



January 29, 2026

Mr. Ken Torres, P.E.
Development Services
100 North Wilcox Street
Castle Rock, CO 80104

Subject: Dawson Trails Filing 2, Tract V (SDP25-0004) Prelim Utility Conformance Letter

Dear Mr. Torres:

The purpose of this letter is to verify that the Dawson Trails Parcel E2 Townhomes project, known as Dawson Trails Filing 2, Tract V (referred to as F2TV herein), is in conformance with the overall report that covers this area.

The F2TV site covers approximately 8.4 acres within the Dawson Trails Project. The project sits within Dawson Trails Filing 2 Amendment 3 (referred to as F2A3 herein) and was modeled with the F2A3 Final Utility Report. Pat Haven Street is planned on the eastern fringe of the site with Quandary Peak Drive bordering on the north side of the site. 100 townhome lots are proposed within F2TV.

F2TV will receive water service from a proposed 8" watermain constructed with F2A3 in Pat Haven Street. This main is in the town's red pressure zone. Watermain will loop through the private streets in F2TV and connect at two points in Pat Haven Street. Calculated water demands for F2TV are 18.4 gpm for average daily demand (ADD), 46.0 gpm for maximum daily demand (MDD) and 101.2 gpm for peak hour demand (PHD). Relevant F2A3 excerpts detailing these calculations are included along with this letter. Fire flow is expected to be no more than the 1,500 gpm minimum for 2 hours specified in the Town of Castle Rock Water System Design Criteria Manual. The fire flow will be confirmed via a signed fire flow memo from the fire department during final design.

Sanitary sewer infrastructure for F2TV will tie into 8" sanitary sewer constructed with F2A3 in Pat Haven Street to the east. The F2TV portion will contribute an average daily wastewater flow (ADF) of 14,000 gallons/day and a peak daily wastewater flow (PDF) of 46 gpm. Relevant F2A3 excerpts detailing these calculations are included along with this letter.

Any proposed development of the existing water and wastewater infrastructure needed to serve the site is the responsibility of the developer/owner. Please see the attached supporting documentation and let me know if there are any questions or concerns.

Sincerely,
EMK Consultants, Inc.

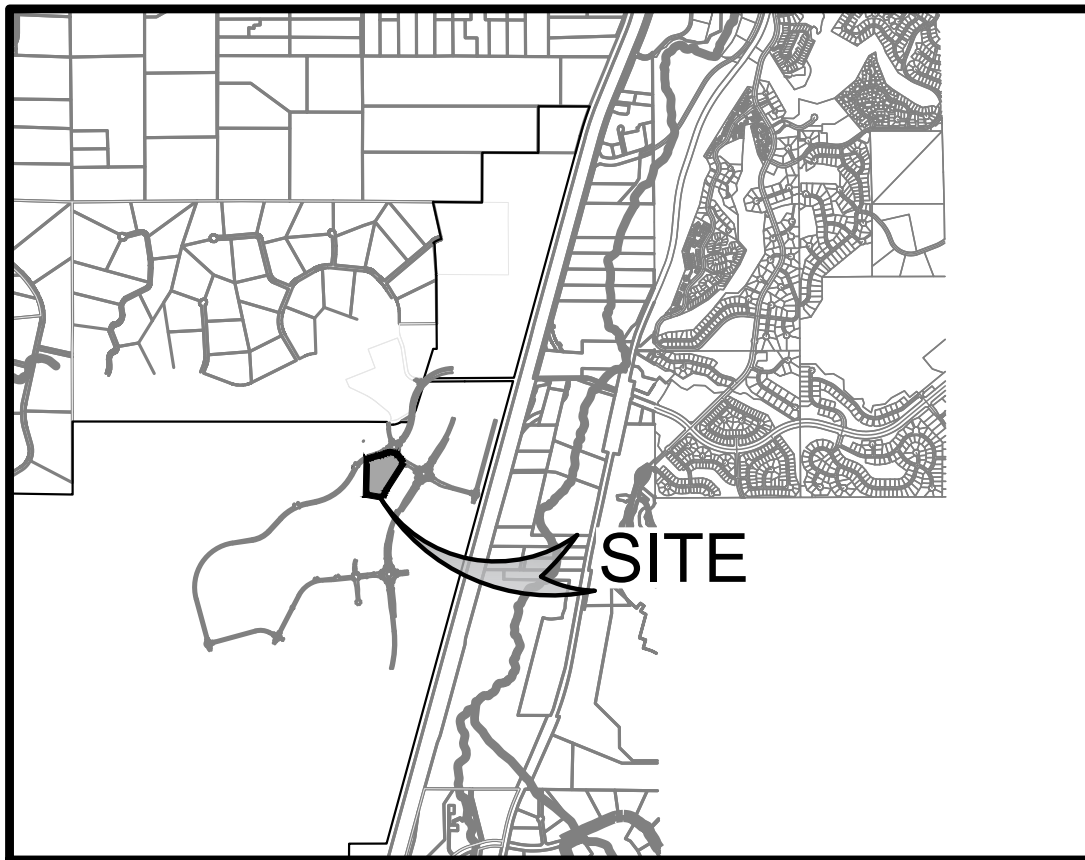
David J. Ott, PE
Project Engineer



SITE DEVELOPMENT PLAN

DAWSON TRAILS FILING NO. 2 TRACT V

LOCATED IN A PART OF THE EAST HALF OF SECTION 28 & WEST HALF OF SECTION 27, TOWNSHIP 8 SOUTH, RANGE 67 WEST OF THE 6TH P.M., TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO





**FINAL UTILITY REPORT
FOR
DAWSON TRAILS – FILING 2, AMENDMENT 3**

Castle Rock, Colorado
Town of Castle Rock Project CD25-0010

February 26, 2025
Revised August 27, 2025

EMK Job. No. 13393

Prepared For:
ACM Dawson Trails VIII JV LLC
4100 East Mississippi Avenue – Suite 500
Denver, CO 80246
Attention: Lawrence Jacobson
303-748-5466
ljacobson@westsideinv.com

Prepared By:
EMK Consultants, Inc.
7006 S. Alton Way, Bldg F
Centennial, CO 80112
Contact: Eric R. McDaniel
Phone: (303) 694-1520

COVER PAGE FOR FILING 2
AMENDMENT 3 REPORT
WHICH FILING 2 TRACT V IS A
PART OF

Water Service Demand Calculations - PARCEL E2

Calculated by: DJO
Date: 2/19/2025

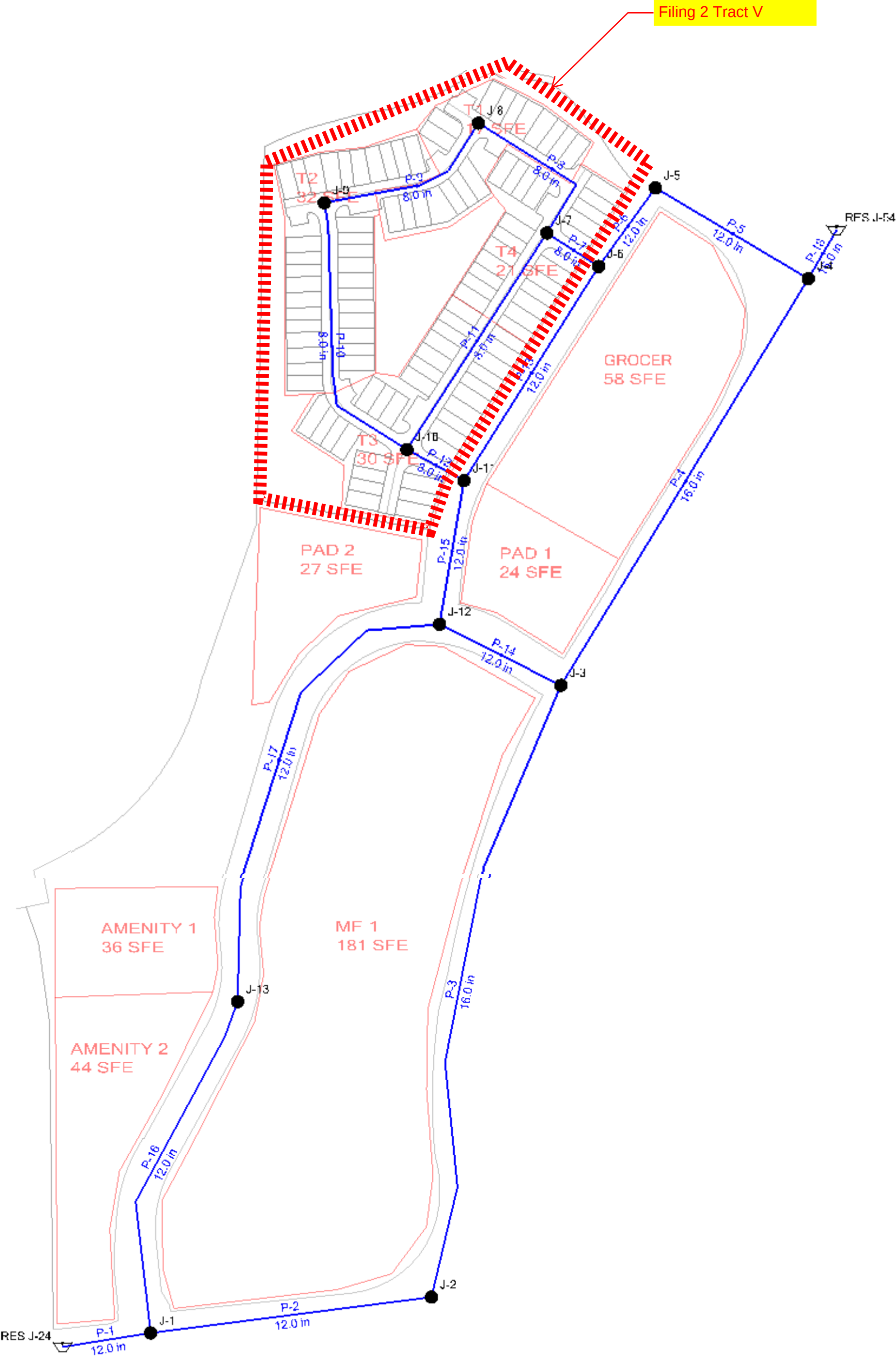
Filing 2 Tract V

Junction ID	Demand Areas to Junction	Number of Dwelling Units	Average Day (gal/day)	Average Day (gpm)	Maximum Day (gal/day)	Maximum Day (gpm)	Peak Hour (gal/day)	Peak Hour (gpm)	Notes
J-1			0	0.0	0	0.0	0	0.0	
J-2			0	0.0	0	0.0	0	0.0	
J-3			0	0.0	0	0.0	0	0.0	
J-4			0	0.0	0	0.0	0	0.0	
J-5			0	0.0	0	0.0	0	0.0	
J-6	GROCER	58	15370	10.7	38425	26.7	84535	58.7	
J-7	T4	21	5565	3.9	13912.5	9.7	30607.5	21.3	
J-8	T1	17	4505	3.1	11262.5	7.8	24777.5	17.2	
J-9	T2	32	8480	5.9	21200	14.7	46640	32.4	
J-10	T3	30	7950	5.5	19875	13.8	43725	30.4	
J-11	PAD 1	24	6360	4.4	15900	11.0	34980	24.3	
J-12	PAD 2	27	7155	5.0	17887.5	12.4	39352.5	27.3	
J-13	AMENITY 1, AMENITY 2, MF 1	261	69165	48.0	172912.5	120.1	380407.5	264.2	

Notes:

1. Average Day Demand = 265 gal-day/dwelling unit (This is different from the ToCR water manual because new regulations allow for less landscaping)
2. Maximum Day Demand = 2.5 x Average Day Demand
3. Peak Hour Demand = 5.5 x Average Day Demand

DAWSON E2 WATERCAD SCHEMATIC



SCENARIO 1
Minimum Static Pressure with zero demand (20% tank storage)

Scenario: 1 Zero Demand Tanks 20% Full
Current Time Step: 0.000 h
FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	6,446.00	0	6,662.40	94
J-2	6,435.00	0	6,662.40	98
J-3	6,431.00	0	6,662.40	100
J-4	6,413.00	0	6,662.40	108
J-5	6,415.00	0	6,662.40	107
J-6	6,421.00	0	6,662.40	104
J-7	6,423.00	0	6,662.40	104
J-8	6,429.00	0	6,662.40	101
J-9	6,436.00	0	6,662.40	98
J-10	6,434.00	0	6,662.40	99
J-11	6,432.00	0	6,662.40	100
J-12	6,432.00	0	6,662.40	100
J-13	6,451.00	0	6,662.40	91

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Filing 2 Tract V

SCENARIO 2
Maximum Static Pressure with zero demand (100% tank storage)

Scenario: 2 Zero Demand Tanks 100% Full
Current Time Step: 0.000 h
FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	6,446.00	0	6,680.00	101
J-2	6,435.00	0	6,680.00	106
J-3	6,431.00	0	6,680.00	108
J-4	6,413.00	0	6,680.00	116
J-5	6,415.00	0	6,680.00	115
J-6	6,421.00	0	6,680.00	112
J-7	6,423.00	0	6,680.00	111
J-8	6,429.00	0	6,680.00	109
J-9	6,436.00	0	6,680.00	106
J-10	6,434.00	0	6,680.00	106
J-11	6,432.00	0	6,680.00	107
J-12	6,432.00	0	6,680.00	107
J-13	6,451.00	0	6,680.00	99

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Filing 2 Tract V

SCENARIO 3a
Maximum Daily Demand + Fire Flow

Scenario: 3a Max Day + FF + Tanks 20% Full
Current Time Step: 0.000 h
FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	6,446.00	0	6,662.40	94
J-2	6,435.00	0	6,662.39	98
J-3	6,431.00	0	6,662.39	100
J-4	6,413.00	0	6,662.40	108
J-5	6,415.00	0	6,662.39	107
J-6	6,421.00	27	6,662.39	104
J-7	6,423.00	10	6,662.39	104
J-8	6,429.00	8	6,662.38	101
J-9	6,436.00	15	6,662.38	98
J-10	6,434.00	14	6,662.39	99
J-11	6,432.00	11	6,662.39	100
J-12	6,432.00	12	6,662.39	100
J-13	6,451.00	120	6,662.38	91

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Filing 2 Tract V

Scenario: 3a Max Day + FF + Tanks 20% Full
Current Time Step: 0.000 h
FlexTable: Pipe Table

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Headloss Gradient (ft/ft)	Velocity (ft/s)
P-1	159	12.0	120.0	85	0.000	0.24
P-2	506	12.0	120.0	11	0.000	0.03
P-3	1,113	16.0	120.0	11	0.000	0.02
P-4	847	16.0	120.0	-64	0.000	0.10
P-5	316	12.0	120.0	67	0.000	0.19
P-6	172	12.0	120.0	67	0.000	0.19
P-7	110	8.0	120.0	25	0.000	0.16
P-8	306	8.0	120.0	12	0.000	0.08
P-9	330	8.0	120.0	5	0.000	0.03
P-10	509	8.0	120.0	-10	0.000	0.06
P-11	459	8.0	120.0	-2	0.000	0.02
P-12	116	8.0	120.0	-21	0.000	0.14
P-13	450	12.0	120.0	-16	0.000	0.04
P-14	242	12.0	120.0	76	0.000	0.21
P-15	259	12.0	120.0	17	0.000	0.05
P-16	638	12.0	120.0	74	0.000	0.21
P-17	839	12.0	120.0	-46	0.000	0.13
P-18	100	16.0	120.0	131	0.000	0.21

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Filing 2 Tract V

Scenario: 3a Max Day + FF + Tanks 20% Full

Current Time Step: 0.000 h

Fire Flow Node FlexTable: Fire Flow Results Table

Label	Fire Flow Status	Fire Flow (Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (System Lower Limit) (psi)	Pressure (Calculated System Lower Limit) (psi)	Junction w/ Minimum Pressure (System)	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity
J-1	Passed	1,500	3,500	20	91	J-13	6.44	P-1
J-2	Passed	1,500	3,500	20	91	J-13	4.73	P-1
J-3	Passed	1,500	3,500	20	91	J-13	3.91	P-18
J-4	Passed	1,500	3,500	20	91	J-13	4.92	P-18
J-5	Passed	1,500	3,500	20	91	J-13	6.38	P-5
J-6	Passed	1,500	3,527	20	91	J-13	5.55	P-6
J-7	Passed	1,500	3,510	20	91	J-13	14.23	P-7
J-8	Passed	1,500	3,508	20	86	J-9	14.08	P-8
J-9	Passed	1,500	3,515	20	89	J-8	11.89	P-10
J-10	Passed	1,500	3,514	20	91	J-13	14.05	P-12
J-11	Passed	1,500	3,511	20	91	J-13	5.74	P-15
J-12	Passed	1,500	3,512	20	91	J-13	5.12	P-14
J-13	Passed	1,500	3,620	20	93	J-1	5.63	P-16

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Filing 2 Tract V

SCENARIO 3b
Maximum Daily Demand + 1500 gmp Fire Flow @ J-22 with P-16 closed

Scenario: 3b Max Day + FF + Tanks 20% Full + P-16 closed
Current Time Step: 0.000 h
FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	6,446.00	0	6,662.32	94
J-2	6,435.00	0	6,662.08	98
J-3	6,431.00	0	6,661.95	100
J-4	6,413.00	0	6,662.28	108
J-5	6,415.00	0	6,661.88	107
J-6	6,421.00	27	6,661.66	104
J-7	6,423.00	10	6,661.56	103
J-8	6,429.00	8	6,661.52	101
J-9	6,436.00	15	6,661.48	98
J-10	6,434.00	14	6,661.44	98
J-11	6,432.00	11	6,661.38	99
J-12	6,432.00	12	6,661.13	99
J-13	6,451.00	1,620	6,655.10	88

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Filing 2 Tract V

Scenario: 3b Max Day + FF + Tanks 20% Full + P-16 closed
Current Time Step: 0.000 h
FlexTable: Pipe Table

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Headloss Gradient (ft/ft)	Velocity (ft/s)
P-1	159	12.0	120.0	374	0.000	1.06
P-2	506	12.0	120.0	374	0.000	1.06
P-3	1,113	16.0	120.0	374	0.000	0.60
P-4	847	16.0	120.0	-708	0.000	1.13
P-5	316	12.0	120.0	634	0.001	1.80
P-6	172	12.0	120.0	634	0.001	1.80
P-7	110	8.0	120.0	177	0.001	1.13
P-8	306	8.0	120.0	70	0.000	0.45
P-9	330	8.0	120.0	63	0.000	0.40
P-10	509	8.0	120.0	48	0.000	0.31
P-11	459	8.0	120.0	-96	0.000	0.62
P-12	116	8.0	120.0	131	0.000	0.83
P-13	450	12.0	120.0	-431	0.001	1.22
P-14	242	12.0	120.0	1,082	0.003	3.07
P-15	259	12.0	120.0	-550	0.001	1.56
P-16	638	0.0	120.0	0	0.011	0.08
P-17	839	12.0	120.0	-1,620	0.007	4.60
P-18	100	16.0	120.0	1,342	0.001	2.14

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Filing 2 Tract V

SCENARIO 4
Peak Hour Demand

Scenario: 4 Peak Hour Demand + Tanks 20% Full
Current Time Step: 0.000 h
FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	6,446.00	0	6,662.39	94
J-2	6,435.00	0	6,662.37	98
J-3	6,431.00	0	6,662.36	100
J-4	6,413.00	0	6,662.39	108
J-5	6,415.00	0	6,662.34	107
J-6	6,421.00	59	6,662.31	104
J-7	6,423.00	21	6,662.30	104
J-8	6,429.00	17	6,662.29	101
J-9	6,436.00	32	6,662.29	98
J-10	6,434.00	30	6,662.29	99
J-11	6,432.00	24	6,662.30	100
J-12	6,432.00	27	6,662.30	100
J-13	6,451.00	264	6,662.09	91

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Filing 2 Tract V

Scenario: 4 Peak Hour Demand + Tanks 20% Full
Current Time Step: 0.000 h
FlexTable: Pipe Table

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (gpm)	Headloss Gradient (ft/ft)	Velocity (ft/s)
P-1	159	12.0	120.0	97	0.000	0.27
P-2	506	12.0	120.0	97	0.000	0.27
P-3	1,113	16.0	120.0	97	0.000	0.15
P-4	847	16.0	120.0	-176	0.000	0.28
P-5	316	12.0	120.0	204	0.000	0.58
P-6	172	12.0	120.0	204	0.000	0.58
P-7	110	8.0	120.0	64	0.000	0.41
P-8	306	8.0	120.0	29	0.000	0.19
P-9	330	8.0	120.0	12	0.000	0.08
P-10	509	8.0	120.0	-20	0.000	0.13
P-11	459	8.0	120.0	-14	0.000	0.09
P-12	116	8.0	120.0	-37	0.000	0.24
P-13	450	12.0	120.0	-81	0.000	0.23
P-14	242	12.0	120.0	272	0.000	0.77
P-15	259	12.0	120.0	-19	0.000	0.05
P-16	638	0.0	120.0	0	0.000	0.01
P-17	839	12.0	120.0	-264	0.000	0.75
P-18	100	16.0	120.0	379	0.000	0.61

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Filing 2 Tract V

Subject: Re: Dawson Trails Parcel D
From: David Takeda <dave@mskwater.com>
Date: 9/11/2023, 9:32 AM
To: David Ott <dott@emkc.com>
CC: gwalter@emkc.com

Gary and David,

Attached are the model results for Phase 1 of the Red Zone.

The two Red Zone Tanks will each have a volume of 1.8 MG. The interior diameter is 118' and the HWL is 22 feet. The finished floor elevation is 6658.

Let me know if you have any questions.

David Takeda, P.E.
MSK Consulting, LLC
303-903-0918
dave@mskwater.com

On Tue, Sep 5, 2023 at 6:29 AM David Ott <dott@emkc.com> wrote:

Tank info from MSK Consulting.

David

Yes, Tank 19 is the red zone tank.

Thank you,

Dave

On 9/4/2023 5:21 AM, David Takeda wrote:

David,

I can get you the pressures for those four junctions. Can you confirm that Tank #19 is the Red Zone tank? We have not been using numbers as identifiers. Thanks.

David Takeda, P.E.
MSK Consulting, LLC
303-903-0918
dave@mskwater.com

From: David Ott <dott@emkc.com>
Sent: Friday, September 1, 2023 12:57 PM
To: dave@mskwater.com
Cc: gwalter@emkc.com
Subject: Re: Dawson Trails Parcel D

Hi Dave -

I am interested in results at J70, J108, J24 and J22 of the figure below. Specifically, the HGL or pressure/elevation at these nodes for Castle Rock's 4 scenarios below (static 20% full, static 100% full, Max day demand + fire flow, and Peak hour demand). I am planning to use these results to plug into my WaterCAD model for Tract D. Also, do you have any of the proposed dimensions, elevations or volumes on Tank 19?

APPENDIX D
Wastewater Flows

Wastewater Flow Calculations - Dawson Trails Tract E2

** Flows are per the Dawson Trails Filing 2 Final Utility Report - Future development within E-2 shall be at or below these flowrates**

Filing 2 Tract V
included with this

Single Family Residential and Duplexes (SFD)	200 GPD/DU
Multi-Family Residential (Townhomes and Condos)	130 GPD/DU
Retail/Offices	0.1 GPD/SF
Resturant	1.5 GPD/SF

Design Point	Single Family Residential and Duplexes (SFD) (DU)	Multifamily (DU)	Retail/Office (SF)	Restaurants (SF)	Average Daily Flow (gpd)	Average Daily Flow (MGD)	Peaking Factor	I/I allowance (MGD)	Peak Daily Flow (PDF) (MGD)	Peak Daily Flow (PDF) (gpm)
J4.05			10000		1000	0.001	5	0.0001	0.005	3.5
J5.06		200			26000	0.026	5	0.0026	0.133	92.1
J5.07		200	60000	150000	257000	0.257	4.59	0.0257	1.20	836.3
Total		400	70000	150000	284000	0.284	4.51	0.0284	1.34	931.9

4.4.1.1 Wastewater System Average Daily Flow (ADF)

Land Use	Typical ADF/Unit	Typical SFEs/Unit
Single Family Residential and Duplexes	200 gpd/dwelling unit	1.00/dwelling unit
Multi-Family Residential (Townhomes and Condos)	130 gpd/dwelling unit	0.65/dwelling unit
Retail/Offices	0.1 gpd/SF	0.0005/SF
Hotels/Motels	75 gpd/room	0.375/room
Restaurants	1.5 gpd/SF	0.0075/SF
Car Washes	5,000 gpd/acre	25.0/acre
Industrial/Other Commercial	600 gpd/acre	3.0/acre
Institutional	400 gpd/acre	2.0/acre
Churches	300 gpd/church	1.5/church
Gym/Fitness Center	0.5 gpd/SF	0.00125 SFE/SF
Irrigated Land	0 gpd/acre	0.0/acre
<u>Rates for Typical Douglas County School Sizes:</u>		
Elementary (10 ac, 675 Students)	3,375 gpd/school	16.88/school
Middle (25 ac, 850 students)	8,500 gpd/school	42.50/school
High (50 ac, 1700 students)	17,000 gpd/school	85.00/school
<u>Rates for Alternate School Sizes:</u>		
Elementary	5 gpd/student	0.025/student
Middle	10 gpd/student	0.050/student
High	10 gpd/student	0.050/student

4.4.1.2 Peaking Factor

The portion of the Peak Design Flow calculation exclusive of I/I shall be determined by multiplying the ADF in the preceding section by a peaking factor (PF). The PF is a function of ADF, and shall be computed as follows: $PF = 3.65 \times [(ADF)^{0.166}]$.

The maximum PF shall be 5.0, and ADF shall be expressed in units of million gallons per day (MGD).

4.4.1.3 Peak Design Flow Rate

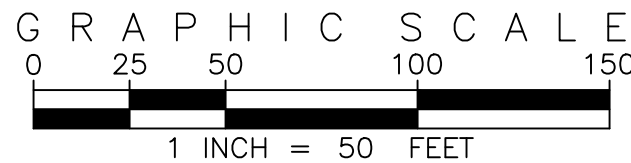
The Peak Design Flow (PDF) shall be computed at all pertinent design points throughout the system, and used to size the corresponding wastewater facilities. The PDF shall be determined by multiplying the ADF by the calculated peaking factor (PF), plus an I/I allowance equal to ten percent of the ADF as expressed by the following formula:

$$PDF = \text{peak base flow} + I/I \text{ allowance} = (ADF \times PF) + (0.1 \times ADF)$$

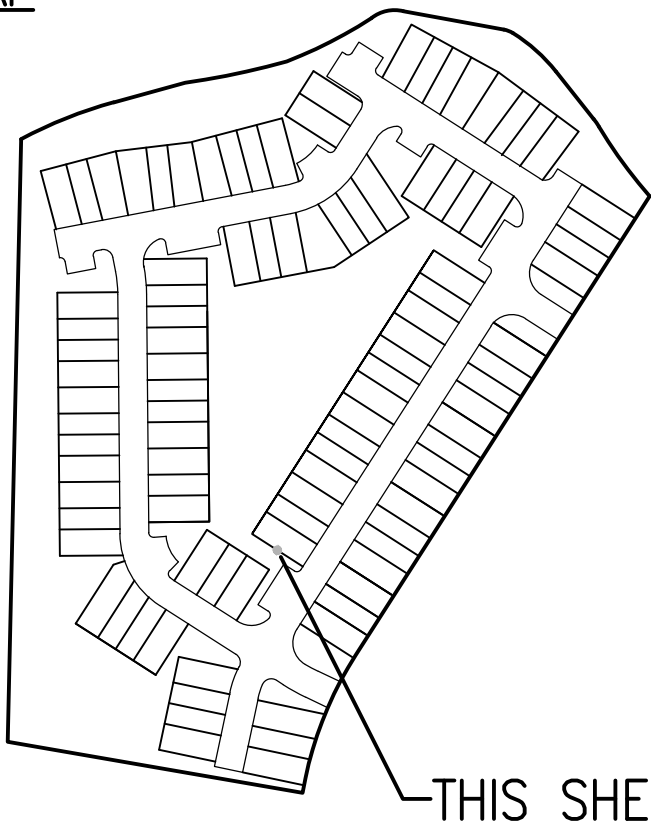
Once computed, the PDF shall be used to determine the sizes of the facilities in accordance with the criteria established below.

SITE DEVELOPMENT PLAN
DAWSON TRAILS FILING NO. 2 – TRACT V

LOCATED IN A PART OF SECTIONS 22 & SECTION 27,
TOWNSHIP 8 SOUTH, RANGE 67 WEST OF THE 6TH P.M.,
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



KEY MAP



UTILITY LEGEND

PROPOSED	MAIN LINE UNDERGROUND	EXISTING

REUSE OF DOCUMENT
THIS DOCUMENT IS THE PROPERTY OF EMK CONSULTANTS, INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN AUTHORIZATION OF EMK CONSULTANTS, INC.



Know what's below.
Call before you dig.

REVISIONS

NO.	DESCRIPTION	DATE
SUBMITTAL-01	2025-03-07	
SUBMITTAL-02	2025-10-10	

DAWSON TRAILS FILING NO. 2
TRACTS N, P, & V
GENERAL UTILITY PLAN

DATE: 01/16/2026
JOB NO: 13455.00

SCALE
HORIZONTAL 1"=50'
VERTICAL N/A

10 of 32

UTILITY NOTES

- This site is located within the Town of Castle Rock Red water pressure zone.
- All proposed easements must be recorded prior to issuance of construction permits.
- 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.
- The minimum separation between waterlines, sanitary sewer and storm sewer lines is 10 feet.
- The minimum separation between water service lines is 5 feet.
- Any tie-in, crossing or lowering of Town critical infrastructure will require a Time and Materials Permit (TMU) with fees required prior to construction.

SITE DEVELOPMENT PLAN

DAWSON TRAILS FILING NO. 2 – TRACT V
TOWN OF CASTLE ROCK PROJECT NO. SDP25-0004 SDP25-0004