



Re-submittal Form

Case Name/ Number: PRC2023-00007

Case Manager: David DeBoskey

Re-submitted Items:

- ☐ Development Plan/ Site Plan
- ☒ Plat
- ☐ Parking/ Landscape Plan
- ☒ Engineering Documents
- ☐ Subdivision Improvements Agreement (Microsoft Word version)
- ☐ Other: _____

*** All re-submittals must have this cover sheet and a cover letter addressing review comments.**

Please note the re-submittal review period is 21 days.

The cover letter must include the following information:

- Restate each comment that requires a response
- Provide a response below the comment with a description of the revisions
- Identify any additional changes made to the original document

For County Use Only:

Date Accepted:

Staff (accepting intake):

Resubmittal Active: Engineering; Planner; Right-of-Way; Addressing; Building Safety;

Neighborhood Services; Environmental; Parks; Attorney; Finance; Plan Coordination



Property Consultants, llc

September 26, 2023

Adams County Community & Economic Development
4430 S. Adams County Pkwy., 1st Fl., Suite W2000
Brighton, CO 80601-8204

**Re: 49900 Old Victory Road – REZONING AND PRELIMINARY PLAT
Response to Comments 2 – 07/18/23**

PLN01: PLN01: Applicant must resubmit with proof of water for the three proposed lots. If this location is on well and septic, please provide proof that these developments would have an adequate amount of water secured. Provide a water supply plan and Determination of Water Right. See attached comment letter from Division of Water Resources.:

Application for the legal source of water has been completed through the DWR. Publication has also been completed. A water supply memo prepared by Jehn Water Consultants, Inc. is included with the resubmittal materials.

ENG8: The drainage report submitted indicate that the applicant does not intend to provide water detention or water quality. In response to the justifications given in the exemption request:

- The lot does NOT appear to be adjacent to Kiowa creek. There exists one property due west and three properties northwest between the site and Kiowa Creek.
- This request is NOT a residential lot split. A residential lot split results in two lots and this request results in three lots.

As a result, the applicant is still responsible for developing drainage infrastructure. However, the applicant may still qualify for detention exemption should the proposed developments be less than 5% of the total lot area.

In discussions with County staff prior to the drafting of the Drainage Report, it was noted that since the floodplain of Kiowa Creek encompasses nearly all of the adjacent lot to the west that the subject property could be considered adjacent to the floodplain, as it comes within a very short distance of the west property line. Additionally, because this is a minor subdivision with no roads, the concept of a lot split was applied in consideration of the detention exemption as this is a small minor subdivision project. Nevertheless, foregoing the two above exemption criteria, the project is developing far less than the 5% threshold for detention (~0.9%) and therefore does meet the exemption criteria. Calculations are shown in the drainage report.

Water quality treatment is included in the Drainage Report via Grass Buffers, a Mile High Flood Control District approved water quality treatment design option.

PLT2023-00011 PRELIMINARY PLAT COMMENTS:

ROW1: Revise the m/b legal to correctly identify Oak Park Drive, not Road to remove the ambiguity caused by this reference.

Revised

ROW2: Revise Notary Acknowledgement to read: THE FOREGOING OWNERSHIP AND DEDICATION CERTIFICATE...

Revised

ROW3: Provide Basis of Bearings Note

Added

ROW4: Notes are out of sequential order, revise.

Revised

ROW5: Need to possibly revise Note 8 (first one) due to revisions.

Revised

ROW6: Access provision note: No access from Lot 1 directly onto Old Victory Road

Added

If you should have any questions, or need any additional information, please don't hesitate to call me at 303-317-300 or email me at Aaron@aperiopc.com.

Sincerely,



Aaron Thompson
Aperio Property Consultants, LLC

Cc: Dan Fahey

OAK PARK ESTATES SUBDIVISION - PRELIMINARY PLAT CASE No.: PRC2023-00007

PURPOSE STATEMENT:

THIS OAK PARK ESTATES SUBDIVISION FILING No. 1 IS INTENDED TO SUBDIVIDE 35.0227 ACRES INTO 3 SINGLE FAMILY LOTS AND EASEMENTS.

OWNERSHIP AND DEDICATION CERTIFICATE:

KNOW ALL MEN BY THESE PRESENTS THAT F & C REALTY COMPANY, A COLORADO CORPORATION, BEING THE SOLE OWNER OF THE FOLLOWING DESCRIBED TRACT OF LAND:

A PARCEL OF PROPERTY LOCATED IN SECTION 26, TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE EAST 1/4 CORNER OF SAID SECTION 26, FROM WHENCE THE SOUTHEAST CORNER OF SAID SECTION 26 TO BEAR SOUTH 00 DEGREES 00 MINUTES 00 SECONDS WEST, A DISTANCE OF 2664.34 FEET;
THENCE SOUTH 00 DEGREES 00 MINUTES 00 SECONDS WEST, ALONG THE EAST LINE OF SAID SOUTH 1/2 OF SECTION 26, A DISTANCE OF 846.15 FEET TO A POINT, SAID POINT BEING ON THE SOUTH RIGHT OF WAY LINE OF THE OLD VICTORY HIGHWAY;
THENCE NORTH 87 DEGREES 08 MINUTES 33 SECONDS WEST, ALONG SAID SOUTH RIGHT OF WAY LINE, A DISTANCE OF 179.98 FEET;
THENCE NORTH 74 DEGREES 02 MINUTES 11 SECONDS WEST, A DISTANCE OF 198.50 FEET TO A POINT ON THE EAST RIGHT OF WAY LINE OF SAID OAK PARK DRIVE;
THENCE NORTH 74 DEGREES 02 MINUTES 11 SECONDS WEST, A DISTANCE OF 100.05 FEET TO THE POINT OF BEGINNING, SAID POINT BEING ON THE WEST RIGHT OF WAY LINE OF SAID OAK PARK DRIVE;
THENCE CONTINUING NORTH 74 DEGREES 02 MINUTES 11 SECONDS WEST, ALONG SAID SOUTH RIGHT OF WAY LINE OF THE OLD VICTORY HIGHWAY, A DISTANCE OF 895.00 FEET TO THE NORTHWEST CORNER OF SAID PARCEL;
THENCE DEPARTING FROM SAID SOUTH RIGHT OF WAY, SOUTH 00 DEGREES 03 MINUTES 56 SECONDS EAST, ALONG THE WEST LINE OF SAID PARCEL, A DISTANCE OF 1059.35 FEET;
THENCE SOUTH 90 DEGREES 00 MINUTES 00 SECONDS WEST, A DISTANCE OF 306.94 FEET;
THENCE SOUTH 12 DEGREES 49 MINUTES 44 SECONDS WEST, A DISTANCE OF 729.80 FEET TO THE NORTH RIGHT OF WAY LINE OF SAID OAK PARK DRIVE;
THENCE ALONG THE NORTH AND WEST RIGHT OF WAY LINE OF SAID OAK PARK DRIVE THE FOLLOWING SIX (6) COURSES:
1) THENCE NORTH 89 DEGREES 32 MINUTES 46 SECONDS EAST, A DISTANCE OF 1027.38 FEET TO AN ARC WITH A CURVE TO THE LEFT;
2) THENCE ALONG AN ARC WITH A CURVE TO THE LEFT A DISTANCE OF 245.23 FEET, HAVING A CENTRAL ANGLE OF 87 DEGREES 00 MINUTES 20 SECONDS, A RADIUS LENGTH OF 161.49 FEET, A CHORD LENGTH OF 222.34 FEET WHICH CHORD BEARS NORTH 46 DEGREES 02 MINUTES 36 SECONDS EAST, TO A POINT OF TANGENCY;
3) NORTH 02 DEGREES 32 MINUTES 26 SECONDS EAST, A DISTANCE OF 964.73 FEET TO A POINT OF CURVATURE;
4) ALONG THE ARC TO THE RIGHT A DISTANCE OF 91.16 FEET, HAVING A CENTRAL ANGLE OF 15 DEGREES 49 MINUTES 41 SECONDS, A RADIUS LENGTH OF 330.00 FEET, A CHORD LENGTH OF 90.87 FEET WHICH CHORD BEARS NORTH 10 DEGREES 27 MINUTES 17 SECONDS EAST;
5) NORTH 18 DEGREES 22 MINUTES 07 SECONDS EAST, A DISTANCE OF 299.97 FEET;
6) NORTH 27 DEGREES 50 MINUTES 02 SECONDS WEST, A DISTANCE OF 27.68 FEET TO THE POINT OF BEGINNING SAID POINT BEING ON THE SAID SOUTH RIGHT OF WAY LINE OF OLD VICTORY HIGHWAY AND THE POINT OF BEGINNING.

HAVE (HAS) BY THESE PRESENTS LAID OUT, PLATTED AND SUBDIVIDED THE SAME INTO LOTS, EASEMENTS AS SHOWN ON THIS PLAT UNDER THE NAME AND STYLE OF OAK PARK ESTATES SUBDIVISION. THE UNDERSIGNED DOES HEREBY GRANT AND CONVEY TO ADAMS COUNTY THOSE PUBLIC EASEMENTS AS SHOWN ON THE PLAT; AND FURTHER RESTRICTS THE USE OF ALL PUBLIC EASEMENTS TO ADAMS COUNTY AND / OR ITS ASSIGNS, PROVIDED HOWEVER, THAT THE SOLE RIGHT AND AUTHORITY TO RELEASE OR QUITCLAIM ALL OR ANY SUCH EASEMENTS SHALL REMAIN EXCLUSIVELY VESTED IN ADAMS COUNTY.

IN WITNESS THEREOF F & C REALTY COMPANY, A COLORADO CORPORATION, HAVE CAUSED THESE PRESENTS TO BE EXECUTED THIS _____ DAY OF _____, 202__ AD.
OWNER: F & C REALTY COMPANY, A COLORADO CORPORATION.
MANAGER: DANIEL FAHEY

BY: DANIEL FAHEY

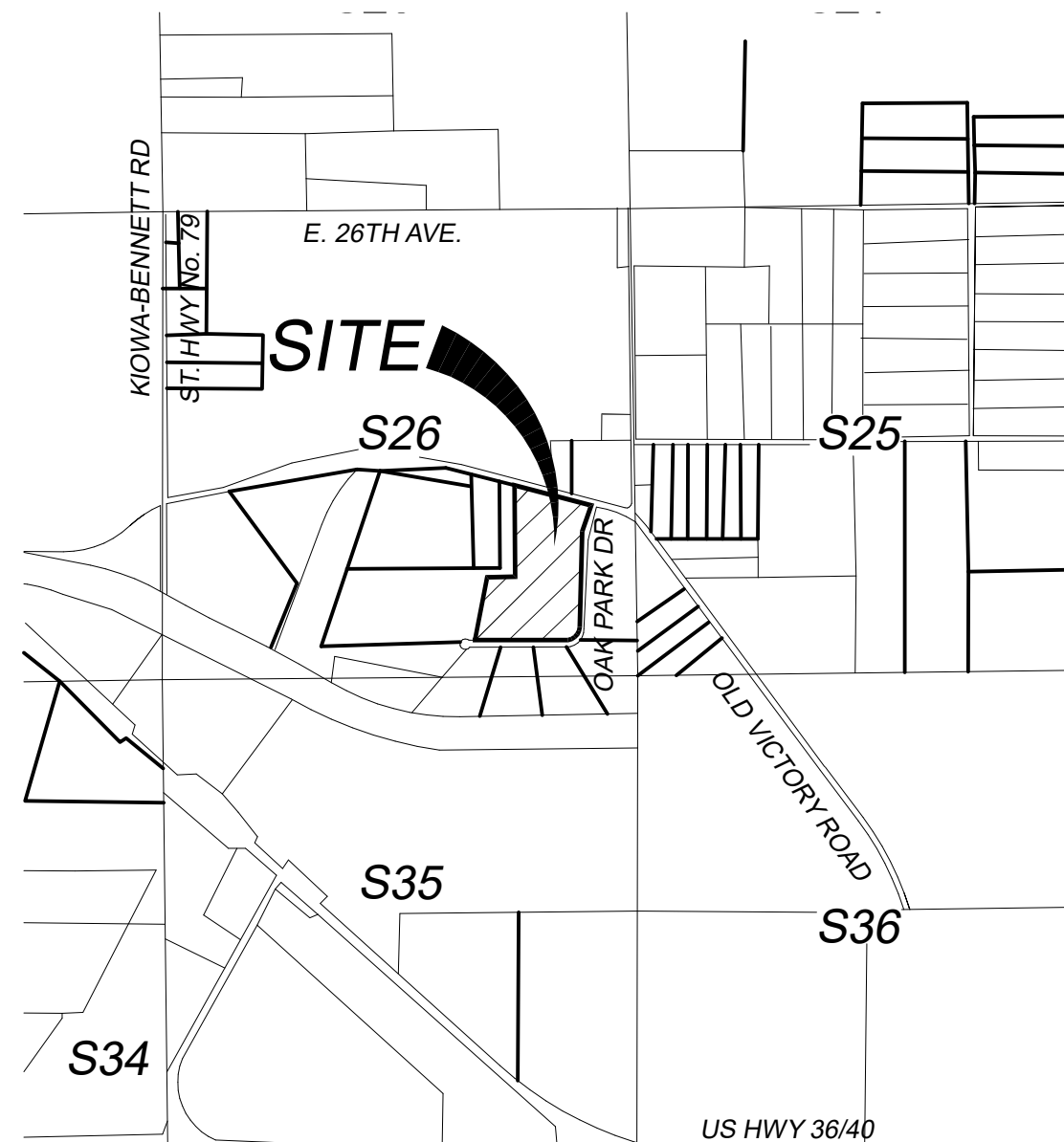
NOTARY PUBLIC:

STATE OF COLORADO)
) SS
COUNTY OF ADAMS)

THE FOREGOING OWNERSHIP AND DEDICATION CERTIFICATE WAS ACKNOWLEDGED BEFORE ME THIS ____ DAY OF _____ 202 ____ AD. BY DANIEL FAHEYAS MANAGER OF F & C REALTY COMPANY.

WITNESS MY HAND AND OFFICIAL SEAL

NOTARY PUBLIC
MY COMMISSION EXPIRES: _____
NOTARY ADDRESS: _____



VICINITY MAP
SCALE 1"=2000'

PLANNING COMMISSION APPROVAL:

RECOMMENDED FOR APPROVAL BY THE ADAMS COUNTY PLANNING
COMMISSION THIS DAY OF A.D. 202

CHAIR

BOARD OF COUNTY COMMISSIONERS' APPROVAL:

APPROVED BY THE ADAMS COUNTY BOARD OF COUNTY COMMISSIONERS
THIS _____ DAY OF _____ A.D. 202__

CHAIR

ADAMS COUNTY ATTORNEY'S OFFICE:

APPROVED AS TO FORM

SURVEYOR'S CERTIFICATE:

I, HAROLD J. PONSERELA, A DULY LICENSED PROFESSIONAL LAND SURVEYOR, REGISTERED IN THE STATE OF COLORADO DO HEREBY CERTIFY THAT THERE NO ROADS, PIPELINES, IRRIGATION DITCHES, OR OTHER EASEMENTS IN EVIDENCE OR KNOWN BY ME TO EXIST ON OR ACROSS THE HEREIN BEFORE DESCRIBED PROPERTY EXCEPT AS SHOWN ON THIS PLAT. I FURTHER CERTIFY THAT I HAVE PERFORMED THE SURVEY SHOWN HEREON, OR SUCH SURVEY WAS PREPARED UNDER MY DIRECT RESPONSIBILITY AND SUPERVISION, THAT THIS PLAT ACCURATELY REPRESENTS SAID SURVEY, AND THAT ALL MONUMENTS EXIST AS SHOWN HEREIN.

DATE: 2/24/2023

HAROLD PINSERELLA
COLORADO P.L.S. NO. 29766
FOR & ON BEHALF OF:
PO BOX 694 STRASBURG CO, 80136
303.549.7992

EASEMENT STATEMENT

FIFTEEN-FOOT (15') WIDE UTILITY AND DRAINAGE EASEMENTS ARE HEREBY DEDICATED ON PRIVATE PROPERTY ADJACENT TO THE FRONT LOT LINES OF EACH LOT IN THE SUBDIVISION. TEN-FOOT (10') WIDE DRY UTILITY EASEMENTS ARE HEREBY DEDICATED ON PRIVATE PROPERTY ADJACENT TO THE REAR LINES OF EACH LOT AND TO THE SIDE LINES OF EACH LOT. THESE EASEMENTS ARE DEDICATED TO ADAMS COUNTY FOR THE BENEFIT OF THE APPLICABLE UTILITY PROVIDERS FOR THE INSTALLATION, MAINTENANCE, AND REPLACEMENT OF UTILITIES. UTILITY EASEMENTS SHALL ALSO BE GRANTED WITHIN ANY ACCESS EASEMENTS AND PRIVATE STREETS IN THE SUBDIVISION. PERMANENT STRUCTURES, IMPROVEMENTS, OBJECTS, BUILDINGS, WELLS, WATER METERS AND OTHER OBJECTS THAT MAY INTERFERE WITH THE UTILITY FACILITIES OR USE THEREOF (INTERFERING OBJECTS) SHALL NOT BE PERMITTED WITHIN SAID UTILITY EASEMENTS AND THE UTILITY PROVIDERS, AS GRANTEEES, MAY REMOVE ANY INTERFERING OBJECTS AT NO COST TO SUCH GRANTEEES, INCLUDING, WITHOUT LIMITATION, VEGETATION.

COTTONWOOD SURVEYING AND ASSOCIATES, INC.

P.O. BOX 694, STRASBURG, COLORADO (303) 549-7992
JOB No. 2023-04 DATE: 2/2/2024

REVISED: 7/8/2023
REVISED: 6/2/2023
REVISED: 5/15/2023

OAK PARK ESTATES SUBDIVISION - PRELIMINARY PLAT

CASE No.: PRC2023-00007

A PARCEL OF LAND SITUATE IN THE SOUTHEAST QUARTER OF SECTION 26,
TOWNSHIP 3 SOUTH, RANGE 63 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
COUNTY OF ADAMS, STATE OF COLORADO.

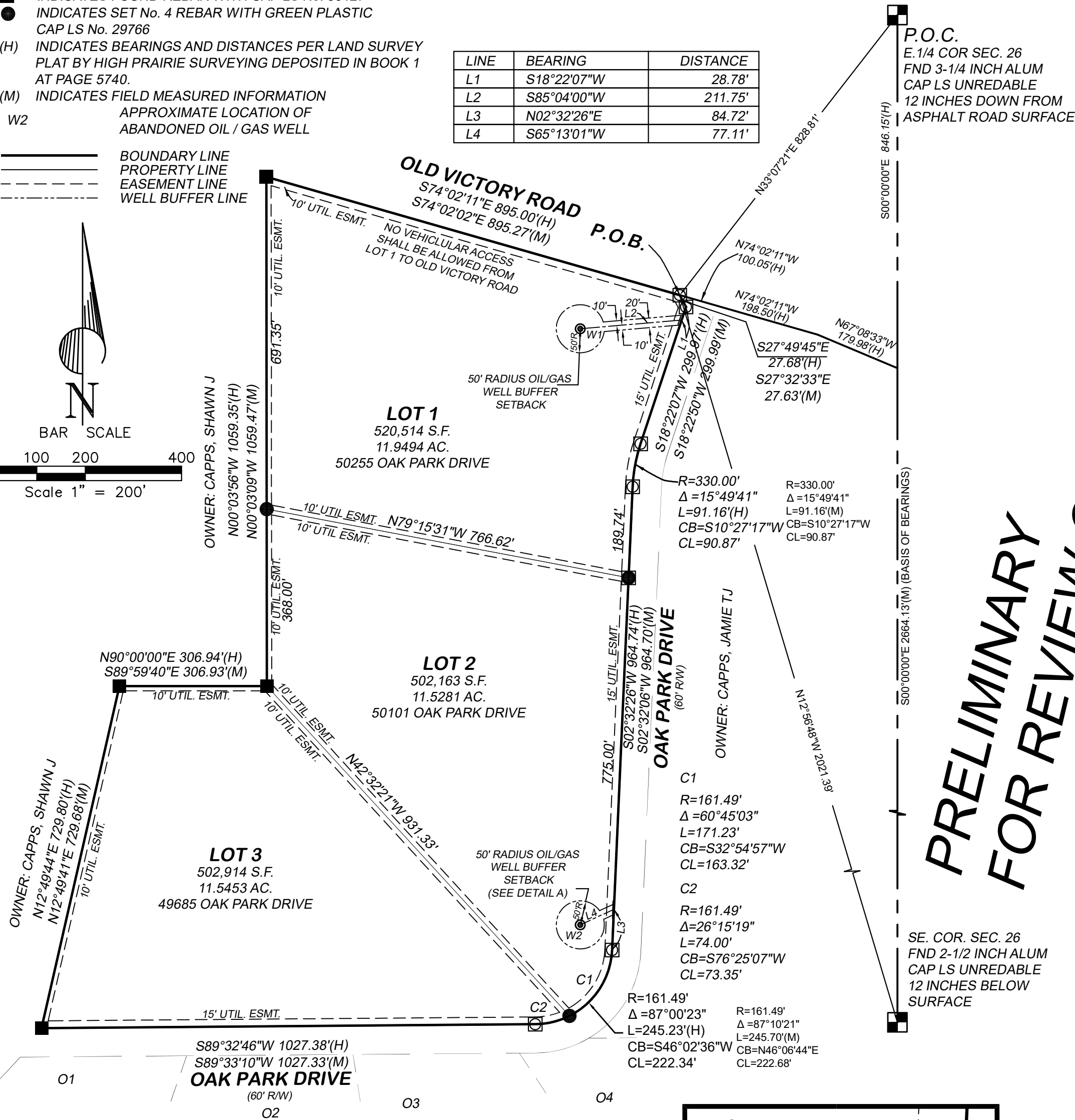
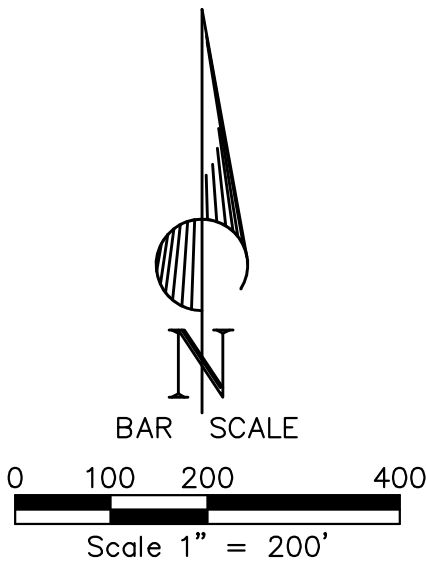
SHEET 2 OF 2

LEGEND

- INDICATES FOUND REBAR WITH CAP L.S. No. 23519
- INDICATES FOUND REBAR WITH CAP L.S. No. 30127
- INDICATES SET No. 4 REBAR WITH GREEN PLASTIC CAP L.S. No. 29766
- (H) INDICATES BEARINGS AND DISTANCES PER LAND SURVEY PLAT BY HIGH PRAIRIE SURVEYING DEPOSITED IN BOOK 1 AT PAGE 5740.
- (M) INDICATES FIELD MEASURED INFORMATION
- W2 APPROXIMATE LOCATION OF ABANDONED OIL / GAS WELL

BOUNDARY LINE
PROPERTY LINE
EASEMENT LINE
WELL BUFFER LINE

LINE	BEARING	DISTANCE
L1	S18°22'07"W	28.78'
L2	S85°04'00"W	211.75'
L3	N02°32'26"E	84.72'
L4	S65°13'01"W	77.11'



- O1 OWNER: DUSAK JOHN M AND DUSAK LINDA M
- O2 OWNER: VIRAMONTES-PILAR JUAN F AND VIRAMONTES-PILAR CRYSTAL JOY
- O3 OWNER: AGUIRRE MANUEL
- O4 OWNER: NELAN CHELSEA AND NELAN CHAD

COTTONWOOD SURVEYING AND ASSOCIATES, INC.

P.O. BOX 694, STRASBURG, COLORADO (303) 549-7992

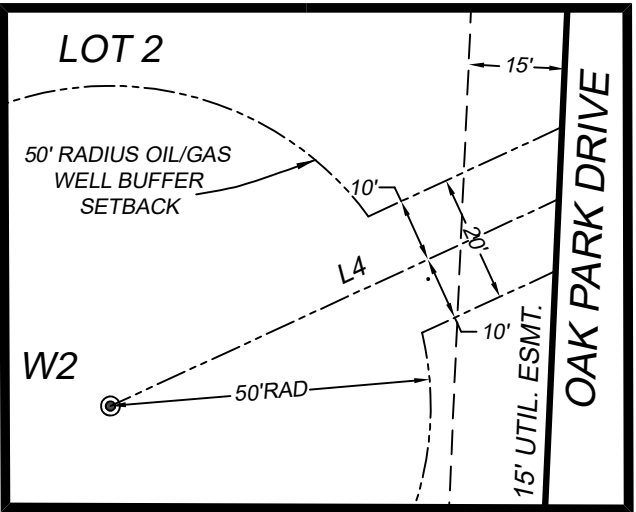
JOB No. 2023-04

DATE: 2/24/2023

REVISED: 7/8/2023
REVISED: 6/2/2023
REVISED: 5/15/2023

NOTES:

- THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY CS&A, INC. TO DETERMINE OWNERSHIP OR EASEMENTS OF RECORD. FOR ALL INFORMATION REGARDING EASEMENTS, RIGHTS-OF-WAY, AND TITLE OF RECORD, CS&A, INC. RELIED UPON O AND E REPORT NO. OE1052818 BY LAND TITLE GUARANTEE COMPANY, EFFECTIVE DATE: 02/24/2023.
- 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.
- ANY PERSON WHO KNOWINGLY REMOVES, ALTERS OR DEFACES ANY PUBLIC LAND SURVEY MONUMENT OR LAND BOUNDARY MONUMENT OR ACCESSORY COMMITS A CLASS TWO(2) MISDEMEANOR PURSUANT TO STATE STATUTE 18-4-508, OF THE COLORADO REVISED STATUTE.
- THE SUBJECT PROPERTY LIES WITHIN ZONE X AS SHOWN ON THE FEMA FLOOD HAZARD MAP No. 08001C0720H EFFECTIVE DATE 3/5/2007.
- BENCH MARK: NGS DEEP ROD "LADYBIRD" PID No. AA8177. MONUMENT IS SITUATE ALONG THE EAST SIDE OF THE OLD RESTSTOP ATOP LADYBIRD HILL BETWEEN BENNETT, CO AND STRASBURG CO. WEST OF THE EXIT FOR LADYBIRD HILL ELEVATION = 5563 FEET (NAVD 88) GPS OBSERVED.
- DISTANCES SHOWN HEREON ARE EXPRESSED IN U.S. SURVEY FEET AND DECIMALS THEREOF. A U.S. SURVEY FOOT IS DEFINED AS EXACTLY 1200 / 3937 METERS.
- THE LOCATION OF ABANDONED AND PLUGGED WELL LYING WITHIN THE SUBJECT PROPERTY IS GRAPHICALLY SHOWN HEREON AND IS APPROXIMATE BASED UPON INFORMATION FROM THE COLORADO OIL/GAS COMMISSION WEBSITE.
- THE ABOVE LEGAL DESCRIPTION WAS PREPARED BY KEITH WESTFALL, PLS 30127, HIGH PRAIRIE SURVEY CO., PO BOX 384, KIOWA, CO AS SHOWN ON THE DEPOSITED LAND SURVEY PLAT BOOK 1 AT PAGE 5740, ADAMS COUNTY. THE OAK PARK ROAD AS NOTED IN THE LEGAL DESCRIPTION BY KEITH WESTFALL, PLS 30127, WAS CORRECTED BY HAROLD J. PONSERELLA, PLS 29766 TO READ OAK PARK DRIVE, PER ADAMS COUNTY.
- ENGINEERED INDIVIDUAL SEWAGE DISPOSAL SYSTEMS (ISDS) MAY BE REQUIRED ON CERTAIN LOTS. ENGINEERED ISDS ARE LARGER AND MORE COSTLY THAN CONVENTIONAL SYSTEMS. LOT-SPECIFIC SOILS AND PERCOLATION TESTS SHALL BE USED TO DETERMINE THE TYPE AND SIZE OF ISDS.
- SUITABLE AREA NEEDS TO BE DESIGNED ON EACH LOT SITE PLAN FOR BOTH PRIMARY AND REPLACEMENT WASTEWATER ABSORPTION AREAS. REPLACEMENT OF THE PRIMARY ABSORPTION AREA MAY BE REQUIRED.
- IF FAILURE OF THE PRIMARY AREA OCCURS. THESE AREAS NEED TO MEET ALL ADAMS COUNTY HEALTH SETBACK REQUIREMENTS, AND ARE TO REMAIN FREE OF ANY IMPROVEMENTS, E.G. IRRIGATED LANDSCAPING, PAVING, OUT-BUILDINGS, ETC.
- THE ONSITE WASTEWATER TREATMENT SYSTEMS (OWTS) MUST BE LOCATED OUTSIDE OF ALL EASEMENTS ON THE LOT AND ARE TO REMAIN FREE OF ALL UNDERGROUND PIPELINES AND ANY IMPROVEMENTS, E.G. IRRIGATED LANDSCAPE, DRAINAGE DITCHES, PAVING, DRIVEWAYS, OUT-BUILDINGS, ETC. AND MEET ALL APPLICABLE SETBACKS. ADDITIONALLY, OWTS ON LOT 1 AND LOT 2 ARE TO BE LOCATED OUTSIDE OF ANY OIL AND GAS ACCESS AND WORKOVER SETBACKS. DUE TO SITE CONSTRAINTS, THE BUILDING FOOTPRINT AND DESIGN OF OWTS ARE LIMITED. ENGINEERED OWTS UTILIZING HIGHER LEVEL TREATMENT AND/OR LIMITS ON THE NUMBER OF BEDROOMS MAY BE NECESSARY TO PERMIT AN OWTS WITHIN THE LIMITED AREA AVAILABLE ON THE LOT.
- NOTICE TO PROSPECTIVE BUYERS: THERE ARE PLUGGED AND ABANDONED WELLS LOCATED ON THIS PLAT IN LOTS 1 AND 2. PURSUANT TO ADAMS COUNTY DEVELOPMENT STANDARDS SECTION 4-10-02-03-03-05(2) THERE ARE 50FT RADIUS BUFFERS AROUND THE ABANDONED WELLHEADS DEDICATED AS WELL MAINTENANCE AND WORKOVER SETBACKS. NO STRUCTURES, FENCES OR DRIVEWAYS SHALL BE LOCATED WITHIN THIS SETBACK. PUBLIC ACCESS FOR INGRESS AND EGRESS TO THE WELL MAINTENANCE AND WORKOVER SETBACK AREA IN LOTS 1 AND 2 IS PROVIDED BY THE EASEMENT AS SHOWN.
- THE OWNER SHALL DISCLOSE TO PROSPECTIVE PURCHASERS OF LOTS 1 AND 2 WITHIN A RADIUS OF 200 FEET OF THE PLUGGED AND ABANDONED WELLS OF (1) THE LOCATION OF THE PLUGGED AND ABANDONED WELL, (2) THE LOCATION OF THE MAINTENANCE AND WORKOVER SETBACK, AND (3) THE PURPOSE FOR THE WELL MAINTENANCE AND WORKOVER SETBACK.
- THERE ARE EXISTING UNDERGROUND GAS AND/OR OIL LINES WITHIN UNDOCUMENTED EASEMENTS WITHIN THIS DEVELOPMENT. THIS IS A GENERAL NOTE INFORMING THAT SUCH LINES OR EASEMENTS MAY EXIST ON ANY LOT AND CANNOT BE ACCURATELY LOCATED ON ANY PLATS AND THAT THE SURVEYOR/ENGINEER ARE NOT LIABLE OR RESPONSIBLE FOR ANY BUILDING RESTRICTIONS OR LIMITATIONS CAUSED BY THESE LINES OR EASEMENTS. RESPONSIBILITY IS WITH THE OWNER/DEVELOPER TO LOCATE ANY SUCH LINES SO AS TO PROVIDE AN ACCEPTABLE BUILDING ENVELOPE.
- LOTS WITHIN THE OAK PARK ESTATES SUBDIVISION WILL BE SERVED BY ONSITE WASTEWATER TREATMENT SYSTEMS (OWTS). ADAMS COUNTY HEALTH DEPARTMENT REQUIRES THAT SEPTIC TANKS BE PUMPED AND INSPECTED EVERY FOUR YEARS. AT LEAST EVERY FOUR YEARS, EACH PROPERTY OWNER SHALL HAVE THEIR SEPTIC TANK PUMPED AND INSPECTED BY A SYSTEMS CLEANER LICENSED BY ADAMS COUNTY HEALTH DEPARTMENT AND SHALL SUBMIT A RECEIPT INDICATING THAT THE SEPTIC SYSTEM HAS BEEN PUMPED AND INSPECTED TO THE ADAMS COUNTY HEALTH DEPARTMENT EHWATERPROGRAM@ADCOGOV.ORG.
- BEARINGS ARE BASED UPON THE EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 26 AS SHOWN ON ON THE DEPOSITED LAND SURVEY PLAT BOOK 1 AT PAGE 5740, ADAMS COUNTY. WHICH LINE BEARS S00°00'00"E AND MONUMENTED AT THE EAST ONE-QUARTER CORNER BY A 3-1/4 INCH ALUMINUM CAP L.S. UNREADABLE, TWELVE INCHES BELOW THE GRAVEL ROAD SURFACE AND MONUMENTED AT THE SOUTHEAST CORNER OF SECTION 26 BY A 2-1/2 INCH ALUMINUM CAP UNREADABLE TWELVE INCHES BELOW THE GROUND SURFACE.
- NO VEHICULAR ACCESS SHALL BE ALLOWED FROM LOT 1 TO OLD VICTORY ROAD



W2 EASEMENT DETAIL A
SCALE 1"=30'

MEMORANDUM

TO: Mr. Dan Fahey
FROM: Gina Burke and Hillary Banks
DATE: September 28, 2023 (Revised)
SUBJECT: Water Availability Study for Oak Park Estates Property
JOB NO: 1053.1

Pursuant to your request, we have completed a review of the available ground water in the Denver Basin aquifers underlying the Oak Park Estates property located in the southeast quarter of Section 26, Township 3 South, Range 63 West, 6th P.M., Adams County, Colorado (the Property). The Oak Park Estates Property consists of approximately 35.02 acres as shown on the attached Figure 1. This Memorandum provides a preliminary review of the water supply underlying the 35.02 acres. Please note that we offer no opinion relating to ownership of land or water rights herein.

We completed a document review at the State Engineer's Office to determine if there are any existing wells on the Property. There were no wells found within the State's database. We also completed a pre-213 well search for the Property to determine if any existing water rights impact the Property. Based on the State Engineer's Office maps, there are no wells whose circles of appropriation impact the property.

The ground water underlying the Property has not been formally claimed in a Determination of Water Right under the Colorado Ground Water Commission (CGWC). There are four Denver Basin aquifers underlying the Property: Denver, Upper Arapahoe, Lower Arapahoe, and Laramie-Fox Hills, as shown in Table 1. We have calculated an

estimate of water availability in the Denver Basin aquifers underlying the Property. Table 1 includes the estimated saturated sand thickness of each aquifer, and the estimated volume of water in each of the aquifers underlying the Property. These values may be slightly adjusted in the Determination of Water Right application process. By Colorado State Statute, a maximum of 1% per year can be withdrawn from the aquifers, resulting in a 100-year supply for each aquifer, the estimated annual amount from each aquifer underlying the Property is provided in Table 1. Per Adams County Development Standards and Regulations, a 300-year aquifer life is considered to be proof of an adequate water supply. Table 1 shows the adjustment of the annual amount by aquifer to meet Adams County's 300-year regulation.

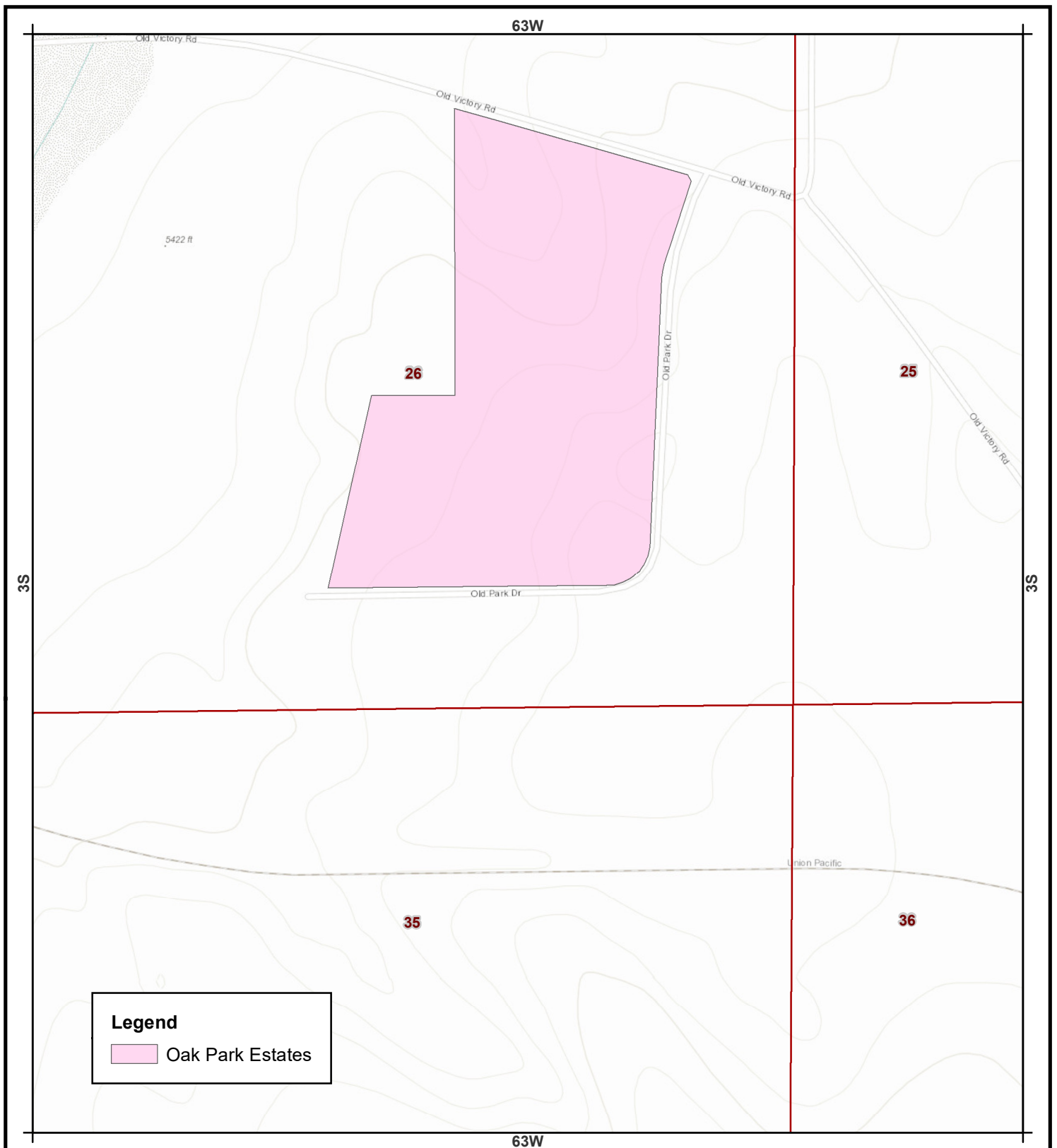
Table 1 also indicates the status of each aquifer as being considered nontributary or not-nontributary. The ground water in the Denver and Upper Arapahoe aquifers are considered not-nontributary as pumping from those bedrock aquifers would cause depletions to the alluvial aquifer. A CGWC approved Replacement Plan is required to place the Denver aquifer ground water to beneficial use. Pumping from the Denver aquifer would require replacement of actual depletions to the alluvial system. The Upper Arapahoe aquifer does not require an approved Replacement Plan, but does require 4% of the volume pumped to be replaced to the alluvial system. Return flows from septic leach fields and irrigation return flows will meet this requirement. The ground water in the Lower Arapahoe and the Laramie-Fox Hills aquifers underlying the Property are considered nontributary and can be placed to beneficial use by applying for a well permit with the Colorado Division of Water Resources.

Should you decide to drill wells on the property, the completion depths of the aquifers were obtained from the Colorado Division of Water Resources Denver Basin Aquifers Determination Tool. The base of the Denver aquifer is estimated to be 306 feet below ground surface (bgs), the base of the Upper Arapahoe aquifer is estimated to be 615 feet bgs, the base of the Lower Arapahoe aquifer is estimated to be 881 feet bgs, and the base of the Laramie-Fox Hills aquifer is estimated to be 1,381 feet bgs.

Based on the Oak Park Estates Subdivision Preliminary Plat dated May 15, 2023, the Property is to be divided into three lots, each approximately 12 acres in size. The

ground water volumes in each aquifer will be equally split between the newly created lots. Thus, each lot will have approximately 2.8 af/yr of ground water available to meet demands, 0.81 af/yr in the Denver aquifer, 0.88 af/yr in the Upper Arapahoe aquifer, 0.5 af/yr in the Lower Arapahoe aquifer, and 0.62 af/yr in the Laramie-Fox Hills aquifer. Pursuant to Section 5-04-05 of the Adams County Development Standards and Regulations, a water requirement of 0.35 acre-feet per lot (0.3 af/yr per residence, 0.05 af/yr per 1,000 square feet of irrigated lawn and garden) is necessary to serve the Property. In total, the ground water underlying the Property is more than adequate to service the three lots, while adhering to the County's 300-year life aquifer rule. Because the ground water in the Denver aquifer is considered not-nontributary and requires full replacement of depletions, the lots will rely on using the Upper Arapahoe aquifer to meet demands and will return 4% of the volume pumped to the stream system using individual septic leach systems and irrigation return flows.

If you have any questions, or if you would like to discuss this Memorandum in greater detail, please do not hesitate to call.



Jehn Water Consultants, Inc.
 88 Inverness Circle East,
 Suite K-102
 Englewood, CO 80112
 (303) 321-8335
www.jehnwater.com

DRAFT

FIGURE 1

Oak Park Estates Property General Location

N
 1 inch = 500 feet
 0 250 500 Feet
 Job No. 1053.1
 Projection: UTM NAD83
 Prepared By: AAW 8/15/2023
 Checked By:
 Sources:
 Esri USA Topo Map Basemap
 Adams County Assessor

TABLE 1
ESTIMATED WATER AVAILABLE
OAK PARK ESTATES
Underlying the 35.02 acre parcel

Aquifers	Acreage	Average Saturated Thickness ft	Sy	Total Appropriation af/yr 100 years	Total Appropriation af/yr 300 years	SEO Status
Denver	35.02	123	17%	7.3	2.4	NNT
Upper Arapahoe		133.6	17%	8.0	2.7	NNT
Lower Arapahoe		75	17%	4.5	1.5	NT
Laramie-Fox Hills		107	15%	5.6	1.9	NT
Totals				25.4	8.5	

Notes:

NNT=Not Nontributary

NT=Nontributary

PUBLIC NOTICES

NOTICE OF PUBLIC HEARING ON THE PROPOSED 2024 BUDGET AND AMENDED 2023 BUDGET

The Board of Directors (the "Board") of the BLIJOU CREEK METROPOLITAN DISTRICT (the "District"), will hold a public hearing via teleconference on October 17, 2023, at 10:00 am to consider adoption of the District's proposed 2024 budget (the "Proposed Budget"), and, if necessary, adoption of an amendment to the 2023 budget (the "Amended Budget"). The public hearing may be joined using the following teleconference information:

Join Zoom Meeting
<https://us06web.zoom.us/j/88433725586?pwd=OWpGNGJWIRs3ZkxwVnpWd0Z202>
 Meeting ID: 884 3372 5586
 Passcode: 128991
 Call: 1-720-707-2699

The Proposed Budget and Amended Budget are available for inspection by the public at the offices of Simmons & Wheel-er, 304 Inverness Way S #490, Englewood, CO 80112

Any interested elector of the District may file any objections to the Proposed Budget and Amended Budget at any time prior to the final adoption of the Proposed Budget or the Amended Budget by the Board.

The agenda for any meeting may be obtained at www.bijoucreekmetrodistrict.org or by calling (303) 858-1800.

BY ORDER OF THE BOARD OF DIRECTORS:

BLIJOU CREEK METROPOLITAN DISTRICT,
 a quasi-municipal corporation and political subdivision
 of the State of Colorado

/s/ White Bear Ankele Tsunaka & Waldron
 Attorneys at Law

#2862
 Published in the Eastern Colorado News on Friday, September 29, 2023.

BEFORE THE COLORADO GROUND WATER COMMISSION DETERMINATIONS OF WATER RIGHT

KIOWA-BLIJOU DESIGNATED GROUNDWATER BASIN AND NORTH KIOWA BLIJOU GROUND
 WATER MANAGEMENT DISTRICT, ADAMS COUNTY

TAKE NOTICE that pursuant to section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, F & C Realty Company has applied for determinations of rights to allocations of designated groundwater from the Laramie-Fox Hills (receipt

no. 10031171), Lower Arapahoe (receipt no. 10031170), Upper Arapahoe (receipt no. 10031169) and Denver (receipt no. 10031168) aquifers underlying 35.02 acres generally described as part of the SE 1/4 of Section 26, Township 3 South, Range 63 West of the 6th P.M. The applicant claims ownership of this land and control of the groundwater in these aquifers underlying this property. The groundwater from these allocations is proposed to be used on the described property for the following beneficial uses: domestic, commercial, irrigation, agriculture, stock watering, fire protection, and replacement purposes.

In accordance with section 37-90-107(7), the Colorado Ground Water Commission shall allocate groundwater from the above aquifers based on ownership of the overlying land. A preliminary evaluation of the application finds the volume of water available for allocation from the aquifers underlying the above-described property to be 532 acre-feet for the Laramie-Fox Hills aquifer, 447 acre-feet for the Lower Arapahoe aquifer, 804 acre-feet for the Upper Arapahoe aquifer and 744 acre-feet for the Denver aquifer. These amounts are subject to final evaluation, and subsequent to issuance of the determinations, adjustment to conform to the actual local aquifer characteristics.

In accordance with section 37-90-107(7)(a), well permits issued pursuant to subsection 107(7) shall allow withdrawals on the basis of an aquifer life of one hundred years.

In accordance with Rule 5.3.6 of the Designated Basin Rules preliminary evaluation of the application finds the replacement water requirement status for the aquifers underlying the above-described property to be nontributary for the Laramie-Fox Hills aquifer, nontributary for the Lower Arapahoe aquifer, not-nontributary (4% replacement) for the Upper Arapahoe aquifer and not-nontributary (actual impact replacement) for the Denver aquifer.

Upon Commission approval of determinations of rights to the allocations, well permits for wells to withdraw the allocations shall be available upon application, subject to the conditions of each determination, the Designated Basin Rules, and approval by the Commission. Such wells must be completed in the aquifer for which the right was allocated and must be located on the 35.02 acres of above described property. Well permits for wells to withdraw not-nontributary (actual impact replacement) groundwater from the Denver aquifer would also be subject to the conditions of a replacement plan to be approved by the Commission.

Any person wishing to object to the approval of these determinations of rights to allocations must do so in writing, briefly stating the nature of the objection, the name of the applicant, a general description of the property, and the specific aquifer(s) and related receipt no(s), of the application(s) that are the subject of the objection. The objection, including a required \$10 fee per application being objected to, must be received by the Colorado Ground Water Commission by close of business October 29, 2023. Objections should be sent via email to DWPermitonline@state.co.us, upon which the objector will be emailed an invoice for paying the fee online. If the objector is unable to provide the objection via email please contact 303-866-3581.

#2860
 Published in the Eastern Colorado News on Friday, September 22, 2023, and Friday, September 29, 2023.

Notice of formal probate for the estate of Judith Mary Brothers, deceased.

Seeking to notify descendant of deceased Michelle Marie Brothers, Case number 23PR469 Jefferson County Court, of hearing on Petition for Formal Probate of Will and Formal Appointment of Stephen Charles Brothers as Personal Representative will be held on October 10, 2023, at 8am in courtroom or division 11, 100 Jefferson County Parkway, Golden, CO 80401.

#2861
 Published in the Eastern Colorado News on Friday, September 22, 2023; Friday, September 29, 2023; and Friday, Oct. 6, 2023.

PUBLIC NOTICES

BEFORE THE COLORADO GROUND WATER COMMISSION DETERMINATIONS OF WATER RIGHT

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TAKE NOTICE that pursuant to section 37-90-107(7), C.R.S., and the Designated Basin Rules, 2 CCR 410-1, F & C Realty Company has applied for determinations of rights to allocations of designated groundwater from the Laramie-Fox Hills (receipt no. 10031171), Lower Arapahoe (receipt no. 10031170), Upper Arapahoe (receipt no. 10031169) and Denver (receipt no. 10031168) aquifers underlying 35.02 acres generally described as part of the SE 1/4 of Section 26, Township 3 South, Range 63 West of the 6th P.M. The applicant claims ownership of this land and control of the groundwater in these aquifers underlying this property. The groundwater from these allocations is proposed to be used on the described property for the following beneficial uses: domestic, commercial, irrigation, agriculture, stock watering, fire protection, and replacement purposes.

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#2861

Published in the *Eastern Colorado News* on Friday, September 22, 2023; Friday, September 29, 2023; and Friday, October 6, 2023.

LEVEL III DRAINAGE REPORT

Oak Park Road Estates

Adams County, CO

PREPARED FOR:

F & C Realty

56321 E. Colfax Ave.
Strasburg, CO 80136
Phone: 303-916-4155
Contact: Dan Fahey
Email: dan@fancrealty.com

PREPARED BY:

KELLY DEVELOPMENT SERVICES, LLC

9301 Scrub Oak Drive
Lone Tree, Colorado 80124
Phone: 303-888-6338
Contact: Greg Kelly, PE
Email: greg@kellydev.com

September 16, 2023

ENGINEER CERTIFICATION OF DRAINAGE REPORT

I hereby certify that this report for the Final Drainage design of the Oak Park Road Estates project was prepared by me or under my direct supervision in accordance with the provisions of Adams County Storm Drainage Design and Technical Criteria for the owners thereof. I understand that Adams County does not and will not assume liability for drainage facilities designed by others.

Registered Professional Engineer
State of Colorado No. 15813



Date 09-16-2023

PREPARED UNDER THE DIRECT SUPERVISION OF
GREGORY S. KELLY, PE COLORADO LIC. #15813
FOR AND ON BEHALF OF KELLY DEVELOPMENT SERVICES, LLC

DEVELOPER CERTIFICATION OF DRAINAGE FACILITIES

Dan Fahey of F & C Realty hereby certifies that the drainage facilities for the Oak Park Road Estates project shall be constructed according to the design presented in this report. I understand that Adams County does not and will not assume liability for the drainage facilities designed and/ or certified by my engineer. I understand that Adams County reviews drainage plans pursuant to Colorado Revised Statutes Title 30, Article 28; but cannot, on behalf of the Oak Park Road Estates project, guarantee that final drainage design review will absolve Raul Mota and/ or their successors and/ or assigns the future liability for improper design. I further understand that approval of the Final Plat and/ or Final Development Plan does not imply approval of my engineer's drainage design.

Date 09-16-23

Daniel C Fahey
Name of Developer

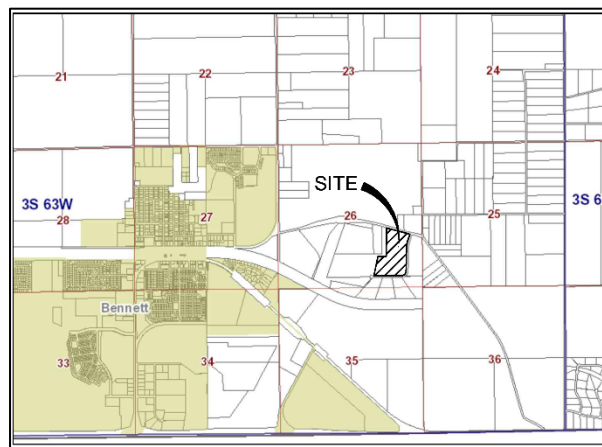
Daniel C Fahey
Authorized Signature

LEVEL III DRAINAGE REPORT OAK PARK ROAD ESTATES

A. INTRODUCTION

1. Location

The Oak Park Road Estates project is an unplatted 35-acre site located at the northwest corner of the intersection of Old Victory Road and Oak Park Road, along the northern ROW of Oak Park Road, in unincorporated Adams County, CO. It is in the Southeast One-Quarter of Section 26, Township 3 South, Range 63 West of the 6th P. M., County of Adams, State of Colorado. The project is not located within the Adams County MS-4 area.



The site is bounded on the north and west by unplatted, rural agricultural ground, by Oak Park Road on the south, and Old Victory Road on the east. The property is undeveloped rural agricultural ground.

2. Proposed Development

The proposed development includes subdividing the parcel into three rural residential lots for single family home construction. The remainder of the property is anticipated to remain undeveloped agricultural ground.

From the NRCS soils report included in the Appendix of this report, the in-situ soil is a mixture of sandy loams, classified as Hydrologic Soil Types A and B. The soils consist of sandy loams and loamy sand with a low swell potential and well drained with low runoff characteristics. The existing ground surface slopes to the north and northeast at varying slopes from approximately 2% to 4% slope. Runoff generally flows north and northeasterly. The pre-development condition, as it currently exists, is that runoff flows to existing drainageways north of the subject property toward Kiowa Creek . The developed condition will not modify the existing drainage patterns as the project is for single family rural residential use with minimal land

disturbance.

There are no major drainageways crossing the site; however, Kiowa Creek is located approximately 800 feet to the west of the site. The site is located within the Zone X floodplain area for Kiowa Creek as shown on the FEMA FIRM Map No. 08001C0720H dated March 5, 2007. A copy of this map is included in the Appendix of this report.

The property is not located within any Master Drainage Plan or Outfall Systems Plan study areas, nor is it located within the Adams County MS-4 area.

B. DESIGN CRITERIA

References

This drainage report is based upon information from the August 15, 2017 Adams County Development Standards and Regulations Chapter 9 *Storm Drainage Design and Stormwater Quality Regulations* and Mile High Flood District Storm Drainage Criteria Manual Volumes 1- 3 (MHFD).

Hydrologic Criteria

The Rational Method was used to calculate runoff from this site in accordance with the Adams County Regulations and Mile High Flood District Manuals. The 1-Hour Design Point Rainfall Values from the Adams County Regulations used for this report are:

$$P1, 2\text{-Yr} = 1.00 \qquad P1, 5\text{-Yr} = 1.42 \qquad P1, 100\text{-Yr} = 2.71$$

Detention calculations were based upon Adams County requirements in accordance with the Manual using the simplified $V=KA$ formulas. These volumes were input into MHFD's UD_Detention_v3.07 spreadsheet for calculation of ponding depth and outlet structure details.

Hydraulic Criteria

No on-site storm drainage improvements are proposed.

Minimum Design Standards

Because the project is not located within the MS-4 area, and due to the negligible change in developed drainage flows as compared to historic values, no water quality or detention facilities are proposed.

C. DRAINAGE PLAN

General Concept

The general drainage concept for the property will remain unchanged from the existing condition as no major site improvements are proposed that would affect the existing drainage patterns.

An exemption from stormwater detention is requested and justified according to the following criteria of Section 9-01-11 of the Adams County Development Standards and Regulations:

1. The total change in developed impervious area is less than 5% of the total site.
Actual developed impervious area is approximately 0.9% of the total property area.

The percent increase in imperviousness (I) for the overall site is 0.3%, a negligible increase as further demonstrated by the minute increases in overall stormwater flow.

Water quality for the site will be accommodated via grass buffer areas adjacent to the future home locations. Due to the minimal flows generated on the site, the buffers are also of minimal size and in reality, will exceed the design requirements per the design form by nature of the natural adjoining areas adjacent to the future homes. Lot 1 should have an 11'x15' grass buffer, lot 2 a 4'x15' buffer, and lot 3 a 6'x15' buffer. Design forms for each are included in the appendix of this report.

Specific Details

No overlot or major grading improvements are proposed; therefore, no change to the existing drainage patterns is anticipated. The site has been divided into seven onsite basins.

The Basins are further described as follows:

Basin A is a small basin at the corner of Old Victory Road and Oak Park Road, 0.45-acres in size that flows to Old Victory Road. No improvements will be made to this basin.

Basin B is the largest basin on the property, 17.94-acres in size. This basin flows to an existing drainage at the northeast corner of the site and is anticipated to have two of the three proposed single-family homes constructed within.

Basin C is a small basin located at the north-central portion of the property and is 0.21-acres in size that flows to the north. No improvements will be made to this basin.

Basin D is another small basin located in the center of the site, 1.70-acres in size that also flows north. No improvements will be made to this basin.

Basin E is a 4.37 acre basin at the southwest portion of the site that flows to the north. No improvements will be made to this basin.

Basin F is a small 1.08-acre basin at the very southwest corner of the property along Oak Park Road. This basin flows to Oak Park Road. No improvements will be made to this basin.

Basin G is a 9.27-acre basin at the western end of the property that flows to the north. The third single-family home is anticipated to be constructed in this basin.

Basin Summary Data including areas, historic, and developed flows are in the two following tables:

HISTORIC BASIN RUNOFF SUMMARY TABLE							
Basin Designation	Basin Area (ac)	C₅	C₁₀₀	Impervious %	T_c (min)	Q₅ (cfs)	Q₁₀₀ (cfs)
A	0.45	0.01	0.13	2.0%	11.7	0.02	0.40
B	17.94	0.01	0.13	2.0%	17.9	0.53	13.15
C	0.21	0.01	0.13	2.0%	10.8	0.01	0.20
D	1.70	0.01	0.13	2.0%	13.3	0.06	1.44
E	4.37	0.01	0.13	2.0%	16.0	0.14	3.39
F	1.08	0.01	0.13	2.0%	11.4	0.04	0.98
G	9.27	0.01	0.13	2.0%	15.4	0.30	7.33

BASIN RUNOFF SUMMARY TABLE							
Basin Designation	Basin Area (ac)	C₅	C₁₀₀	Impervious %	T_c (min)	Q₅ (cfs)	Q₁₀₀ (cfs)
A	0.45	0.01	0.13	2.0%	11.7	1.01	0.40
B	18.04	0.02	0.14	3.1%	17.9	0.01	14.05
C	0.21	0.01	0.13	2.0%	10.8	0.06	0.20
D	1.70	0.01	0.13	2.0%	16.0	0.14	1.44
E	4.37	0.01	0.13	2.0%	11.4	0.04	3.39
F	1.08	0.01	0.13	2.0%	15.4	0.56	0.98
G	9.32	0.02	0.14	3.0%	0.0	0.00	7.82

Post-Construction BMP and Stormwater Detention

No detention or water quality facilities are required with the project as the property is not located within the MS-4 boundary area, and post-developed impacts will be negligible as demonstrated in the comparative tables above.

E. LOW IMPACT DEVELOPMENT STANDARDS AND REQUIREMENTS

The project is not located with the Adams County MS-4 area.

F. SUSTAINABLE DEVELOPMENT PRACTICES

The project is not located with the Adams County MS-4 area and development impacts are minimal.

G. POTENTIAL EROSION AND SEDIMENT IMPACTS

Construction of the Oak Park Road Estates will likely disturb less than an acre of land on the three lots as is typical of a rural residential single-family project. Erosion and sediment impacts will be negligible.

H. CONCLUSIONS

This project will have little to no impact upon the existing conditions and surrounding area as disturbance and variance from the existing, pre-developed condition is minimal. It is my professional opinion that the design will be equivalent in quality, effectiveness, durability, and safety to the requirements prescribed in the Adams County Development Manual.

G. Appendices

1. Hydrologic Computations
 - a. Land use assumptions, composite “C” and % Impervious calculations
 - b. Initial and major storm runoff computations for developed runoff conditions
2. Graphs, tables, SCS Soils Data, floodplain map, and other relevant data
3. Grass Buffer Design Forms

APPENDIX 1

HYDROLOGIC COMPUTATIONS

COMPOSITE 'C' FACTORS (HISTORIC)																					
LOCATION: Oak Park Road Estates				Adams County		Soil Type: A/B				Final Drainage Report						BY: AWT			DATE: 2/10/2023		
SUB-BASIN	Acreage				PAVED				ROOFS				LAWNS				COMPOSITE C FACTOR				PERCENT IMPERVIOUS
DESIGNATION	PAVED	ROOFS	LAWNS	TOTAL	2YR	5 YR	10 YR	100 YR	2YR	5 YR	10 YR	100 YR	2YR	5 YR	10 YR	100 YR	2YR	5 YR	10 YR	100 YR	
Imperviousness =					100				90				2								
A	0.00	0.00	0.45	0.45	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
B	0.00	0.00	17.94	17.94	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
C	0.00	0.00	0.21	0.21	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
D	0.00	0.00	1.70	1.70	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
E	0.00	0.00	4.37	4.37	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
F	0.00	0.00	1.08	1.08	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
G	0.00	0.00	9.27	9.27	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
Overall Site	0.00	0.00	35.03	35.03	0.84	0.86	0.87	0.89	0.80	0.85	0.90	0.90	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%

COMPOSITE 'C' FACTORS (DEVELOPED)																					
LOCATION: Oak Park Road Estates				Adams County		Soil Type: A/B				Final Drainage Report						BY: AWT			DATE: 2/10/2023		
SUB-BASIN	Acreage				PAVED				ROOFS				LAWNS				COMPOSITE C FACTOR				PERCENT IMPERVIOUS
DESIGNATION	PAVED	ROOFS	LAWNS	TOTAL	2YR	5 YR	10 YR	100 YR	2YR	5 YR	10 YR	100 YR	2YR	5 YR	10 YR	100 YR	2YR	5 YR	10 YR	100 YR	
Imperviousness =					100				90				2								
A	0.00	0.00	0.45	0.45	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
B	0.09	0.11	17.83	18.04	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.02	0.02	0.02	0.14	3.1%
C	0.00	0.00	0.21	0.21	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
D	0.00	0.00	1.70	1.70	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
E	0.00	0.00	4.37	4.37	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
F	0.00	0.00	1.08	1.08	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.01	0.01	0.01	0.13	2.0%
G	0.05	0.06	9.21	9.32	0.84	0.86	0.87	0.89	0.73	0.75	0.77	0.81	0.01	0.01	0.01	0.13	0.02	0.02	0.02	0.14	3.0%
Overall Site	0.14	0.17	34.85	35.16	0.84	0.86	0.87	0.89	0.80	0.85	0.90	0.90	0.01	0.01	0.01	0.13	0.02	0.02	0.02	0.14	2.3%

TIME OF CONCENTRATION (DEVELOPED)															REMARKS
LOCATION: Oak Park Road Estates			Final Drainage Report								BY: AWT		DATE: 2/13/2023		FORMULAS: * $T_i = 0.395 (1.1 - C_s) L^{0.5} S / 100^{1/3}$ ** $V = C_v (S / 100)^{0.5}$
SUB-BASIN DATA			INIT./OVERLAND TIME (T _i)			TRAVEL TIME (T _t)					TOTAL	T _c Check (Urbanized Basins)		FINAL T _c	
DESIGNATION	C _s	AREA (AC)	LENGTH (FT)	SLOPE %	T _i (Min.)*	GRASS/ PAVED	LENGTH (FT)	SLOPE %	VEL (FPS)**	T _t (Min.)	T _i +T _t (Min.)	LGTH. (FT)	T _c = (L/180) + 10	(minutes)	
A	0.01	0.45	100	3.50	13.16	GRASS	210	2.60	1.13	3.10	16.3	310	11.7	11.7	
B	0.02	18.04	500	4.50	26.84	GRASS	929	3.70	1.35	11.50	38.3	1429	17.9	17.9	
C	0.01	0.21	136	3.80	14.93	GRASS	0	3.80	1.36	0.00	14.9	136	10.8	10.8	
D	0.01	1.70	500	4.00	28.15	GRASS	90	4.00	1.40	1.07	29.2	590	13.3	13.3	
E	0.01	4.37	285	1.80	27.73	GRASS	790	3.10	1.23	10.68	38.4	1075	16.0	16.0	
F	0.01	1.08	260	3.50	21.22	GRASS	0	3.50	1.31	0.00	21.2	260	11.4	11.4	
G	0.02	9.32	500	3.90	28.16	GRASS	465	3.90	1.38	5.61	33.8	965	15.4	15.4	

TIME OF CONCENTRATION (DEVELOPED)															REMARKS
LOCATION: Oak Park Road Estates			Final Drainage Report								BY: AWT		DATE: 2/13/2023		FORMULAS: * $T_i = 0.395 (1.1 - C_s) L^{0.5} S / 100^{1/3}$ ** $V = C_v (S / 100)^{0.5}$
SUB-BASIN DATA			INIT./OVERLAND TIME (T _i)			TRAVEL TIME (T _t)					TOTAL	T _c Check (Urbanized Basins)		FINAL T _c	
DESIGNATION	C _s	AREA (AC)	LENGTH (FT)	SLOPE %	T _i (Min.)*	GRASS/ PAVED	LENGTH (FT)	SLOPE %	VEL (FPS)**	T _t (Min.)	T _i +T _t (Min.)	LGTH. (FT)	T _c = (L/180) + 10	(minutes)	
A	0.01	0.45	100	3.50	13.16	GRASS	210	2.60	1.13	3.10	16.3	310	11.7	11.7	
B	0.02	18.04	500	4.50	26.84	GRASS	929	3.70	1.35	11.50	38.3	1429	17.9	17.9	
C	0.01	0.21	136	3.80	14.93	GRASS	0	3.80	1.36	0.00	14.9	136	10.8	10.8	
D	0.01	1.70	500	4.00	28.15	GRASS	90	4.00	1.40	1.07	29.2	590	13.3	13.3	
E	0.01	4.37	285	1.80	27.73	GRASS	790	3.10	1.23	10.68	38.4	1075	16.0	16.0	
F	0.01	1.08	260	3.50	21.22	GRASS	0	3.50	1.31	0.00	21.2	260	11.4	11.4	
G	0.02	9.32	500	3.90	28.16	GRASS	465	3.90	1.38	5.61	33.8	965	15.4	15.4	

Storm Drainage System Design (Rational Method Procedure)

Subdivision	<u>Oak Park Road Estates</u>
Designer	<u>AWT</u>
Date	<u>2/13/2023</u>
Design Storm	<u>5 -YR HISTORIC</u>

$$I = \frac{28.5 \cdot P_1}{(10 + T_C)^{0.786}}$$

Where: $P_1 = 1.42$

[illegible]

Storm Drainage System Design (Rational Method Procedure)

Subdivision	<u>Oak Park Road Estates</u>
Designer	<u>AWT</u>
Date	<u>2/13/2023</u>
Design Storm	<u>5 -YR DEVELOPED</u>

$$I = \frac{28.5 \cdot P_1}{(10 + T_C)^{0.786}}$$

Where: $P_1 = 1.42$

[illegible]

Storm Drainage System Design (Rational Method Procedure)

Subdivision	Oak Park Road Estates
Designer	AWT
Date	2/13/2023
Design Storm	100-YR HISTORIC

$$I = \frac{28.5 \cdot P_1}{(10 + T_C)^{0.786}}$$

Where: $P_1 = 2.71$

[illegible]

Storm Drainage System Design (Rational Method Procedure)

Subdivision	<u>Oak Park Road Estates</u>
Designer	<u>AWT</u>
Date	<u>2/13/2023</u>
Design Storm	100-YR DEVELOPED

$$I = \frac{28.5 \cdot P_1}{(10 + T_C)^{0.786}}$$

Where: $P_1 = 2.71$

[illegible]

BASIN RUNOFF SUMMARY TABLE							
Basin Designation	Basin Area (ac)	C ₅	C ₁₀₀	Impervious %	T _c (min)	Q ₅ (cfs)	Q ₁₀₀ (cfs)
A	0.45	0.01	0.13	2.0%	11.7	1.01	0.40
B	18.04	0.02	0.14	3.1%	17.9	0.01	14.05
C	0.21	0.01	0.13	2.0%	10.8	0.06	0.20
D	1.70	0.01	0.13	2.0%	16.0	0.14	1.44
E	4.37	0.01	0.13	2.0%	11.4	0.04	3.39
F	1.08	0.01	0.13	2.0%	15.4	0.56	0.98
G	9.32	0.02	0.14	3.0%	0.0	0.00	7.82

DESIGN POINT RUNOFF SUMMARY TABLE					
Design Point	Contributing Basins	Contributing Area (acres)	T _c (min)	Q ₅ (cfs)	Q ₁₀₀ (cfs)
1	A	0.45	11.7	0.02	0.40
2	B	18.04	17.9	1.01	14.05
3	C	0.21	10.8	0.01	0.20
4	D	1.70	13.3	0.06	1.44
5	E	4.37	16.0	0.14	3.39
6	F	1.08	11.4	0.04	0.98
7	G	9.32	15.4	0.56	7.82

HISTORIC DESIGN POINT RUNOFF SUMMARY TABLE					
Design Point	Contributing Basins	Contributing Area (acres)	T _c (min)	Q ₅ (cfs)	Q ₁₀₀ (cfs)
1	A	0.45	11.7	0.02	0.40
2	B	17.94	17.9	1.01	13.15
3	C	0.21	10.8	0.01	0.20
4	D	1.70	13.3	0.06	1.44
5	E	4.37	16.0	0.14	3.39
6	F	1.08	11.4	0.04	0.98
7	G	9.27	15.4	0.56	7.33

APPENDIX 2

**GRAPHS, TABLES, SCS SOILS DATA, FLOODPLAN MAPS,
AND OTHER RELEVANT DATA**



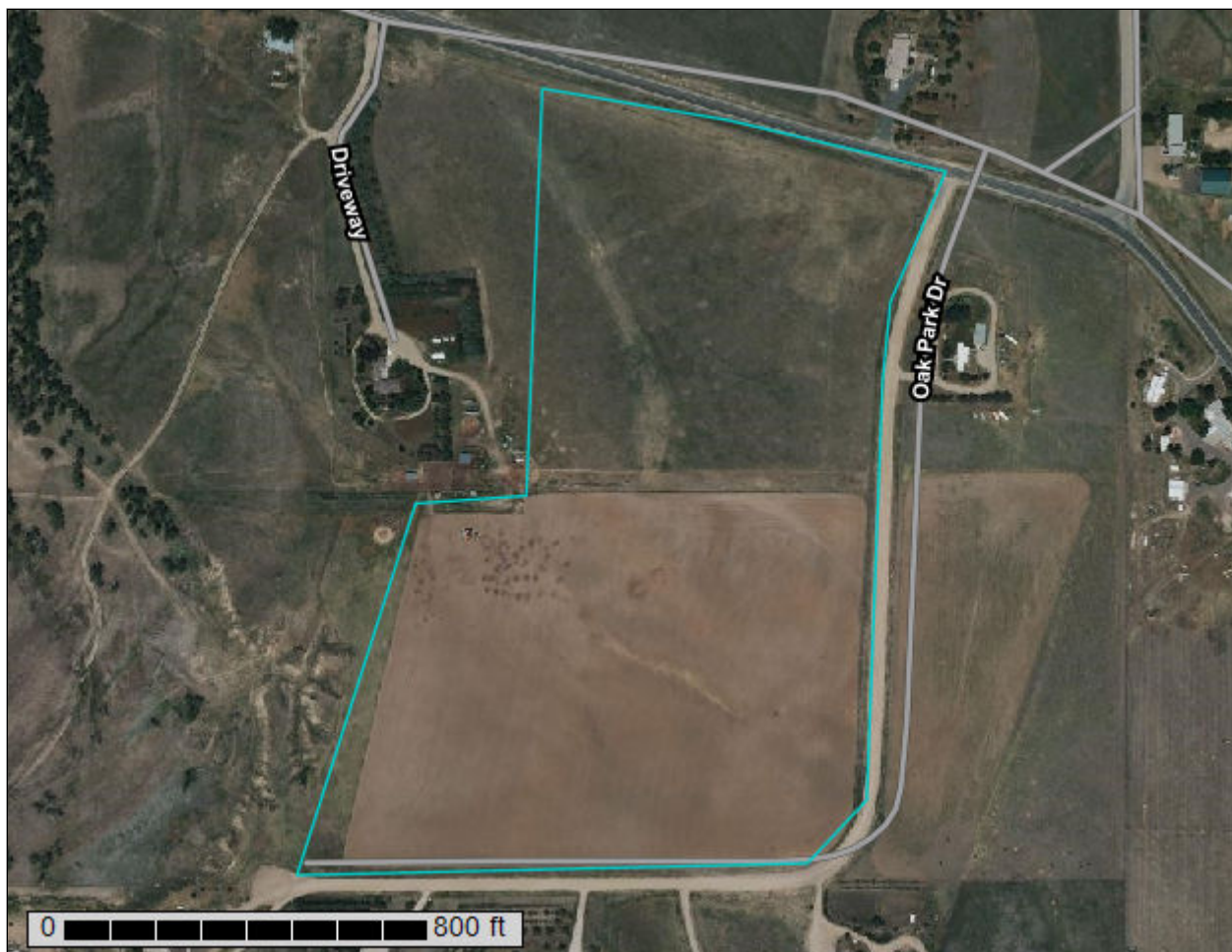
United States
Department of
Agriculture

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 Adams County Area, Parts of Adams and Denver Counties, Colorado



February 10, 2023

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.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

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



Custom Soil Resource Report

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 1:20,000.

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: Adams County Area, Parts of Adams and Denver Counties, Colorado
Survey Area Data: Version 19, Sep 1, 2022

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

Date(s) aerial images were photographed: Jun 9, 2021—Jun 12, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

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
AsC	Ascalon sandy loam, 3 to 5 percent slopes	12.9	35.7%
AsD	Ascalon sandy loam, 5 to 9 percent slopes	7.9	21.8%
BoD	Blakeland loamy sand, 3 to 9 percent slopes	0.6	1.7%
Bt	Blakeland-Truckton association	10.6	29.2%
TtD	Truckton loamy sand, 3 to 9 percent slopes	4.2	11.6%
Totals for Area of Interest		36.3	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.

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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.

Adams County Area, Parts of Adams and Denver Counties, Colorado

AsC—Ascalon sandy loam, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2tln

Elevation: 3,550 to 5,970 feet

Mean annual precipitation: 12 to 16 inches

Mean annual air temperature: 46 to 57 degrees F

Frost-free period: 135 to 160 days

Farmland classification: Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

Map Unit Composition

Ascalon and similar soils: 80 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Interfluvies

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Interfluvie

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Wind-reworked alluvium and/or calcareous sandy eolian deposits

Typical profile

Ap - 0 to 6 inches: sandy loam

Bt1 - 6 to 12 inches: sandy clay loam

Bt2 - 12 to 19 inches: sandy clay loam

Bk - 19 to 35 inches: sandy clay loam

C - 35 to 80 inches: sandy loam

Properties and qualities

Slope: 3 to 5 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Nonsaline (0.1 to 1.9 mmhos/cm)

Sodium adsorption ratio, maximum: 1.0

Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: B

Ecological site: R067BY024CO - Sandy Plains, R072XY111KS - Sandy Plains

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Stoneham

Percent of map unit: 10 percent

Landform: Interfluves

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R067BY002CO - Loamy Plains, R072XY100KS - Loamy Tableland

Hydric soil rating: No

Vona

Percent of map unit: 8 percent

Landform: Interfluves

Landform position (two-dimensional): Shoulder, backslope, footslope

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R067BY024CO - Sandy Plains, R072XY111KS - Sandy Plains

Hydric soil rating: No

Platner

Percent of map unit: 2 percent

Landform: Interfluves

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R067BY002CO - Loamy Plains, R072XY100KS - Loamy Tableland

Hydric soil rating: No

AsD—Ascalon sandy loam, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2tlmx

Elevation: 3,870 to 6,070 feet

Mean annual precipitation: 13 to 16 inches

Mean annual air temperature: 46 to 57 degrees F

Frost-free period: 135 to 160 days

Farmland classification: Not prime farmland

Map Unit Composition

Ascalon and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Interfluves

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Wind-reworked alluvium and/or calcareous sandy eolian deposits

Typical profile

Ap - 0 to 6 inches: sandy loam

Bt1 - 6 to 12 inches: sandy clay loam

Bt2 - 12 to 19 inches: sandy clay loam

Bk - 19 to 35 inches: sandy clay loam

C - 35 to 80 inches: sandy loam

Properties and qualities

Slope: 5 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 1.0

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: B

Ecological site: R067BY024CO - Sandy Plains

Hydric soil rating: No

Minor Components

Stoneham

Percent of map unit: 10 percent

Landform: Interfluves

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R067BY002CO - Loamy Plains

Hydric soil rating: No

Manter

Percent of map unit: 5 percent

Landform: Interfluves

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R067BY024CO - Sandy Plains

Hydric soil rating: No

BoD—Blakeland loamy sand, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: 34vs

Elevation: 4,600 to 5,800 feet

Mean annual precipitation: 13 to 15 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 135 to 155 days

Map Unit Composition

Blakeland and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blakeland

Setting

Landform: Plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed and/or eolian deposits derived from mixed

Typical profile

H1 - 0 to 9 inches: loamy sand

H2 - 9 to 60 inches: sand

Properties and qualities

Slope: 3 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: A

Ecological site: R067BY015CO - Deep Sand

Hydric soil rating: No

Minor Components

Truckton

Percent of map unit: 5 percent

Hydric soil rating: No

Bt—Blakeland-Truckton association

Map Unit Setting

National map unit symbol: 34vt

Elevation: 4,400 to 6,000 feet

Mean annual precipitation: 13 to 15 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 125 to 155 days

Farmland classification: Not prime farmland

Map Unit Composition

Blakeland and similar soils: 60 percent

Truckton and similar soils: 20 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blakeland

Setting

Landform: Plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from mixed and/or eolian deposits derived from mixed

Typical profile

H1 - 0 to 9 inches: loamy sand

H2 - 9 to 60 inches: sand

Properties and qualities

Slope: 3 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Custom Soil Resource Report

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R067BY015CO - Deep Sand
Hydric soil rating: No

Description of Truckton

Setting

Landform: Plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from mixed

Typical profile

H1 - 0 to 9 inches: loamy sand
H2 - 9 to 21 inches: sandy loam
H3 - 21 to 32 inches: loamy sand
H4 - 32 to 60 inches: coarse sand

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R067BY015CO - Deep Sand
Hydric soil rating: No

Minor Components

Valent

Percent of map unit: 10 percent
Hydric soil rating: No

Vona

Percent of map unit: 10 percent
Hydric soil rating: No

TtD—Truckton loamy sand, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: 34wz
Elevation: 4,400 to 6,000 feet
Mean annual precipitation: 13 to 15 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 125 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

Truckton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Truckton

Setting

Landform: Plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from mixed

Typical profile

H1 - 0 to 9 inches: loamy sand
H2 - 9 to 21 inches: sandy loam
H3 - 21 to 32 inches: loamy sand
H4 - 32 to 60 inches: coarse sand

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Minor Components

Vona

Percent of map unit: 8 percent

Hydric soil rating: No

Blakeland

Percent of map unit: 5 percent

Hydric soil rating: No

Loup

Percent of map unit: 1 percent

Landform: Swales

Ecological site: R067BY029CO - Sandy Meadow

Hydric soil rating: Yes

Tryon

Percent of map unit: 1 percent

Landform: Swales

Ecological site: R067BY024CO - Sandy Plains

Hydric soil rating: Yes

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- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodway data have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only to landward of 0.5 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for the jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on the FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1955 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NGS012
National Geodetic Survey
SSM-C-3, #0202
1315 East West Highway
Silver Spring, MD 20910-2852

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (801) 713-3342, or visit its website at <http://www.ngs.noaa.gov/>.

Base map information shown on this FIRM was provided by the Adams County and Commerce City GIS departments. The coordinate system used for the production of the digital FIRM is Universal Transverse Mercator, Zone 13N, referenced to North American Datum of 1983 and the GRS 80 spheroid, Western Hemisphere.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the FEMA Map Service Center at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://www.fema.gov>.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2927) or visit the FEMA website at <http://www.fema.gov>.

This digital Flood Insurance Rate Map (FIRM) was produced through a cooperative partnership between the State of Colorado Water Conservation Board, the Urban Drainage and Flood Control District, and the Federal Emergency Management Agency (FEMA). The State of Colorado Water Conservation Board and the Urban Drainage and Flood Control District have implemented a long-term agreement of regional management to reduce the costs associated with flooding. As part of this effort, both the State of Colorado and the Urban Drainage and Flood Control District have joined in Cooperating Technical Partner agreements with FEMA to produce this digital FIRM.

Additional flood hazard information and resources are available from local communities, the Colorado Water Conservation Board, and the Urban Drainage and Flood Control District.



THIS AREA SHOWN AT A
SCALE OF 1" = 500'
ON MAP NUMBER 08001C0718

ADAMS COUNTY
UNINCORPORATED AREAS
080001

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED
WITHIN TOWNSHIP 3 SOUTH, RANGE 63 WEST.

LEGEND

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

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

ZONE A
No Base Flood Elevations determined.
Base Flood Elevations determined.
ZONE AE
Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AH
Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined, for areas of about one foot deep, velocities also determined.

ZONE AR
Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently abandoned. Zone AR indicates that the former flood control system is being retained to provide protection from the 1% annual chance or greater flood.

ZONE ARB
Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevation determined.
ZONE V
Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE
Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

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

OTHER AREAS

ZONE X
Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D
Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPA)

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

— Floodplain boundary

— Floodway boundary

— Zone D boundary

— CBRS and OPA boundary

Boundary defining Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

Base Flood Elevation line and value; elevation in feet*

Base Flood Elevation value where uniform within zone; elevation in feet*

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

(A) ——— (A) ——— (A) ———
Traverse line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

100-meter Universal Transverse Mercator grid lines, zone 13

500-foot grid lines: Alabama State Plane coordinate system, east zone (FIPS2000 5001), Transverse Mercator

Bench mark (see explanation in Notes to Users section of this FIRM panel)

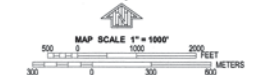
M.T.S.
River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
August 14, 1999

EFFECTIVE DATES OF REVISIONS TO THIS PANEL
March 5, 2007 - to update map format.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-655-6625.



MAP SCALE 1" = 500'

PANEL 0720H

FIRM
FLOOD INSURANCE RATE MAP
ADAMS COUNTY,
COLORADO
AND INCORPORATED AREAS

PANEL 720 OF 1160

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY NUMBER PANEL SUFFIX
ADAMS COUNTY 08001 0720 H

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

MAP NUMBER
08001C0720H

MAP REVISED
MARCH 5, 2007

Federal Emergency Management Agency

APPENDIX 3

GRASS BUFFER DESIGN FORMS

Design Procedure Form: Grass Buffer (GB)

UD-BMP (Version 3.07, March 2018)

Sheet 1 of 1

Designer: AT
Company: Kelly Development Services
Date: May 16, 2023
Project: Oak Park Drive
Location: Lot 1

1. Design Discharge A) 2-Year Peak Flow Rate of the Area Draining to the Grass Buffer	$Q_2 = $ <input style="width: 100px;" type="text" value="0.5"/> cfs
2. Minimum Width of Grass Buffer	$W_G = $ <input style="width: 100px;" type="text" value="11"/> ft
3. Length of Grass Buffer (14' or greater recommended)	$L_G = $ <input style="width: 100px;" type="text" value="15"/> ft
4. Buffer Slope (in the direction of flow, not to exceed 0.1 ft / ft)	$S_G = $ <input style="width: 100px;" type="text" value="0.050"/> ft / ft
5. Flow Characteristics (sheet or concentrated) A) Does runoff flow into the grass buffer across the entire width of the buffer? B) Watershed Flow Length C) Interface Slope (normal to flow) D) Type of Flow Sheet Flow: $F_L * S_i \leq 1$ Concentrated Flow: $F_L * S_i > 1$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input checked="" type="radio"/> Yes <input type="radio"/> No </div> $F_L = $ <input style="width: 100px;" type="text" value="50"/> ft $S_i = $ <input style="width: 100px;" type="text" value="0.010"/> ft / ft <div style="border-bottom: 1px solid black; width: 100%; text-align: center;">Sheet</div>
6. Flow Distribution for Concentrated Flows	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input checked="" type="radio"/> None (sheet flow) <input type="radio"/> Slotted Curbing <input type="radio"/> Level Spreader <input type="radio"/> Other (Explain): </div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
7 Soil Preparation (Describe soil amendment)	<div style="border-bottom: 1px solid black; width: 100%;">None - minimal disturbance</div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
8 Vegetation (Check the type used or describe "Other")	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input checked="" type="radio"/> Existing Xeric Turf Grass <input type="radio"/> Irrigated Turf Grass <input type="radio"/> Other (Explain): </div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
9. Irrigation (*Select None if existing buffer area has 80% vegetation AND will not be disturbed during construction.)	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input type="radio"/> Temporary <input type="radio"/> Permanent <input checked="" type="radio"/> None* </div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
10. Outflow Collection (Check the type used or describe "Other")	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input type="radio"/> Grass Swale <input type="radio"/> Street Gutter <input type="radio"/> Storm Sewer Inlet <input checked="" type="radio"/> Other (Explain): </div> <div style="border-bottom: 1px solid black; width: 100%;">Sheet flow in historic pattern</div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
Notes: Watershed length based upon future home site <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>	

Design Procedure Form: Grass Buffer (GB)

UD-BMP (Version 3.07, March 2018)

Sheet 1 of 1

Designer: AT
Company: Kelly Development Services
Date: May 16, 2023
Project: Oak Park Drive
Location: Lot 2

1. Design Discharge A) 2-Year Peak Flow Rate of the Area Draining to the Grass Buffer	$Q_2 = $ <input style="width: 100px;" type="text" value="0.2"/> cfs
2. Minimum Width of Grass Buffer	$W_G = $ <input style="width: 100px;" type="text" value="4"/> ft
3. Length of Grass Buffer (14' or greater recommended)	$L_G = $ <input style="width: 100px;" type="text" value="15"/> ft
4. Buffer Slope (in the direction of flow, not to exceed 0.1 ft / ft)	$S_G = $ <input style="width: 100px;" type="text" value="0.050"/> ft / ft
5. Flow Characteristics (sheet or concentrated) A) Does runoff flow into the grass buffer across the entire width of the buffer? B) Watershed Flow Length C) Interface Slope (normal to flow) D) Type of Flow Sheet Flow: $F_L * S_i \leq 1$ Concentrated Flow: $F_L * S_i > 1$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input checked="" type="radio"/> Yes <input type="radio"/> No </div> $F_L = $ <input style="width: 100px;" type="text" value="50"/> ft $S_i = $ <input style="width: 100px;" type="text" value="0.010"/> ft / ft <div style="border-bottom: 1px solid black; width: 100%; text-align: center;">Sheet</div>
6. Flow Distribution for Concentrated Flows	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input checked="" type="radio"/> None (sheet flow) <input type="radio"/> Slotted Curbing <input type="radio"/> Level Spreader <input type="radio"/> Other (Explain): </div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
7 Soil Preparation (Describe soil amendment)	<div style="border-bottom: 1px solid black; width: 100%;">None - minimal disturbance</div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
8 Vegetation (Check the type used or describe "Other")	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input checked="" type="radio"/> Existing Xeric Turf Grass <input type="radio"/> Irrigated Turf Grass <input type="radio"/> Other (Explain): </div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
9. Irrigation (*Select None if existing buffer area has 80% vegetation AND will not be disturbed during construction.)	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input type="radio"/> Temporary <input type="radio"/> Permanent <input checked="" type="radio"/> None* </div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
10. Outflow Collection (Check the type used or describe "Other")	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input type="radio"/> Grass Swale <input type="radio"/> Street Gutter <input type="radio"/> Storm Sewer Inlet <input checked="" type="radio"/> Other (Explain): </div> <div style="border-bottom: 1px solid black; width: 100%;">Sheet flow in historic pattern</div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
Notes: Watershed flow length based on approximate future footprint of home site <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>	

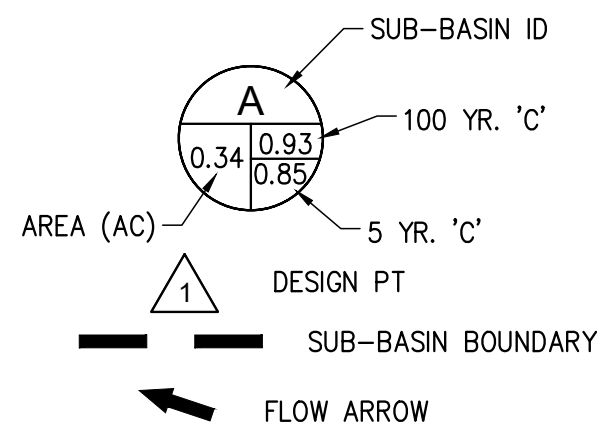
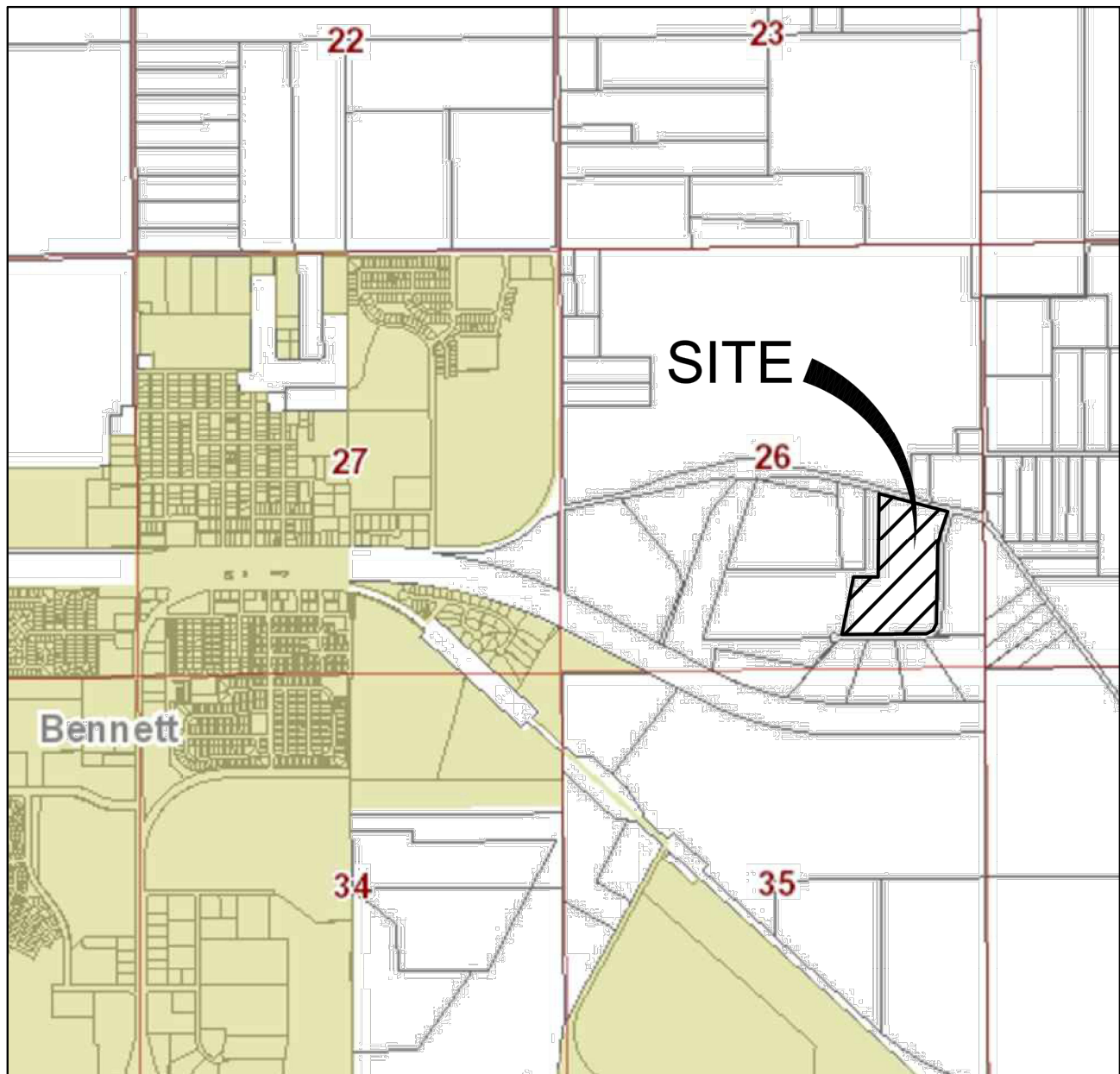
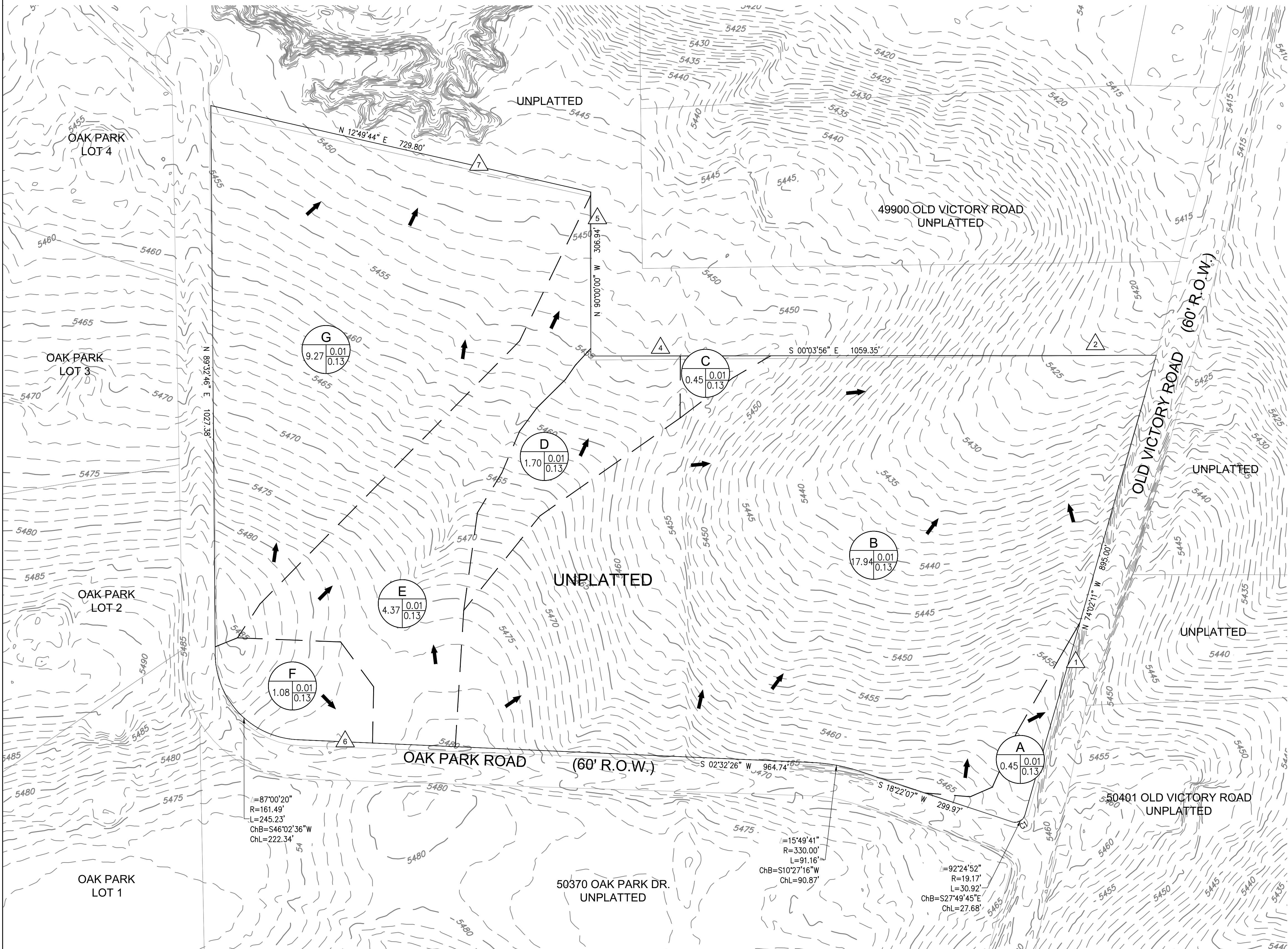
Design Procedure Form: Grass Buffer (GB)

UD-BMP (Version 3.07, March 2018)

Sheet 1 of 1

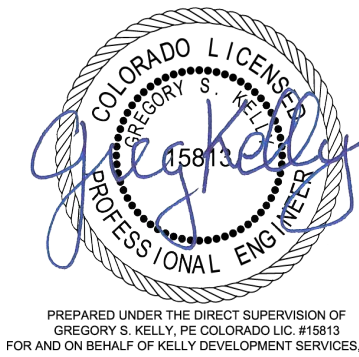
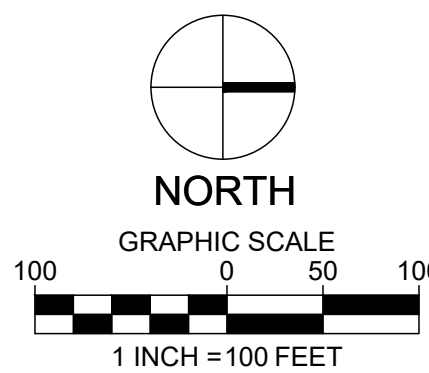
Designer: AT
Company: Kelly Development Services
Date: May 16, 2023
Project: Oak Park Drive
Location: Lot 3

1. Design Discharge A) 2-Year Peak Flow Rate of the Area Draining to the Grass Buffer	$Q_2 = $ <input style="width: 50px; text-align: center;" type="text" value="0.3"/> cfs
2. Minimum Width of Grass Buffer	$W_G = $ <input style="width: 50px; text-align: center;" type="text" value="6"/> ft
3. Length of Grass Buffer (14' or greater recommended)	$L_G = $ <input style="width: 50px; text-align: center;" type="text" value="15"/> ft
4. Buffer Slope (in the direction of flow, not to exceed 0.1 ft / ft)	$S_G = $ <input style="width: 50px; text-align: center;" type="text" value="0.050"/> ft / ft
5. Flow Characteristics (sheet or concentrated) A) Does runoff flow into the grass buffer across the entire width of the buffer? B) Watershed Flow Length C) Interface Slope (normal to flow) D) Type of Flow Sheet Flow: $F_L * S_i \leq 1$ Concentrated Flow: $F_L * S_i > 1$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input checked="" type="radio"/> Yes <input type="radio"/> No </div> $F_L = $ <input style="width: 50px; text-align: center;" type="text" value="50"/> ft $S_i = $ <input style="width: 50px; text-align: center;" type="text" value="0.010"/> ft / ft <div style="border-bottom: 1px solid black; width: 100%; text-align: center;">Sheet</div>
6. Flow Distribution for Concentrated Flows	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input checked="" type="radio"/> None (sheet flow) <input type="radio"/> Slotted Curbing <input type="radio"/> Level Spreader <input type="radio"/> Other (Explain): </div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
7 Soil Preparation (Describe soil amendment)	<div style="border-bottom: 1px solid black; width: 100%;">None - minimal disturbance</div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
8 Vegetation (Check the type used or describe "Other")	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input checked="" type="radio"/> Existing Xeric Turf Grass <input type="radio"/> Irrigated Turf Grass <input type="radio"/> Other (Explain): </div> <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
9. Irrigation (*Select None if existing buffer area has 80% vegetation AND will not be disturbed during construction.)	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input type="radio"/> Temporary <input type="radio"/> Permanent <input checked="" type="radio"/> None* </div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
10. Outflow Collection (Check the type used or describe "Other")	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Choose One <input type="radio"/> Grass Swale <input type="radio"/> Street Gutter <input type="radio"/> Storm Sewer Inlet <input checked="" type="radio"/> Other (Explain): </div> <div style="border-bottom: 1px solid black; width: 100%;">Sheet flow in historic pattern</div> <div style="border-bottom: 1px solid black; width: 100%;"></div>
Notes: Watershed length based upon future home site <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="border-bottom: 1px solid black; width: 100%;"></div>	



HISTORIC BASIN RUNOFF SUMMARY TABLE							
Basin Designation	Basin Area (ac)	C _s	C ₁₀₀	Impervious %	T (min)	Q _s (cfs)	Q ₁₀₀ (cfs)
A	0.45	0.01	0.13	2.0%	11.7	0.02	0.40
B	17.94	0.01	0.13	2.0%	17.9	0.53	13.15
C	0.21	0.01	0.13	2.0%	10.8	0.01	0.20
D	1.70	0.01	0.13	2.0%	13.3	0.06	1.44
E	4.37	0.01	0.13	2.0%	16.0	0.14	3.39
F	1.08	0.01	0.13	2.0%	11.4	0.04	0.98
G	9.27	0.01	0.13	2.0%	15.4	0.30	7.33

HISTORIC DESIGN POINT RUNOFF SUMMARY TABLE					
Design Point	Contributing Basins	Contributing Area (acres)	T (min)	Q _s (cfs)	Q ₁₀₀ (cfs)
1	A	0.45	11.7	0.02	0.40
2	B	17.94	17.9	0.78	13.15
3	C	0.21	10.8	0.01	0.20
4	D	1.70	13.3	0.06	1.44
5	E	4.37	16.0	0.14	3.39
6	F	1.08	11.4	0.04	0.98
7	G	9.27	15.4	0.43	7.33



COLORADO 811
WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

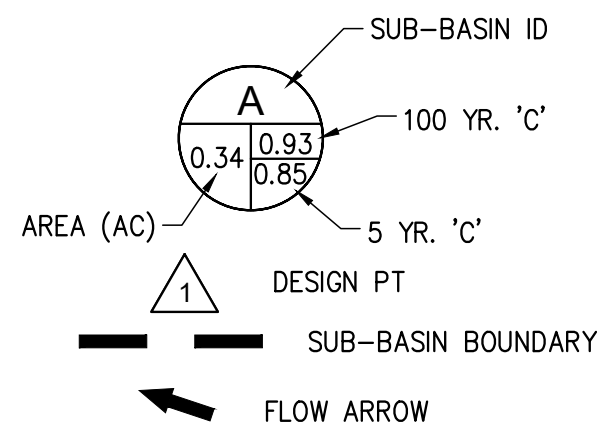
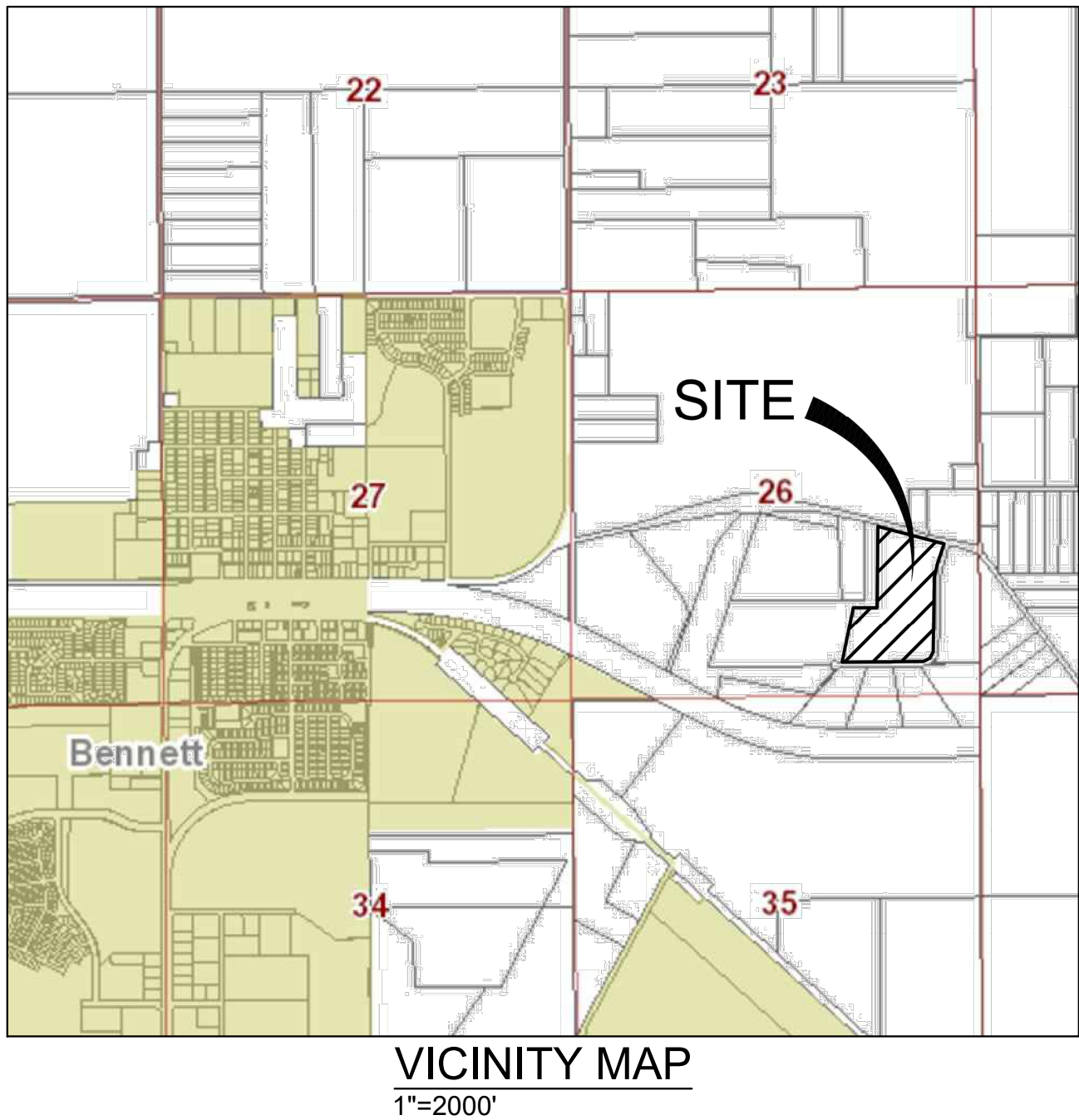
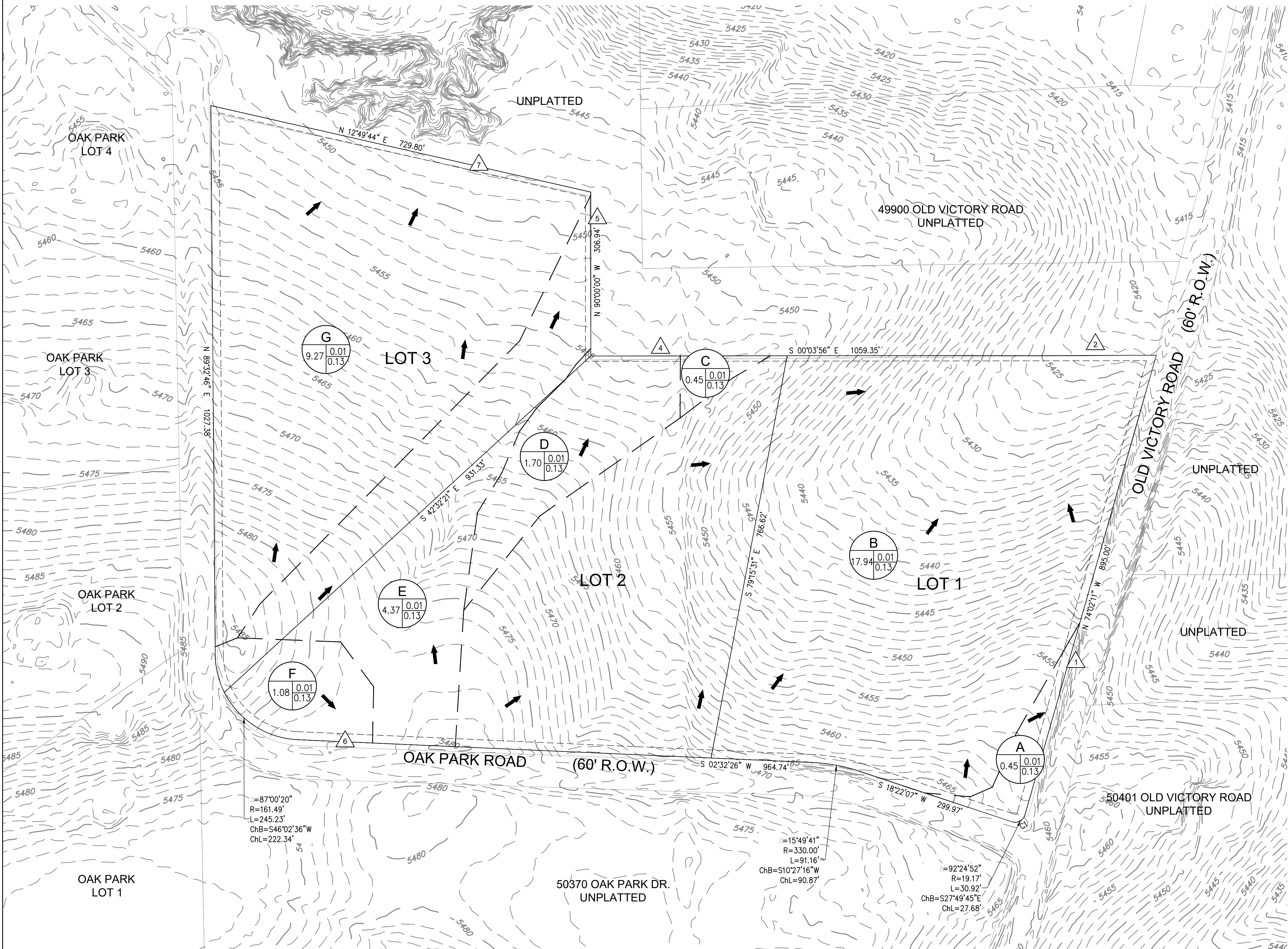
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OAK PARK ROAD ESTATES
LEVEL III DRAINAGE REPORT
PRE-DEVELOPED CONDITION

KELLY DEVELOPMENT SERVICES, LLC
9301 SCRUB OAK DR
LONE TREE, CO 80124
303-888-6338
greg@kellydev.com

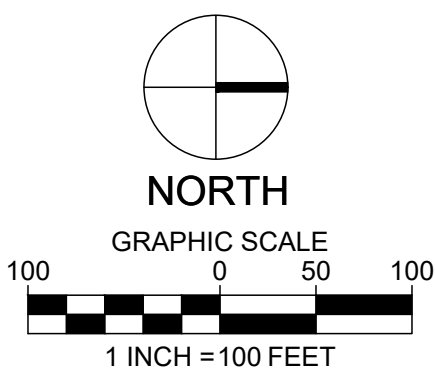
SHEET NUMBER
DR1
SHEET 1
PROJECT NUMBER
2209.01

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BASIN RUNOFF SUMMARY TABLE							
Basin Designation	Basin Area (ac)	C _s	C ₁₀₀	Impervious %	T (min)	Q _s (cfs)	Q ₁₀₀ (cfs)
A	0.45	0.01	0.13	2.0%	11.7	1.01	0.40
B	18.04	0.02	0.14	3.1%	17.9	10.8	14.05
C	0.21	0.01	0.13	2.0%	10.8	0.06	0.20
D	1.70	0.01	0.13	2.0%	16.0	0.14	1.44
E	4.37	0.01	0.13	2.0%	11.4	0.04	3.39
F	1.08	0.01	0.13	2.0%	15.4	0.56	0.98
G	9.32	0.02	0.14	3.0%	0.0	0.00	7.82

DESIGN POINT RUNOFF SUMMARY TABLE					
Design Point	Contributing Basins	Contributing Area (acres)	T (min)	Q _s (cfs)	Q ₁₀₀ (cfs)
1	A	0.45	11.7	0.02	0.40
2	B	18.04	17.9	1.01	14.05
3	C	0.21	10.8	0.01	0.20
4	D	1.70	13.3	0.06	1.44
5	E	4.37	16.0	0.14	3.39
6	F	1.08	11.4	0.04	0.98
7	G	9.32	15.4	0.56	7.82



GRASS BUFFER DESIGN SUMMARY			
Lot	Q _s (cfs)	Length (ft)	Width (ft)
1	0.50	15	11
2	0.20	15	4
3	0.30	15	6



COLORADO 811
CAUTION NOTICE TO CONTRACTORS
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL 811 AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF THE UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

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OAK PARK ROAD ESTATES
LEVEL III DRAINAGE PLAN

KELLY DEVELOPMENT SERVICES, LLC
9301 SCRUB OAK DR
LONE TREE, CO 80124
303-888-6338
greg@kellydev.com

SHEET NUMBER
DR2
SHEET 1
PROJECT NUMBER
2209.01