

DUNKIN FOUNDERS

Lot 5 Block 2 of Founders Market Place, Filing No. 1
2-94 Founders Parkway, Castle Rock, CO 80104

Utility Report

Prepared By:
WC Civil, Inc.
7220 W Jefferson Avenue, Suite 204
Lakewood, CO 80235
Contact: Eric McKnight, P.E.
303-390-0172

Prepared For:
CD Founders-Castle Rock
106 S Kyrene Road
Chandler, AZ 85226
Contact: Bert Hayenga

Submitted To:
Town of Castle Rock

WCC Project No.: 322002
City Project No.: CD24-0003

October 7, 2024

Engineer's Statement:

The enclosed utility report, and exhibits, were prepared by me or under my direct supervision and is correct to the best of my knowledge and belief. Said utility report has been prepared in accordance with applicable Town of Castle Rock criteria and is in conformance with the master utility plans for the affected area. I accept responsibility for any liability caused by negligent acts, errors, or omissions on my part in preparing this report.

Eric McKnight, PE, QSD
Project Manager
Registered Professional Engineer State of Colorado No. 55261

Owner/Developer's Statement:

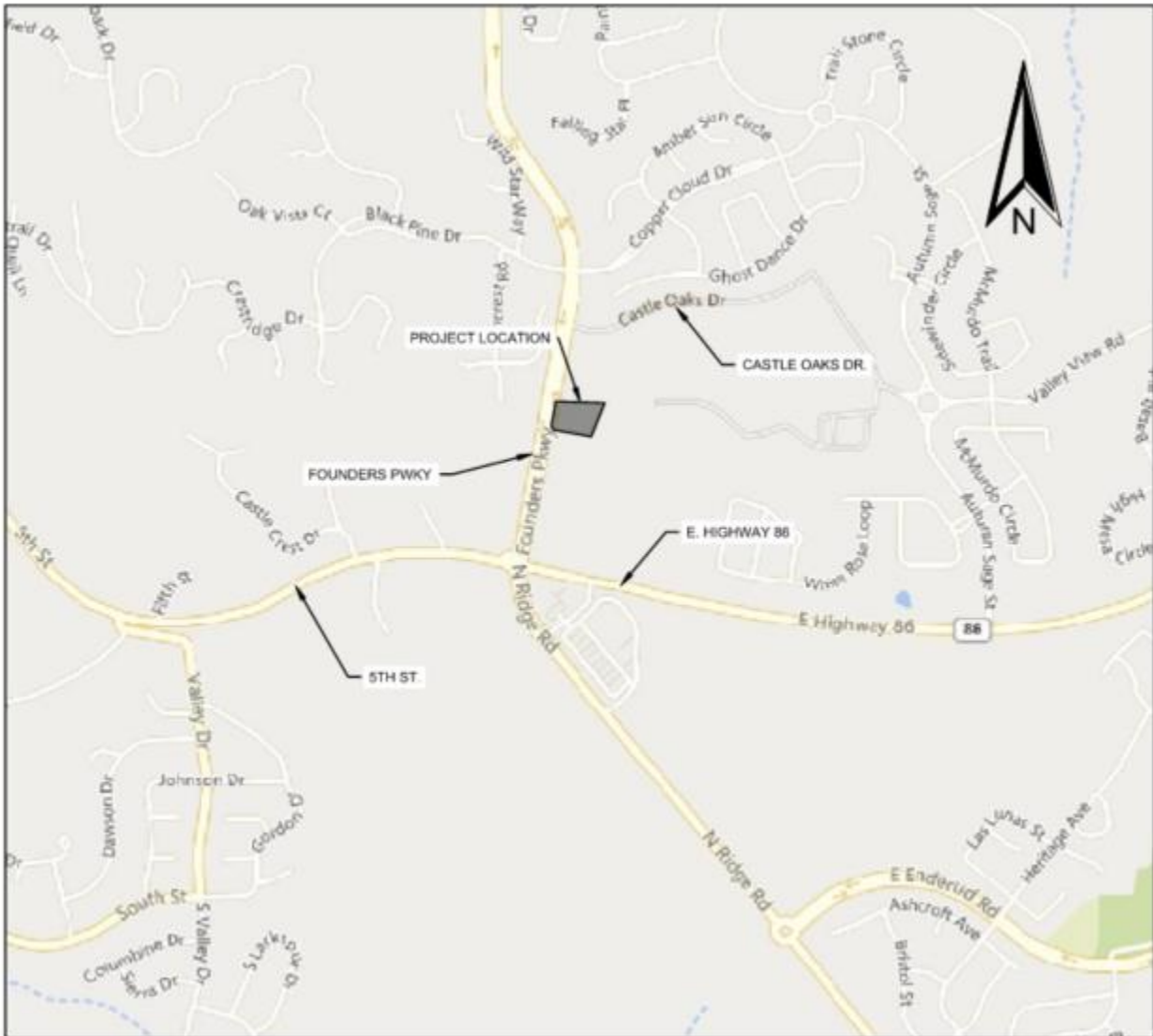
As Owner/Developer of Land(s) identified within this report; I agree to proceed, implement and comply with all recommendations and requirements outlined herein.

Name of Developer

Authorized Signature

General Location and Description

Site Location



The Dunkin Founders project (Site) is located in a parcel of land situated in the Southwest Quarter of the Southwest Quarter of Section 6, Township 8 South, Range 66 West of the Sixth Principal Meridian in Douglas County Colorado. The Site is more specifically located at the Northeast Intersection of Founders Parkway and Aloha Court, or approximately 1,000 feet north of the intersection of Founders Parkway and Highway 86.

Description of Property and Land Use

The Site includes Lot 5 of Founders Marketplace Filing No. 1, 2nd Amendment, and includes 1.13 total acres.

The site is currently undeveloped and covered with natural grasses. The topography of the site generally slopes from the southwest to the northeast, with slopes ranging from 1 percent to 25 percent. There is approximately 14 feet of relief across the site from southwest to northeast.

Calculated Water Demands & System Descriptions

Water demands below have been calculated based on the Town of Castle Rock Water System Design 2018 Criteria Manual (WSDCM).

Average Daily Demands (ADD)

The average daily demand for the site including irrigation demand is **6,278 gpd**. See Calculations below:

Average Daily Demand (ADD)							
Use	Unit	Quantity	ADD				
			gpd/unit	SFE/Unit	gpd	gpm	SFE
Restaurant	SF	1,780	3.0	0.0075	5,340	3.71	13.4
Irrigation	AC	0.25	3,750	9.38	938	0.65	2.3
Total					6,278	4.36	15.7

Max Daily Demand (MDD)

MDD for the site including irrigation is **0.014 MGD or 9.375 gpm or 13,500 gpd or 33.725 SFE** based on the 2.5 MDD factor listed in the WSDCM.

Peak Hour Demand (PHD)

PHD for the site including irrigation is **0.030 MGD or 20.625 gpm or 29,700 gpd or 74.195 SFE** based on the 5.5 PHD factor listed in the WSDCM.

Irrigation Demands

Irrigation demands are included in the above demands per the water demand notes in the WSDCM. Total irrigated area includes 8,586 SF of moderately spaced shrub beds and 2,122 SF of native grasses that will temporarily irrigated. Additional information on the irrigation demands and calculations have been included in Appendix B of this report.

Required Storage Volume

The required storage volume for the site is 0.187 MG based on the calculation below:

Storage Requirements			
Storage (MG) = MDD (MG) + Fire Flow (MG)			
Use	Flow (gpm)	Duration (min)	Total (MG)
MDD	14.7	1440	0.021
Fire	1500	120	0.180
Total			0.201

Existing Water System

The existing water system includes 8-inch mains on the south and east sides of the site with a 2-inch service lateral stub in the southeast corner. The existing mains connect to a 12-inch main within Founders Parkway to the west of the site. One existing fire hydrant is also located in the southeast corner of the site. Two existing 20" water transmission lines also run through the middle of the site in the east/west direction.

Existing Supply Facilities

The site is within the Town of Castle Rock supply area and lies within the Green master planned water pressure zone. The HGLs of the system at the site are 6,805.0 at 20% full and 6823.8 at 100% full.

Proposed Water System

The proposed water system will include connection to the existing service stub and separation of potable and irrigation water with meters (1.5-inch for potable, 1-inch for irrigation) and backflow devices as required by the Town of Castle Rock. Per the Final Utility Report for the Founders Crossing development by Atwell, dated February 12, 2018, the revised square footage for the Dunkin Founders building was placed into the Average Daily Demand calculation and resulted in the following increases:

Average Daily Demand (ADD)							
Lot	Unit	Quantity	ADD				
			gpd/unit	SFE/Unit	gpd	gpm	SFE
1	SF	5,300	0.2	0.0005	1,060	0.74	2.7
2	EA	1	5000	12.5	5,000	3.47	12.5
3	SF	650	3	0.0075	1,950	1.35	4.9
4	SF	4,000	0.2	0.0005	800	0.56	2.0
5	SF	1,780	3	0.0075	6,278	4.36	15.7
6	Student	50	5	0.013	250	0.17	0.7
Total			Total		15,338	10.65	38.5
			Increase		4,328	3.00	10.9

Per the Atwell report, the existing Eastern Water Treatment Plant Lift Station is designed for 60.8 single family equivalents (SFE) from the 6-lot Founders Village North and South development. With this increase in flow, the total SFE for the development is 38.5 SFE, still well below the 60.8 the treatment facility is designed to receive from the Founders Village development. Additionally, per the Atwell report, the fire flow was analyzed for a building with an area of 12,000 square feet. With the proposed Dunkin Founders building totaling 1,780 square feet, the fire flow is sufficient.

Proposed Supply Facilities

The Town of Castle Rock will provide supply for the site.

Proposed Fire Flows

Per Castle Rock Fire and Rescue Department, an additional fire hydrant is proposed to be added to the site along with the existing fire hydrant to support the site.

FIRE FLOW DATA:

CODE USED FOR ANALYSIS: 2018 IFC WITH 2019 AMENDMENTS

OCCUPANCY GROUP(S): B

CONSTRUCTION TYPE(S): V-B

FIRE FLOW CALCULATION AREA: 1,780 SF

THIS BUILDING IS NOT PROTECTED WITH AN AUTOMATIC SPRINKLER SYSTEM.

PER IFC TABLE B105.1(2):

TOTAL REQUIRED FIRE FLOW = 1,500 GPM @ 20 PSI RESIDUAL PRESSURE

DURATION = 2 HOURS

PER IFC TABLE C102.1:

MINIMUM NUMBER OF HYDRANTS = 1 HYDRANT

AVERAGE SPACING BETWEEN HYDRANTS = 500 FEET

MAXIMUM DISTANCE FROM STREET FRONTAGE = 250 FEET

Additionally, per the Atwell report, the fire flow for Founders Village was analyzed for a building with an area of 12,000 square feet. With the proposed Dunkin Founders building totaling 1,780 square feet, the fire flow is sufficient.

Land Dedication Requirements

No land dedication requirements are anticipated for the site.

Calculated Wastewater Demands & System Descriptions

Per the Final Utility Report for the Founders Crossing development by Atwell, dated February 12, 2018, the existing Eastern Water Treatment Plant Lift Station is designed for 60.8 Single Family Equivalents (SFE) from Founders Village North and South (Founders Marketplace and Founders Crossing, respectively). The projected wastewater flows from the site is 9.36 gpm.

Average Day Wastewater Flows (ADF)

The average day wastewater flows for the site is 2,697 gpd. This equates to 13.5 SFEs which is less than the amount allowable per the Eastern Water Treatment Plant. See Calculations Below:

Average Day Flow (ADF)						
Use	Unit	Quantity	ADF			
			gpd/unit	SFE/unit	gpd	SFE
Restaurant	SF	1,798	1.5	0.0075	2,697	13.5

Peaking Factor (PF)

The calculated peaking factor for the site is 9.86 per the peaking factor equation ($PF = 3.65 \times [(ADF)^{-0.168}]$) listed in the Town of Castle Rock Wastewater Collection Design 2018 Criteria Manual (WCDCM). However, the maximum peaking factor per the WCDCM is 5.0 and shall be used for peak design flow.

Peak Design Flows (PDF)

The peak design flow for the site is **13,755 gpd** (ADF x PF).

Existing Collection System

There is an existing 8-inch sewer main located to the east of the property along Aloha Street with an existing 6" stub out to the site.

Proposed Collection System

The site will connect to the existing 6-inch stub at the southeast corner of the site.

Proposed Wastewater Facilities

The proposed site includes a proposed grease interceptor for the site. The Town of Castle Rock will provide wastewater treatment for the site. Per the Final Utility Report for the Founders Crossing development by Atwell, dated February 12, 2018, the peak hour flow for the planned site is stated at 975 gal/day flowing at 2.4% full, with a 1,305,277 gal/day capacity when flowing full. The peak hour flow as designed for the Dunkin Founders development is **13,755 gal/day** – greater than the value planned for the lot in 2018, but still well below the capacity as modeled and will not have any flow constraints.

Land Dedication Requirements

No land dedication is required as the only new wastewater facilities will be a private service connection to the existing stub.

Service Lateral Slopes

The service lateral will be designed and installed per Town of Castle Rock standards.

References

1. Town of Castle Rock Water System Design Criteria Manual, December 2018.
2. Town of Castle Rock Wastewater System Design Criteria Manual, December 2018.
3. Atwell Final Utility Report – Founders Crossing, February 2018.

Appendix A

Fire Flow Memo

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

January 25, 2024

**RE: Confirmation Memo of Required Fire Flow
Dunkin Founders
Lot 5 Block 2 of Founder Marketplace Filing No. 1
Castle Rock, CO 80104**

To Life Safety Division,

Please accept the following required fire flow evaluation(s) based upon the currently adopted 2012 International Fire Code for review and confirmation for each of the following proposed buildings.

Total Fire Flow Calculation Area: 1,798-square feet
Building Construction Type: V-B
Are fire sprinklers provided throughout this building? NO
Are you proposing a reduction in Required Fire Flow for fire sprinklers? NO
Are Fire walls provided in this building? NO

Reference Appendix B, Table B105.1
Required Fire Flow: 1,500-gpm at 20-psi
Flow Duration: 2-hours
If applicable, Calculated Fire Flow including reduction for sprinklers: N/A
Flow Duration: N/A

Reference Appendix C, Table C105.1
Required Number of Fire Hydrants: 1
Maximum Average Spacing: 500
Maximum Distance from Fire Hydrant to Building: 150-feet, as a fire truck would drive
(Note in sprinkled buildings, a hydrant shall be located within 100-ft of the FDC)



Engineer's Signature: _____ Date: 1/25/2023

Eric McKnight, P.E.
Project Manager, WC Civil

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: _____ Date: 01-25-2024

Fire Department Plan Review Number: 14322

Appendix B

Calculations



Irrigation System Hydraulic Worksheet

Project Name:	Dunkin' Donuts					Date:	January 26, 2024		
Project Location:	Founders Marketplace Lot 5								
Prepared by:	Doug Smith					Current TOCR Registration #	15-1166		
Tap Size	1.00 "		Source of Pressure		minimum required pressure				
Static Water Pressure:	65 psi								
Hydraulic Grade At Zone:	6562		Company		Smith Irrigation Design				
	Fl. of Copper		Pipe Size (")	K Copper	Friction Loss (from chart)	Flow-GPM	Loss/Gain		
Service Line (tap to meter):	40	LF	1.00	K Copper	3.50 /100 FT	10	1.40		
Water Meter:			1.00		0.70	10	0.70		
Service Line (meter to backflow):	5	LF	1.00	K Copper	3.50 /100 FT	10	0.18		
Backflow:			1		12	10	12.00		
Master Valve:					3	10	3.00		
Pressure Required at Head:								40	
Lateral Allowance:								1.50	
Control Valve Allowance:								3.00	
Mainline Allowances:									
Length of Mainline	Pipe Material	Size	Gals.						
100	LF CL200BE	1.000 "@	10	GPM	1.30 /100 FT		1.30		
	LF CL200BE	"@	10	GPM-Looped	/100 FT		0.00		
Elevation:	Tap elevation	6,559		High/Low:	6,562		1.30		
Green shading indicates required information you must provide									
Total System requirements (PSI)							64.37		
Available System Pressure (PSI)							65.00		
Town of Castle Rock provides a minimum of 43 psi									
Total irrigated area for tap # _____ is _____ sq. ft.									



IRRIGATION CHART

Registered Professional Doug Smith Registration # 15-1166 Date 06/13/24

Company Name Smith Irrigation Design Address 9499 High Cliffe St Highlands Ranch, CO 80129

Phone 303-471-7377 Email DSmith@Smith-Irrigation.com Clock Make WeatherTrak Model LC+

Monday, Wednesday, Friday (west side of I-25) Tuesday, Thursday, Saturday (east side of I-25)

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" per month or 1.5" per week)	Run Time (minutes per month)	Run Time (minutes per day)	Water Usage (gallons per month)
1	Low	Shrubs	Drip	1 gph	0.26	5	2.5	577	58	2,885
2	Low	Shrubs	Drip	1 gph	0.26	3	2.5	577	58	1,731
3	Low	Shrubs	Drip	1 gph	0.26	4	2.5	577	58	2,308
4	Low	Shrubs	Drip	1 gph	0.26	6	2.5	577	58	3,462
Total								2,308	231	10,385
								Min/month	Min/cycle	Gallons/month



IRRIGATION CHART - TEMPORARY ZONE

Registered Professional Doug Smith Registration # 15-1166 Date 06/13/24

Company Name Smith Irrigation Design Address 9499 High Cliffe St Highlands Ranch, CO 80129

Phone 303-471-7377 Email DSmith@Smith-Irrigation.com Clock Make WeatherTrak Model LC+

Monday, Wednesday, Friday (west side of I-25) Tuesday, Thursday, Saturday (east side of I-25)

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" per month or 1.5" per week)	Run Time (minutes per month)	Run Time (minutes per day)	Water Usage (gallons per month)
5	Low	Native (Blue Gram)	Rotary Spray	MP Rotator	0.4	10	2.5	375	38	3,863
Total								375	38	3,863
								Min/month	Min/cycle	Gallons/month



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.

Founders Marketplace Dunkin' Donuts

Name of Project

2-94 Founders Parkway, Castle Rock, CO 80104

Address of property, if known

10/24/25

Signature

Date

100 North Wilcox Street, Castle Rock, CO 80104 P: 303.660.1015 F: 303.660.1024

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