



Drainage Report

Project: T-3892 Target Distribution Center – Tractor Parking Lot

Date: December 19, 2022

Subject: Stormwater Management System

Introduction

This technical memorandum has been created to address the stormwater management system associated with the T-3892 Target Distribution Center – Tractor Parking Lot project. The Tractor Parking Lot project is a proposed parking lot exclusively for tractors within the existing Target Distribution Center located at 3049 N US Highway 441, Lake City, FL 32055. More specifically, the purpose of this project is to provide a parking lot totaling 40 stalls, specifically sized and limited to parking for tractors that during operating hours are used to transport trailers from the trailer parking stalls to the dock doors (and vice versa) for loading/unloading goods. The parking lot is a dedicated space for the tractors to park while not being used during operations at the existing facility.

Permitted Conditions

The master stormwater management system serving the existing Target Distribution Center was permitted under Suwannee River Water Management District (SRWMD) Environmental Resource Permit (ERP) number ERP06-0603M. A closed-drainage stormwater management system, providing treatment and attenuation in a wet detention pond located northeast of the existing facility was permitted. This pond discharges north by means of a control structure and the existing distribution center building and parking infrastructure were routed via storm sewer to the pond. The permit consists of construction and operation of a surface water management system serving 28.60 acres of impervious surface on a total project area of 94.43 acres.

Based on an exemption request submitted on behalf of Ryan Companies on February 23, 2011 for a truck entrance widening project, the site was previously constructed to a total impervious area of 27.30 acres. This truck widening project proposed a total of 0.03 acres of impervious area, bringing the total site impervious area to 27.33 acres. Since this time there has been no additional impervious area added to the site. Therefore, since the constructed stormwater management system was sized for 28.60 acres of impervious area, the system can handle an additional roughly 1.27 acres of impervious area. The exemption letter request verifying the amount of existing impervious area onsite is included in this memorandum as **EXHIBIT A**.

To further verify the amount of existing impervious area onsite, **EXHIBIT B** has been created. This exhibit is a visual representation of the total onsite impervious area based on aerial imagery from Nearmap dated October 27, 2022.

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Proposed Conditions

This project proposes a total of 0.78 acres of impervious area as showcased on **EXHIBIT B**. The runoff generated by the added impervious area is collected via a storm sewer collection and routing system that consists of catch basins and storm pipe. This system captures the runoff and connects to the existing storm sewer system onsite that ultimately discharges to the master wet detention pond serving the property. No additional treatment or attenuation is proposed as part of this project since the overall system was sized for an additional 1.27 acres of impervious area, a threshold that is not exceeded by the proposed improvements.

Floodplain

Per FEMA panel 12023C0285 D (November 2, 2018), the project site is in flood zone AE with an established base flood elevation (BFE) of 151 ft. As specified in the Environmental Resource Permit Applicant's Handbook Volume II, Part III, Section 3.3, no net encroachment into the flood plain, up to that encompassed by the 100-year event, which will adversely affect conveyance, storage, water quality or adjacent lands, is allowed. Any required compensating storage shall be equivalently provided between the lowest level of encroachment and the 100-year flood level to allow storage function during all lesser flood events. An evaluation was completed based on the proposed elevations of the improvements to determine whether compensatory storage was required as part of this project due to filling in the floodplain. As demonstrated on the floodplain exhibit attached as **EXHIBIT C**, the proposed improvements provide a total volume of cut based on a comparison of the existing and proposed elevations. Therefore, no compensatory storage is provided as part of this project since there is no net encroachment into the flood plain.

Internal Storm Sewer

The hydraulic grade line of the internal storm sewer system was analyzed to ensure the system could adequately collect contributing runoff without creating flooding at the inlets in the 25-year, 24-hour storm event. This evaluation has been provided in **EXHIBIT D**.

Summary

The stormwater management system currently serving the site was sized for 28.60 acres of impervious area, while the amount of impervious area onsite today is roughly 27.33 acres. Therefore, the existing stormwater management system has stormwater treatment and flood attenuation capability sufficient to meet the permitting requirements for the additional proposed impervious area of 0.78 acres associated with this project.

Kimley»»Horn

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Although this project is located with FEMA flood plain Zone AE, there is no proposed net encroachment into the flood plain as a result of the proposed improvements. The grading for this project generates a net cut of material in means of earthwork and therefore does not require any compensatory flood plain storage.

This is to certify that the enclosed engineering calculations were performed by me or under my direct supervision.



KYLE C. KRAGEL, P.E. #88712
Kimley-Horn and Associates, Inc.
401 B Street, Suite 600
San Diego, CA 92101

KYLE C. KRAGEL, P.E.
STATE OF FLORIDA
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LICENSE NO. 88712
THIS ITEM HAS BEEN ELECTRONICALLY
SIGNED AND SEALED
BY KYLE C. KRAGEL, P.E.
ON 12/20/2022 USING A SHA
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EXHIBIT A

Exemption Verification Letter Request

STAFF REVIEW

Project Name: MUNCHIES FOOD STORE
 Reviewer: Leroy Marshall
 Related Permits (CMP, CE):

Permit Number:
 Date Reviewed:
 Type of Permit:

ERP11-0032
 2/28/11
 NOTICED GENERAL

<u>Administrative</u>	YES	NO	N/A
Completed Application	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct Fee	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proof of Ownership	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Agent Letter Provided	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Signed application	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Signed & sealed plans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Signed & sealed calculations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
O&M entity identified	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HOA documents approved	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
O&M plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aerial Provided	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TRS and Parcel ID Numbers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Technical</u>			
Water quality ok	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water quantity ok			
Rates	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Volumes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Off-site drainage areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Drawdown within limits?			
Quality	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Quantity	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Finished Floor Elevations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Wetland issues (if yes, provide notes)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Adequate erosion & sediment control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil Boring Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
100-year flood zone on-site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sovereign Submerged Lands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Consent of Use	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Public Easement	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Private Easement	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lease	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Severed Dredge Fees	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OK TO ISSUE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

NOTES: .03 ACRE ADDITION OF IMPERVIOUS SURFACES. TOTAL IMPERVIOUS IS 27.33.
 SITE STILL HAS 1.3 ACRES OF FUTURE IMPERVIOUS.

THOMAS & HUTTON ENGINEERING CO.

50 PARK OF COMMERCE WAY
POST OFFICE BOX 2727
SAVANNAH, GEORGIA 31402-2727
TELEPHONE (912) 234-5300
FAX (912) 234-2950

February 23, 2011

Received
SRWMD

FEB 26 2011

Original to File CRP06-0603m2
Copies to _____
Leroy

Mr. Leroy Marshall II, P.E.
Water Resource Engineer
Suwannee River Water Management District
9225 CR 49
Live Oak, FL 32064

RE: Target FDC - Truck Entrance Widening
Target Food Distribution Center
Lake City, Florida
J# 18882.02

Dear Leroy:

On behalf of our client, the Ryan Companies, we submit this request for an exemption from permit modification for the proposed Target FDC - Truck Entrance Widening.

The Target FDC is an existing 420,000 square foot facility located in Lake City in Columbia County, Florida. Construction was completed in 2008. The proposed truck entrance widening includes increasing the turning radius for the existing truck entrance off of Tammy Lane. Proposed work includes the removal of curb and gutter and existing pavement; installation of pavement and curb and gutter; and the removal of an existing curb inlet top and replacing it with a hooded grate inlet type. Please refer to the specific development plans for the proposed truck entrance widening that are included with this submittal.

** Nothing included - only this letter
R. Hamm 2/25/11*

The impervious area provided in the original permit and used in the storm calculations was 28.60 acres. Based on what has been constructed to date and including the addition of the 0.03 acres for the proposed truck entrance widening, the total impervious area equals approximately 27.33 acres.

Because the proposed truck entrance widening does not increase the impervious area above the acreage provided in the permit and used in the storm calculations, we request an exemption from permit modification for the proposed project. Should you have any questions or need additional information, please do not hesitate to contact our office at (912) 234-5300.

Please let us know if you have any questions or need any additional information.

Sincerely,

THOMAS & HUTTON



Jason Chambless, P.E.
Project Manager

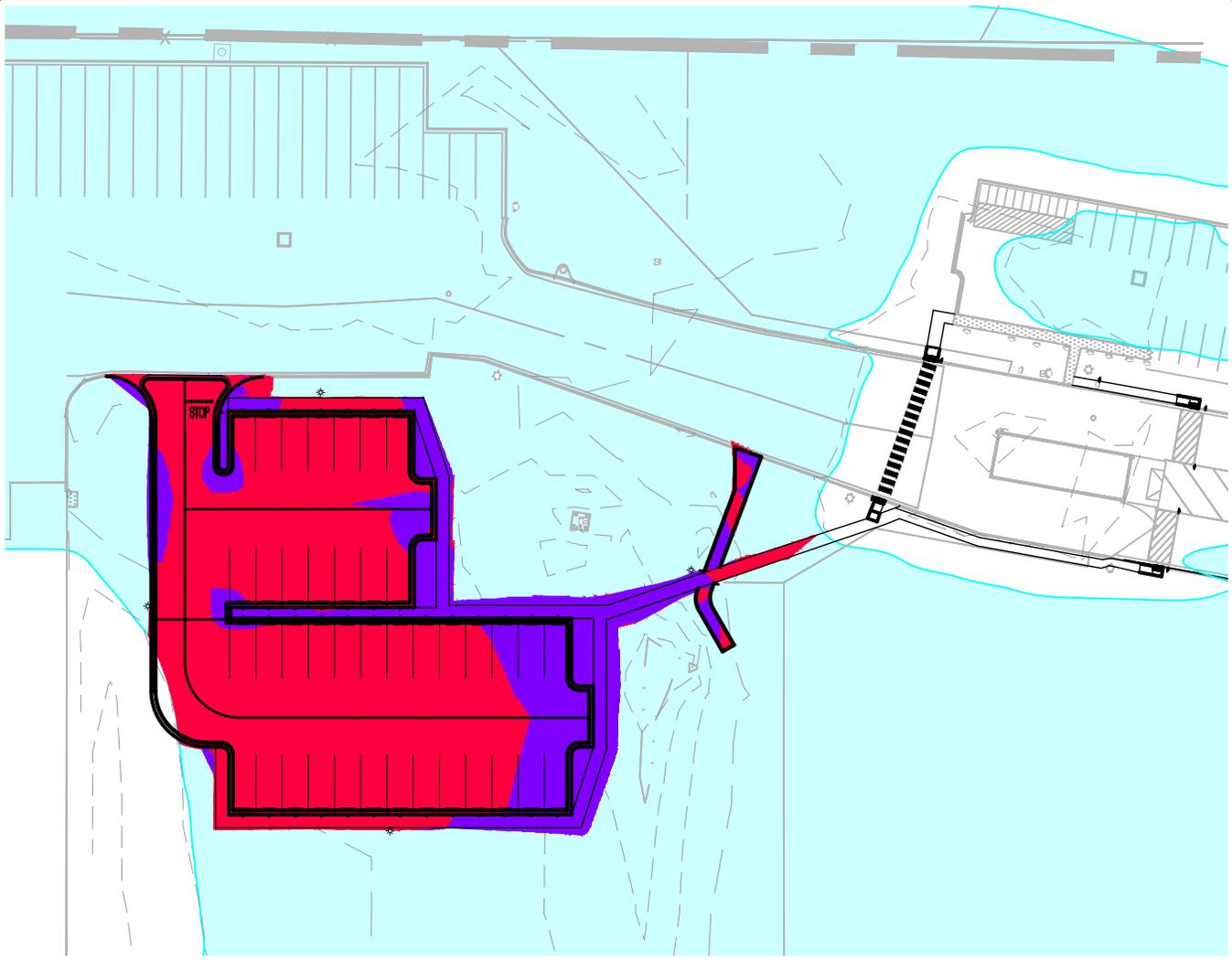
JOC/sawr

EXHIBIT B

Existing and Proposed Impervious Area Exhibit

EXHIBIT C

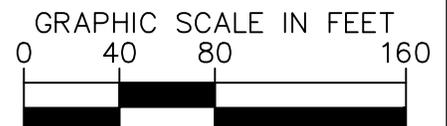
Floodplain Encroachment Exhibit



LEGEND

- SPECIAL FLOOD HAZARD AREA (ZONE AE) LIMITS EL 151.00'
- AREA OF CUT
- AREA OF FILL

Volume Table				
	Minimum Cut / Fill (FT)	Maximum Cut / Fill (FT)	Volume (CY)	Color
1	-1.43	0.00	507.33 (Cut)	
2	0.00	2.76	247.98 (Fill)	
Net Volume			259.35 CY (Cut)	



FLOODPLAIN EXHIBIT

C:\Users\TAYLOR-TIKLA\AppData\Local\Temp\AcPublish_24066\VSURF-FG.dwg Layout1 Dec 20, 2022

EXHIBIT D

Hydraulic Grade Line Calculations

INTERNAL STORM SEWER HGL ANALYSIS

T-3892 TARGET DISTRIBUTION CENTER - TRACTOR PARKING LOT

25-Year, 24-Hour Storm Event

1) Friction Loss = $29 * N^2 * V^2 / 2g * R^{(-4/3)} * L$

2) Tailwater = Max Stage in Existing System

3) Peak Runoff = $Q = CiA$ (i = 8.0 in/hr)

Pond Peak Runoff = **5.78** cfs Tailwater = 144.13 ft
 Area = **0.76** ac
 Prorated Runoff = 7.60 cfs / ac

Pipe From (-)	Inlet Area (ac)	Inlet Flow (cfs)	Total Flow (cfs)	Pipe Length (ft)	Pipe Diameter (in)	Manning N (-)	Velocity (ft/s)	HGL Slope (%)	Friction Loss (ft)	Min Loss Coeff. (K)	Minor Loss (ft)	HGL DS Elev. (ft)	HGL US Elev. (ft)	Edge of Pvmt. Elev. (ft)	Flood Depth (in)
1	0.43	3.27	3.27	175	12	0.012	4.16	0.713	1.248	1.25	0.336	144.80	146.39	148.30	N/A
2	0.33	2.51	5.78	250	18	0.012	3.27	0.256	0.640	0.19	0.031	144.13	144.80	148.30	N/A
Check	0.76		5.78												