

WATER RESOURCE AND WASTEWATER REPORT

for

WOODMEN HILLS
METROPOLITAN DISTRICT



BENT GRASS RESIDENTIAL FILING NO. 2

JULY 2019

Prepared By:



WOODMEN HILLS METROPOLITAN DISTRICT

BENT GRASS RESIDENTIAL FILING #2

WATER RESOURCES & WASTEWATER REPORT

July 2019

Prepared for:

**Woodmen Hills Metropolitan District
8046 Eastonville Road
Peyton, CO 80831**

Prepared by:

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1.0 INTRODUCTION AND CONCLUSION

The purpose of this report is to provide an update of prior Water Resource Supply and Wastewater Reports for the Woodmen Hills Metropolitan District and address the specific needs of Bent Grass Residential Filing Two in Falcon, CO. There are 121 residential lots within this proposed 50.8-acre subdivision.

CONCLUSION: The Woodmen Hills Metropolitan District has adequate Water Supply to meet the needs of Bent Grass Residential Filing No. 2 on a 300 Year basis. Additionally the Woodmen Hills Metropolitan District has adequate wastewater system and treatment capacity to provide wastewater service to the Bent Grass Residential Filing No. 2.

2.0 PROJECTED LAND USES

2.1 *Projected Land Uses:* Lands within the subject area have been planned as a residential development. This report and associated commitments pertain to the Final Plat of Bent Grass Residential Filing No. 2. Please refer to the Land Use Exhibit in *Appendix A*.

3.0 WATER NEEDS AND SUPPLY

3.1 *Water Demand:* The District has adopted a 0.353 AF/SFE-Day demand factor that covers not only actual use, but also covers reserves, system losses, and water accountability. The actual delivered quantity varies year to year in the range It is expected that Bent Grass Residential Filing #2 will utilize the following water demands.

The water wastewater comt is for 121 lots. 177 as indicated in the application form, the LOI states 181 lots; The plat numbering is so confusing - its unknown how many lots are proposed

**Table 3-1 –
Summary of Expected Water Demands**

# of Units	Use	Annual Demand (@ 0.353 AF/SFE/Year) (AF)	Average Daily Flow (ADF) (GPD)	Maximum Daily Flow (MDF) (@ 2.45 x ADF) (GPD)
121	Residential	42.7	38,132	93,422

- 3.2 *Three Year Water Demand Summary:* The Woodmen Hills Metropolitan District (WHMD, the District) tracks water demands and water use on an annual basis. Unit user characteristics have continued to trend downwards over the last several years due to water conservation.

Table 3.2
Three Year Use History

Year	Annual Water Use (AF)	SFE (No)	Unit User Characteristic (AF/SFE)
2016	740.80	2641	.281
2017	779.54	2679	.291
2018	800.33	2815	.284

Data provided by WHMD Operations staff.

3.3 *District Water Supply*

The District has numerous local and off-site water rights. The rights include both renewable sources and Denver Basin non-renewable sources. The District total legal supply on a 300-year basis has grown to 1459.48 annual acre-feet. Since the last water report was prepared in 2014, two additional sources of legal supply have been recently added to the inventory. Below is a narrative description of the nature of those supplies. Appendix B is the District's current legal water supply inventory

Renewable Water Supply: Woodmen Hills and the surrounding area are within a Designated Groundwater Basin known as the Upper Black Squirrel Groundwater Management District. Rules regarding use, access, and other management issues are governed by the UBS and the State Groundwater Commission. These rules vary from other areas in the state. Water types managed within the District are alluvial groundwater which exists in the upper most sands which are only 15 to 25 feet deep in the Falcon area up to 350 feet deep easterly in the Guthrie Ranch area. Alluvial water in the UBS are "over-appropriated" which means no additional alluvial water rights are available. Acquisition of an alluvial rights therefore is limited to purchase of someone else's existing alluvial rights. The Guthrie alluvial rights were obtained in such a fashion. Alluvial rights are renewable.

The District has renewable resources in two categories. One is a direct alluvial pumping right in the UBS basin at Guthrie and the other is a perpetual contractual right through Cherokee Metropolitan District. The direct alluvial right is for 89 annual acre-feet and as a renewable right, it does not need to be counted on a 300 year basis. It is currently fully physically available and used at about an average of 90% of its full capacity.

The second renewable source is a 350 annual acre-feet contractual and perpetual right through Cherokee. It is typically used near its face value capacity since it is perpetual at about 98%. This water is delivered to the District through a 3 mile off-site system to the south of the District.

In 2018, the two alluvial rights supplied about 55% of the District's annual needs.

Non-renewable Denver Basin Supply: The second type of groundwater in the Falcon area is Denver Basin water. The Denver Basin is a vast deep-rock aquifer that stretches from south of Falcon northerly to beyond Denver. Rights that are granted in the Denver basin are based on the ownership of the surface property. The larger the parcel, the larger the allocation. This water is much deeper ranging up to 2650 feet deep. Denver Basin water is considered finite and therefore non-renewable water. In the Falcon area, there are four main formations that make up the Denver Basin. In the Falcon area, there are four main formations that make up the Denver Basin, the Dawson, the Denver, the Arapahoe, and the Laramie-Fox-Hills, described from top to bottom.

The District has numerous determinations under the existing District boundaries, which total 779 annual acre-feet on a 300 year basis and 2356 annual acre-feet on a 100 year basis. Except maybe for support of future ASR projects, it is not anticipated that the number of local well sites will be increased in the near future. Although there is significant unused pumping capability in the Falcon area, the District has relied less on their local sources in the past 5 to 10 years.

The District has also acquired additional Off-site Denver Basin Rights. These areas have yet to be fully developed as physical supply. The Hart well field already has future easements and well sites dedicated, but because it is not yet needed, no wells have been drilled as yet in the Hart area. Because the Guthrie area has not been accessed by any other Denver Basin users at this time, its physical capacity has remained strong. Not counting Dawson or Denver formations, the Guthrie and Hart areas have a total of 860 Annual AF₁₀₀ and 287 AF₃₀₀. The Guthrie Denver Basin well field is only currently being pumped at a fraction of its full capability (less than 20%). The Guthrie well field is the location that WHMD expects that additional physical sources (additional wells) will be drilled as needed in the near future (next 10 to 20 years).

4.0 WATER SYSTEM FACILITIES AND PHYSICAL SUPPLY

4.1 Source of Supply;

Local Wells; The District has 11 wells in the Falcon area mostly in the Arapahoe and Laramie Fox-Hills formations. These wells are all within the District's Service Area boundary.

Off-site Wells: The District operates 4 Denver Basin wells at the Guthrie field which is about 12 miles east of the Falcon area. The Denver Basin wells are in the Arapahoe and Laramie Fox-Hills formations.

Additionally, The District owns and operates 2 alluvial wells in the Guthrie Ranch area which pump renewable water from the Upper Black Squirrel Basin.

Cherokee Water; This water is alluvial from the Upper Black Squirrel Basin and is renewable. The annual quantity obtained from Cherokee is 350 acre-feet and is a perpetual right.

4.2 Water Treatment: The District owns and operates three water treatment plants and provides water treatment to its entire supply. The plants are all within the service area and treat

Filter Plant #1	1.1 MGD Treatment Capacity
Filter Plant #2	0.36 MGD Treatment Capacity
Filter Plant #3	1.30 MGD Treatment Capacity

4.3 Water Storage: The District currently owns and operates three water storage facilities. The total capacity is just over 3.5 Million Gallons.

4.4 Distribution, Pumping and Transmission Lines: The District has two major offsite transmission lines which are jointly owned with Meridian Service Metropolitan District. WHMD has responsibility for operation of both the Tamlin and Guthrie systems.

The Tamlin system is a 12 inch line extending roughly 3 miles south-westerly of the District and is connected to the Cherokee Metropolitan District. The ultimate capacity of the Tamlin system is 1.8 MGD. The Tamlin system includes a 1.5 MGD pumping station.

The Guthrie system is a 14 mile 12 inch pipeline extending to the east of the District along Judge Orr Road. It includes wells, pumping facilities, and a mid-point pumping station. Its current capacity is 1.944 MGD.

The District has additional pump stations within the District boundaries. One, the Theriot Pump station and two, an integral pump station within Filter Plant #3.

The District consist of multiple service pressure zones and roughly 13 miles of internal distribution lines.

4.5 *Water Quality*

The District treats and filters 100% of its water supply. Filtration is generally for iron and manganese removal and water is disinfected and meets and or exceeds all CDPHE Drinking Water Standards. Appendix C is a copy of the 2018 WHMD Consumer Confidence Report which outlines water quality as delivered to District customers.

4.0 WASTEWATER REPORT

4.1 *Projected Wastewater Loads:* Wastewater flows for WHMD are based on an established benchmark of Average Daily Flow of 163 gallons/day per SFE and 172 gallons/day per SFE for Average Daily-Maximum Month Flow. These are summarized as follows

4.2 *Treatment Facilities:* The WHMD has constructed a new regional wastewater treatment facility which was placed on line in the spring of 2019. The new plant is an advanced wastewater treatment plant with a hydraulic capacity of 1.3 MGD. WHMD is;

- A) In compliance with its discharge permit
- B) Has adequate capacity for the additional flows.

Current loading at startup is roughly 50% and adequate capacity exists to handle the additional flows proposed from Bent Grass Residential Filing No. 2.

The expected loads from this development represent about 1.5% of WHMD's current permitted treatment plant capacity of 1,300,000 gal/day.

Table 5.1
Summary of Expected Wastewater Loads

SFE	Average Daily Flows (Gal/Day)	Average Daily- Max Month Flow (Gal/Day)
121	19,723 (GPD)	20,812 (GPD)

4.3 *Collection and Pumping Facilities:* This development will be required to install gravity sewer facilities in accordance with WHMD standards and approvals. Said gravity sewer facilities will connect to existing collection systems owned and operated by WHMD.

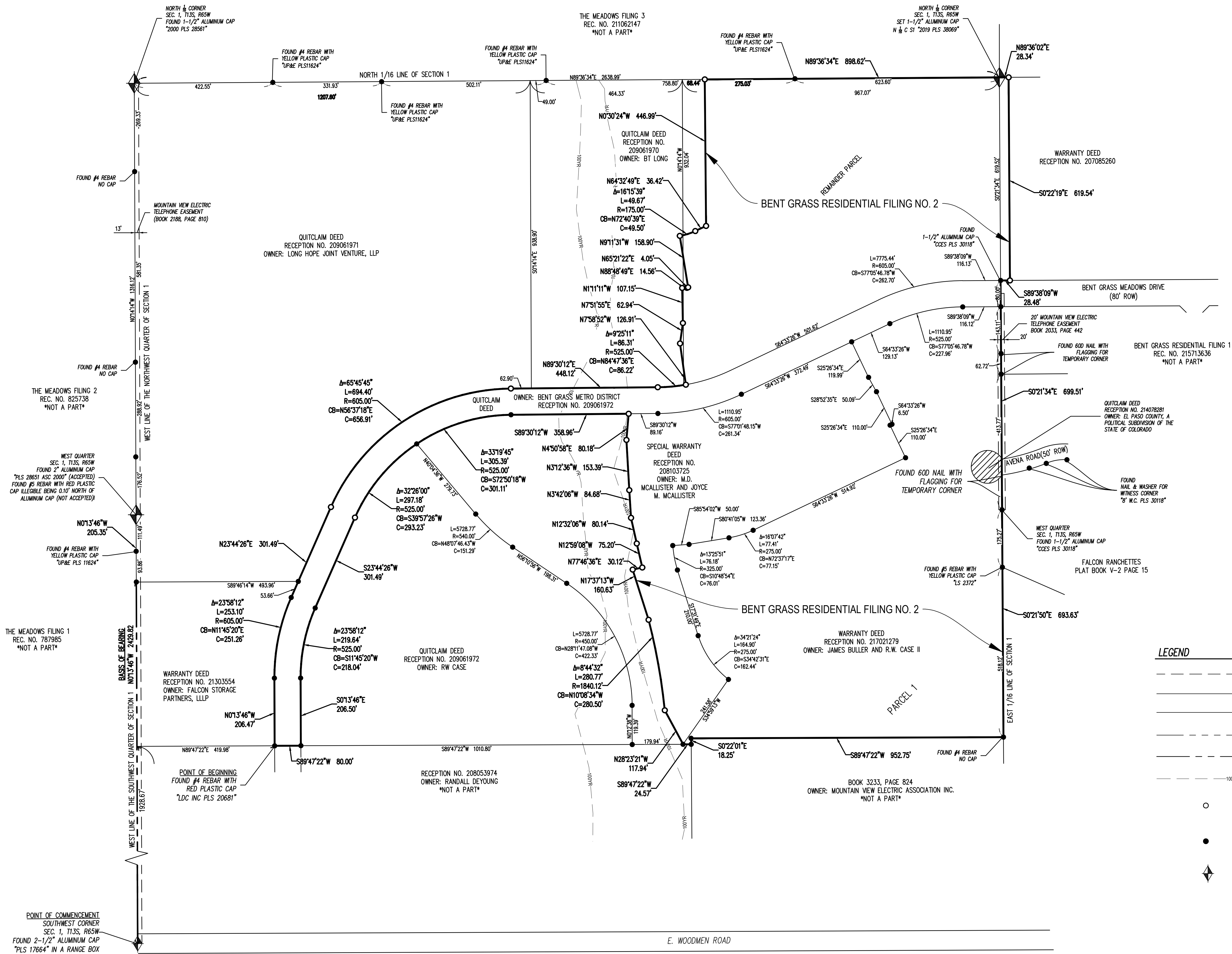
Wastewater pumping facilities are not necessary to serve Bent Grass Residential Filing #2.

Appendix A

BENT GRASS RESIDENTIAL FILING NO. 2

LOCATED IN THE NORTHWEST QUARTER AND SOUTHWEST QUARTER OF
SECTION 1 T13S R65W OF THE 6TH PRINCIPAL MERIDIAN
COUNTY OF EL PASO, STATE OF COLORADO

OVERALL BOUNDARY & EASEMENTS MAP



LEGEND

---	P.U.D.E (PUBLIC UTILITY & DRAINAGE EASEMENT)
---	LOT LINE
---	PROPERTY BOUNDARY
---	ROAD CENTERLINE
---	SECTION LINE
---	100-YEAR FLOODPLAIN LINE
○	SET, NO. 5 REBAR W/ ORANGE PLASTIC CAP, "PLS 38069", UNLESS OTHERWISE NOTED
●	FOUND, NO. 4 REBAR W/ RED PLASTIC CAP, "LDC INC PLS 20681", UNLESS OTHERWISE NOTED
◆	ALIQUOT CORNER (AS DESCRIBED)

SHEET INDEX	
SHEET 2	OVERALL BOUNDARY & EASEMENTS MAP
SHEET 3-5	LOT CONFIGURATION
SHEET 6	CURVE TABLE

Galloway

1755 Teletar Drive, Suite 107
Colorado Springs, CO 80920
719.900.7220
GallowayUS.com



FINAL PLAT
BENT GRASS RESIDENTIAL FILING NO. 2
LOCATED IN THE NORTHWEST QUARTER AND SOUTHWEST QUARTER OF
SECTION 1 T13S R65W OF THE 6TH PRINCIPAL MERIDIAN
COUNTY OF EL PASO, STATE OF COLORADO

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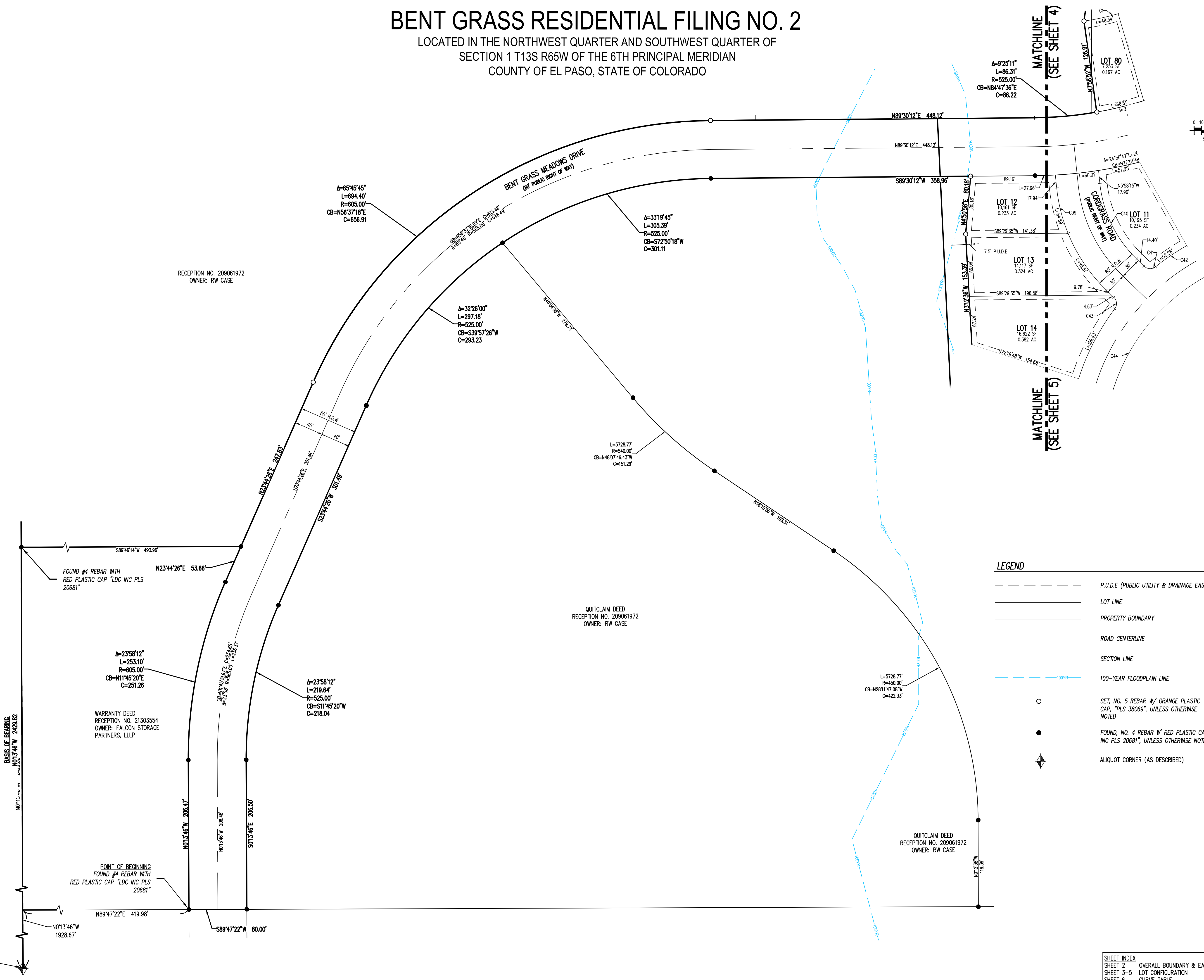
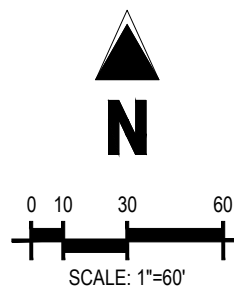
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Drawn By:	AAY
Checked By:	BJD
	5/14/2019

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Galloway

1755 Teletar Drive, Suite 107
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LEGEND	
---	P.U.D.E (PUBLIC UTILITY & DRAINAGE EASEMENT)
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BENT GRASS RESIDENTIAL FILING NO. 2

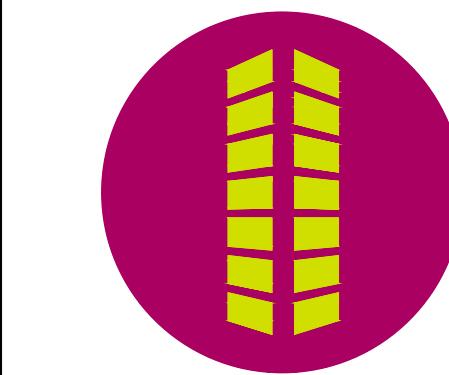
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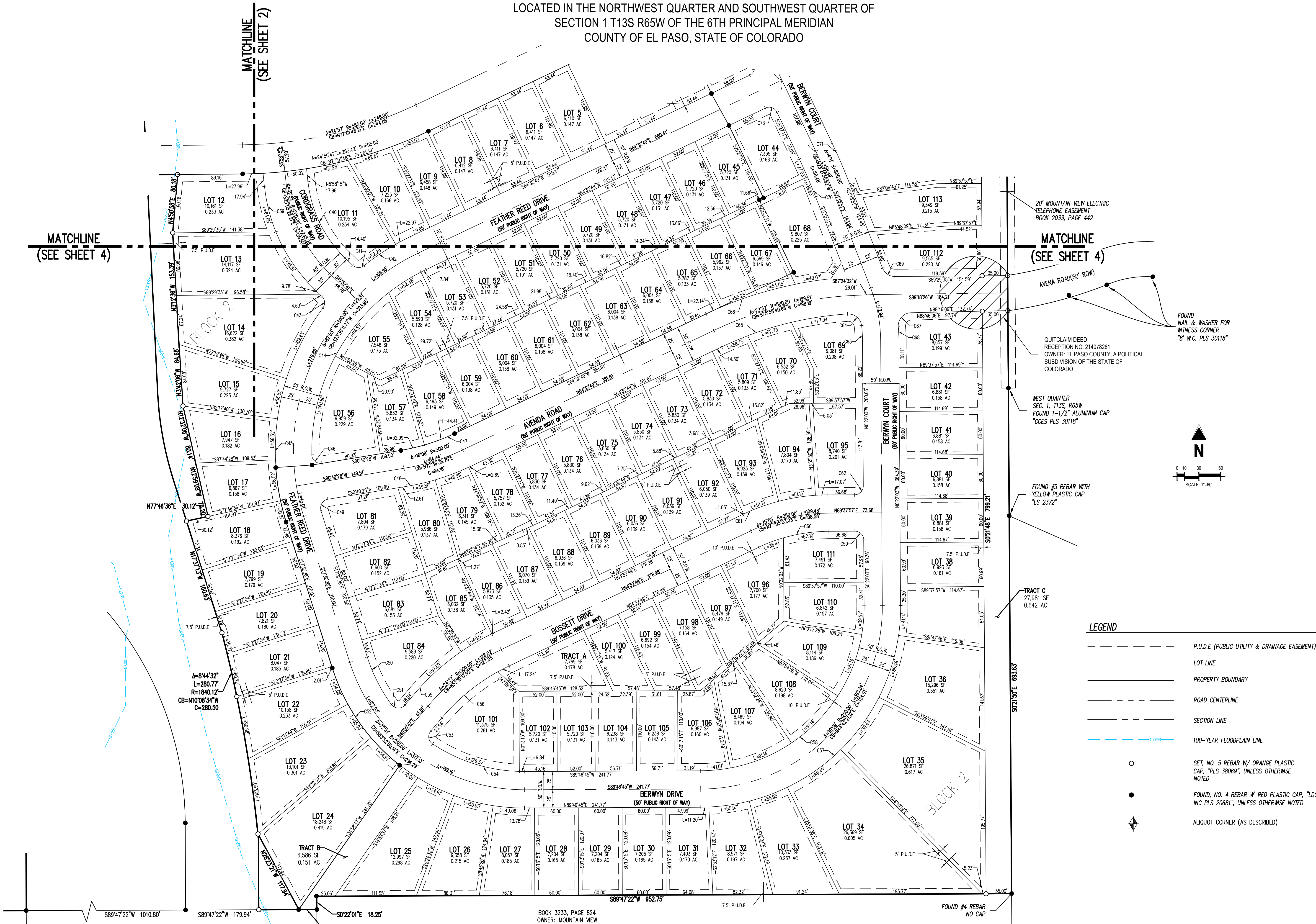
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SHEET 6	

COUNTY OF EL PASO, STATE OF COLORADO

CURVE TABLE

PARCEL CURVE SEGMENT TABLE					
CURVE TAG #	DELTA	LENGTH (FT)	RADIUS (FT)	CHORD BEARING	CHORD LENGTH (FT)
C1	17°28'21"	100.63	330.00	S73°17'00"W	100.25
C2	13°49'23"	65.14	270.00	S71°27'31"W	64.98
C3	90°00'00"	18.85	12.00	S19°32'42"W	16.97
C4	86°47'51"	18.18	122.00	S59°06'41"E	16.49
C5	12°36'34"	50.83	225.00	N7°10'10"E	50.72
C6	12°36'34"	62.12	275.00	S71°10'06"W	61.99
C7	85°18'00"	17.87	12.00	N34°50'23"E	16.26
C8	6°28'57"	59.40	525.00	S4°34'09"E	59.37
C9	44°24'55"	38.76	50.00	N22°42'52"W	37.80
C10	268°49'50"	258.06	55.00	S89°29'35"W	78.57
C11	44°24'55"	38.76	50.00	S21°42'03"W	37.80
C12	24°56'46"	206.81	475.00	S12°58'48"E	205.18
C13	90°00'00"	18.85	12.00	N70°27'11"W	16.97
C14	24°56'46"	100.14	230.00	S77°01'12"W	99.35
C15	90°00'00"	18.85	12.00	N44°29'35"E	16.97
C16	44°24'55"	38.76	50.00	N22°42'52"W	37.80
C17	268°49'50"	258.06	55.00	S89°29'35"W	78.57
C18	44°24'55"	38.76	50.00	S21°42'03"W	37.80
C19	88°11'13"	18.47	12.00	S44°36'01"E	16.70
C20	25°24'01"	99.75	225.00	N75°59'37"W	98.93

PARCEL CURVE SEGMENT TABLE					
CURVE TAG #	DELTA	LENGTH (FT)	RADIUS (FT)	CHORD BEARING	CHORD LENGTH (FT)
C21	26°22'14"	80.54	175.00	S76°28'44"E	79.84
C22	90°58'30"	19.05	12.00	N44°50'54"E	17.11
C23	4°30'31"	41.47	527.00	S1°36'54"W	41.46
C24	4°30'31"	37.22	473.00	S1°36'54"W	37.21
C25	46°27'28"	28.38	35.00	N19°21'34"W	27.61
C26	27°25'54"6"	261.98	55.00	N86°07'50"W	75.78
C27	46°27'28"	28.38	35.00	S27°05'54"W	27.61
C28	89°49'07"	18.81	12.00	S45°28'33"E	16.94
C29	44°24'55"	38.76	50.00	N67°24'26"E	37.80
C30	268°49'50"	258.06	55.00	N02°30'07"W	78.57
C31	44°24'55"	38.76	50.00	N68°10'36"W	37.80
C32	27°06'12"	106.43	225.00	S76°50'43"E	105.45
C33	24°34'36"	75.07	175.00	N75°45'55"W	74.49
C34	92°38'11"	19.40	12.00	S45°48'41"W	17.36
C35	24°56'46"	76.19	175.00	S12°58'48"E	75.59
C36	24°56'46"	74.02	170.00	S17°10'12"W	73.43
C37	83°06'42"	17.41	12.00	N48°57°03"W	15.92
C38	18°03'29"	70.91	225.00	N16°25'26"W	70.62
C39	39°54'27"	160.20	230.00	S25°55'28"E	156.98
C40	39°54'27"	118.41	170.00	N25°55'28"W	116.03

CURVE TAG #	DELTA	LENGTH (FT)	RADIUS (FT)	CHORD BEARING	CHORD LENGTH (FT)
C41	82°50'26"	17.35	12.00	N87°17'55"W	15.88
C42	131°55'57"	75.25	325.00	S57°54'51"W	75.08
C43	82°50'26"	17.35	12.00	S42°27'28"E	15.88
C44	64°09'09"	307.91	275.00	S30°50'18"W	292.08
C45	54°30'11"	309.16	325.00	S9°42'40"W	297.63
C46	98°05'15"	20.54	12.00	S50°16'54"E	18.13
C47	16°07'39"	77.41	275.00	S72°36'39"W	77.15
C48	15°39'11"	88.79	325.00	S72°50'52"W	88.51
C49	98°12'54"	20.57	12.00	S31°34'01"W	18.14
C50	18°42'42"	73.48	225.00	S26°53'47"E	73.15
C51	103°39'06"	21.71	12.00	S88°04'41"E	18.87
C52	72°40'49"	348.84	275.00	S33°52'50"E	325.92
C53	96°23'46"	20.19	12.00	N8°06'06"W	17.89
C54	33°55'15"	133.21	225.00	N73°15'37"W	131.27
C55	24°27'03"	138.69	325.00	S52°49'18"W	137.64
C56	20°51'31"	100.11	275.00	N50°31'32"E	99.56
C57	90°08'49"	432.67	275.00	N44°42'21"E	389.41
C58	90°08'49"	354.01	225.00	S44°42'21"W	318.61
C59	90°00'00"	18.85	12.00	S45°22'03"E	16.97
O60	25°05'07"	98.51	225.00	N77°05'23"E	97.73

PARCEL CURVE SEGMENT TABLE					
CURVE TAG #	DELTA	LENGTH (FT)	RADIUS (FT)	CHORD BEARING	CHORD LENGTH (FT)
C61	25'05'07"	120.40	275.00	S77'05'23"W	119.44
C62	90'00'00"	18.85	12.00	N44'37'57"E	16.97
C63	6'34'03"	20.06	175.00	N3'39'05"W	20.05
C64	86'52'34"	27.29	18.00	N50'02'23"W	24.75
C65	21'38'31"	179.42	475.00	S75'02'05"W	178.35
C66	19'28'54"	178.51	525.00	S74'17'17"W	177.65
C67	93'39'51"	29.43	18.00	N41'56'11"E	26.26
C68	4'31'42"	17.78	225.00	N23'7'54"W	17.78
C69	69'14'34"	21.75	18.00	N55'53'08"W	20.45
C70	41'1'20"	56.66	775.00	N23'21'31"W	56.65
C71	41'1'20"	60.32	825.00	N23'21'31"W	60.30
C72	90'00'00"	18.85	12.00	N19'32'49"E	16.97
C73	90'00'00"	18.85	12.00	N70'27'11"W	16.97
C74	90'00'00"	18.85	12.00	S19'32'49"W	16.97
C75	90'00'00"	18.85	12.00	N70'27'11"W	16.97
C76	40'37'48"	24.82	35.00	S44'13'55"W	24.30
C77	33'00'44"	31.68	55.00	N37'02'11"W	31.24
C78	51'46'05"	31.62	35.00	S89'34'08"E	30.56

<u>SHEET INDEX</u>	
SHEET 2	OVERALL BOUNDARY & EASEMENTS MAP
SHEET 3-5	LOT CONFIGURATION
SHEET 6	CURVE TABLE



FINAL PLAT
BENT GRASS RESIDENTIAL FILING NO. 2

LOCATED IN THE NORTHWEST QUARTER AND SOUTHWEST QUARTER OF
SECTION 1 T13S R65W OF THE 6TH PRINCIPAL MERIDIAN
COUNTY OF EL PASO, STATE OF COLORADO

[illegible]

Project No:	CLH014.20
Drawn By:	AAY
Checked By:	BJD
Date:	5/14/2019

Appendix B

Appendix B
Woodman Hills Metropolitan District Legal Water Supply Inventory
Summary Sheet

Land Formation/Aquifer	Determination/ Decree	Tributary Status	Annual Allocation 100 Year	Annual Allocation 300 Year	Well Permit(s)
			Acre-Feet/Year	Acre-Feet/Year	
<u>Woodmen Hills Non-Renewable Water Supply</u>					
Dawson	129-BD	NNT - RP	55.00	18.33	60830-F; 60831-F
Dawson	133-BD	NNT - RP	102.00	34.00	60832-F; 60833-F
Dawson/Denver			240.00	80.00	11355-F
Denver	Pre-128-BD	NNT 4%	0.00	0.00	28030-F
Denver	128-BD	NNT 4%	530.90	176.97	
Denver	132-BD	NNT 4%	251.00	83.67	
Arapahoe	127-BD	NT	195.60	65.20	A-1 (59180-F) A-2 (59179-F) A-3 (59183-F)
Arapahoe	131-BD	NT	173.00	57.67	A-5 (56121-F) A-6 (57848-F)
Laramie Fox Hills	126-BD	NT	335.80	111.93	LFH-1 (59181-F) LFH-2 (59182-F) LFH-3 (59184-F)
Laramie Fox Hills	130-BD	NT	145.00	48.33	LFH-5 (56118-F) LFH-6 (57849-F)
<u>Guthrie Ranch</u>					
Arapahoe	229-BD	NT	241.00	80.33	GA-1 (61236-F) GA-2 (61237-F)
Laramie Fox Hills	228-BD	NT	290.00	96.67	GLFH-1 (61234-F) GLFH-2 (61235-F)
<u>Falcon Vista</u>					
Denver	49-BD	NNT 4%	22.10	7.37	
Arapahoe	45307-F	NT	7.00	2.33	45307-F
Laramie Fox Hills	48-BD	NT	15.00	5.00	45306-F
<u>Bentgrass</u>					
Denver	373-BD	NNT 4%	98.80	32.93	
Denver	562-BD	NNT 4%	19.40	6.47	
Arapahoe	372-BD	NT	56.00	18.67	
Arapahoe	561-BD	NT	10.20	3.40	
Laramie Fox Hills	371-BD	NT	50.80	16.93	
Laramie Fox Hills	560-BD	NT	10.50	3.50	
<u>Hart Water</u>					
Arapahoe	2100-BD	NT	51.50	17.17	
Laramie Fox Hills	2099-BD	NT	62.50	20.83	
<u>Gaddie Inclusion</u>					
Denver	1314-BD	NNT	18.28	6.09	
Arapahoe	1313-BD	NT	9.29	3.10	
Laramie Fox Hills	1312-BD	NT	10.66	3.55	
<u>Falcon Fields Inclusion</u>					
Denver	505-BD	NNT	25.66	8.55	Update June, 2019
Arapahoe	504-BD	NT	16.33	5.44	Update June, 2019
Laramie Fox Hills	503-BD	NT	18.12	6.04	Update June, 2019
<u>Sub Total Non-Renewable Supply</u>			3061.44	1020.48	
<u>Woodmen Hills Non-Renewable Water Supply</u>					
Guthrie Alluvial	Finding 5/5/83	Trib	89.00	89.00	612-RFP; 27554-FP
Cherokee Contract			350.00	350.00	
<u>Sub Total Renewable Supply</u>			439.00	439.00	
TOTAL WATER SUPPLY			3500.44	1459.48	
<u>Woodmen Hills Miscellaneous Water Supply</u>					
1. Surface Water Diversion				25% of 2 cfs	Currently GC Irrigation
2. Evaporation Deficit and Lawn Irrigation Return Flow Credit (Replacement Plan)				-25.00	Pending

Update: June 2019

JDS-Hydro Consultants, Inc.

Appendix C

**WOODMEN HILLS MD 2018 Drinking Water Quality Report
For Calendar Year 2017**

Public Water System ID: CO0121930

Esta es información importante. Si no la pueden leer, necesitan que alguien se la traduzca.

We are pleased to present to you this year's water quality report. Our constant goal is to provide you with a safe and dependable supply of drinking water. Please contact JD Shivvers at 719-495-2500 with any questions or for public participation opportunities that may affect water quality.

General Information

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791) or by visiting <http://water.epa.gov/drink/contaminants>.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV-AIDS or other immune system disorders, some elderly, and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and microbiological contaminants call the EPA Safe Drinking Water Hotline at (1-800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- Microbial contaminants:** viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants:** salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides:** may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses.
- Radioactive contaminants:** can be naturally occurring or be the result of oil and gas production and mining activities.
- Organic chemical contaminants:** including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also may come from gas stations, urban storm water runoff, and septic systems.

In order to ensure that tap water is safe to drink, the Colorado Department of Public Health and Environment prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems (especially for pregnant women and young children). It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home's plumbing. If you are concerned about lead in your water, you may wish to have your water tested. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Source Water Assessment and Protection (SWAP)

The Colorado Department of Public Health and Environment has provided us with a Source Water Assessment Report for our water supply. For general information or to obtain a copy of the report please visit www.colorado.gov/cdphe/ccr. The report is located under "Guidance: Source Water Assessment Reports". Search the table using 121930, WOODMEN HILLS MD, or by contacting JD Shivvers at 719-495-2500. The Source Water Assessment Report provides a screening-level evaluation of potential contamination that could occur. It does not mean that the contamination has or will occur. We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provide a starting point for developing a source water protection plan. Potential sources of contamination in our source water area are listed on the next page.

Please contact us to learn more about what you can do to help protect your drinking water sources, any questions about the Drinking Water Quality Report, to learn more about our system, or to attend scheduled public meetings. We want you, our valued customers, to be informed about the services we provide and the quality water we deliver to you every day.

Our Water Sources

<u>Source</u>	<u>Source Type</u>	<u>Water Type</u>	<u>Potential Source(s) of Contamination</u>
GA1 WELL	Well	Groundwater	Non-tributary 1000’ plus deep
GA2 WELL	Well	Groundwater	Non-tributary 1000’ plus deep
GALV1 WELL	Well	Groundwater	Agricultural, Industrial, Highway & Septic
GALV2 WELL	Well	Groundwater	Agricultural, Industrial, Highway & Septic
GLFH1 WELL	Well	Groundwater	Non-tributary 1500’ plus deep
GLFH2 WELL	Well	Groundwater	Non-tributary 1500’ plus deep
WELL A1	Well	Groundwater	Non-tributary 1800’ plus deep
WELL A2	Well	Groundwater	Non-tributary 1800’ plus deep
WELL A3	Well	Groundwater	Non-tributary 1800’ plus deep
WELL A5	Well	Groundwater	Non-tributary 1800’ plus deep
WELL A6	Well	Groundwater	Non-tributary 1800’ plus deep
WELL DW1	Well	Groundwater	Agricultural, Industrial, Highway & Septic
WELL DW3	Well	Groundwater	Inactive well, unequipped
WELL LFH1	Well	Groundwater	Non-tributary 2000’ plus deep
WELL LFH2	Well	Groundwater	Non-tributary 2000’ plus deep
WELL LFH3	Well	Groundwater	Non-tributary 2000’ plus deep
WELL LFH5	Well	Groundwater	Non-tributary 2000’ plus deep
WELL LFH6	Well	Groundwater	Non-tributary 2000’ plus deep

Terms and Abbreviations

- **Maximum Contaminant Level (MCL)** – The highest level of a contaminant allowed in drinking water.
- **Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.
- **Health-Based** – A violation of either a MCL or TT.
- **Non-Health-Based** – A violation that is not a MCL or TT.
- **Action Level (AL)** – The concentration of a contaminant which, if exceeded, triggers treatment and other regulatory requirements.
- **Maximum Residual Disinfectant Level (MRDL)** – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Contaminant Level Goal (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Maximum Residual Disinfectant Level Goal (MRDLG)** – The level of a drinking water disinfectant, below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **Violation (No Abbreviation)** – Failure to meet a Colorado Primary Drinking Water Regulation.
- **Formal Enforcement Action (No Abbreviation)** – Escalated action taken by the State (due to the risk to public health, or number or severity of violations) to bring a non-compliant water system back into compliance.
- **Variance and Exemptions (V/E)** – Department permission not to meet a MCL or treatment technique under certain conditions.
- **Gross Alpha (No Abbreviation)** – Gross alpha particle activity compliance value. It includes radium-226, but excludes radon 222, and uranium.
- **Picocuries per liter (pCi/L)** – Measure of the radioactivity in water.
- **Nephelometric Turbidity Unit (NTU)** – Measure of the clarity or cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the typical person. **Compliance Value (No Abbreviation)** – Single or calculated value used to determine if regulatory contaminant level (e.g. MCL) is met. Examples of calculated values are the 90th Percentile, Running Annual Average (RAA) and Locational Running Annual Average (LRAA).
- **Average (x-bar)** – Typical value.
- **Range (R)** – Lowest value to the highest value.
- **Sample Size (n)** – Number or count of values (i.e. number of water samples collected).
- **Parts per million = Milligrams per liter (ppm = mg/L)** – One part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion = Micrograms per liter (ppb = ug/L)** – One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- **Not Applicable (N/A)** – Does not apply or not available.
- **Level 1 Assessment** – A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- **Level 2 Assessment** – A very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions



Detected Contaminants

WOODMEN HILLS MD routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table(s) show all detections found in the period of January 1 to December 31, 2017 unless otherwise noted. The State of Colorado requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Therefore, some of our data, though representative, may be more than one year old. Violations and Formal Enforcement Actions, if any, are reported in the next section of this report.

Note: Only detected contaminants sampled within the last 5 years appear in this report. If no tables appear in this section then no contaminants were detected in the last round of monitoring.

Disinfectants Sampled in the Distribution System										
TT Requirement: At least 95% of samples per period (month or quarter) must be at least 0.2 ppm <u>OR</u> If sample size is less than 40 no more than 1 sample is below 0.2 ppm Typical Sources: Water additive used to control microbes										
Disinfectant Name	Time Period		Results			Number of Samples Below Level		Sample Size	TT Violation	MRDL
Chlorine	December, 2017		Lowest period percentage of samples meeting TT requirement: 100%			0		12	No	4.0 ppm
Lead and Copper Sampled in the Distribution System										
Contaminant Name	Time Period		90 th Percentile	Sample Size	Unit of Measure	90 th Percentile AL	Sample Sites Above AL	90 th Percentile AL Exceedance	Typical Sources	
Copper	07/25/2017 to 08/04/2017		0.35	20	ppm	1.3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits	
Lead	07/25/2017 to 08/04/2017		1	20	ppb	15	1	No	Corrosion of household plumbing systems; Erosion of natural deposits	
Disinfection Byproducts Sampled in the Distribution System										
Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	Highest Compliance Value	MCL Violation	Typical Sources
Total Haloacetic Acids (HAA5)	2017	4.95	4.6 to 5.3	2	ppb	60	N/A		No	Byproduct of drinking water disinfection
Total Trihalomet hanes (TTHM)	2017	25.95	25.8 to 26.1	2	ppb	80	N/A		No	Byproduct of drinking water disinfection
Radionuclides Sampled at the Entry Point to the Distribution System										
Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources	
Combined Radium	2017	0.93	0 to 1.4	3	pCi/L	5	0	No	Erosion of natural deposits	

Appendix D

WATER SUPPLY INFORMATION SUMMARY

Section 30-28-133,(d), C.R.S. requires that the applicant submit to the County, "Adequate evidence that a Water supply that is sufficient in terms of quantity, quality, and dependability will be available to ensure an adequate supply of water"

1. NAME OF DEVELOPMENT AS PROPOSED				<u>Bent Grass Residential Filing #2</u>			
2. LAND USE ACTION				<u>Final Plat</u>			
3. NAME OF EXISTING PARCEL AS RECORDED				<u>N/A</u>			
SUBDIVISION		FILING		BLOCK		Lot	
<u>See Above</u>		<u>2</u>		<u>N/A</u>		<u>N/A</u>	
4. TOTAL ACREAGE		5. NUMBER OF LOTS PROPOSED		PLAT MAPS ENCLOSED			
<u>50.8</u>		<u>121</u>		<input checked="" type="checkbox"/> YES		<u>See Submittal</u>	
6. PARCEL HISTORY - Please attach copies of deeds, plats, or other evidence or documentation. (In submittal package)							
A. Was parcel recorded with county prior to June 1, 1972? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO							
B. Has the parcel ever been part of a division of land action since June 1, 1972? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO							
If yes, describe the previous action							
7. LOCATION OF PARCEL - Include a map delineating the project area and tie to a section corner. (In submittal)							
West 1/2 OF 1/4 SECTION <u>1</u> TOWNSHIP <u>13</u>				<input type="checkbox"/> N <input checked="" type="checkbox"/> S RANGE <u>65</u> <input type="checkbox"/> E <input checked="" type="checkbox"/> W			
PRINCIPAL MERIDIAN: <input checked="" type="checkbox"/> 6TH <input type="checkbox"/> N.M. <input type="checkbox"/> UTE <input type="checkbox"/> COSTILLA							
8. PLAT - Location of all wells on property must be plotted and permit numbers provided.							
Surveyors plat <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If not, scaled hand-drawn sketch <input type="checkbox"/> YES <input type="checkbox"/> NO <u>N/A</u>							
9. ESTIMATED WATER REQUIREMENTS - Gallons per Day or Acre Foot per Year				10. WATER SUPPLY SOURCE			
HOUSEHOLD USE # * <u>121</u> of units <u>38,132</u> GPD <u>42.713</u> AF				<input checked="" type="checkbox"/> EXISTING <input type="checkbox"/> DEVELOPED		<input type="checkbox"/> NEW WELLS	
COMMERCIAL USE # <u>0.0</u> Gr. Ac. <u>0</u> GPD <u>0.0</u> AF				<u>WELLS</u> SPRING		Proposed Aquifers - (Check One)	
IRRIGATION # ** _____ acres _____ GPD _____ AF						<input type="checkbox"/> Alluvial <input type="checkbox"/> Upper Arapahoe	
STOCK WATERING # _____ of head _____ GPD _____ AF						<input type="checkbox"/> Upper Dawson <input type="checkbox"/> Lower Arapahoe	
OTHER _____ Multi-fam _____ GPD _____ AF						<input type="checkbox"/> Lower Dawson <input type="checkbox"/> Laramie Fox Hills	
TOTAL <u>38,132</u> GPD <u>42.7</u> AF						<input type="checkbox"/> Denver <input type="checkbox"/> Dakota	
* Based on 0.353 Acre-Feet/Unit/Year						<input type="checkbox"/> Other	
** Irrigation included in Residential Uses							
				<input type="checkbox"/> MUNICIPAL		WATER COURT DECREE CASE NUMBERS <u>Determinations</u> <u>373-BD, 562-BD</u> <u>372-BD, 561-BD</u> <u>371-BD, 560-BD</u> NUMEROUS ADDITIONAL	
				<input type="checkbox"/> ASSOCIATION			
				<input type="checkbox"/> COMPANY			
				<input checked="" type="checkbox"/> DISTRICT			
				NAME <u>Woodmen Hills Metro. Dist.</u>			
				LETTER OF COMMITMENT FOR SERVICE <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
11. ENGINEER'S WATER SUPPLY REPORT <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If yes, please forward with this form. (This may be required before our review is completed)							
12. TYPE OF SEWAGE DISPOSAL SYSTEM <u>Central Sewer System</u>							
<input type="checkbox"/> SEPTIC TANK/LEACH FIELD				<input checked="" type="checkbox"/> CENTRAL SYSTEM - DISTRICT NAME: <u>Woodmen Hills Metropolitan District</u>			
<input type="checkbox"/> LAGOON				<input type="checkbox"/> VAULT - LOCATION SEWAGE HAULED TO: _____			
<input type="checkbox"/> ENGINEERED SYSTEM (Attach a copy of engineering design)				<input type="checkbox"/> OTHER: _____			

Appendix E

WOODMEN HILLS

METROPOLITAN DISTRICT

July 9, 2019

Jim Byers
Challenger Homes
8605 Explorer Drive, Suite 250
Colorado Springs, Colorado 80920

**Re: Water and Wastewater Commitment Letter for Final Plat for
Bent Grass Residential, Filing No. 2**

Dear Mr. Byers:

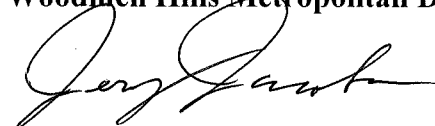
The above named subdivision is a 121 lot residential subdivision which is within the Woodmen Hills Metropolitan District in Bentgrass. Woodmen Hills Metropolitan District commits to providing both water and sewer service for the above named subdivision.

This final commitment is for 121 residential lots and a water commitment of 42.713 Acre-feet/year. WHMD has adequate water supplies to meet the anticipated additional demand.

Wastewater service will be for 121 residential taps. Estimated wastewater loads are 19,723 gallons/day. Adequate wastewater system and treatment capacity exists to meet the anticipated additional loading.

If you have any questions, please do not hesitate to call.

Sincerely,
Woodmen Hills Metropolitan District

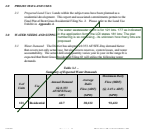


Jerry Jacobson, District Manager

C: John P. McGinn, District Engineer

Markup Summary 9-18-2019

dsdparsons (1)



Subject: Callout
Page Label: 4
Author: dsdparsons
Date: 9/17/2019 12:34:09 PM
Color: █

The water wastewater comt is for 121 lots. 177 as indicated in the application form, the LOI states 181 lots; The plat numbering is so confusing - its unknown how many lots are proposed