–GRADE
13	6.1	14.7	15' SUMP
14	3.7	7.5	10' SUMP
15	4.8	12.6	EX. 15' AT–GRADE
16	4.7	14.3	EX. 15' AT–GRADE
17	6.2	13.0	10' AT–GRADE
18	5.6	14.5	15' SUMP
19	3.5	7.1	5' SUMP
20	6.2	13.2	10' AT–GRADE
21	3.8	11.2	10' SUMP
22	2.4	4.9	5' SUMP
23	3.1	8.6	EX. 15' AT–GRADE
24	3.1	9.1	EX. 15' AT–GRADE
25	3.7	7.7	EX. 15' AT–GRADE
26	3.8	9.1	EX. 15' AT–GRADE
27	7.5	15.1	EX. 15' SUMP
28	7.3	14.6	EX. 15' SUMP
29A	5.9	14.0	10' AT–GRADE
29B	2.1	8.7	5' SUMP
30A	8.3	18.6	10' AT–GRADE
30B	2.4	9.9	10' SUMP
31	5.1	10.6	10' SUMP
32	3.5	7.2	5' SUMP
33	5.3	11.0	10' SUMP
34	4.0	8.2	10' SUMP
35	2.8	5.6	5' SUMP
36	2.2	4.6	5' SUMP
37	3.5	7.0	5' SUMP
38	4.7	9.9	10' SUMP
39	3.9	8.3	10' SUMP
40	2.4	4.9	5' SUMP
41	3.2	6.4	5' SUMP
42	1.5	3.0	5' SUMP
43	2.0	4.2	5' SUMP

DESIGN POINT SUMMARY			
DESIGN POINT	(Q5 CFS)	(Q100 CFS)	INLET SIZE
44	1.3	2.5	5' SUMP
45	2.2	4.6	5' SUMP
46	1.4	2.7	5' SUMP
47A	5.1	10.3	10' AT–GRADE
47B	5.3	13.0	10' SUMP
48	1.1	2.1	5' SUMP
50	51.9	126.6	FUTURE STORM
50B	2.4	17.5	TYPE D INLET
50C	2.4	17.5	TYPE D INLET
50D	2.4	17.5	TYPE D INLET
51	7.9	16.1	FUTURE STORM
52	1.8	4.7	TYPE C INLET
53	1.1	3.1	TYPE C INLET
54	1.4	3.7	TYPE C INLET
55A	1.1	3.2	TYPE C INLET
55B	2.2	7.0	TYPE C INLET
56	0.8	4.3	FUTURE STORM
57	2.1	11.0	FUTURE STORM
58	3.0	5.6	FUTURE STORM
59	1.5	9.2	FUTURE STORM
60	232.0	520.5	PROPOSED POND 14A

LEGEND

- EXISTING GROUND CONTOUR (7000)
- PROPOSED FINISHED GRADE CONTOURS 7000
- SUBDIVISION BOUNDARY
- 100–YR FLOODPLAIN LIMITS
- EXISTING STORM SEWER
- EXISTING STORM INLET
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- FUTURE STORM SEWER
- PROPOSED BASIN BOUNDARY
- BASIN IDENTIFIER / AREA IN ACRES: D / 1.41
- DIRECTION OF DRAINAGE
- DESIGN POINT: 1
- PIPE RUN: 1
- EXISTING RIPRAP
- PROPOSED RIPRAP

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UTILITY NOTIFICATION CENTER OF COLORADO
IT'S THE LAW

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NO.	REVISION	DATE

REVIEW:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

KYLE R. CAMPBELL, COLORADO P.E. #29794 — DATE

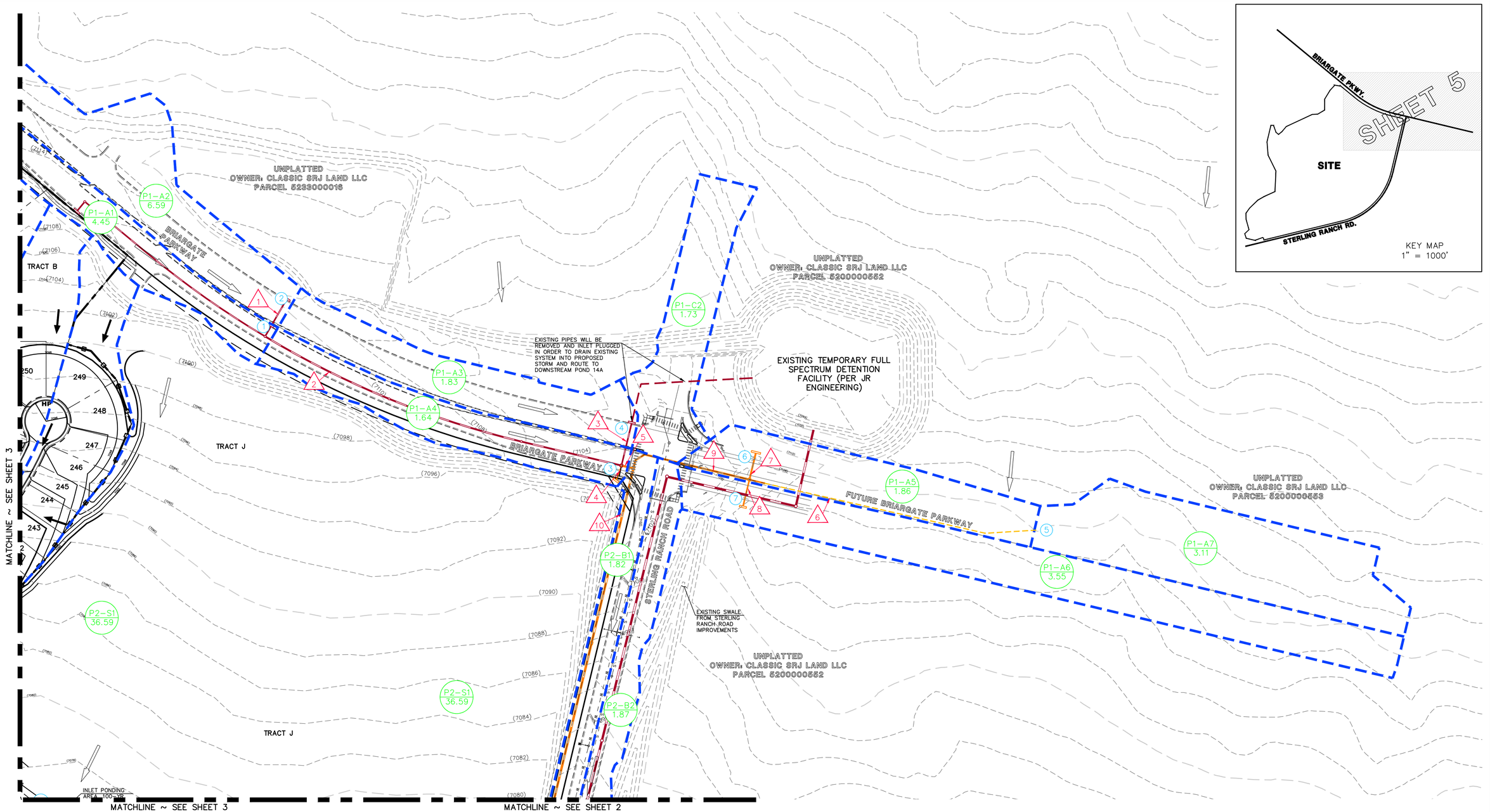
CLASSIC CONSULTING
619 N. Cascade Avenue, Suite 200
Colorado Springs, Colorado 80903
(719)785-0790
(719)785-0799(Fax)

STERLING RANCH EAST FILING NO. 1

FINAL DRAINAGE REPORT
DEVELOPED CONDITIONS DRAINAGE MAP

DESIGNED BY	MAL	SCALE		DATE	11/04/22
DRAWN BY	MAL	(H) 1"=	100'	SHEET	2 OF 5
CHECKED BY		(V) 1"=	N/A	JOB NO.	1183.30

N:\1183\01\DRAWINGS\DEVELOPMENT\PLT-1-FDR-REV.dwg, 8/23/2023 4:14:50 PM, 1:1



LEGEND

- EXISTING GROUND CONTOUR (7000)
- PROPOSED FINISHED GRADE CONTOURS 7000
- SUBDIVISION BOUNDARY
- 100-YR FLOODPLAIN LIMITS
- EXISTING STORM SEWER
- EXISTING STORM INLET
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- FUTURE STORM SEWER
- PROPOSED BASIN BOUNDARY
- BASIN IDENTIFIER D / AREA IN ACRES 1.41
- DIRECTION OF DRAINAGE
- DESIGN POINT 1
- PIPE RUN 1
- EXISTING RIPRAP
- PROPOSED RIPRAP

100 50 0 100 200

SCALE: 1" = 100'

N

48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS
811
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NO.	REVISION	DATE

REVIEW:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

KYLE R. CAMPBELL, COLORADO P.E. #29794 DATE

CLASSIC CONSULTING SM
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799(Fax)

STERLING RANCH EAST FILING NO. 1

FINAL DRAINAGE REPORT
DEVELOPED CONDITIONS DRAINAGE MAP

DESIGNED BY	MAL	SCALE		DATE	11/04/22
DRAWN BY	MAL	(H) 1"= 100'		SHEET	5 OF 5
CHECKED BY		(V) 1"= N/A		JOB NO.	1183.30

N:\1183\01\DRAWINGS\DEVELOPMENT\FIL-1-FDR-REV.dwg, 8/23/2023 4:16:52 PM, 1:1

REFERENCE FINAL DRAINAGE REPORT FOR

STERLING RANCH EAST FILING NO. 3 & 5

CLASSIC CONSULTING ENGINEERS & SURVEYORS

FINAL DRAINAGE REPORT
FOR
STERLING RANCH EAST
FILING NO. 3

Prepared for:
CLASSIC SRJ LAND, LLC
2138 FLYING HORSE CLUB DRIVE
COLORADO SPRINGS CO 80921
(719) 592-9333

Prepared by:
CLASSIC CONSULTING
619 N. CASCADE AVE SUITE 200
COLORADO SPRINGS CO 80903
(719) 785-0790

Job No. 1183.33

PCD Project No.

FINAL DRAINAGE REPORT FOR
STERLING RANCH EAST FILING NO. 3

ENGINEER'S STATEMENT:
The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the applicable 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.

_____ _____

Marc A. Whorton Colorado P.E. #37155 Date

OWNER'S/DEVELOPER'S STATEMENT:
I, the owner/developer, have read and will comply with all of the requirements specified in this drainage report and plan.

Business Name: CLASSIC SRJ LAND, LLC

By: _____

Title: _____

Address: 2138 Flying Horse Club Drive

Colorado Springs, CO 80921

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

_____ _____

Joshua Palmer, P.E. Date
County Engineer, / ECM Administrator

Conditions:

AREA QUALIFIES FOR EXCLUSION H – STREAM STABILIZATION (PBMP FORM)

AREA TREATED IN EXISTING PERMANENT POND FSD–14A

AREA TREATED IN FUTURE PERMANENT POND FSD–14B

66.79 AC. (BASINS TRIBUTARY TO POND FSD–11B)

7.48 AC. (UIA AREA BASINS BB, CC, DD, EE, FF)

4.55 AC. (BUFFER TRACT IN BASINS AA, BB, CC, DD, EE, FF)

AREAS TREATED IN PROPOSED PERMANENT POND 11–B

AREAS OF RUNOFF REDUCTION WATER QUALITY TREATMENT

AREA WITHIN BASINS FOR RECEIVING PERVIOUS AREA (RPA) OR BASIN AA (SPA)

WATER QUALITY TREATMENT PLAN MAP

BASIN AA SPA AREA

BASIN BB RPA AREA

BASIN BB UIA AREA

BASIN CC RPA AREA

BASIN CC UIA AREA

BASIN DD RPA AREA

BASIN DD UIA AREA

BASIN EE RPA AREA

BASIN EE UIA AREA

BASIN FF RPA AREA

BASIN FF UIA AREA

N

100 50 0 100 200

SCALE: 1" = 100'

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NO.	REVISION	DATE

REVIEW:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHORTON, COLORADO P.E. #37155 DATE

CLASSIC CONSULTING SM
619 N. Cascade Avenue, Suite 200 (719)785–0790
Colorado Springs, Colorado 80903 (719)785–0799(Fax)

STERLING RANCH EAST FILING NO. 3

FINAL DRAINAGE REPORT
STORMWATER QUALITY TREATMENT PLAN MAP

CLASSIC CONSULTING

DESIGNED BY	MAW	SCALE		DATE	6/1/23
DRAWN BY	MAW	(H) 1"= 100'		SHEET	1 OF 1
CHECKED BY		(V) 1"= N/A		JOB NO.	1183.33

\\1183.33\REPORTS\FINAL DRAINAGE REPORT\1183.33PTM.dwg, 9/23/2024 2:05:05 PM, h1

Design Procedure Form: Runoff Reduction

UD-BMP (Version 3.07, March 2018)

Designer: Marc A. Whorton, P.E.
Company: Classic Consulting
Date: September 23, 2024
Project: Sterling Ranch East Filing No. 3
Location: El Paso County, Colorado

SITE INFORMATION (User Input in Blue Cells)

WQCV Rainfall Depth = 0.53 inches
Depth of Average Runoff Producing Storm, d_6 = 0.42 inches (for Watersheds Outside of the Denver Region, Figure 3-1 in USDCM Vol. 3)

Area Type	SPA	UIA:RPA	UIA:RPA	UIA:RPA	UIA:RPA	UIA:RPA	UIA:RPA	UIA:RPA	UIA:RPA			
Area ID	Basin AA	Basin BB	Basin CC	Basin DD1	Basin DD2	Basin EE1	Basin EE2	Basin EE3	Basin FF			
Downstream Design Point ID	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site			
Downstream BMP Type	None	None	None	None	None	None	None	None	None			
DCIA (ft^2)	--	--	--	--	--	--	--	--	--			
UIA (ft^2)	--	12,786	46,741	41,293	41,293	50,141	50,141	50,141	33,452			
RPA (ft^2)	--	35,130	23,633	21,241	21,241	20,635	20,635	20,635	10,359			
SPA (ft^2)	23,958	--	--	--	--	--	--	--	--			
HSG A (%)	0%	30%	100%	100%	100%	100%	100%	100%	100%			
HSG B (%)	100%	70%	0%	0%	0%	0%	0%	0%	0%			
HSG C/D (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%			
Average Slope of RPA (ft/ft)	--	0.030	0.028	0.020	0.020	0.028	0.028	0.028	0.029			
UIA:RPA Interface Width (ft)	--	90.00	280.00	260.00	260.00	250.00	250.00	250.00	140.00			

CALCULATED RUNOFF RESULTS

Area ID	Basin AA	Basin BB	Basin CC	Basin DD1	Basin DD2	Basin EE1	Basin EE2	Basin EE3	Basin FF			
UIA:RPA Area (ft^2)	--	47,916	70,374	62,534	62,534	70,776	70,776	70,776	43,811			
L / W Ratio	--	5.92	0.90	0.93	0.93	1.13	1.13	1.13	2.24			
UIA / Area	--	0.2668	0.6642	0.6603	0.6603	0.7084	0.7084	0.7084	0.7636			
Runoff (in)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Runoff (ft^3)	0	0	0	0	0	0	0	0	0			
Runoff Reduction (ft^3)	1058	458	1675	1480	1480	1797	1797	1797	1199			

CALCULATED WQCV RESULTS

Area ID	Basin AA	Basin BB	Basin CC	Basin DD1	Basin DD2	Basin EE1	Basin EE2	Basin EE3	Basin FF			
WQCV (ft^3)	0	520	1902	1681	1681	2041	2041	2041	1361			
WQCV Reduction (ft^3)	0	520	1902	1681	1681	2041	2041	2041	1361			
WQCV Reduction (%)	0%	100%	100%	100%	100%	100%	100%	100%	100%			
Untreated WQCV (ft^3)	0	0	0	0	0	0	0	0	0			

CALCULATED DESIGN POINT RESULTS (sums results from all columns with the same Downstream Design Point ID)

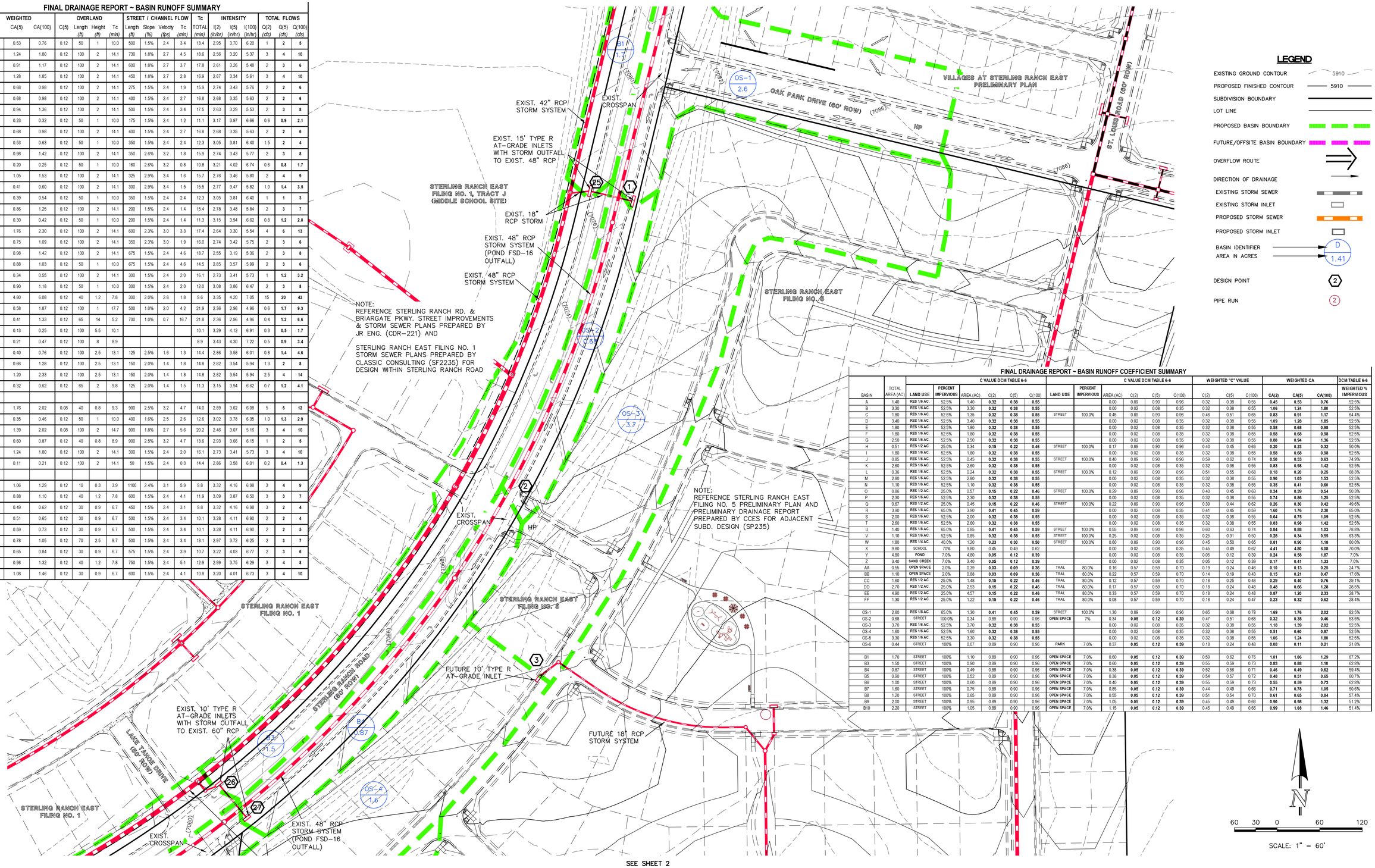
Downstream Design Point ID	Off-site											
DCIA (ft^2)	0											
UIA (ft^2)	325,988											
RPA (ft^2)	173,509											
SPA (ft^2)	23,958											
Total Area (ft^2)	523,455											
Total Impervious Area (ft^2)	325,988											
WQCV (ft^3)	13,267											
WQCV Reduction (ft^3)	13,267											
WQCV Reduction (%)	100%											
Untreated WQCV (ft^3)	0											

CALCULATED SITE RESULTS (sums results from all columns in worksheet)

Total Area (ft^2)	523,455
Total Impervious Area (ft^2)	325,988
WQCV (ft^3)	13,267
WQCV Reduction (ft^3)	13,267
WQCV Reduction (%)	100%
Untreated WQCV (ft^3)	0

FINAL DRAINAGE REPORT ~ BASIN RUNOFF SUMMARY

BASIN	WEIGHTED CA(2)	WEIGHTED CA(5)	WEIGHTED CA(100)	OVERLAND C(5)	OVERLAND Length (ft)	OVERLAND Height (ft)	OVERLAND Tc (min)	STREET / CHANNEL FLOW Length (ft)	STREET / CHANNEL FLOW Slope (%)	STREET / CHANNEL FLOW Velocity (fps)	STREET / CHANNEL FLOW Tc (min)	Tc TOTAL (min)	INTENSITY I(2) (in/hr)	INTENSITY I(5) (in/hr)	INTENSITY I(100) (in/hr)	TOTAL FLOWS Q(2) (cfs)	TOTAL FLOWS Q(5) (cfs)	TOTAL FLOWS Q(100) (cfs)
A	0.45	0.53	0.76	0.12	50	1	10.0	500	1.5%	2.4	3.4	13.4	2.95	3.70	6.20	1	**2**	**5**
B	1.06	1.24	1.80	0.12	100	2	14.1	730	1.8%	2.7	4.5	18.6	2.56	3.20	5.37	3	**4**	**10**
C	0.83	0.91	1.17	0.12	100	2	14.1	600	1.8%	2.7	3.7	17.8	2.61	3.26	5.48	2	**3**	**6**
D	1.09	1.28	1.85	0.12	100	2	14.1	450	1.8%	2.7	2.8	16.9	2.67	3.34	5.61	3	**4**	**10**
E	0.58	0.68	0.98	0.12	100	2	14.1	275	1.5%	2.4	1.9	15.9	2.74	3.43	5.76	2	**2**	**6**
F	0.58	0.68	0.98	0.12	100	2	14.1	400	1.5%	2.4	2.7	16.8	2.68	3.35	5.63	2	**2**	**6**
G	0.80	0.94	1.36	0.12	100	2	14.1	500	1.5%	2.4	3.4	17.5	2.63	3.29	5.53	2	**3**	**8**
H	0.20	0.23	0.32	0.12	50	1	10.0	175	1.5%	2.4	1.2	11.1	3.17	3.97	6.66	0.6	**0.9**	**2.1**
I	0.58	0.68	0.98	0.12	100	2	14.1	400	1.5%	2.4	2.7	16.8	2.68	3.35	5.63	2	**2**	**6**
J	0.50	0.53	0.63	0.12	50	1	10.0	350	1.5%	2.4	2.4	12.3	3.05	3.81	6.40	1.5	**2**	**4**
K	0.83	0.98	1.42	0.12	100	2	14.1	350	2.6%	3.2	1.8	15.9	2.74	3.43	5.77	2	**3**	**8**
L	0.18	0.20	0.25	0.12	50	1	10.0	160	2.6%	3.2	0.8	10.8	3.21	4.02	6.74	0.6	**0.8**	**1.7**
M	0.90	1.05	1.53	0.12	100	2	14.1	325	2.9%	3.4	1.6	15.7	2.76	3.46	5.80	2	**4**	**9**
N	0.35	0.41	0.60	0.12	100	2	14.1	300	2.9%	3.4	1.5	15.5	2.77	3.47	5.82	1.0	**1.4**	**3.5**
O	0.34	0.39	0.54	0.12	50	1	10.0	350	1.5%	2.4	2.4	12.3	3.05	3.81	6.40	1	**1**	**3**
P	0.74	0.86	1.25	0.12	100	2	14.1	200	1.5%	2.4	1.4	15.4	2.78	3.48	5.84	2	**3**	**7**
Q	0.26	0.30	0.42	0.12	50	1	10.0	200	1.5%	2.4	1.4	11.3	3.15	3.94	6.62	0.8	**1.2**	**2.8**
R	1.60	1.76	2.30	0.12	100	2	14.1	600	2.3%	3.0	3.3	17.4	2.64	3.30	5.54	4	**6**	**13**
S	0.64	0.75	1.09	0.12	100	2	14.1	350	2.3%	3.0	1.9	16.0	2.74	3.42	5.75	2	**3**	**6**
T	0.83	0.98	1.42	0.12	100	2	14.1	675	1.5%	2.4	4.6	18.7	2.55	3.19	5.36	2	**3**	**8**
U	0.84	0.88	1.03	0.12	50	1	10.0	675	1.5%	2.4	4.6	14.5	2.85	3.57	5.99	2	**3**	**6**
V	0.28	0.34	0.55	0.12	100	2	14.1	300	1.5%	2.4	2.0	16.1	2.73	3.41	5.73	1	**1.2**	**3.2**
W	0.81	0.90	1.18	0.12	50	1	10.0	300	1.5%	2.4	2.0	12.0	3.08	3.86	6.47	2	**3**	**8**
X	4.41	4.80	6.08	0.12	40	1.2	7.8	300	2.0%	2.8	1.8	9.6	3.35	4.20	7.05	15	**20**	**43**
Y	0.24	0.58	1.87	0.12	100	1	17.7	500	1.0%	2.0	4.2	21.9	2.36	2.96	4.96	0.6	**1.7**	**9.3**
Z	0.17	0.41	1.33	0.12	65	14	5.2	700	1.0%	0.7	16.7	21.8	2.36	2.96	4.96	0.4	**1.2**	**6.6**
AA	0.10	0.13	0.25	0.12	100	5.5	10.1					10.1	3.29	4.12	6.91	0.3	**0.5**	**1.7**
BB	0.15	0.21	0.47	0.12	100	8	8.9					8.9	3.43	4.30	7.22	0.5	**0.9**	**3.4**
CC	0.29	0.40	0.76	0.12	100	2.5	13.1	125	2.5%	1.6	1.3	14.4	2.86	3.58	6.01	0.8	**1.4**	**4.6**
DD	0.48	0.66	1.28	0.12	100	2.5	13.1	150	2.0%	1.4	1.8	14.8	2.82	3.54	5.94	1.3	**2**	**8**
EE	0.87	1.20	2.33	0.12	100	2.5	13.1	150	2.0%	1.4	1.8	14.8	2.82	3.54	5.94	2.5	**4**	**14**
FF	0.23	0.32	0.62	0.12	65	2	9.8	125	2.0%	1.4	1.5	11.3	3.15	3.94	6.62	0.7	**1.2**	**4.1**
OS-1	1.69	1.76	2.02	0.08	40	0.8	9.3	900	2.5%	3.2	4.7	14.0	2.89	3.62	6.08	5	**6**	**12**
OS-2	0.32	0.35	0.46	0.12	50	1	10.0	400	1.6%	2.5	2.6	12.6	3.02	3.78	6.35	1.0	**1.3**	**2.9**
OS-3	1.18	1.39	2.02	0.08	100	2	14.7	900	1.8%	2.7	5.6	20.2	2.46	3.07	5.16	3	**4**	**10**
OS-4	0.51	0.60	0.87	0.12	40	0.8	8.9	900	2.5%	3.2	4.7	13.6	2.93	3.66	6.15	1	**2**	**5**
OS-5	1.06	1.24	1.80	0.12	100	2	14.1	300	1.5%	2.4	2.0	16.1	2.73	3.41	5.73	3	**4**	**10**
OS-6	0.08	0.11	0.21	0.12	100	2	14.1	50	1.5%	2.4	0.3	14.4	2.86	3.58	6.01	0.2	**0.4**	**1.3**
B1	1.01	1.06	1.29	0.12	10	0.3	3.9	1100	2.4%	3.1	5.9	9.8	3.32	4.16	6.98	3	**4**	**9**
B3	0.83	0.88	1.10	0.12	40	1.2	7.8	600	1.5%	2.4	4.1	11.9	3.09	3.87	6.50	3	**3**	**7**
B4	0.83	0.49	0.62	0.12	30	0.9	6.7	450	1.5%	2.4	3.1	9.8	3.32	4.16	6.98	3	**2**	**4**
B5	0.48	0.51	0.65	0.12	30	0.9	6.7	500	1.5%	2.4	3.4	10.1	3.28	4.11	6.90	2	**2**	**4**
B6	0.55	0.59	0.73	0.12	30	0.9	6.7	500	1.5%	2.4	3.4	10.1	3.28	4.11	6.90	2	**2**	**5**
B7	0.71	0.78	1.05	0.12	70	2.5	9.7	500	1.5%	2.4	3.4	13.1	2.97	3.72	6.25	2	**3**	**7**
B8	0.61	0.65	0.84	0.12	30	0.9	6.7	575	1.5%	2.4	3.9	10.7	3.22	4.03	6.77	2	**3**	**6**
B9	0.90	0.98	1.32	0.12	40	1.2	7.8	750	1.5%	2.4	5.1	12.9	2.99	3.75	6.29	3	**4**	**8**
B10	0.99	1.08	1.46	0.12	30	0.9	6.7	600	1.5%	2.4	4.1	10.8	3.20	4.01	6.73	3	**4**	**10**



LEGEND

- EXISTING GROUND CONTOUR — 5910
- PROPOSED FINISHED CONTOUR — 5910
- SUBDIVISION BOUNDARY
- LOT LINE
- PROPOSED BASIN BOUNDARY
- FUTURE/OFFSITE BASIN BOUNDARY
- OVERFLOW ROUTE
- DIRECTION OF DRAINAGE
- EXISTING STORM SEWER
- EXISTING STORM INLET
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- BASIN IDENTIFIER / AREA IN ACRES — D / 1.41
- DESIGN POINT — 2
- PIPE RUN — 2

N

60 30 0 60 120

SCALE: 1" = 60'

SEE SHEET 2

FINAL DRAINAGE REPORT ~ BASIN RUNOFF COEFFICIENT SUMMARY

BASIN	TOTAL AREA (AC)	C VALUE DCM TABLE 6-6 LAND USE	C VALUE DCM TABLE 6-6 PERCENT IMPERVIOUS	C VALUE DCM TABLE 6-6 AREA (AC)	C VALUE DCM TABLE 6-6 C(2)	C VALUE DCM TABLE 6-6 C(5)	C VALUE DCM TABLE 6-6 C(100)	WEIGHTED "C" VALUE LAND USE	WEIGHTED "C" VALUE PERCENT IMPERVIOUS	WEIGHTED "C" VALUE AREA (AC)	WEIGHTED "C" VALUE C(2)	WEIGHTED "C" VALUE C(5)	WEIGHTED "C" VALUE C(100)	WEIGHTED CA C(2)	WEIGHTED CA C(5)	WEIGHTED CA C(100)	DCM TABLE 6-6 WEIGHTED % IMPERVIOUS
A	1.40	RES 1/8 AC.	52.5%	1.40	**0.32**	**0.38**	**0.55**			0.00	0.89	0.90	0.96	0.32	0.38	0.55	**0.45**	**0.53**	**0.76**	52.5%
B	3.30	RES 1/8 AC.	52.5%	3.30	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**1.06**	**1.24**	**1.80**	52.5%
C	1.80	RES 1/8 AC.	52.5%	1.35	**0.32**	**0.38**	**0.55**	STREET	100.0%	0.45	0.89	0.90	0.96	0.46	0.51	0.65	**0.83**	**0.91**	**1.17**	64.4%
D	3.40	RES 1/8 AC.	52.5%	3.40	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**1.09**	**1.28**	**1.85**	52.5%
E	1.80	RES 1/8 AC.	52.5%	1.80	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**0.58**	**0.68**	**0.98**	52.5%
F	1.80	RES 1/8 AC.	52.5%	1.80	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**0.58**	**0.68**	**0.98**	52.5%
G	2.50	RES 1/8 AC.	52.5%	2.50	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**0.80**	**0.94**	**1.36**	52.5%
H	0.51	RES 1/2 AC.	25.0%	0.34	**0.15**	**0.22**	**0.46**	STREET	100.0%	0.17	0.89	0.90	0.96	0.40	0.45	0.63	**0.20**	**0.23**	**0.32**	50.0%
I	1.80	RES 1/8 AC.	52.5%	1.80	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**0.58**	**0.68**	**0.98**	52.5%
J	0.85	RES 1/8 AC.	52.5%	0.45	**0.32**	**0.38**	**0.55**	STREET	100.0%	0.40	0.89	0.90	0.96	0.59	0.62	0.74	**0.50**	**0.53**	**0.63**	74.9%
K	2.60	RES 1/8 AC.	52.5%	2.60	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**0.83**	**0.98**	**1.42**	52.5%
L	0.36	RES 1/8 AC.	52.5%	0.24	**0.32**	**0.38**	**0.55**	STREET	100.0%	0.12	0.89	0.90	0.96	0.51	0.55	0.68	**0.18**	**0.20**	**0.25**	68.3%
M	2.80	RES 1/8 AC.	52.5%	2.80	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**0.90**	**1.05**	**1.53**	52.5%
N	1.10	RES 1/8 AC.	52.5%	1.10	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**0.35**	**0.41**	**0.60**	52.5%
O	0.86	RES 1/2 AC.	25.0%	0.57	**0.15**	**0.22**	**0.46**	STREET	100.0%	0.29	0.89	0.90	0.96	0.40	0.45	0.63	**0.34**	**0.39**	**0.54**	50.3%
P	2.30	RES 1/8 AC.	52.5%	2.30	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**0.74**	**0.86**	**1.25**	52.5%
Q	0.67	RES 1/2 AC.	25.0%	0.45	**0.15**	**0.22**	**0.46**	STREET	100.0%	0.22	0.89	0.90	0.96	0.39	0.44	0.62	**0.26**	**0.30**	**0.42**	49.6%
R	3.90	RES 1/8 AC.	65.0%	3.90	**0.41**	**0.45**	**0.59**			0.00	0.02	0.08	0.35	0.41	0.45	0.59	**1.60**	**1.76**	**2.30**	65.0%
S	2.00	RES 1/8 AC.	52.5%	2.00	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**0.64**	**0.75**	**1.09**	52.5%
T	2.60	RES 1/8 AC.	52.5%	2.60	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**0.83**	**0.98**	**1.42**	52.5%
U	1.40	RES 1/8 AC.	65.0%	0.85	**0.41**	**0.45**	**0.59**	STREET	100.0%	0.55	0.89	0.90	0.96	0.60	0.63	0.74	**0.84**	**0.88**	**1.03**	78.8%
V	1.10	RES 1/8 AC.	52.5%	0.85	**0.32**	**0.38**	**0.55**	STREET	100.0%	0.25	0.02	0.08	0.35	0.25	0.31	0.50	**0.28**	**0.34**	**0.55**	63.3%
W	1.80	RES 1/4 AC.	40.0%	1.20	**0.23**	**0.30**	**0.50**	STREET	100.0%	0.60	0.89	0.90	0.96	0.45	0.50	0.65	**0.81**	**0.90**	**1.18**	60.0%
X	9.80	SCHOOL	70%	9.80	0.45	0.49	0.62			0.00	0.02	0.08	0.35	0.45	0.49	0.62	**4.41**	**4.80**	**6.08**	70.0%
Y	4.80	POND	7.0%	4.80	**0.05**	**0.12**	**0.39**			0.00	0.02	0.08	0.35	0.05	0.12	0.39	**0.24**	**0.58**	**1.87**	7.0%
Z	3.40	SAND CREEK	7.0%	3.40	**0.05**	**0.12**	**0.39**			0.00	0.02	0.08	0.35	0.05	0.12	0.39	**0.17**	**0.41**	**1.33**	7.0%
AA	0.55	OPEN SPACE	2.0%	0.39	**0.03**	**0.09**	**0.36**	TRAIL	80.0%	0.16	0.57	0.59	0.70	0.19	0.24	0.46	**0.10**	**0.13**	**0.25**	24.7%
BB	1.10	OPEN SPACE	2.0%	0.88	**0.03**	**0.09**	**0.36**	TRAIL	80.0%	0.22	0.57	0.59	0.70	0.14	0.19	0.43	**0.15**	**0.21**	**0.47**	17.6%
CC	1.60	RES 1/2 AC.	25.0%	1.48	**0.15**	**0.22**	**0.46**	TRAIL	80.0%	0.12	0.57	0.59	0.70	0.18	0.25	0.48	**0.29**	**0.40**	**0.76**	29.1%
DD	2.70	RES 1/2 AC.	25.0%	2.53	**0.15**	**0.22**	**0.46**	TRAIL	80.0%	0.17	0.57	0.59	0.70	0.18	0.24	0.48	**0.48**	**0.66**	**1.28**	28.5%
EE	4.90	RES 1/2 AC.	25.0%	4.57	**0.15**	**0.22**	**0.46**	TRAIL	80.0%	0.33	0.57	0.59	0.70	0.18	0.24	0.48	**0.87**	**1.20**	**2.33**	28.7%
FF	1.30	RES 1/2 AC.	25.0%	1.22	**0.15**	**0.22**	**0.46**	TRAIL	80.0%	0.08	0.57	0.59	0.70	0.18	0.24	0.47	**0.23**	**0.32**	**0.62**	28.4%
OS-1	2.60	RES 1/8 AC.	65.0%	1.30	**0.41**	**0.45**	**0.59**	STREET	100.0%	1.30	0.89	0.90	0.96	0.65	0.68	0.78	**1.69**	**1.76**	**2.02**	82.5%
OS-2	0.68	STREET	100.0%	0.34	0.89	0.90	0.96	OPEN SPACE	7%	0.34	**0.05**	**0.12**	**0.39**	0.47	0.51	0.68	**0.32**	**0.35**	**0.46**	53.5%
OS-3	3.70	RES 1/8 AC.	52.5%	3.70	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**1.18**	**1.39**	**2.02**	52.5%
OS-4	1.60	RES 1/8 AC.	52.5%	1.60	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**0.51**	**0.60**	**0.87**	52.5%
OS-5	3.30	RES 1/8 AC.	52.5%	3.30	**0.32**	**0.38**	**0.55**			0.00	0.02	0.08	0.35	0.32	0.38	0.55	**1.06**	**1.24**	**1.80**	52.5%
OS-6	0.44	STREET	100%	0.07	0.89	0.90	0.96	PARK	7.0%	0.37	**0.05**	**0.12**	**0.39**	0.18	0.24	0.48	**0.08**	**0.11**	**0.21**	21.8%
B1	1.70	STREET	100%	1.10	0.89	0.90	0.96	OPEN SPACE	7.0%	0.60	**0.05**	**0.12**	**0.39**	0.59	0.62	0.76	**1.01**	**1.06**	**1.29**	67.2%
B3	1.50	STREET	100%	0.90	0.89	0.90	0.96	OPEN SPACE	7.0%	0.60	**0.05**	**0.12**	**0.39**	0.55	0.59	0.73	**0.83**	**0.88**	**1.10**	62.8%
B4	0.87	STREET	100%	0.49	0.89	0.90	0.96	OPEN SPACE	7.0%	0.38	**0.05**	**0.12**	**0.39**	0.52	0.56	0.71	**0.46**	**0.49**	**0.62**	59.4%
B5	0.90	STREET	100%	0.52	0.89	0.90	0.96	OPEN SPACE	7.0%	0.38	**0.05**	**0.12**	**0.39**	0.54	0.57	0.72	**0.48**	**0.51**	**0.65**	60.7%
B6	1.00	STREET	100%	0.60	0.89	0.90	0.96	OPEN SPACE	7.0%	0.40	**0.05**	**0.12**	**0.39**	0.55	0.59	0.73	**0.55**	**0.59**	**0.73**	62.8%
B7	1.60	STREET	100%	0.75	0.89	0.90	0.96	OPEN SPACE	7.0%	0.85	**0.05**	**0.12**	**0.39**	0.44	0.49	0.66	**0.71**	**0.78**	**1.05**	50.6%
B8	1.20	STREET	100%	0.65	0.89	0.90	0.96	OPEN SPACE	7.0%	0.55	**0.05**	**0.12**	**0.39**	0.51	0.54	0.70	**0.61**	**0.65**	**0.84**	57.4%
B9	2.00	STREET	100%	0.95	0.89	0.90	0.96	OPEN SPACE	7.0%	1.05	**0.05**	**0.12**	**0.39**	0.45	0.49	0.66	**0.90**	**0.98**	**1.32**	51.2%
B10	2.20	STREET	100%	1.05	0.89	0.90	0.96	OPEN SPACE	7.0%	1.15	**0.05**	**0.12**	**0.39**	0.45	0.49	0.66	**0.99**	**1.08**	**1.46**	51.4%

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THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NO.	REVISION	DATE

REVIEW:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHORTON, COLORADO P.E. #37155 — DATE

CLASSIC CONSULTING SM
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799(Fax)

STERLING RANCH EAST FILING NO. 3

FINAL DRAINAGE REPORT
DEVELOPED DRAINAGE MAP

CLASSIC CONSULTING

DESIGNED BY	MAW	SCALE		DATE	6/1/23
DRAWN BY	MAW	(H) 1"= 60'		SHEET	1 OF 5
CHECKED BY		(V) 1"= N/A		JOB NO.	1183.33

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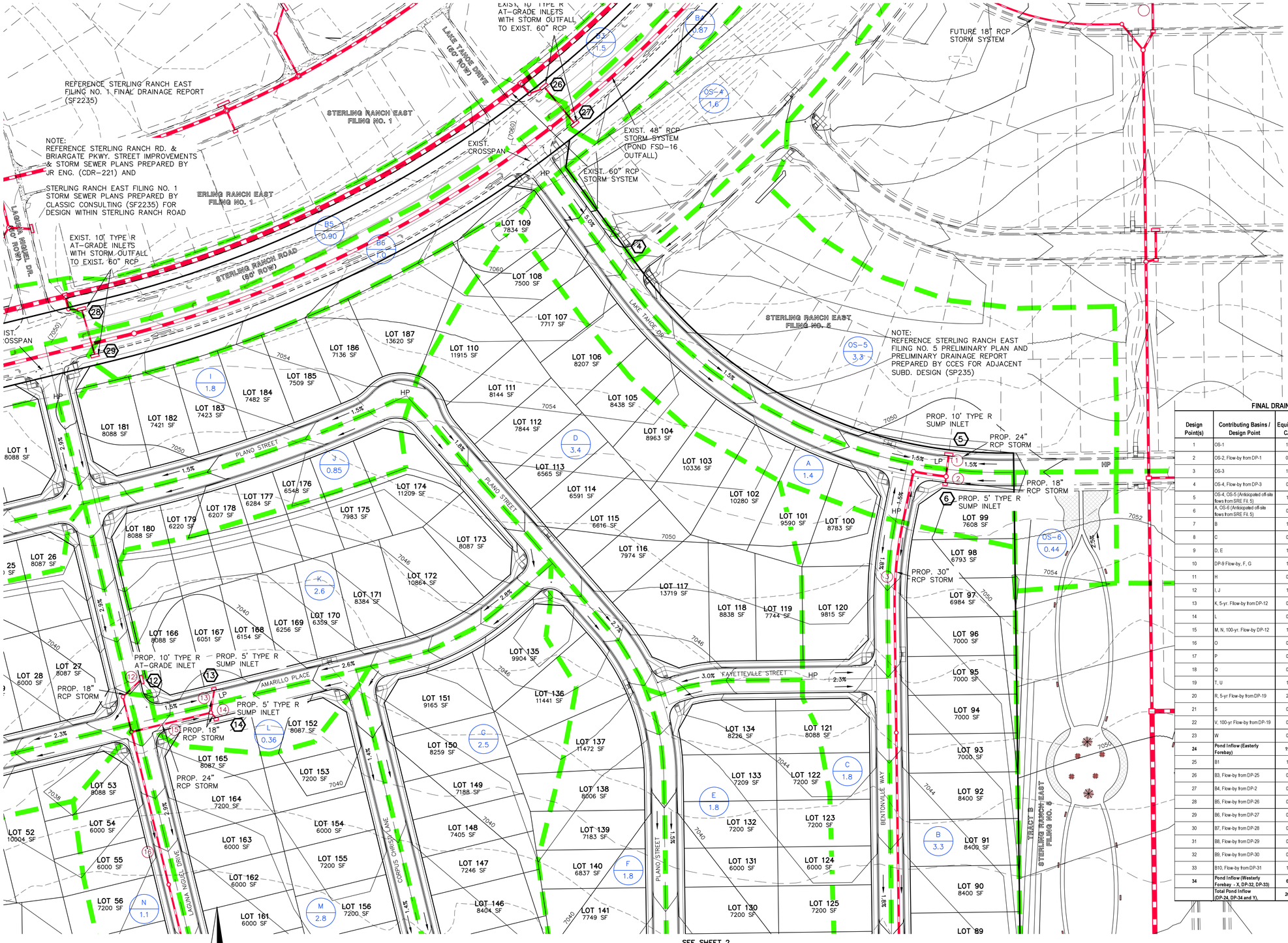

LEGEND

- EXISTING GROUND CONTOUR — 5910
- PROPOSED FINISHED CONTOUR — 5910
- SUBDIVISION BOUNDARY
- LOT LINE
- PROPOSED BASIN BOUNDARY
- FUTURE/OFFSITE BASIN BOUNDARY
- OVERFLOW ROUTE
- DIRECTION OF DRAINAGE
- EXISTING STORM SEWER
- EXISTING STORM INLET
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- BASIN IDENTIFIER / AREA IN ACRES — D / 1.41
- DESIGN POINT — 2
- PIPE RUN — 2

FINAL DRAINAGE REPORT ~ SURFACE ROUTING SUMMARY

Design Point(s)	Contributing Basins / Design Point	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity I(5)	Intensity I(100)	Flow Q(5)	Flow Q(100)	Facility/ Inlet Size*
1	OS-1	1.76	2.02	14.0	3.62	6.08	6	12	Exist. 15' Type R At-grade Inlet
2	OS-2, Flow-by from DP-1	0.35	0.72	16.6	3.37	5.65	1	4	Exist. Crosspan
3	OS-3	1.39	2.02	20.2	3.07	5.16	4	10	Future 10' Type R At-grade Inlet
4	OS-4, Flow-by from DP-3	0.61	1.46	21.2	3.00	5.03	2	7	Prop. 6' Crosspan
5	OS-4, OS-5 (Anticipated off-site flows from SRE Fil. 5)	1.85	3.26	22.2	2.93	4.92	5	16	Prop. 10' Type R Sump Inlet
6	A; OS-6 (Anticipated off-site flows from SRE Fil. 5)	0.63	0.97	13.4	3.70	6.20	2	6	Prop. 5' Type R Sump Inlet
7	B	1.24	1.80	18.6	3.20	5.37	4	10	Prop. 10' Type R Sump Inlet
8	C	0.91	1.17	17.8	3.26	5.48	3	6	Prop. 5' Type R Sump Inlet
9	D, E	1.95	2.83	18.8	3.18	5.35	6	15	Prop. 10' At-Grade Type R Inlet
10	DP-9 Flow-by, F, G	1.85	3.53	17.5	3.29	5.53	6	20	Prop. 10' Type R Sump Inlet
11	H	0.23	0.32	11.1	3.97	6.66	0.9	2.1	Prop. 5' Type R Sump Inlet
12	I, J	1.20	1.61	18.8	3.18	5.34	4	9	Prop. 10' At-Grade Type R Inlet
13	K, 5-yr. Flow-by from DP-12	0.99	1.42	15.9	3.43	5.77	3	8	Prop. 5' Type R Sump Inlet
14	L	0.20	0.25	10.8	4.02	6.74	0.8	1.7	Prop. 5' Type R Sump Inlet
15	M, N, 100-yr. Flow-by DP-12	1.46	2.53	18.8	3.18	5.34	5	14	Prop. 10' Type R Sump Inlet
16	O	0.39	0.54	12.3	3.81	6.40	1	3	Prop. 5' Type R Sump Inlet
17	P	0.86	1.25	15.4	3.48	5.84	3	7	Prop. 5' Type R Sump Inlet
18	Q	0.30	0.42	11.3	3.94	6.62	1.2	2.8	Prop. 5' Type R Sump Inlet
19	T, U	1.85	2.45	19.1	3.16	5.31	6	13	Prop. 10' At-Grade Type R Inlet
20	R, 5-yr Flow-by from DP-19	2.05	2.30	17.4	3.30	5.54	7	13	Prop. 10' Type R Sump Inlet
21	S	0.75	1.09	16.0	3.42	5.75	3	6	Prop. 5' Type R Sump Inlet
22	V, 100-yr Flow-by from DP-19	0.34	1.55	16.1	3.41	5.73	1.2	8.9	Prop. 10' Type R Sump Inlet
23	W	0.90	1.18	12.0	3.86	6.47	3	8	Prop. 5' Type R Sump Inlet
24	**Pond Inflow (Easterly Forebay)**	**19.40**	**27.87**	**25.3**	**2.73**	**4.59**	**53**	**128**	**Prop. 54" RCP**
25	B1	1.06	1.29	9.8	4.16	6.98	4	9	Exist. 15' Type R At-grade Inlet
26	B3, Flow-by from DP-25	0.88	1.16	11.9	3.87	6.50	3	8	Exist. 10' Type R At-grade Inlet
27	B4, Flow-by from DP-2	0.83	1.34	19.7	3.11	5.22	3	7	Exist. 10' Type R At-grade Inlet
28	B5, Flow-by from DP-26	0.51	0.89	12.9	3.75	6.30	2	6	Exist. 10' Type R At-grade Inlet
29	B6, Flow-by from DP-27	0.59	0.96	20.7	3.04	5.10	2	5	Exist. 10' Type R At-grade Inlet
30	B7, Flow-by from DP-28	0.78	1.16	13.9	3.64	6.11	3	7	Exist. 10' Type R At-grade Inlet
31	B8, Flow-by from DP-29	0.65	0.90	21.7	2.97	4.98	2	4	Exist. 10' Type R At-grade Inlet
32	B9, Flow-by from DP-30	0.98	1.52	15.9	3.44	5.77	3	9	Exist. 10' Type R Sump Inlet
33	B10, Flow-by from DP-31	1.08	1.47	23.7	2.83	4.76	3	7	Exist. 15' Type R Sump Inlet
34	**Pond Inflow (Westerly Forebay - X, DP-32, DP-33)**	**6.87**	**9.06**	**16.9**	**3.34**	**5.61**	**23**	**51**	**Prop. 42" RCP**
	Total Pond Inflow (DP-24, DP-34 and Y),	**26.85**	**38.80**	**25.3**	**2.73**	**4.59**	**73**	**178**	**Pond FSD-11B**

SEE SHEET 2

60 30 0 60 120

SCALE: 1" = 60'

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DEVELOPED DRAINAGE MAP

CLASSIC CONSULTING

DESIGNED BY	MAW	SCALE		DATE	6/1/23
DRAWN BY	MAW	(H) 1"=	60'	SHEET	2 OF 5
CHECKED BY		(V) 1"=	N/A	JOB NO.	1183.33

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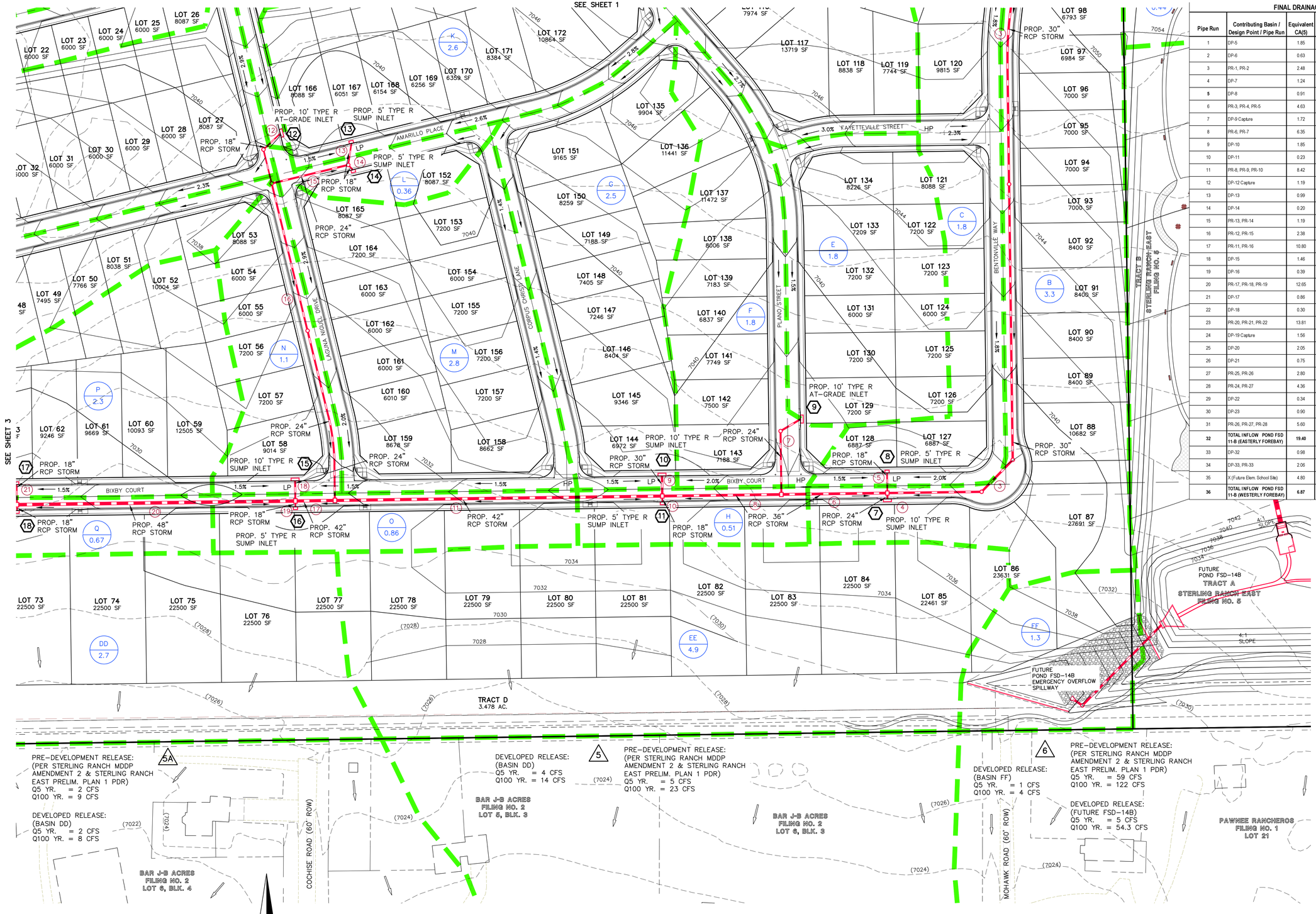

FINAL DRAINAGE REPORT ~ PIPE ROUTING SUMMARY

Pipe Run	Contributing Basin / Design Point / Pipe Run	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity I(5)	Intensity I(100)	Flow Q(5)	Flow Q(100)	Pipe Size*
1	DP-5	1.85	3.26	22.2	2.93	4.92	5	16	PROP. 24" RCP
2	DP-6	0.63	0.97	13.4	3.70	6.20	2	6	PROP. 18" RCP
3	PR-1, PR-2	2.48	4.23	23.2	2.86	4.81	7	20	PROP. 30" RCP
4	DP-7	1.24	1.80	18.6	3.20	5.37	4	10	PROP. 24" RCP
5	DP-8	0.91	1.17	17.8	3.26	5.48	3	6	PROP. 18" RCP
6	PR-3, PR-4, PR-5	4.63	7.20	23.4	2.85	4.79	13	34	PROP. 36" RCP
7	DP-9 Capture	1.72	1.64	18.8	3.18	5.35	5	9	PROP. 24" RCP
8	PR-6, PR-7	6.35	8.84	23.6	2.84	4.76	18	42	PROP. 36" RCP
9	DP-10	1.85	3.53	17.5	3.29	5.53	6	20	PROP. 30" RCP
10	DP-11	0.23	0.32	11.1	3.97	6.66	0.9	2.1	PROP. 18" RCP
11	PR-8, PR-9, PR-10	8.42	12.69	24.4	2.79	4.68	23	59	PROP. 42" RCP
12	DP-12 Capture	1.19	1.21	18.8	3.18	5.34	4	6	PROP. 18" RCP
13	DP-13	0.99	1.42	15.9	3.43	5.77	3	8	PROP. 18" RCP
14	DP-14	0.20	0.25	10.8	4.02	6.74	0.8	1.7	PROP. 18" RCP
15	PR-13, PR-14	1.19	1.66	15.9	3.43	5.77	4	10	PROP. 24" RCP
16	PR-12, PR-15	2.38	2.87	19.4	3.14	5.26	7	15	PROP. 24" RCP
17	PR-11, PR-16	10.80	15.56	24.4	2.79	4.68	30	73	PROP. 42" RCP
18	DP-15	1.46	2.53	18.8	3.18	5.34	5	14	PROP. 24" RCP
19	DP-16	0.39	0.54	12.3	3.81	6.40	1	3	PROP. 18" RCP
20	PR-17, PR-18, PR-19	12.65	18.63	24.8	2.76	4.64	35	86	PROP. 48" RCP
21	DP-17	0.86	1.25	15.4	3.48	5.84	3	7	PROP. 18" RCP
22	DP-18	0.30	0.42	11.3	3.94	6.62	1.2	2.8	PROP. 18" RCP
23	PR-20, PR-21, PR-22	13.81	20.30	25.2	2.74	4.60	38	93	PROP. 48" RCP
24	DP-19 Capture	1.56	1.44	19.1	3.16	5.31	5	8	PROP. 18" RCP
25	DP-20	2.05	2.30	17.4	3.30	5.54	7	13	PROP. 24" RCP
26	DP-21	0.75	1.09	16.0	3.42	5.75	3	6	PROP. 18" RCP
27	PR-25, PR-26	2.80	3.39	17.5	3.29	5.53	9	19	PROP. 30" RCP
28	PR-24, PR-27	4.36	4.83	19.3	3.15	5.28	14	26	PROP. 30" RCP
29	DP-22	0.34	1.55	16.1	3.41	5.73	1.2	8.9	PROP. 18" RCP
30	DP-23	0.90	1.18	12.0	3.86	6.47	3	8	PROP. 18" RCP
31	PR-26, PR-27, PR-28	5.60	7.56	19.4	3.14	5.27	18	40	PROP. 36" RCP
32	**TOTAL INFLOW POND FSD 11-B (EASTERLY FOREBAY)**	**19.40**	**27.87**	**25.3**	**2.73**	**4.59**	**53**	**128**	**PROP. 54" RCP**
33	DP-32	0.98	1.52	15.9	3.44	5.77	3	9	PROP. 18" RCP
34	DP-33, PR-33	2.06	2.98	16.9	3.34	5.61	7	17	PROP. 24" RCP
35	X (Future Elem. School Site)	4.80	6.08	9.6	4.20	7.05	20	43	PROP. 36" RCP
36	**TOTAL INFLOW POND FSD 11-B (WESTERLY FOREBAY)**	**6.87**	**9.06**	**16.9**	**3.34**	**5.61**	**23**	**51**	**PROP. 42" RCP**

LEGEND

- EXISTING GROUND CONTOUR — 5910
- PROPOSED FINISHED CONTOUR — 5910
- SUBDIVISION BOUNDARY
- LOT LINE
- PROPOSED BASIN BOUNDARY
- FUTURE/OFFSITE BASIN BOUNDARY
- OVERFLOW ROUTE
- DIRECTION OF DRAINAGE
- EXISTING STORM SEWER
- EXISTING STORM INLET
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- BASIN IDENTIFIER / AREA IN ACRES — D / 1.41
- DESIGN POINT — 2
- PIPE RUN — 2

48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS
811
UTILITY NOTIFICATION CENTER OF COLORADO
IT'S THE LAW

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NO.	REVISION	DATE

REVIEW:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHORTON, COLORADO P.E. #37155 DATE

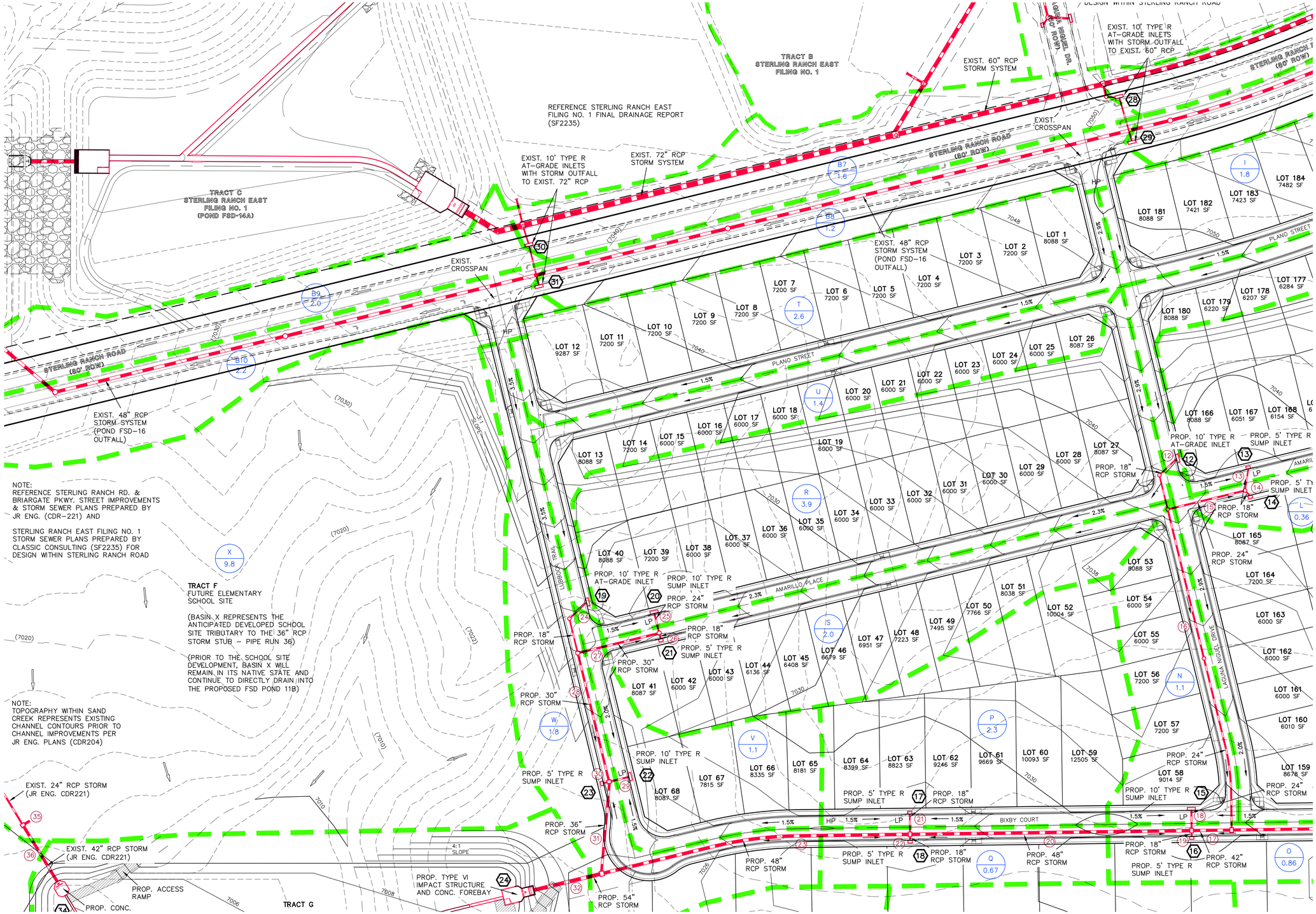
CLASSIC CONSULTING SM
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799(Fax)

STERLING RANCH EAST FILING NO. 3

FINAL DRAINAGE REPORT
DEVELOPED DRAINAGE MAP

DESIGNED BY	MAW	SCALE		DATE	6/1/23
DRAWN BY	MAW	(H) 1"= 60'		SHEET	3 OF 5
CHECKED BY		(V) 1"= N/A		JOB NO.	1183.33

N:\1183.33\REPORTS\FINAL DRAINAGE REPORT\1183.33FDM.dwg, 9/23/2024 10:04:18 AM, 1:1



NOTE:
REFERENCE STERLING RANCH RD. & BRIARGATE PKWY. STREET IMPROVEMENTS & STORM SEWER PLANS PREPARED BY JR ENG. (CDR-221) AND

STERLING RANCH EAST FILING NO. 1 STORM SEWER PLANS PREPARED BY CLASSIC CONSULTING (SF2235) FOR DESIGN WITHIN STERLING RANCH ROAD

TRACT F
FUTURE ELEMENTARY SCHOOL SITE

(BASIN X REPRESENTS THE ANTICIPATED DEVELOPED SCHOOL SITE TRIBUTARY TO THE 36" RCP STORM STUB – PIPE RUN 36)

(PRIOR TO THE SCHOOL SITE DEVELOPMENT, BASIN X WILL REMAIN IN ITS NATIVE STATE AND CONTINUE TO DIRECTLY DRAIN INTO THE PROPOSED FSD POND 11B)

NOTE:
TOPOGRAPHY WITHIN SAND CREEK REPRESENTS EXISTING CHANNEL CONTOURS PRIOR TO CHANNEL IMPROVEMENTS PER JR ENG. PLANS (CDR204)

LEGEND

- EXISTING GROUND CONTOUR — 5910
- PROPOSED FINISHED CONTOUR — 5910
- SUBDIVISION BOUNDARY
- LOT LINE
- PROPOSED BASIN BOUNDARY
- FUTURE/OFFSITE BASIN BOUNDARY
- OVERFLOW ROUTE
- DIRECTION OF DRAINAGE
- EXISTING STORM SEWER
- EXISTING STORM INLET
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- BASIN IDENTIFIER / AREA IN ACRES — D / 1.41
- DESIGN POINT — 2
- PIPE RUN — 2

N

60 30 0 60 120

SCALE: 1" = 60'

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NO.	REVISION	DATE

REVIEW:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHORTON, COLORADO P.E. #37155 — DATE

CLASSIC CONSULTING SM
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799(Fax)

STERLING RANCH EAST FILING NO. 3

FINAL DRAINAGE REPORT
DEVELOPED DRAINAGE MAP

CLASSIC CONSULTING

DESIGNED BY	MAW	SCALE		DATE	6/1/23
DRAWN BY	MAW	(H) 1"= 60'		SHEET	4 OF 5
CHECKED BY		(V) 1"= N/A		JOB NO.	1183.33

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EXIST. 15' TYPE R AT-GRADE INLETS

STERLING RANCH ROAD (80' ROW)

EXIST. 48" RCP STORM SYSTEM (POND FSD-16 OUTFALL)

EXIST. 24" RCP STORM (JR ENG. CDR221)

NOTE:
REFERENCE STERLING RANCH RD. & BRIARGATE PKWY. STREET IMPROVEMENTS & STORM SEWER PLANS PREPARED BY JR ENG. (CDR-221) AND

STERLING RANCH EAST FILING NO. 1 STORM SEWER PLANS PREPARED BY CLASSIC CONSULTING (SF2235) FOR DESIGN WITHIN STERLING RANCH ROAD

TRACT F
FUTURE ELEMENTARY SCHOOL SITE

(BASIN X REPRESENTS THE ANTICIPATED DEVELOPED SCHOOL SITE TRIBUTARY TO THE 36" RCP STORM STUB - PIPE RUN 36)

(PRIOR TO THE SCHOOL SITE DEVELOPMENT, BASIN X WILL REMAIN IN ITS NATIVE STATE AND CONTINUE TO DIRECTLY DRAIN INTO THE PROPOSED FSD POND 11B)

NOTE:
TOPOGRAPHY WITHIN SAND CREEK REPRESENTS EXISTING CHANNEL CONTOURS PRIOR TO CHANNEL IMPROVEMENTS PER JR ENG. PLANS (CDR204)

TRACT E

EXIST. 100-YR. FEMA FLOODPLAIN

EXIST. 24" RCP STORM (JR ENG. CDR221)

EXIST. 42" RCP STORM (JR ENG. CDR221)

PROP. 24" RCP STORM OUTFALL

TRACT B
STERLING RANCH FILING NO. 3

SAND CREEK

PROP. ACCESS RAMP

PROP. CONC. FOREBAY

PROP. 24" WIDE CONC. TRICKLE CHANNEL

PROP. CONC. OUTLET STRUCTURE W/ MICROPOOL

PROP. EMERGENCY OVERFLOW SPILLWAY TYPE L RIP-RAP

TRACT G
POND FSD-11B

PROP. TYPE VI IMPACT STRUCTURE AND CONC. FOREBAY

PROP. ACCESS RAMP

PROP. 36" WIDE CONC. TRICKLE CHANNEL

TOP EMBANKMENT = 7010.0

TRACT D
3.478 AC.

PLANO STREET

BIXBY COURT

AMARILLO PLACE

LUBBOCK TRAIL

PROP. 10' TYPE R AT-GRADE INLET

PROP. 10' TYPE R SUMP INLET

PROP. 24" RCP STORM

PROP. 18" RCP STORM

PROP. 5' TYPE R SUMP INLET

PROP. 30" RCP STORM

PROP. 36" RCP STORM

PROP. 48" RCP STORM

PROP. 54" RCP STORM

LOT 13 8088 SF
LOT 14 7200 SF
LOT 15 6000 SF
LOT 16 6000 SF
LOT 17 6000 SF
LOT 18 6000 SF
LOT 19 6000 SF
LOT 20 6000 SF
LOT 21 6000 SF
LOT 22 6000 SF
LOT 23 6000 SF
LOT 24 6000 SF
LOT 27 8087 SF
LOT 28 6000 SF
LOT 29 6000 SF
LOT 30 6000 SF
LOT 31 6000 SF
LOT 32 6000 SF
LOT 33 6000 SF
LOT 34 6000 SF
LOT 35 6000 SF
LOT 36 6000 SF
LOT 37 6000 SF
LOT 38 6000 SF
LOT 39 7200 SF
LOT 40 8088 SF
LOT 41 8087 SF
LOT 42 6000 SF
LOT 43 6000 SF
LOT 44 6136 SF
LOT 45 6408 SF
LOT 46 6679 SF
LOT 47 6951 SF
LOT 48 7223 SF
LOT 49 7495 SF
LOT 50 7766 SF
LOT 51 8038 SF
LOT 52 10004 SF
LOT 59 12505 SF
LOT 60 10093 SF
LOT 61 9669 SF
LOT 62 9246 SF
LOT 63 8823 SF
LOT 64 8399 SF
LOT 65 8181 SF
LOT 66 8335 SF
LOT 67 7815 SF
LOT 68 8087 SF
LOT 69 22013 SF
LOT 70 22333 SF
LOT 71 22310 SF
LOT 72 22500 SF
LOT 73 22500 SF
LOT 74 22500 SF
LOT 75 22500 SF

DEVELOPED RELEASE:
(BASIN AA)
Q5 YR. = 0.5 CFS
Q100 YR. = 1.7 CFS

DEVELOPED RELEASE:
(BASIN BB)
Q5 YR. = 0.9 CFS
Q100 YR. = 3.4 CFS

PRE-DEVELOPMENT RELEASE:
(PER STERLING RANCH MDDP AMENDMENT 2 & STERLING RANCH EAST PRELIM. PLAN 1 PDR)
Q5 YR. = 46 CFS
Q100 YR. = 105 CFS

PRE-DEVELOPMENT RELEASE:
(PER STERLING RANCH MDDP AMENDMENT 2 & STERLING RANCH EAST PRELIM. PLAN 1 PDR)
Q5 YR. = 1 CFS
Q100 YR. = 5 CFS

DEVELOPED RELEASE:
(BASIN CC)
Q5 YR. = 1 CFS
Q100 YR. = 5 CFS

PRE-DEVELOPMENT RELEASE:
(PER STERLING RANCH MDDP AMENDMENT 2 & STERLING RANCH EAST PRELIM. PLAN 1 PDR)
Q5 YR. = 2 CFS
Q100 YR. = 9 CFS

DEVELOPED RELEASE:
(BASIN DD)
Q5 YR. = 2 CFS
Q100 YR. = 8 CFS

PAWNEE RANCHEROS FILING NO. 2A LOT 10A

PAWNEE RANCHEROS FILING NO. 2A LOT 10B

PAWNEE RANCHEROS FILING NO. 2 LOT 9

PAWNEE RANCHEROS FILING NO. 2 LOT 8

BAR J-B ACRES FILING NO. 2 LOT 6, BLK. 4

SEE SHEET 3

LEGEND

- EXISTING GROUND CONTOUR 5910
- PROPOSED FINISHED CONTOUR 5910
- SUBDIVISION BOUNDARY
- LOT LINE
- PROPOSED BASIN BOUNDARY
- FUTURE/OFFSITE BASIN BOUNDARY
- OVERFLOW ROUTE
- DIRECTION OF DRAINAGE
- EXISTING STORM SEWER
- EXISTING STORM INLET
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- BASIN IDENTIFIER / AREA IN ACRES (D / 1.41)
- DESIGN POINT (2)
- PIPE RUN (2)

N

60 30 0 60 120

SCALE: 1" = 60'

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NO.	REVISION	DATE

REVIEW:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHORTON, COLORADO P.E. #37155 DATE

CLASSIC CONSULTING
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799(Fax)

STERLING RANCH EAST FILING NO. 3

FINAL DRAINAGE REPORT
DEVELOPED DRAINAGE MAP

DESIGNED BY	MAW	SCALE		DATE	6/1/23
DRAWN BY	MAW	(H) 1"= 60'		SHEET	5 OF 5
CHECKED BY		(V) 1"= N/A		JOB NO.	1183.33

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FINAL DRAINAGE REPORT
FOR
STERLING RANCH EAST
FILING NO. 5

Prepared for:
CLASSIC SRJ LAND, LLC
2138 FLYING HORSE CLUB DRIVE
COLORADO SPRINGS CO 80921
(719) 592-9333

Prepared by:
CLASSIC CONSULTING
619 N. CASCADE AVE SUITE 200
COLORADO SPRINGS CO 80903
(719) 785-0790

Job No. 1183.25

PCD Project No. SF-24xx

FINAL DRAINAGE REPORT FOR
STERLING RANCH EAST FILING NO. 5

ENGINEER'S STATEMENT:
The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the applicable 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.

_____ _____

Marc A. Whorton Colorado P.E. #37155 Date

OWNER'S/DEVELOPER'S STATEMENT:
I, the owner/developer, have read and will comply with all of the requirements specified in this drainage report and plan.

Business Name: CLASSIC SRJ LAND, LLC

By: _____

Title: _____

Address: 2138 Flying Horse Club Drive

Colorado Springs, CO 80921

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

_____ _____

Joshua Palmer, P.E. Date
County Engineer, / ECM Administrator

Conditions:

STERLING RANCH EAST PRELIMINARY PLAN NO. 1
Pre-Developed Surface Routing

Design Point (South Bndy.)	Peak Runoff 5 yr. (CFS)	Peak Runoff 100 yr. (CFS)
4	46	105
4A	1	5
5	5	23
5A	2	9
6	59	122
6A	7	19
7	110	249
56	60	160

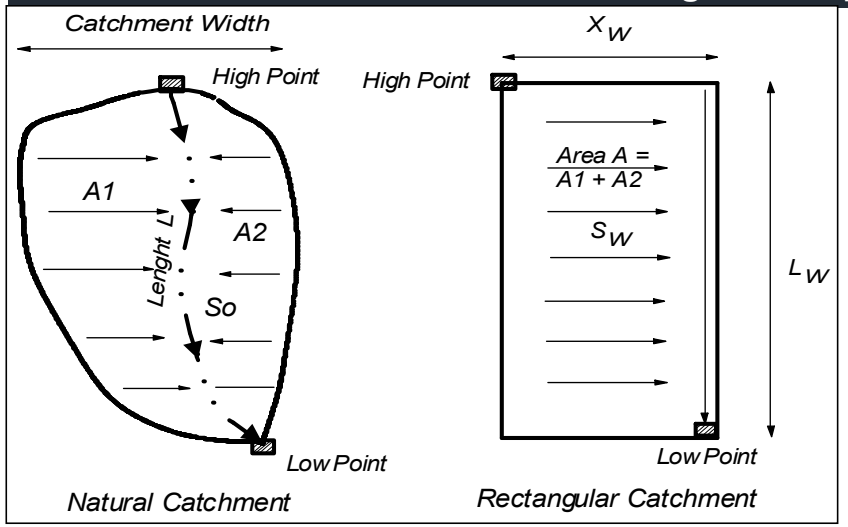
STERLING RANCH EAST PRELIMINARY PLAN NO. 1
Pre-Developed Subcatchment Runoff

Subcatchment	Area (Ac.)	SWMM Imperv. (%)	*SWMM Width (Lw) (ft.)	*SWMM Slope (Sw) (%)	Peak Runoff 5 yr. (CFS)	Peak Runoff 100 yr. (CFS)
EX-10	265.9	7%	3365	3.41%	105	222
EX10A	153.5	5%	1857	4.05%	46	103
EX-11 +	214.3	4%	3255	3.01%	54	129
EX-13 +	94.8	6%	1877	3.97%	36	85
EX-4A	44.2	8%	3355	1.09%	19	50
EX-5	26.2	8%	1959	1.65%	12	32
EX-7	152.8	5%	2234	3.13%	46	105
EX-7A	2.4	2%	416	2.70%	1	5
EX-8	32.2	2%	1679	1.47%	5	23
EX-8A	6.6	2%	698	1.80%	2	9
EX-9	139.3	8%	1837	3.19%	59	122
EX-9A	21.8	5%	786	3.01%	7	19
TR-12 +	4.7	5%	544	4.13%	2	9
TR-20 +	23.2	7%	1388	3.21%	10	32
TR-4 +	4.4	5%	645	2.76%	2	9
TR-5 +	13.7	5%	990	2.70%	5	17
TR-6 +	1.5	5%	519	1.55%	1	4
TR-7 +	2.6	5%	233	5.84%	1	5

* Reference SWMM Catchment Shape Parameter Finder for calculations

CATCHMENT SHAPE PARAMETER FINDER

Convert Natural Catchment to a Rectangular Shape



Subcatchment Center	Z=0.5
Side Collector	Z=1
Skewed Location	0.5<Z<1

Dimensionless Variables

$$Y = \frac{L}{L_w}; \qquad X = \frac{A}{L^2}$$

$$Y = (1.5 - Z)(2.286X - 0.286X^2)$$

$$\frac{Lw}{L} = (1.5 - Z)[2.286(\frac{A}{L^2}) - 0.286(\frac{A}{L^2})^2]$$

$$S_o/S_w = A/(LL_w) + L_w/L$$

$$X_w = A/L_w$$

Subarea ID	Area acre	A1 acre	A2 acre	L ft	High Pt Elev. ft	Low Pt Elev. ft	Z=Am/A	X=A/L²	Y=Lw/L	Lw ft	Xw ft	So %	So/Sw	Sw %
EX-7	152.80	82.00	70.80	6,430	7160.0	6997.0	0.54	0.16	0.35	2,234	2,980	2.53	0.81	3.13
EX-9	139.30	65.00	74.30	7,190	7190.0	7026.0	0.53	0.12	0.26	1,837	3,302	2.28	0.71	3.19
EX10A	153.50	75.00	78.50	8,030	7,236	7,015	0.51	0.10	0.23	1,857	3,600	2.75	0.68	4.05
EX10	265.90	120.00	145.90	7,280	7,380	7,148	0.55	0.22	0.46	3,365	3,442	3.19	0.94	3.41
EX-11	214.30	100.00	114.30	6,140	7,192	7,008	0.53	0.25	0.53	3,255	2,867	3.00	1.00	3.01
EX-13	94.80	47.00	47.80	4,900	7,232	7,070	0.50	0.17	0.38	1,877	2,200	3.31	0.83	3.97
TR-4	4.40	2.20	2.20	640	7,270	7,244	0.50	0.47	1.01	645	297	4.06	1.47	2.76
TR-5	13.70	7.50	6.20	1,250	7,273	7,230	0.55	0.38	0.79	990	603	3.44	1.27	2.70
TR-6	1.50	0.75	0.75	250	7,238	7,228	0.50	1.05	2.08	519	126	4.00	2.58	1.55
TR-7	2.60	1.30	1.30	1,100	7,234	7,192	0.50	0.09	0.21	233	487	3.82	0.65	5.84
TR-12	4.70	2.50	2.20	800	7,300	7,262	0.53	0.32	0.68	544	377	4.75	1.15	4.13
TR-20	23.20	12.00	11.20	1,550	7,314	7,246	0.52	0.42	0.90	1,388	728	4.39	1.37	3.21
EX-4A	44.20	22.10	22.10	750	7,044	7,001	0.50	3.42	4.47	3,355	574	5.73	5.24	1.09
EX-5	26.20	13.10	13.10	1,200	7,186	7,144	0.50	0.79	1.63	1,959	583	3.50	2.12	1.65
EX-7A	2.40	1.20	1.20	550	7,039	7,021	0.50	0.35	0.76	416	251	3.27	1.21	2.70
EX-8A	6.60	3.30	3.30	900	7,045	7,025	0.50	0.35	0.78	698	412	2.22	1.23	1.80
EX-8A	32.20	17.00	15.20	1,750	7,062	7,025	0.53	0.46	0.96	1,679	835	2.11	1.44	1.47
EX-9A	21.80	11.80	10.00	2,600	7,082	7,022	0.54	0.14	0.30	786	1,208	2.31	0.77	3.01

WATER QUALITY TREATMENT PLAN MAP

10.89 AC. (BASINS OS-1, OS-2, O, P, R, OS-4, OS-5) — AREA TREATED IN OFF-SITE PERMANENT POND FSD-11B

68.07 AC. (BASINS P4-B, OS-3, A-N, S-X, 25% OS-3) — AREA TREATED IN PROPOSED PERMANENT POND FSD-14B

3.60 AC. (BASINS Y1, Y2) — AREA OF RUNOFF REDUCTION WATER QUALITY TREATMENT

3.1 AC. (BASIN AA, Z) — AREAS TREATED IN TEMPORARY SEDIMENT BASIN NOW AND FUTURE PERMANENT FSD POND FACILITY ULTIMATELY

FILING 5 BOUNDARY LINE

NOTE: REFERENCE STERLING RANCH RD. & BRIARGATE PKWY. STREET IMPROVEMENTS & STORM SEWER PLANS PREPARED BY JR ENG. FOR DESIGN WITHIN STERLING RANCH ROAD

NOTE: REFERENCE VILLAGES AT STERLING RANCH EAST PRELIMINARY PLAN – PRELIMINARY DRAINAGE REPORT PREPARED BY CLASSIC CONSULTING FOR PRELIMINARY DESIGN

BRIARGATE PKWY. (150' ROW)

STERLING RANCH ROAD (80' ROW)

VILLAGES AT STERLING RANCH EAST PRELIMINARY PLAN

KANSAS CITY ROAD (60' ROW)

OAK PARK DRIVE (60' ROW)

ST. LOUIS ROAD (60' ROW)

SHOREWOOD DR. (60' ROW)

CEDAR RAPIDS DR. (60' ROW)

NEWPORT BEACH DRIVE (60' ROW)

CHATTANOOGA DRIVE

LAKE TAHOE DRIVE (60' ROW)

OCEAN SPRINGS PATH

HUNTSVILLE DRIVE

MONTEREY COURT

PAWTUCKET CT.

STERLING RANCH EAST FILING NO. 1

STERLING RANCH EAST FILING NO. 2

STERLING RANCH EAST FILING NO. 3

STERLING RANCH EAST FILING NO. 5 (MIDDLE SCHOOL SITE)

FUTURE STERLING RANCH EAST DEVELOPMENT UNPLATTED

POND FSD-14B TRACT A 4.56 AC

PARK TRACT B 3.68 AC

PARK TRACT E 40983 SF

TRACT C 9500 SF

TRACT D 21100 SF

TRACT F 4116 SF

TRACT G 2824 SF

TRACT I 7400 SF

CONST. BERM ALONG LOT LINE TO ROUTE PARK FLOWS TO BILOXI PL.

EXIST. 48" RCP STORM SYSTEM (POND FSD-16 OUTFALL)

EXIST. 42" RCP STORM SYSTEM

EXIST. 15" TYPE R AT-GRADE INLETS

EXIST. 18" RCP STORM

EXIST. 60" RCP STORM SYSTEM

EXIST. 10' TYPE R AT-GRADE INLET

EXIST. 36" RCP STORM SYSTEM

EXIST. TYPE R SUMP INLETS

PROP. 48" PUBLIC RCP

PROP. 24" PUBLIC RCP

PROP. 18" PUBLIC RCP

PROP. 30" PUBLIC RCP

PROP. 54" PUBLIC RCP

PROP. 60" PUBLIC RCP

PROP. 10' TYPE R SUMP INLET

PROP. 5' TYPE R SUMP INLET

PROP. 10' TYPE R AT-GRADE INLET

PROP. TEMP. SEDIMENT BASIN

OFF-SITE ESMT. TO BE GRANTED PRIOR TO CONST.

PAWNEE RANCHEROS FILING NO. 1 LOT 19

PAWNEE RANCHEROS FILING NO. 1 LOT 21

PAWNEE RANCHEROS FILING NO. 1 LOT 20

PAWNEE RANCHEROS FILING NO. 1 LOT 7

BAR J-B ACRES FILING NO. 2 LOT 6

MOHAWK ROAD (60' ROW)

BRULE ROAD (60' ROW)

OTO CIRCLE

Design Procedure Form: Runoff Reduction

UD-BMP (Version 3.07, March 2018)

Designer: Marc A. Whorton, P.E.
Company: Classic Consulting
Date: October 16, 2024
Project: Sterling Ranch East Filing No. 5 - FDR
Location: Sand Creek East Fork Basin

SITE INFORMATION (User Input in Blue Cells)

WQCV Rainfall Depth: 0.53 inches
Depth of Average Runoff Producing Storm, d_6 = 0.42 inches (for Watersheds Outside of the Denver Region, Figure 3-1 in USDCM Vol. 3)

Area Type	UIA:RPA	UIA:RPA										
Area ID	Basin Y1	Basin Y2										
Downstream Design Point ID	SC	SC										
Downstream BMP Type	None	None										
DCIA (ft^2)	--	--										
UIA (ft^2)	13,068	10,120										
RPA (ft^2)	56,696	63,932										
SPA (ft^2)	--	--										
HSG A (%)	0%	0%										
HSG B (%)	100%	100%										
HSG C/D (%)	0%	0%										
Average Slope of RPA (ft/ft)	0.030	0.030										
UIA:RPA Interface Width (ft)	450.00	620.00										

CALCULATED RUNOFF RESULTS

Area ID	Basin Y1	Basin Y2										
UIA:RPA Area (ft^2)	69,764	74,052										
L / W Ratio	0.34	0.19										
UIA / Area	0.1873	0.1367										
Runoff (in)	0.00	0.00										
Runoff (ft^3)	0	0										
Runoff Reduction (ft^3)	468	363										

CALCULATED WQCV RESULTS

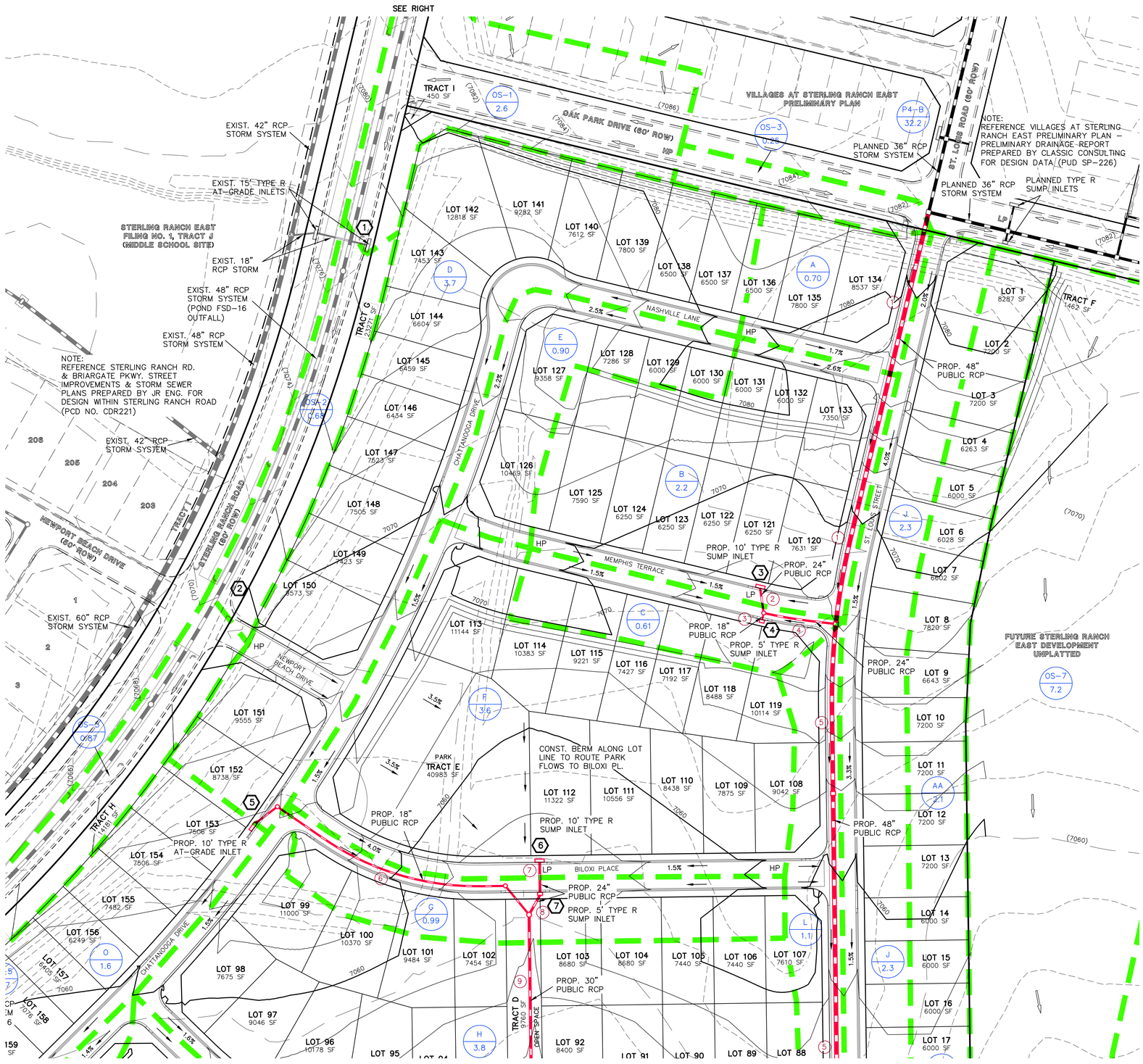
Area ID	Basin Y1	Basin Y2										
WQCV (ft^3)	532	412										
WQCV Reduction (ft^3)	532	412										
WQCV Reduction (%)	100%	100%										
Untreated WQCV (ft^3)	0	0										

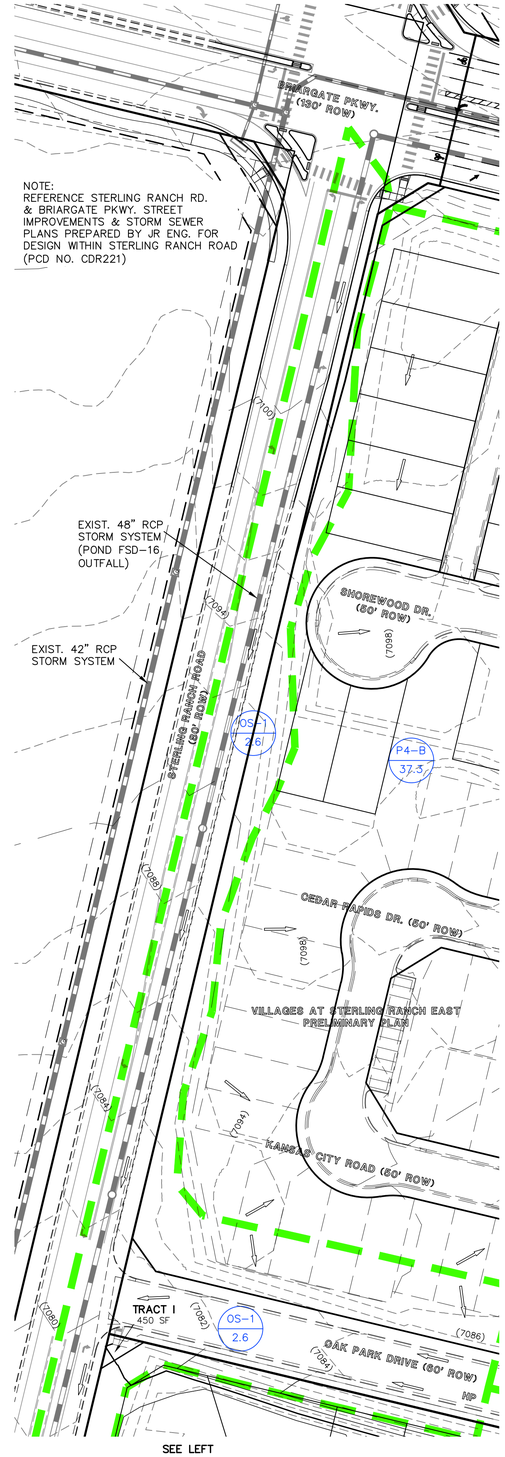
CALCULATED DESIGN POINT RESULTS (sums results from all columns with the same Downstream Design Point ID)

Downstream Design Point ID	SC											
DCIA (ft^2)	0											
UIA (ft^2)	23,188											
RPA (ft^2)	120,628											
SPA (ft^2)	0											
Total Area (ft^2)	143,816											
Total Impervious Area (ft^2)	23,188											
WQCV (ft^3)	944											
WQCV Reduction (ft^3)	944											
WQCV Reduction (%)	100%											
Untreated WQCV (ft^3)	0											

CALCULATED SITE RESULTS (sums results from all columns in worksheet)

Total Area (ft^2)	143,816
Total Impervious Area (ft^2)	23,188
WQCV (ft^3)	944
WQCV Reduction (ft^3)	944
WQCV Reduction (%)	100%
Untreated WQCV (ft^3)	0





LEGEND

- EXISTING GROUND CONTOUR — 5910
- PROPOSED FINISHED CONTOUR — 5910
- SUBDIVISION BOUNDARY
- LOT LINE
- PROPOSED BASIN BOUNDARY
- DIRECTION OF DRAINAGE
- EXISTING STORM SEWER
- EXISTING STORM INLET
- PROPOSED STORM SEWER
- PROPOSED STORM INLET
- BASIN IDENTIFIER — D
- AREA IN ACRES — 1.41
- DESIGN POINT — 2
- PIPE RUN — 2

NOTE:
SEE SHEET 2 AND 3 FOR HYDROLOGIC AND HYDRAULIC CALCULATIONS.

N

60 30 0 60 120

SCALE: 1" = 60'

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UTILITY NOTIFICATION CENTER OF COLORADO
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NO.	REVISION	DATE

REVIEW:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHORTON, COLORADO P.E. #37155 — DATE

CLASSIC CONSULTING SM
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799(Fax)

STERLING RANCH EAST FILING NO. 5
FINAL PLAT
FINAL DRAINAGE REPORT
DEVELOPED DRAINAGE MAP

CLASSIC CONSULTING

DESIGNED BY	MAW	SCALE		DATE	7/22/24
DRAWN BY	MAW	(H) 1"= 60'		SHEET	1 OF 3
CHECKED BY		(V) 1"= N/A		JOB NO.	1183.25

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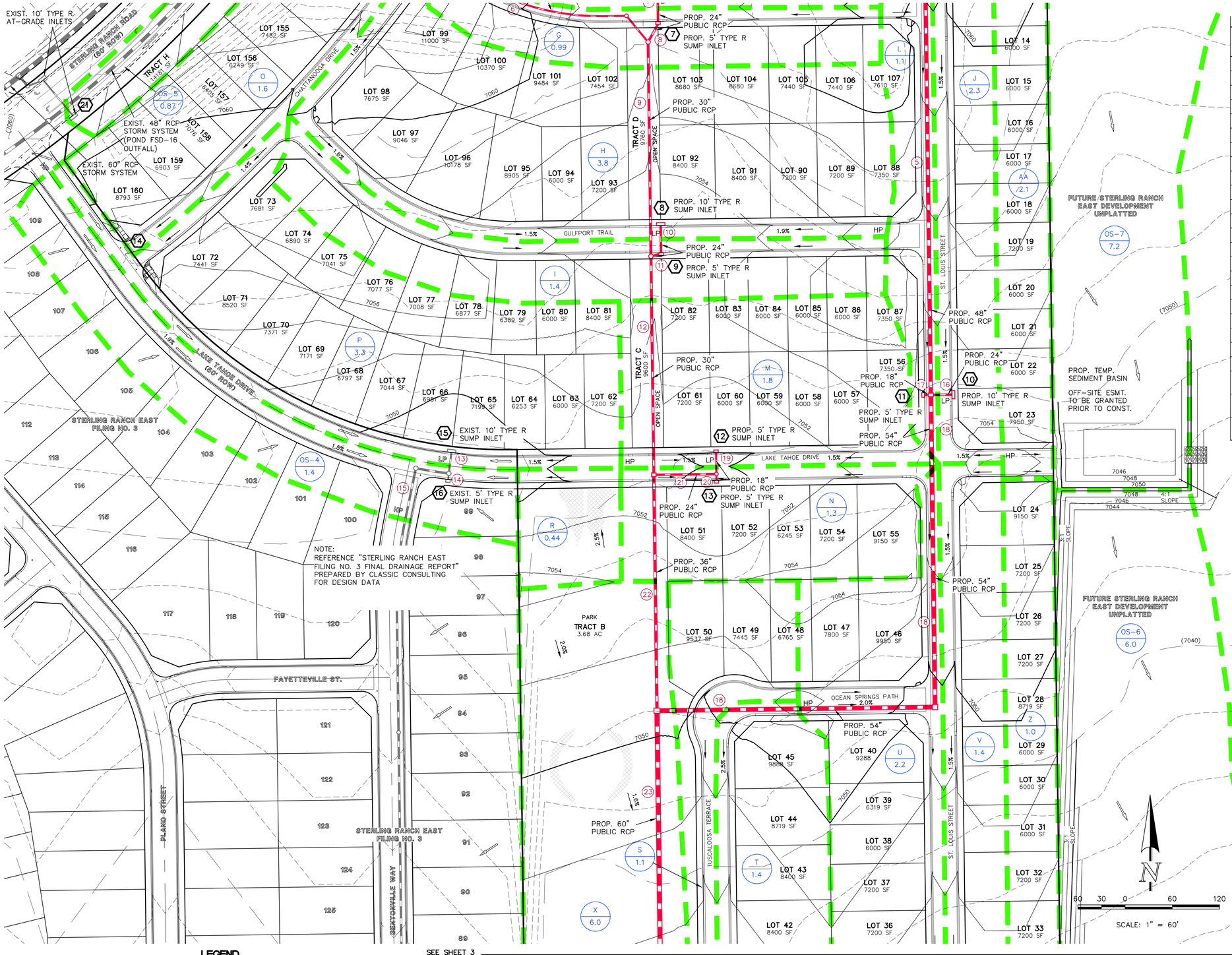

FINAL DRAINAGE REPORT ~ SURFACE ROUTING SUMMARY

Design Point(s)	Contributing Basins / Design Point	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity I(5)	Intensity I(100)	Flow Q(5)	Flow Q(100)	Facility/ Inlet Size*
1	OS-1	1.76	2.02	14.0	3.62	6.08	6	12	Exist. 15' Type R At-Grade Inlet
2	OS-2, Flow-By from DP-1	0.35	0.72	16.6	3.37	5.65	1	4	Exist. Crosspan
3	OS-3, A, B	1.31	1.82	16.4	3.39	5.68	4	10	Prop. 10' Type R Sump Inlet
4	C	0.23	0.33	12.1	3.84	6.45	0.9	2.1	Prop. 5' Type R Sump Inlet
5	D	1.39	2.02	20.2	3.07	5.16	4	10	Prop. 10' Type R At-Grade Inlet
6	E, F	1.45	2.31	15.9	3.43	5.76	5	13	Prop. 10' Type R Sump Inlet
7	G	0.36	0.53	11.8	3.88	6.52	1.4	3.5	Prop. 5' Type R Sump Inlet
8	H	1.38	2.04	17.1	3.32	5.57	5	11	Prop. 10' Type R Sump Inlet
9	I	0.51	0.75	13.4	3.69	6.19	2	5	Prop. 5' Type R Sump Inlet
10	J	0.86	1.25	13.2	3.72	6.24	3	8	Prop. 10' Type R Sump Inlet
11	L	0.41	0.60	18.1	3.24	5.44	1.3	3.3	Prop. 5' Type R Sump Inlet
12	M	0.63	0.95	15.4	3.48	5.84	2	6	Prop. 5' Type R Sump Inlet
13	N	0.45	0.69	15.4	3.48	5.84	2	4	Prop. 5' Type R Sump Inlet
14	O and DP-5 Flow-By	0.61	1.46	21.2	3.00	5.03	2	7	Prop. 6' Crosspan
15	P and DP-14	1.85	3.26	22.2	2.93	4.92	5	16	Exist. 10' Type R Sump Inlet
16	OS-4, R	0.63	0.97	14.4	3.58	6.01	2	6	Exist. 5' Type R Sump Inlet
17	S	0.41	0.60	18.1	3.24	5.44	1.3	3.3	Prop. 5' Type R Sump Inlet
18	T	0.53	0.76	16.7	3.36	5.64	2	4	Prop. 5' Type R Sump Inlet
19	U, V	1.35	1.96	18.1	3.24	5.44	4	11	Prop. 10' Type R Sump Inlet
20	W	0.15	0.17	5.0	5.17	8.68	0.8	1.4	Prop. 5' Type R Sump Inlet
21	OS-5, Flow-by from DP-2	0.83	1.34	19.7	3.11	5.22	3	7	Exist. 10' Type R At-Grade Inlet
	TOTAL BASINS TRIBUTARY TO POND FSD-14B	**27.06**	**38.31**	**23.1**	**2.88**	**4.83**	**78**	**185**	
	TOTAL BASINS TRIBUTARY TO POND FSD-14B (VILLAGES NOT DEV.)	**12.12**	**18.54**	**23.1**	**2.88**	**4.83**	**35**	**89**	
6 (MDDP) SOUTH BNDY.	**POND FSD-14B RELEASE AND BASIN Y1**	**REF. MHFD-DETENTION SPREADSHEET FOR CALCULATIONS**			**2.4**	**43.4**			Sheet flow from Level Spreader & Basin Y1
6A (MDDP) SOUTH BNDY.	**BASIN Y2**	**0.20**	**0.66**	**7.1**	**4.65**	**7.81**	**0.9**	**5.2**	Sheet flow

FINAL DRAINAGE REPORT ~ PIPE ROUTING SUMMARY

Pipe Run	Contributing Basin / Design Point / Pipe Run	Equivalent CA(5)	Equivalent CA(100)	Maximum Tc	Intensity I(5)	Intensity I(100)	Flow Q(5)	Flow Q(100)	Pipe Size*
1	**P4-B FUTURE VILLAGES AT STERLING RANCH PP**	**14.94**	**19.77**	**18.7**	**3.19**	**5.35**	**48**	**106**	**PROP. 48" RCP**
2	DP-3	1.31	1.82	16.4	3.39	5.68	4	10	PROP. 24" RCP
3	DP-4	0.23	0.33	12.1	3.84	6.45	0.9	2.1	PROP. 18" RCP
4	PR-2, PR-3	1.54	2.15	16.6	3.37	5.65	5	12	PROP. 24" RCP
5	**PR-1, PR-4**	**16.48**	**21.92**	**19.5**	**3.12**	**5.25**	**52**	**115**	**PROP. 48" RCP**
6	DP-5 COLLECTION	1.37	1.43	20.5	3.05	5.12	4	7	PROP. 18" RCP
7	DP-6	1.45	2.31	15.9	3.43	5.76	5	13	PROP. 24" RCP
8	PR-7, DP-7	1.81	2.84	15.9	3.43	5.76	6	16	PROP. 24" RCP
9	PR-6, PR-8	3.18	4.27	20.9	3.02	5.07	10	22	PROP. 30" RCP
10	DP-8	1.38	2.04	17.1	3.32	5.57	5	11	PROP. 24" RCP
11	PR-10, DP-9	1.89	2.80	17.1	3.32	5.57	6	16	PROP. 24" RCP
12	PR-9, PR-11	5.07	7.07	21.3	2.99	5.02	15	35	PROP. 30" RCP
13	**DP-15 (To Pond FSD-11B)**	**1.85**	**3.26**	**22.2**	**2.93**	**4.92**	**5**	**16**	**EXIST. 24" RCP**
14	**DP-16 (To Pond FSD-11B)**	**0.63**	**0.97**	**14.4**	**3.58**	**6.01**	**2**	**6**	**EXIST. 18" RCP**
15	**PR-13, PR-14 (To FSD-11B)**	**2.48**	**4.23**	**23.4**	**2.85**	**4.79**	**7**	**20**	**EXIST. 30" RCP**
16	DP-10	0.86	1.25	13.2	3.72	6.24	3	8	PROP. 24" RCP
17	DP-11	0.41	0.60	18.1	3.24	5.44	1.3	3.3	PROP. 18" RCP
18	**PR-5, PR-13, PR-14**	**17.76**	**23.78**	**19.7**	**3.11**	**5.22**	**55**	**124**	**PROP. 54" RCP**
19	DP-12	0.63	0.95	15.4	3.48	5.84	2	6	PROP. 18" RCP
20	DP-13	0.45	0.69	15.4	3.48	5.84	2	4	PROP. 18" RCP
21	PR-19, PR-20	1.08	1.64	15.5	3.47	5.82	4	10	PROP. 24" RCP
22	PR-12, PR-21	6.15	8.71	21.7	2.96	4.98	18	43	PROP. 36" RCP
23	**PR-18, PR-22**	**23.91**	**32.48**	**22.2**	**2.93**	**4.92**	**70**	**160**	**PROP. 60" RCP**
24	DP-17	0.41	0.60	18.1	3.24	5.44	1.3	3.3	PROP. 18" RCP
25	DP-18	0.53	0.76	16.7	3.36	5.64	2	4	PROP. 18" RCP
26	PR-24, PR-25	0.94	1.36	18.1	3.24	5.44	3	7	PROP. 24" RCP
27	**PR-23, PR-26 (IN-FLOW ULTIMATE CONDITION)**	**24.85**	**33.85**	**22.3**	**2.92**	**4.91**	**73**	**166**	**PROP. 60" RCP**
27	**PR-20, PR-23 (IN-FLOW INTERIM CONDITION - VILLAGES NOT DEVELOPED)**	**9.91**	**14.08**	**20.3**	**3.06**	**5.14**	**30**	**72**	**PROP. 60" RCP**
28	DP-19	1.35	1.96	18.1	3.24	5.44	4	11	PROP. 24" RCP
29	**DP-20, PR-28**	**1.50**	**2.13**	**18.2**	**3.23**	**5.43**	**5**	**12**	**PROP. 24" RCP**

LEGEND

- EXISTING GROUND CONTOUR — 5910
- PROPOSED FINISHED CONTOUR — 5910
- SUBDIVISION BOUNDARY
- LOT LINE
- PROPOSED BASIN BOUNDARY
- DIRECTION OF DRAINAGE
- EXISTING STORM SEWER
- EXISTING STORM INLET
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- PROPOSED STORM INLET
- BASIN IDENTIFIER — D
- AREA IN ACRES — 1.41
- DESIGN POINT — 2
- PIPE RUN — 2

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NO.	REVISION	DATE

REVIEW:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHORTON, COLORADO P.E. #37155 — DATE

CLASSIC CONSULTING
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799(Fax)

STERLING RANCH EAST FILING NO. 5
FINAL PLAT
FINAL DRAINAGE REPORT
DEVELOPED DRAINAGE MAP

DESIGNED BY	MAW	SCALE		DATE	7/22/24
DRAWN BY	MAW	(H) 1"= 60'		SHEET	2 OF 3
CHECKED BY		(V) 1"= N/A		JOB NO.	1183.25

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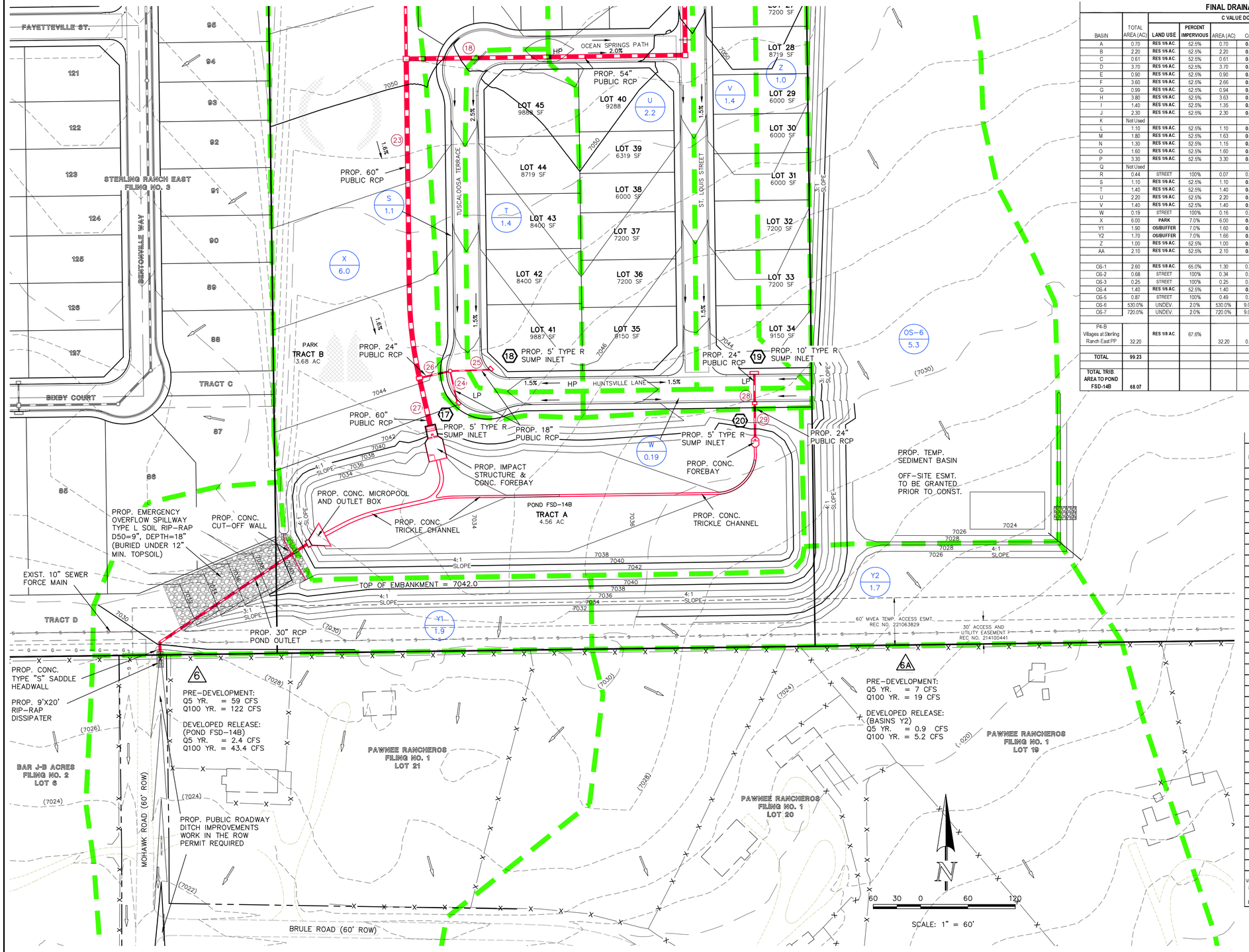

FINAL DRAINAGE REPORT ~ BASIN RUNOFF COEFFICIENT SUMMARY

BASIN	TOTAL AREA (AC)	C VALUE DCM TABLE 6-6				C VALUE DCM TABLE 6-6					WEIGHTED "C" VALUE		WEIGHTED CA		DCM TABLE 6-6
		LAND USE	PERCENT IMPERVIOUS	AREA (AC)	C(5)	C(100)	LAND USE	PERCENT IMPERVIOUS	AREA (AC)	C(5)	C(100)	C(5)	C(100)	CA(5)	CA(100)	WEIGHTED % IMPERVIOUS
A	0.70	RES 1/8 AC	52.5%	0.70	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.26	0.38	52.5%
B	2.20	RES 1/8 AC	52.5%	2.20	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.83	1.20	52.5%
C	0.61	RES 1/8 AC	52.5%	0.61	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.23	0.33	52.5%
D	3.70	RES 1/8 AC	52.5%	3.70	0.38	0.55			0.00	0.08	0.35	0.38	0.55	1.39	2.02	52.5%
E	0.90	RES 1/8 AC	52.5%	0.90	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.34	0.49	52.5%
F	3.60	RES 1/8 AC	52.5%	2.66	0.38	0.55	PARK	7.0%	0.94	0.12	0.39	0.31	0.50	1.11	1.82	40.6%
G	0.99	RES 1/8 AC	52.5%	0.94	0.38	0.55	OPEN SPACE	7.0%	0.05	0.12	0.39	0.36	0.54	0.36	0.53	50.2%
H	3.80	RES 1/8 AC	52.5%	3.63	0.38	0.55	OPEN SPACE	7.0%	0.17	0.12	0.39	0.36	0.54	1.38	2.04	50.5%
I	1.40	RES 1/8 AC	52.5%	1.35	0.38	0.55	OPEN SPACE	7.0%	0.05	0.08	0.35	0.36	0.54	0.51	0.75	50.9%
J	2.30	RES 1/8 AC	52.5%	2.30	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.86	1.25	52.5%
K	Not Used															
L	1.10	RES 1/8 AC	52.5%	1.10	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.41	0.60	52.5%
M	1.80	RES 1/8 AC	52.5%	1.63	0.38	0.55	OPEN SPACE	7.0%	0.17	0.12	0.39	0.35	0.53	0.63	0.95	48.2%
N	1.30	RES 1/8 AC	52.5%	1.15	0.38	0.55	PARK	7.0%	0.15	0.12	0.39	0.35	0.53	0.45	0.69	47.3%
O	1.60	RES 1/8 AC	52.5%	1.60	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.60	0.87	52.5%
P	3.30	RES 1/8 AC	52.5%	3.30	0.38	0.55			0.00	0.08	0.35	0.38	0.55	1.24	1.80	52.5%
Q	Not Used															
R	0.44	STREET	100%	0.07	0.90	0.96	PARK	7.0%	0.37	0.12	0.39	0.24	0.48	0.11	0.21	21.8%
S	1.10	RES 1/8 AC	52.5%	1.10	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.41	0.60	52.5%
T	1.40	RES 1/8 AC	52.5%	1.40	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.53	0.76	52.5%
U	2.20	RES 1/8 AC	52.5%	2.20	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.83	1.20	52.5%
V	1.40	RES 1/8 AC	52.5%	1.40	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.53	0.76	52.5%
W	0.19	STREET	100%	0.16	0.90	0.96	OPEN SPACE	7.0%	0.03	0.12	0.39	0.78	0.87	0.15	0.17	85.3%
X	6.00	PARK	7.0%	6.00	0.12	0.39			0.00	0.08	0.35	0.12	0.39	0.72	2.34	7.0%
Y1	1.90	OS/BUFFER	7.0%	1.60	0.12	0.39	SIDEWALK	100.0%	0.30	0.90	0.96	0.24	0.48	0.46	0.91	21.7%
Y2	1.70	OS/BUFFER	7.0%	1.66	0.12	0.39	SIDEWALK	100.0%	0.04	0.08	0.35	0.12	0.39	0.20	0.66	9.2%
Z	1.00	RES 1/8 AC	52.5%	1.00	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.38	0.55	52.5%
AA	2.10	RES 1/8 AC	52.5%	2.10	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.79	1.14	52.5%
OS-1	2.60	RES 1/8 AC	65.0%	1.30	0.45	0.59	STREET	100%	1.30	0.90	0.96	0.68	0.78	1.76	2.02	82.5%
OS-2	0.68	STREET	100%	0.34	0.90	0.96	OPEN SPACE	7.0%	0.34	0.12	0.39	0.51	0.68	0.35	0.46	53.5%
OS-3	0.25	STREET	100%	0.25	0.90	0.96			0.00	0.08	0.35	0.90	0.96	0.23	0.24	100.0%
OS-4	1.40	RES 1/8 AC	52.5%	1.40	0.38	0.55			0.00	0.08	0.35	0.38	0.55	0.53	0.76	52.5%
OS-5	0.87	STREET	100%	0.49	0.90	0.96	OPEN SPACE	7.0%	0.38	0.12	0.39	0.56	0.71	0.49	0.62	59.4%
OS-6	530.0%	UNDEV.	2.0%	530.0%	9.0%	36.0%			0.0%	12.0%	39.0%	9.0%	36.0%	47.7%	190.8%	2.0%
OS-7	720.0%	UNDEV.	2.0%	720.0%	9.0%	36.0%			0.0%	12.0%	39.0%	9.0%	36.0%	64.8%	259.2%	2.0%
P4-B Villages at Sterling Ranch East PP	32.20	RES 1/8 AC	67.5%	32.20	0.46	0.61			0.00	0.08	0.35	0.46	0.61	14.94	19.77	67.6%
TOTAL	99.23															
TOTAL TRIB. AREA TO POND FSD-14B	68.07															55.6%

FINAL DRAINAGE REPORT ~ BASIN RUNOFF SUMMARY

BASIN	WEIGHTED			OVERLAND				STREET / CHANNEL FLOW				Tc	INTENSITY			TOTAL FLOWS		
	CA(2)	CA(5)	CA(100)	C(5)	Length (ft)	Height (ft)	Tc (min)	Length (ft)	Slope (%)	Velocity (fps)	Tc (min)	TOTAL (min)	I(2) (in/hr)	I(5) (in/hr)	I(100) (in/hr)	Q(2) (cfs)	Q(5) (cfs)	Q(100) (cfs)
A	0.22	0.26	0.38	0.08	100	2	14.7	135	2.0%	2.8	0.8	15.4	2.78	3.48	5.84	0.6	0.9	2.2
B	0.70	0.83	1.20	0.08	100	2	14.7	260	1.5%	2.4	1.8	16.4	2.70	3.39	5.68	2	3	7
C	0.20	0.23	0.33	0.08	50	1	10.4	260	1.5%	2.4	1.8	12.1	3.07	3.84	6.45	0.6	0.9	2.1
D	1.18	1.39	2.02	0.08	100	2	14.7	900	1.8%	2.7	5.6	20.2	2.46	3.07	5.16	3	4	10
E	0.29	0.34	0.49	0.08	50	1	10.4	470	2.5%	3.2	2.5	12.8	3.00	3.75	6.30	0.9	1.3	3.1
F	0.90	1.11	1.82	0.12	100	2	14.1	270	1.5%	2.4	1.8	15.9	2.74	3.43	5.76	2	4	10
G	0.30	0.36	0.53	0.12	50	1	10.0	270	1.5%	2.4	1.8	11.8	3.10	3.88	6.52	0.9	1.4	3.5
H	1.17	1.38	2.04	0.12	100	2	14.1	450	1.5%	2.4	3.1	17.1	2.65	3.32	5.57	3	5	11
I	0.43	0.51	0.75	0.08	50	1	10.4	450	1.5%	2.4	3.1	13.4	2.94	3.69	6.19	1	2	5
J	0.74	0.86	1.25	0.08	50	1	10.4	630	3.5%	3.7	2.8	13.2	2.97	3.72	6.24	2	3	8
K	Not Used																	
L	0.35	0.41	0.60	0.08	100	2	14.7	500	1.5%	2.4	3.4	18.1	2.59	3.24	5.44	0.9	1.3	3.3
M	0.53	0.63	0.95	0.12	100	2	14.1	200	1.5%	2.4	1.4	15.4	2.78	3.48	5.84	1	2	6
N	0.38	0.45	0.69	0.12	100	2	14.1	200	1.5%	2.4	1.4	15.4	2.78	3.48	5.84	1	2	4
O	0.51	0.60	0.87	0.08	100	2	14.7	300	1.5%	2.4	2.0	16.7	2.69	3.36	5.64	1	2	5
P	1.06	1.24	1.80	0.08	100	2	14.7	420	1.5%	2.4	2.9	17.5	2.63	3.29	5.52	3	4	10
Q	Not Used																	
R	0.08	0.11	0.21	0.12	100	2	14.1	50	1.5%	2.4	0.3	14.4	2.86	3.58	6.01	0.2	0.4	1.3
S	0.35	0.41	0.60	0.08	100	2	14.7	500	1.5%	2.4	3.4	18.1	2.59	3.24	5.44	0.9	1.3	3.3
T	0.45	0.53	0.76	0.08	100	2	14.7	300	1.5%	2.4	2.0	16.7	2.69	3.36	5.64	1	2	4
U	0.70	0.83	1.20	0.08	100	2	14.7	500	1.5%	2.4	3.4	18.1	2.59	3.24	5.44	2	3	7
V	0.45	0.53	0.76	0.08	50	1	10.4	650	1.5%	2.4	4.4	14.8	2.83	3.54	5.95	1	2	5
W	0.14	0.15	0.17									5.0	4.12	5.17	8.68	0.6	0.8	1.4
X	0.30	0.72	2.34	0.08	100	2	14.7	500	2.0%	1.0	8.4	23.1	2.30	2.88	4.83	1	2	11
Y1	0.35	0.46	0.91	0.90	250	10	3.6					5.0	4.12	5.17	8.68	1.4	2	8
Y2	0.08	0.20	0.66	0.08	90	14	7.1					7.1	3.71	4.65	7.81	0.3	0.9	5.2
Z	0.32	0.38	0.55	0.08	65	2	10.2					10.2	3.27	4.09	6.87	1	2	4
AA	0.67	0.79	1.14	0.08	65	2	10.2					10.2	3.27	4.09	6.87	2	3	8
OS-1	1.69	1.76	2.02	0.08	40	0.8	9.3	900	2.5%	3.2	4.7	14.0	2.89	3.62	6.08	5	6	12
OS-2	0.32	0.35	0.46	0.12	50	1	10.0	400	1.6%	2.5	2.6	12.6	3.02	3.78	6.35	1.0	1.3	2.9
OS-3	0.22	0.23	0.24									5.0	4.12	5.17	8.68	0.9	1.2	2.1
OS-4	0.45	0.53	0.76	0.08	50	1	10.4	500	1.5%	2.4	3.4	13.8	2.91	3.65	6.13	1	2	5
OS-5	0.46	0.49	0.62	0.12	25	0.75	6.2	450	1.5%	2.4	3.1	9.2	3.39	4.25	7.14	2	2	4
OS-6	0.16	0.48	1.91	0.12	300	7	23.2					23.2	2.29	2.87	4.81	0.4	1	9
OS-7	0.22	0.65	2.59	0.12	300	7	23.2					23.2	2.29	2.87	4.81	0.5	2	12
P4-B Villages at Sterling Ranch East PP	13.52	14.94	19.77	0.08	100	2	14.7	600	1.5%	2.4	4.1	18.7	2.55	3.19	5.35	34	48	106

LEGEND

EXISTING GROUND CONTOUR 5910
PROPOSED FINISHED CONTOUR 5910
SUBDIVISION BOUNDARY
LOT LINE
PROPOSED BASIN BOUNDARY
DIRECTION OF DRAINAGE
EXISTING STORM SEWER
EXISTING STORM INLET
PROPOSED STORM SEWER
PROPOSED STORM INLET
BASIN IDENTIFIER D
AREA IN ACRES 1.41
DESIGN POINT 2
PIPE RUN 2

48 HOURS BEFORE YOU DIG, CALL UTILITY LOCATORS
811
UTILITY NOTIFICATION CENTER OF COLORADO
IT'S THE LAW

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NO.	REVISION	DATE

REVIEW:

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF CLASSIC CONSULTING ENGINEERS AND SURVEYORS, LLC

MARC A. WHORTON, COLORADO P.E. #37155 DATE

CLASSIC CONSULTING SM
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799(Fax)

STERLING RANCH EAST FILING NO. 5
FINAL PLAT
FINAL DRAINAGE REPORT
DEVELOPED DRAINAGE MAP

CLASSIC CONSULTING

DESIGNED BY	MAW	SCALE		DATE	7/22/24
DRAWN BY	MAW	(H) 1"=	60'	SHEET	3 OF 3
CHECKED BY		(V) 1"=	N/A	JOB NO.	1183.25

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VILLAGES AT STERLING RANCH EAST

EXISTING CONDITIONS DRAINAGE MAP AND DEVELOPED CONDITIONS

DRAINAGE MAPS

CLASSIC CONSULTING ENGINEERS & SURVEYORS

SEE SHEET 1

LEGEND

DESCRIPTION	SYMBOL
EXISTING GROUND CONTOUR	6910
PROPOSED FINISHED CONTOUR	6910
SUB-BASIN BOUNDARY	
SAND CREEK EAST FORK BASIN LINE	
DESIGN POINT	4
BASIN IDENTIFIER / AREA IN ACRES	BB 10.0
EXISTING DIRECTION OF FLOW	
EXISTING STORM SEWER	

STERLING RANCH EAST PRELIMINARY PLAN NO. 1
Pre-Developed Subcatchment Runoff

Subcatchment	Area (Ac.)	SWMM Imperv. (%)	Peak Runoff 5 yr. (CFS)	Peak Runoff 100 yr. (CFS)
EX-10	265.9	7%	105	222
EX10A	153.5	5%	46	103
EX-11 *	214.3	4%	54	129
EX-13 *	94.8	6%	36	85
EX-4A	44.2	8%	19	50
EX-5	26.2	8%	12	32
EX-7	152.8	5%	46	105
EX-7A	2.4	2%	1	5
EX-8	32.2	2%	5	23
EX-8A	6.6	2%	2	9
EX-9	139.3	8%	59	122
EX-9A	21.8	5%	7	19
TR-12 *	4.7	5%	2	9
TR-20 *	23.2	7%	10	32
TR-4 *	4.4	5%	2	9
TR-5 *	13.7	5%	5	17
TR-6 *	1.5	5%	1	4
TR-7 *	2.6	5%	1	5

* Basins with no change upon developed condition

STERLING RANCH EAST PRELIMINARY PLAN NO. 1
Pre-Developed Surface Routing

Design Point (South Bndy.)	Peak Runoff 5 yr. (CFS)	Peak Runoff 100 yr. (CFS)
4	46	105
4A	1	5
5	5	23
5A	2	9
6	59	122
6A	7	19
7	110	249
56	60	160

SAND CREEK REACH SC-
BISON VALLE
EXIST. POND 2
EXIST. TEMP. SEDIMENT BASIN
VOLLMER ROAD
(HOMESTEAD NORTH AT STERLING RANCH RESIDENTIAL USE)
HOMESTEAD NORTH PLATTED BOUNDARY
CLASSIC OWNERSHIP BOUNDARY
SAND CREEK REACH SC-9
EX-5 26.2
BRIARGATE BLVD. (130' ROW)
REFERENCE SAND CREEK CHANNEL IMPROVEMENTS PROPOSED WITH HOMESTEAD NORTH AT STERLING RANCH FIL.NO. 1 PREPARED BY JR ENG. (PCD NO. SF-22-013)
UNPLATTED (FUTURE STERLING RANCH RESIDENTIAL USE)
SAND CREEK EAST FORK
EX-7 152.8
EX-9 139.3
EX-4A 44.2
HOMESTEAD AT STERLING RANCH FILING NO. 2
HOMESTEAD AT STERLING RANCH FILING NO. 1
SAND CREEK REACH SC-8
REFERENCE SAND CREEK CHANNEL IMPROVEMENTS PROPOSED WITH HOMESTEAD NORTH AT STERLING RANCH FIL.NO. 1 PREPARED BY JR ENG. (PCD NO. SF-22-013)
CLASSIC OWNERSHIP BOUNDARY
STERLING RANCH EAST FILING NO. 1
UNPLATTED (FUTURE STERLING RANCH RESIDENTIAL USE)
BRANDING IRON AT STERLING RANCH FILING NO. 2
STERLING RANCH RD. (80' ROW)
EX10A 153.5
SITE
SITE
SITE
UNPLATTED (FUTURE STERLING RANCH RESIDENTIAL USE)
EX10 265.9
INDIAN WELLS SUBD. FILING NO. 1
TOMAHAWK TRAIL
STAPLETON ROAD
BOW VALLEY SUBD.
EX-13 94.8
UNPLATTED (FUTURE STERLING RANCH RESIDENTIAL USE)
EX-11 214.3
OVERALL STERLING RANCH PROPERTY BOUNDARY
UNPLATTED ELITE PROPERTIES OF AMERICA, INC. (CLASSIC HOMES)
UNPLATTED BUFORD/BENNETT

SEE SHEET 3

N

200 100 0 200 400

SCALE: 1" = 200'

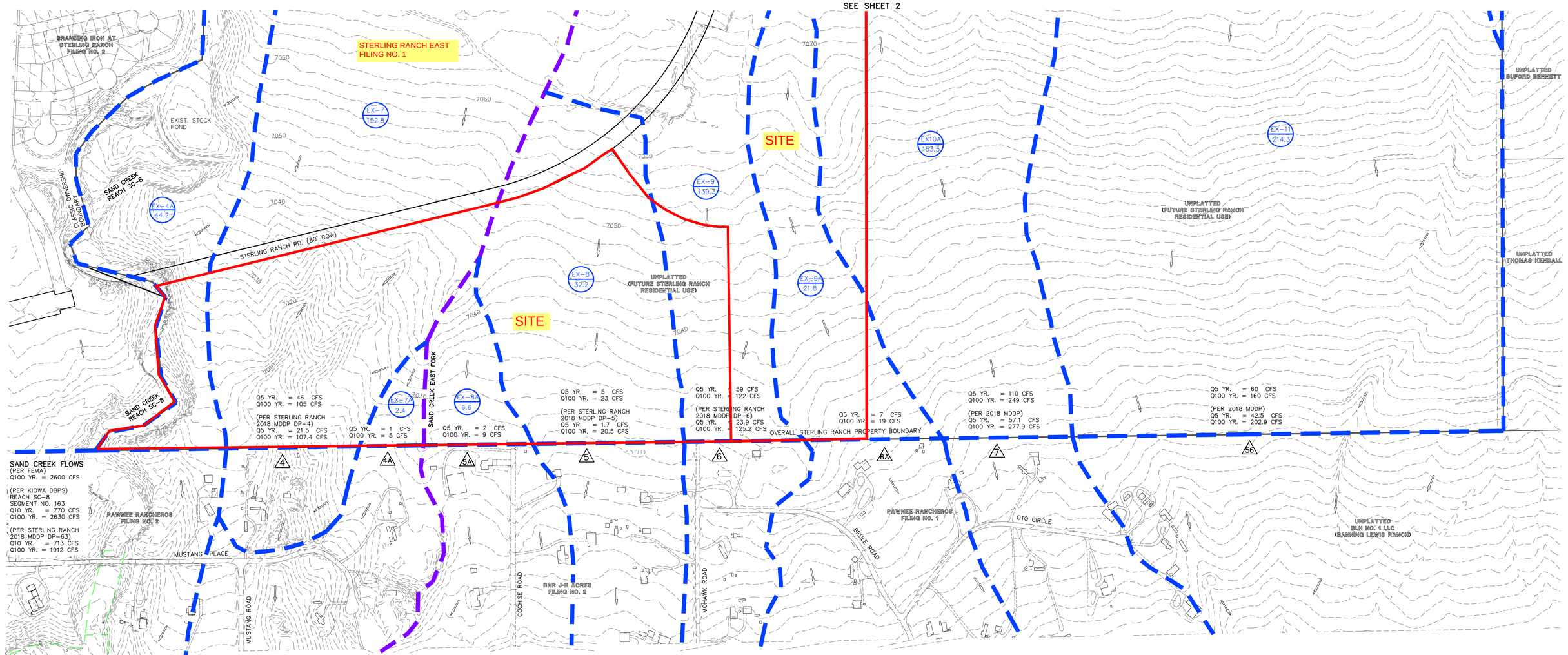
CLASSIC CONSULTING
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799 (Fax)

STERLING RANCH EAST
PRELIMINARY PLAN NO. 1
PRELIMINARY DRAINAGE REPORT
PRE-DEVELOPMENT DRAINAGE MAP

DESIGNED BY	MAW	SCALE	DATE 4-1-22
DRAWN BY	MAW	(H) 1"= 200'	SHEET 2 OF 6
CHECKED BY		(V) 1"= N/A	JOB NO. 1183.22

N:\1183.22\REPORTS\PRELIM DRAINAGE REPORT\1183.22PRDR HDM rev.dwg, 11/11/2022 10:06:43 AM, 1:1

SEE SHEET 2



NOTE:

THE FOLLOWING LABELS AS SHOWN ALONG THE SOUTH BOUNDARY REPRESENT PRE-DEVELOPED FLOWS AS PRESENTED IN THE 2018 STERLING RANCH MDDP. SEE REFERENCE MATERIAL IN APPENDIX FOR ORIGINAL MAP.

(PER STERLING RANCH 2018 MDDP DP-5)
Q5 YR. = 1.7 CFS
Q100 YR. = 20.5 CFS

STERLING RANCH EAST PRELIMINARY PLAN NO. 1
Pre-Developed Subcatchment Runoff

Subcatchment	Area (Ac.)	SWMM Imperv. (%)	Peak Runoff 5 yr. (CFS)	Peak Runoff 100 yr. (CFS)
EX-10	265.9	7%	105	222
EX10A	153.5	5%	46	103
EX-11 *	214.3	4%	54	129
EX-13 *	94.8	6%	36	85
EX-4A	44.2	8%	19	50
EX-5	26.2	8%	12	32
EX-7	152.8	5%	46	105
EX-7A	2.4	2%	1	5
EX-8	32.2	2%	5	23
EX-8A	6.6	2%	2	9
EX-9	139.3	8%	59	122
EX-9A	21.8	5%	7	19
TR-12 *	4.7	5%	2	9
TR-20 *	23.2	7%	10	32
TR-4 *	4.4	5%	2	9
TR-5 *	13.7	5%	5	17
TR-6 *	1.5	5%	1	4
TR-7 *	2.6	5%	1	5

* Basins with no change upon developed condition

STERLING RANCH EAST PRELIMINARY PLAN NO. 1
Pre-Developed Surface Routing

Design Point (South Bndy.)	Peak Runoff 5 yr. (CFS)	Peak Runoff 100 yr. (CFS)
4	46	105
4A	1	5
5	5	23
5A	2	9
6	59	122
6A	7	19
7	110	249
56	60	160

LEGEND

DESCRIPTION	SYMBOL
EXISTING GROUND CONTOUR	6910
PROPOSED FINISHED CONTOUR	6910
SUB-BASIN BOUNDARY	
SAND CREEK EAST FORK BASIN LINE	
DESIGN POINT	4
BASIN IDENTIFIER / AREA IN ACRES	BB 10.0
EXISTING DIRECTION OF FLOW	
EXISTING STORM SEWER	

200 100 0 200 400

SCALE: 1" = 200'

CLASSIC CONSULTING SM
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799 (Fax)

STERLING RANCH EAST
PRELIMINARY PLAN NO. 1
PRELIMINARY DRAINAGE REPORT
PRE-DEVELOPMENT DRAINAGE MAP

DESIGNED BY	MAW	SCALE		DATE	4-1-22
DRAWN BY	MAW	(H) 1"= 200'		SHEET	3 OF 6
CHECKED BY		(V) 1"= N/A		JOB NO.	1183.22

N:\1183\2\REPORTS\PRELIM DRAINAGE REPORT\1183\2PDR.dwg, 11/1/2022 10:05:54 AM, 1:1

DRAINAGE MAP

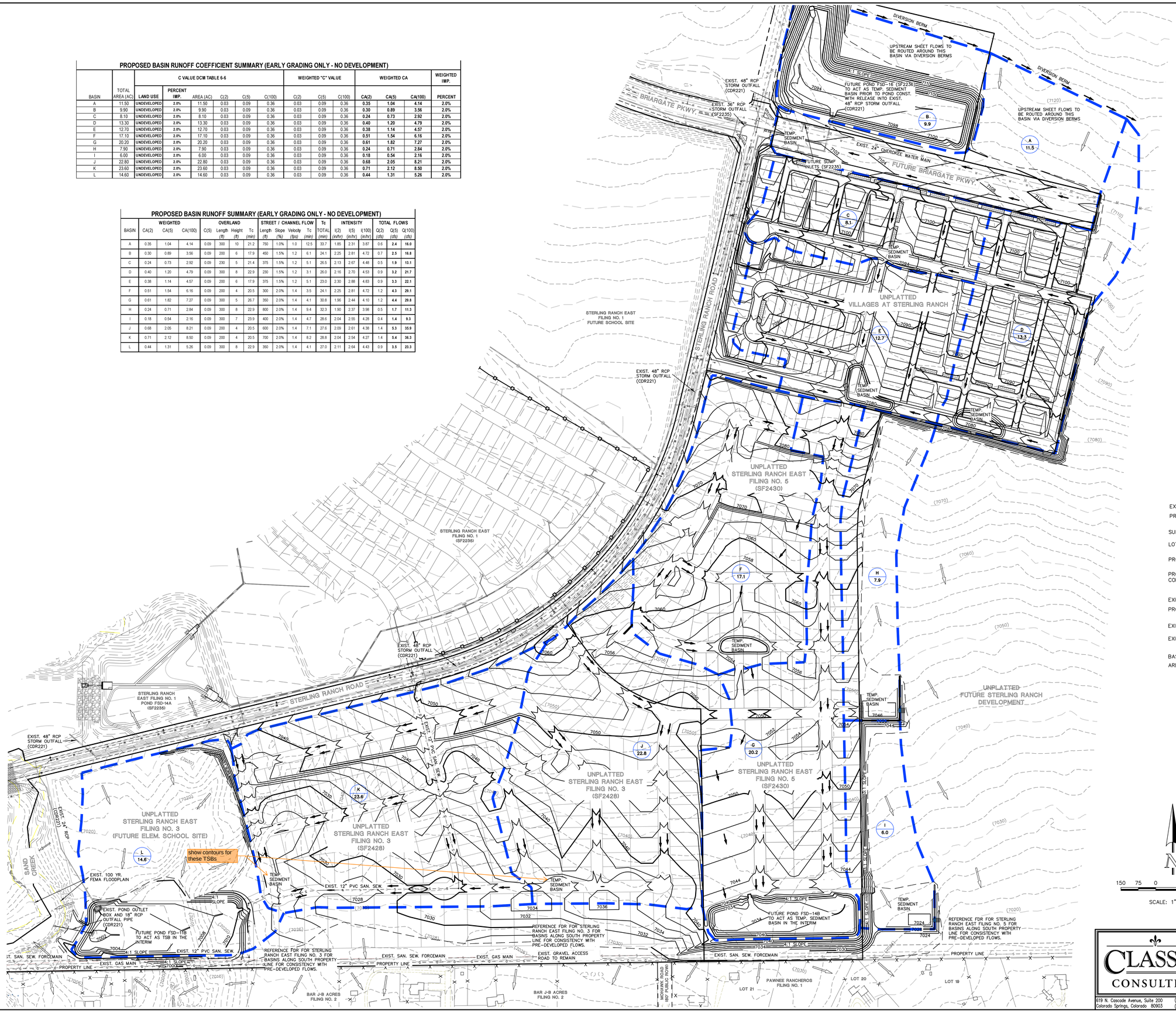
CLASSIC SM
CONSULTING
ENGINEERS & SURVEYORS

PROPOSED BASIN RUNOFF COEFFICIENT SUMMARY (EARLY GRADING ONLY - NO DEVELOPMENT)

BASIN	TOTAL AREA (AC)	C VALUE DCM TABLE 6-6						WEIGHTED "C" VALUE			WEIGHTED CA			WEIGHTED IMP.
		LAND USE	PERCENT IMP.	AREA (AC)	C(2)	C(5)	C(100)	C(2)	C(5)	C(100)	CA(2)	CA(5)	CA(100)	PERCENT
A	11.50	UNDEVELOPED	2.0%	11.50	0.03	0.09	0.36	0.03	0.09	0.36	**0.35**	**1.04**	**4.14**	**2.0%**
B	9.90	UNDEVELOPED	2.0%	9.90	0.03	0.09	0.36	0.03	0.09	0.36	**0.30**	**0.89**	**3.56**	**2.0%**
C	8.10	UNDEVELOPED	2.0%	8.10	0.03	0.09	0.36	0.03	0.09	0.36	**0.24**	**0.73**	**2.92**	**2.0%**
D	13.30	UNDEVELOPED	2.0%	13.30	0.03	0.09	0.36	0.03	0.09	0.36	**0.40**	**1.20**	**4.79**	**2.0%**
E	12.70	UNDEVELOPED	2.0%	12.70	0.03	0.09	0.36	0.03	0.09	0.36	**0.38**	**1.14**	**4.57**	**2.0%**
F	17.10	UNDEVELOPED	2.0%	17.10	0.03	0.09	0.36	0.03	0.09	0.36	**0.51**	**1.54**	**6.16**	**2.0%**
G	20.20	UNDEVELOPED	2.0%	20.20	0.03	0.09	0.36	0.03	0.09	0.36	**0.61**	**1.82**	**7.27**	**2.0%**
H	7.90	UNDEVELOPED	2.0%	7.90	0.03	0.09	0.36	0.03	0.09	0.36	**0.24**	**0.71**	**2.84**	**2.0%**
I	6.00	UNDEVELOPED	2.0%	6.00	0.03	0.09	0.36	0.03	0.09	0.36	**0.18**	**0.54**	**2.16**	**2.0%**
J	22.80	UNDEVELOPED	2.0%	22.80	0.03	0.09	0.36	0.03	0.09	0.36	**0.68**	**2.05**	**8.21**	**2.0%**
K	23.60	UNDEVELOPED	2.0%	23.60	0.03	0.09	0.36	0.03	0.09	0.36	**0.71**	**2.12**	**8.50**	**2.0%**
L	14.60	UNDEVELOPED	2.0%	14.60	0.03	0.09	0.36	0.03	0.09	0.36	**0.44**	**1.31**	**5.26**	**2.0%**

PROPOSED BASIN RUNOFF SUMMARY (EARLY GRADING ONLY - NO DEVELOPMENT)

BASIN	WEIGHTED			OVERLAND				STREET / CHANNEL FLOW				Tc	INTENSITY			TOTAL FLOWS		
	CA(2)	CA(5)	CA(100)	C(5)	Length (ft)	Height (ft)	Tc (min)	Length (ft)	Slope (%)	Velocity (fps)	Tc (min)	TOTAL (min)	I(2) (in/hr)	I(5) (in/hr)	I(100) (in/hr)	Q(2) (cfs)	Q(5) (cfs)	Q(100) (cfs)
A	0.35	1.04	4.14	0.09	300	10	21.2	750	1.0%	1.0	12.5	33.7	1.85	2.31	3.87	0.6	**2.4**	**16.0**
B	0.30	0.89	3.56	0.09	200	6	17.9	450	1.5%	1.2	6.1	24.1	2.25	2.81	4.72	0.7	**2.5**	**16.8**
C	0.24	0.73	2.92	0.09	230	5	21.4	375	1.5%	1.2	5.1	26.5	2.13	2.67	4.48	0.5	**1.9**	**13.1**
D	0.40	1.20	4.79	0.09	300	8	22.9	230	1.5%	1.2	3.1	26.0	2.16	2.70	4.53	0.9	**3.2**	**21.7**
E	0.38	1.14	4.57	0.09	200	6	17.9	375	1.5%	1.2	5.1	23.0	2.30	2.88	4.83	0.9	**3.3**	**22.1**
F	0.51	1.54	6.16	0.09	200	4	20.5	300	2.0%	1.4	3.5	24.1	2.25	2.81	4.72	1.2	**4.3**	**29.1**
G	0.61	1.82	7.27	0.09	300	5	26.7	350	2.0%	1.4	4.1	30.8	1.96	2.44	4.10	1.2	**4.4**	**29.8**
H	0.24	0.71	2.84	0.09	300	8	22.9	800	2.0%	1.4	9.4	32.3	1.90	2.37	3.98	0.5	**1.7**	**11.3**
I	0.18	0.54	2.16	0.09	300	7	23.9	400	2.0%	1.4	4.7	28.6	2.04	2.55	4.28	0.4	**1.4**	**9.3**
J	0.68	2.05	8.21	0.09	200	4	20.5	600	2.0%	1.4	7.1	27.6	2.09	2.61	4.38	1.4	**5.3**	**35.9**
K	0.71	2.12	8.50	0.09	200	4	20.5	700	2.0%	1.4	8.2	28.8	2.04	2.54	4.27	1.4	**5.4**	**36.3**
L	0.44	1.31	5.26	0.09	300	8	22.9	350	2.0%	1.4	4.1	27.0	2.11	2.64	4.43	0.9	**3.5**	**23.3**



NOTE:

THE SITE HAS BEEN PREVIOUSLY DISTURBED WITH MASS GRADING OPERATIONS AND VEGETATION IS SPARSE AND OF NATURAL GRASSLAND CONSISTENCY (NO TREES OR SHRUBS).

LEGEND

- EXISTING CONTOUR (7700)
- PROPOSED CONTOUR 7700
- SUBDIVISION BOUNDARY
- LOT LINE
- PROPOSED BASIN BOUNDARY
- PROPOSED LIMITS OF GRADING/ CONSTRUCTION SITE BOUNDARY
- EXISTING FLOW DIRECTION
- PROPOSED FLOW
- EXISTING STORM SEWER
- EXISTING STORM INLET
- BASIN IDENTIFIER D / AREA IN ACRES 1.41

NOTE:

THIS PLAN AND REPORT ONLY ALLOWS FOR EARLY GRADING OPERATIONS WITHIN THIS SPECIFIED AREA WHICH MAY INCLUDE WET UTILITY INSTALLATION, ALL AT THE DEVELOPER'S RISK.

NO ROADWAY CONSTRUCTION OR HOMEBUILDING ACTIVITY ALLOWED PRIOR TO FINAL PLATS AND CD APPROVAL BY EL PASO COUNTY.

N

150 75 0 150 300

SCALE: 1" = 150'

PCD FILE # PUD SP226

CLASSIC CONSULTING SM
619 N. Cascade Avenue, Suite 200 (719)785-0790
Colorado Springs, Colorado 80903 (719)785-0799 (Fax)

VILLAGES AT STERLING RANCH
FINAL DRAINGE REPORT
(EARLY GRADING AND EROSION CONTROL PLAN)

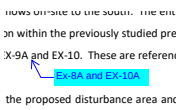
CLASSIC CONSULTING

DESIGNED BY	MAW	SCALE		DATE	1/13/25
DRAWN BY	MAW	(H) 1"= 150'		SHEET	1 OF 1
CHECKED BY		(V) 1"= N/A		JOB NO.	1183.26

N:\1183\Admin\REPORTS\FOR EARLY GEC\1183X FDR Early GEC.dwg, 1/16/2025 12:09:18 PM, ILI.03232

V6_Drainage Report GEC.pdf Markup Summary

Callout (1)



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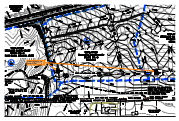
Ex-8A and EX-10A

SW - Textbox with Arrow (1)



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Author: Glenn Reese - EPC Stormwater
Date: 2/3/2025 1:38:42 PM
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Color:
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Space:

show contours for these TSBs