COLORADO SPRINGS
OLYMPIC CITY USA

GENERAL APPLICATION FORM

Edited 9/25/18

Project Name: ASPEN MEADOWS FILING 4 | Existing Zone: PUD/AO/SS | Acreage: 22.7 AC

Site Address: VACANT, UNPLATTED | Direction from Nearest Street Intersection: SOUTHEAST OF COWPOKE RD. AND FOREST MEADOWS AVE.

Tax Schedule Number(s): 5300000709, 5300000661

TYPE OF PLAN(S) - *Check all that apply. Note: MJ=Major Amendment; MN=Minor Amendment; MM=Minor Modification*

- ☐ 2020 Land Use Map Amendment
- ☐ Administrative Relief
- ☐ Amendment to Plat Restriction
- ☐ Annexation
- ☐ Building Permit to Unplatted Land
- ☐ Building Permit Prior to Platting
- ☐ CMRS No. ○ 1 ○ 2 ○ 3
- ☐ Concept Plan ○ New ○ MJ ○ MN ○ MM
- ☐ Conditional Use ○ New ○ MJ ○ MN ○ MM
- ☐ Coordinated Sign Plan (CSP)
- ☐ Development Agreement
- ☐ Development Plan ○ New ○ MJ ○ MN ○ MM
- ☐ Historic Preservation ○ Re-roof ○ Hearing Request
- ☒ Landscape Plan ○ Preliminary ○ Final ○ Irrigation
- ☐ Master Plan ○ New ○ MJ ○ MN ○ MM
- ☐ Nonuse Variance
- ☐ Preservation Easement Adjustment
- ☐ Property Boundary Adjustment
- ☐ PUD Concept Plan ○ New ○ MJ ○ MN ○ MM
- ☒ PUD Development Plan ○ New ○ MJ ○ MN ○ MM
- ☐ PUD Zone Change
- ☐ Street Name Change
- ● Subdivision Plat ○ Prelim ○ Prelim & Final ● Final
- ☐ Subdivision Waiver ○ Design ○ Process
- ☐ Use Variance ○ New ○ MJ ○ MN ○ MM
- ☐ Vacation of Plat
- ☐ Waiver of Replat
- ☐ Zone Change; Proposed Zone: _____
- ☐ FBZ Development Plan ○ New ○ MJ ○ MN ○ MM
- ☐ FBZ Conditional Use ○ New ○ MJ ○ MN ○ MM
- ☐ FBZ Interim Use Plan
- ☐ FBZ Minor Improvement Plan
- ☐ FBZ Warrant

PROPERTY OWNER AND/OR APPLICANT/CONSULTANT ACKNOWLEDGEMENT OF RESPONSIBILITIES:

The signature(s) hereby certify that the statements made by myself and constituting part of this application are true and correct. I am fully aware that any misrepresentation of any information on this application may be grounds for denial of this application. I agree that if this request is approved, it is issued on the representations made in this submittal, and any approval or subsequently issued building permit(s) or other type of permit(s) may be revoked without notice if there is a breach of representations or conditions of approval. The applicant/owner by his or her signature understands and agrees that he or she is responsible for the completion of all on-site and off-site improvements as shown and approved on the final plan (including landscaping, paving, lighting, etc.) prior to receiving a Certificate of Occupancy.

Signature of Property Owner — Date: 7/7/21
Signature of Consultant — Date: 7/15/21
Signature of Developer — Date: 7/7/21

APPLICANT CONTACT INFORMATION (please print or type)

Property Owner: RAO INVESTMENTS LLC | Contact Name: TIMOTHY BUSCHAR

E-Mail: TBUSCHAR@ASPENVIEWHOMES.NET | Phone: (719) 306-2976

Developer: COLA, LLC DBA ASPEN VIEW HOMES | Contact Name: TIMOTHY BUSCHAR

E-Mail: TBUSCHAR@ASPENVIEWHOMES.NET | Phone: (719)306-2976

Consultant/Main Contact name: MATRIX DESIGN GROUP/ ANDREA PAPIERSKI | Phone: (719) 457-5612

Address: 2435 RESEARCH PKWY, STE 300 | City: COLORADO SPRINGS

State: CO | Zip Code: 80920 | E-Mail: ANDREA.PAPIERSKI@MATRIXDESIGNGROUP.COM

PLANNER AUTHORIZATION: (CITY USE ONLY)

● Checklists ● Distribution Form ● Project Blurb ● E-mail to Admin. Initial Review Level: ● AR ☐ CPC ☐ DRB ☐ HP

Payment $_____ Assigned to: Katelynn Wintz Date: 7/19/21

Receipt No.: _____ City File No: AR FP 21-00476

COLORADO SPRINGS
OLYMPIC CITY USA

Final Plat
Application Requirements

REVIEW CRITERIA: It is the purpose and intent of this article:

A. To promote the health, safety, convenience and general welfare of the citizens of the City.
B. To set forth appropriate standards for subdivision design which will:
   1. Encourage the development of sound, economical, stable neighborhoods and create a healthy living environment for the residents of the City, in conformance with the goals and policies of the Comprehensive Plan.
   2. Provide for lots of adequate size, configuration and appropriate design for the purpose for which they are to be used and to accommodate the physical features of the site.
   3. Promote design flexibility.
   4. Provide for streets of adequate capacity and with which appropriate improvements will handle anticipated traffic flow.
   5. Preserve the significant natural features and environmental quality of the City.
C. To set forth appropriate standards for utilities and services which will:
   1. Provide an efficient, adequate and economical supply of utilities and services to land proposed for development, in order to assure that governmental costs are minimized to the greatest extent possible.
   2. Ensure at the time of subdivision that adequate storm drainage, sewage disposal and other utilities, services and improvements needed as a consequence of subdivision of land are provided.
   3. Provide for the undergrounding of all public utilities lines up to thirty thousand (30,000) volts except as otherwise provided in section 7.7.805 of this article.
D. To assure the provision of adequate and safe circulation which will:
   1. Minimize traffic hazards through means of appropriate street design, and provide for safe and convenient vehicular and pedestrian traffic circulation.
   2. Provide for adequate vehicular access to abutting properties and the subdivider's remaining holdings.
   3. Assure that street rights of way are provided for in accord with the major thoroughfare plan and the City Engineer design manual.
   4. Provide for safe and convenient pedestrian access throughout the community.
E. To assure adequate public facilities are provided which will:
   1. Enhance the coordination of subdivision development with the provision of public facilities such as parks, recreation areas, schools and other types of community facilities.
   2. Ensure that public facilities are provided in accord with the City's Comprehensive Plan.
   3. Provide for adequate law enforcement and fire protection facilities.
F. To ensure the appropriate development of the community through the implementation of the goals and policies of the Comprehensive Plan. (Ord. 96-44; Ord. 01-42)

SUBMITTAL CHECKLIST: The following items will need to be included in any Final Plat review submittal.

Applicant		Planner
☒	**General Development Application Form**	☐
☒	1 copy of a **Project Statement** identifying the following: 1. A clear description of the proposed plat. If public easements dedicated by plat to the City are to be vacated as part of the request, indicate this within the project statement letter; 2. A justification based on the review criteria addressing why the proposed plat should be approved; and 3. An issue list stating how each of the pre-application issues, as communicated to the applicant/owner by the reviewing planner, has been addressed in the proposed subdivision plat.	☐
☒	1 copy of a **Final Plat** showing all "Plan Contents" below	☐
☒	All plans, documents, and reports uploaded to **Dropbox folder** (Planner to send folder invite through email)	☐
☒	A **legal description** of the proposed project	☐
	Reports and Studies **Requirement for each report is determined at the pre-application meeting or LDTC meeting. All reports to be provided in electronic form via Dropbox link from planner.**	
☐	Geologic Hazard Report	
☒	Drainage Reports	
☐	Traffic Impact Analysis	
☒	Submittal of the Hydraulic Grade Line (HGL) Request Form to waterplanning@csu.org or fax to 719-668-5651 prior to submittal.	
☒	Submittal of the Wastewater Facilities Master Report to wwmasterplansubmit@csu.org prior to application submittal.	

SUBMITTAL CHECKLIST: *Continued from previous page.*

Applicant		Planner
☒	**Proof of Ownership** via title insurance, tax assessor's statement, or a deed.	☐
☒	**Ad Valorem Taxes** - proof payment via paid tax receipt, an archive report, or a certificate for ad valorem property taxes.	☐
☒	A copy of the **Pre-Application Meeting Summary** letter from the assigned City Planner.	☐
☐	1 copy of an approved **Preliminary Plat** or **Concept,** or **Development Plan** for the proposed project.	☐
☐	**Utility Line Locates** provided if public easements dedicated by plat to the City are to be vacated, unless waived by Springs Utilities *(refer to content requirements)*.	☐
☒	**Mineral Estate Owner Notification Certification Affidavit** (Public Hearing Items ONLY).	☐

PLAN CONTENT REQUIRMENTS: The content of the final plat must include the following information.

General Information

☒	Name of subdivision at the top of the sheet, followed by a subtitle identifying the Section, Township and Range along with City, County and State.	☐
☒	Sheet Size shall be 24" x 36" including 1/2" border with 'landscape' orientation.	☐
☒	Indication of standardized scale, both fractional and bar (i.e. 1" = 20')	☐
☒	North arrow	☐
☒	Vicinity Map (does not have to be to scale). A vicinity location necessary to locate the tract.	☐
☒	Date of preparation of the plat	☐
☒	Legal Description of the overall boundary of the subdivision with acreage. All courses on the legal shall be shown and labeled on the plat drawing.	☐
☐	Easement statement of standard easements as required on all, side rear and front lots lines. as well as site triangle easements.	☐
☒	Dedication Statements. Statements of land to be dedicated to the City for parks, playgrounds or other public uses, grants of easements and dedication of public streets and alleys to the City.	☐
☒	**All plats with public easements and/or tracts must have the dedication statement:** *"The undersigned does hereby dedicate, grant and convey to the City of Colorado Springs those Public Easements (and tracts) as shown on the plat; and further restricts the use of all Public Easement to the City of Colorado Springs and/or its assigns, provided however, that the sole right and authority to release or quitclaim all or any such Public Easements shall remain exclusively vested in the City of Colorado Springs."*	☐
☒	A**ll plats with public streets shall have the following sentence in the dedication statement:** *"All public streets are hereby dedicated to the City of Colorado Springs for public use."*	☐
☐	**All plats with other tracts being dedicated to the City shall have:** (1) A sentence in the dedication statement similar to *"Tract X is hereby dedicated to the City of Colorado Springs for public use.* (2) A special numbered plat note defining the purpose and perpetual maintenance responsibility for the tract such as *"Tract X is for public drainage, landscaping, trail and open space with maintenance of the surface being vested in the (Distract Name) Special Maintenance District."*	☐
☐	All plats with private streets shall have the following sentence as a plat note: *"All private streets (insert names) are privately owned and maintained by (list owner name, Owner's Association, ect.)."*	☐
☒	Statement of ownership and acknowledgement. The notarized signature of the owner is required.	☐
☐	Statement of mortgagee and acknowledgement. The signature of the mortgagee, if any, consenting to the dedication is required	☐
☒	**The following statement that the area included in the plat is subject to this Code as such applies to the development of the land:** "No building permits shall be issued for building sites within this plat until all required fees have been paid and all required public and private improvements have been installed as specified by the City of Colorado Springs or alternatively until acceptable assurances including but not limited to letters of credit cash subdivision bonds or combinations thereof guaranteeing the completion of all required public improvements including, but not limited to, drainage, street and erosion control have been placed on file with the City of Colorado Springs."	☐
☒	Notary Statement. Acknowledgement of the execution of the plat before a notary public.	☐

PLAN CONTENT REQUIRMENTS: *Continued from previous page.*

Applicant | Planner

Access Provisions:

☒ a. A Statement Restricting Access. A statement restricting access rights across the right-of-way lines of major highways, parkways, streets or freeways, where required as a provision of approval.
b. Provision of Adequate Access. Proof of adequate, suitable access must be provided and clearly indicated on the face of the plat. If access is not directly gained from public right-of-way, a separate signed and recorded easement must be provided and referenced on the face of the plat. ☐

☒ Fee block (drainage, bridge, school and park) ☐

Certificates for execution by each of the following or their duly appointed representative(s).

☒ a. City Engineer
b. City Planning Director
c. City Clerk
d. El Paso County Clerk and Recorder ☐

☒ Layout. **The exact layout including:** ☐

Boundary Lines

☒ The subdivision boundary will be clearly distinguishable from other maplines by use of a distinct line type and/or thickness. All lines will be labeled with bearing and distance, and all curves will be labeled with a central angle (delta), radius and arc length. Radial bearings and/or chord bearings will be provided for all non-tangent curves. All dimensions to be determined by accurate field survey which must balance and close within a limit of 1 in 5,000. Show adjacent and/or intersecting plat/deed lines and label appropriately to include recording information (Book and Page and/or Reception Number. ☐

Streets

☒ All street right-of-ways defined by the plat will be clearly distinguishable from other map lines by use of a distinct line type and/or thickness. All lines will be labeled with a complete bearing and distance, and all curves will be labeled with a central angle (delta), radius and arc length. Radial bearings and/or chord bearings will be provided for all non-tangent curves. Widths shall be labeled from each right-of-way line normal to the corresponding street centerline. All street centerlines defined by the plat will be clearly distinguishable from other map lines by use of distinct line type and/or thickness. All lines will be labeled with a complete bearing and distance and all curves will be labeled with a central angle (delta), radius and arc length. Radial bearings and/or chord bearings will be provided for all non-tangent curves. The plat shall show the right-of-way lines, widths, locations and street names of all existing and proposed public or private streets: ☐

(1) Within the proposed subdivision, and
(2) Immediately abutting the proposed subdivision, and
(3) Any private street shall include the designation "(private)" immediately following street name;any other Private right of way that is not named shall include the designation "(private)" in a manner that clearly conveys such a status.

Easements

☒ All easements as required by City Utilities, the City Engineer and other public and quasi-public agencies. Said easements shall be clearly labeled to include with, use and identification as public or private, if necessary. Tie to property lines and annotate with bearings and distances as necessary. Clearly show and label all existing easements, to include width and recording information, that cross, abut or are located within the subdivision boundary. ☐

Lots and Blocks

☒ All lines of lots, blocks and other parcels of land defined by the plat will be clearly distinguishable from other map lines by use of a distinct line type and/or thickness. All lines will be labeled with a complete bearing and distance and all curves will be labeled with a radius and arc length. Lots must close to 1 in 5,000. ☐

Identification System

☒ All lots and blocks in the subdivision shall be numbered, beginning with the numeral "1" and continuing consecutively throughout the tract, with no omissions or duplications. All tracts shall be likewise labeled beginning with the letter `A'. Lots and tracts shall be labeled with the area of the lot or tract. ☐

☒ Whenever a plat drawing spans multiple sheets, clear and well-labeled match lines and a keymap shall be included on each sheet. Labels will be of the nature `See Sheet ___ of ___". Duplicate street names, widths, lot numbers, tract names, easement labeling or any such labeling when any feature is shown on multiple sheets. ☐

☒ Use leader lines whenever a dimension is not clearly and unmistakably associated with a given line, line segment or arc. ☐

☒ All line annotation and all other text will be easily and clearly readable. No text shall overwrite other text or be overwritten by map lines. ☐

☒ Provide a legend, which designates all, lines and symbols except where called out on plat drawing. ☐

PLAN CONTENT REQUIRMENTS: *Continued from previous pages.*

Applicant | Planner

Inundation Mark:

The plat shall clearly show the 100-year flood plain line. Reference the appropriate FEMA Panel by which the location of this line has been determined.

Option 1: Property located completely outside of the 100-year floodplain:
"This property is located within Zone X (Areas determined to be outside of the 500-year floodplain) as established by FEMA per FIRM panel 08041C_ _ _ _ F, effective date 3/17/1997."

Option 2: Property located within the 100-year floodplain:
"A portion of this property is located within Zone AE (area located within a 100-year floodplain, Base flood elevations determined) as established by FEMA per FIRM panel 08041C _ _ _ _ F, effective date 3/17/1997."

☒ Option 3: Property located within a 100-year floodplain where a LOMR has been processed: ☐
"A portion of this property is located within Zone AE (area located within the 100-year floodplain, Base flood elevations determined) as established by FEMA per FIRM panel 08041C_ _ _ _F, effective date 3/17/1997 and as modified by LOMR# 0_-08-_ _ _ _ P effective date DD/MM/YYYY."

Option 4: Property located within 100-year floodplain where a CLOMR has been processed and lot restrictions apply until a LOMR is approved by FEMA:
"A portion of this property is located within Zone AE (area located within the 100-year floodplain, Base flood elevations determined) as established by FEMA per FIRM panel 08041C_ _ _ F, effective date 3/17/1997. A CLOMR# 0_-08-_ _ _ _R effective date DD/MM/YYYY is on record with the Regional Floodplain Administration. The following lots are will not be allowed building permits ("enter lot numbers") until a FEMA approved LOMR removing the properties from the 100-year floodplain is received by the Regional Floodplain Administration."

*All **bold** and **"_ _ _ _ "** require the Applicant to insert the appropriate data for their specific site.

☒	Book and Page and/or Reception Number for all existing and newly created easements.	☐
☒	All other information required by Colorado State law.	☐
☒	Sheet Size shall be 24" x 36" including 1/2" border with 'landscape' orientation.	☐
☒	Scale Bar	☐
☒	North arrow	☐
☒	Adjacent Subdivision. Names of adjacent platted areas along with the Reception and/or Plat Book and Page Number shall be shown. If unplatted, so indicate. Existing street right-of-ways that intersect the subdivision boundary or are adjacent to said boundary lines shall be clearly labeled with the street name, right-of-way width and appropriate deed or plat recording information where in said right-of-way is defined. Show and label all existing lots and blocks that are immediately adjacent to the subdivision boundary.	☐
☒	Basis of Bearing. A clearly defined basis of bearings shall be provided, both verbally and graphically. All monumentation defining said line shall be shown and labeled on the plat drawing. When said line is not common with the subdivision boundary, it shall be accurately tied to the boundary with bearings and distances.	☐
☐	Public Land and/or Land Reserved In Deeds. Location of land intended to be conveyed or reserved for public use or reserved in the deeds for the use of all property owners in the proposed subdivision.	☐
☒	Monuments. All monuments used to determine and/or describe a boundary (including Basis of Bearings, Point of Beginning and Point of Commencement) shall be shown and clearly labeled on the plat drawing. Monuments for corners defined by the plat, or otherwise found to be missing in the field, shall be placed and set in accord with the requirements of the State of Colorado.	☐
☐	Not a Part of Subdivision. All areas enclosed within the subdivision boundary, which do not constitute a part of the subdivision shall be labeled `Not a part of this subdivision.' All lines pertaining to such areas shall be dashed.	☐
☒	The area in sq.ft. of all Lots and Tracts sought to be platted.	☐
☒	The following statement in compliance with Section 7.7.303.D.7."The area included in the plat described herein is subject to the Code of the City of Colorado Springs, 2001 As Amended."	☐
☒	The final plat shall be clearly and legibly prepared by a registered land surveyor or engineer	☐
☐	Show all common ingress-egress, parking and access easements required by the development plan.	☐
☒	The proposed subdivision meet all of the requirements of Chapter 7, Section 2 through 9 of the City Code, the Public Works Design Manual and any other applicable City ordinance and resolutions.	☐

PLAN CONTENT REQUIRMENTS: *Continued from previous pages.*

Applicant		Planner
☒	**Surveyor's Statement**, which shall read: "The undersigned Professional Land Surveyor licensed in the State of Colorado, hereby states and declares that the accompanying plat was surveyed and drawn under his/her responsible charge and accurately shows the described tract of land, and subdivision thereof, and that the requirements of Title 38 of the Colorado Revised Statutes, 1973, as amended, have been met to the best of his/her knowledge and belief."	☐
☐	Closure Sheets. One (1) copy of the computer closure sheets for the entire subdivision area.Such sheets shall not be required if not more than five (5) lots in the subdivision are irregular(not rectangular) in shape.	☐
☐	Replat should include the following information: The replat shall be identified by its own separate title. The title block of the replat shall further identify the subdivision of record of that portion of the subdivision of record which is being replatted.	☐
☐	The replat shall contain the following notice: `*The approval of this replat vacates all prior plats for the area described by this replat.*'	☐
☐	The replat shall show graphically the "as platted" lot(s) separately on the plat drawing. The drawing shall indicate all existing easements.	☐
☐	If any existing lot line is being removed, relocated or re-orientated, any associated Easements dedicated by plat still remain unless vacated separately or as part of this request. If this easement is to be vacated as part of this request, provide the following information With the replat: The project description letter needs to indicate that the associated lot line easement(s)or other platted easement(s) are to be vacated. Provide locates from the utility locaters,unless no water or wastewater mains exist adjacent to the area being replatted or unless CSU specifically waives the submission of locates.	☐
☐	Geologic Hazard Study disclosure statement (not required if waiver has been approved): "This property is subject to the findings summary and conclusions of a Geologic Hazard Report prepared by_____ dated_____ , which identified the following specific geologic hazard on the property:_____ . A copy of said report has been placed within file #_____ or within the subdivision file _____ of the City of Colorado Springs Planning and Development Team. Contact the Planning and Development Team, 30 South Nevada Avenue, Suite 105, Colorado Springs, CO, if you would like to review said report."	☐
☐	If within an airport overlay, the following note must be added: "The avigation easement dedicated herein for public avigation purposes, shall be considered a public easement subject to those terms and conditions as specified on the instrument recorded at reception no. 217069667 of the Records of El Paso County, Colorado. All other easements or interests of record affecting any of the platted property depicted hereon shall not be affected and shall remain in full force and effect."	☐

Matrix Design Group, Inc.
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Colorado Springs, CO 80920
O 719.575.0100
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matrixdesigngroup.com

PROJECT STATEMENT

Aspen Meadows Filing 4
July 14, 2021

The Aspen Meadows Filing No. 4 Single-Family Small Lot Development is located immediately south of Cowpoke Road and immediately east of Forest Meadows Ave and is part of the Woodmen Heights Master Plan. The complete site, including rights-of-way, encompasses approximately 22.7 acres of vacant, undeveloped land. The property is located within Woodmen Heights and is consistent with the recently approved Woodmen Heights Master Plan with an approved land use of Residential with a density of 3.5-7.99 Du/ Acre. The site is currently zoned PUD which shall remain. The PUD permits a maximum building height of 45' and a density of 3.5-7.99 dwelling units per acre.

The proposed development plan seeks to build one hundred twenty-eight (128) detached single family units on the 22.7 total acres for density of 5.64 Du/ Acre. The one hundred twenty-eight (128) units are all small lots with the smaller lots being a minimum of 35' by 105' (3,675 SF) and the larger of the lots being 45' by 105' (4,725 SF). The proposed development plan does not encroach into the existing gas transmission main easements located directly east of the proposed development. The two access points are via Grey Bark Way and Cowpoke Road at the northern boundary of the site and Clear Amber Place and Forest Meadows Ave at the western boundary of Aspen Meadows Filing No 4. Utilities serving Aspen Meadows Filing No. 4 from the north have been stubbed into this site as part of Aspen Meadows Filing No. 1. Utilities serving Aspen Meadows Filing No. 4 from the west will be stubbed into the existing utilities within Forest Meadows Ave.

The applications being submitted to the City of Colorado Springs include:

- Small Lot PUD Development Plan - Filing No. 4
- Final Plat - Filing No. 4

A pre-application meeting was held on December 2, 2020 with a subsequent follow up pre-submittal meeting on (March 24, 2021) with city planning staff. There were no major issues identified.

<u>Woodmen Heights Master Plan</u>
As mentioned above, the proposed Aspen Meadows Filing 4 project is part of the Woodmen Heights Master Plan illustrating an approved use of Residential with a permitted density of 3.5-7.99 Du/Acre recently approved. The PUD zoning for this parcel was approved in 2005 (Ordinance No. 05-122) which shall remain.

<u>Development Plan</u>
The development plan proposes 128 single-family attached residential units on 22.7 acres for a density of 5.64 DU/ Acre. The proposed Aspen Meadows Filing 4 project will

be developed as a single phase and will include common open space, trail connections, and perimeter landscaping. No direct vehicular access from individual lots will be permitted onto Forest Meadows Ave or Cowpoke Rd.

Development Plan Review Criteria

1. ***Will the project design be harmonious with the surrounding land uses and neighborhood?*** The project will be designed to harmoniously blend with the adjacent land uses and neighborhoods through desired planning practices, architectural palettes, and landscape materials.

2. ***Will the proposed land uses be compatible with the surrounding neighborhood? Will the proposed development overburden the capacities of existing streets, utilities, parks, schools and other public facilities?*** The proposed land uses will not overburden capacities of existing or planned streets as this area has been master planned since 2006 with anticipated uses of varied intensity including residential, commercial, schools, and a park site. The proposed use and density for this site is in compliance with the approved master plan and PUD zoning ordinance. All public facilities will be extended as necessary to serve the development.

3. ***Will the structures be located to minimize the impact of their use and bulk on adjacent properties?*** Structures will meet setback requirements and will be of similar size, height and bulk as other single-family developments found within the Forest Meadows community. The maximum building height as measured per City of Colorado Springs zoning code is 45'.

4. ***Will landscaping, berms, fences and/or walls be provided to buffer the site from undesirable views, noise, lighting or other off-site negative influences and to buffer adjacent properties from the negative influences that may be created by the proposed development?*** Landscaping and fencing will be provided per the City of Colorado Springs Landscape Code and Policy Manual and Small Lot PUD Guidelines. This includes streetscape plantings are proposed along both Forest Meadows Ave and Cowpoke Rd. A preliminary landscape plan has been submitted for review as part of the Development Plan application. A final landscape plan and irrigation plan submittal will follow.

5. ***Will vehicular access from the project to the streets outside the project be combined, limited, located, designed and controlled to channel traffic to and from such areas conveniently and safely and in such a manner which minimizes traffic friction, noise and pollution and promotes free traffic flow without excessive interruption?*** The proposed development plan has two points of access via one along Forest Meadows Ave (Clear Amber Place) and another along Cowpoke Rd. (Grey Bark Way). Cowpoke Rd. will be constructed eastward from Forest Meadows Dr. to Marksheffel Rd. as part of Aspen Meadows Filing 2. All internal streets are designed as residential local public streets to be owned and maintained by the City of Colorado Springs. This includes public sidewalks and pedestrian ramps as required.

6. ***Will all the streets and drives provide logical, safe and convenient vehicular access to the facilities within the project?*** The internal streets were designed to promote pedestrian connectivity while discouraging cut through traffic. This will help create safe, user friendly streets while promoting cycling/ walking within

the community. The proposed development includes two soft surface trail connections east to future public park. All roadways are proposed as public roads to be dedicated to the City of Colorado Springs.

7. ***Will streets and drives within the project area be connected to the streets outside the project area in such a way that discourages their use by through traffic?*** The site has been designed to mitigate cut through traffic and the inclusion of traffic calming devices such as mid-block crossings and on street parking will help to slow down any cut through traffic that may arise.

8. ***Will adequately sized parking areas be located throughout the project to provide safe and convenient access to specific facilities?*** Ample parking has been designed into the site layout to include garage parking, driveway parking, and on-street parking throughout the site.

9. ***Will safe and convenient provision for the access and movement of handicapped persons and parking of vehicles for the handicapped be accommodated in the project design?*** Accessible sidewalks and walkways have been provided within the public rights-of-way as well as throughout the site to access the proposed park located directly east of this project. ADA ramps have been provided throughout the site at intersections as required.

10. ***Will the design of streets, drives and parking areas within the project result in a minimum of area devoted to asphalt?*** The street system is designed to accommodate the anticipated traffic and provide ample parking for residents in the most efficient manner possible.

11. ***Will pedestrian walkways be functionally separated from vehicular traffic and landscaped to accomplish this? Will pedestrian walkways be designed and located in combination with other easements that are not used by motor vehicles?*** The primary pedestrian system is in conformance with the City Subdivision design standards and ADA guidelines. All internal roadways are designed to be public, meeting City of Colorado Springs Traffic Criteria standards. Interior sidewalk connections have been included providing access to the internal open space areas including the soft surface trails connecting to the adjacent park.

12. ***Does the design encourage the preservation of significant natural features such as healthy vegetation, drainage channels, steep slopes and rock outcroppings? Are these significant natural features incorporated into the project design?*** N/A, there are no natural features found on site.

ASPEN MEADOWS SUBDIVISION FILING NO. 4

A PORTION OF LAND LYING WITHIN THE WEST HALF OF SECTION 4 AND THE EAST HALF OF SECTION 5, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN,
CITY OF COLORADO SPRINGS, COUNTY OF EL PASO, STATE OF COLORADO

BE IT KNOWN BY THESE PRESENTS:

A PARCEL OF LAND LOCATED IN THE WEST ONE-HALF OF SECTION 4 AND THE EAST ONE-HALF OF SECTION 5, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF COLORADO SPRINGS, COUNTY OF EL PASO, STATE OF COLORADO; MORE PARTICULARLY DESCRIBED AS FOLLOWS, WITH BEARINGS REFERENCED TO A PORTION OF THE WEST LINE OF ASPEN MEADOWS FILING NO. 3 RECORDED __DATE__, 2021 IN THE OFFICE OF THE EL PASO COUNTY CLERK UNDER RECEPTION NUMBER _REC. NO._; MONUMENTED ON BOTH ENDS BY NO. 5 REBAR WITH 1-1/2 INCH ALUMINUM CAP STAMPED "MATRIX PLS 34977" FOUND FLUSH WITH THE GROUND; ASSUMED TO BEAR SOUTH 00°20'05" EAST 965.29 FEET;

BEGIN AT THE NORTHWEST CORNER OF SAID ASPEN MEADOWS FILING NO. 3;

THENCE ON THE EXTERIOR OF SAID ASPEN MEADOWS FILING NO. 3 THE FOLLOWING (2) TWO COURSES:

1. THENCE SOUTH 00°20'05" EAST A DISTANCE OF 965.29 FEET;
2. THENCE SOUTH 00°00'05" WEST A DISTANCE OF 251.68 FEET TO THE EXTERIOR OF THE NOOK AT SHILOH MESA FILING NO. 1 RECORDED MAY 28, 2020 IN SAID RECORDS UNDER RECEPTION NUMBER 220714516;

THENCE SOUTH 49°05'51" WEST ON SAID EXTERIOR, A DISTANCE OF 268.99 FEET TO THE NORTHEASTERLY CORNER OF THAT CERTAIN SPECIAL WARRANTY DEED RECORDED JANUARY 15, 2013 IN SAID RECORDS UNDER RECEPTION NUMBER 213006396;

THENCE ON THE EXTERIOR OF SAID SPECIAL WARRANTY DEED THE FOLLOWING (2) TWO COURSES:

1. NORTH 82°23'34" WEST, A DISTANCE OF 54.68 FEET;
2. THENCE NORTH 89°59'11" WEST A DISTANCE OF 633.04 FEET TO A NON-TANGENT CURVE, HAVING A RADIUS OF 723.00 FEET, WHOSE CENTER BEARS NORTH 49°45'52" WEST, SAID POINT BEING ON THE EXTERIOR OF FOREST MEADOWS FILING NO. 6A RECORDED SEPTEMBER 10, 2013 IN SAID RECORDS UNDER RECEPTION NUMBER 213713374;

THENCE ON THE EXTERIOR OF SAID FOREST MEADOWS FILING NO. 6A AND THE EXTERIOR OF FOREST MEADOWS FILING NO. 7 RECORDED NOVEMBER 20, 2014 IN SAID RECORDS UNDER RECEPTION NUMBER 214713542 AND THE EXTERIOR OF FOREST MEADOWS FILING NO 7A RECORDED NOVEMBER 20, 2014 IN SAID RECORDS UNDER RECEPTION NUMBER 214713543 THE FOLLOWING (2) TWO COURSES:

1. THENCE NORTHERLY, ON SAID CURVE, THROUGH A CENTRAL ANGLE OF 40°52'01", AN ARC DISTANCE OF 515.69 FEET;
2. THENCE NORTH 00°37'53" WEST A DISTANCE OF 874.97 FEET TO THE EXTERIOR OF ASPEN MEADOWS FILING NO. 1 RECORDED _____, 2021 IN SAID RECORDS UNDER RECEPTION NUMBER _____;

THENCE ON THE EXTERIOR OF SAID ASPEN MEADOWS FILING NO. 1 THE FOLLOWING (2) TWO COURSES:

1. THENCE NORTH 89°21'51" EAST A DISTANCE OF 524.04 FEET TO A TANGENT CURVE, HAVING A RADIUS OF 733.00 FEET, WHOSE CENTER BEARS NORTHWESTERLY;
2. THENCE EASTERLY, ON SAID CURVE, THROUGH A CENTRAL ANGLE OF 15°49'16", AN ARC DISTANCE OF 202.41 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIPTION PRODUCES A CALCULATED AREA OF 986,780 SQUARE FEET (22.65336 ACRES), MORE OR LESS.

DEDICATION:

THE UNDERSIGNED OWNER HAS CAUSED SAID TRACT OF LAND TO BE PLATTED INTO LOTS, TRACTS, PUBLIC STREETS AND PUBLIC EASEMENTS, AS SHOWN ON THE PLAT. THE UNDERSIGNED DOES HEREBY DEDICATE, GRANT AND CONVEY TO THE CITY OF COLORADO SPRINGS THOSE PUBLIC STREETS AND PUBLIC EASEMENTS AS SHOWN ON THE PLAT; AND FURTHER RESTRICTS THE USE OF ALL PUBLIC EASEMENTS TO THE CITY OF COLORADO SPRINGS AND/OR ITS ASSIGNS, PROVIDED HOWEVER, THAT THE SOLE RIGHT AND AUTHORITY TO VACATE, RELEASE OR QUITCLAIM ALL OR ANY SUCH PUBLIC STREETS AND PUBLIC EASEMENTS SHALL REMAIN EXCLUSIVELY VESTED IN THE CITY OF COLORADO SPRINGS. THIS TRACT OF LAND AS PLATTED HEREIN SHALL BE KNOWN AS "ASPEN MEADOWS SUBDIVISION FILING NO. 4", IN CITY OF COLORADO SPRINGS, COUNTY OF EL PASO, STATE OF COLORADO. ALL PUBLIC STREETS ARE HEREBY DEDICATED TO THE CITY OF COLORADO SPRINGS FOR PUBLIC USE.

OWNER:

THE AFOREMENTIONED, RAO INVESTMENTS, LLC, A TEXAS LIMITED LIABILITY COMPANY, BY RANDALL S. O'LEARY IT'S MANAGER, HAS EXECUTED THIS INSTRUMENT THIS _____ DAY OF _____, 2021 A.D.

_____
RANDALL S. O'LEARY, MANAGER

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____, 2021

BY RANDALL S. O'LEARY, MANAGER OF RAO INVESTMENTS, LLC, A TEXAS LIMITED LIABILITY COMPANY.

MY COMMISSION EXPIRES: _____

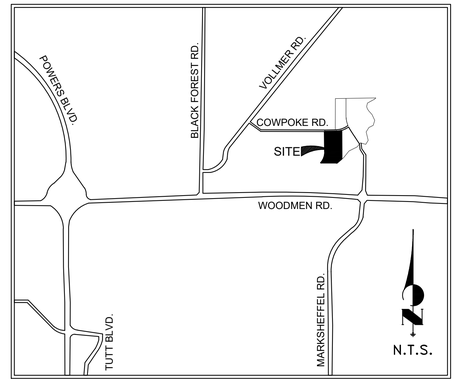
_____
NOTARY PUBLIC

PLAT NOTES:

1. THE BEARINGS ARE BASED ON A PORTION OF THE WEST LINE OF ASPEN MEADOWS FILING NO. 3 RECORDED _DATE__, 2021 IN THE OFFICE OF THE EL PASO COUNTY CLERK UNDER RECEPTION NUMBER _REC. NO._; MONUMENTED ON BOTH ENDS BY NO. 5 REBAR WITH 1-1/2 INCH ALUMINUM CAP STAMPED "MATRIX PLS 34977" FOUND FLUSH WITH THE GROUND; ASSUMED TO BEAR SOUTH 00°20'05" EAST 965.29 FEET;
2. ALL LINEAR UNITS SHOWN ON THIS PLAT ARE IN U.S. SURVEY FEET.
3. SET #5 REBAR WITH 1-1/2" ALUM. CAP STAMPED "MATRIX PLS 34977", FLUSH WITH THE GROUND, AT ALL EXTERIOR CORNERS, UNLESS OTHERWISE NOTED.
4. NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.
5. THIS PROPERTY IS LOCATED WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS ESTABLISHED BY FEMA PER FIRM PANEL 08041C0533G, WITH AN EFFECTIVE DATE OF DECEMBER 7, 2018.
6. TRACT "A" IS FOR A PARK TO BE OWNED AND MAINTAINED BY THE WOODMEN HEIGHTS METROPOLITAN DISTRICT NO. 2 AND WILL BE CONVEYED BY SEPARATE INSTRUMENT.
7. TRACT "B" IS FOR OPEN SPACE, A MONUMENT SIGN AND PEDESTRIAN ACCESS TO BE OWNED AND MAINTAINED BY THE WOODMEN HEIGHTS METROPOLITAN DISTRICT NO. 2 AND WILL BE CONVEYED BY SEPARATE INSTRUMENT.
8. TRACT "C" IS FOR OPEN SPACE, PUBLIC AND PRIVATE DRAINAGE FACILITIES AND PUBLIC UTILITIES TO BE OWNED AND MAINTAINED BY THE WOODMEN HEIGHTS METROPOLITAN DISTRICT NO. 2 AND WILL BE CONVEYED BY SEPARATE INSTRUMENT.
9. TRACT "D" IS FOR OPEN SPACE AND PEDESTRIAN ACCESS TO BE OWNED AND MAINTAINED BY THE WOODMEN HEIGHTS METROPOLITAN DISTRICT NO. 2 AND WILL BE CONVEYED BY SEPARATE INSTRUMENT.
10. TRACT "E" IS FOR OPEN SPACE, MAIL BOXES AND PEDESTRIAN ACCESS TO BE OWNED AND MAINTAINED BY THE WOODMEN HEIGHTS METROPOLITAN DISTRICT NO. 2 AND WILL BE CONVEYED BY SEPARATE INSTRUMENT.

PREPARED BY:

Matrix
2435 Research Parkway, Suite 300
Colorado Springs, CO. 80920
Phone 719-575-0100
Fax 719-575-0208



VICINITY MAP

PLAT NOTES (CONT.):

11. CALL UTILITY NOTIFICATION CENTER OF COLORADO 811. CALL TWO (2) BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, EXCAVATE, FOR THE MARKING OF COLORADO INTERSTATE GAS AND MAGELLAN PIPELINES.

12. THE AVIGATION EASEMENT DEDICATED HEREIN FOR PUBLIC AVIGATION PURPOSES, SHALL BE CONSIDERED A PUBLIC EASEMENT SUBJECT TO THOSE TERMS AND CONDITIONS AS SPECIFIED ON THE INSTRUMENT RECORDED AT RECEPTION NO. 217069667 OF THE RECORDS OF EL PASO COUNTY, COLORADO. ALL OTHER EASEMENTS OR INTERESTS OF RECORD AFFECTING ANY OF THE PLATTED PROPERTY DEPICTED HEREON SHALL NOT BE AFFECTED AND SHALL REMAIN IN FULL FORCE AND EFFECT.

13. SCHOOL FEES OR SCHOOL LAND DEDICATION FOR THIS PROJECT ARE NOT REQUIRED PER AGREEMENT BETWEEN FALCON 49 SCHOOL DISTRICT AND THIS DEVELOPER DATED FEBRUARY 19, 2021. A COPY OF THIS LETTER HAS BEEN PROVIDED WITH THIS SUBMITTAL.

14. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY MATRIX DESIGN GROUP, INC., TO DETERMINE THE COMPATIBILITY OF THIS DESCRIPTION WITH THAT OF ADJACENT TRACTS OF LAND, OWNERSHIP OR EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS-OF-WAY OR TITLE OF RECORD, MATRIX DESIGN GROUP INC., RELIED UPON TITLE COMMITMENT NO. SC55065575.1 PREPARED BY LAND TITLE GUARANTEE COMPANY WITH AN EFFECTIVE DATE OF FEBRUARY 22, 2021 AT 5:00 P.M. THE SCHEDULE B-SECTION 2 ITEMS BELOW HAVE BEEN EXAMINED IN A LIMITED FASHION TO DETERMINE THE GEOGRAPHICAL IMPACT ON THE SUBJECT PROPERTY, AND IF POSSIBLE, THE LIMITS OF THE IMPACT SHALL BE PLOTTED HEREON.

14.1 RIGHT OF WAY EASEMENT AS GRANTED TO FORD, BACON & DAVIS, INC. IN INSTRUMENT RECORDED OCTOBER 15, 1927, IN BOOK 798 AT PAGE 162. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A RIGHT-OF-WAY FOR GAS PIPELINE BEING LOCATED IN THE SOUTH 1/2 OF THE SOUTHWEST 1/4 OF SECTION 4, TOWNSHIP 13 SOUTH, RANGE 65 WEST AND CALLS FOR THE LOCATION OF THE RIGHT-OF-WAY TOP BE FURTHER REPRESENTED ON THE "GRANTEES PRESENT SURVEY" WHICH DOES NOT ACCOMPANY THE DOCUMENT AND IS UNKNOWN TO THIS SURVEYOR. WHILE THE SOUTH 1/2 OF THE SOUTHWEST 1/4 OF SECTION 4 LIES SOUTHERLY AND ADJACENT TO THE SUBJECT PROPERTY, THIS SURVEYOR BELIEVES THIS DOCUMENT IS REFERRING TO A KNOWN PIPELINE THAT RUNS NORTH-SOUTH AND EAST OF THE SUBJECT PROPERTY.)*

14.2 CONVEYANCE OF MINERAL RIGHTS AS CONTAINED IN MINERAL DEED RECORDED OCTOBER 13, 1954 IN BOOK 1458 AT PAGE 218. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS AND COMPLETELY ENCOMPASSES THE SUBJECT PROPERTY).*

14.3 *A RIGHT OF WAY EASEMENT AS GRANTED TO MOUNTAIN VIEW ELECTRIC ASSOCIATION, INC. IN INSTRUMENT RECORDED DECEMBER 04, 1958, IN BOOK 1714 AT PAGE 541. (SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS THAT PORTION OF THE SUBJECT PROPERTY LYING WITHIN SECTION 4, TOWNSHIP 13 SOUTH, RANGE 65 WEST. THIS DOCUMENT DOES NOT SPECIFY AN EXACT LOCATION OF THE UTILITIES AND IS BLANKET IN NATURE.)*

14.4 RIGHT OF WAY EASEMENT AS GRANTED TO WACO PIPE LINE COMPANY BY INSTRUMENT RECORDED MARCH 21, 1966 IN BOOK 2123 AT PAGE 166. ASSIGNMENT OF EASEMENTS AND LICENSES RECORDED OCTOBER 12, 2005 UNDER RECEPTION NO. 205161563. AND ASSIGNMENT RECORDED DECEMBER 2, 2013 UNDER RECEPTION NO. 213144183. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS THAT PORTION OF THE SUBJECT PROPERTY LYING WITHIN SECTION 4, TOWNSHIP 13 SOUTH, RANGE 65 WEST.)*

14.5 THE EFFECT OF THE INCLUSION OF SUBJECT PROPERTY IN THE BLACK SQUIRREL SOIL CONSERVATION DISTRICT, AS EVIDENCED BY INSTRUMENT RECORDED FEBRUARY 19, 1975, IN BOOK 2734 AT PAGE 180. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS AND COMPLETELY ENCOMPASSES THE SUBJECT PROPERTY).*

14.6 EFFECT OF THE INCLUSION OF SUBJECT PROPERTY IN THE FALCON FIRE PROTECTION DISTRICT, AS EVIDENCED BY INSTRUMENTS RECORDED DECEMBER 02, 1980, IN BOOK 3380 AT PAGES 670 AND 675 AND FEBRUARY 17, 1981 IN BOOK 3404 AT PAGES 582 AND 587. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS THAT PORTION OF THE SUBJECT PROPERTY LYING WITHIN SECTION 4, TOWNSHIP 13 SOUTH, RANGE 65 WEST).*

14.7 CONVEYANCE OF MINERAL RIGHTS AS CONTAINED IN MINERAL QUIT CLAIM DEED RECORDED FEBRUARY 12, 2003 UNDER RECEPTION NO. 203032039. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS THAT PORTION OF THE SUBJECT PROPERTY LYING WITHIN SECTION 4, TOWNSHIP 13 SOUTH, RANGE 65 WEST.).*

14.8 EASEMENTS AS RESERVED IN SPECIAL WARRANTY DEED RECORDED JANUARY 8, 2004 UNDER RECEPTION NO. 204004025. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS A PORTION OF THE SUBJECT PROPERTY AND IS GRAPHICALLY SHOWN AND LABELED HEREON.)*

14.9 TERMS, PROVISIONS, CONDITIONS AND RESTRICTION AS CONTAINED IN SPECIAL WARRANTY DEED RECORDED JANUARY 8, 2004 UNDER RECEPTION NO. 204004025. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS A PORTION OF THE SUBJECT PROPERTY AND IS GRAPHICALLY SHOWN AND IDENTIFIED HEREON.)*

14.10 RESERVATIONS AND RIGHT OF WAYS CONTAINED IN DEEDS RECORDED JUNE 17, 2004 UNDER RECEPTION NO. 204100838. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS A PORTION OF THE SUBJECT PROPERTY AND IS GRAPHICALLY SHOWN AND IDENTIFIED HEREON.)*

14.11 TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN COST SHARING PROCESSING AND STRATEGIC DEVELOPMENT OBLIGATIONS AGREEMENT RECORDED JUNE 17, 2004 UNDER RECEPTION NO. 204100840. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS THAT PORTION OF THE SUBJECT PROPERTY LYING WITHIN SECTION 4, TOWNSHIP 13 SOUTH, RANGE 65 WEST.)*

14.12 TERMS, CONDITIONS AND PROVISIONS OF ANNEXATION AGREEMENT RECORDED SEPTEMBER 23, 2004 AT RECEPTION NO. 204160917. ANNEXATION ORDINANCE RECORDED SEPTEMBER 23, 2004 UNDER RECEPTION NO. 204160916. ANNEXATION PLAT RECORDED SEPTEMBER 23, 2004 UNDER RECEPTION NO. 204160918. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THESE DOCUMENTS DESCRIBES A PARCEL OF LAND THAT ENCUMBERS A PORTION OF THE SUBJECT PROPERTY AND IS GRAPHICALLY SHOWN AND IDENTIFIED HEREON.)*

14.13 TERMS, CONDITIONS AND PROVISIONS OF ORDER AND DECREE ORGANIZING WOODMEN HEIGHTS METROPOLITAN DISTRICT NO. 2 AND 3, AS EVIDENCED BY INSTRUMENTS RECORDED DECEMBER 28, 2004 UNDER RECEPTION NO. 204209871 AND 204209872, SEPTEMBER 8, 2005 UNDER RECEPTION NO. 205140999, NOVEMBER 28, 2005 UNDER RECEPTION NO. 205189163, JULY 13, 2006 UNDER RECEPTION NO. 206103276 AND JUNE 26, 2008 UNDER RECEPTION NO. 208073150. AMENDED AND RESTATED RESOLUTION RECORDED SEPTEMBER 29, 2008 UNDER RECEPTION NO. 208106389. SECOND AMENDED AND RESTATED RESOLUTION RECORDED NOVEMBER 19, 2013 UNDER RECEPTION NO. 213140364. *(SURVEYOR'S NOTE: THE DOCUMENTS CITED UNDER THIS ITEM AFFECT THE SUBJECT PROPERTY. THE LEGAL DESCRIPTIONS CITED WITHIN THESE DOCUMENTS DESCRIBE PARCELS OF LAND BEING WOODMEN HEIGHTS METROPOLITAN DISTRICT TWO AND DISTRICT THREE, WHICH ENCUMBERS AND COMPLETELY ENCOMPASSES THE SUBJECT PROPERTY.)*

PLAT NOTES (CONT.):

14.14 TERMS, PROVISIONS, CONDITIONS, RESTRICTIONS AND EASEMENTS RESERVED, AS CONTAINED IN SPECIAL WARRANTY DEED RECORDED DECEMBER 29, 2004 UNDER RECEPTION NO. 204211658. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS A PORTION OF THE SUBJECT PROPERTY AND IS GRAPHICALLY SHOWN AND IDENTIFIED HEREON.)*

14.15 TERMS, CONDITIONS AND PROVISIONS OF PERMANENT EASEMENT AGREEMENT RECORDED DECEMBER 09, 2005 AT RECEPTION NO. 205196076. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS A PORTION OF THE SUBJECT PROPERTY AND IS GRAPHICALLY SHOWN AND IDENTIFIED HEREON.)*

14.16 THE EFFECT OF INCLUSION OF SUBJECT PROPERTY IN WOODMEN ROAD METROPOLITAN DISTRICT, RECORDED DECEMBER 27, 2005, UNDER RECEPTION NO. 205202369. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS AND COMPLETELY ENCOMPASSES THE SUBJECT PROPERTY).*

14.17 TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN DECLARATION OF DEVELOPMENT COVENANTS AND COST RECOVERY AGREEMENT FOR WOODMEN HEIGHTS RECORDED JUNE 17, 2004 UNDER RECEPTION NO. 204100839. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS AND COMPLETELY ENCOMPASSES THE SUBJECT PROPERTY).*

14.18 TERMS, CONDITIONS, PROVISIONS, BURDENS, OBLIGATIONS AND EASEMENTS AS SET FORTH AND GRANTED IN PERMANENT EASEMENT AGREEMENT RECORDED APRIL 19, 2016 UNDER RECEPTION NO. 216040890. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT ENCUMBERS A PORTION OF THE SUBJECT PROPERTY AND IS GRAPHICALLY SHOWN AND IDENTIFIED HEREON.)*

14.19 TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN UTILITY EASEMENT RECORDED JANUARY 22, 2020 UNDER RECEPTION NO. 220009291. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT DOES NOT ENCUMBER THE SUBJECT PROPERTY.)*

14.20 TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN DEED RECORDED NOVEMBER 20, 2019 UNDER RECEPTION NO. 219146908. *(SURVEYOR'S NOTE: THE LEGAL DESCRIPTION CITED IN THIS DOCUMENT DESCRIBES A PARCEL OF LAND THAT DOES NOT ENCUMBER THE SUBJECT PROPERTY.)*

EASEMENTS:

EASEMENTS ARE AS DEPICTED HEREON, WITH SURFACE MAINTENANCE VESTED IN THE OWNER OF RECORD.

ALL EASEMENTS SHOWN OR DEDICATED HEREON FOR PUBLIC UTILITY PURPOSES SHALL BE SUBJECT TO THOSE TERMS AND CONDITIONS AS SPECIFIED IN THE INSTRUMENT RECORDED AT RECEPTION NUMBER 212112548 OF THE RECORDS OF EL PASO COUNTY, COLORADO. ALL OTHER EASEMENTS OR INTERESTS OF RECORD AFFECTING ANY OF THE PLATTED PROPERTY DEPICTED HEREON SHALL NOT BE AFFECTED AND SHALL REMAIN IN FULL FORCE AND EFFECT.

NOTICE IS HEREBY GIVEN:

THAT THE AREA INCLUDED IN THE PLAT DESCRIBED HEREIN IS SUBJECT TO THE CODE OF THE CITY OF COLORADO SPRINGS, 2001, AS AMENDED. NO BUILDING PERMITS SHALL BE ISSUED FOR BUILDING SITES WITHIN THIS PLAT UNTIL ALL REQUIRED FEES HAVE BEEN PAID AND ALL REQUIRED PUBLIC AND PRIVATE IMPROVEMENTS HAVE BEEN INSTALLED AS SPECIFIED BY THE CITY OF COLORADO SPRINGS, OR, ALTERNATIVELY, UNTIL ACCEPTABLE ASSURANCES, INCLUDING BUT NOT LIMITED TO LETTERS OF CREDIT, CASH, SUBDIVISION BONDS, OR COMBINATION THEREOF GUARANTEEING THE COMPLETION OF ALL REQUIRED PUBLIC IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, DRAINAGE, STREET AND EROSION CONTROL HAVE BEEN PLACED ON FILE WITH THE CITY OF COLORADO SPRINGS.

SURVEYOR'S CERTIFICATION:

THE UNDERSIGNED PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF COLORADO, HEREBY STATES AND DECLARES THAT THE ACCOMPANYING PLAT WAS SURVEYED AND DRAWN UNDER HIS RESPONSIBLE CHARGE AND ACCURATELY SHOWS THE DESCRIBED TRACT OF LAND, AND SUBDIVISION THEREOF, AND THAT THE REQUIREMENTS OF TITLE 38 OF THE COLORADO REVISED STATUTES, 1973, AS AMENDED, HAVE BEEN MET TO THE BEST OF HIS KNOWLEDGE AND BELIEF.

FOR COMMENT

_____
ROBERT L. MEADOWS JR., PLS 34977
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.

CITY APPROVALS:

ON BEHALF OF THE CITY OF COLORADO SPRINGS, THE UNDERSIGNED HEREBY APPROVE FOR FILING THE ACCOMPANYING PLAT OF: "ASPEN MEADOWS SUBDIVISION FILING NO. 4"

_____
CITY ENGINEER

_____
CITY PLANNING DIRECTOR

_____
CITY CLERK

FEES:

SCHOOL FEE: _____ BRIDGE FEE: _____

PARK FEE: _____ DRAINAGE FEE: _____

CLERK AND RECORDER'S CERTIFICATE:

STATE OF COLORADO)
) SS
COUNTY OF EL PASO)

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD IN MY OFFICE AT _____ O'CLOCK ___.M.,

THIS _____ DAY OF _____, 2021, A.D., AND DULY RECORDED UNDER RECEPTION NO. _____

OF THE RECORDS OF EL PASO COUNTY, COLORADO.

FEE: _____ CHUCK BROERMAN, RECORDER

SURCHARGE: _____ BY: _____
DEPUTY

AR FP 21-00XXX
ASPEN MEADOWS SUBDIVISION FILING NO. 4
DATE PREPARED: JULY 14, 2021
JOB NUMBER: 21.886.035
SHEET 1 OF 3

S:\17.886.004.000 (Forest Meadows)\700 SURVEY\Dwg\Aspen Meadows Filing No. 4\Dwg\Plat\Aspen Meadows Filing No. 4.dwg

ASPEN MEADOWS SUBDIVISION FILING NO. 4

A PORTION OF LAND LYING WITHIN THE WEST HALF OF SECTION 4 AND THE EAST HALF OF SECTION 5, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN,
CITY OF COLORADO SPRINGS, COUNTY OF EL PASO, STATE OF COLORADO

MAP REFERENCE LEGEND

THE FOLLOWING RECORD DOCUMENTS WERE CONSIDERED IN DEVELOPING THE SUBDIVISION BOUNDARY:

R1 AN ALTA/ACSM LAND TITLE SURVEY DEPOSITED FOR RECORD ON SEPTEMBER 2, 2004 IN THE EL PASO COUNTY CLERK AND RECORDER'S OFFICE AND RECORDED UNDER DEPOSIT NUMBER 204900133.

R2 AN ALTA/ACSM LAND TITLE SURVEY DEPOSITED FOR RECORD ON NOVEMBER 16, 2006 IN THE EL PASO COUNTY CLERK AND RECORDER'S OFFICE AND RECORDED UNDER DEPOSIT NUMBER 206900256.

R3 THE FINAL PLAT OF THE NOOK AT SHILOH MESA FILING NO. 1 RECORDED MAY 28, 2020 IN THE EL PASO COUNTY CLERK AND RECORDER'S OFFICE UNDER RECEPTION NUMBER 220714516.

R4 THE FINAL PLAT OF ASPEN MEADOWS SUBDIVISION FILING NO. 1 RECORDED _____, 2021 IN THE EL PASO COUNTY CLERK AND RECORDER'S OFFICE UNDER RECEPTION NUMBER _____.

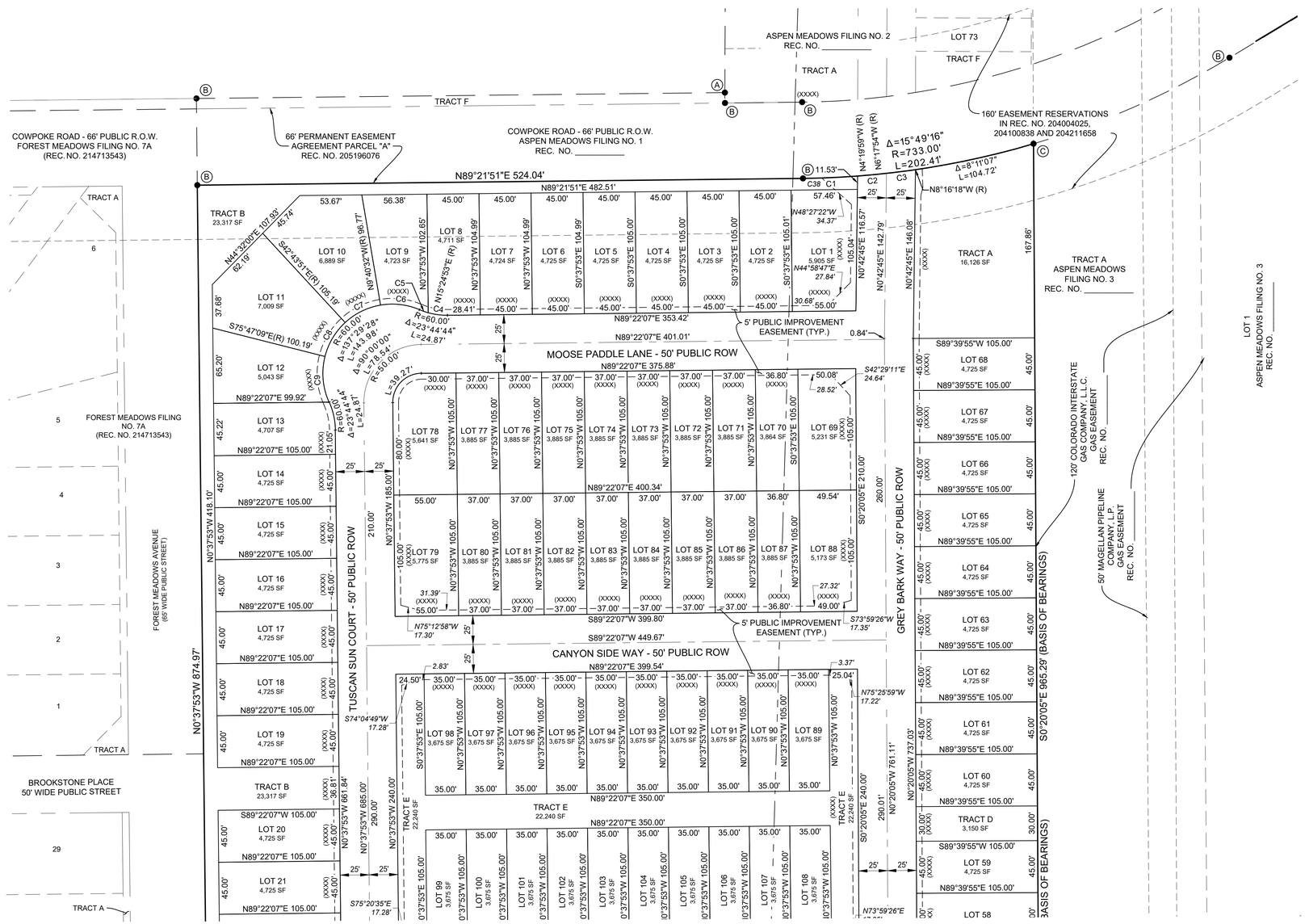
R5 THE FINAL PLAT OF ASPEN MEADOWS SUBDIVISION FILING NO. 3 RECORDED _____, 2021 IN THE EL PASO COUNTY CLERK AND RECORDER'S OFFICE UNDER RECEPTION NUMBER _____.

MONUMENTATION LEGEND

A - INDICATES A FOUND REBAR WITH 1 INCH ORANGE PLASTIC CAP ILLEGIBLY STAMPED ACCEPTED AS A PERPETUATION OF THE THE MONUMENT POSITION PER MAP REFERENCE R1 AND R2. NO PUBLIC RECORD OF THIS MONUMENT FOUND DURING THE RESEARCH FOR THIS SURVEY1.

B- INDICATES A NO. 5 REBAR WITH 1-1/2 INCH ALUMINUM CAP STAMPED "MATRIX PLS 34977" FOUND FLUSH WITH THE GROUND, ACCEPTED AS THE MONUMENT PER MAP REFERENCE R3.

C - INDICATES A NO. 5 REBAR WITH 1-1/2 INCH ALUMINUM CAP STAMPED "MATRIX PLS 34977" FOUND FLUSH WITH THE GROUND, ACCEPTED AS THE MONUMENT PER MAP REFERENCE R4.



● UNLESS OTHERWISE NOTED - INDICATES A FOUND MONUMENT AS IDENTIFIED UNDER THE MONUMENT LEGEND

○ UNLESS OTHERWISE NOTED - INDICATES A SET NO. 5 REBAR WITH 1-1/2 INCH ALUMINUM CAP, FLUSH WITH THE GROUND, STAMPED "MATRIX PLS 34977"

(XXXX) LOT ADDRESSES

SEE SHEET 3 OF 3

PREPARED BY:

Matrix

2435 Research Parkway, Suite 300
Colorado Springs, CO. 80920
Phone 719-575-0100
Fax 719-575-0208

S:\17.886.004.000 (Forest Meadows)\700 SURVEY\Dwg\Aspen Meadows Filing No. 4\Dwg\Plat\Aspen Meadows Filing No. 4.dwg

AR FP 21-00XXX
ASPEN MEADOWS SUBDIVISION FILING NO. 4
DATE PREPARED: JULY 14, 2021
JOB NUMBER: 21.886.035
SHEET 2 OF 3

ASPEN MEADOWS SUBDIVISION FILING NO. 4

A PORTION OF LAND LYING WITHIN THE WEST HALF OF SECTION 4 AND THE EAST HALF OF SECTION 5, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN,
CITY OF COLORADO SPRINGS, COUNTY OF EL PASO, STATE OF COLORADO

MAP REFERENCE LEGEND

THE FOLLOWING RECORD DOCUMENTS WERE CONSIDERED IN DEVELOPING THE SUBDIVISION BOUNDARY:

R1 AN ALTA/ACSM LAND TITLE SURVEY DEPOSITED FOR RECORD ON SEPTEMBER 2, 2004 IN THE EL PASO COUNTY CLERK AND RECORDER'S OFFICE AND RECORDED UNDER DEPOSIT NUMBER 204900133.

R2 AN ALTA/ACSM LAND TITLE SURVEY DEPOSITED FOR RECORD ON NOVEMBER 16, 2006 IN THE EL PASO COUNTY CLERK AND RECORDER'S OFFICE AND RECORDED UNDER DEPOSIT NUMBER 206900256.

R3 THE FINAL PLAT OF THE NOOK AT SHILOH MESA FILING NO. 1 RECORDED MAY 28, 2020 IN THE EL PASO COUNTY CLERK AND RECORDER'S OFFICE UNDER RECEPTION NUMBER 220714516.

R4 THE FINAL PLAT OF ASPEN MEADOWS SUBDIVISION FILING NO. 1 RECORDED _____________, 2021 IN THE EL PASO COUNTY CLERK AND RECORDER'S OFFICE UNDER RECEPTION NUMBER _________.

R5 THE FINAL PLAT OF ASPEN MEADOWS SUBDIVISION FILING NO. 3 RECORDED _____________, 2021 IN THE EL PASO COUNTY CLERK AND RECORDER'S OFFICE UNDER RECEPTION NUMBER _________.

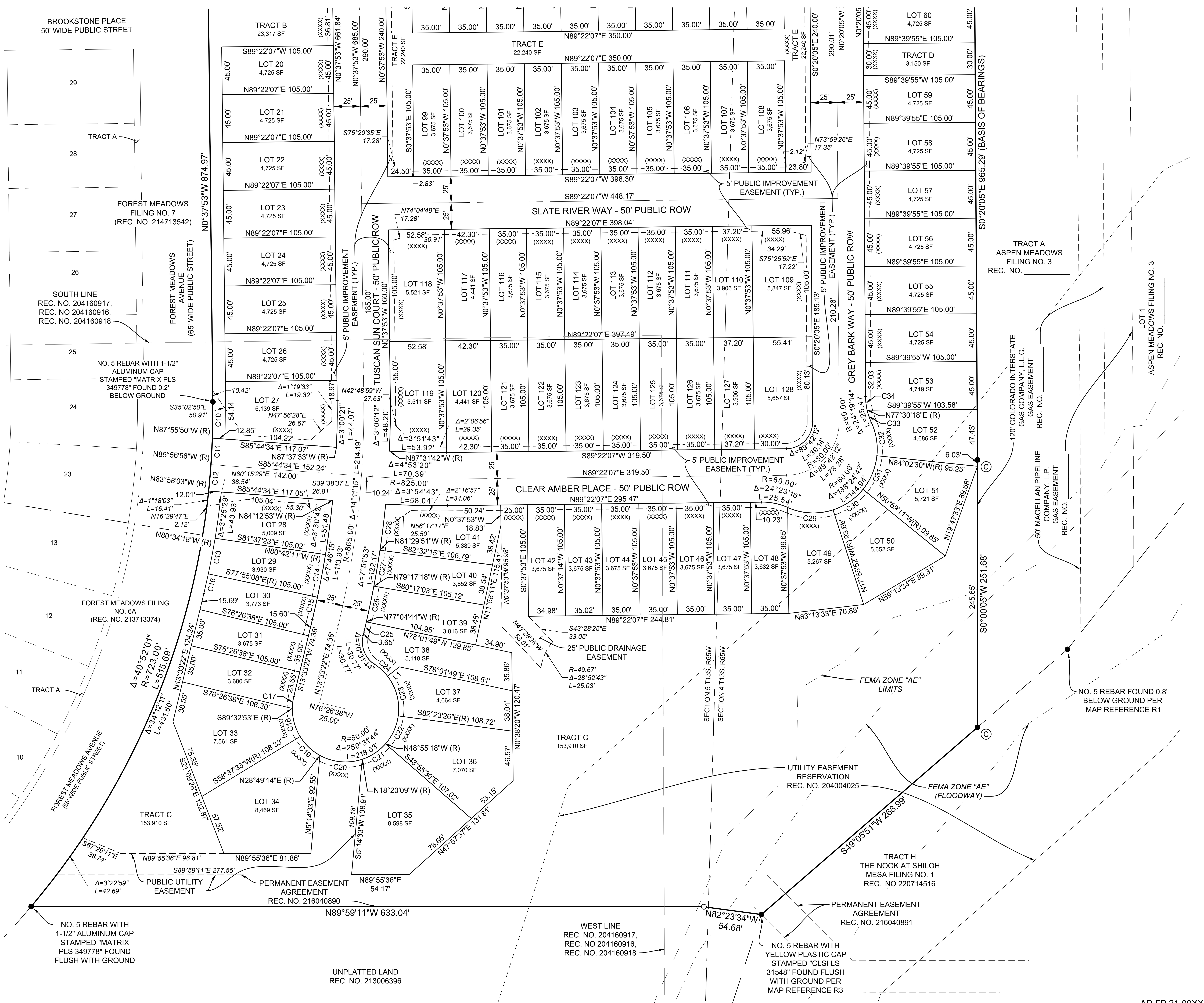
MONUMENTATION LEGEND

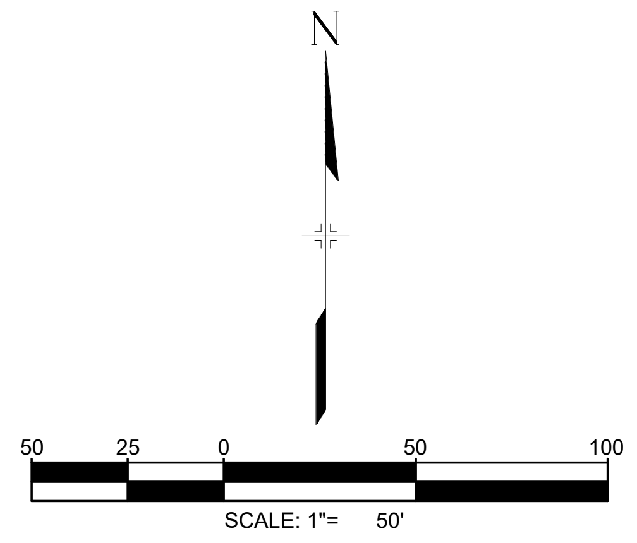
A - INDICATES A FOUND REBAR WITH 1 INCH ORANGE PLASTIC CAP ILLEGIBLY STAMPED ACCEPTED AS A PERPETUATION OF THE THE MONUMENT POSITION PER MAP REFERENCE R1 AND R2. NO PUBLIC RECORD OF THIS MONUMENT FOUND DURING THE RESEARCH FOR THIS SURVEY1.

B- INDICATES A NO. 5 REBAR WITH 1-1/2 INCH ALUMINUM CAP STAMPED "MATRIX PLS 34977" FOUND FLUSH WITH THE GROUND, ACCEPTED AS THE MONUMENT PER MAP REFERENCE R3.

C - INDICATES A NO. 5 REBAR WITH 1-1/2 INCH ALUMINUM CAP STAMPED "MATRIX PLS 34977" FOUND FLUSH WITH THE GROUND, ACCEPTED AS THE MONUMENT PER MAP REFERENCE R4.

SEE SHEET 2 OF 3





● UNLESS OTHERWISE NOTED - INDICATES A FOUND MONUMENT AS IDENTIFIED UNDER THE MONUMENT LEGEND

○ UNLESS OTHERWISE NOTED - INDICATES A SET NO. 5 REBAR WITH 1-1/2 INCH ALUMINUM CAP, FLUSH WITH THE GROUND, STAMPED "MATRIX PLS 34977"

(XXXX) LOT ADDRESSES

S:\17.886.004.000 (Forest Meadows)\700 SURVEY\Dwg\Aspen Meadows Filing No. 4\Dwg\Plat\Aspen Meadows Filing No. 4.dwg

PREPARED BY:

Matrix

2435 Research Parkway, Suite 300
Colorado Springs, CO. 80920
Phone 719-575-0100
Fax 719-575-0208

AR FP 21-00XXX
ASPEN MEADOWS SUBDIVISION FILING NO. 4
DATE PREPARED: JULY 14, 2021
JOB NUMBER: 21.886.035
SHEET 3 OF 3

FINAL DRAINAGE REPORT
For
"ASPEN MEADOWS FILING NO. 4"
&
MASTER DRAINAGE DEVELOPMENT PLAN AMENDMENT
To The
WOODMEN HEIGHTS MDDP

SAND CREEK
DRAINAGE BASIN

Prepared for:
City of Colorado Springs
Engineering Development Review Division Team
30 North Nevada Avenue, Suite 401
Colorado Springs, CO 80903

On Behalf of:
COLA, LLC.
555 Middle Creek Parkway, Suite 380
Colorado Springs, CO 80921

Prepared by:

Matrix Design Group
2435 Research Parkway, Suite 300
Colorado Springs, CO 80920
(719) 575-0100
fax (719) 572-0208

July 2021

MDG Project No. 21.886.045

Engineer's Statement:

The attached drainage plan and report (Aspen Meadows Filing No. 4) 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 established criteria 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.

_____ _____

Jesse Sullivan Date
Registered Professional Engineer
State of Colorado
No. 55600

Developer's Statement:

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

COLA, LLC
Business Name

By: _____ _____
Timothy Buschar Date

Title: COO

Address: 555 Middle Creek Parkway, Suite 380
Colorado Springs, CO 80921

City of Colorado Springs:

Filed in accordance with section 7.7.906 of the Code of the City of Colorado Springs, 2001, as amended.

_____ _____
For the City Engineer Date

Conditions:

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I. INTRODUCTION

The Aspen Meadows Filing No. 4 development is located within the 90.24-acre Aspen Meadows Subdivision, which is located in northeastern Colorado Springs, El Paso County, state of Colorado. The proposed development is comprised of a total of 13.79 acres of single-family residential, open space, and public right-of-way.

Figure 1 - Project Location

II. PURPOSE AND SCOPE OF STUDY

The purpose of this Final Drainage Report (FDR) is to identify and evaluate the offsite and onsite drainage patterns associated with Aspen Meadows Filing No. 4 development (22.635 acres, 128 Lots) and to provide hydrologic and hydraulic analyses of this area to ensure compliance with the City of Colorado Springs Drainage Criteria Manual (DCM), as well as provide effective, safe routing to downstream outfalls.

III. GENERAL LOCATION AND DESCRIPTION

Aspen Meadows Filing No. 4 is within the Woodmen Heights Master Plan area, Aspen Meadows subdivision, which extends from the Northpark Commercial site and Forest Meadows Filings 1-7 on the west to Sand Creek Channel on the east and south, to Sterling Ranch to the north. Aspen Meadows subdivision is bisected by two roadways, Marksheffel Road (running north-south) and Cowpoke Road (running east-west). More specifically, the study area is located as follows:

A. **<u>General Location:</u>** The northwest ¼ of Section 4, Township 13 South, Range 65 West of the 6th P.M. in the City of Colorado Springs, County of El Paso, State of Colorado.

B. <u>Surrounding Streets and Developments:</u>

a. <u>North:</u> Sterling Ranch, single family development. This area is located in El Paso County (development of this subdivision is in process).

b. <u>East:</u> Aspen Meadows Filing No. 1.

c. <u>South:</u> Future Aspen Meadows Filing No. 4, Regional Detention Basin No. 3 and Sand Creek Channel.

d. <u>West:</u> Northpark commercial landscape and Forest Meadows Filing Nos. 1-7 are all currently built out at this time.

C. <u>Drainageway:</u> This site is within the Sand Creek Drainage Basin.

D. Irrigation Facilities

No known functioning irrigation facilities are within the project area.

E. Utilities and Encumbrances

a) Storm Sewer: There is an existing area inlet just south of the proposed development which drains directly into Sand Creek Detention Facility #3. Most of the area tributary to this pipe will be intercepted and directed to the proposed onsite detention facility, but some small undeveloped areas will remain tributary after project completion.

b) Sanitary Sewer: No known sanitary infrastructure existing onsite.

c) Gas: There is also an existing CSU gas main running east to west immediately north of the site within the future Cowpoke Road R.O.W.

d) Water: An existing 24-inch water transmission main associated with development in the area crosses from east to west just north of Aspen Meadows Filing No. 4 within R.O.W. for Cowpoke Road.

e) Electric: There are no known electric encumbrances on the project site.

IV. Referenced Drainage Reports

This site is within the Woodmen Heights Master Plan area, Aspen Meadows subdivision. This study looks at Aspen Meadows Filing No. 4, which takes up the northwest 13.79 acres of the Aspen Meadows Subdivision. The four reports below were used as references for this report.

*"Master Development Drainage Plan for Woodmen Heights Master Plan", by Classic Consulting Engineers and Surveyors, LLC, June 2004. (***WHMP-MDDP***)*

*"Master Development Drainage Plan Update for Woodmen Heights and Final Drainage Report for Forest Meadows Filing No. 1 and No. 4", by Engineering and Surveying, Inc., February 2006 (***MDDP Update***)*

"Final Drainage Report for Sterling Ranch Filing No. 2", El Paso County, by M & S Civil Consultants, Inc., December 2017. (**SR-FDR**)

"Preliminary Drainage Report for Aspen Meadows Filing No. 2 and No. 4", completed by Matrix Design Group, Dated January 2021. (**PDR-Matrix**) *In progress.*

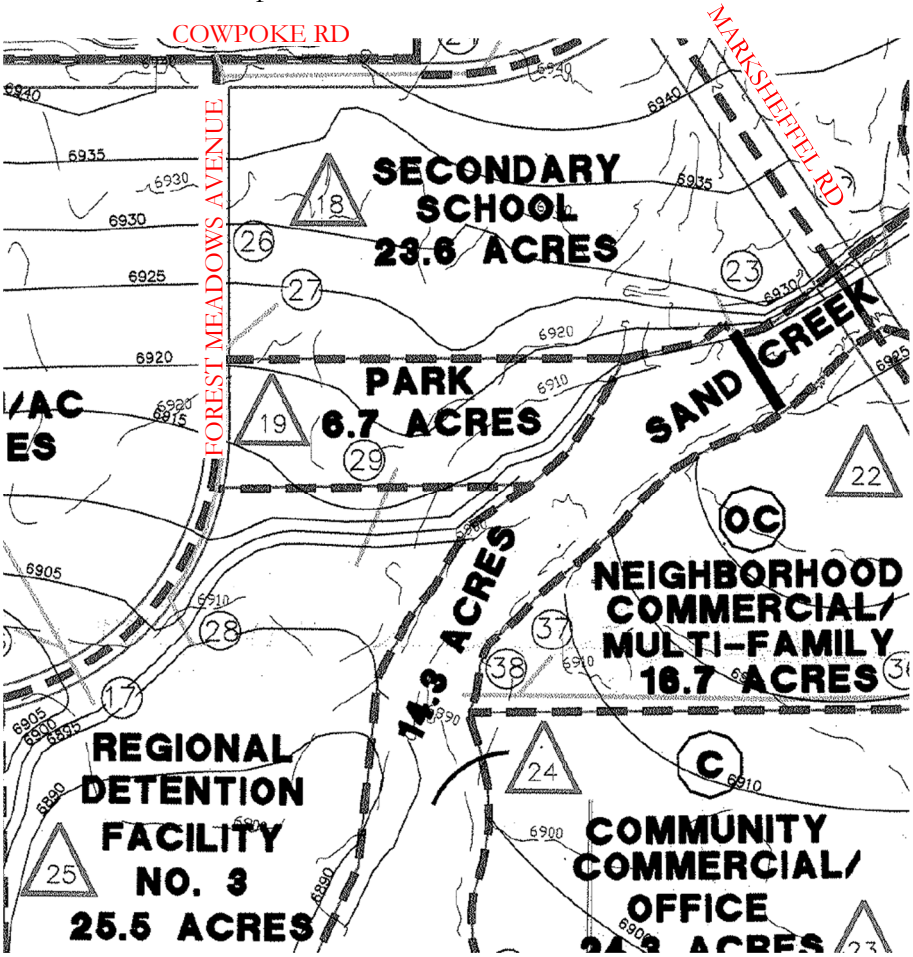
"Amendment Letter to the Final Drainage Report for Forest Meadows Filing No. 6 & No. 6A and Final Drainage Report for Forest Meadows Filing No. 7 & No. 7A", by M&S Civil Consultants, Inc., September 2014. (**FDR-FM-7A**)

"Channel Design Report: Sand Creek Stabilization at Aspen Meadows Subdivision Filing No. 1", by Matrix Design Group, March 2021 (In progress). (**CDR-Matrix**)

V. Amendments to MDDP

Land Uses

Land uses for the proposed development will be single-family residential, public roads, and open space. The 2004 MDDP for Woodmen Heights (WHMP-MDDP) drainage drawing shows the area bounded by Forest Meadows on the west, Cowpoke Road on the north, Marksheffel Road on the east, and Sand Creek or Sand Creek Regional Detention Facility No. 3 on the south as 23.6 acres of secondary school and 6.7 acres of park.



Aspen Meadows takes up 22.635 acres adjacent to Forest Meadows Avenue from the regional detention facility north to Cowpoke Road. As mentioned above, this will now be single-family residential development. The remaining area between Aspen Meadows Filing No. 4 and Marksheffel Road is covered in Aspen Meadows Filing No. 3 and will be used as a park. This filing either will be or has been covered in a separate drainage report.

Detention

Under the original WHMP-MDDP detention and water quality were addressed in the Sand Creek Regional Detention Facility No. 3. Subsequent changes to criteria and best practices have made using this pond to detain runoff from Aspen Meadows Filing No. 4 untenable and prohibitively expensive; therefore, onsite Full Spectrum Detention will be provided for this development. Please see the detention section later in this report for the onsite detention details.

VI. SOIL CONDITIONS

Soils can be classified in four different hydrologic groups, A, B, C, or D to help predict stormwater runoff rates. Hydrologic group "A" is characterized by deep, well-drained coarse-grained soils with a rapid infiltration rate when thoroughly wet and having a low runoff potential. Group "D" typically has a clay layer at or near to the surface, or a very shallow depth to impervious bedrock and has a very slow infiltration rate and a high runoff potential. See Soils Map; Appendix C. Table 3.1 on the following page lists the soil types present in the development area:

Table 3.1 – NRCS Soil Survey for El Paso County

SOIL ID NUMBER	*SOIL*	*HYDROLOGIC CLASSIFICATION*	*PERMEABILITY*	*PERCENT ON SITE*
8	Blakeland loamy sand, 1 to 9 percent slopes	A	Well Drained	6.7%
9	Blakeland-Fluvaquentic Haplaquolls	A	Well Drained	6.6%
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	A	Well Drained	86.7%

Predevelopment site conditions are undeveloped and ground cover consists of sparse natural vegetative land cover.

VII. Project Characteristics

Aspen Meadows Filing No. 4:

a. **Onsite Flows:** Filing No. 4 contains 22.635 acres of area within the Sand Creek Drainage Basin. Under predevelopment conditions flows in this area generally flow south. After development, flows will generally sheet flow to curb and gutter within Vibrant Drive in the center of the development, where they will be conveyed downstream via gutter flow towards a pair of at-grade inlets which will capture the flows. Alternately flows may sheet flow towards swales along the outside boundaries of

the development which will convey the captured flows downstream. Ultimately onsite flows will be conveyed to the proposed Pond-1 via public storm sewer.

b. **Offsite Flows:** No offsite flows are anticipated for this development.

VIII. Regulatory Floodplain

Per the ***Flood Insurance Rate Map (FIRM)*** 08041CO533 G, effective date December 7, 2018, published by the Federal Emergency Management Agency (FEMA), none of the lots within Aspen Meadows Filing No. 4 lie within the designated 100-year floodplain (Sand Creek). Sand Creek does run adjacent to the southeast corner of the development. An annotated FIRM Panel is included in Appendix C.

IX. Drainage Design Criteria

A. Design References

As required by the City of Colorado Springs, Colorado, this report has been prepared in accordance to the criteria set forth in the *City of Colorado Springs and El Paso County Drainage Criteria Manual Volume 1 & 2* (Drainage Criteria Manual or **DCM**).

In addition to the DCM, the ***Urban Storm Drainage Criteria Manuals, Volumes 1-3*** (UDFCD), published by the Urban Drainage and Flood Control District, latest update, have been used to supplement the Drainage Criteria Manual for water quality capture volume (WQCV).

B. Design Frequency

Design frequency is based on the DCM. The 100-year storm event was used as the major storm for the project, and the 5-year storm event was used as the minor storm.

C. Design Discharge

a. Method of Analysis

The hydrology for this project uses the Rational Method as recommended by the Drainage Criteria Manual for the minor and major storms for drainage basins less than 100-acres in size. The Rational Method uses the following equation: $Q=C*i*A$

Where:

Q = Maximum runoff rate in cubic feet per second (cfs)
C = Runoff coefficient
i = Average rainfall intensity (inches per hour)
A = Area of drainage sub-basin (acres)

b. Runoff Coefficient

Rational Method coefficients from Table 6-6 of the Drainage Criteria Manual for developed land were utilized in the Rational Method calculations. See Appendix B for more information.

c. Time of Concentration

The time of concentration consists of the initial time of overland flow and the travel time in a channel to the inlet or point of interest. A minimum time of concentrations of 5 minutes is utilized for urban areas.

d. Rainfall Intensity

The hypothetical rainfall depths for the 1-hour storm duration were taken from Table 6-2 of the Drainage Criteria Manual. Table 5.1, below, lists the rainfall depth for the Major and Minor 1-hour storm events.

Table 5.1 – Project Area 1-Hour Rainfall Depth

Storm Recurrence Interval	Rainfall Depth (inches)
5-year	1.50
100-year	2.52

The rainfall intensity equation for the Rational Method was taken from Drainage Criteria Manual Volume 1 Figure 6-5.

e. StormCAD Analysis

1. HGL Profiles

StormCAD was also used to determine the Hydraulic Grade Profiles for the major and minor storms. The standard method was (or will in a future addendum be) used to calculate head loss in the system with K coefficients taken from Table 9-4 of the DCM.

Table 9-4. STORMCAD Standard Method Coefficients

Bend Loss		
Bend Angle	**K Coefficient**	
0°	0.05	
22.5°	0.10	
45°	0.40	
60°	0.64	
90°	1.32	
LATERAL LOSS		
One Lateral K Coefficient		
Bend Angle	Non-surcharged	Surcharged
45°	0.27	0.47
60°	0.52	0.90
90°	1.02	1.77
Two Laterals K Coefficient		
45°	0.96	
60°	1.16	
90°	1.52	

X. Drainage Basins and Sub-basins

A. The ***historic undeveloped conditions*** for the site have been analyzed and are presented by design points (Table 6.2) and are described as follows:

Historically, onsite drainage currently flows from the northeastern corner of the site to the southwestern corner (Sub-basins EX1 (Q_5 = 1.31 cfs, Q_{100} = 8.77 cfs), EX2 (Q_5 = 3.29 cfs, Q_{100} = 22.12 cfs), & EX3-NW (Q_5 = 0.69 cfs, Q_{100} = 4.66 cfs)), both overland and through natural drainage swales and channels, and eventually discharges directly into the Sand Creek Channel. Under previous filings the adjacent Sterling Ranch property to the north (Sub-basin EX4) of Aspen Meadows Filing No. 2 had contributed offsite drainage at the north end of the proposed town home site (Aspen Meadows Filing No. 3) north of this filing. As development of Sterling Ranch has progressed, much of Basin EX-4 has been intercepted and rerouted to Sterling Ranch detention facilities. Areas north of and including Cowpoke Road are now either captured in the Aspen Meadows Filing No. 2 detention facility or are captured in the two inlets on Cowpoke Road and directed into Sand Creek Detention Facility No. 3 which is located south of this filing. These minimal flows will be routed around the site via the existing gas easement.

Total Historic discharge to the Sand Creek Channel is approximately 8.90 cfs for the Q_5 event and 59.98 cfs for the Q_{100} event. According to the MHFD-Detention modeling for this filing this runoff has been reduced to 0.2 cfs for the Q5 event and 10.4 cfs for the Q100 event.

Sub-basins and Design points are summarized in the following tables:

Aspen Meadows Filing No. 4
Historic Conditions Sub-basin Summary Table

Area ID	Area (Acres)	Q5 (cfs)	Q100 (cfs)
EX4	23.05	3.26	21.88
EX3NW	3.95	0.69	4.66
EX2	24.81	3.29	22.12
EX1	8.80	1.31	8.77

Aspen Meadows Filing No. 4
Historic Design Point Summary

Design Point	Sub-Basins	Total Area (ac.)	Q(5) (cfs)	Q(100) (cfs)
EX1	EX1	8.80	1.31	8.77
EX2	EX2	24.81	3.29	22.12
EX3	EX3NW	3.95	0.69	4.66
TO SAND CREEK CHANNEL	BJR-2	**37.56**	**8.9**	**59.98**

B. The ***fully developed conditions*** for the site are as follows:

Under proposed conditions, runoff will sheet flow off developed lots towards curb and gutter. Channelized flows in the curb and gutter will be conveyed downstream towards D-10-R curb inlets which will capture flows and subsequent storm sewer will direct the flows into Pond AM #4.

Treated flows will be discharged to Sand Creek via an 18" (public) RCP storm pipe.

Sub-basins and Design Points for the fully developed conditions are summarized in the tables below.

Sub-basins and Design points are summarized in the tables on the following page:

Aspen Meadows Filing No. 4 Fully Developed Conditions - Sub-basin Summary			
Basin	**Area**	**Q5**	**Q100**
	acres	**cfs**	**cfs**
A	3.88	6.4	14.2
B	3.48	6.0	13.1
C	2.46	4.2	9.3
D	3.25	5.6	12.4
E	1.72	2.9	6.3
F	2.78	4.9	10.7
G	1.46	1.5	4.4

Aspen Meadows Filing No. 4 Fully Developed Conditions – Design Point Summary				
Design Point	**Total Drainage Area**	**Storm Sewer**		**Downstream Design Point**
		Q5 (cfs)	**Q100 (cfs)**	
1	3.88	6.43	14.17	3
2	5.95	10.18	22.42	3
3	9.83	16.29	35.88	6
4	3.25	5.61	12.35	6
5	4.50	7.89	17.37	6
6	17.58	29.68	65.37	7
7	19.03	29.42	65.85	8
8	19.03	0.50	9.60	Sand Creek

DESIGN POINT DESCRIPTIONS **Aspen Meadows Filing No. 4**		
Design Point	**Description**	**Downstream Design Point**
1	This design point represents two 10-foot at-grade type D-10-R Curb Inlets (Public) which capture most of the flows on the west side of the westernmost north-south residential street within this filing. Flows are conveyed downstream via 24-inch Storm Sewer (Public).	3
2	This design point represents three 10-foot at-grade type D-10-R Curb Inlets (Public) which capture the flows on the east side of the westernmost north-south residential street within this filing. Flows are conveyed downstream via 30-inch Storm Sewer (Public).	3
3	This design point represents the manhole (Public) combining flows from Design Points 1 and 2. From this design point flows are conveyed downstream via 30-inch Storm Sewer (Public).	6
4	This design point represents an 8-foot Type D-10-R Curb inlet (Public) in sump condition on the north side of the southernmost east-west road in this filing. All flows to the inlet are captured. Flows are conveyed downstream via 24-inch Storm Sewer (Public).	6
5	This design point represents an 8-foot Type D-10-R Curb inlet (Public) in sump condition on the south side of the southernmost east-west road in this filing. All flows to the inlet are captured. Flows are conveyed downstream via 24-inch Storm Sewer (Public).	6
6	This design point represents the manhole (Public) combining flows from Design Points 3, 4, and 5. Flows are conveyed downstream via 36-inch Storm Sewer (Public).	7
7	This design point represents the combination of all flows into the proposed Full Spectrum Detention Pond AM #4 (Private)	8
8	This design point represents the FSD Pond AM #4 discharge structure (Private) and 18" Storm Sewer discharge pipe (Public) to Sand Creek.	Sand Creek

- Generally, flows sheet flow off developed lots towards adjacent streets or swales which capture flows and direct them downstream to the nearest inlets. After capture by inlets the flows will be conveyed onwards towards the downstream detention basin via storm sewer.

XI. Drainage Facility Design

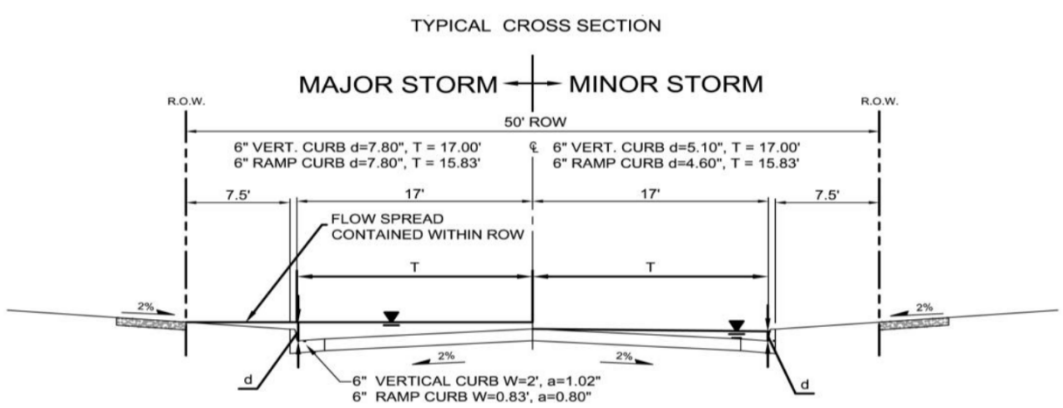
A. Street Capacity

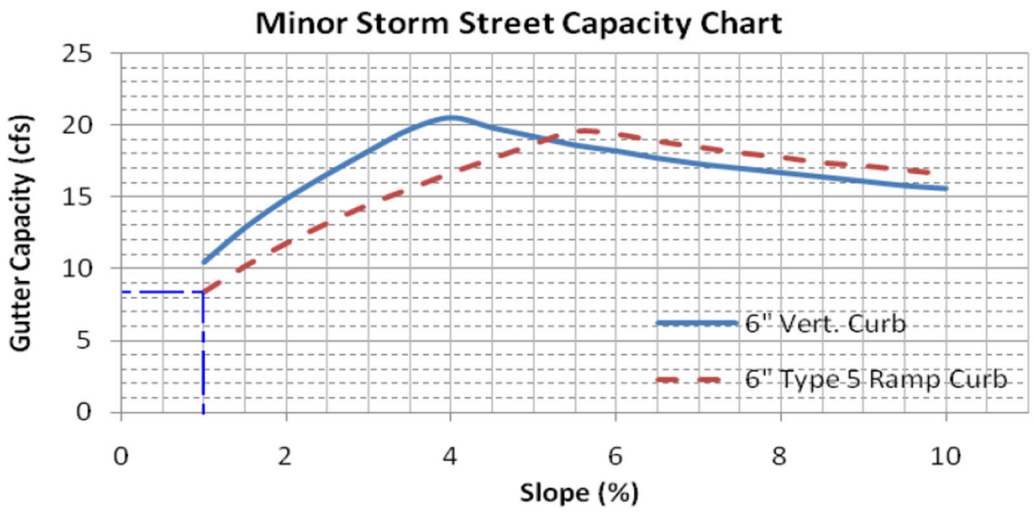
The width of the typical section for streets within Filing No. 2 will be 35 feet from back of curb to back of curb. Curb heights will be 6-inch. These streets will generally utilize City of Colorado Springs Type 5 residential curb and gutter with Type 2 6" vertical curb and gutter used for parking areas and the curb radii through intersections. The following table (Table 7.1) lists streets and capacities by Design Point:

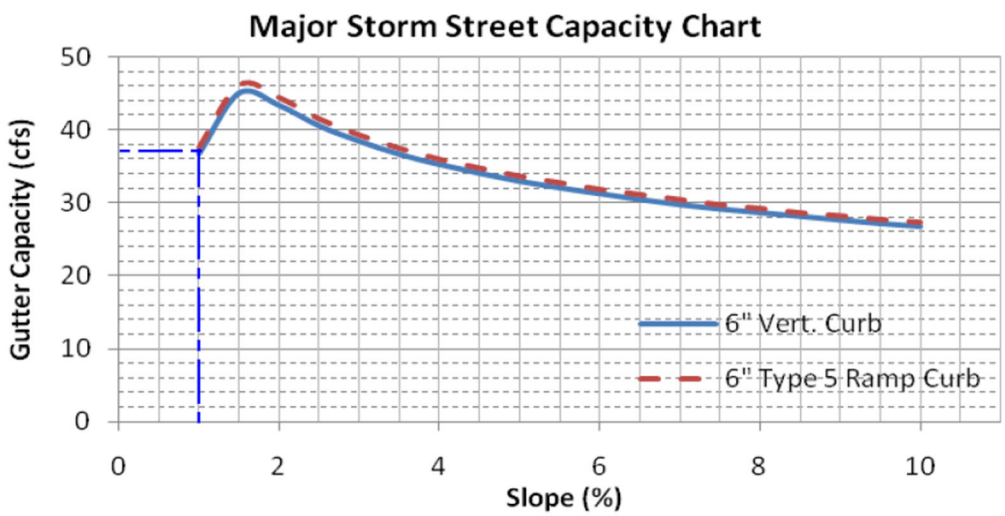
STREET CAPACITIES ***Aspen Meadows Filing No. 4***									
Street	***Sub-basin***	***BYPASS SOURCE (Design Point)***	***Q(5) BYPASS FLOWS RECEIVED(cfs)***	***Slope %***	***ROAD CAPACITY MINOR STORM (cfs)***	***Q(5) TOTAL FLOW***	***Q(100) BYPASS FLOWS RECEIVED (cfs)***	***ROAD CAPACITY MAJOR STORM (cfs)***	***Q(100) TOTAL FLOW (cfs)***
	A	N/A	0.0	2.0%	11.5	6.4	0.0	44	14.2
	B	N/A	0.0	1.5%	10	6.0	0.0	46	13.1
	C	N/A	0.0	1.0%	8.5	4.2	0.0	37	9.3
	D	1 & 2	0.0	1.4%	9.75	5.6	1.2	45	13.6
	E	N/A	0.0	1.0%	8.5	2.9	0.0	37.0	6.3
	F	N/A	0.0	1.4%	9.75	4.9	0.0	45.0	10.7

Figure 7-7 from the DCM is shown below and on the following page:

Figure 7-7. Street Capacity Charts Residential (Detached Sidewalk)







Note: 1% slope used to demonstrate worst case capacities.

Notes:

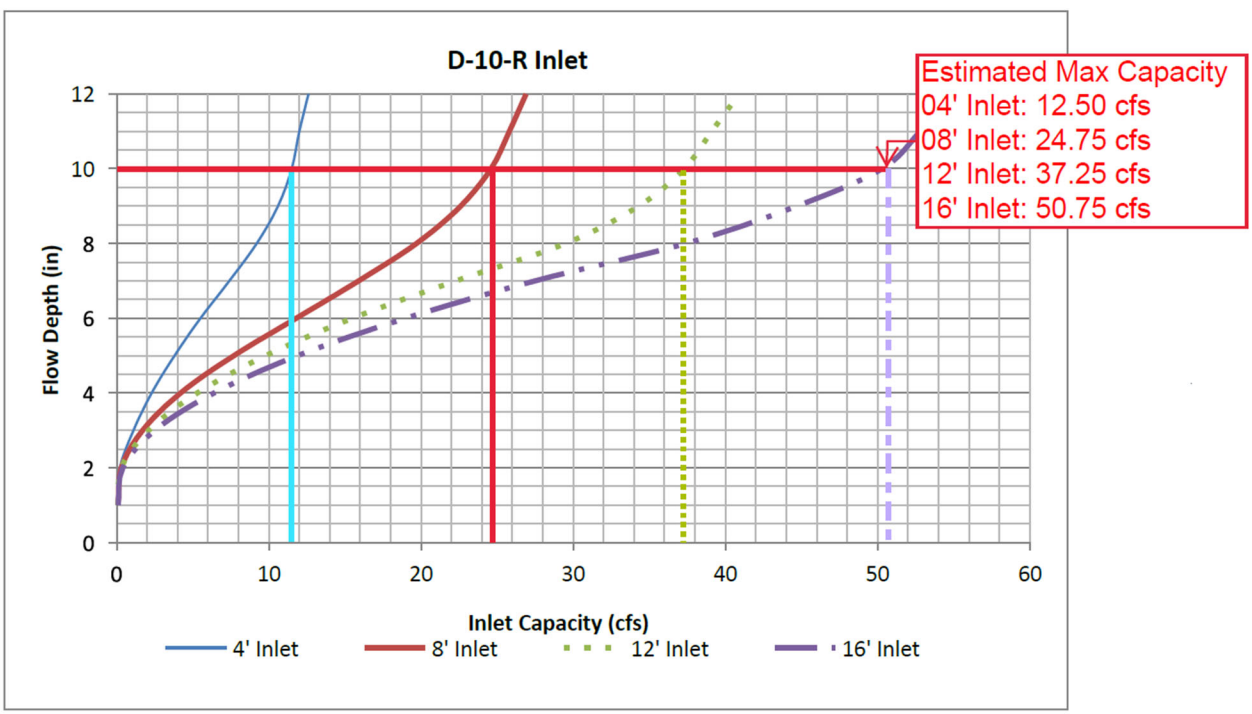
- City of Colorado Springs Type 5 residential curb and gutter was used for all streets.
- The nomograph (Figure 7-7) above was used to calculate capacities for the City of Colorado Springs Type 5 residential (Local/Residential) streets within the project area.

B. Inlet Capacity

In accordance with the DCM, this project will use City of Colorado Springs Type D10-R inlets and a CDOT Type C inlet. Sump inlet capacities were determined utilizing DCM Figure 8-12 shown below. The following table lists inlets by design point and corresponding capacity. The next table describes overflow routing for each sump inlet.

INLET SUMMARY ***Aspen Meadows Filing No. 4***											
DESIGN POINT	*SUB-BASINS*	*TOTAL AREA (AC)*	*INLET*			*Q_5 BYPASS FLOWS (cfs)*	*Q_5 TOTAL INFLOW*	*Q_5 INLET CAPACTIY*	*Q_{100} BYPASS FLOWS (cfs)*	*Q_{100} TOTAL INFLOW (cfs)*	*MAX INLET CAPACITY*
			SIZE (Ft.)	*TYPE*	*CONDITION*						
1	A	3.88	10	D-10-R	**AT-GRADE X 2**	**0.0**	6.4	**6.4**	**1.1**	14.2	**13.1**
2	B & C	5.95	10	D-10-R	**At-GRADE X 3**	**0.0**	10.2	**10.2**	**0.1**	22.4	**22.3**
4	D	3.25	8	D-10-R	**SUMP**	**0.0**	5.6	**5.6**	**0.0**	13.6	**24.8**
5	E & F	4.50	8	D-10-R	**SUMP**	**0.0**	7.9	**7.9**	**0.0**	17.4	**24.8**

Figure 8-12. Inlet Capacity Chart Sump Conditions, Curb Opening (D-10-R) Inlet



Overflow Routing Aspen Meadows, Filing No. 4	
Inlet	***Overflow Routing Under Inlet Blockage Conditions***
4	If this inlet is blocked flows will surcharge the crown of the road and enter the sump inlet at Design Point 5. If both inlets are blocked flows will be conveyed south to Pond AM #4 via swale running along the pond maintenance access road.
5	If this inlet is blocked flows will surcharge the crown of the road and enter the sump inlet at Design Point 4. If both inlets are blocked flows will be conveyed south to Pond AM #4 via swale running along the pond maintenance access road.

C. Storm Sewer Capacities

Storm sewer capacities and HGL's will be submitted with a future drainage addendum. These will be analyzed utilizing StormCAD software. Interim pipe calculations can be found in Appendix A.

D. Detention

Summary information for the privately owned and maintained Pond-AM #4 is listed below. Supporting MHFD-Detention spreadsheets can be found in Appendix A. This pond will provide full spectrum detention for the filing and will be privately owned and maintained by the Woodmen Heights Metropolitan District.

Proposed Pond Summary											
Aspen Meadows Filing No. 4											
Pond	Tributary Area	% Impervious	Pre-Development Peak		Pond Outflow		Pre vs. Post Ratio		Detention Volume (Acre-feet)		
			Q5	Q100	Q5	Q100	Q5	Q100	WQCV	EURV	Q100
AM #4	19.03	62.68	0.2	10.4	0.5	9.6	2.0	0.9	0.392	1.471	2.121

Emergency Overflows

Emergency Overflow Weirs		
Major Basin	**Pond ID**	**Description of Emergency Overflow Weir**
Sand Creek	AM #4	The emergency overflow weir for this private pond will release emergency overflows to Sand Creek where flows will continue along historic paths.

Outfall Analysis

Pond-AM#4

The emergency spillway for Pond-1 was analyzed utilizing Figure 13-12b and Figure 13-12d (see below). The swale receiving discharge from the pond's proposed outlet structure has also been analyzed and the initial portion of the swale has been found to require 6-inch D_{50} Rip Rap (Type VL) protection for the portion which is at approximately 7.2 percent grade. The area downstream of that is flatter and has been found to be adequate to handle the pond's discharge.

Figure 13-12b. Emergency Spillway Profile at Embankment

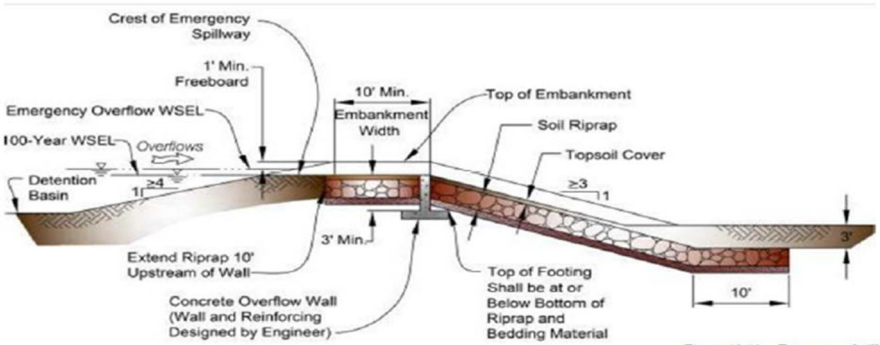
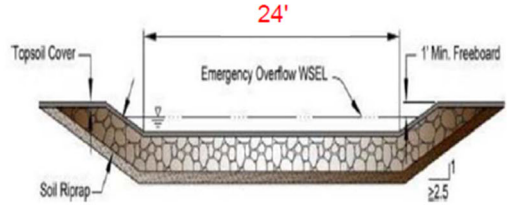


Figure 13-12c. Emergency Spillway Protection

ROAD EMBANKMENT PROTECTION CALCULATION
Q=47.5 CFS
LENGTH=24
UNIT FLOW RATE: 2.0 CFS/FT

=> TYPE VL RIP RAP



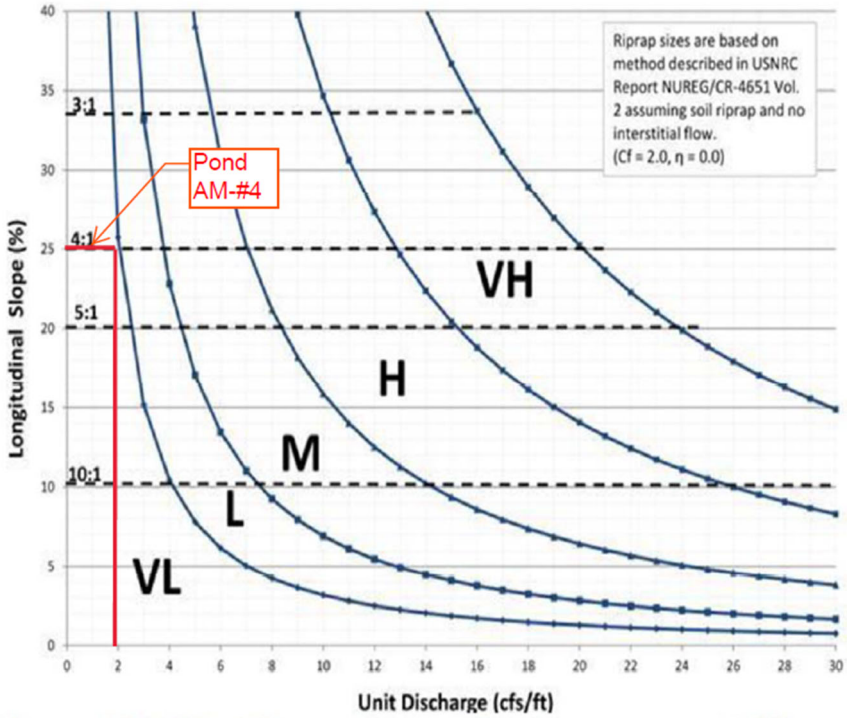


Figure 13-12d. Riprap Types for Emergency Spillway Protection

XII. Environmental Evaluations

A. WETLAND IMPACTS

There are no designated wetland or riparian areas on site, and no anticipated impacts.

B. STORMWATER QUALITY

The on-site detention facility shall be designed to accommodate water quality requirements. As the development of each parcel progresses, the detention guidelines outlined in this report are to be upheld. Per Chapter 6, Section 7.1, of the City of Colorado Springs DCM, Volume 2, the DCM requires a Four Step Process for receiving water protection that focuses on reducing runoff volumes, treating the water quality capture volume (WQCV), stabilizing drainageways, and implementing long-term source controls.

Step 1: **Employ Runoff Reduction Practices**

- Site specific landscaping will be done on each lot to decrease the connectivity of impervious areas. Grass lined swales will be used where possible to allow ground infiltration. This can be seen in the swales called for along the outside borders of the subdivision. See IRF spreadsheet in Appendix A.

Step 2: **Treat and Slowly Release the WQCV**

- The privately owned and maintained AM #4 meets the DCM standards for the release rates of Full Spectrum Detention Ponds for Water Quality Capture Volumes.

Step 3: **Stabilize Stream Channels.**

- The site is in the Sand Creek drainage basin. Drainage fees, to be paid by the Aspen Meadows Filing No. 4 developers at the time of platting, will help fund future channel improvements. CDR-Matrix describes the proposed improvements to Sand Creek which will provide for a stabilized stream channel. Note that, because the developer is constructing the channel improvements, the drainage fees for this development are offset by the construction costs.

Step 4: **Implement Source Controls**

- Dumping of waste materials in the proposed storm system is not permitted.
- During construction, the contractor will have designated concrete washout areas and will implement sediment control logs and inlet protection in order to control pollutants at their source.
- There are no plans for outdoor stockpiling of materials onsite after construction has been completed, therefore, no other source control BMPs are anticipated at this time.

XIII. PERMITTING REQUIREMENTS

No additional permitting requirements are expected at this time.

XIV. Erosion Control Plan

A grading and erosion control plan (GEC) for Aspen Meadows Filing No. 4 will be completed. The GEC incorporates straw wattles, straw bale check dams, silt fence, vehicle tracking control, inlet & outlet control, sedimentation basins and other best management practices (BMPs) identified in the DCM Volume 2. Please refer to the GEC for procedural information. An over-lot grading GEC for Aspen Meadows Filings No. 2 and 4 has also been completed.

XV. Drainage Fees

Reimbursable Fees

As the Sand Creek channel improvements are an improvement to public infrastructure that is being constructed by the private developer (COLA), the cost of the proposed improvements, or some portion of the cost, may be credited to the development and/or defer drainage basin fees. The 2021 basin fee for the Sand Creek basin is $18,841/acre of platted land and the anticipated platted acreage for the adjacent Aspen Meadows Filing No. 4 plat is 22.653 acres, therefore, the drainage basin fee for this plat will be $426,805.17. Please see the drainage basin fee calculation table at end of section.

Phases 1 and 2 of the proposed project encompass Segment SC1R11 in the 2021 Sand Creek DBPS. The DBPS indicates that this segment was planned 3838 LF of Type 6 channel improvements at a cost of $700 per linear foot for a total estimated cost of $2,686,600.

An opinion of probable construction cost was completed for Phase 1 and Phase 2 of the proposed improvements (Combined phases totaling roughly 3800 LF of channel improvements). Unit costs developed during the completion of the Monument Creek Restoration Master Plan, regional sources and recently completed similar projects were used. The opinion of probable construction costs for the proposed Phase 1 improvements is $1,313,956. The opinion of probable construction cost for the proposed Phase 2 improvements is $798,582. Based on the level of design completed for this analysis, the AACE International Class 1 designation applies. Therefore, the opinion of probable construction cost can vary from a 10% below to 15% above these values. These cost values do not include permitting, engineering, construction administration/ management, wetlands mitigation, right-of-way acquisition or other "non-construction" costs.

Anticipated and historic fees in the area of these proposed Sand Creek channel improvements are summarized below:

Area Filings	Area	Basin Fees Paid or Deferred, or Reconciled by Project	
Shiloh Mesa			
Filing No. 1		$199,806.25	Reconciled with Reimbursement for the 72" RCP
Filing No. 2		$204,264.26	Reconciled with Reimbursement for the 72" RCP and additional credits from COLA.
Filing No. 3		$155,654.07	Deferred and has not been reconciled
Filing No. 4		$166,577.66	Confirmed Paid to City
Filing No. 5		$110,733.45	Confirmed Paid to City
The Nook		$265,554.48	Confirmed Paid to City
Aspen Meadows			
Filing No. 1	40.459	$762,288.02	Approved

Filing No. 2	13.791	$259,836.23	Submitted for Approval
Filing No. 3 (Park Plat)	12.232	$230,463.11	Projected
Filing No. 4	**22.653**	**$426,805.17**	**Projected**

Projected Construction Costs

- Phase One Projected Construction Costs: $1,313,956.00
- Phase Two Projected Construction Costs: $798,582.00

Summary

- *Available Cost Credit for Sand Creek Channel Improvements Per 2021 DBPS: $2,686,600.00*
- *Total Estimated Cost of Channel Improvements: $1,313,956 + $798,582 = $2,112,538.00*
- *Future Plat Fee Deferred Costs: $1,679,392.54*
- *Plat Fees Previously Differed (Shiloh Mesa Filing No 3): $155,654.07*

Remainder Credit from DBPS: $851,553.40

Estimated Channel Costs less deferred costs:
$2,112,538.00-$1,679,392.54-$155,654.07 = $277,491.40

The above information demonstrates that the proposed channel improvement costs should be more than adequate to defer the Sand Creek Drainage Basin fees for Aspen Meadows Filings 1-4, therefore Aspen Meadows Filing No. 4 is eligible to defer drainage basin fees in the amount of $426,805.17 as described in the table at the end of this section.

The applicable pages from the 2021 Sand Creek DBPS and the fee schedule for 1996 are provided in Appendix D.

Reimbursable costs included within the DBPS ($2,686,600) far exceed the drainage fees that are due with the filing of this plat ($426,805.17), therefore no fees are due at the time of platting. See fee calculations below:

Aspen Meadows Filing No. 4
Final Drainage Report
2021 Drainage and Bridge Fees for Sand Creek

	Area (ac.)	Fee/Acre	Fee Due	Reimbursable Const. Costs	Fee Due at Platting	Drainage Fee Credit
Drainage Fee	22.653	$18,841.00	$426,805.17	$426,805.17	$0.00	$0.00
				$426,805.17	***$0.00***	

Construction Cost Opinion

Engineer's Estimate of Probable Construction Costs				
Sand Creek Drainage Fee Basin				
Aspen Meadows Filing No. 4				
Item	Unit	Quantity	Unit Cost	Extension
Storm MH	EA	6	$11,625.00	$69,750.00
18" RCP	LF	100	$65.00	$6,500.00
24" RCP	LF	102	$78.00	$7,956.00
30" RCP	LF	442	$97.00	$42,874.00
36" RCP	LF	248	$120.00	$29,760.00
8' D-10 R Inlet	EA	2	$7,600.00	$15,200.00
10' D-10 R Inlet	EA	5	$8,800.00	$44,000.00
18" FES	EA	1	$390.00	$390.00
Detention/WQ Pond	EA	1	$300,000.00	$300,000.00
			Sub Total	$516,430.00
			10% Contingency	$51,643.00
			TOTAL:	**$568,073.00**

Since the engineer has no control over the cost of labor, materials, equipment or services furnished by others, or over the contractor's method of determining prices, or over the competitive bidding or market conditions, the opinion of probable construction costs provided herein are made on the basis of the engineer's experience and qualifications and represents the best judgment as an experienced and qualified professional familiar with the construction industry. The engineer cannot, and does not guarantee that proposals, bid or actual construction costs will not vary from the opinions of probable cost.

XVI. Summary

The above report has demonstrated that the proposed development will comply with the governing DCM, previous drainage reports, and the City of Colorado Springs MS4 permit. No adverse effect on downstream infrastructure is anticipated. Therefore, we recommend approval of the proposed development.

XVII. References

1. ***City of Colorado Springs Drainage Criteria Manual, Volume 1 & 2***, El Paso County, May 2014
2. ***Web Soil Survey of El Paso County Area, Colorado. Unites States Department of Agriculture Soil Conservation Service***.
3. ***Flood Insurance Rate Maps for El Paso County, Colorado and Incorporated Areas, Panel 533 of 1300, Federal Emergency Management Agency***, Effective Date December 7, 2018.
4. ***Urban Storm Drainage Criteria Manual, Vol. 1-3*** by Urban Drainage and Flood Control District (UDFCD), January 2016
5. ***"Master Development Drainage Plan for Woodmen Heights Master Plan"***, by Classic Consulting Engineers and Surveyors, LLC, June 2004. *(***WHMP-MDDP***)*
6. ***"Master Development Drainage Plan Update for Woodmen Heights and Final Drainage Report for Forest Meadows Filing No. 1 and No. 4",*** by Engineering and Surveying, Inc., February 2006 *(***MDDP Update***)*
7. ***"Final Drainage Report for Sterling Ranch Filing No. 2",*** El Paso County, by M & S Civil Consultants, Inc., December 2017 *(***SR-FDR***)*
8. ***"Preliminary Drainage Report for Aspen Meadows Filing No. 2 and No. 4",*** completed by Matrix Design Group, Dated January 2021 *(***PDR-Matrix***)* (Approval Pending)
9. ***"Amendment Letter to the Final Drainage Report for Forest Meadows Filing No. 6 & No. 6A and Final Drainage Report for Forest Meadows Filing No. 7 & No. 7A",*** *by M&S Civil Consultants, Inc., September 2014. (***FDR-FM-7A***)*
10. ***"Channel Design Report: Sand Creek Stabilization at Aspen Meadows Subdivision Filing No. 1",*** *by Matrix Design Group, March 2021 (In progress). (***CDR-Matrix***)*

XVIII. Appendices

APPENDIX A

HYDROLOGIC AND HYDRAULIC CALCULATIONS

Project Name:	Aspen Meadows Filing No. 4
Project Location:	Colorado Springs, CO
Designer	BAS
Notes:	Predevelopment Condition

Average Channel Velocity	4	ft/s	(If specific channel vel is used, this will be ignored)
Average Slope for Initial Flow	0.04	ft/ft	(If Elevations are used, this will be ignored)

Channel Flow Type Key

Heavy Meadow	2
Tillage/Field	3
Short Pasture and Lawns	4
Nearly Bare Ground	5
Grassed Waterway	6
Paved Areas	7

		Area		Rational 'C' Values											Flow Lengths				Initial Flow		Channel Flow				Tc	Rainfall Intensity & Rational Flow Rate					
				Surface Type 1 (Residential 1/8 Acre Lots)			Surface Type 2 (Impervious)			Surface Type 3 (Undeveloped)			Composite																		
Sub-basin	**Comments**	sf	acres	C5	C100	Area (SF)	C5	C100	Area (SF)	C5	C100	Area	C5	C100	Initial ft	True Initial Length ft	Channel ft	True Channel Length ft	Average (decimal) Slope	Initial Tc (min)	Average (%) Slope	Channel Flow Type (See Key above) Ground Type	Velocity (ft/s)	Channel Tc (min)	Total (min)	i2 in/hr	Q2 cfs	i5 in/hr	Q5 cfs	i100 in/hr	Q100 cfs
EX-1		383,376	8.80	0.45	0.59		0.90	0.96		0.09	0.36	383,376	0.09	0.36	100	100.00	1630	1630.00	0.009	18.69	2.02	4	1.0	27.4	46.1	1.5	**1.2**	1.9	**1.49**	3.1	**10.05**
EX-2		1,080,724	24.81	0.45	0.59		0.90	0.96		0.09	0.36	1,080,724	0.09	0.36	200	200.0	2155	2155.0	0.029	18.11	2.14	4	1.0	35.4	53.5	1.4	**3.0**	1.7	**3.84**	2.9	**25.78**
EX-3-NW		172,062	3.95	0.45	0.59		0.90	0.96		0.09	0.36	172,062	0.09	0.36	200	200.00	1131	1131.00	0.023	19.39	2.44	4	1.1	17.4	36.8	1.7	**0.6**	2.2	**0.77**	3.6	**5.18**
EX-4		1,004,058	23.05	0.45	0.59		0.90	0.96		0.09	0.36	1,004,058	0.09	0.36	200	100.0	1510	1610.0	0.020	20.41	1.77	4	0.9	29.4	49.8	1.4	**3.0**	1.8	**3.73**	3.0	**25.07**
DESIGN POINTS	***INCLUDED SUB-BASINS***																														
EX1	***EX1***	383,376	8.80	0.45	0.59		0.90	0.96		0.09	0.36	383,376	0.09	0.36	100	100.0	1630	1630.0	0.009	18.69	2.02	4	1.0	27.4	46.1	1.5	**1.2**	1.9	**1.49**	3.1	**10.05**
EX2	***EX2, EX4***	2,084,782	47.86	0.45	0.59		0.90	0.96		0.09	0.36	2,084,782	0.09	0.36	200	100.00	4156	4256.00	0.029	18.03	2.04	4	1.0	71.7	89.7	1.0	**4.2**	1.2	**5.25**	2.0	**35.31**
EX3	***EX3***	172,062	3.95	0.45	0.59		0.90	0.96		0.09	0.36	172,062	0.09	0.36	200	200.00	1131	1131.00	0.023	19.39	2.44	4	1.1	17.4	36.8	1.7	**0.6**	2.2	**0.77**	3.6	**5.18**
	TOTAL AREA	2,640,220	60.61							0.09	0.36	2,640,220	0.09	0.36	200	200.00	4156	4256.00	0.029	18.03	2.04	4	1.0	71.7	89.7	1.0	**5.3**	1.2	**6.65**	2.0	**44.72**

Note: Q2, Q5 & Q10 are based on C5; Q25, Q50 & Q100 are based on C100

Rational Method - Proposed Conditions

Development Name:	Aspen Meadows Filing No. 4
Project Location:	Colorado Springs, CO
Designer	JTS
Notes:	Proposed Condition

Average Channel Velocity	4.00	ft/s	(If specific channel vel is used, this will be ignored)
Average Slope for Initial Flow	0.04	ft/ft	(If Elevations are used, this will be ignored)

Channel Flow Type Key:
Heavy Meadow 2
Tillage/Field 3
Short Pasture and Lawns 4
Nearly Bare Ground 5
Grassed Waterway 6
Paved Areas 7

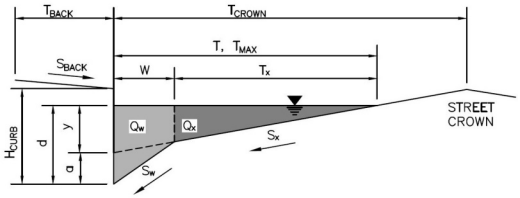
		Area		Rational 'C' Values																						Flow Lengths										Tc	Rainfall Intensity & Rational Flow Rate			
Sub-basin	Comments			Commercial Areas (95% Impervious)			Residential (1/8 or less) (65% Impervious)			Streets - Paved (100% Impervious)			Neighborhood Multi-Family (70% Impervious)			Parks and Cemeteries (7% Impervious)			Undeveloped-Historic Flow Analysis (2% Impervious)			Composite		Percent Impervious	Initial	True Initial	Channel	True Channel	Average (decimal)	Initial	Average (%)	Channel Flow Type (See Key above)	Velocity	Channel	Total	i5	Q5	i100	Q100
		sf	acres	C5	C100	Area	C5	C100	Area (SF)	C5	C100	Area (SF)	C5	C100	Area	C5	C100	Area	C5	C100	Area	C5	C100		ft	Length ft	ft	Length ft	Slope	Tc (min)	Slope	Ground Type	(ft/s)	Tc (min)	(min)	in/hr	cfs	in/hr	cfs
A		169156	3.88	0.82	0.89		0.45	0.59	169156.00	0.90	0.96		0.45	0.59		0.12	0.39		0.09	0.36		0.45	0.59	65.00	100	100	1097	1097	0.05	6.84	2.00	7	2.83	6.46	13.30	3.65	**6.4**	6.14	**14.2**
B		151703	3.48	0.82	0.89		0.45	0.59	151703.00	0.90	0.96		0.45	0.59		0.12	0.39		0.09	0.36		0.45	0.59	65.00	100	100	931	931	0.05	6.84	2.00	7	2.83	5.49	12.32	3.77	**6.0**	6.34	**13.1**
C		107362	2.46	0.82	0.89		0.45	0.59	107362.00	0.90	0.96		0.45	0.59		0.12	0.39		0.09	0.36		0.45	0.59	65.00	100	100	640	640	0.05	6.84	1.00	7	2.00	5.33	12.17	3.79	**4.2**	6.37	**9.3**
D		141408	3.25	0.82	0.89		0.45	0.59	141408.00	0.90	0.96		0.45	0.59		0.12	0.39		0.09	0.36		0.45	0.59	65.00	100	100	625	625	0.05	6.84	1.00	7	2.00	5.21	12.05	3.81	**5.6**	6.40	**12.4**
E		75118	1.72	0.82	0.89		0.45	0.59	75118.00	0.90	0.96		0.45	0.59		0.12	0.39		0.09	0.36		0.45	0.59	65.00	100	100	755	755	0.05	6.84	1.00	7	2.00	6.29	13.13	3.67	**2.9**	6.17	**6.3**
F		120982	2.78	0.82	0.89		0.45	0.59	120982.00	0.90	0.96		0.45	0.59		0.12	0.39		0.09	0.36		0.45	0.59	65.00	100	100	1000	1000	0.05	6.84	3.00	7	3.46	4.81	11.65	3.86	**4.9**	6.49	**10.7**
G	***Direct runoff to Detention Pond***	63394	1.46	0.82	0.89		0.45	0.59	30207.00	0.90	0.96		0.45	0.59		0.12	0.39	33187.00	0.09	0.36		0.28	0.49	34.64	50	50	285	285	0.05	6.12	1.00	4	0.70	6.79	12.90	3.70	**1.5**	6.22	**4.4**
DESIGN POINTS																																									
1	***Basin A***	169156	3.88	0.82	0.89	0	0.45	0.59	169156	0.90	0.96	0	0.45	0.59	0	0.12	0.39	0	0.09	0.36	0	0.45	0.59	65.00	100	100	1097	1097	0.05	6.84	2	7	2.83	6.46	13.30	3.65	**6.4**	6.14	**14.2**
2	***Basin B & C***	259065	5.95	0.82	0.89	0	0.45	0.59	259065	0.90	0.96	0	0.45	0.59	0	0.12	0.39	0	0.09	0.36	0	0.45	0.59	65.00	100	100	931	931	0.05	6.84	2.0	7	2.83	5.49	12.32	3.77	**10.2**	6.34	**22.4**
3	***Basins A-C***	428221	9.83	0.82	0.89	0	0.45	0.59	428221	0.90	0.96	0	0.45	0.59	0	0.12	0.39	0	0.09	0.36	0	0.45	0.59	65.00	100	100	1097	1097	0.05	6.84	2.0	7	2.83	6.46	13.30	3.65	**16.3**	6.14	**35.9**
4	***Basin D***	141408	3.25	0.82	0.89	0	0.45	0.59	141408	0.90	0.96	0	0.45	0.59	0	0.12	0.39	0	0.09	0.36	0	0.45	0.59	65.00	100	100	625	625	0.05	6.84	1	7	2.00	5.21	12.05	3.81	**5.6**	6.40	**12.4**
5	***Basins E & F***	196100	4.50	0.82	0.89	0	0.45	0.59	196100	0.90	0.96	0	0.45	0.59	0	0.12	0.39	0	0.09	0.36	0	0.45	0.59	65.00	100	100	1000	1000	0.05	6.84	3.0	7	3.46	4.81	11.65	3.86	**7.9**	6.49	**17.4**
6	***Basins A-F***	765729	17.58	0.82	0.89	0	0.45	0.59	765729	0.90	0.96	0	0.45	0.59	0	0.12	0.39	0	0.09	0.36	0	0.45	0.59	65.00	100	100	1000	1000	0.05	6.84	2.0	7	2.83	5.89	12.73	3.72	**29.7**	6.23	**65.4**
7	***Total Inflow to Detention Pond***	829123	19.03	0.82	0.89	0	0.45	0.59	795936	0.90	0.96	0	0.45	0.59	0	0.12	0.39	33187	0.09	0.36	0	0.44	0.58	62.68	100	100	1285	1285	0.05	6.98	2.0	7	2.83	7.57	14.55	3.51	**29.4**	5.90	**65.9**
8	***Detention Pond Discharge***	829123	19.03	0.82	0.89	0	0.45	0.59	795936	0.90	0.96	0	0.45	0.59	0	0.12	0.39	33187	0.09	0.36	0	0.44	0.58	62.68	100	100	1000	1000	0.05	6.98	2.0	7	2.83	5.89	12.87		**0.5**		**9.6**

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Aspen Meadows Filing No. 4

DP 1



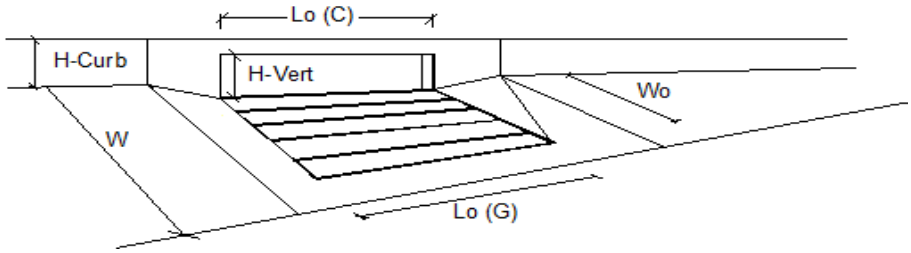
Gutter Geometry (Enter data in the blue cells)				
Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	10.0		ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020		ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020		
Height of Curb at Gutter Flow Line	H_{CURB} =	6.00		inches
Distance from Curb Face to Street Crown	T_{CROWN} =	17.0		ft
Gutter Width	W =	0.83		ft
Street Transverse Slope	S_X =	0.020		ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.083		ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.020		ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.013		
		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	17.0	17.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	5.1	8.0	inches
Allow Flow Depth at Street Crown (leave blank for no)		☐	☑	check = yes
MINOR STORM Allowable Capacity is based on Spread Criterion		Minor Storm	Major Storm	
MAJOR STORM Allowable Capacity is based on Depth Criterion	**Q_{allow} =**	**17.4**	**63.0**	**cfs**

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.05 Released March 2017



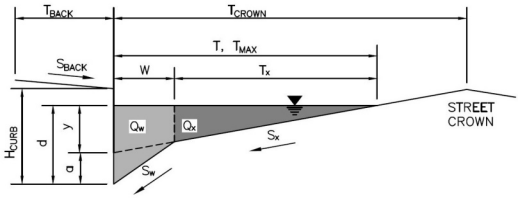
Design Information (Input)	Colorado Springs D-10-R	MINOR	MAJOR	
Type of Inlet	Type =	Colorado Springs D-10-R		
Local Depression (additional to continuous gutter depression 'a')	a_{LOCAL} =	4.0	4.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)	No =	2	2	
Length of a Single Unit Inlet (Grate or Curb Opening)	L_o =	10.00	10.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)	W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	C_f-G =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	C_f-C =	0.10	0.10	
Street Hydraulics: OK - Q < Allowable Street Capacity'		MINOR	MAJOR	
Total Inlet Interception Capacity	**Q =**	**6.4**	**13.1**	**cfs**
Total Inlet Carry-Over Flow (flow bypassing inlet)	**Q_b =**	**0.0**	**1.1**	**cfs**
Capture Percentage = Q_a/Q_o =	**C% =**	**100**	**92**	**%**

ALLOWABLE CAPACITY FOR ONE-HALF OF STREET (Minor & Major Storm)

(Based on Regulated Criteria for Maximum Allowable Flow Depth and Spread)

Aspen Meadows Filing No. 4

DP 2



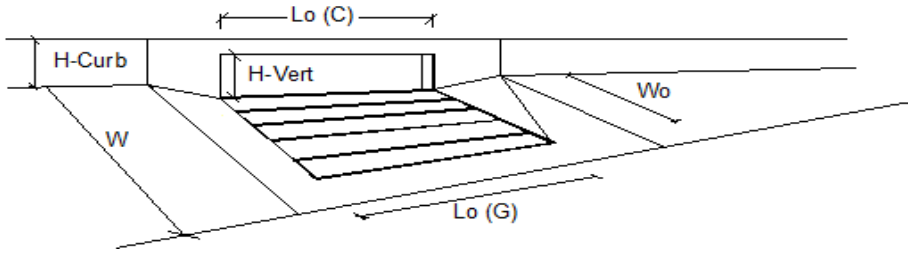
Gutter Geometry (Enter data in the blue cells)				
Maximum Allowable Width for Spread Behind Curb	T_{BACK} =	10.0		ft
Side Slope Behind Curb (leave blank for no conveyance credit behind curb)	S_{BACK} =	0.020		ft/ft
Manning's Roughness Behind Curb (typically between 0.012 and 0.020)	n_{BACK} =	0.020		
Height of Curb at Gutter Flow Line	H_{CURB} =	6.00		inches
Distance from Curb Face to Street Crown	T_{CROWN} =	17.0		ft
Gutter Width	W =	2.50		ft
Street Transverse Slope	S_X =	0.020		ft/ft
Gutter Cross Slope (typically 2 inches over 24 inches or 0.083 ft/ft)	S_W =	0.083		ft/ft
Street Longitudinal Slope - Enter 0 for sump condition	S_O =	0.020		ft/ft
Manning's Roughness for Street Section (typically between 0.012 and 0.020)	n_{STREET} =	0.013		
		Minor Storm	Major Storm	
Max. Allowable Spread for Minor & Major Storm	T_{MAX} =	17.0	17.0	ft
Max. Allowable Depth at Gutter Flowline for Minor & Major Storm	d_{MAX} =	5.1	8.0	inches
Allow Flow Depth at Street Crown (leave blank for no)		☐	☑	check = yes
MINOR STORM Allowable Capacity is based on Depth Criterion		Minor Storm	Major Storm	
MAJOR STORM Allowable Capacity is based on Depth Criterion	**Q_{allow} =**	**11.5**	**44.1**	**cfs**

Minor storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

Major storm max. allowable capacity GOOD - greater than the design flow given on sheet 'Inlet Management'

INLET ON A CONTINUOUS GRADE

Version 4.05 Released March 2017



Design Information (Input)	Colorado Springs D-10-R	MINOR	MAJOR	
Type of Inlet	Type =	Colorado Springs D-10-R		
Local Depression (additional to continuous gutter depression 'a')	a_{LOCAL} =	4.0	4.0	inches
Total Number of Units in the Inlet (Grate or Curb Opening)	No =	3	3	
Length of a Single Unit Inlet (Grate or Curb Opening)	L_o =	10.00	10.00	ft
Width of a Unit Grate (cannot be greater than W, Gutter Width)	W_o =	N/A	N/A	ft
Clogging Factor for a Single Unit Grate (typical min. value = 0.5)	C_f-G =	N/A	N/A	
Clogging Factor for a Single Unit Curb Opening (typical min. value = 0.1)	C_f-C =	0.10	0.10	
Street Hydraulics: OK - Q < Allowable Street Capacity'		MINOR	MAJOR	
Total Inlet Interception Capacity	**Q =**	**10.1**	**22.3**	**cfs**
Total Inlet Carry-Over Flow (flow bypassing inlet)	**Q_b =**	**0.0**	**0.1**	**cfs**
Capture Percentage = Q_a/Q_o =	**C% =**	**100**	**100**	**%**

INLET SUMMARY Aspen Meadows Filing No. 4											
DESIGN POINT (#-Letter) or SUB-BASIN (Letter#)	SUB-BASINS	TOTAL AREA (AC)	INLET			Q(5) BYPASS FLOWS (cfs)	Q(5) TOTAL INFLOW	Q5 INLET CAPACTIY	Q(100) BYPASS FLOWS (cfs)	Q(100) TOTAL INFLOW (cfs)	MAX INLET CAPACITY
			SIZE (Ft.)	TYPE	CONDITION						
1		3.88	10	D-10-R	AT-GRADE X 2	0.0	6.4	6.4	1.1	14.2	13.1
2		5.95	10	D-10-R	At-GRADE X 3	0.0	10.2	10.2	0.1	22.4	22.3
4		3.25	8	D-10-R	SUMP	0.0	5.6	5.6	0.0	13.6	24.8
5		4.50	8	D-10-R	SUMP	0.0	7.9	7.9	0.0	17.4	24.8

Figure 8-12. Inlet Capacity Chart Sump Conditions, Curb Opening (D-10-R) Inlet

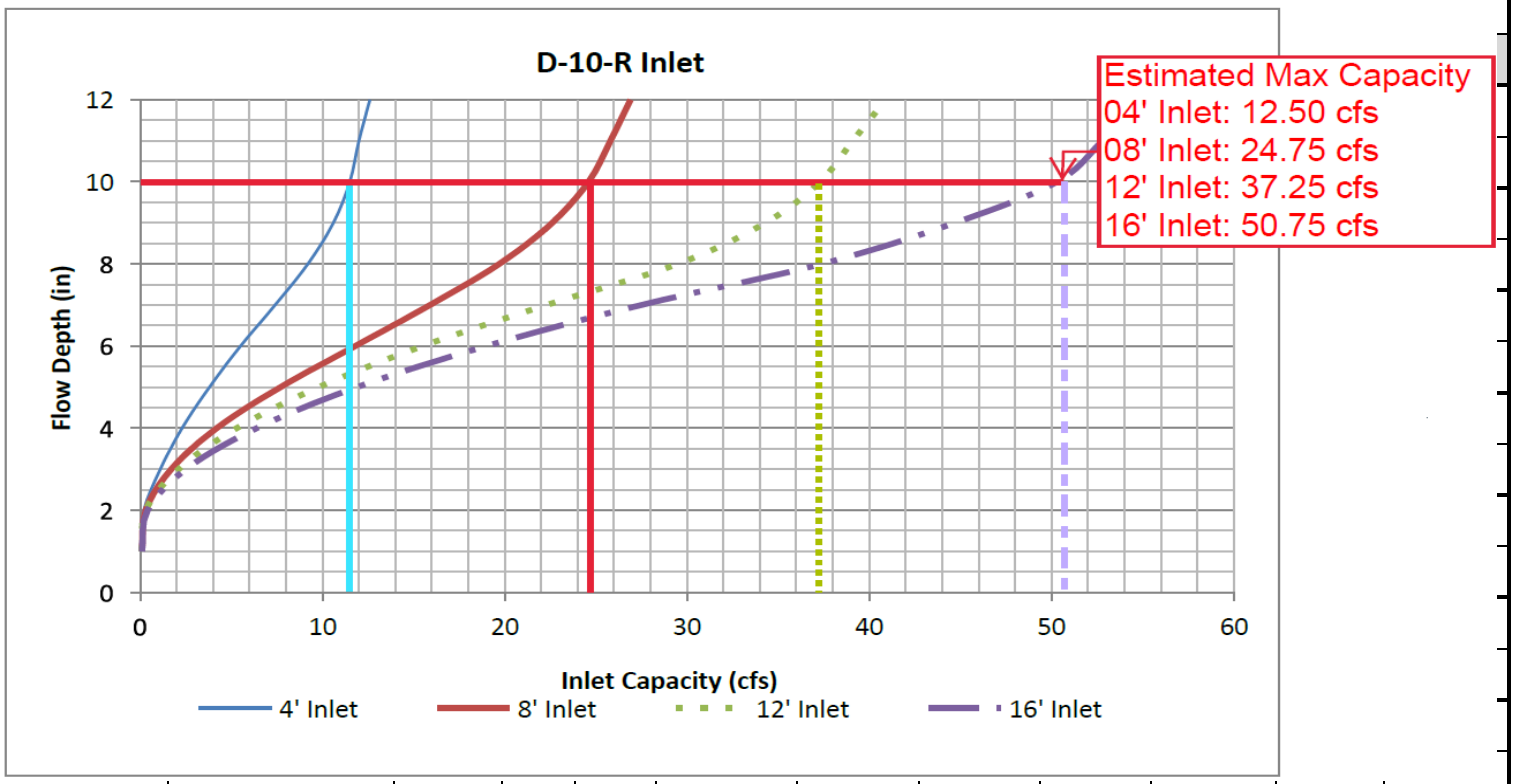
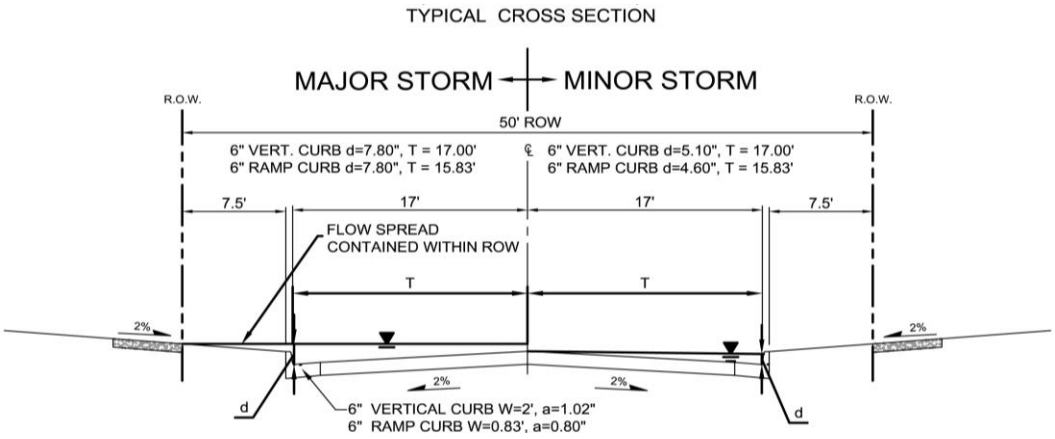
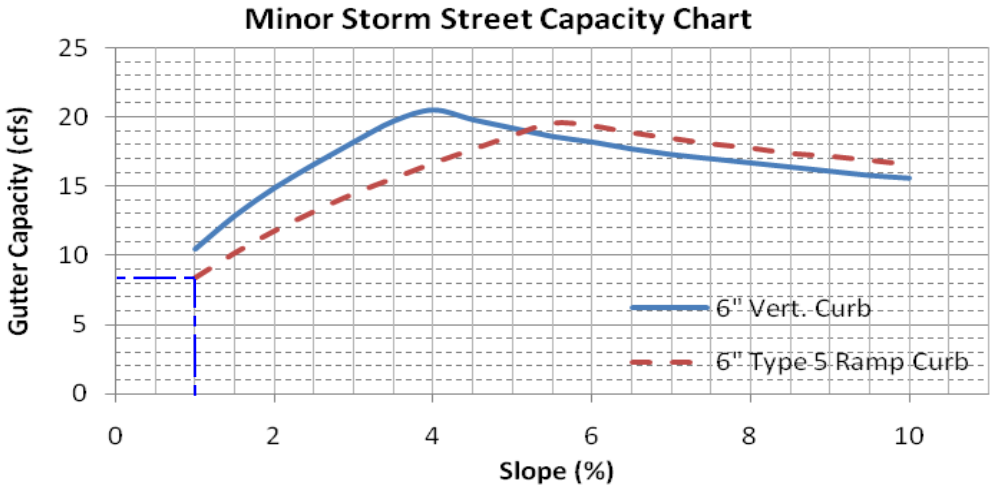
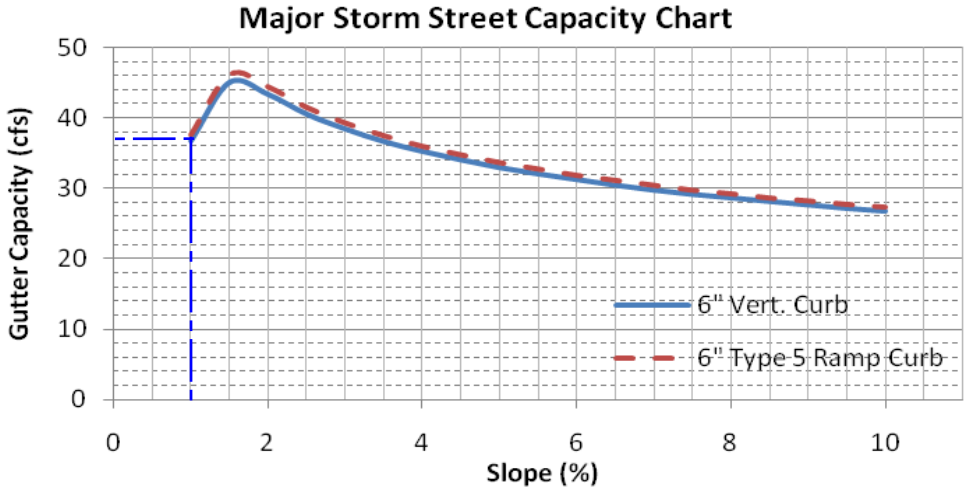


Figure 7-7. Street Capacity Charts Residential (Detached Sidewalk)





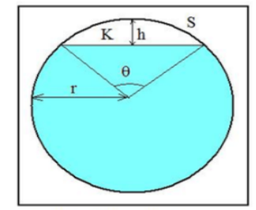


Note: 1% slope used to demonstrate worst case capacities.

These charts shall only be used for the standard street sections as shown. The capacity shown is based on ½ the street section as calculated by the UD-Inlet spreadsheets. Minor storm capacities are based on no crown overtopping, curb height or maximum allowable spread widths. Major storm capacities are based on flow being containing within the public right-of-way, including conveyance capacity behind the curb. The UDFCD Safety Reduction Factor was applied. An 'n_{STREET}' of 0.016 and 'n_{BACK}' of 0.020 was used. Calculations were done using UD-Inlet 3.00.xls, March, 2011.

INITIAL STORM SEWER CAPACITY CALCULATIONS - MANNINGS CHANNEL FLOW METHOD

Design Point	Notes		Max Q (Q100) Proposed	Capacity Analysis	Storm Pipe Calculated Max Q for Pipe (CFS)	Percent of Pipe Capacity Used	n(full)	Slope (ft/ft)	n	Pipe Diameter (ft)	Width (ft) Box Culvert Only	Pipe Depth (inches)	Optimum Flow Depth (+/- 0.94 x D)	Θ (Radians)	A (Sq. Ft.)	Wetted Perimeter (ft)	Velocity at Max Pipe Capacity
1			14.2	Adequate	33.5	42%	0.013	0.020	0.013	2		24	1.88	0.990	3.065	5.293	10.93
2			22.4	Adequate	60.7	37%	0.013	0.020	0.013	2.5		30	2.35	0.990	4.788	6.617	12.69
3			35.9	Adequate	47.1	76%	0.013	0.012	0.013	2.5		30	2.35	0.990	4.788	6.617	9.83
4			12.4	Adequate	23.7	52%	0.013	0.010	0.013	2		24	1.88	0.990	3.065	5.293	7.73
5			17.4	Adequate	23.7	73%	0.013	0.010	0.013	2		24	1.88	0.990	3.065	5.293	7.73
6			65.4	Adequate	92.4	71%	0.013	0.0175	0.013	3		36	2.82	0.990	6.895	7.940	13.40



Partially Full Pipe Flow Parameters
(More Than Half Full)

r = D/2

h = 2r - y

(hydraulic radius)

R = A/P

(Manning Equation)

$Q = (1.49/n)(A)(R^{2/3})(S^{1/2})$

V = Q/A

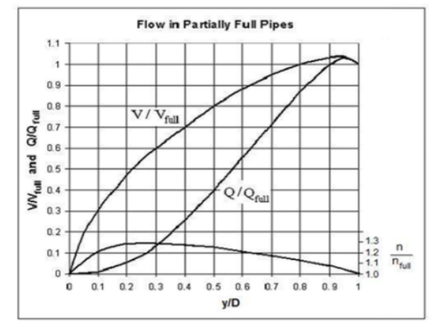
P

$$\theta = 2\arccos\left(\frac{r-h}{r}\right)$$

$$A = \pi r^2 - \frac{r^2(\theta - \sin\theta)}{2}$$

$$P = 2\pi r - r * \theta$$

Equation used for n/n_{full}: $n/n_{full} = 1.25 - (y/D - 0.5)^{*}0.5$ (for $0.5 \le y/D \le 1$)



Flow In Partially Full Pipes

Worksheet Protected

Site-Level Low Impact Development (LID) Design Effective Impervious Calculator

LID Credit by Impervious Reduction Factor (IRF) Method

UD-BMP (Version 3.06, November 2016)

User Input

Calculated cells

***Design Storm: 1-Hour Rain Depth	WQCV Event	0.60	inches
***Minor Storm: 1-Hour Rain Depth	5-Year Event	1.50	inches
***Major Storm: 1-Hour Rain Depth	100-Year Event	2.52	inches
Optional User Defined Storm	CUHP		
(CUHP) NOAA 1 Hour Rainfall Depth and Frequency for User Defined Storm	100-Year Event	2.52	
Max Intensity for Optional User Defined Storm	2.51496		

Designer:	**Jesse Sullivan**
Company:	**Matrix Design Group**
Date:	**July 14, 2021**
Project:	**Aspen Meadows Filing No. 4**
Location:	**Colorado Springs, CO**

SITE INFORMATION (USER-INPUT)

Sub-basin Identifier	**A**	**B**	**C**	**D**	**E**	**F**	**G**							
Receiving Pervious Area Soil Type	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam							
Total Area (ac., Sum of DCIA, UIA, RPA, & SPA)	3.880	3.480	2.460	3.250	1.720	2.780	1.460							
Directly Connected Impervious Area (DCIA, acres)	2.522	2.262	1.599	2.113	1.118	1.807	0.504							
Unconnected Impervious Area (UIA, acres)	0.000	0.000	0.000	0.000	0.000	0.000	0.000							
Receiving Pervious Area (RPA, acres)	0.000	0.000	0.000	0.000	0.000	0.000	0.000							
Separate Pervious Area (SPA, acres)	1.358	1.218	0.861	1.138	0.602	0.973	0.956							
RPA Treatment Type: Conveyance (C), Volume (V), or Permeable Pavement (PP)	C	C	C	C	C	C	C							

CALCULATED RESULTS (OUTPUT)

Total Calculated Area (ac, check against input)	3.880	3.480	2.460	3.250	1.720	2.780	1.460							
Directly Connected Impervious Area (DCIA, %)	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	34.5%							
Unconnected Impervious Area (UIA, %)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							
Receiving Pervious Area (RPA, %)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							
Separate Pervious Area (SPA, %)	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	65.5%							
A_R (RPA / UIA)	0.000	0.000	0.000	0.000	0.000	0.000	0.000							
I_a Check	1.000	1.000	1.000	1.000	1.000	1.000	1.000							
f / I for WQCV Event:	1.7	1.7	1.7	1.7	1.7	1.7	1.7							
f / I for 5-Year Event:	0.5	0.5	0.5	0.5	0.5	0.5	0.5							
f / I for 100-Year Event:	0.3	0.3	0.3	0.3	0.3	0.3	0.3							
f / I for Optional User Defined Storm CUHP:	0.31	0.31	0.31	0.31	0.31	0.31	0.31							
IRF for WQCV Event:	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
IRF for 5-Year Event:	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
IRF for 100-Year Event:	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
IRF for Optional User Defined Storm CUHP:	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
Total Site Imperviousness: I_{total}	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	34.5%							
Effective Imperviousness for WQCV Event:	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	34.5%							
Effective Imperviousness for 5-Year Event:	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	34.5%							
Effective Imperviousness for 100-Year Event:	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	34.5%							
Effective Imperviousness for Optional User Defined Storm CUHP:	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	34.5%							

LID / EFFECTIVE IMPERVIOUSNESS CREDITS

WQCV Event CREDIT: Reduce Detention By:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
This line only for 10-Year Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
100-Year Event CREDIT**: Reduce Detention By:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
User Defined CUHP CREDIT: Reduce Detention By:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							

Total Site Imperviousness:	**62.7%**
Total Site Effective Imperviousness for WQCV Event:	**62.7%**
Total Site Effective Imperviousness for 5-Year Event:	**62.7%**
Total Site Effective Imperviousness for 100-Year Event:	**62.7%**
Total Site Effective Imperviousness for Optional User Defined Storm CUHP:	**62.7%**

Notes:

* Use Green-Ampt average infiltration rate values from Table 3-3.

** Flood control detention volume credits based on empirical equations from Storage Chapter of USDCM.

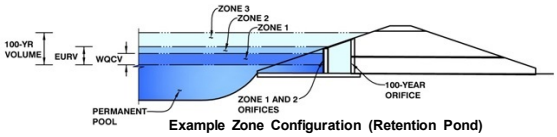
*** Method assumes that 1-hour rainfall depth is equivalent to 1-hour intensity for calculation purposed

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.03 (May 2020)

Project: **Aspen Meadows Filing No. 4 - Pond AM #4**

Basin ID: **Sand Creek**



Example Zone Configuration (Retention Pond)

Watershed Information

Selected BMP Type =	**EDB**	
Watershed Area =	19.06	acres
Watershed Length =	1,782	ft
Watershed Length to Centroid =	600	ft
Watershed Slope =	0.022	ft/ft
Watershed Imperviousness =	62.68%	percent
Percentage Hydrologic Soil Group A =	100.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	0.0%	percent
Target WQCV Drain Time =	40.0	hours
Location for 1-hr Rainfall Depths =	User Input	

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

			Optional User Overrides	
Water Quality Capture Volume (WQCV) =	0.390	acre-feet		acre-feet
Excess Urban Runoff Volume (EURV) =	1.467	acre-feet		acre-feet
2-yr Runoff Volume (P1 = 1.19 in.) =	1.079	acre-feet	1.19	inches
5-yr Runoff Volume (P1 = 1.5 in.) =	1.418	acre-feet	1.50	inches
10-yr Runoff Volume (P1 = 1.75 in.) =	1.690	acre-feet	1.75	inches
25-yr Runoff Volume (P1 = 2 in.) =	2.053	acre-feet	2.00	inches
50-yr Runoff Volume (P1 = 2.25 in.) =	2.410	acre-feet	2.25	inches
100-yr Runoff Volume (P1 = 2.52 in.) =	2.846	acre-feet	2.52	inches
500-yr Runoff Volume (P1 = 3.14 in.) =	3.800	acre-feet	3.14	inches
Approximate 2-yr Detention Volume =	0.953	acre-feet		
Approximate 5-yr Detention Volume =	1.247	acre-feet		
Approximate 10-yr Detention Volume =	1.506	acre-feet		
Approximate 25-yr Detention Volume =	1.816	acre-feet		
Approximate 50-yr Detention Volume =	2.005	acre-feet		
Approximate 100-yr Detention Volume =	2.205	acre-feet		

Define Zones and Basin Geometry

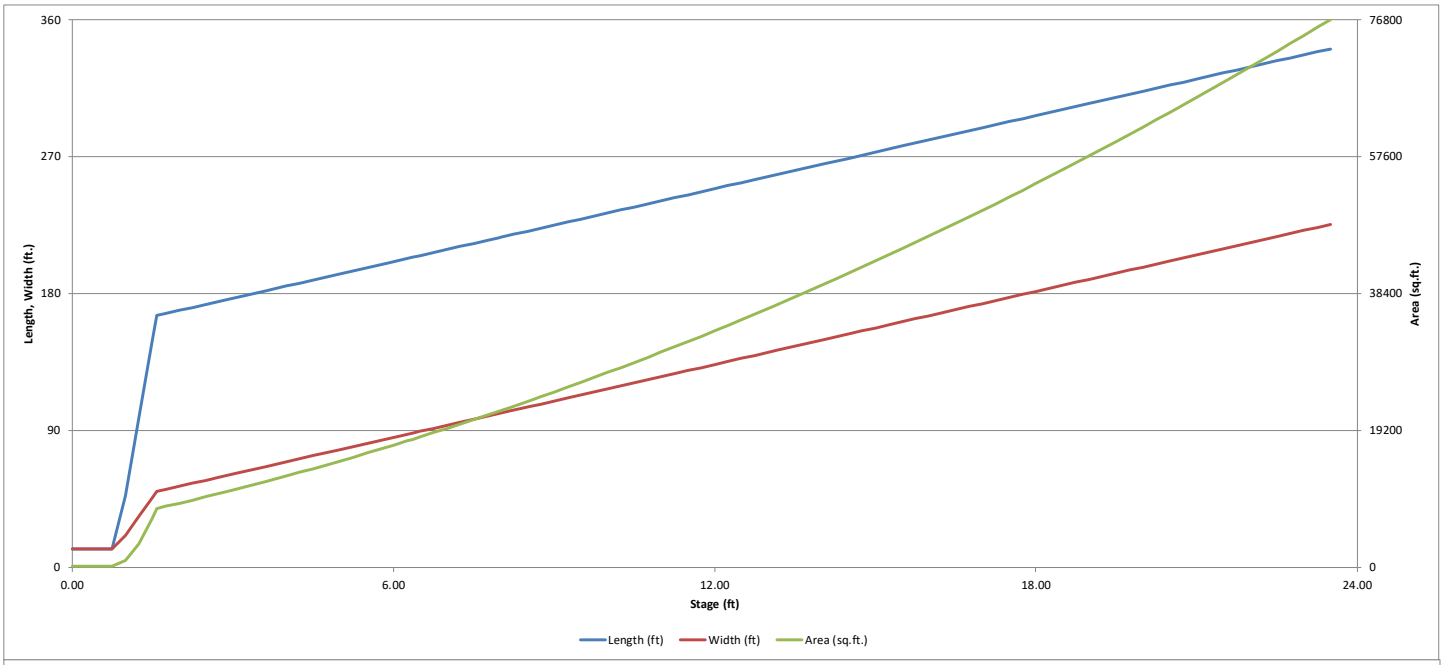
Zone 1 Volume (WQCV) =	0.390	acre-feet
Zone 2 Volume (EURV - Zone 1) =	1.078	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	0.738	acre-feet
Total Detention Basin Volume =	2.205	acre-feet
Initial Surcharge Volume (ISV) =	51	ft^3
Initial Surcharge Depth (ISD) =	0.33	ft
Total Available Detention Depth (H_{total}) =	8.00	ft
Depth of Trickle Channel (H_{TC}) =	0.50	ft
Slope of Trickle Channel (S_{TC}) =	0.005	ft/ft
Slopes of Main Basin Sides (S_{main}) =	4	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	4	
Initial Surcharge Area (A_{ISV}) =	154	ft^2
Surcharge Volume Length (L_{ISV}) =	12.4	ft
Surcharge Volume Width (W_{ISV}) =	12.4	ft
Depth of Basin Floor (H_{FLOOR}) =	0.75	ft
Length of Basin Floor (L_{FLOOR}) =	165.4	ft
Width of Basin Floor (W_{FLOOR}) =	49.9	ft
Area of Basin Floor (A_{FLOOR}) =	8,259	ft^2
Volume of Basin Floor (V_{FLOOR}) =	2,386	ft^3
Depth of Main Basin (H_{MAIN}) =	6.42	ft
Length of Main Basin (L_{MAIN}) =	216.8	ft
Width of Main Basin (W_{MAIN}) =	101.3	ft
Area of Main Basin (A_{MAIN}) =	21,957	ft^2
Volume of Main Basin (V_{MAIN}) =	93,481	ft^3
Calculated Total Basin Volume (V_{total}) =	**2.204**	acre-feet

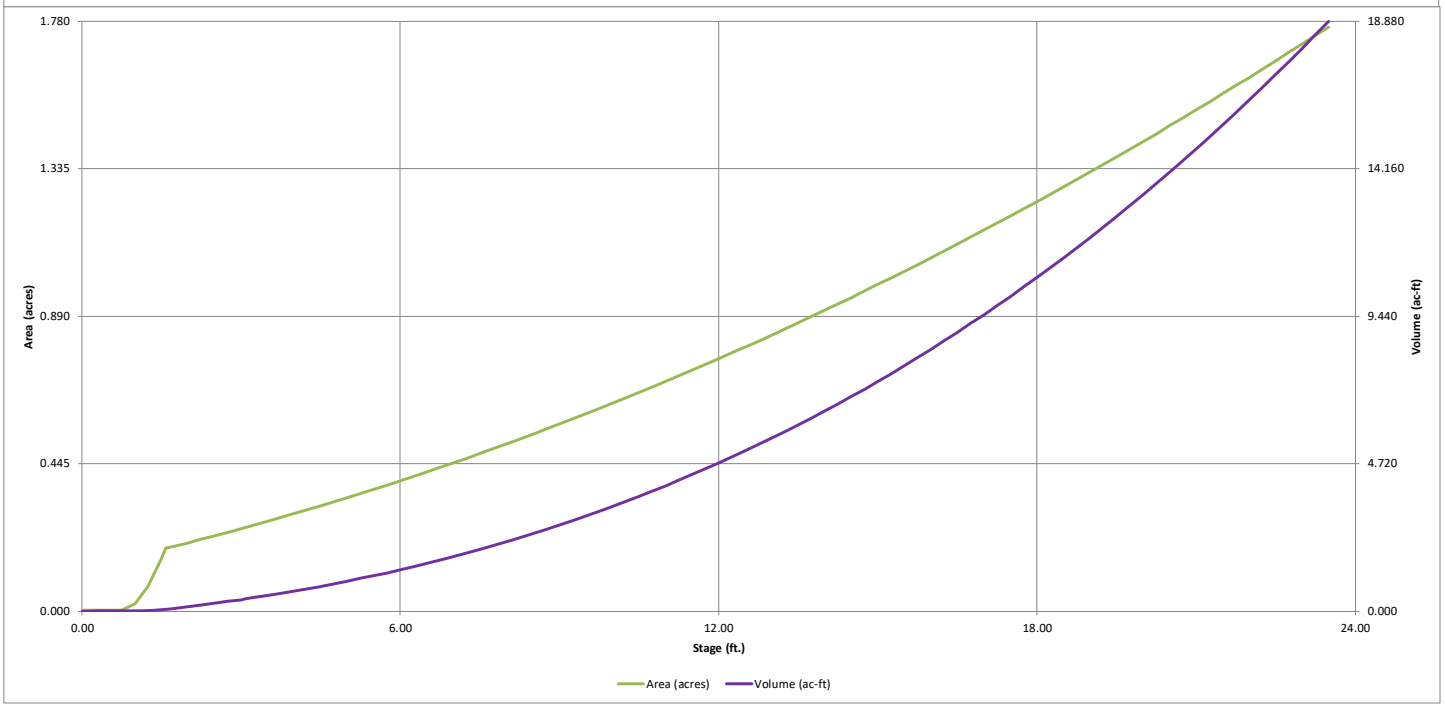
Depth Increment = 0.25 ft

Stage - Storage Description	Stage (ft)	Optional Override Stage (ft)	Length (ft)	Width (ft)	Area (ft^2)	Optional Override Area (ft^2)	Area (acre)	Volume (ft^3)	Volume (ac-ft)
Top of Micropool	0.00		12.4	12.4	154		0.004		
ISV	0.33		12.4	12.4	154		0.004	51	0.001
	0.50		12.4	12.4	154		0.004	77	0.002
	0.75		12.4	12.4	154		0.004	116	0.003
	1.00		47.1	20.9	986		0.023	217	0.005
	1.25		98.1	33.4	3,279		0.075	723	0.017
	1.50		149.1	45.9	6,848		0.157	1,963	0.045
Floor	1.58		165.4	49.9	8,259		0.190	2,566	0.059
	1.75		166.8	51.3	8,554		0.196	3,995	0.092
	2.00		168.8	53.3	8,994		0.206	6,188	0.142
	2.25		170.8	55.3	9,442		0.217	8,493	0.195
	2.50		172.8	57.3	9,898		0.227	10,910	0.250
	2.75		174.8	59.3	10,362		0.238	13,442	0.309
	3.00		176.8	61.3	10,834		0.249	16,092	0.369
Zone 1 (WQCV)	3.09		177.5	62.0	11,006		0.253	17,075	0.392
	3.25		178.8	63.3	11,315		0.260	18,860	0.433
	3.50		180.8	65.3	11,803		0.271	21,750	0.499
	3.75		182.8	67.3	12,299		0.282	24,762	0.568
	4.00		184.8	69.3	12,803		0.294	27,900	0.640
	4.25		186.8	71.3	13,315		0.306	31,164	0.715
	4.50		188.8	73.3	13,835		0.318	34,558	0.793
	4.75		190.8	75.3	14,363		0.330	38,083	0.874
	5.00		192.8	77.3	14,900		0.342	41,740	0.958
	5.25		194.8	79.3	15,444		0.355	45,533	1.045
	5.50		196.8	81.3	15,996		0.367	49,463	1.136
	5.75		198.8	83.3	16,556		0.380	53,532	1.229
	6.00		200.8	85.3	17,124		0.393	57,742	1.326
	6.25		202.8	87.3	17,700		0.406	62,094	1.425
Zone 2 (EURV)	6.36		203.7	88.2	17,956		0.412	64,056	1.471
	6.50		204.8	89.3	18,284		0.420	66,592	1.529
	6.75		206.8	91.3	18,877		0.433	71,237	1.635
	7.00		208.8	93.3	19,477		0.447	76,031	1.745
	7.25		210.8	95.3	20,085		0.461	80,976	1.859
	7.50		212.8	97.3	20,701		0.475	86,074	1.976
	7.75		214.8	99.3	21,325		0.490	91,328	2.097
Zone 3 (100-year)	7.97		216.5	101.0	21,881		0.502	96,080	2.206
	8.00		216.8	101.3	21,957		0.504	96,738	2.221
	8.25		218.8	103.3	22,597		0.519	102,307	2.349
	8.50		220.8	105.3	23,246		0.534	108,037	2.480
	8.75		222.8	107.3	23,902		0.549	113,930	2.615
	9.00		224.8	109.3	24,566		0.564	119,989	2.755
	9.25		226.8	111.3	25,238		0.579	126,214	2.897
	9.50		228.8	113.3	25,918		0.595	132,608	3.044
	9.75		230.8	115.3	26,606		0.611	139,174	3.195
	10.00		232.8	117.3	27,302		0.627	145,912	3.350
	10.25		234.8	119.3	28,007		0.643	152,825	3.508
	10.50		236.8	121.3	28,719		0.659	159,916	3.671
	10.75		238.8	123.3	29,439		0.676	167,186	3.838
	11.00		240.8	125.3	30,167		0.693	174,636	4.009
	11.25		242.8	127.3	30,903		0.709	182,270	4.184
	11.50		244.8	129.3	31,647		0.727	190,088	4.364
	11.75		246.8	131.3	32,399		0.744	198,094	4.548
	12.00		248.8	133.3	33,160		0.761	206,289	4.736
	12.25		250.8	135.3	33,928		0.779	214,674	4.928
	12.50		252.8	137.3	34,704		0.797	223,253	5.125
	12.75		254.8	139.3	35,488		0.815	232,027	5.327
	13.00		256.8	141.3	36,280		0.833	240,998	5.533
	13.25		258.8	143.3	37,080		0.851	250,168	5.743
	13.50		260.8	145.3	37,888		0.870	259,539	5.958
	13.75		262.8	147.3	38,705		0.889	269,113	6.178
	14.00		264.8	149.3	39,529		0.907	278,892	6.402
	14.25		266.8	151.3	40,361		0.927	288,878	6.632

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.03 (May 2020)



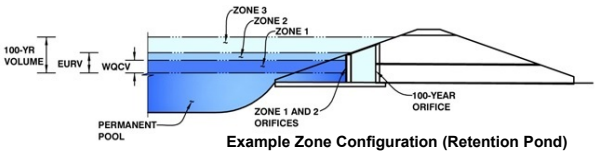


DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.03 (May 2020)

Project: Aspen Meadows Filing No. 4 - Pond AM #4

Basin ID: Sand Creek



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	3.09	0.390	Orifice Plate
Zone 2 (EURV)	6.36	1.078	Rectangular Orifice
Zone 3 (100-year)	7.97	0.738	Weir&Pipe (Restrict)
Total (all zones)		2.205	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth =	N/A	ft (distance below the filtration media surface)
Underdrain Orifice Diameter =	N/A	inches

Calculated Parameters for Underdrain

Underdrain Orifice Area =	N/A	ft^2
Underdrain Orifice Centroid =	N/A	feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Invert of Lowest Orifice =	0.00	ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate =	3.08	ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing =	12.30	inches
Orifice Plate: Orifice Area per Row =	1.25	sq. inches (diameter = 1-1/4 inches)

Calculated Parameters for Plate

WQ Orifice Area per Row =	8.681E-03	ft^2
Elliptical Half-Width =	N/A	feet
Elliptical Slot Centroid =	N/A	feet
Elliptical Slot Area =	N/A	ft^2

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	1.03	2.05					
Orifice Area (sq. inches)	1.25	1.25	1.25					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

	Zone 2 Rectangular	Not Selected	
Invert of Vertical Orifice =	3.08	N/A	ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice =	6.35	N/A	ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Height =	2.00	N/A	inches
Vertical Orifice Width =	1.89		inches

Calculated Parameters for Vertical Orifice

	Zone 2 Rectangular	Not Selected	
Vertical Orifice Area =	0.03	N/A	ft^2
Vertical Orifice Centroid =	0.08	N/A	feet

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir (and No Outlet Pipe)

	Zone 3 Weir	Not Selected	
Overflow Weir Front Edge Height, Ho =	6.35	N/A	ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length =	6.00	N/A	feet
Overflow Weir Grate Slope =	4.00	N/A	H:V
Horiz. Length of Weir Sides =	4.00	N/A	feet
Overflow Grate Open Area % =	70%	N/A	%, grate open area/total area
Debris Clogging % =	50%	N/A	%

Calculated Parameters for Overflow Weir

	Zone 3 Weir	Not Selected	
Height of Grate Upper Edge, H_t =	7.35	N/A	feet
Overflow Weir Slope Length =	4.12	N/A	feet
Grate Open Area / 100-yr Orifice Area =	24.00	N/A	
Overflow Grate Open Area w/o Debris =	17.32	N/A	ft^2
Overflow Grate Open Area w/ Debris =	8.66	N/A	ft^2

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

	Zone 3 Restrictor	Not Selected	
Depth to Invert of Outlet Pipe =	0.25	N/A	ft (distance below basin bottom at Stage = 0 ft)
Outlet Pipe Diameter =	18.00	N/A	inches
Restrictor Plate Height Above Pipe Invert =	7.70		inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate

	Zone 3 Restrictor	Not Selected	
Outlet Orifice Area =	0.72	N/A	ft^2
Outlet Orifice Centroid =	0.37	N/A	feet
Half-Central Angle of Restrictor Plate on Pipe =	1.43	N/A	radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage=	7.90	ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length =	24.00	feet
Spillway End Slopes =	4.00	H:V
Freeboard above Max Water Surface =	1.00	feet

Calculated Parameters for Spillway

Spillway Design Flow Depth=	0.71	feet
Stage at Top of Freeboard =	9.61	feet
Basin Area at Top of Freeboard =	0.60	acres
Basin Volume at Top of Freeboard =	3.11	acre-ft

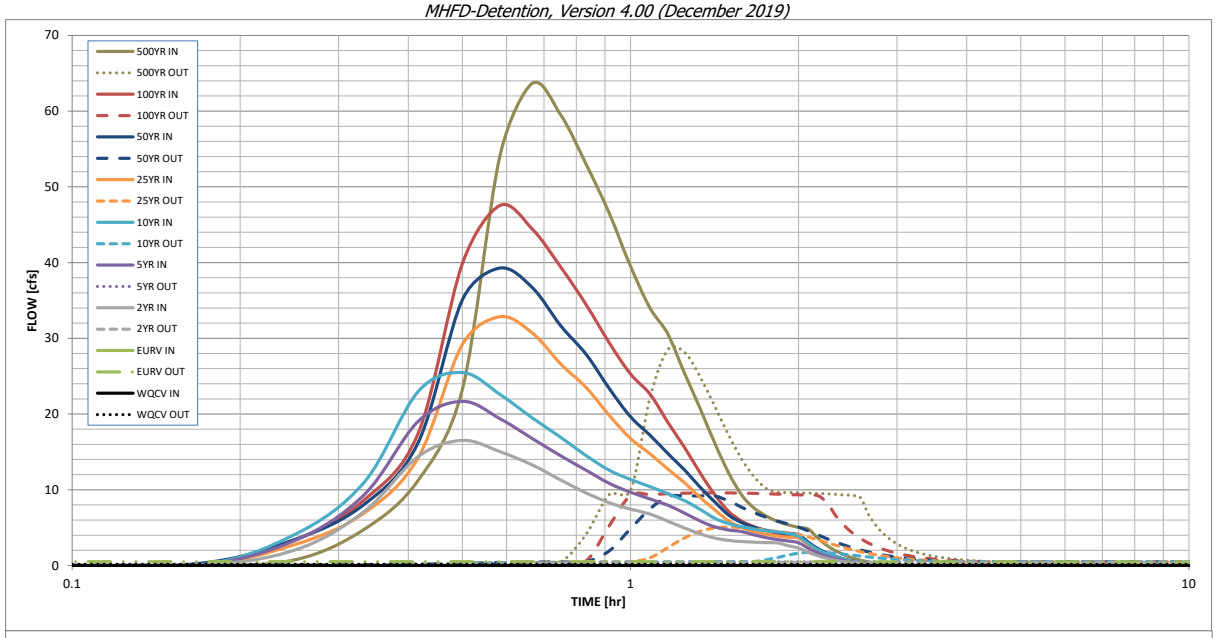
Routed Hydrograph Results

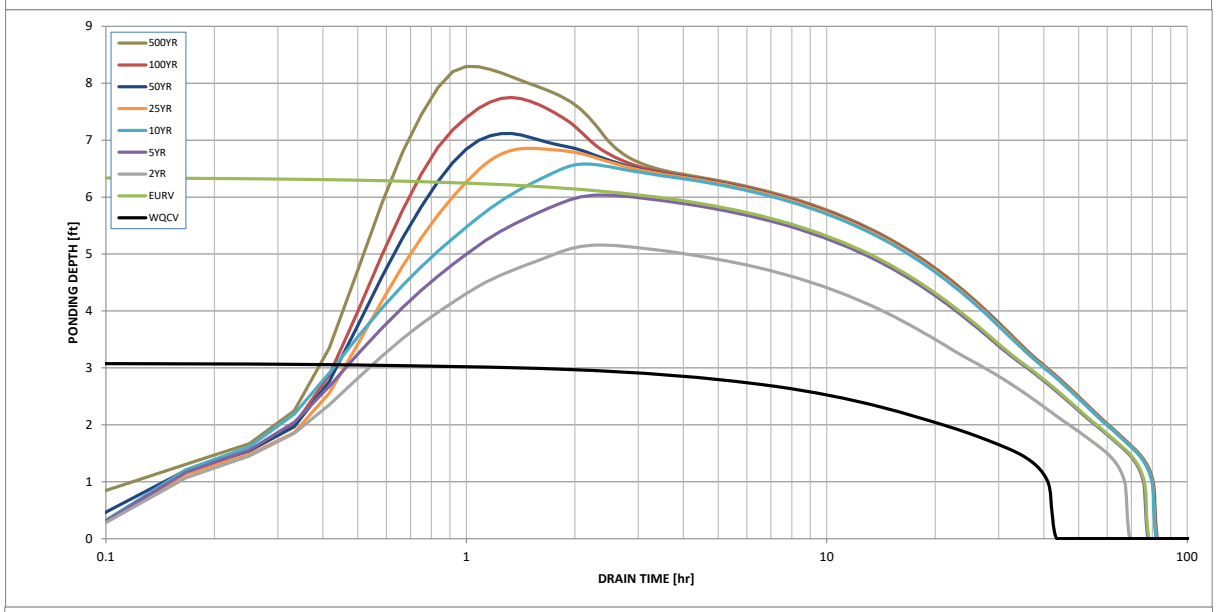
The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

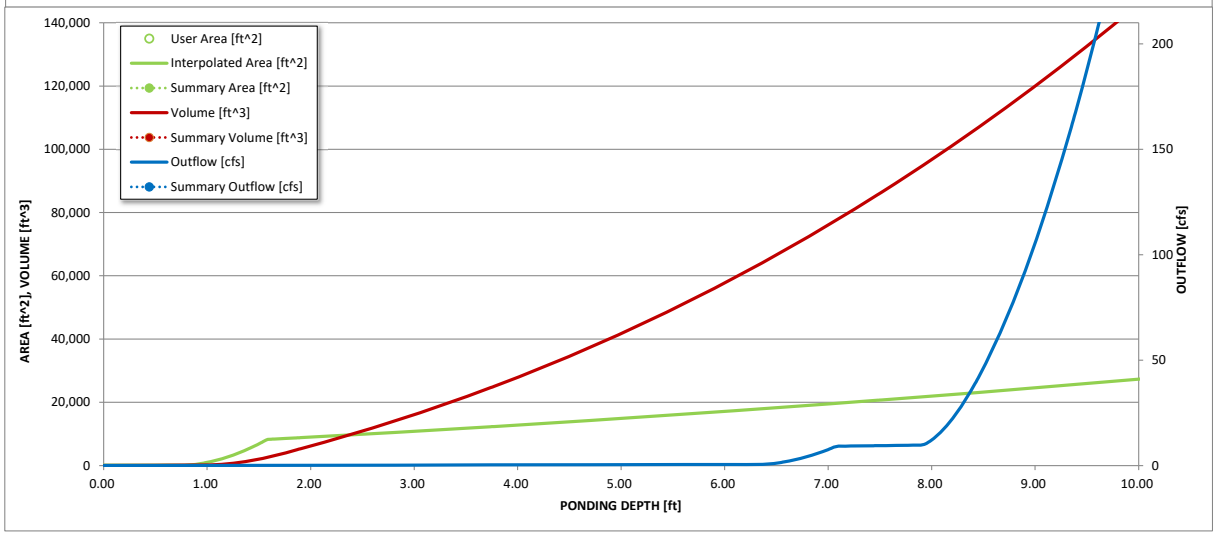
Design Storm Return Period =	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
One-Hour Rainfall Depth (in) =	N/A	N/A	1.19	1.50	1.75	2.00	2.25	2.52	3.14
CUHP Runoff Volume (acre-ft) =	0.390	1.467	1.079	1.418	1.690	2.053	2.410	2.846	3.800
Inflow Hydrograph Volume (acre-ft) =	N/A	N/A	1.079	1.418	1.690	2.053	2.410	2.846	3.800
CUHP Predevelopment Peak Q (cfs) =	N/A	N/A	0.1	0.2	0.3	3.2	6.4	10.4	18.9
OPTIONAL Override Predevelopment Peak Q (cfs) =	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre) =	N/A	N/A	0.01	0.01	0.02	0.17	0.34	0.55	0.99
Peak Inflow Q (cfs) =	N/A	N/A	16.5	21.7	25.5	32.8	39.3	47.5	63.7
Peak Outflow Q (cfs) =	0.2	0.5	0.4	0.5	1.7	5.1	9.2	9.6	28.5
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	2.0	5.0	1.6	1.4	0.9	1.5
Structure Controlling Flow =	Plate	Overflow Weir 1	Vertical Orifice 1	Vertical Orifice 1	Overflow Weir 1	Overflow Weir 1	Outlet Plate 1	Outlet Plate 1	Spillway
Max Velocity through Grate 1 (fps) =	N/A	0.00	N/A	N/A	0.1	0.3	0.5	0.5	0.5
Max Velocity through Grate 2 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours) =	40	69	62	69	72	71	69	68	64
Time to Drain 99% of Inflow Volume (hours) =	**41**	74	66	74	77	77	76	76	75
Maximum Ponding Depth (ft) =	3.09	6.36	5.16	6.03	6.58	6.85	7.11	7.75	8.29
Area at Maximum Ponding Depth (acres) =	0.25	0.41	0.35	0.39	0.42	0.44	0.45	0.49	0.52
Maximum Volume Stored (acre-ft) =	0.392	1.471	1.010	1.337	1.558	1.679	1.795	2.092	2.369

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.00 (December 2019)







Design Procedure Form: Extended Detention Basin (EDB)

UD-BMP (Version 3.07, March 2018)

Designer:	**Jesse Sullivan**
Company:	**Matrix Design Group**
Date:	**July 8, 2021**
Project:	**Trails at Aspen Ridge Filing No. 4 (Internal F6) - Forebay Sizing NE Detention Pond**
Location:	**El Paso County, Colorado**

1. Basin Storage Volume	
A) Effective Imperviousness of Tributary Area, I_a	I_a = 62.68 %
B) Tributary Area's Imperviousness Ratio ($i = I_a / 100$)	i = 0.627
C) Contributing Watershed Area	Area = 19.060 ac
D) For Watersheds Outside of the Denver Region, Depth of Average Runoff Producing Storm	d_6 = in
E) Design Concept (Select EURV when also designing for flood control)	Choose One: (●) Water Quality Capture Volume (WQCV) ( ) Excess Urban Runoff Volume (EURV)
F) Design Volume (WQCV) Based on 40-hour Drain Time ($V_{DESIGN} = (1.0 * (0.91 * i^3 - 1.19 * i^2 + 0.78 * i) / 12 * Area$)	V_{DESIGN}= 0.390 ac-ft
G) For Watersheds Outside of the Denver Region, Water Quality Capture Volume (WQCV) Design Volume ($V_{WQCV\ OTHER} = (d_6*(V_{DESIGN}/0.43))$	$V_{DESIGN\ OTHER}$= ac-ft
H) User Input of Water Quality Capture Volume (WQCV) Design Volume (Only if a different WQCV Design Volume is desired)	$V_{DESIGN\ USER}$= ac-ft
I) NRCS Hydrologic Soil Groups of Tributary Watershed	
i) Percentage of Watershed consisting of Type A Soils	HSG_A = %
ii) Percentage of Watershed consisting of Type B Soils	HSG_B = %
iii) Percentage of Watershed consisting of Type C/D Soils	$HSG_{C/D}$ = %
J) Excess Urban Runoff Volume (EURV) Design Volume For HSG A: $EURV_A = 1.68 * i^{1.28}$ For HSG B: $EURV_B = 1.36 * i^{1.08}$ For HSG C/D: $EURV_{C/D} = 1.20 * i^{1.08}$	$EURV_{DESIGN}$ = ac-f t
K) User Input of Excess Urban Runoff Volume (EURV) Design Volume (Only if a different EURV Design Volume is desired)	$EURV_{DESIGN\ USER}$= ac-f t
2. Basin Shape: Length to Width Ratio (A basin length to width ratio of at least 2:1 will improve TSS reduction.)	L : W = : 1
3. Basin Side Slopes	
A) Basin Maximum Side Slopes (Horizontal distance per unit vertical, 4:1 or flatter preferred)	Z = 4.00 ft / ft
4. Inlet	
A) Describe means of providing energy dissipation at concentrated inflow locations:	
5. Forebay	
A) Minimum Forebay Volume (V_{FMIN} = 3% of the WQCV)	V_{FMIN} = 0.012 ac-ft
B) Actual Forebay Volume	V_F = 0.012 ac-ft
C) Forebay Depth (D_F = 18 inch maximum)	D_F = 18.0 in
D) Forebay Discharge	
i) Undetained 100-year Peak Discharge	Q_{100} = 68.90 cfs
ii) Forebay Discharge Design Flow ($Q_F = 0.02 * Q_{100}$)	Q_F = 1.38 cfs
E) Forebay Discharge Design	Choose One: ( ) Berm With Pipe (●) Wall with Rect. Notch ( ) Wall with V-Notch Weir — **Flow too small for berm w/ pipe**
F) Discharge Pipe Size (minimum 8-inches)	Calculated D_P = in
G) Rectangular Notch Width	Calculated W_N = 6.3 in

Design Procedure Form: Extended Detention Basin (EDB)

Designer:	**Jesse Sullivan**
Company:	**Matrix Design Group**
Date:	**July 8, 2021**
Project:	**Trails at Aspen Ridge Filing No. 4 (Internal F6) - Forebay Sizing NE Detention Pond**
Location:	**El Paso County, Colorado**

6. Trickle Channel	
A) Type of Trickle Channel	Choose One: ○ Concrete ○ Soft Bottom
F) Slope of Trickle Channel	S = [ ] ft / ft
7. Micropool and Outlet Structure	
A) Depth of Micropool (2.5-feet minimum)	D_M = [ ] ft
B) Surface Area of Micropool (10 ft^2 minimum)	A_M = [ ] sq ft
C) Outlet Type	Choose One: ○ Orifice Plate ○ Other (Describe):
D) Smallest Dimension of Orifice Opening Based on Hydrograph Routing (Use UD-Detention)	$D_{orifice}$ = [ ] inches
E) Total Outlet Area	A_{ot} = [ ] square inches
8. Initial Surcharge Volume	
A) Depth of Initial Surcharge Volume (Minimum recommended depth is 4 inches)	D_{IS} = [ ] in
B) Minimum Initial Surcharge Volume (Minimum volume of 0.3% of the WQCV)	V_{IS} = 51 cu ft
C) Initial Surcharge Provided Above Micropool	V_s= [ ] cu ft
9. Trash Rack	
A) Water Quality Screen Open Area: $A_t = A_{ot} * 38.5*(e^{-0.095D})$	A_t = [ ] square inches
B) Type of Screen (If specifying an alternative to the materials recommended in the USDCM, indicate "other" and enter the ratio of the total open are to the total screen are for the material specified.)	
Other (Y/N): N	
C) Ratio of Total Open Area to Total Area (only for type 'Other')	User Ratio = [ ]
D) Total Water Quality Screen Area (based on screen type)	A_{total} = [ ] sq. in.
E) Depth of Design Volume (EURV or WQCV) (Based on design concept chosen under 1E)	H= [ ] feet
F) Height of Water Quality Screen (H_{TR})	H_{TR}= [ ] inches
G) Width of Water Quality Screen Opening ($W_{opening}$) (Minimum of 12 inches is recommended)	$W_{opening}$ = [ ] inches

Design Procedure Form: Extended Detention Basin (EDB)

Designer: Jesse Sullivan
Company: Matrix Design Group
Date: July 8, 2021
Project: Trails at Aspen Ridge Filing No. 4 (Internal F6) - Forebay Sizing NE Detention Pond
Location: El Paso County, Colorado

10. Overflow Embankment A) Describe embankment protection for 100-year and greater overtopping: B) Slope of Overflow Embankment (Horizontal distance per unit vertical, 4:1 or flatter preferred)	Ze = ____ ft / ft
11. Vegetation	Choose One ○ Irrigated ○ Not Irrigated
12. Access A) Describe Sediment Removal Procedures	

Notes:

Design Point	Total Water Quality Control Volume (Cu. Ft.)	Pond Name	Pond Drainage Area (Acres)	Pond Drainage Area Less Pond Footprint (Acres)	Forebay Location	Drainage area tributary to Forebay	Proportion of Total Drainage Area	Proportional WQCV Volume (Cu. Ft.)	Forebay Volume 3% of WQCV (Cu. Ft.)	Q100 to Forebay (cfs)	Forebay Outlet Sizing 2% of Q100 (cfs)	Forebay Slot Sizing (inches)
7	16988.4	Pond AM #4 (DP 7 & 8)	19.06	18.48	East	18.48	1.00	16988.40	510	68.9	1.4	6.3

	WQCV		Pond Footprint	
EDB Pond	0.390	Acre-Ft	0.58	Acres
Percent of WQCV for Forebay	3%	Between 5 and 20 impervious acres		
Impervious Percentage	62.68%			
	Impervious Acres	11.9	Acres	

Table EDB-4. EDB component criteria

	On-Site EDBs for Watersheds up to 1 Impervious Acre[1]	EDBs with Watersheds between 1 and 2 Impervious Acres[1]	EDBs with Watersheds up to 5 Impervious Acres	EDBs with Watersheds over 5 Impervious Acres	EDBs with Watersheds over 20 Impervious Acres
Forebay Release and Configuration	EDBs should not be used for watersheds with less than 1 impervious acre.	Release 2% of the undetained 100-year peak discharge by way of a wall/notch configuration	Release 2% of the undetained 100-year peak discharge by way of a wall/notch configuration	Release 2% of the undetained 100-year peak discharge by way of a wall/notch configuration	Release 2% of the undetained 100-year peak discharge by way of a wall/notch or berm/pipe[2] configuration
Minimum Forebay Volume		1% of the WQCV	2% of the WQCV	3% of the WQCV	3% of the WQCV
Maximum Forebay Depth		12 inches	18 inches	18 inches	30 inches
Trickle Channel Capacity		≥ the maximum possible forebay outlet capacity	≥ the maximum possible forebay outlet capacity	≥ the maximum possible forebay outlet capacity	≥ the maximum possible forebay outlet capacity
Micropool		Area ≥ 10 ft^2	Area ≥ 10 ft^2	Area ≥ 10 ft^2	Area ≥ 10 ft^2
Initial Surcharge Volume		Depth ≥ 4 inches	Depth ≥ 4 inches	Depth ≥ 4 in. Volume ≥ 0.3% WQCV	Depth ≥ 4 in. Volume ≥ 0.3% WQCV

[1] EDBs are not recommended for sites with less than 2 impervious acres. Consider a sand filter or rain garden.

[2] Round up to the first standard pipe size (minimum 8 inches).

Hydraulic Analysis Report

Project Data

Project Title:

Designer:

Project Date: Thursday, July 8, 2021

Project Units: U.S. Customary Units

Notes:

Channel Analysis: AM No 4 Outfall Swale - 1

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 15.5500 ft/ft

Side Slope 2 (Z2): 4.2600 ft/ft

Channel Width: 5.0000 ft

Longitudinal Slope: 0.0720 ft/ft

Manning's n: 0.0776

Flow: 9.6000 cfs

Result Parameters

Depth: 0.4436 ft

Area of Flow: 4.1666 ft^2

Wetted Perimeter: 13.8526 ft

Hydraulic Radius: 0.3008 ft

Average Velocity: 2.3040 ft/s

Top Width: 13.7870 ft

Froude Number: 0.7386

Critical Depth: 0.3771 ft

Critical Velocity: 2.9144 ft/s

Critical Slope: 0.1375 ft/ft

Critical Top Width: 12.47 ft

Calculated Max Shear Stress: 1.9928 lb/ft^2

Calculated Avg Shear Stress: 1.3514 lb/ft^2

Channel Lining Analysis: CLDA - 1

Notes:

Lining Input Parameters

Channel Lining Type: Riprap, Cobble, or Gravel

D50: 0.5 ft

Riprap Specific Weight: 165 lb/ft^3

Water Specific Weight: 62.4 lb/ft^3

Riprap Shape is Angular

Safety Factor: 1

Calculated Safety Factor: 1.00535

Lining Results

Angle of Repose: 41.15 degrees

Relative Flow Depth: 0.604427

Manning's n method: Bathurst

Manning's n: 0.0775979

Channel Bottom Shear Results

V*: 1.01408

Reynold's Number: 41663.1

Shield's Parameter: 0.0480706

shear stress on channel bottom: 1.99284 lb/ft^2

Permissible shear stress for channel bottom: 2.43512 lb/ft^2

channel bottom is stable

Stable D50: 0.411378 ft

Channel Side Shear Results

K1: 1

K2: 1

Kb: 0

shear stress on side of channel: 1.99284 lb/ft^2

Permissible shear stress for side of channel: 2.43512 lb/ft^2

Stable Side D50: 0.411378 lb/ft^2

side of channel is stable

Channel Lining Stability Results

the channel is stable

Channel Summary

Name of Selected Channel: AM No 4 Outfall Swale - 1

Channel Analysis: AM No 4 Outfall Swale - 2

Notes:

Input Parameters

Channel Type: Trapezoidal

Side Slope 1 (Z1): 16.2000 ft/ft

Side Slope 2 (Z2): 10.0000 ft/ft

Channel Width: 13.6200 ft

Longitudinal Slope: 0.0550 ft/ft

Manning's n: 0.0422

Flow: 9.6000 cfs

Result Parameters

Depth: 0.2173 ft

Area of Flow: 3.5776 ft^2

Wetted Perimeter: 19.3300 ft

Hydraulic Radius: 0.1851 ft

Average Velocity: 2.6833 ft/s

Top Width: 19.3125 ft

Froude Number: 1.0987

Critical Depth: 0.2303 ft

Critical Velocity: 2.5061 ft/s

Critical Slope: 0.0449 ft/ft

Critical Top Width: 19.65 ft

Calculated Max Shear Stress: 0.7457 lb/ft^2

Calculated Avg Shear Stress: 0.6352 lb/ft^2

Channel Lining Analysis: CLDA - 2

Notes:

Lining Input Parameters

Channel Lining Type: Vegetation

Specific Weight of Water: 62.4 lb/ft^3

Height of Vegetation: 0.333 ft

Vegetation Condition is good

Growth Form of Vegetation is mixed

Cf: 0.75

See HEC-15, Table 4.5 (default: 0.75 for Good cover factor and Mixed growth form)

soil is noncohesive

D75: 0.1

Safety Factor: 1

Lining Results

Cn: 0.165205

Permissible Soil Shear Stress: 0.04 lb/ft^2

Mean Boundary Shear Stress: 0.635198 lb/ft^2

Maximum Shear Stress on the Channel Bottom: 0.745671 lb/ft^2

Manning's n: 0.0421929

Soil Grain Roughness: 0.0177136

Effective Shear Stress: 0.0268071 lb/ft^2

Permissible Shear Stress on Vegetation: 0.907788 lb/ft^2

This value is compared with the maximum shear stress times the safety factor to determine lining stability

Channel Bottom Shear Results

channel bottom is stable

Channel Lining Stability Results

the channel is stable

Channel Summary

Name of Selected Channel: AM No 4 Outfall Swale - 2

Selected Profile: FHWA Profile (read-only)

Culvert Assessment Profiles

Culvert Assessment Profile Name: Standard (read-only)

Maximum Excavation Depth: 20 ft

Maximum Shallow Cover: 4 ft

Maximum Small Pipe Size: 36 in

Minimum Manned Entry Size: 48 in

APPENDIX B

STANDARD DESIGN CHARTS AND TABLES

2021 DRAINAGE, BRIDGE AND POND FEES
CITY OF COLORADO SPRINGS
March 9, 2021

Basin Name	DBPS Year	Drainage Fee/Acre	Bridge Fee/Acre	Pond Land Fee/Acre	Pond Facility Fee/Acre	Surcharge/ Acre
19th Street	1964	$4,338				
21st Street	1977	$6,621				
Bear Creek	1980	$4,261	$402			
Big Johnson, Crews	1991	$16,487	$1,355	$241		
Black Squirrel Creek	1989	$15,104		$3,739		
Camp Creek	1964	$2,443				
Cottonwood Creek[1] ,[2]	2019	$14,751	$1,216			$778
Douglas Creek	1981	$13,700	$306			
Dry Creek[3]	1966	$0				
Elkhorn Basin[4]	n/a	$0				
Fishers Canyon[5]	1991	$0				
Fountain Creek[6]	n/a	VAR				
Jimmy Camp Creek	2015	$8,584			$2,798	
Kettle Creek[7] Old Ranch Trib.	2001	$0				
Little Johnson	1988	$14,389		$1,227		
Mesa	1986	$11,516				
Middle Tributary	1987	$25,779		$1,121		
Miscellaneous[8]	n/a	$12,814				
Monument Branch[12]	1987	$0				
North Rockrimmon	1973	$6,622				
Park Vista (MDDP)	2004	$18,444				
Peterson Field	1984	$13,912	$641			
Pine Creek[9]	1988	$0				
Pope's Bluff	1976	$4,409	$755			
Pulpit Rock	1968	$7,302				
Sand Creek	2021	$18,841				
Shooks Run[10]	1994	$0				
Smith Creek[11]	2002	$0				
South Rockrimmon	1976	$5,177				
Southwest Area	1984	$14,718				
Spring Creek	1968	$11,420				
Templeton Gap	1977	$7,480	$83			
Windmill Gulch	1992	$15,709	$292	$3,055		

All Drainage, Bridge and Detention Pond Facilities Fees adjusted by 3.5% over 2020 by City Council Resolution No. 131-20 on December 8, 2020 to be effective on January 1, 2021. Land Fees are based on the Park Land Dedication Fee which is currently $76,602/acre (0% change for inflation in 2020).

---

[1] The 2021 Cottonwood Creek drainage fee consists of a capital improvement fee of $11,682 per acre and land fee of $3,069 per acre for a total of $14,751 per acre. These fees are adjusted annually using different procedures but are combined for collection purposes. **The surcharge fee of $778/ac is due in cash; credits for prior facility construction cannot be used to offset this fee,** which is deposited into a separate City fund known as the "Cottonwood Creek Surcharge" fund.

[2] The Wolf Ranch portion of the Cottonwood Creek Drainage Basin was approved as a "no fee" basin **as to Drainage Fees only** by City Council on August 28, 2018 by Resolution No. 96-18

[3] Dry Creek is a closed basin per City Council Resolution No.118-08 on June 24, 2008

[4] Elkhorn Basin is a closed basin per the Annexation Agreements for the area.

[5] Fishers Canyon is a closed basin per City Council Resolution No. 74-08 on April 22, 2008.

[6] Pursuant to the recommendation of the Subdivision Storm Drainage Board adopted at its meeting of September 15, 1977, there are exempted and excluded from the provisions of this part construction of the main Fountain Creek Channel from the confluence of Fountain Creek with Monument Creek northwest to the City limits. Land developments taking place adjacent to Fountain Creek shall remain responsible for dedicating rights of way necessary for the channelization of Fountain Creek, and the developers shall continue to pay to the City as a condition of subdivision plat approval the applicable drainage fees. Drainage fees are required in accordance with the appropriate basin study.

[7] Kettle Creek Old Ranch Tributary is a closed basin per City Council Resolution 139-02 on August 27, 2002.

[8] Miscellaneous fee is assessed on unstudied areas and the Roswell and Westside Basins.

[9] Pine Creek is a closed basin per City Council Resolution No.236-88 on December 13, 1988.

[10] Shooks Run is a closed basin pursuant to the recommendation of the Drainage Board, adopted at its meeting on October 15, 1963.

[11] Smith Creek is a closed basin per City Council Resolution 140-02 on August 27, 2002

[12] Monument Branch Basin is a closed basin per City Council Res. 177-10 on October 12, 2010

Table 6-6. Runoff Coefficients for Rational Method
(Source: UDFCD 2001)

Land Use or Surface Characteristics	Percent Impervious	Runoff Coefficients											
		2-year		5-year		10-year		25-year		50-year		100-year	
		HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D
Business													
Commercial Areas	95	0.79	0.80	0.81	0.82	0.83	0.84	0.85	0.87	0.87	0.88	0.88	0.89
Neighborhood Areas	70	0.45	0.49	0.49	0.53	0.53	0.57	0.58	0.62	0.60	0.65	0.62	0.68
Residential													
1/8 Acre or less	65	0.41	0.45	0.45	0.49	0.49	0.54	0.54	0.59	0.57	0.62	0.59	0.65
1/4 Acre	40	0.23	0.28	0.30	0.35	0.36	0.42	0.42	0.50	0.46	0.54	0.50	0.58
1/3 Acre	30	0.18	0.22	0.25	0.30	0.32	0.38	0.39	0.47	0.43	0.52	0.47	0.57
1/2 Acre	25	0.15	0.20	0.22	0.28	0.30	0.36	0.37	0.46	0.41	0.51	0.46	0.56
1 Acre	20	0.12	0.17	0.20	0.26	0.27	0.34	0.35	0.44	0.40	0.50	0.44	0.55
Industrial													
Light Areas	80	0.57	0.60	0.59	0.63	0.63	0.66	0.66	0.70	0.68	0.72	0.70	0.74
Heavy Areas	90	0.71	0.73	0.73	0.75	0.75	0.77	0.78	0.80	0.80	0.82	0.81	0.83
Parks and Cemeteries	7	0.05	0.09	0.12	0.19	0.20	0.29	0.30	0.40	0.34	0.46	0.39	0.52
Playgrounds	13	0.07	0.13	0.16	0.23	0.24	0.31	0.32	0.42	0.37	0.48	0.41	0.54
Railroad Yard Areas	40	0.23	0.28	0.30	0.35	0.36	0.42	0.42	0.50	0.46	0.54	0.50	0.58
Undeveloped Areas													
Historic Flow Analysis-- Greenbelts, Agriculture	2	0.03	0.05	0.09	0.16	0.17	0.26	0.26	0.38	0.31	0.45	0.36	0.51
Pasture/Meadow	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50
Forest	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50
Exposed Rock	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Offsite Flow Analysis (when landuse is undefined)	45	0.26	0.31	0.32	0.37	0.38	0.44	0.44	0.51	0.48	0.55	0.51	0.59
Streets													
Paved	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Gravel	80	0.57	0.60	0.59	0.63	0.63	0.66	0.66	0.70	0.68	0.72	0.70	0.74
Drive and Walks	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Roofs	90	0.71	0.73	0.73	0.75	0.75	0.77	0.78	0.80	0.80	0.82	0.81	0.83
Lawns	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50

3.2 Time of Concentration

One of the basic assumptions underlying the Rational Method is that runoff is a function of the average rainfall rate during the time required for water to flow from the hydraulically most remote part of the drainage area under consideration to the design point. However, in practice, the time of concentration can be an empirical value that results in reasonable and acceptable peak flow calculations.

For urban areas, the time of concentration (t_c) consists of an initial time or overland flow time (t_i) plus the travel time (t_t) in the storm sewer, paved gutter, roadside drainage ditch, or drainage channel. For non-urban areas, the time of concentration consists of an overland flow time (t_i) plus the time of travel in a concentrated form, such as a swale or drainageway. The travel portion (t_t) of the time of concentration can be estimated from the hydraulic properties of the storm sewer, gutter, swale, ditch, or drainageway. Initial time, on the other hand, will vary with surface slope, depression storage, surface cover, antecedent rainfall, and infiltration capacity of the soil, as well as distance of surface flow. The time of concentration is represented by Equation 6-7 for both urban and non-urban areas.

APPENDIX C

REPORT REFERENCES

MASTER DEVELOPMENT DRAINAGE PLAN
FOR
WOODMEN HEIGHTS MASTER PLAN

JUNE 2004

PREPARED FOR:

MARKSHEFFEL – WOODMEN INVESTMENTS, LLC
102 E. PIKES PEAK AVENUE
COLORADO SPRINGS CO 80903
(719) 633-2700

PREPARED BY:

CLASSIC CONSULTING ENGINEERS & SURVEYORS, LLC
6385 CORPORATE DRIVE, SUITE 304
COLORADO SPRINGS, CO 80919
(719) 785-0790

2077.00

central portion of the developed flows will be discharged directly into the proposed improved Sand Creek. The runoff collected from this portion of the site shall be conveyed by 36" RCP storm sewer and will discharge developed runoff of Q_5= 21cfs, Q_{100}= 44cfs (Pipe 20), while the lower third of the parcel will be conveyed within a proposed 36" RCP Q_5= 24cfs, Q_{100}= 50cfs (Pipe 21), where it will be directed under the proposed bridge at Marksheffel Road and Sand Creek.

Parcel 16 (Q_5= 1.5cfs, Q_{100}= 14.1cfs) contains 15.1 acres of the Sand Creek Channel. Flows generated within the channel will combine with runoff from Parcels 14 and 15. These combined flows will continue within the channel towards the proposed On-line Detention Facility No. 3. Channel improvements will be required with the development of the adjacent sites and will be discussed in depth within this report.

Parcel 17 (Q_5= 22cfs, Q_{100}= 46cfs) contains 13.7 acres of multi-family development with associated streets, parking and structures. Developed flows will be routed westerly via a proposed 36" storm system (Pipe 24). Runoff from the eastern-half of Basin OS-2 (Q_5= 108cfs, Q_{100}= 305cfs) – (Pipe 25) is to be collected by a 66" RCP and combined with runoff from Parcel 17. The combined runoff (Q_5= 111cfs, Q_{100}= 312cfs) – (Pipe 26) will be conveyed southerly towards the proposed On-line Detention Facility No. 3.

Parcel 18 (Q_5= 22cfs, Q_{100}= 54cfs) consists of 23.6 acres of proposed public school development. Runoff from a portion of this site will be conveyed by a proposed 24" storm system, where it will combine with runoff from Parcel 17 and OS-2 (Pipe 27). Flows totaling Q_5= 112cfs, Q_{100}= 314cfs will continue south within a proposed 66" RCP towards proposed On-line Detention Facility No. 3. The remainder of the runoff collected from the basin will be conveyed within a 36" RCP storm drain and discharged into the Sand Creek Drainage Channel (Q_5= 21cfs, Q_{100}= 43cfs) - (Pipe 23).

Parcel 19 (Q_5= 0.6cfs, Q_{100}= 6.2cfs) will consist of 6.70 acres of a proposed public park site. Anticipated runoff from this site will be conveyed within a proposed 18" storm system (Pipe 29). Runoff collected from this site will discharge into proposed On-line

Detention Facility No. 3. The 18" RCP pipe may or may not be warranted at the time of final design, however, this pipe stub is provided for calculation purposes anyway.

Basin OS-5 (Q_5= 72, Q_{100}= 340) 323.00 acres, consists of a large lot residential neighborhood within the main stem of the Sand Creek Basin. Per the Sand Creek Drainage Basin Planning Study, Q_{100}=340cfs is entering Parcel 20 via existing 42" CMP storm culverts under Mustang Road. The DBPS calls for replacement of the 42" CMP with twin 60" CMP culverts. DBPS Segment 150-2 describes the improvements for a rip rap channel. This option is an alternative to an underground 72" storm system (Pipe 30). A separate Final Drainage Report for this parcel will make the determination for the ultimate drainage system. Channel improvements and the underground pipe system will be sized to handle existing flows from OS-5. Land use east of the Woodmen Heights boundary currently includes developed 5-acre residential properties. Any future change in land use that will increase runoff will require on-site detention to maintain anticipated release rates.

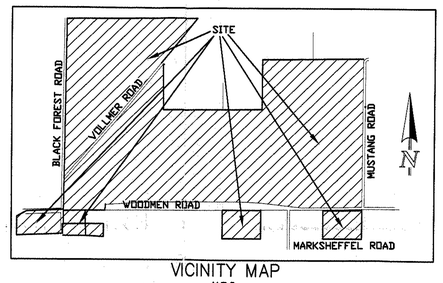
Parcel 20 (Q_5= 28cfs, Q_{100}= 58cfs) contains 17.3 acres of proposed major public assembly. This parcel will contain associated streets and structures. Developed flows from this parcel will be collected within proposed 36" and combine with runoff from OS-5 and a small portion of Parcel 15 (Pipe 31). These combined flows of Q_5= 106cfs, Q_{100}= 418cfs will be directed south within a proposed 72" RCP (Pipe 32).

Parcel 21 (Q_5= 82cfs, Q_{100}= 170cfs) contains 50.4 acres proposed for major public assembly development. The parcel will contain associated streets, parking, and structures. Runoff from the northern portion of the parcel (25.2 acres) will be collected within a proposed 42" RCP (Q_5= 41cfs, Q_{100}= 85cfs) - (Pipe 35). The collected runoff combines with flows from Parcels OS-5, 15, and 20 within a proposed 72" RCP. Combining for total runoff of Q_5= 141cfs, Q_{100}= 489cfs, which is to be conveyed within a proposed 78" RCP west to Sand Creek (Pipe 36).

DEVELOPED CONDITIONS
WOODMEN HEIGHTS
MASTER DEVELOPMENT DRAINAGE PLAN
JUNE, 2004

PIPE RUN SUMMARY

0 36" RCP @ 1.00%	5A 72" RCP @ 1.00%	10 48" RCP @ 1.00%	17 72" RCP @ 1.00%	25 66" RCP @ 1.00%	33 36" RCP @ 1.00%	41 60" RCP @ 1.00%
1 18" RCP @ 1.00%	6 48" RCP @ 1.00%	11 48" RCP @ 1.00%	18 48" RCP @ 1.00%	26 66" RCP @ 1.00%	34 78" RCP @ 1.00%	42 42" RCP @ 1.00%
2 36" RCP @ 1.00%	7 42" RCP @ 1.00%	12 30" RCP @ 1.00%	19 30" RCP @ 1.00%	27 24" RCP @ 1.00%	35 42" RCP @ 1.00%	43 36" RCP @ 1.00%
3 54" RCP @ 1.00%	7A 78" RCP @ 1.00%	12A 48" RCP @ 1.00%	20 36" RCP @ 1.00%	28 66" RCP @ 1.00%	36 78" RCP @ 1.00%	44 54" RCP @ 1.00%
3A 54" RCP @ 1.00%	8 42" RCP @ 1.00%	13 36" RCP @ 1.00%	21 36" RCP @ 1.00%	29 18" RCP @ 1.00%	37 42" RCP @ 1.00%	45 54" RCP @ 1.00%
3B 66" RCP @ 1.00%	8A 66" RCP @ 1.00%	14 66" RCP @ 1.00%	22 30" RCP @ 1.00%	30 72" RCP @ 1.00%	38 84" RCP @ 1.00%	
4 66" RCP @ 1.00%	8B 72" RCP @ 1.00%	15 66" RCP @ 1.00%	23 36" RCP @ 1.00%	31 36" RCP @ 1.00%	39 42" RCP @ 1.00%	
5 42" RCP @ 1.00%	9 42" RCP @ 1.00%	16 48" RCP @ 1.00%	24 36" RCP @ 1.00%	32 72" RCP @ 1.00%	40 48" RCP @ 1.00%	



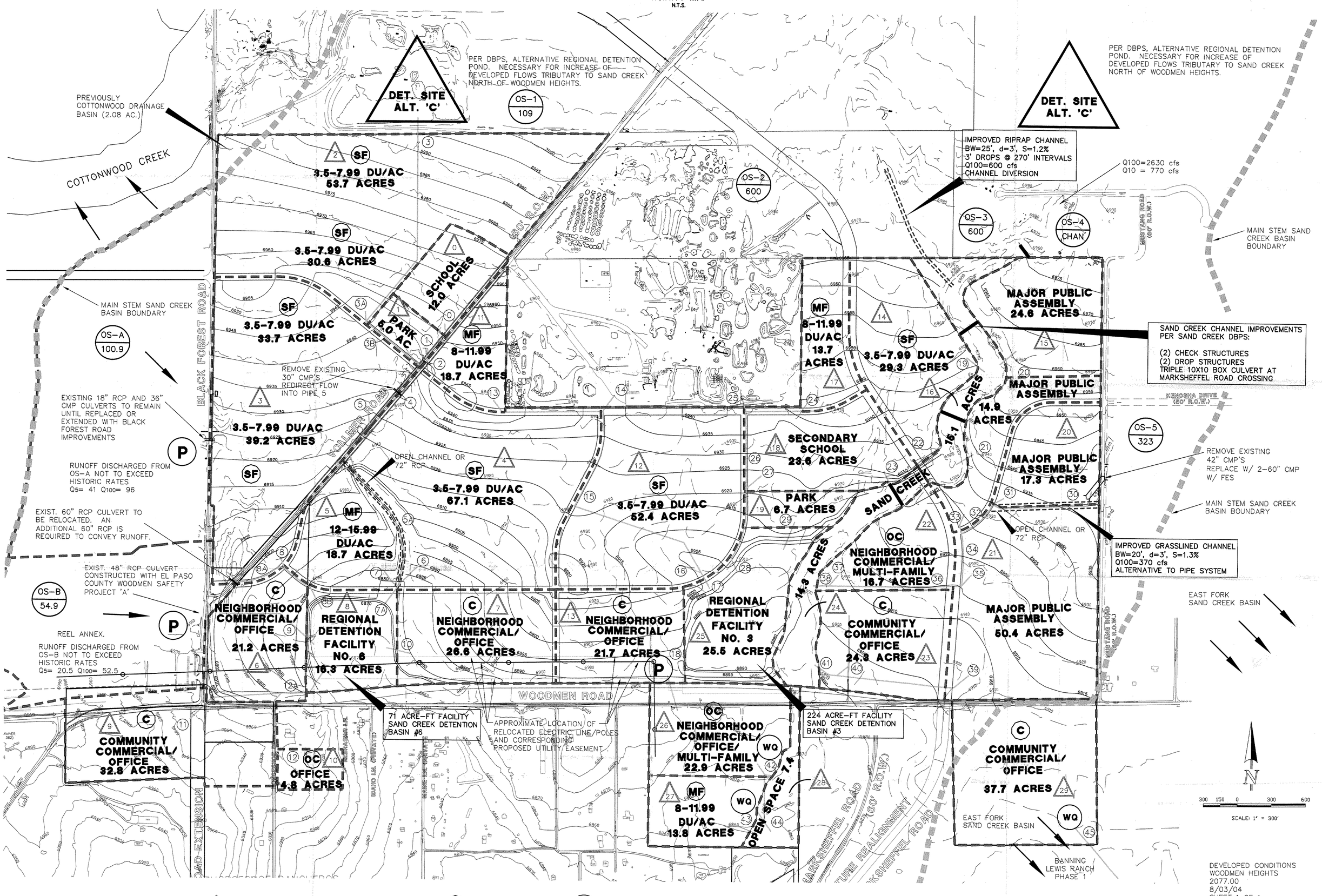
VICINITY MAP
N.T.S.

PARCEL RUNOFF SUMMARY

0 Q5 = 19 CFS Q100 = 40 CFS	7 Q5 = 64 CFS Q100 = 116 CFS	14 Q5 = 22 CFS Q100 = 51 CFS	21 Q5 = 82 CFS Q100 = 170 CFS	28 Q5 = 1.0 CFS Q100 = 8.7 CFS	
1 Q5 = 1.0 CFS Q100 = 1.5 CFS	8 Q5 = 5.5 CFS Q100 = 20 CFS	15 Q5 = 66 CFS Q100 = 138 CFS	22 Q5 = 40 CFS Q100 = 73 CFS	29 Q5 = 90 CFS Q100 = 164 CFS	
2 Q5 = 64 CFS Q100 = 176 CFS	9 Q5 = 64 CFS Q100 = 116 CFS	16 Q5 = 1.5 CFS Q100 = 14.1 CFS	23 Q5 = 59 CFS Q100 = 106 CFS		
3 Q5 = 56 CFS Q100 = 151 CFS	10 Q5 = 11.5 CFS Q100 = 21 CFS	17 Q5 = 22 CFS Q100 = 46 CFS	24 Q5 = 1.5 CFS Q100 = 13.3 CFS		
4 Q5 = 51 CFS Q100 = 140 CFS	11 Q5 = 21 CFS Q100 = 43 CFS	18 Q5 = 22 CFS Q100 = 54 CFS	25 Q5 = 8.6 CFS Q100 = 32 CFS		
5 Q5 = 38 CFS Q100 = 74 CFS	12 Q5 = 40 CFS Q100 = 110 CFS	19 Q5 = 0.6 CFS Q100 = 9.2 CFS	26 Q5 = 55 CFS Q100 = 100 CFS		
6 Q5 = 51 CFS Q100 = 92 CFS	13 Q5 = 52 CFS Q100 = 94 CFS	20 Q5 = 28 CFS Q100 = 58 CFS	27 Q5 = 24 CFS Q100 = 53 CFS		

OFFSITE RUNOFF SUMMARY

OS-A Q5 = 41 CFS Q100 = 96 CFS	OS-B Q5 = 20.5 CFS Q100 = 52.5 CFS	OS-1 Q5 = 65 CFS Q100 = 163 CFS	OS-2 Q5 = 216 CFS Q100 = 610 CFS	OS-3 Q5 = 216 CFS Q100 = 610 CFS	OS-4 Q5 = 809 CFS Q100 = 2286 CFS
OS-5 Q5 = 72 CFS Q100 = 340 CFS					



6880 PROPOSED INDEX CONTOUR
EXIST. INDEX CONTOUR
4 PARCEL DESIGNATION
36 PIPE ROUTING
STORM SEWER PIPE
NATURAL CHANNEL
C PROPOSED LAND USE
OS-3 600 OFFSITE DRAINAGE BASIN
P PROPOSED POND
WQ PROPOSED WATER QUALITY POND
BASIN/PARCEL BOUNDARY
BASIN/PARCEL BOUNDARY

DEVELOPED CONDITIONS
WOODMEN HEIGHTS
2077.00
8/03/04
SHEET 1 OF 1

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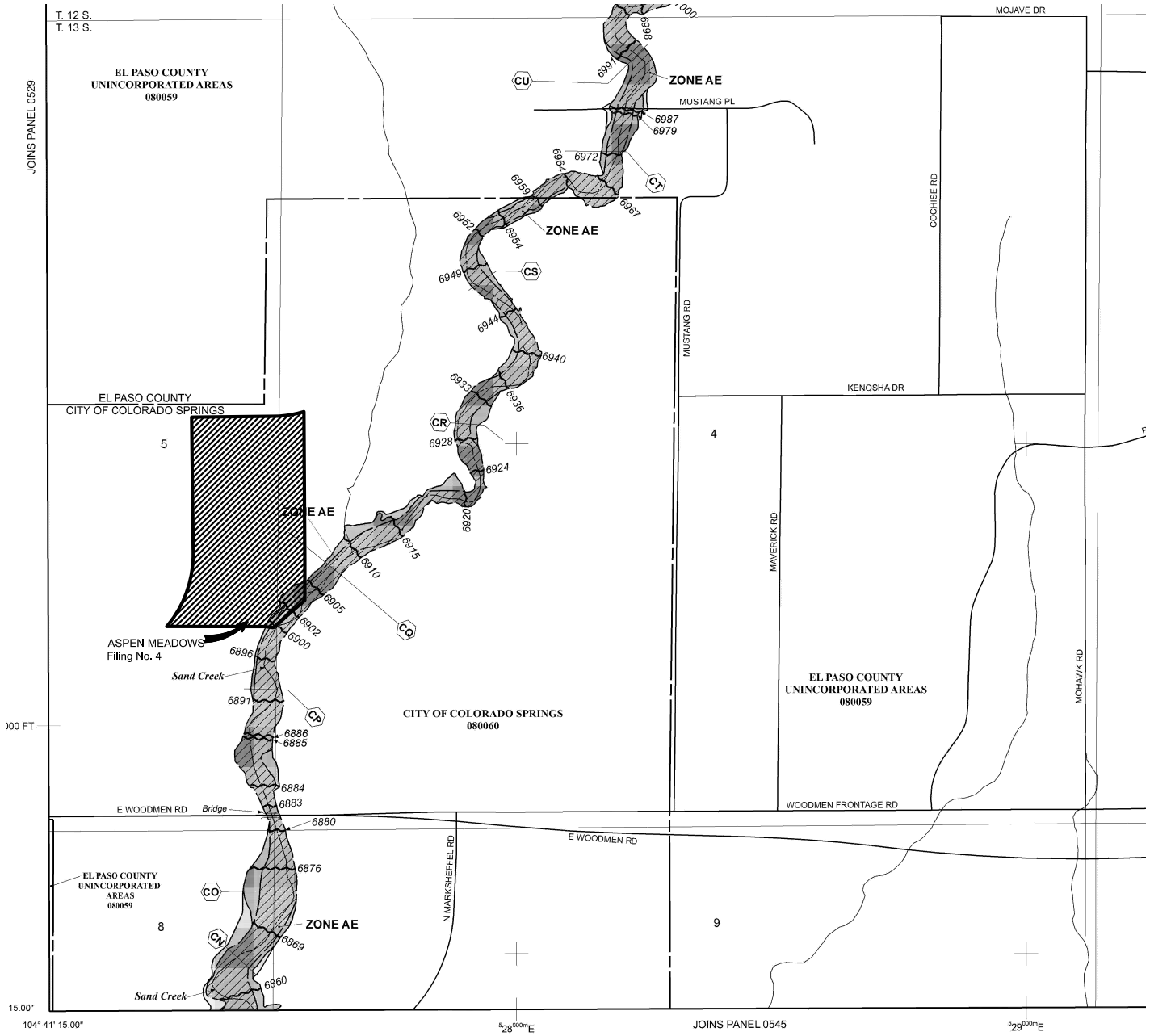
FIRMETTE



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 12 SOUTH, RANGE 65 WEST, AND TOWNSHIP 13 SOUTH, RANGE 65 WEST.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 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

USDA NRCS WEB SOIL SURVEY REPORT

United States Department of Agriculture

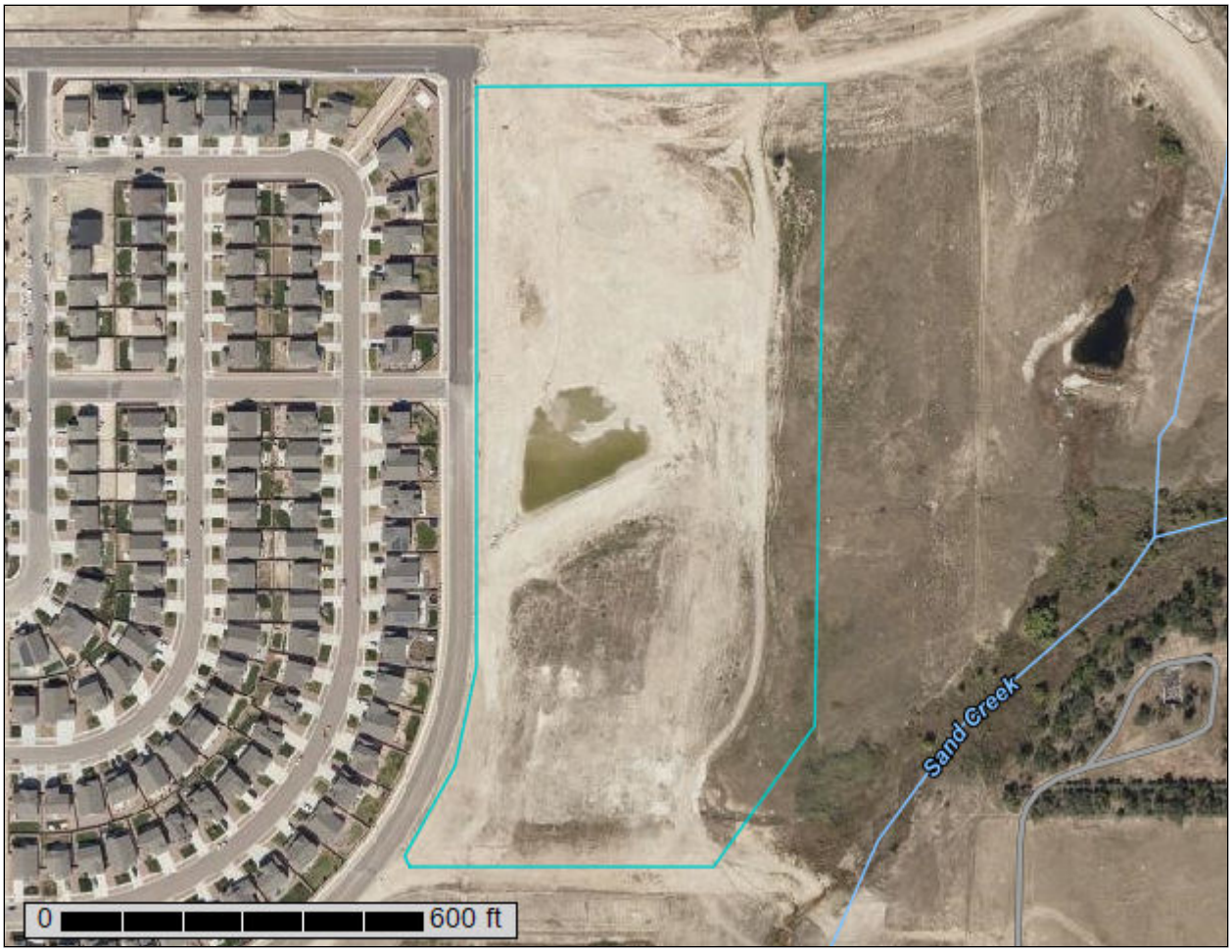
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

El Paso County Area, Colorado



July 2, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:2,310 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

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

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 18, Jun 5, 2020

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—Sep 23, 2018

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	3.5	20.8%
9	Blakeland-Fluvaquentic Haplaquolls	13.1	78.2%
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	0.2	1.0%
Totals for Area of Interest		**16.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

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: Hills, flats
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 capacity: 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

Pleasant

Percent of map unit: 1 percent

Landform: Depressions
Hydric soil rating: Yes

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

9—Blakeland-Fluvaquentic Haplaquolls

Map Unit Setting
National map unit symbol: 36b6
Elevation: 3,500 to 5,800 feet
Mean annual precipitation: 13 to 17 inches
Mean annual air temperature: 46 to 55 degrees F
Frost-free period: 110 to 165 days
Farmland classification: Not prime farmland

Map Unit Composition
Blakeland and similar soils: 60 percent
Fluvaquentic haplaquolls and similar soils: 38 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blakeland

Setting
Landform: Hills, flats
Landform position (three-dimensional): Side slope, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium derived from arkose and/or eolian deposits derived from arkose

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 capacity: 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

Description of Fluvaquentic Haplaquolls

Setting

Landform: Swales
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 12 inches: variable

Properties and qualities

Slope: 1 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 to 24 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Interpretive groups

Land capability classification (irrigated): 6w
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: D
Hydric soil rating: Yes

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

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, flood plains, fan terraces
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 capacity: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XB215CO - Gravelly Foothill
Hydric soil rating: No

Minor Components

Pleasant

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

Other soils

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

Fluvaquentic haplaquolls

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

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

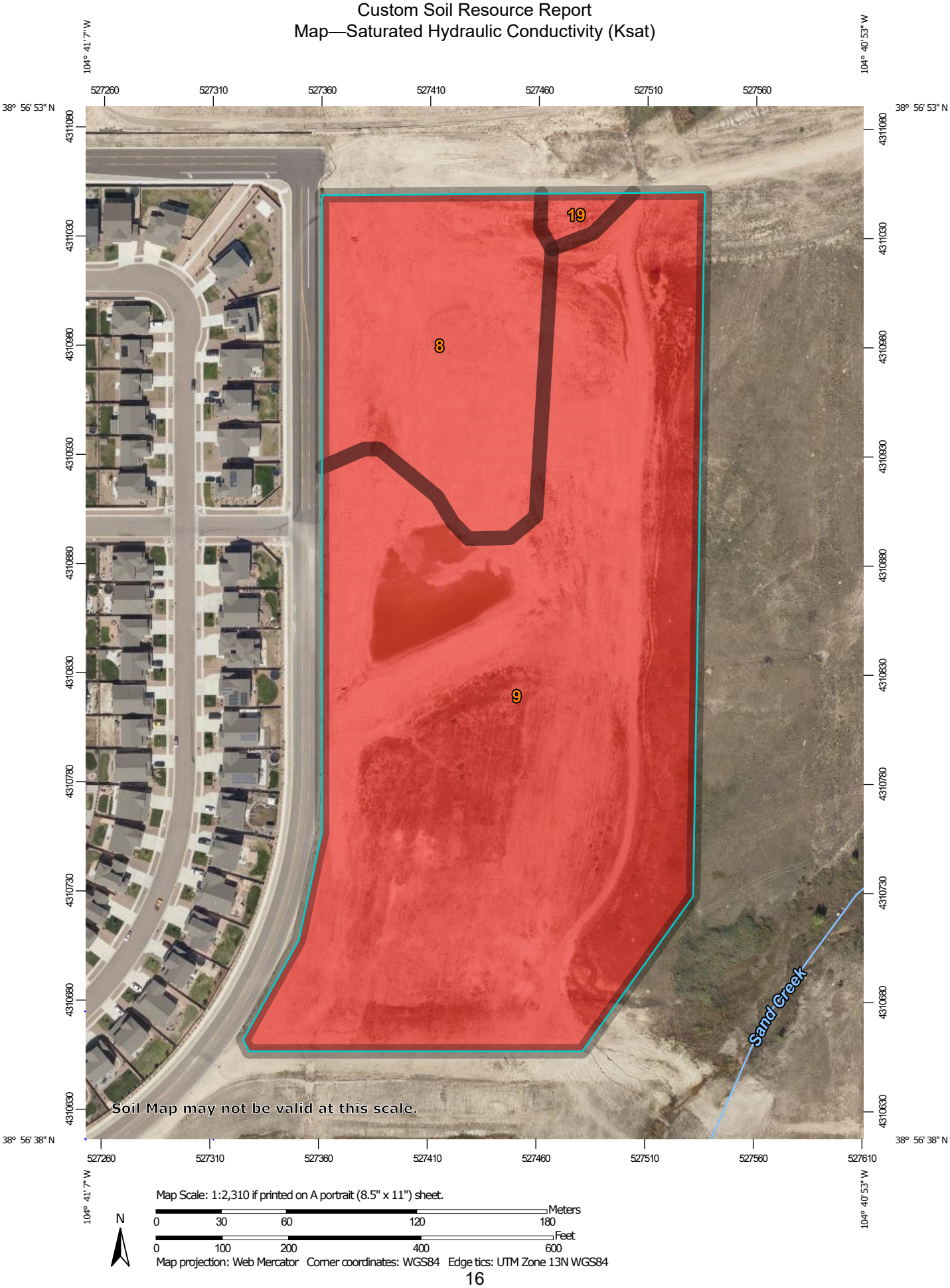
Saturated Hydraulic Conductivity (Ksat)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Map—Saturated Hydraulic Conductivity (Ksat)



Map Scale: 1:2,310 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

= 92.0000

Not rated or not available

Soil Rating Lines

= 92.0000

Not rated or not available

Soil Rating Points

= 92.0000

Not rated or not available

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 18, Jun 5, 2020

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—Sep 23, 2018

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.

Table—Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	92.0000	3.5	20.8%
9	Blakeland-Fluvaquentic Haplaquolls	92.0000	13.1	78.2%
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	92.0000	0.2	1.0%
Totals for Area of Interest			**16.8**	**100.0%**

Rating Options—Saturated Hydraulic Conductivity (Ksat)

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

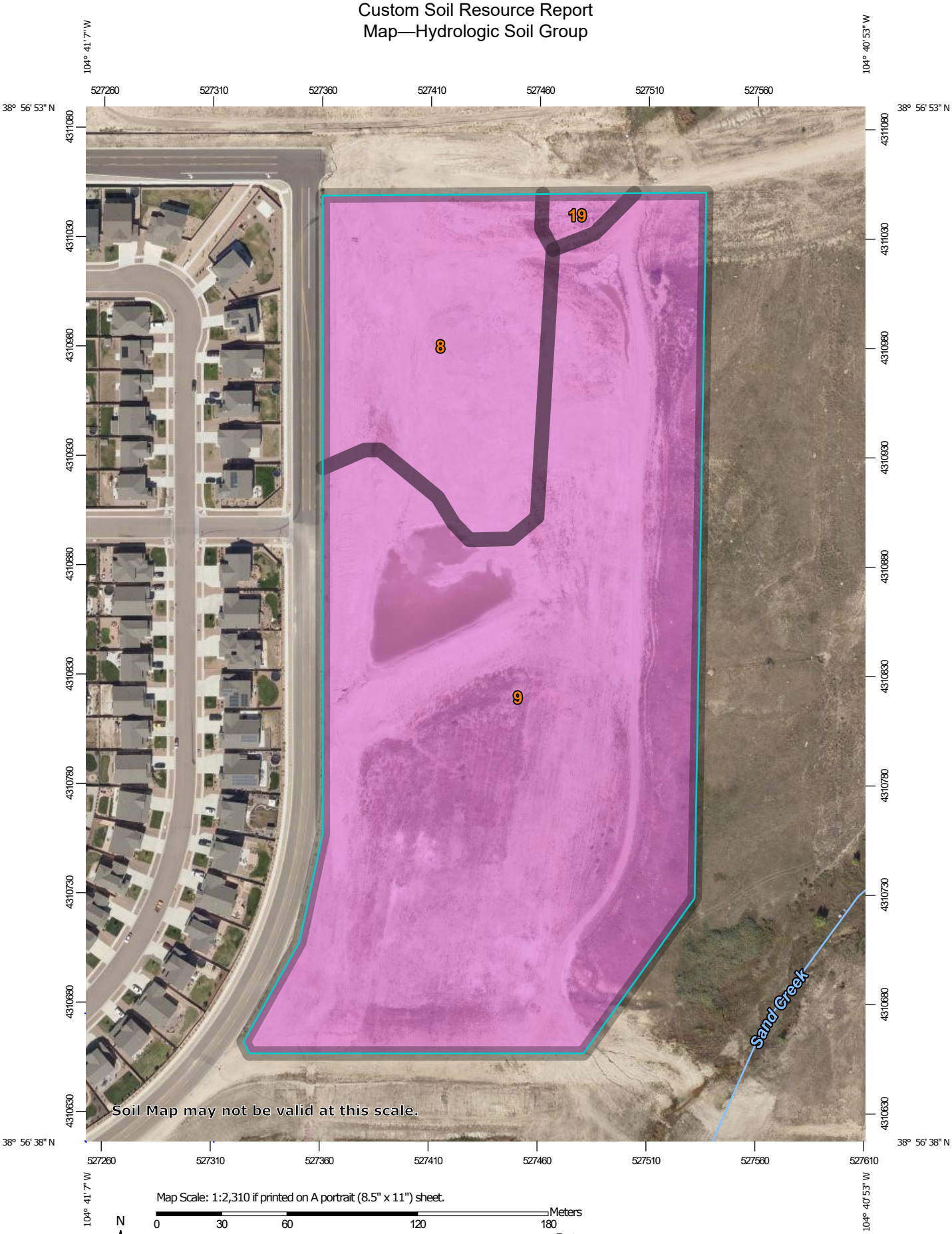
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group



Map Scale: 1:2,310 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

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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.

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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.

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Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 18, Jun 5, 2020

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—Sep 23, 2018

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.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	A	3.5	20.8%
9	Blakeland-Fluvaquentic Haplaquolls	A	13.1	78.2%
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	A	0.2	1.0%
Totals for Area of Interest			**16.8**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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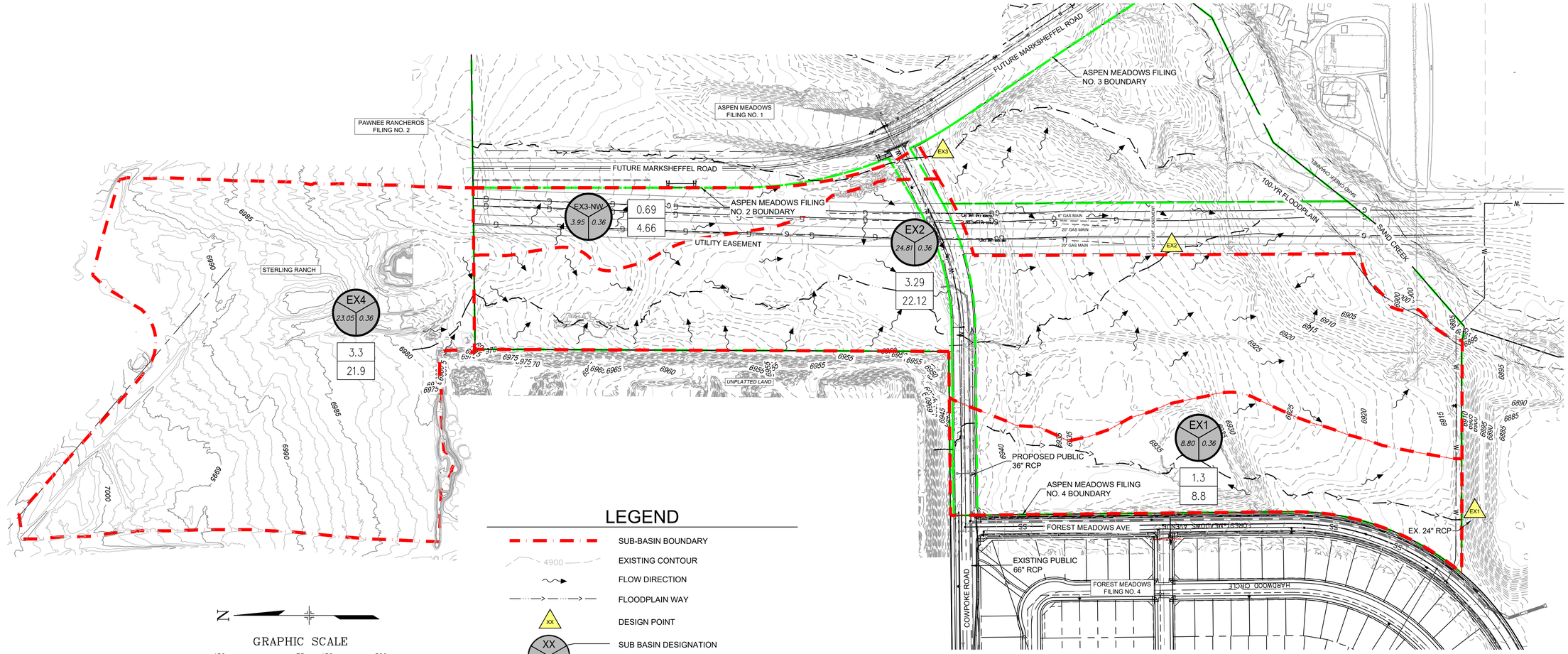
APPENDIX D

MAPS

SHEET NO. 1

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



LEGEND

- SUB-BASIN BOUNDARY
- EXISTING CONTOUR (4900)
- FLOW DIRECTION
- FLOODPLAIN WAY
- DESIGN POINT (XX)
- SUB BASIN DESIGNATION (XX)
- SUB BASIN RUNOFF COEFFICIENT (0.01)
- SUB BASIN AREA (AC.)
- 5-YEAR STORM EVENT PEAK FLOW (CFS) (0.0)
- 100-YEAR STORM EVENT PEAK FLOW (CFS) (0.0)
- PROPERTY LINE

N

GRAPHIC SCALE

150 0 75 150 300

(IN FEET)
1 inch = 150 ft.

SAND CREEK SUB-BASIN SUMMARY TABLE

SUB-BASIN ID	AREA (AC.)	Q(5) (CFS)	Q(100) (CFS)
EX-1	8.80	1.31	8.77
EX-2	24.81	3.29	22.12
EX-3-NW	3.95	0.69	4.66
EX-4	23.05	3.26	21.88

SAND CREEK DESIGN POINT SURFACE FLOW SUMMARY TABLE

DESIGN POINT ID	AREA (AC.)	Q(5) (CFS)	Q(100) (CFS)	SUB-BASINS
EX1	23.05	3.87	25.98	EX-1
EX2	47.86	4.34	29.34	EX-2, EX-4
EX3	3.95	0.69	4.66	EX-3-NW

REFERENCE DRAWINGS

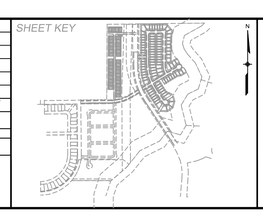
No.	DATE	DESCRIPTION	BY

REVISIONS

COMPUTER FILE MANAGEMENT

FILE NAME:
CTB FILE:
PLOT DATE:
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



PREPARED BY:

Matrix

SEAL

PRELIMINARY
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

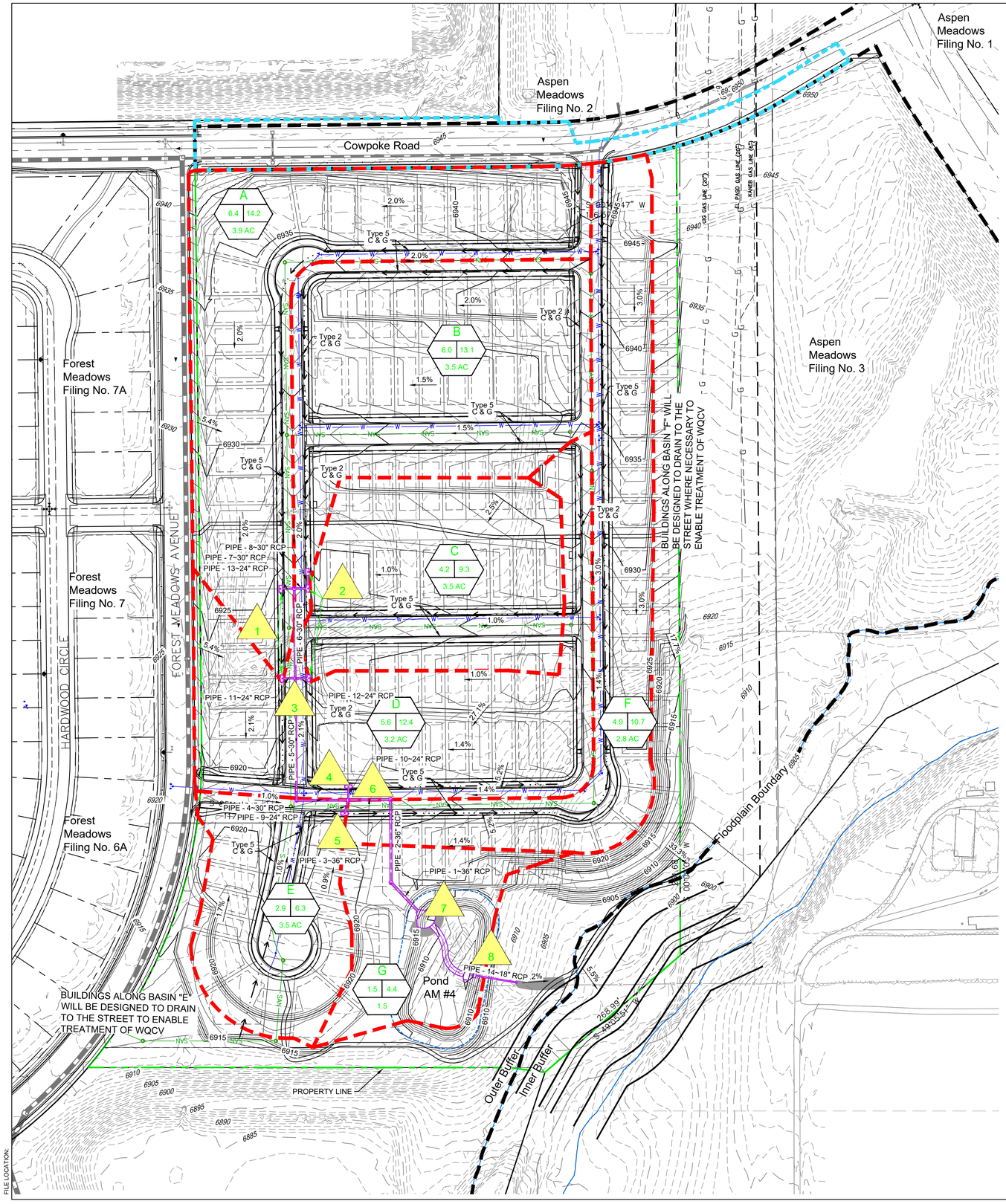
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
PROJECT No.

ASPEN MEADOWS FILING NO. 4

CITY OF COLORADO SPRINGS

HISTORIC CONDITIONS DRAINAGE MAP

DESIGNED BY: BAS	SCALE	DATE ISSUED:	MARCH 2021	DRAWING No.	
DRAWN BY: BAS	HORIZ. 1"=150'	SHEET	1 OF 3	DP01	
CHECKED BY: JAO	VERT. N/A				



LEGEND

- BASIN BOUNDARY
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM DRAIN PIPE
- EXISTING STORM DRAIN PIPE
- DRAINAGE CHANNEL
- EXISTING EDGE OF ROAD
- PROPOSED PROPERTY LINE
- 3.0% PROPOSED FLOW DIRECTION
- BASIN — SUB BASIN DESIGNATION
- Q5 — 5-YEAR STORM EVENT PEAK FLOW (CFS)
- Q100 — 100-YEAR STORM EVENT PEAK FLOW (CFS)
- AREA — SUB BASIN AREA (AC.)

Aspen Meadows Filing No. 4
Proposed Conditions
Sub-basin Summary

Basin	Area	Q5	Q100
	acres	cfs	cfs
A	3.88	6.4	14.2
B	3.48	6.0	13.1
C	2.46	4.2	9.3
D	3.25	5.6	12.4
E	1.72	2.9	6.3
F	2.78	4.9	10.7
G	1.46	1.5	4.4

Proposed Design Point Summary
Aspen Meadows Filing No. 4

Design Point	Sub-Basins	Total Area (ac.)	Q(5) (cfs)	Q(100) (cfs)
1	Basin A	3.88	6.43	14.17
2	Basin B & C	5.95	10.18	22.42
3	Basins A-C	9.83	16.29	35.88
4	Basin D	3.25	5.61	12.35
5	Basins E & F	4.50	7.89	17.37
6	Basins A-F	17.58	29.68	65.37
7	Total Inflow to Detention Pond	19.03	29.42	65.85
8	Detention Pond Discharge	19.03	0.50	9.60

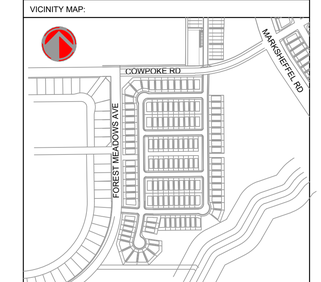
NOTE:
ALL STORM SEWER INFRASTRUCTURE TO BE PUBLICLY OWNED AND MAINTAINED

CONSULTANTS:

PLANNER/ LANDSCAPE ARCHITECT/ CIVIL ENGINEER:
Matrix
2435 RESEARCH PARKWAY, SUITE 300
COLORADO SPRINGS, CO 80920
PHONE: (719) 575-0100
FAX : (719) 575-0208

OWNER/DEVELOPER:
COLA, LLC
555 MIDDLE CREEK PARKWAY, SUITE 380
COLORADO SPRINGS, CO 80921
(719) 459-0807
COLA Colorado Land Acquisition

VICINITY MAP:



PROJECT: ASPEN MEADOWS FILING NO. 4

REVISION HISTORY:

NO.	DATE	DESCRIPTION	BY

DRAWING INFORMATION:
PROJECT NO: 21.886.045
DRAWN BY: JTS
CHECKED BY: JTS
APPROVED BY: JTS
SHEET TITLE: PROPOSED CONDITIONS

FILE LOCATION:

CITY FILE NO.:

Matrix Design Group, Inc.
2435 Research Parkway, Suite 300
Colorado Springs, CO 80920
O 719.575.0100
F 719.575.0208
matrixdesigngroup.com

ASPEN MEADOWS FILING NO. 4
(PARCEL DESCRIPTION)

A PARCEL OF LAND LOCATED IN THE WEST ONE-HALF OF SECTION 4 AND THE EAST ONE-HALF OF SECTION 5, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF COLORADO SPRINGS, COUNTY OF EL PASO, STATE OF COLORADO; MORE PARTICULARLY DESCRIBED AS FOLLOWS, WITH BEARINGS REFERENCED TO A PORTION OF THE WEST LINE OF ASPEN MEADOWS FILING NO. 3 RECORDED _____, 2021 IN THE OFFICE OF THE EL PASO COUNTY CLERK UNDER RECEPTION NUMBER _____; MONUMENTED ON BOTH ENDS BY NO. 5 REBAR WITH 1-1/2 INCH ALUMINUM CAP STAMPED "MATRIX PLS 34977" FOUND FLUSH WITH THE GROUND; ASSUMED TO BEAR SOUTH 00°20'05" EAST 965.29 FEET;

BEGIN AT THE NORTHWEST CORNER OF SAID ASPEN MEADOWS FILING NO. 3;

THENCE ON THE EXTERIOR OF SAID ASPEN MEADOWS FILING NO. 3 THE FOLLOWING (2) TWO COURSES:

1. THENCE SOUTH 00°20'05" EAST A DISTANCE OF 965.29 FEET;
2. THENCE SOUTH 00°00'05" WEST A DISTANCE OF 251.68 FEET TO THE EXTERIOR OF THE NOOK AT SHILOH MESA FILING NO. 1 RECORDED MAY 28, 2020 IN SAID RECORDS UNDER RECEPTION NUMBER 220714516;

THENCE SOUTH 49°05'51" WEST ON SAID EXTERIOR, A DISTANCE OF 268.99 FEET TO THE NORTHEASTERLY CORNER OF THAT CERTAIN SPECIAL WARRANTY DEED RECORDED JANUARY 15, 2013 IN SAID RECORDS UNDER RECEPTION NUMBER 213006396;

THENCE ON THE EXTERIOR OF SAID SPECIAL WARRANTY DEED THE FOLLOWING (2) TWO COURSES:

1. NORTH 82°23'34" WEST, A DISTANCE OF 54.68 FEET;
2. THENCE NORTH 89°59'11" WEST A DISTANCE OF 633.04 FEET TO A NON-TANGENT CURVE, HAVING A RADIUS OF 723.00 FEET, WHOSE CENTER BEARS NORTH 49°45'52" WEST, SAID POINT BEING ON THE EXTERIOR OF FOREST MEADOWS FILING NO. 6A RECORDED SEPTEMBER 10, 2013 IN SAID RECORDS UNDER RECEPTION NUMBER 213713374;

THENCE ON THE EXTERIOR OF SAID FOREST MEADOWS FILING NO. 6A AND THE EXTERIOR OF FOREST MEADOWS FILING NO. 7 RECORDED NOVEMBER 20, 2014 IN SAID RECORDS UNDER RECEPTION NUMBER 214713542 AND THE EXTERIOR OF FOREST MEADOWS FILING NO 7A RECORDED NOVEMBER 20, 2014 IN SAID RECORDS UNDER RECEPTION NUMBER 214713543 THE FOLLOWING (2) TWO COURSES:

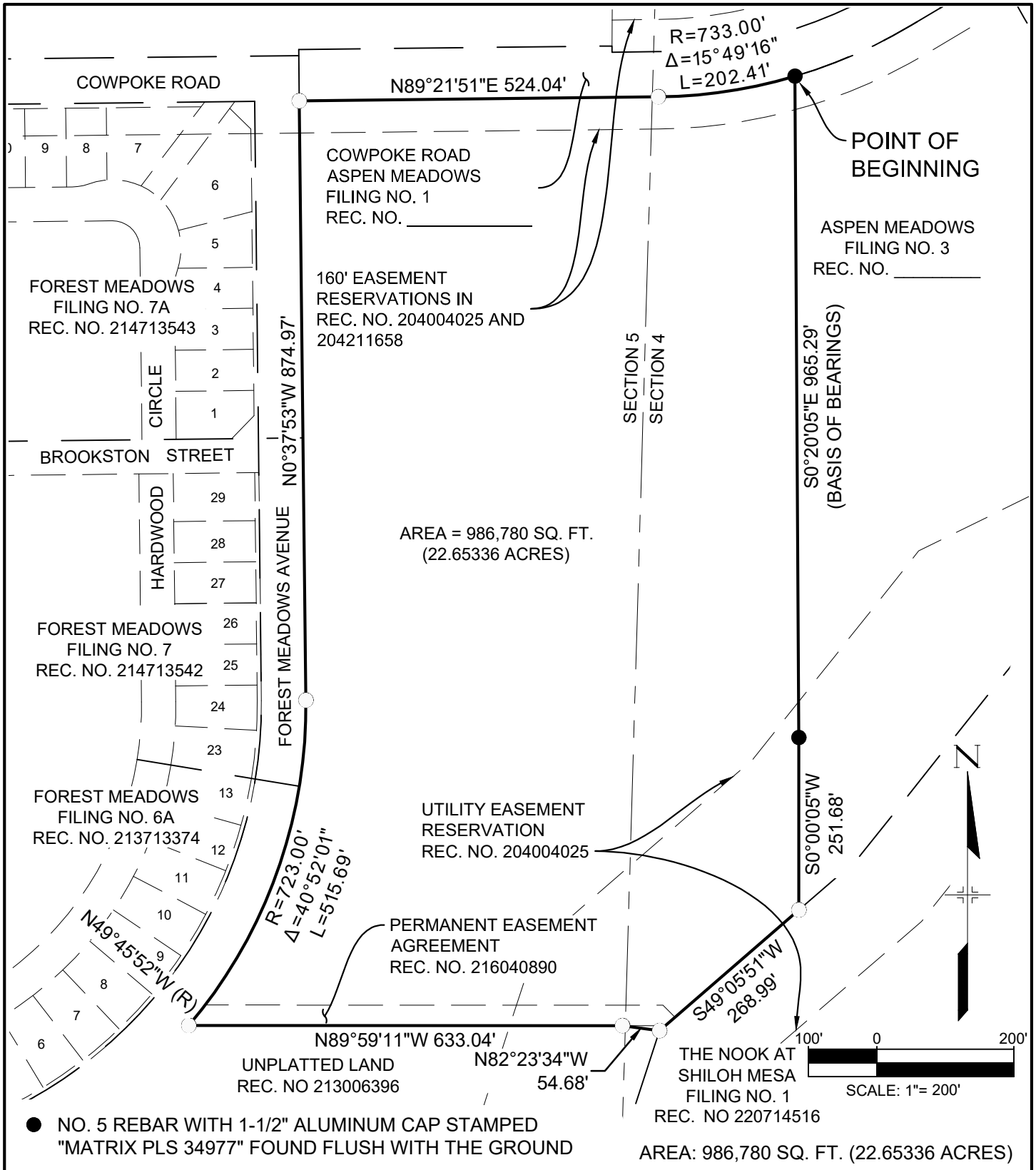
1. THENCE NORTHERLY, ON SAID CURVE, THROUGH A CENTRAL ANGLE OF 40°52'01", AN ARC DISTANCE OF 515.69 FEET;
2. THENCE NORTH 00°37'53" WEST A DISTANCE OF 874.97 FEET TO THE EXTERIOR OF ASPEN MEADOWS FILING NO. 1 RECORDED _____, 2021 IN SAID RECORDS UNDER RECEPTION NUMBER _____;

THENCE ON THE EXTERIOR OF SAID ASPEN MEADOWS FILING NO. 1 THE FOLLOWING (2) TWO COURSES:

1. THENCE NORTH 89°21'51" EAST A DISTANCE OF 524.04 FEET TO A TANGENT CURVE, HAVING A RADIUS OF 733.00 FEET, WHOSE CENTER BEARS NORTHWESTERLY;
2. THENCE EASTERLY, ON SAID CURVE, THROUGH A CENTRAL ANGLE OF 15°49'16", AN ARC DISTANCE OF 202.41 FEET TO THE **POINT OF BEGINNING.**

THE ABOVE DESCRIPTION PRODUCES A CALCULATED AREA OF 986,780 SQUARE FEET (22.65336 ACRES), MORE OR LESS, AND IS DEPICTED ON THE ATTACHED GRAPHICAL EXHIBIT FOR REFERENCE.

ROBERT L. MEADOWS JR., PLS 34977
PREPARED FOR AND ON BEHALF OF MATRIX DESIGN GROUP
2435 RESEARCH PARKWAY, SUITE 300
COLORADO SPRINGS, CO. 80920
(719) 575-0100



● NO. 5 REBAR WITH 1-1/2" ALUMINUM CAP STAMPED "MATRIX PLS 34977" FOUND FLUSH WITH THE GROUND

AREA: 986,780 SQ. FT. (22.65336 ACRES)

Matrix
2435 Research Parkway, Suite 300
Colorado Springs, CO. 80920
Phone 719-575-0100
Fax 719-575-0208

ASPEN MEADOWS FILING NO. 4

BOUNDARY LEGAL DESCRIPTION

CHECKED BY: RLM	DATE: FEB. 18, 2021 JN: 21.886.037	3 OF 3

PRE-APPLICATION MEETING SUMMARY

COLORADO SPRINGS
OLYMPIC CITY USA

Area: North Date: 12/2/2020

Pre-Application No.: N20-200

Applicant(s) Present: Jason Alwine (Matrix); Timothy Buschar/ Justine Wells (COLA/ Owner) Lot Size: +/- 22 acres

Site Location: Woodmen Heights MP - Cowpoke and Forest Meadows TSN: 5300000709 *portion

Project Description: Master plan change and rezone of property for residential use. Zone: Current: A

APPLICATION(S) REQUIRED: ☐ No application to the Planning Department required

☐ 2020 Land Use Map Amendment	☐ Development Agreement (PUD Zone)	☐ Street Name Change
☐ Administrative Relief	☒ Development Plan ○MJ ○MN ○MM	☒ Subdivision Plat ○PP ●FP ○PFP
☐ Amendment to Plat Restriction	☐ Historic Preservation Board	☐ Subdivision Waiver ○Design ○Process
☐ Annexation	☒ Master Plan ●MJ ○MN ○MM	☐ Use Variance ○MJ ○MN ○MM
☐ Building Permit to Unplatted Land	☐ Minor Improvement Plan	☐ Vacation of Plat
☐ CMRS No.	☐ Nonuse Variance / Warrant	☐ Vacation of Public Right-of-Way
☒ Concept Plan ○MJ ○MN ○MM	☐ Preservation Easement Adjustment	☐ Waiver of Replat
☐ Conditional Use ○MJ ○MN ○MM	☐ Property Boundary Adjustment	☒ Zone Change

*Visit the Land Use Review Division website at **www.coloradosprings.gov/planninginfo** for application forms and checklists*

MJ = Major Amendment, MN = Minor Amendment, and MM = Minor Modification

NEIGHBORHOOD ORGANIZATION:

Neighborhood Association/Contact: Forest Meadows/ Shiloh: **Date/time coordination w/ staff** ☒ Neighborhood Meeting

PUBLIC NOTIFICATION REQUIREMENTS: ☐ Pre-Application Stage ☒ Internal Review Stage ☒ Public Hearing Stage

Note: Applicant will be required to pay for postage at time of poster pick-up.

☒ Postcard ☒ Poster ☐ No Public Notice Required

Buffer Distance: ☐ 150 ft. ☐ 500 ft. ☒ 1,000 ft. ☐ Custom distance:

ADDITIONAL STUDIES/MATERIALS TO BE SUBMITTED WITH APPLICATION:

☐ Geo-Hazard Report	☒ Traffic Impact Analysis	☒ Drainage Report
Contact:	Contact: Zaker Alazzeh, 719-385-5468	Contact: Anna Bergmark, 719-385-5613
☐ Hydraulic Grade Line	☐ Wastewater Master Facility Report	☒ Land Suitability Analysis
☐ Elevation Drawings	☒ Mineral Estate Owner Notification	☒ Other: D49 school land/fee analysis

LDTC MEETING: ☐ Yes ☒ No **Date:** Unless requested by owner for DP **Time:**

COMMENTS: *(This is a preliminary listing of issues and attention items; additional issues will likely surface as the application proceeds through the review process):*

School District 49: Has committed to release of land, waiting on final signed contract. There is a fee per acre that is established in contract that will be paid for the current school site and any future residential development in COLA ownership. The District needs to provide specific information on what this overall agreement will require and how this leaves the overall Woodmen Heights MP in it's entirety for school dedication/'fees. Staff will look for the owner to receive clear update from the District or is available for a meeting with the District to discuss details. This overall information should also be included in the project summary provided for submittal.
Small Lot PUD - all single-family detached; will need to account on the concept plan for items identified in the Small Lot PUD guidelines, please pay attention to green space and pedestrian connection. If full driveways are not provided there shall be the need for guest parking provided throughout the site.
Streamside: Creek improvements are being done and included, this will be included for zoning. Please also speak with SWENT about what notes should be included for channel improvements.
Included in Airport Overlay.
***Above studies shall be done with master plan/ concept plan even if owner chooses to submit DP/FP at later date. If bifurcated the MP/ZM/PUP will require public hearing and DP/FP at later date will be reviewed administratively.

NOTE: The above information is intended to assist in the preparation of an application. This sheet is not a complete list of submittal requirements. Refer to the Zoning and Subdivision Ordinances and the appropriate application checklists for further information and details.

This form and the information contained herein is valid for 6 months.

Fee Estimate: Estimate provided for MP/ZC/PUP. Based on EST. of acres.

Number of Plans: Electronic Submittal + One hard copy of each application

Katie Carleo
Principal Planner
Land Use Review
Planning & Community Development

30 S. Nevada Avenue, Suite 105
P.O. Box 1575, MC 155
Colorado Springs, CO 80901-1575

Phone: (719) 385-5060
Fax: (719) 385-5167
kcarleo@springsgov.com

CITY OF COLORADO SPRINGS
We Create Community

LAND USE REVIEW DIVISION

COMMUNITY DEVELOPMENT DEPARTMENT

MINERAL ESTATE OWNER NOTIFICATION CERTIFICATION AFFIDAVIT

APPLICANT: MATRIX DESIGN GROUP

PROJECT: ASPEN MEADOWS FILING NO. 2

CITY PLANNING FILE NUMBER(S): _____

The Applicant certifies that he has complied with the applicable provisions of the City of Colorado Springs Mineral Estate Owner Notification process. The Applicant certifies that the records, including filed requests for surface development notification forms, of the El Paso County Tax Assessor and the Clerk and Recorder were examined. The Applicant further certifies the following:

☐ Yes, a separate mineral estate owner(s) was identified and the Applicant certifies that 1.) the mineral estate owner(s) was notified by certified mail, return receipt requested, or by a nationally recognized overnight courier of the initial City Planning Commission public hearing not less than thirty (30) days prior to the hearing; 2.) he has attached a listing of the Mineral Estate Owner(s) with mailing addresses, and 3.) has attached a copy of the notice that was mailed. Said notice contained the time and place of the public hearing, the nature and subject of the hearing, legal description of the property and the name of the applicant.

☐ Yes a separate mineral estate owner(s) was identified, but the Applicant certifies that 1.) no mailing addresses of record(s) are known; 2.) he has attached a listing of the Mineral Estate Owner(s); and 3.) no further action was taken.

☒ No separate mineral estate owner(s) were identified and no further action was taken.

Pursuant to 24-65.5-103(4), C.R.S., I certify that above is true and accurate and that I have acted in good faith to comply with the applicable provisions of the City of Colorado Springs Mineral Estate Owner Notification process.

Dated this _____ day of_____, 20_____.

_____

Signature

Notary Certificate:

STATE OF COLORADO)
) sis
COUNTY OF EL PASO)

The foregoing certification was acknowledged before me this ___ day of _____., 20__, by _____.

Witness my hand and official seal.

My commission Expires: _____

_____

Notary Public

El Paso County, Colorado
Property Tax Details

Property Taxes for 2020 Due 2021

Display Tax Statement

This information reflects current year status of tax liability, assessments due, fees, interest, and current payments received. This information is not to be used in place of a certificate of taxes due.

Parcel Information

Schedule Number:	5300000709

Owner Information

Name:	RAO INVESTMENTS LLC
Mailing Address:	7910 GATEWAY E STE 102 EL PASO TX 79915-1810

Property Information

Property Address:	MARKSHEFFEL RD
Property Type:	Real

Legal Description

TR IN SEC 4 & 5-13-65 DESC AS FOLS: BEG AT THE SW COR OF LOT 14 PAWNEE RANCHEROS,TH N 89<17'09" E 393.05 FT, S 45<46'00" W 69.10 FT, S 60<48'00" W 348.00 FT, S 13<26'00" W 147.00 FT, S 17<10'00" E 104.00 FT, S 34<21'00" E 107.00 FT, S 41<34'00" E 204.0 FT, S 25<23'00" E 272.0 FT, S 17<08"00" W 222.0 FT, S 63<38'00" W, 205.0 FT, S 31<25'00" W 224.0 FT, S 13<39'00" E 369.0 FT, S 30<42'00" W 193.0 FT, N 75<08'00" W 243.0 FT, S 37<48'00" W 218.0 FT, S63<49'00" W 387.0 FT, TH S 38<30'00" W 362.00 FT, TH N 51<30'00" W 130 FT M/L, TH N 90<00'00" W 841 FT M/L TO A PT ON THE ELY LN OF FOREST MEADOWS AVE, TH NLY ALG ELY LN SD FOREST MEADOWS AVE TO TH S LN OF THE NE4 OF SEC 5, TH N 89<21'45" E ALG S LN 457.26 FT, TH N 00<15'39: E ALG E LN OF NE4 OF SEC 5 1320.73 FT TO SE4 COR OF THE NW4NW4 OF SEC 4, TH N 89<17'09" E 1321.33 FT TO POB, EX THAT PT CONV BY REC# 219146908

Alerts

N/A

Property Valuation

Total Assessed Land:	$242,020
Total Assessed Improvements:	$0
Total Assessed:	$242,020

Assessment questions? Click here

Value

Total Market Value:	$834,564

Taxes Billed

Base Tax Amount:	$30,216.20
Special Assessment Amount:	$0.00
Improvement District Amount:	$0.00
Total Current Year Taxes:	$30,216.20

Total Current Year Taxes do not reflect outstanding tax liens and delinquencies, if any.
See Alerts.

Current Year Payments Due as of 7/14/2021

Option 1:

Payment Type	Due Date	Taxes & Fees Due	Interest Due	Total Amount		
First Half:	March 01	$0.00	$0.00	$0.00	False	Pay
Second Half:	June 15	$0.00	$0.00	$0.00	False	Pay

OR

Option 2:

Payment Type	Due Date	Taxes & Fees Due	Interest Due	Total Amount		
Full Amount:	April 30	$0.00	$0.00	$0.00	False	Pay

Current Year Payments Received

Date	Amount
04/20/2021	$30,216.20

Prior Year(s) Transaction History

N/A

Note: Prior years transaction history data is for a maximum of 4 years.

Print This Page

Please Note: This web page is best viewed in Compatability View.

Disclaimer: We have made a good-faith effort to provide you with the most recent and most accurate information available. However, if you need to use this information in any legal or official venue, you will need to obtain official copies from the Treasurer's Office. Do be aware that this data is subject to change on a daily basis. If you believe that any of this information is incorrect, please contact the Treasurer's office.

For any questions, please contact the Treasurer's Office at: **(719) 520-7900** or email to: **trsweb@elpasoco.com**

PREVENT FRAUD - Please remember to call a member of our closing team when initiating a wire transfer or providing wiring instructions.

Land Title Guarantee Company

Customer Distribution

Our Order Number: SC55065575.1

Date: 02-25-2021

Property Address: WOODMEN HEIGHTS COLORADO SPRINGS 00000

For Title Assistance
ROBERT HAYES
102 S TEJON #760
COLORADO SPRINGS, CO 80903
303-850-4136 (phone)
719-634-3190 (fax)
rohayes@ltgc.com

PLEASE CONTACT YOUR CLOSER OR CLOSER'S ASSISTANT FOR WIRE TRANSFER INSTRUCTIONS

Land Title Guarantee Company

Estimate of Title Fees

Order Number: SC55065575.1 Date: 02-25-2021

Property Address: WOODMEN HEIGHTS COLORADO SPRINGS 00000

Buyer/Borrower: RAO INVESTMENTS, LLC, A TEXAS LIMITED LIABILITY COMPANY

Seller: RAO INVESTMENTS, LLC A TEXAS LIMITED LIABILITY COMPANY

Visit Land Title's website at www.ltgc.com for directions to any of our offices.

Estimate of Title Insurance Fees	
ALTA Loan Policy 06-17-06	$0.00
Tax Certificate	$26.00
If Land Title Guarantee Company will be closing this transaction, the fees listed above will be collected at closing.	
Total	$26.00
THANK YOU FOR YOUR ORDER!	

ALTA COMMITMENT
Old Republic National Title Insurance Company
Schedule A

Order Number: SC55065575.1

Customer Ref-Loan No.:

Property Address:

WOODMEN HEIGHTS COLORADO SPRINGS 00000

1. Effective Date:

02-22-2021 at 5:00 P.M.

2. Policy to be Issued and Proposed Insured:

"ALTA" Loan Policy 06-17-06 $0.00
Proposed Insured:
A LENDER TO BE DETERMINED

3. The estate or interest in the land described or referred to in this Commitment and covered herein is:

A FEE SIMPLE

4. Title to the estate or interest covered herein is at the effective date hereof vested in:

RAO INVESTMENTS, LLC A TEXAS LIMITED LIABILITY COMPANY

5. The Land referred to in this Commitment is described as follows:

ASPEN MEADOWS FILING NO. 4 (PARCEL DESCRIPTION)

A PARCEL OF LAND LOCATED IN THE WEST ONE-HALF OF SECTION 4 AND THE EAST ONE-HALF OF SECTION 5, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF COLORADO SPRINGS, COUNTY OF EL PASO, STATE OF COLORADO; MORE PARTICULARLY DESCRIBED AS FOLLOWS, WITH BEARINGS REFERENCED TO A PORTION OF THE WEST LINE OF ASPEN MEADOWS FILING NO. 3 RECORDED _____, 2021 IN THE OFFICE OF THE EL PASO COUNTY CLERK UNDER RECEPTION NUMBER _____; MONUMENTED ON BOTH ENDS BY NO. 5 REBAR WITH 1-1/2 INCH ALUMINUM CAP STAMPED "MATRIX PLS 34977" FOUND FLUSH WITH THE GROUND; ASSUMED TO BEAR SOUTH 00°20'05" EAST 965.29 FEET; BEGIN AT THE NORTHWEST CORNER OF SAID ASPEN MEADOWS FILING NO. 3; THENCE ON THE EXTERIOR OF SAID ASPEN MEADOWS FILING NO. 3 THE FOLLOWING (2) TWO COURSES: 1. THENCE SOUTH 00°20'05" EAST A DISTANCE OF 965.29 FEET; 2. THENCE SOUTH 00°00'05" WEST A DISTANCE OF 251.68 FEET TO THE EXTERIOR OF THE NOOK AT SHILOH MESA FILING NO. 1 RECORDED MAY 28, 2020 IN SAID RECORDS UNDER RECEPTION NUMBER 220714516; THENCE SOUTH 49°05'51" WEST ON SAID EXTERIOR, A DISTANCE OF 268.99 FEET TO THE NORTHEASTERLY CORNER OF THAT CERTAIN SPECIAL WARRANTY DEED RECORDED JANUARY 15, 2013 IN SAID RECORDS UNDER RECEPTION NUMBER 213006396; THENCE ON THE EXTERIOR OF SAID SPECIAL WARRANTY DEED THE FOLLOWING (2) TWO COURSES: 1. NORTH 82°23'34" WEST, A DISTANCE OF 54.68 FEET; 2. THENCE NORTH 89°59'11" WEST A DISTANCE OF 633.04 FEET TO A NON-TANGENT CURVE, HAVING A RADIUS OF 723.00 FEET, WHOSE CENTER BEARS NORTH 49°45'52" WEST, SAID POINT BEING ON THE EXTERIOR OF FOREST MEADOWS FILING NO. 6A RECORDED SEPTEMBER 10, 2013 IN SAID RECORDS UNDER RECEPTION NUMBER 213713374; THENCE ON THE EXTERIOR OF SAID FOREST MEADOWS FILING NO. 6A AND THE EXTERIOR OF FOREST MEADOWS FILING NO. 7 RECORDED NOVEMBER 20, 2014 IN SAID RECORDS UNDER RECEPTION NUMBER 214713542 AND THE EXTERIOR OF FOREST MEADOWS FILING NO 7A RECORDED NOVEMBER 20, 2014 IN SAID RECORDS UNDER RECEPTION NUMBER 214713543 THE FOLLOWING (2) TWO COURSES: 1. THENCE NORTHERLY, ON SAID CURVE, THROUGH A CENTRAL

ALTA COMMITMENT
Old Republic National Title Insurance Company
Schedule A

Order Number: SC55065575.1

Customer Ref-Loan No.:

ANGLE OF 40°52'01", AN ARC DISTANCE OF 515.69 FEET; 2. THENCE NORTH 00°37'53" WEST A DISTANCE OF 874.97 FEET TO THE EXTERIOR OF ASPEN MEADOWS FILING NO. 1 RECORDED _____, 2021 IN SAID RECORDS UNDER RECEPTION NUMBER _____; THENCE ON THE EXTERIOR OF SAID ASPEN MEADOWS FILING NO. 1 THE FOLLOWING (2) TWO COURSES:1. THENCE NORTH 89°21'51" EAST A DISTANCE OF 524.04 FEET TO A TANGENT CURVE, HAVING A RADIUS OF 733.00 FEET, WHOSE CENTER BEARS NORTHWESTERLY; 2. THENCE EASTERLY, ON SAID CURVE, THROUGH A CENTRAL ANGLE OF 15°49'16", AN ARC DISTANCE OF 202.41 FEET TO THE POINT OF BEGINNING. THE ABOVE DESCRIPTION PRODUCES A CALCULATED AREA OF 986,780 SQUARE FEET (22.65336 ACRES), MORE OR LESS, AND IS DEPICTED ON THE ATTACHED GRAPHICAL EXHIBIT FOR REFERENCE. ROBERT L. MEADOWS JR., PLS 34977 PREPARED FOR AND ON BEHALF OF MATRIX DESIGN GROUP 2435 RESEARCH PARKWAY, SUITE 300 COLORADO SPRINGS, CO. 80920 (719) 575-0100

ALTA COMMITMENT
Old Republic National Title Insurance Company
Schedule B, Part I

(Requirements)

Order Number: SC55065575.1

The following are the requirements must be met:

This proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

Pay the agreed amount for the estate or interest to be insured.

Pay the premiums, fees, and charges for the Policy to the Company.

Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.

Old Republic National Title Insurance Company
Schedule B, Part II

(Exceptions)

Order Number: SC55065575.1

This commitment does not republish any covenants, condition, restriction, or limitation contained in any document referred to in this commitment to the extent that the specific covenant, conditions, restriction, or limitation violates state or federal law based on race, color, religion, sex, sexual orientation, gender identity, handicap, familial status, or national origin.

1. **Any facts, rights, interests, or claims thereof, not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.**

2. **Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.**

3. **Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.**

4. **Any lien, or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown by the Public Records.**

5. **Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the public records or attaching subsequent to the effective date hereof but prior to the date of the proposed insured acquires of record for value the estate or interest or mortgage thereon covered by this Commitment.**

6. **(a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.**

7. **(a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water.**

8. (ITEM INTENTIONALLY DELETED)

9. RIGHT OF WAY EASEMENT AS GRANTED TO FORD, BACON & DAVIS, INC. IN INSTRUMENT RECORDED OCTOBER 15, 1927, IN BOOK 798 AT PAGE 162.

10. CONVEYANCE OF MINERAL RIGHTS AS CONTAINED IN MINERAL DEED RECORDED OCTOBER 13, 1954 IN BOOK 1458 AT PAGE 218.

11. RIGHT OF WAY EASEMENT AS GRANTED TO MOUNTAIN VIEW ELECTRIC ASSOCIATION, INC. IN INSTRUMENT RECORDED DECEMBER 04, 1958, IN BOOK 1714 AT PAGE 541.

12. RIGHT OF WAY EASEMENT AS GRANTED TO WACO PIPE LINE COMPANY BY INSTRUMENT RECORDED MARCH 21, 1966 IN BOOK 2123 AT PAGE 166. ASSIGNMENT OF EASEMENTS AND LICENSES RECORDED OCTOBER 12, 2005 UNDER RECEPTION NO. 205161563. AND ASSIGNMENT RECORDED DECEMBER 2, 2013 UNDER RECEPTION NO. 213144183.

13. THE EFFECT OF THE INCLUSION OF SUBJECT PROPERTY IN THE BLACK SQUIRREL SOIL CONSERVATION DISTRICT, AS EVIDENCED BY INSTRUMENT RECORDED FEBRUARY 19, 1975, IN BOOK 2734 AT PAGE 180.

Old Republic National Title Insurance Company
Schedule B, Part II

(Exceptions)

Order Number: SC55065575.1

14. EFFECT OF THE INCLUSION OF SUBJECT PROPERTY IN THE FALCON FIRE PROTECTION DISTRICT, AS EVIDENCED BY INSTRUMENTS RECORDED DECEMBER 02, 1980, IN BOOK 3380 AT PAGES 670 AND 675 AND FEBRUARY 17, 1981 IN BOOK 3404 AT PAGES 582 AND 587.

15. CONVEYANCE OF MINERAL RIGHTS AS CONTAINED IN MINERAL QUIT CLAIM DEED RECORDED FEBRUARY 12, 2003 UNDER RECEPTION NO. 203032039.

16. EASEMENTS AS RESERVED IN SPECIAL WARRANTY DEED RECORDED JANUARY 8, 2004 UNDER RECEPTION NO. 204004025.

17. TERMS, PROVISIONS, CONDITIONS AND RESTRICTION AS CONTAINED IN SPECIAL WARRANTY DEED RECORDED JANUARY 8, 2004 UNDER RECEPTION NO. 204004025.

18. RESERVATIONS AND RIGHT OF WAYS CONTAINED IN DEEDS RECORDED JUNE 17, 2004 UNDER RECEPTION NO. 204100838.

19. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN COST SHARING PROCESSING AND STRATEGIC DEVELOPMENT OBLIGATIONS AGREEMENT RECORDED JUNE 17, 2004 UNDER RECEPTION NO. 204100840.

20. TERMS, CONDITIONS AND PROVISIONS OF ANNEXATION AGREEMENT RECORDED SEPTEMBER 23, 2004 AT RECEPTION NO. 204160917. ANNEXATION ORDINANCE RECORDED SEPTEMBER 23, 2004 UNDER RECEPTION NO. 204160916. ANNEXATION PLAT RECORDED SEPTEMBER 23, 2004 UNDER RECEPTION NO. 204160918.

21. TERMS, CONDITIONS AND PROVISIONS OF ORDER AND DECREE ORGANIZING WOODMEN HEIGHTS METROPOLITAN DISTRICT NO. 2 AND 3, AS EVIDENCED BY INSTRUMENTS RECORDED DECEMBER 28, 2004 UNDER RECEPTION NO. 204209871 AND 204209872, SEPTEMBER 8, 2005 UNDER RECEPTION NO. 205140999, NOVEMBER 28, 2005 UNDER RECEPTION NO. 205189163, JULY 13, 2006 UNDER RECEPTION NO. 206103276 AND JUNE 26, 2008 UNDER RECEPTION NO. 208073150. AMENDED AND RESTATED RESOLUTION RECORDED SEPTEMBER 29, 2008 UNDER RECEPTION NO. 208106389. SECOND AMENDED AND RESTATED RESOLUTION RECORDED NOVEMBER 19, 2013 UNDER RECEPTION NO. 213140364.

22. TERMS, PROVISIONS, CONDITIONS, RESTRICTIONS AND EASEMENTS RESERVED, AS CONTAINED IN SPECIAL WARRANTY DEED RECORDED DECEMBER 29, 2004 UNDER RECEPTION NO. 204211658.

23. TERMS, CONDITIONS AND PROVISIONS OF PERMANENT EASEMENT AGREEMENT RECORDED DECEMBER 09, 2005 AT RECEPTION NO. 205196076.

24. THE EFFECT OF INCLUSION OF SUBJECT PROPERTY IN WOODMEN ROAD METROPOLITAN DISTRICT, RECORDED DECEMBER 27, 2005, UNDER RECEPTION NO. 205202369.

25. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN DECLARATION OF DEVELOPMENT COVENANTS AND COST RECOVERY AGREEMENT FOR WOODMEN HEIGHTS RECORDED JUNE 17, 2004 UNDER RECEPTION NO. 204100839.

26. TERMS, CONDITIONS, PROVISIONS, BURDENS, OBLIGATIONS AND EASEMENTS AS SET FORTH AND GRANTED IN PERMANENT EASEMENT AGREEMENT RECORDED APRIL 19, 2016 UNDER RECEPTION NO. 216040890.

Old Republic National Title Insurance Company
Schedule B, Part II

(Exceptions)

Order Number: SC55065575.1

27. DEED OF TRUST DATED MARCH 16, 2018 FROM RAO INVESTMENTS, LLC, A TEXAS LIMITED LIABILITY COMPANY TO THE PUBLIC TRUSTEE OF EL PASO COUNTY FOR THE USE OF WESTSTAR BANK TO SECURE THE SUM OF RECORDED MARCH 16, 2018 UNDER RECEPTION NO. 21830445. PARTIAL RELEASE RECORDED NOVEMBER 22, 2019 UNDER RECEPTION NO. 219148141. SAID DEED OF TRUST WAS ASSIGNED BY INSTRUMENT RECORDED JANUARY 25, 2019, UNDER RECEPTION NO. 2199140 AND 219939, AND IN INSTRUMENT RECORDED FEBRUARY 6, 2019 UNDR RECEPTION NO. 21913182.

28. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN UTILITY EASEMENT RECORDED JANUARY 22, 2020 UNDER RECEPTION NO. 2209291.

29. TERMS, CONDITIONS, PROVISIONS, BURDENS AND OBLIGATIONS AS SET FORTH IN DEED RECORDED NOVEMBER 20, 2019 UNDER RECEPTION NO. 219146908.

JOINT NOTICE OF PRIVACY POLICY OF

LAND TITLE GUARANTEE COMPANY
LAND TITLE GUARANTEE COMPANY OF SUMMIT COUNTY
LAND TITLE INSURANCE CORPORATION AND
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

This Statement is provided to you as a customer of Land Title Guarantee Company ,
as agent for Land Title Insurance Corporation and Old Republic National Title Insurance Company.

We want you to know that we recognize and respect your privacy expectations and the requirements of federal and state privacy laws. Information security is one of our highest priorities. We recognize that maintaining your trust and confidence is the bedrock of our business. We maintain and regularly review internal and external safeguards against unauthorized access to non-public personal information ("Personal Information").

In the course of our business, we may collect Personal Information about you from:

- applications or other forms we receive from you, including communications sent through TMX, our web-based transaction management system;
- your transactions with, or from the services being performed by, us, our affiliates, or others;
- a consumer reporting agency, if such information is provided to us in connection with your transaction;

  and
- the public records maintained by governmental entities that we either obtain directly from those entities, or from our affiliates and non-affiliates.

Our policies regarding the protection of the confidentiality and security of your Personal Information are as follows:

- We restrict access to all Personal Information about you to those employees who need to know that information in order to provide products and services to you.
- We maintain physical, electronic and procedural safeguards that comply with federal standards to protect your Personal Information from unauthorized access or intrusion.
- Employees who violate our strict policies and procedures regarding privacy are subject to disciplinary action.
- We regularly access security standards and procedures to protect against unauthorized access to Personal Information.

WE DO NOT DISCLOSE ANY PERSONAL INFORMATION ABOUT YOU WITH ANYONE FOR ANY PURPOSE THAT IS NOT PERMITTED BY LAW.

Consistent with applicable privacy laws, there are some situations in which Personal Information may be disclosed. We may disclose your Personal Information when you direct or give us permission; when we are required by law to do so, for example, if we are served a subpoena; or when we suspect fraudulent or criminal activities. We also may disclose your Personal Information when otherwise permitted by applicable privacy laws such as, for example, when disclosure is needed to enforce our rights arising out of any agreement, transaction or relationship with you.

Our policy regarding dispute resolution is as follows. Any controversy or claim arising out of or relating to our privacy policy, or the breach thereof, shall be settled by arbitration in accordance with the rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

LAND TITLE GUARANTEE COMPANY

DISCLOSURE STATEMENTS

Note: Pursuant to CRS 10-11-122, notice is hereby given that:

A) The Subject real property may be located in a special taxing district.
B) A certificate of taxes due listing each taxing jurisdiction will be obtained from the county treasurer of the county in which the real property is located or that county treasurer's authorized agent unless the proposed insured provides written instructions to the contrary. (for an Owner's Policy of Title Insurance pertaining to a sale of residential real property)
C) The information regarding special districts and the boundaries of such districts may be obtained from the Board of County Commissioners, the County Clerk and Recorder, or the County Assessor.

Note: Effective September 1, 1997, CRS 30-10-406 requires that all documents received for recording or filing in the clerk and recorder's office shall contain a top margin of at least one inch and a left, right and bottom margin of at least one half of an inch. The clerk and recorder may refuse to record or file any document that does not conform, except that, the requirement for the top margin shall not apply to documents using forms on which space is provided for recording or filing information at the top margin of the document.

Note: Colorado Division of Insurance Regulations 8-1-2 requires that "Every title entity shall be responsible for all matters which appear of record prior to the time of recording whenever the title entity conducts the closing and is responsible for recording or filing of legal documents resulting from the transaction which was closed". Provided that Land Title Guarantee Company conducts the closing of the insured transaction and is responsible for recording the legal documents from the transaction, exception number 5 will not appear on the Owner's Title Policy and the Lenders Policy when issued.

Note: Affirmative mechanic's lien protection for the Owner may be available (typically by deletion of Exception no. 4 of Schedule B-2 of the Commitment from the Owner's Policy to be issued) upon compliance with the following conditions:

A) The land described in Schedule A of this commitment must be a single family residence which includes a condominium or townhouse unit.
B) No labor or materials have been furnished by mechanics or material-men for purposes of construction on the land described in Schedule A of this Commitment within the past 6 months.
C) The Company must receive an appropriate affidavit indemnifying the Company against un-filed mechanic's and material-men's liens.
D) The Company must receive payment of the appropriate premium.
E) If there has been construction, improvements or major repairs undertaken on the property to be purchased within six months prior to the Date of the Commitment, the requirements to obtain coverage for unrecorded liens will include: disclosure of certain construction information; financial information as to the seller, the builder and or the contractor; payment of the appropriate premium fully executed Indemnity Agreements satisfactory to the company, and, any additional requirements as may be necessary after an examination of the aforesaid information by the Company.

No coverage will be given under any circumstances for labor or material for which the insured has contracted for or agreed to pay.

Note: Pursuant to CRS 10-11-123, notice is hereby given:

This notice applies to owner's policy commitments disclosing that a mineral estate has been severed from the surface estate, in Schedule B-2.

A) That there is recorded evidence that a mineral estate has been severed, leased, or otherwise conveyed from the surface estate and that there is a substantial likelihood that a third party holds some or all interest in oil, gas, other minerals, or geothermal energy in the property; and
B) That such mineral estate may include the right to enter and use the property without the surface owner's permission.

Note: Pursuant to CRS 10-1-128(6)(a), It is unlawful to knowingly provide false, incomplete, or misleading facts or information to an insurance company for the purpose of defrauding or attempting to defraud the company. Penalties may include imprisonment, fines, denial of insurance, and civil damages. Any insurance company or agent of an insurance company who knowingly provides false, incomplete, or misleading facts or information to a policyholder or claimant for the purpose of defrauding or attempting to defraud the policyholder or claimant with regard to a settlement or award payable from insurance proceeds shall be reported to the Colorado Division of Insurance within the Department of Regulatory Agencies.

Note: Pursuant to Colorado Division of Insurance Regulations 8-1-3, notice is hereby given of the availability of a closing protection letter for the lender, purchaser, lessee or seller in connection with this transaction.

Commitment For Title Insurance

Issued by OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

NOTICE

IMPORTANT—READ CAREFULLY: THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACONTRACTUAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANY'S OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON.

COMMITMENT TO ISSUE POLICY

Subject to the Notice; Schedule B, Part I—Requirements; Schedule B, Part II—Exceptions; and the Commitment Conditions, Old republic National Title Insurance Company, A Minnesota corporation (the "Company"), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Policy Amount and the name of the Proposed Insured. If all of the Schedule B, Part I—Requirements have not been met within *6 months* after the Commitment Date, this Commitment terminates and the Company's liability and obligation end.

COMMITMENT CONDITIONS

1. **DEFINITIONS**

(a) "Knowledge" or "Known": Actual or imputed knowledge, but not constructive notice imparted by the Public Records.

(b) "Land": The land described in Schedule A and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues,alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.

(c) "Mortgage": A mortgage, deed of trust, or other security instrument, including one evidenced by electronic means authorized by law.

(d) "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.

(e) "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.

(f) "Proposed Policy Amount": Each dollar amount specified in Schedule A as the Proposed Policy Amount of each Policy to be issued pursuant to this Commitment.

(g) "Public Records": Records established under state statutes at the Commitment Date for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge.

(h) "Title": The estate or interest described in Schedule A.

2. If all of the Schedule B, Part I—Requirements have not been met within the time period specified in the Commitment to Issue Policy, Comitment terminates and the Company's liability and obligation end.

3. The Company's liability and obligation is limited by and this Commitment is not valid without:

(a) the Notice;
(b) the Commitment to Issue Policy;
(c) the Commitment Conditions;
(d) Schedule A;
(e) Schedule B, Part I—Requirements; [and]
(f) Schedule B, Part II—Exceptions[; and
(g) a counter-signature by the Company or its issuing agent that may be in electronic form.

4. COMPANY'S RIGHT TO AMEND

The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company shall not be liable for any other amendment to this Commitment.

5. LIMITATIONS OF LIABILITY

(a) The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:

(I) comply with the Schedule B, Part I—Requirements;
(ii) eliminate, with the Company's written consent, any Schedule B, Part II—Exceptions; or
(iii) acquire the Title or create the Mortgage covered by this Commitment.

(b) The Company shall not be liable under Commitment Condition 5(a) if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.
(c) The Company will only have liability under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.
(d) The Company's liability shall not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Conditions 5(a)(i) through 5(a)(iii) or the Proposed Policy Amount.
(e) The Company shall not be liable for the content of the Transaction Identification Data, if any.
(f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I—Requirements have been met to the satisfaction of the Company.
(g) In any event, the Company's liability is limited by the terms and provisions of the Policy.

6. LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT

(a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
(b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.
(c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.
(d) The deletion or modification of any Schedule B, Part II—Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
(e) Any amendment or endorsement to this Commitment must be in writing [and authenticated by a person authorized by the Company].
(f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT

The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. PRO-FORMA POLICY

The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

9. ARBITRATION

The Policy contains an arbitration clause. All arbitrable matters when the Proposed Policy Amount is $2,000,000 or less shall be arbitrated at the option of either the Company or the Proposed Insured as the exclusive remedy of the parties. A Proposed Insured may review a copy of the arbitration rules at http://www.alta.org/arbitration.

Issued by:
Land Title Guarantee Company
3033 East First Avenue Suite 600
Denver, Colorado 80206
303-321-1880

Authorized Officer or Agent

Old Republic National Title Insurance Company
a Stock Company
400 Second Avenue South
Minneapolis, Minnesota 55401
(612)371-1111

Mark Bilbrey
President

Rande Yeager
Secretary

This page is only a part of a 2016 ALTA® Commitment for Title Insurance Old Republic National Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I—Requirements; and Schedule B, Part II—Exceptions[; and a counter-signature by the Company or its issuing agent that may be in electronic form]

Date: July 20, 2021
Planner: Katelynn Wintz
Planner email: Katelynn.wintz@coloradosprings.gov
Planner phone number: (719) 385-5192
Applicant Email: andrea.papierski@matrixdesigngroup.com
Applicant Name: Andrea Papierski
TSN: 5300000709, 5300000661
Site Address (to be used on postcard): n/a

PROJECT:

☐	Pre-application Notice	☒	Standard Notification
☐	Pre-application Neighborhood Meeting Notice	☐	Standard with Neighborhood Meeting Notice
☐	No notice	☐	Poster only

PUBLIC NOTICE:
☐ 150 feet ☐ 500 feet ☒ 1,000 feet ☐ Modified (attach modified buffer) ☐ No public notice

PROJECT BLURB

Provide a project blurb for each application type, adjust language as needed. Note code sections where applicable for variances.

PUD Development Plan
Request by RAO Investments LLC, with representation by Matrix Design Group, for approval of a PUD Development Plan. If approved the proposed application would allow for development of 128 single-family detached residential units with common open space, trail connections and landscaping improvements. The site is zoned PUD/AO/SS (Planning Unit Development, Airport and Streamside Overlay) is 22.7 acres in size, and is located southeast of Cowpoke Road and Forest Meadows Avenue.

Final Plat
Request by RAO Investments LLC, with representation by Matrix Design Group, for approval of a final plat. If approved the proposed application would allow for establishment of 128 new lots, public right-of-way and associated tracts. The site is zoned PUD/AO/SS (Planning Unit Development, Airport and Streamside Overlay) is 22.7 acres in size, and is located southeast of Cowpoke Road and Forest Meadows Avenue.

POSTCARD

Include 3-5 highlighted points to best describe the project.

- This project proposes 128 single-family residential units.
- The development will include common open space, trail connections, landscaping, and public roadway improvements.
- A concurrent final plat proposed 128 new lots with platted tracts.

Neighborhood Meeting Information:

[Type text]

- Date / Time / Location
- _____
- _____

POSTER

Fill out applicable information below:

What type of project is proposed? (large bold letters on poster, approx. 35 characters):
128 single-family detached units with open space, trails and landscaping improvements
Subtext (below bold letters, file number or additional information approx. 55 characters):

This is the file number area.

AR PUD DP 21-00475

AR FP 21-00476

Planning and Development Distribution Form
Final Plat

Directions: Planners select *at least one* check box under each section to determine the application distribution.

Planner Intake Date: KW 7/19/21 **Admin Receive Date: *[completed by login person]***

Project Name: Aspen Meadows Filing 4

1. PUBLIC NOTICE: (see Project Blurb to establish noticing parameters)

2. Date buckslip comments are due (21 calendar days after submittal): 8/9/21

3. HOA: # 266 (Forest Meadows 5-9 HOA)

4. STANDARD DISTRIBUTION:
☒ Include all standard distribution recipients *(either check here or individually check boxes below)*

ID#	Division Name	Email/Distribution Notes
3	☐ CONO	rdavis@cscono.org landusenotice@cscono.org
85	☐ Utilities Development Services	Buckslips@csu.org
9	☐ Fire Department	CSFDDevelopmentSMB@coloradosprings.gov
24	☐ SWENT / EDRD	development.review@coloradosprings.gov
17	☐ Cory Sharp, Land Surveyor	Cory.Sharp@coloradosprings.gov
66	☐ Real Estate Services	Barbara.Reinardy@coloradosprings.gov
14	☐ Lois Ruggera Candy Fontecchio	Lois.Ruggera@coloradosprings.gov Candy.Fontecchio@coloradosprings.gov
19	☐ Century Link	Patti.Moore@CenturyLink.com Bea.Romero@centurylink.com Melissa.Spencer@centurylink.com
77	☐ CSU Customer Contract Administration	Buckslips@csu.org
11	☐ IT GIS	Bootsy.Jones@coloradosprings.gov
13	☐ Parks & Recreation	Britt.Haley@coloradosprings.gov Constance.Schmeisser@coloradosprings.gov Emily.Duncan@coloradosprings.gov
23	☐ Enumerations	addressing@pprbd.org

29	☐ Flood Plain	Keith@pprbd.org
98	☐ USPS	Elaine.f.kelly@usps.gov
45	☐ Zaker Alazzeh, Traffic – School Safety	development.review@coloradosprings.gov
65	☐ Zaker Alazzeh, Traffic Eng	development.review@coloradosprings.gov
48	☐ Street Division	Corey.Rivera@coloradosprings.gov Cole.Platt@coloradosprings.gov
60	☐ Transit	Roger.Austin@coloradosprings.gov
25	☐ County Health Department	catherinemcgarvy@elpasoco.com
30	☐ Comcast	Jason_Jacobsen@comcast.com DENNIS_LONGWELL@comcast.com WSTMWR_MDSubmissions@comcast.com
92	☐ Forestry	Jeff.Cooper@coloradosprings.gov
56	☐ PlanCOS	PlanCOS@coloradosprings.gov

5. SCHOOL DISTRICT:

ID#	Division Name	Email/Distribution Notes
	☐ None	
36	☐ School District # 2	sbecker@hsd2.org
68	☐ School District # 3	gishd@wsd3.org
37	☐ School District # 11	TERRY.SEAMAN@d11.org JOSH.CHISM@d11.org
38	☐ School District # 12	dpeak@cmsd12.org
39	☐ School District # 20	tom.gregory@asd20.org
69	☐ School District # 22	chrissmith@esd22.org
41	☒ School District # 49	mandrews@d49.org

6. MILITARY INSTALLATION (if within 2 mile buffer):

ID#	Division Name	Email/Distribution Notes
	☒ None	
84	☐ Fort Carson	john.j.sanders71.civ@mail.mil thomas.j.wiersma.civ@mail.mil
46	☐ NORAD	Michael.kozak.2@us.af.mil Michael.Shafer.4@us.af.mil joseph.elms@us.af.mil 21CES.CENB.BaseDevelopment@us.af.mil
26	☐ USAFA	corine.weiss@us.af.mil craig.johnson.35.ctr@us.af.mil steven.westbay.ctr@us.af.mil elizabeth.dukes.3.ctr@us.af.mil 10CES.CENP.USAFADEVREVIEWGRP@us.af.mil
75	☐ Peterson	PAEK, AYOKA B GS-12 USSF AFSPC 21 CES/CENB <ayoka.paek@spaceforce.mil> Joseph.elms@us.af.mil 21CES.CENB.BaseDevelopment@us.af.mil

7. OPTIONAL DISTRIBUTION (Depending on Location of Site):

ID#	Division Name	Email/Distribution Notes
	☐ None	
59	☐ StratusIQ – AKA Falcon Broadband	jlandis@stratusiq.com tking@stratusiq.com cotrin@stratusiq.com **BLR & Flying Horse (ONLY)**
27	☐ CDOT (adjacent to CDOT ROW)	Valerie.vigil@state.co.us
34	☐ Colorado Geological Survey	cgs_lur@mines.edu
33	☐ SECWCD, Garrett Markus	garrett@secwcd.com
18	☒ Streamside Area Overlay	Tasha.Brackin@coloradosprings.gov
15	☐ Hillside Overlay	Kerri.Schott@coloradosprings.gov
20	☒ Airport	Kandrews@coloradosprings.gov Patrick.Bowman@coloradosprings.gov Kevin.Keith@coloradosprings.gov

63	☒ El Paso County Dev. Services Division	NinaRuiz@elpasoco.com Review of Plans within ½ mile of a County/City Border
43	☐ Wescott Fire District (adjacent only)	admin@wescottfire.org
71	☐ Falcon Fire Protection District	tharwig@falconfire.org
72	☐ Black Forest Fire Protection District	chief@bffire.org
81	☐ Broadmoor Fire Protection District	chief@broadmoorfire.com noalsperran@gmail.com
80	☐ CSURA – Urban Renewal	Jariah.Walker@coloradosprings.gov
5	☒ Woodmen Road Metro District Woodmen Heights 2	
65	☐ Kate Brady, Bike Planning, Traffic	Kate.Brady@coloradosprings.gov
53	☐ UCCS Review – North Nevada Overlay zone	mwood@uccs.edu
49	☐ Bob Cope & Sherry Hoffman, Economic Development	Bob.Cope@coloradosprings.gov Sherry.Hoffman@coloradosprings.gov

8. LAND USE REVIEW:

Hard Copy Full sized plans

☒ Planner	Traffic Report, Drainage Report, Geo-Hazard Report

Special notes or instructions: