July 30, 2026

Town of Castle Rock Development Services

COLORADO LICENSED
MARTIN RAY METSKER
41743
08/13/2026
PROFESSIONAL ENGINEER

DXD Castle Rock Storage Utility Conformance Letter
Town of Castle Rock Project No. CD26-0014

This letter has been prepared in support of the DXD Castle Rock Storage Project Construction Documents (CDs) and provides utility information for the proposed development located within The Meadows Filing No. 19, Lot 2 North. The purpose of this letter is to demonstrate that the planned improvements associated with this project conform to the Town of Castle Rock's current utility requirements, design criteria, and standard engineering practices.

The DXD Castle Rock Storage project is a commercial development situated north of Timber Mill Parkway in Castle Rock, Colorado. The proposed development will include a primary building containing interior walk-in storage units, several modular storage units, paved alleys, concrete walks and pans, and associated landscaped areas. Using the land use of 3 SFE/acre our site totals 9 SFEs.

The site will be served by Town of Castle Rock water and sanitary sewer utilities. The site is within the Town of Castle Rock orange water pressure zone. One proposed building will require a 6-inch fire service line, a ¾-inch irrigation service, a 1-inch domestic water service, and a 4-inch sanitary service. The 1-inch domestic water service will connect from the existing water line to a proposed water meter and then to the proposed building. Both water services will connect to the existing 12-inch water main located along the west side of the property within the adjacent access road. Sanitary sewer service will be provided by extending an 8-inch sanitary main from the existing 18-inch sanitary trunk line located north of the site within the existing 35' utility and drainage easement. A 4-inch sanitary service line will then connect the proposed building to the extended 8-inch sanitary main.

A 1-inch water meter will be installed near the site entrance to serve the domestic water demand. Final meter sizing, assigned project SFEs and capacity will be determined during building permitting based on the required fixture unit count and any additional projected water use. This information will be submitted to the Town of Castle Rock for review and approval in accordance with Town standards. Necessary easements for proposed utilities will be provided at the time of the Final Plat.

TOWN OF CASTLE ROCK COLORADO
DEVELOPMENT SERVICES
APPROVED
By jkirkpatrick
on 08/17/2026
APPROVED-CD26-0014 Final Util Rpt.pdf
Record Document on File

terracina design
Landscape Architecture ▪ Planning ▪ Civil Engineering
10200 E. Girard Avenue, A-314. Denver, CO 80231 ph: 303.632.8867

Sanitary Sewer System

The sewer calculations used in this letter were based on the following criteria:

- Demand per Acre 600 GPD/Acre
- Peak Factor – PF = 3.65 * (ADF^-0.168), max. = 5.0
- Infiltration/inflow – I = 0.10 * Average Flow
- Peak Design Flow – PDF = (PF * ADF) + (Infiltration/Inflow)

Based on the requirements above, the calculated sanitary flow for our proposed site has been summarized in the table below in comparison to the "Final Water & Sanitary Sewer Utility Report" by Terracina Design, dated 2021.

PARCEL	***ACRES***	***AVG DAY*** **(GPD)**	***AVG DAY*** **(GPM)**	***PEAK DESIGN*** **(GPM)**	***PEAK DESIGN*** **(GPD)**	***AVG DAY*** **(cfs)**	***PEAK DESIGN*** **(cfs)**
DXD Castle Rock Storage	4.0	2,370	1.65	8.39	12,087	0.004	0.019
Existing Development	27.3	34,498	23.96	122.18	175,942	0.053	0.272
Remaining Demand	384.8	39,314	27.30	139.22	200,498	0.043	0.310

Based on the comparison in the table above, our proposed site is well within the expectations of the "Final Water & Sanitary Sewer Utility Report" by Terracina Design, dated 2021. The ideal sanitary service size is 4" based on the Hydro flow analysis provided in Appendix C.

Water System

Water usage was estimated using the Town of Castle Rock's standard design criteria for average daily demand (ADD), maximum day demand (MDD), and peak hour demand (PHD).

- The Average Daily Demand is based on 1,200 gpd/acre.
- The Maximum Day Demand was determined by applying a peak day factor of 2.5.
- The Peak Hour Demand was calculated using a peak hour factor of 5.5.
- The Highest Irrigation Demand Zone is 9 gpm.

Using these design assumptions, the anticipated water system demands for the proposed development have been calculated and are summarized below in comparison to the "Final Water & Sanitary Sewer Utility Report" by Terracina Design, dated 2021.

The Fire Flow necessary for this project has been determined using a 73,946 sf building of II-B construction type. The building will be protected with a fire sprinkler system and those required Fire Flow requirements are 3,500 gpm at 20 psi for a duration of 1 hour.

Total required storage volume is 221,995.20 gallons (0.221 MG). Required storage volume was computed using the formula in Section 4.4.2 of Water Criteria.

PARCEL	***USE***	***ACRES***	***AVG DAY (GPD/AC)***	***AVG DAY (GPD)***	***AVG DAY (GPM)***	***MAX DAY (MDD) (GPM)***	***PEAK HOUR (PHD) (GPM)***
Meadows Storage	Commercial	4.0	1,200	4,800	3.33	8.33	18.33
CD21-0042 Report	Multifamily	66.0	1,200	234,406	162.78	506.95	995.30

Based on the comparison in the table above, our proposed site is well within the expectations of the "Final Water & Sanitary Sewer Utility Report" by Terracina Design, dated 2021.

Future development of existing water and wastewater infrastructure necessary for service for this project is responsibility of developer.

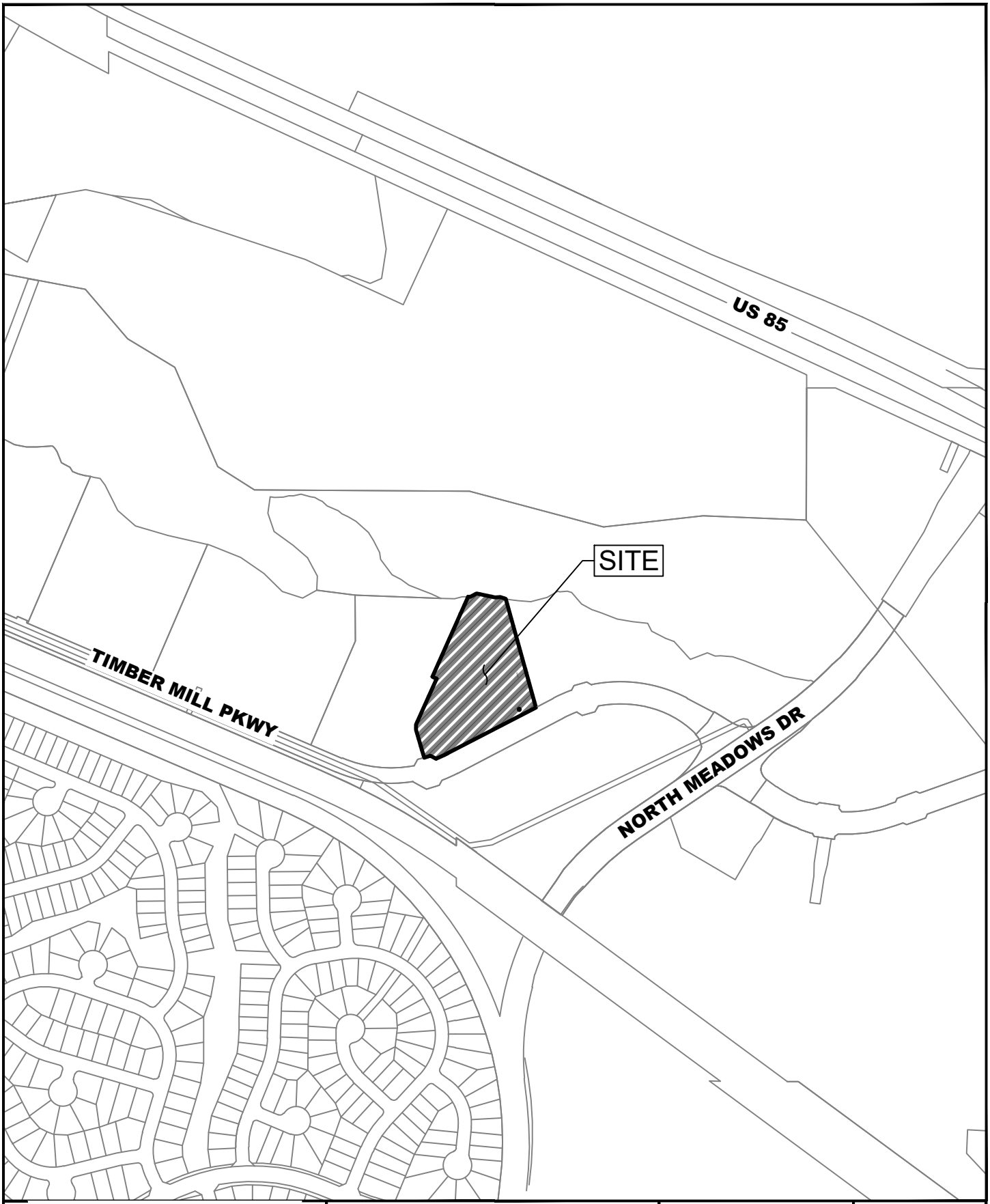
If you have any questions, please do not hesitate to call me at 720-854-9456

Sincerely,
Terracina Design

Martin Metsker, PE
Project Manager

APPENDIX A
GENERAL MAPS

Vicinity Map



terracina design
10200 E. Girard Ave, A-314
Denver, CO 80231
ph: 303.632.8867

MEADOWS STORAGE
VICINITY MAP

CASTLE ROCK, CO DATE: 1/12/2023

0 500'
1" = 500'

N

11/25/2025 11:51 AM ; X:\DXD CAPITAL - MEADOWS STORAGE\DOCUMENTS\REPORTS\DRAINAGE\00 - OVERALL\A1 - MAPS (VIC-FEMA-SOILS)\VICINITY MAP.DWG;

APPENDIX B
WATER DEMANDS

Water Demand Calculations

DXD Castle Rock Storage

Water and Sanitary Sewer Utlity Conformance Letter

Potable Water Demand Calcualtion

PARCEL NO.	USE	ACRES	EQUIVALENT (SFE/DU)	Single Family Equivalent (SFE)	DEMAND AVG DAY (GPD/AC) (2)	DEMAND AVG DAY (GPD)	DEMAND AVG DAY (GPM)	MAX DAY (MDD) (GPM)	PEAK HOUR (PHD) (GPM) (3)
Commercial									
DXD Castle Rock Storage	Commercial	4.0	3	12	1200	4,800	3.33	8.33	18.33
Irrigation - DXD Castle Rock Storage	Irrigated Land	0.6	9.38	6	3750	2,390	1.66		
	TOTAL					**7,190**	**4.99**	**9.99**	**19.99**

PEAKING FACTOR	
MAX DAY (MDD)	**2.5**
PEAK HOUR (PHD)	**5.5**

Assumptions:

(1) Industrial/Other Commercial Land Use (demands based on TOCR standards: 1,200 gpd/acre)
(2) Irrigation Demand based on 3,750 gpd/irrigated acre per TOCR Water System Design 2018 Criteria Manual
(3) Peaking Hour Demands (PHD) determined per TOCR Water section 4.4.1.2 equation: PHD = Domestic ADD x PHF + Irrigation ADD
- Tank Elevations provided by TOCR (Mark Mantua via email dated 4/26/2017)
- PRV assumed at Lot 1 tap (12in)
- Assuming Orange Zone Pressures at all Water Tap locations (PRV located at Yellow Zone tap set to Orage Zone pressures)
- 4,000 gpm Maximum Available Fire Flow (per Technical Memorandum by TST dated 02/29/2016)
- Peaking factor of 2.5 was used to obtain MDD
- Peaking factor of 5.5 was used to obtain PHD

APPENDIX C
SANITARY DEMANDS

Sanitary Demand Calculations
Sanitary Service Hydraulic Analysis

DXD Castle Rock Storage
Water and Sanitary Sewer Utlity Conformance Letter
Sanitary Sewer Demand Calcualtion

Peaking Factor = 5.0

PARCEL	*USE*	*ACRES*	*DU*	*AVG DAY*	*AVG DAY*	*AVG DAY*	*PEAK DESIGN*	*PEAK DESIGN*	*AVG DAY*	*PEAK DESIGN*	*ADF*	*Calc*
				DEMAND							Peaking Factor Check	
Filing 19 - Lot 2 North			(DU/AC)	(GPD/AC) [1]	(GPD)	(GPM)	(GPM) [2][3]	(GPD)	(cfs)	(cfs)	(MGD)	PF [4]
											0.002	10.08
Proposed Development												
a. DXD Castle Rock Storage	Commercial	4.0	N/A	600	2370	1.65	8.39	12,087	0.004	0.019		
Sub-Total		**4.0**	**N/A**	**600**	**2370**	**1.65**	**8.39**	**12,087**	**0.004**	**0.019**		
Existing Development												
b. Lot 1	Commercial	8.3	N/A	600	4993	3.47	17.68	25,465	0.008	0.039		
c. Lot 2	Commercial	5.3	N/A	600	3205	2.23	11.35	16,347	0.005	0.025		
d. Lot 3B	Church	8.2	1.00	300	300	0.21	1.06	1,530	0.000	0.002		
e. Lot 3C	Residential	5.5	200	130	26000	18.06	92.08	132,600	0.040	0.205		
Sub-Total		**27.3**	**N/A**	**N/A**	**34,498**	**23.96**	**122.18**	**175,942**	**0.053**	**0.272**		
f. Developed Total (a+b+c+d+e)		31.2	N/A	N/A	36,868	25.60	130.58	188,029	0.057	0.291		
g. CD21-0042 Report		66.0	14	130	76,182	52.90	269.80	388,527	0.100	0.601		
Remaining Demand (g-f)		**34.8**	**N/A**	**N/A**	**39,314**	**27.30**	**139.22**	**200,498**	**0.043**	**0.310**		

Assumptions:
(1) Industrial/Other Commercial (demands based on acreage: 600 gpd/ac)
(2) Peaking Factor of 5 used
(3) Peak Design Flow determined from TOCR Wastewater section 4.4.1.3 equation: PDF = peak base flow + I/I allowance = (ADF*PF) + (0.1*ADF)
(4) Peaking Factor check from TOCR Wastewater section 4.4.1.2 equation: PF = 3.65 (ADF^(-0.168)); Max PF = 5.0

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Apr 16 2026

4in Sanitary Service

Circular

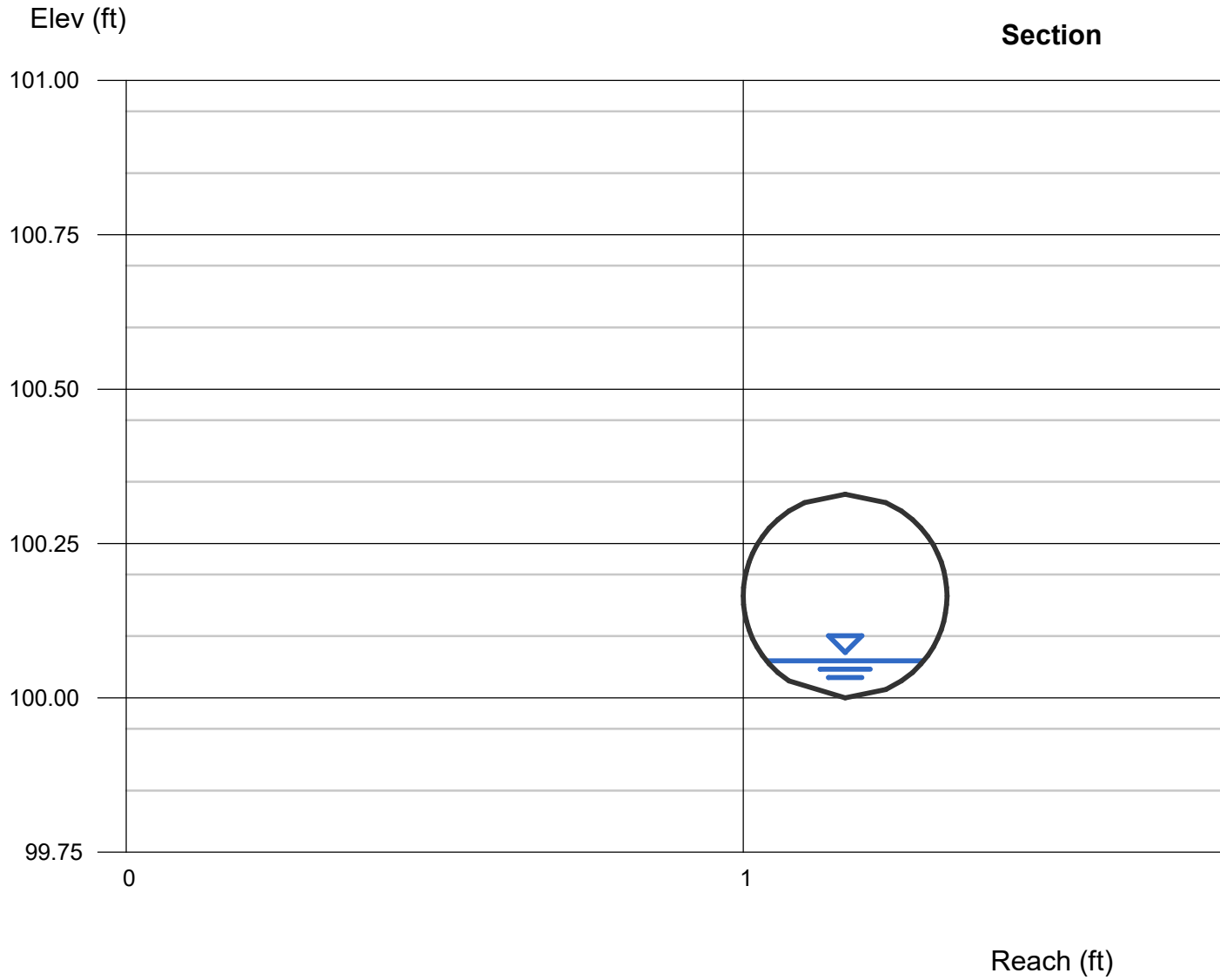
Diameter (ft)	=	0.33
Invert Elev (ft)	=	100.00
Slope (%)	=	2.00
N-Value	=	0.011

Calculations

Compute by:		Known Q
Known Q (cfs)	=	0.02

Highlighted

Depth (ft)	=	0.06
Q (cfs)	=	0.020
Area (sqft)	=	0.01
Velocity (ft/s)	=	1.86
Wetted Perim (ft)	=	0.29
Crit Depth, Yc (ft)	=	0.08
Top Width (ft)	=	0.26
EGL (ft)	=	0.11



APPENDIX D

References

Excerpts from “Final Water & Sanitary Sewer Utility Report for the Meadows - Filing 19 - Lot 2 North" by Terracina Design, dated February 2021

Excerpts from the " Final Water & Sanitary Sewer Utility Report for the Meadows - Filing 19 - Lot 2 North" by Terracina Design, dated February 2021

FINAL WATER & SANITARY SEWER UTILITY REPORT FOR THE MEADOWS – FILING 19 – LOT 2 NORTH CASTLE ROCK, CO

PROJECT NO. CD21-0042

PREPARED FOR:

CASTLE ROCK DEVELOPMENT CO.
3033 E. 1ST AVE. #310
DENVER, COLORADO 80206
303-394-5500
CONTACT: R.C HANISCH

PREPARED BY:

TERRACINA DESIGN, LLC
10200 E. GIRARD AVENUE
BUILDING A, SUITE 314
DENVER, CO 80231
PHONE: 303-632-8867
CONTACT: MARTIN METSKER
PROJECT NUMBER: 14-003

FEBRUARY 2021

Excerpts from the " Final Water & Sanitary Sewer Utility Report for the Meadows - Filing 19 - Lot 2 North" by Terracina Design, dated February 2021

CRDC # 14-003
2/7/2022

The Meadows - Filing 19

Water and Sanitary Sewer Utlity Report
Potable Water Demand Calcualtion
(Concept A)

Filing 19

PARCEL NO.	USE	ACRES	DWELLING UNITS (DU/AC)	DWELLING UNITS (DU) (3)	EQUIVALENT (SFE/DU) (2)	Single Family Equivalent (SFE)	DEMAND AVG DAY (GPD/DU) (2)	DEMAND AVG DAY (GPD)	DEMAND AVG DAY (GPM)	MAX DAY (MDD) (GPM)	PEAK HOUR (PHD) (GPM) (3)
Residential											
Lot 2 North	Multi-Family	66.0	13.66	902	0.65	586	260	234,406	162.78	506.95	995.30
Irrigation - Lot 2 North (2)	Irrigated Land							144,000	100.00		
	TOTAL							**378,406**	**262.78**	**506.95**	**995.30**

PEAKING FACTOR	
MAX DAY (MDD)	**2.5**
PEAK HOUR (PHD)	**5.5**

Assumptions:
(1) Industrial/Other Commercial Land Use (demands based on TOCR standards: 1,200 gpd/acre)
(2) Irrigation Demand based on 100 GPM per TOCR Fee Schedule dated January 2022
(3) Peaking Hour Demands (PHD) determined per TOCR Water section 4.4.1.2 equation: PHD = Domestic ADD x PHF + Irrigation ADD
- Tank Elevations provided by TOCR (Mark Mantua via email dated 4/26/2017)
- PRV assumed at Lot 1 tap (12in)
- Assuming Orange Zone Pressures at all Water Tap locations (PRV located at Yellow Zone tap set to Orage Zone pressures)
- 4,000 gpm Maximum Available Fire Flow (per Technical Memorandum by TST dated 02/29/2016)
- Peaking factor of 2.5 was used to obtain MDD
- Peaking factor of 5.5 was used to obtain PHD

Excerpts from the " Final Water & Sanitary Sewer Utility Report for the Meadows - Filing 19 - Lot 2 North" by Terracina Design, dated February 2021

Filing 19 Sanitary Sewer Demand

Peaking Factor = **5.0**

PARCEL	USE	ACRES	DU (DU/AC)	EQUIVALENT (SFE/AC)	EQUIVALENT (SFE/DU)	SFE (DU)	DESIGN FLOW AVG DAY (GPD/AC) [1]	AVG DAY (GPD/DU)	AVG DAY (GPD)	AVG DAY (GPM)	PEAK DESIGN (GPM) [2][3]	PEAK DESIGN (GPD)	AVG DAY (cfs)	PEAK DESIGN (cfs)	Peaking Factor Check ADF (MGD)	Calc PF [4]
RESIDENTIAL																
Lot 2 North	Industrial/Commercial	42.9		3.00		128.7	600		25,740	17.88	91.16	131,274	0.040	0.203	0.026	6.75
Lot 2 North	Multi-Family	23.1	13.66		0.65	205.1		130	26,664	18.52	94.43	135,985	0.041	0.210	0.027	6.71
		66.0														
				SUB-TOTAL		**333.8**			**52,404**	**36.4**	**185.6**	**267,259**	**0.1**	**0.414**		

Assumptions:
(1) Industrial/Other Commercial Land Use (demands based on acreage: 600 gpd/acre)
(2) Peaking Factor of 5 used
(3) Peak Design Flow determined from TOCR Wastewater section 4.4.1.3 equation: PDF = peak base flow + I/I allowance = (ADF*PF) + (0.1*ADF)

APPENDIX E

Supporting Documents

Commercial Business Building Permit
Grease Interceptor Requirement

Fire Flow Memo

Commercial Business Building Permit

Grease Interceptor Requirement

All Commercial Business Building Permits for new business and construction of new buildings, remodels, or tenant improvement permits will be required to comply with Town Code 13.05, Grease Interceptors Required. Applicant will be required to submit an Industry Information Questionnaire through the Plum Creek Water Reclamation Authority (PCWRA) to verify if the business will require an oil/grease interceptor. Please go to PCWRA website at:

https://www.pcwracolorado.org/commercial-businesses

CONSTRUCTION DRAWINGS

Please note PCWRA requires all new commercial buildings to provide a stub-out for a separate waste line for future interceptor installation, if not proposed with the project. All drainage fixtures and grease waste lines that are tied to the oil/grease must be shown in the construction drawings as well as the location of the oil/grease interceptor.

ACKNOWLEDGEMENT

The applicant must sign and date this form to acknowledge that the applicant has read and understands the Town's Code requirement regarding Grease Interceptors, PCWRA's requirement to complete an Industry Information Questionnaire and Food Service Application, and the Town's requirement that a letter from PCWRA must be provided with the Town of Castle Rock Building Permit. This signed form is required to be included in the Utility Report with the Predevelopment Plan (PDP), Site Development Plan (SDP) and Construction Document (CD) submittals.

DXD Castle Rock Storage

Name of Project

3223 Timber Mill Pkwy, Castle Rock CO 80109

Address of property, if known

Scott Hughes Digitally signed by Scott Hughes DN: C=US, E=scott@dxd.capital, O=DXD Capital, OU=Managing Director, CN=Scott Hughes Date: 2026.04.15 16:48:04-04'00'

Signature

4/15/26

Date

These plans have been reviewed for the adopted fire code by Castle Rock Fire and Rescue Department, and are:

Approved

Fire and Life Safety Division on 04/24/2026 10:57 AM. Signature of Plans Reviewer:

Alayna Moore
ICC/STATE Certification number: 246317922

Review and approval are for general compliance and compatibility with the design as outlined by the adopted fire code, adopted building code and NFPA standards of the submitted structural and fire protection documents. The contractor and fire protection company shall be responsible for complying with the stamped plans/documents and coordination of the work of those trades associated with the required fire and life safety elements of these stamped plans.

Castle Rock Fire and Rescue Department
300 Perry Street
Castle Rock, CO 80104

04/16/2026

RE: DXD Capital SDP26-0001 - Confirmation Memo of Required Fire Flow

To Life Safety Division,

Please accept the following required fire flow evaluation(s) based upon the currently adopted 2018 International Fire Code for review and confirmation for each of the following proposed buildings.

Building Name
Building Address

Total Fire Flow Calculation Area: 73,946 square feet
Building Construction Type: II-B
Are fire sprinklers provided throughout this building? Yes
Are you proposing a reduction in Required Fire Flow for fire sprinklers? Yes
Are Fire walls provided in this building? Yes

Reference Appendix B, Table B105.1
Required Fire Flow: 6,000 gpm at 20-psi Flow Duration: 4-hours
If applicable, Calculated Fire Flow including reduction for sprinklers: 3500 gpm at 20-psi Flow Duration: 3-hour

Reference Appendix C, Table C105.1
Required Number of Fire Hydrants: 1 Maximum Average Spacing: 400
Maximum Distance from Fire Hydrant to Building: N/A feet, as a fire truck would drive (Note in sprinkled buildings, a hydrant shall be located within 100-ft of the FDC)

Design Engineers Signature: _____ Date: 4/16/2026

The determined Required Fire Flow, Number of Fire Hydrants and Hydrant Spacing as shown above satisfy the fire protection requirements of the Castle Rock Fire and Rescue Department.

Final fire hydrant placement will be determined and approved during the Site Development (SDP) and/or Construction Document (CD) review phase.

Castle Rock Fire Signature: FIRE REVIEW AND PERMIT 18915 REV 4-24 Date: 4-24-26

terracina design

Landscape Architecture ▪ Planning ▪ Civil Engineering
10200 E. Girard Avenue, A-314. Denver, CO 80231 ph: 303.632.8867

FIRE REVIEW AND
PERMIT 18915 REV 4-24

Fire Department Plan Review Number: _____

Supplemental Information (DO NOT INCLUDE WITH REVIEW SUBMITTAL):

Fire Flow Calculation Area or Fire Area (2018 IFC, Definitions) – The aggregate floor area enclosed and bounded by fire walls, fire barriers, exterior walls or horizontal assemblies of a building. If a fire wall/barrier is included, then the total fire flow calculation area provided on the memo shall include the total square footage on "each side" of the wall.

Reduction for Fire Sprinklers (2018 IFC, Section B105.2) –A reduction in fire flow up to 75% may be granted by the Fire Code Official for the installation of an NFPA 13 or NFPA 13R fire sprinkler, whether they are required or not. Any reduction must be approved by the Fire Code Official (Fire Marshal) after review of the building, water distribution system, and use of the building.

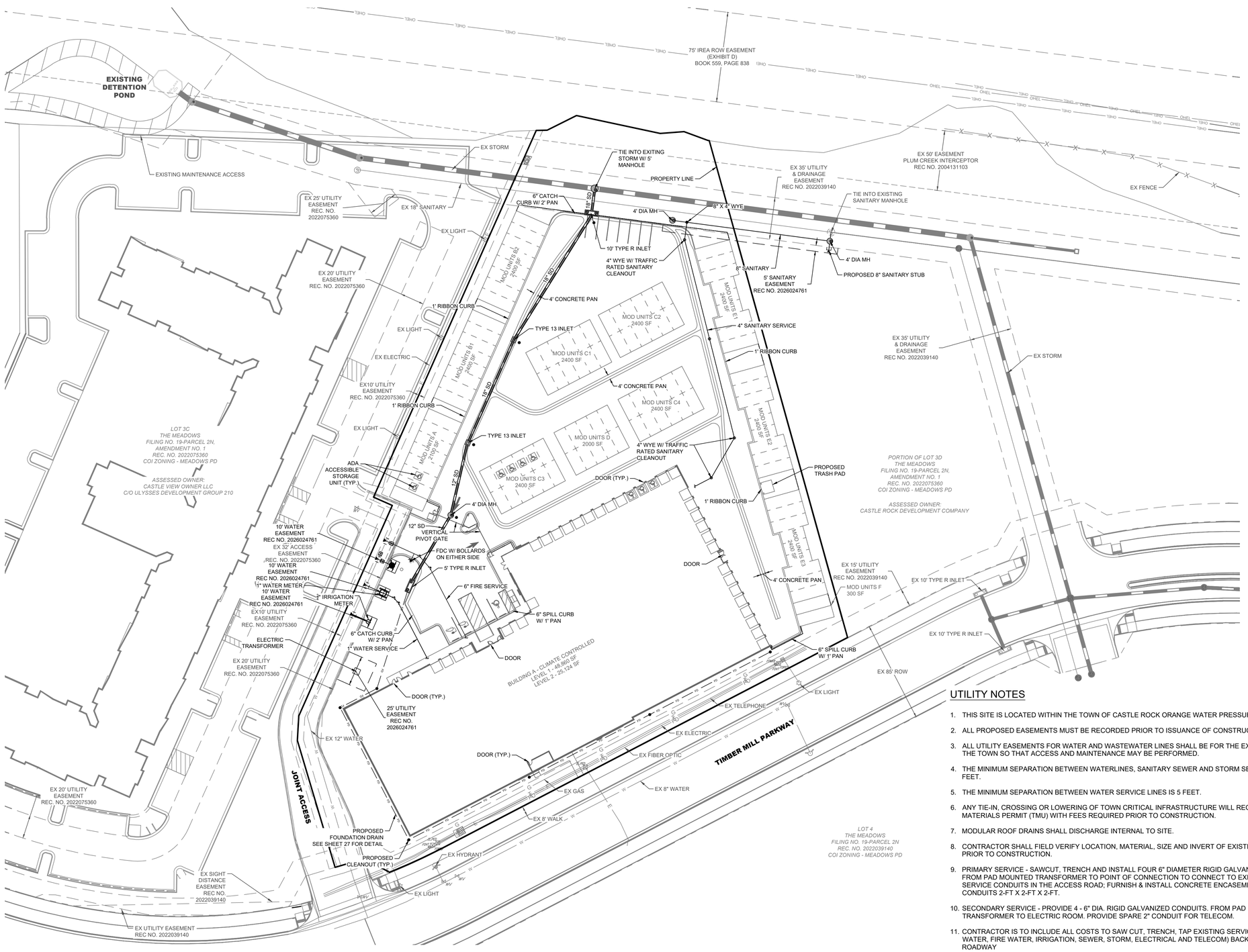
> Example: If the building requires 5000-gpm per Table B105, and the building is sprinklered, then the required fire flow may be reduced to 2500-gpm. The required number of hydrants and spacing will be determined by the reduced fire flow. The minimum flow accepted for commercial building is 1500-gpm. When reducing the fire flows, you will occasionally end up with an odd number such as 1825-gpm, in these cases you should round up to the nearest 250-gpm.

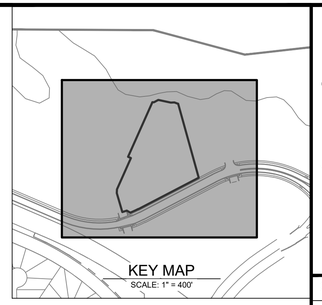
Multiple Buildings on One Site – If multiple buildings are proposed on one site (ie. Apartment Complex), then each "building" shall be evaluated based on the largest building and a single memo using the recommended format repeated for each individual structure.

APPENDIX F

Plans

Overall Utility Plan
Irrigation Controller Charts
System Hydraulic Worksheets





N

0 40' 80'

1 inch = 40'

LEGEND

- STORM (FES, MH, & INLET)
- SANITARY
- WATER (HYDRANT, VALVE, BEND, ARV)
- FD — FOUNDATION DRAIN
- E — EXISTING ELECTRIC
- X — EXISTING FENCE
- FO — EXISTING FIBER OPTIC
- G — EXISTING GAS
- T — EXISTING TELEPHONE
- W — EXISTING WATER
- EXISTING SWALE
- OHEL — EXISTING OVERHEAD ELECTRIC
- EXISTING SANITARY CLEAN OUT
- EX WATER VALVE & HYDRANT
- EXISTING STREET LIGHT
- EXISTING STREET SIGNS
- MODULAR STORAGE UNITS
- LIMITS OF CONSTRUCTION

UTILITY NOTES

1. THIS SITE IS LOCATED WITHIN THE TOWN OF CASTLE ROCK ORANGE WATER PRESSURE ZONE.
2. ALL PROPOSED EASEMENTS MUST BE RECORDED PRIOR TO ISSUANCE OF CONSTRUCTION PERMITS.
3. ALL UTILITY EASEMENTS FOR WATER AND WASTEWATER LINES SHALL BE FOR THE EXCLUSIVE USE OF THE TOWN SO THAT ACCESS AND MAINTENANCE MAY BE PERFORMED.
4. THE MINIMUM SEPARATION BETWEEN WATERLINES, SANITARY SEWER AND STORM SEWER LINES IS 10 FEET.
5. THE MINIMUM SEPARATION BETWEEN WATER SERVICE LINES IS 5 FEET.
6. ANY TIE-IN, CROSSING OR LOWERING OF TOWN CRITICAL INFRASTRUCTURE WILL REQUIRE A TIME AND MATERIALS PERMIT (TMU) WITH FEES REQUIRED PRIOR TO CONSTRUCTION.
7. MODULAR ROOF DRAINS SHALL DISCHARGE INTERNAL TO SITE.
8. CONTRACTOR SHALL FIELD VERIFY LOCATION, MATERIAL, SIZE AND INVERT OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
9. PRIMARY SERVICE - SAWCUT, TRENCH AND INSTALL FOUR 6" DIAMETER RIGID GALVANIZED CONDUITS FROM PAD MOUNTED TRANSFORMER TO POINT OF CONNECTION TO CONNECT TO EXISTING ELECTRICAL SERVICE CONDUITS IN THE ACCESS ROAD; FURNISH & INSTALL CONCRETE ENCASEMENT OF PRIMARY CONDUITS 2-FT X 2-FT X 2-FT.
10. SECONDARY SERVICE - PROVIDE 4 - 6" DIA. RIGID GALVANIZED CONDUITS. FROM PAD MOUNTED TRANSFORMER TO ELECTRIC ROOM. PROVIDE SPARE 2" CONDUIT FOR TELECOM.
11. CONTRACTOR IS TO INCLUDE ALL COSTS TO SAW CUT, TRENCH, TAP EXISTING SERVICES (DOMESTIC WATER, FIRE WATER, IRRIGATION, SEWER, STORM, ELECTRICAL AND TELECOM) BACKFILL AND RESTORE ROADWAY

CD26-0014

I HEREBY AFFIRM THAT THESE FINAL CONSTRUCTION PLANS WERE PREPARED UNDER MY DIRECT SUPERVISION, IN ACCORDANCE WITH ALL APPLICABLE TOWN OF CASTLE ROCK AND STATE OF COLORADO STANDARDS AND STATUTES, RESPECTIVELY; AND THAT I AM FULLY RESPONSIBLE FOR ALL DESIGN AND REVISIONS RELATIVE TO SAID PLANS.

COLORADO LICENSED PROFESSIONAL ENGINEER MARTIN METSKER RAY 07/29/2026

MARTIN METSKER DATE
STATE OF COLORADO

TOWN OF CASTLE ROCK APPROVAL

PLANS ARE HEREBY APPROVED FOR ONE YEAR FROM DATE OF DEVELOPMENT SERVICES APPROVAL.

APPROVED BY:

DEVELOPMENT SERVICES DATE

terracina design
10200 E. Girard Ave, A-314
Denver, CO 80231
ph: 303.632.8867

#	REVISION DESCRIPTION	DATE	BY
1	1ST SUBMITTAL	04/17/2026	MM
2	2ND SUBMITTAL	06/10/2026	MM
3	3RD SUBMITTAL	07/10/2026	MM

DXD CASTLE ROCK STORAGE

CASTLE ROCK, COLORADO

CONSTRUCTION DOCUMENTS
UTILITY PLAN

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

7/29/2026 2:36 PM X:\DXD CAPITAL_MEADOWS STORAGE\CAD\PLANS\00_OVERALL\CDS OVERALL UTILITY PLAN_DXD.DWG 1

WATER SCHEDULING

PROGRAM A

IRRIGATION CHART

Registered Professional David Zickerman Registration # 15-1032 Date: 4-19-26
Company Name __Avocet Irrigation Design Address
Phone 303-562-5698 Email avocet@wispertel.net Clock Make: Rain Bird ESP-2WIRE

r Circle r Diamond r Square

Zone	Hydrozone (Very Low <5" Low 5-10" Medium 10-15" High >15")	Plant Type (Turf, Native, Shrubs, Perennials, Trees, Annuals, etc.)	Head Type (Rotors, Sprays, Bubblers, Drip, SDI, etc.)	Nozzle (Nozzle/ Emitter size)	App. Rate (inches/hour)	GPM (Per Zone)	Inches/Month (Peak not to exceed 6"/month or 1.5"/week)	Run Time (Minutes/ Month)	Run Time (Minutes Every Third Day)	Water Usage (Gallons per month)
Ex. 1	*High*	*Blue Grass*	*RB 1806 SAM PRS*	*15'*	*1.83*	*15*	*6*	*197*	*20*	*2951*
Ex. 2	*Low*	*Buffalo Grass*	*Hunter I-20*	*3*	*1.83*	*15*	*1*	*33*	*3*	*492*
A1	Low	Native Seed	Hunter I-20 Rotor	MPR 25 square	0.64	6	2	188	19	1125
A2	Low	Native Seed	Hunter I-20 Rotor	MPR 25 triangle	0.74	9	2	162	16	1459
A3	Low	Native Seed	Hunter I-20 Rotor	MPR 25 triangle	0.74	8	2	162	16	1297
A4	Low	Native Seed	Hunter I-20 Rotor	MPR 25 triangle	0.74	8	2	162	16	1297
A5	Low	Native Seed	Hunter I-20 Rotor	MPR 25 square	0.64	9	2	188	19	1688
A6	Low	Trees/Shrubs	Drip	1.0 gph	1	6	2	120	12	720
A7	Low	Native Seed	MP Rotators	varies	0.47	5	2	255	26	1277
A8	Low	Native Seed	Hunter I-20 Rotor	MPR 30 square	0.63	6	2	190	19	1143
A9	Low	Native Seed	Hunter I-20 Rotor	MPR 30 square	0.63	6	2	190	19	1143
A10	Low	Native Seed	Hunter I-20 Rotor	MPR 35 square	0.6	9	2	200	20	1800
A11	Low	Native Seed	Hunter I-20 Rotor	MPR 35 square	0.6	9	2	200	20	1800
A12	Low	Trees/Shrubs	Drip	1.0 gph	2	5	2	60	6	300
A13	Low	Native Seed	Hunter I-20 Rotor	MP 25 square	0.64	8	2	188	19	1500
A14	Low	Native Seed	Hunter I-20 Rotor	MPR 25 square	0.64	8	2	188	19	1500
A15	Low	Native Seed	MP Rotators	MP800SR square	0.81	9	2	148	15	1333
A16	Low	Native Seed	Hunter I-20 Rotor	MPR 25 square	0.64	6	2	188	19	1125
A19	Low	Native Seed	MP Rotators	MP800SR square	0.81	9	2	148	15	1333
A20	Low	Native Seed	Hunter I-20 Rotor	MPR 25 square	0.64	8	2	188	19	1500
A21	Low	Native Seed	Hunter I-20 Rotor	MPR 25 square	0.64	8	2	188	19	1500
A22	Low	Native Seed	MP Rotators	MP800SR square	0.81	9	2	148	15	1333
A23	Low	Native Seed	Hunter I-20 Rotors	MPR 25 square	0.64	9	2	188	19	1688
A24	Low	Native Seed	Hunter I-20 Rotors	MPR 25 square	0.64	9	2	188	19	1688
A26	Low	Native Seed	Hunter I-20 Rotor	MPR 25 square	0.64	8	2	188	19	1500
A27	Low	Native Seed	MP Rotators	MP2000 square	0.41	7	2	293	29	2049
							Totals	4315	431	33098
Total								**Min/Month**	**Min/cycle**	**Gallons/Month**

PROGRAM B

IRRIGATION CHART

Registered Professional David Zickerman Registration # 15-1032 Date: 4-19-26
Company Name __Avocet Irrigation Design Address
Phone 303-562-5698 Email avocet@wispertel.net Clock Make: Rain Bird ESP-2WIRE

r Circle r Diamond r Square

Zone	Hydrozone (Very Low <5" Low 5-10" Medium 10-15" High >15")	Plant Type (Turf, Native, Shrubs, Perennials, Trees, Annuals, etc.)	Head Type (Rotors, Sprays, Bubblers, Drip, SDI, etc.)	Nozzle (Nozzle/ Emitter size)	App. Rate (inches/hour)	GPM (Per Zone)	Inches/Month (Peak not to exceed 6"/month or 1.5"/week)	Run Time (Minutes/ Month)	Run Time (Minutes Every Third Day)	Water Usage (Gallons per month)
Ex. 1	*High*	*Blue Grass*	*RB 1806 SAM PRS*	*15'*	*1.83*	*15*	*6*	*197*	*20*	*2951*
Ex. 2	*Low*	*Buffalo Grass*	*Hunter I-20*	*3*	*1.83*	*15*	*1*	*33*	*3*	*492*
A17	Low	Native Seed	MP Rotators	MP2000 square	0.41	3	2	293	29	878
A18	Low	Trees/Shrubs	Drip	1.0 gph	1	3	2	120	12	360
A25	Low	Shrubs	Drip	1.0 gph	1	2	2	120	12	240
							Totals	533	53	1478
Total								**Min/Month**	**Min/cycle**	**Gallons/Month**

PROGRAM C

IRRIGATION CHART

Registered Professional David Zickerman Registration # 15-1032 Date: 4-19-26
Company Name __Avocet Irrigation Design Address
Phone 303-562-5698 Email avocet@wispertel.net Clock Make: Rain Bird ESP-2WIRE

r Circle r Diamond r Square

Zone	Hydrozone (Very Low <5" Low 5-10" Medium 10-15" High >15")	Plant Type (Turf, Native, Shrubs, Perennials, Trees, Annuals, etc.)	Head Type (Rotors, Sprays, Bubblers, Drip, SDI, etc.)	Nozzle (Nozzle/ Emitter size)	App. Rate (inches/hour)	GPM (Per Zone)	Inches/Month (Peak not to exceed 6"/month or 1.5"/week)	Run Time (Minutes/ Month)	Run Time (Minutes Every Third Day)	Water Usage (Gallons per month)
Ex. 1	*High*	*Blue Grass*	*RB 1806 SAM PRS*	*15'*	*1.83*	*15*	*6*	*197*	*20*	*2951*
Ex. 2	*Low*	*Buffalo Grass*	*Hunter I-20*	*3*	*1.83*	*15*	*1*	*33*	*3*	*492*
A28	Low	Native Seed	MP Rotators	MP2000 square	0.41	5	2	293	29	1463
A29	Low	Trees	Drip	1.0 gph	1	4	2	120	12	480
A30	Low	Trees/Shrubs	Drip	1.0 gph	1	5	2	120	12	600
							Totals	533	53	2543
Total								**Min/Month**	**Min/cycle**	**Gallons/Month**

PROGRAM "A" OPERATES SINGULARILY
431 MINUTES

431 MINUTES + 53 MINUTES = 484 TOTAL MINUTES PER CYCLE

53 MINUTES TOTAL

PROGRAMS "A" & "B" OPERATE
CONCURRENTLY AFTER PROGRAM "A"
HAS COMPLETED WATERING
53 MINUTES TOTAL

WATER BUDGET

Description	Irrigated Acres	Month	Application Rate (in./month)	Monthly water use (gallons)
Irrigated Turf Grass		April	0.00	0
		May	2.07	0
		June	3.11	0
	0.000	July	4.00	0
		August	3.40	0
		Sept.	2.22	0
		Octobe	0.00	0
annual sub-total			14.80 /yr	0 /yr
				0.00 acrefeet
Irrigated Shrub Beds		April	0.00	0
		May	1.36	4,062
		June	2.13	6,362
	0.110	July	2.72	8,124
		August	2.37	7,079
		Sept.	1.42	4,241
		Octobe	0.00	0
annual sub-total			10.00 /yr	29,868 /yr
				0.09 acrefeet
Irrigated Native Grass		April	0.00	0
		May	1.36	17,947
		June	2.13	28,108
	0.486	July	2.72	35,893
		August	2.37	31,275
		Sept.	1.42	18,738
		Octobe	0.00	0
annual sub-total			10.00 /yr	131,961 /yr
				0.41 acrefeet
Totals	**0.60**	**irrigated acres**		**161,828 gals/yr**
				0.09 acrefeet/yr

TOWN OF CASTLE ROCK APPROVAL

PLANS ARE HEREBY APPROVED FOR ONE YEAR FROM DATE OF DEVELOPMENT SERVICES APPROVAL.

APPROVED BY:

DEVELOPMENT SERVICES DATE

DESIGN PREPARED BY: DAVID ZICKERMAN 15-1032 CD26-0014

terracina design
10200 E. Girard Ave, A-314
Denver, CO 80231
ph: 303.632.8867

#	REVISION DESCRIPTION	DATE	BY
1	1ST SUBMITTAL	04/17/2026	MM
2	2ND SUBMITTAL	06/09/2026	MM

NOT FOR CONSTRUCTION

DXD CASTLE ROCK STORAGE
CASTLE ROCK, COLORADO
CONSTRUCTION DOCUMENTS
IRRIGATION PLAN (3 OF 8)

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

6/4/2026 12:09 PM X:\DXD CAPITAL - MEADOWS STORAGE\CAD\PLANS\00- OVERALL\CDS IRRIGATION PLAN - DXD.DWG 03

PRESSURE CALCULATIONS

FURTHEST ZONE

Irrigation System Hydraulic Worksheet

Project Name:	**DXD Storage**					**Date:**		April 22, 2026
Project Location:								
Prepared by:	**David Zickerman**					**Current TOCR Registration #**		15-1032
	Controller "A" - zone A30							
Tap Size		**0.75**	**"**		**Source of Pressure**	Town of Castle Rock Utilities		
Static Water Pressure:		**90**	**psi**					
Hydraulic Grade At Zone:					**Company**	Avocet Irrigation Design		
	Ft. of Copper		Pipe Size (")	K Copper		Friction Loss (from chart)	Flow-GPM	Loss/Gain
Service Line (tap to meter):	15	LF	0.75	K Copper		3.99 /100 FT	5	0.60
Water Meter:			0.75			0.30	5	0.30
Service Line (meter to backflow):	15	LF	0.75	K Copper		3.99 /100 FT	5	0.60
Backflow:		Febco 825YA	0.75			12	5	12.00
Master Valve:		Griswold DWS	3/4			2.9	5	2.90
Pressure Required at Head:		Drip Emitters						30
Lateral Allowance:								3.00
Control Valve Allowance:								5.00
Mainline Allowances:								
Length of Mainline	Pipe Material	Size		Gals.				
1250	LF CL200BE	1.5"	"@	5	GPM	0.08 /100 FT		1.00
	LF CL200BE		"@	5	GPM-Looped	/100 FT		0.00
Elevation:								
	Tap elevation	6,023				High/Low: 6,020		-1.30
Green shading indicates required information you must provide								
Total System requirements (PSI)								***54.10***
Available System Pressure (PSI)								***90.00***
Town of Castle Rock provides a minimum of 43 psi								
Total irrigated area for tap # 1 ***is*** 26,135 ***sq. ft.***								

LARGEST ZONE

Irrigation System Hydraulic Worksheet

Project Name:	**DXD Storage**					**Date:**		April 22, 2026
Project Location:								
Prepared by:	**David Zickerman**					**Current TOCR Registration #**		15-1032
	Controller "A" - zone A21							
Tap Size		**0.75**	**"**		**Source of Pressure**	Town of Castle Rock Utilities		
Static Water Pressure:		**90**	**psi**					
Hydraulic Grade At Zone:					**Company**	Avocet Irrigation Design		
	Ft. of Copper		Pipe Size (")	K Copper		Friction Loss (from chart)	Flow-GPM	Loss/Gain
Service Line (tap to meter):	15	LF	0.75	K Copper		11.86 /100 FT	9	1.78
Water Meter:			0.75			1.30	9	1.30
Service Line (meter to backflow):	15	LF	0.75	K Copper		11.86 /100 FT	9	1.78
Backflow:		Febco 825YA	0.75			12	9	12.00
Master Valve:		Griswold DWS	3/4			2.9	9	2.90
Pressure Required at Head:		Hinter I-20 rotors						45
Lateral Allowance:								3.00
Control Valve Allowance:								1.80
Mainline Allowances:								
Length of Mainline	Pipe Material	Size		Gals.				
450	LF CL200BE	1.5"	"@	9	GPM	0.18 /100 FT		0.81
	LF CL200BE		"@	9	GPM-Looped	/100 FT		0.00
Elevation:								
	Tap elevation	6,023				High/Low: 6,033		4.33
Green shading indicates required information you must provide								
Total System requirements (PSI)								***74.70***
Available System Pressure (PSI)								***90.00***
Town of Castle Rock provides a minimum of 43 psi								
Total irrigated area for tap # 1 ***is*** 26,135 ***sq. ft.***								

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APPROVED BY:

DEVELOPMENT SERVICES DATE

DESIGN PREPARED BY: DAVID ZICKERMAN 15-1032 CD26-0014

terracina design
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CASTLE ROCK, COLORADO
CONSTRUCTION DOCUMENTS
IRRIGATION PLAN (4 OF 8)

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