Appendix H

Drainage and Stormwater

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CALCULATED BY **AMP** DATE **04/23/20**
CHECKED BY **RJG** DATE **04/23/20**

FLOOD CONTROL: DRAINAGE STUDY (PRELIMINARY)

for

Arctic Cold – Cold Storage and Packaging

A.P.N. 128-097-001 AND 128-097-002
SANTA MARIA, CA.

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PROJECT DESCRIPTION

The proposed project consists of the development of a 436,647 S.F. freezer/processer facility located at 1750 East Betteravia Road in the Santa Maria area, east of Highway 101. The site consists of two existing parcels, totaling 108.76 acres and the site is zoned AG-II-40.

The development area encompasses 40 acres and will be the focus of this study.

The project consists of two 40' wide driveways off Betteravia Road, drive aisles, parking lots and landscaping. The proposed project replaces existing row crops. The completed project proposes:

proposed building:	436,647 S.F. (10.02 AC.)
proposed parking lots/ drive aisles/ sidewalk areas:	422,439 S.F. (9.70 AC.)
proposed irrigated landscaping:	76,672 S.F. (1.76 AC.)
proposed non-irrigated landscaping:	382,593 S.F. (8.78 AC.)
proposed class II base parking lot:	101,664 S.F. (2.33 AC.)
proposed process waste-water basin:	100,000 S.F. (2.30 AC.)
proposed detention basin:	222,385 S.F. (5.11 AC.)
Total Site:	1,742,400 S.F. (40 AC.)

The project is designed to be in conformance with the Flood Control Standard Conditions allowing a maximum outflow of 0.07 cfs per acre of development for a 100-year storm event and 2-year through 100-year outflow mitigation.

EXISTING SITE

The site is currently farmed with row crops accessed by private dirt farm roads. The site gently slopes to the northwest and discharges storm water runoff to an existing drainage ditch along the south edge of Betteravia Road. For purposes of meeting Santa Barbara County requirements, the following predeveloped flows were calculated based on existing conditions on the proposed site.

The following flows were prepared using HydroCAD software. In HydroCAD the calculations were set up to determine the peak flow runoff through the SBUH Method. For purposes of the calculations, web soil survey data was collected to determine the soil type in the proposed site.

Pre-developed Flows:
Area Total = 1,742,400 S.F. = 40 Acres
1,742,400 SF, CN Selected = 78, Based on HSG B, row crops, straight row, Good
Time of Concentration = 100.7 min

Events for Subcatchment Pre: Existing Conditions

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2 YEAR	1.81	1.44	1.272	0.38
5 YEAR	2.62	4.21	2.889	0.87
10 YEAR	3.15	6.58	4.123	1.24
25 YEAR	3.81	9.89	5.789	1.74
50 YEAR	4.29	12.48	7.068	2.12
95th Percentile	1.50	0.79	0.777	0.23
100 YEAR	**4.76**	**15.14**	**8.364**	**2.51**

PROPOSED SITE

Tributary Areas
The developed on-site tributary areas are defined as follows: Pervious areas (Landscape, Native vegetation), Impervious Areas (Buildings, Sidewalks & Driveways) and Base Areas (Class II base parking lot). The purpose of subdividing the disturbed area into these areas is to calculate the total amount of runoff to the basin and to properly design an adequate outlet of the prescribe outflow set by the Santa Barbara County Flood Control Requirements.

Basin Design:
The goal of the proposed site basin design is to provide the required storage and outflow requirements while minimizing the impacts of daily operations throughout the rest of the site. The proposed development is designed to convey all site-generated storm water to the onsite basin located along the western edge of the proposed development. The basin is designed to accommodate a 100-year storm while allowing the proposed development runoff to match historical drainage patters. The outflow discharge rates do not exceed 0.07 cfs per acre of development for 100-year storm event. The basin was designed using HydroCAD software.

The basin receives flows from the entire development via sheet flow and direct runoff. Flows enter a series of catch basins which discharge directly into the basin. The basin has a 10” bleeder orifice at 296.40 and discharges into the existing drainage ditch along Betteravia Road.

	Elevation	Area	Perimeter
Basin Bottom	296.40’	175,372 S.F.	2,734.34 L.F.
Depth 0.60’	297.00’	181,957 S.F.	2752.63 L.F.
Depth 1.60’	298.00’	193,028 S.F.	2783.13 L.F.
Depth 2.60’	299.00’	204,222 S.F.	2813.62 L.F.
Depth 3.60’	300.00’	215,537 S.F.	2844.12 L.F.
Depth 4.20’	300.60’	222,385 S.F.	2862.42 L.F.

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CONCLUSION

In conclusion we have come up with a basin design that meets the outflow requirements of 0.07 cfs per acre of development for a 100-year storm event for the proposed development. The drainage into the offsite drainage ditch matches historical flows. The 100-year highwater elevation is 297.95' with overland escape at the north end of the basin at an elevation of 300.00' allowing about 2' of freeboard.

40-acres x 0.07 cfs/acre = 2.8 cfs (max allowable outflow in a 100-year storm event)
From calculations 100-year storm outflow from Basin = 2.79 cfs **OK**

As an additional check, predeveloped flows and post-development flows for 2-year through 100-year storm event were also compared in the tables below to ensure that post developed flows do not exceed that of predeveloped.

Pre-developed Flows:

Events for Subcatchment Pre: Existing Conditions

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2 YEAR	1.81	1.44	1.272	0.38
5 YEAR	2.62	4.21	2.889	0.87
10 YEAR	3.15	6.58	4.123	1.24
25 YEAR	3.81	9.89	5.789	1.74
50 YEAR	4.29	12.48	7.068	2.12
95th Percentile	1.50	0.79	0.777	0.23
100 YEAR	**4.76**	**15.14**	**8.364**	**2.51**

Post-Developed Flows:

Events for Pond RB: Flood Control Basin

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2 YEAR	17.81	0.82	296.90	88,960
5 YEAR	28.17	1.50	297.14	132,899
10 YEAR	35.72	1.87	297.32	166,225
25 YEAR	45.54	2.28	297.57	212,207
50 YEAR	52.89	2.55	297.76	247,930
95th Percentile	14.34	0.58	296.81	72,889
100 YEAR	**60.21**	**2.79**	**297.95**	**284,408**

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Summary for Pond RB: Flood Control Basin

Inflow Area = 32.868 ac, 59.86% Impervious, Inflow Depth = 3.52" for 100 YEAR event
Inflow = 60.21 cfs @ 9.98 hrs, Volume= 9.644 af
Outflow = 2.79 cfs @ 20.79 hrs, Volume= 5.556 af, Atten= 95%, Lag= 648.3 min
Primary = 2.79 cfs @ 20.79 hrs, Volume= 5.556 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.050 hrs
Peak Elev= 297.95' @ 20.79 hrs Surf.Area= 374,394 sf Storage= 284,408 cf

Plug-Flow detention time= 794.4 min calculated for 5.548 af (58% of inflow)
Center-of-Mass det. time= 607.1 min (1,339.8 - 732.7)

Volume	Invert	Avail.Storage	Storage Description
#1	296.40'	107,199 cf	**Basin (Prismatic)** Listed below (Recalc)
#2	297.00'	187,493 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#3	298.00'	198,625 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#4	299.00'	209,880 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#5	300.00'	131,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		834,572 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
296.40	175,372	0	0
297.00	181,957	107,199	107,199

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
297.00	181,957	0	0
298.00	193,028	187,493	187,493

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
298.00	193,028	0	0
299.00	204,222	198,625	198,625

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
299.00	204,222	0	0
300.00	215,537	209,880	209,880

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
300.00	215,537	0	0
300.60	222,385	131,377	131,377

Device	Routing	Invert	Outlet Devices
#1	Primary	296.40'	**10.0" Vert. Bleeder** C= 0.600

Primary OutFlow Max=2.79 cfs @ 20.79 hrs HW=297.95' (Free Discharge)
1=Bleeder (Orifice Controls 2.79 cfs @ 5.12 fps)

Stormwater Control Plan

For

Arctic Cold Cold Storage and Packaging

1750 East Betteravia Road
Santa Maria, CA 93454
September 9, 2020

Prepared for:
Fisher Construction Group
625 Fisher Lane
Burlington, WA. 98233

Prepared by:
Bethel Engineering
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Santa Maria, CA 93455
(805)934-5767

Table of Contents

I. Project Data

Project Name:	Arctic Cold Cold Storage and Packaging
Application Submittal Date:	March 25, 2020
Project Location:	1750 East Betteravia Road – Santa Maria
Total Project site area:	1,742,400 S.F. / 40.00 acres
Total New Impervious Surface Area:	859,086 S.F. / 19.72± acres
Total Pre-Project Impervious Area:	0 S.F. / 0 acres
Total Post-Project Impervious Area:	859,086 S.F. / 19.72± acres
Total Replaced Impervious Area:	0 S.F. / 0 acres
Watershed Management Zone:	Zone 1
Design Storm Frequency and Depth:	1.2 inch Design Storm

II. Setting

II.A. Project Location and Description

The project site is located at 1750 East Betteravia Road, on the East side of Highway 101, on a portion of an existing 110.72 Acre piece of land outside the Santa Maria city limits. The site is zoned AG-II-40 and is currently used for row crops. The project proposes the development of a freezer and fruit processing facility. The project will also include a flood control basin, process waste-water pond and a septic system for domestic use. Access to the site is from Betteravia Road to the north.

II.B. Existing Site Features and Conditions

The site is currently used for farming and is 100% pervious. The topography of this site gently slopes to the northwest into an existing drainage ditch along Betteravia Road. The USDA, Natural Resources Conservation Service, Web Soil Survey, determines that the site consists of 57.3%± Betteravia Loamy Sand (BmA) and 42.7%± Pleasanton Sandy Loam (PnA) (see Appendix D). The definitions in the Stormwater Technical Guide helped determine the site's soil would fit 42.7% into HSG A category and 57.3% into HSG C category. Category HSG A/B was used in the SCM Sizing Calculator (see Exhibit 1 of Appendix A).

II.C. Opportunities and Constraints for the Stormwater Control

The opportunities selected for stormwater control include a 4.1 AC on-site infiltration basin to treat and retain all storm water runoff from a 1.2 inch design storm. With this, the grading design will direct / transport the stormwater to the proposed infiltration basin via gutters and catch basins on-site.

III. Low Impact Development Design Strategies

III.A. Optimization of Site Layout

The site was designed to direct run-off into a large infiltration basin design to infiltrate a 1.2 inch design storm. (see Appendix A).

III.A.1. Limitation of Development Envelope

The project has no substantial limitations for proposed development.

III.A.2. Preservation of Natural Drainage Features

The site currently sheet flows to the north into a drainage ditch and along Betteravia Road. The project proposes to drain to west into a new retention/infiltration basin which will bleed into the existing drainage basin preserving the existing drainage patterns of the site.

III.A.3. Setbacks from Creeks, Wetlands and Riparian Habitats

There are no Creeks, Wetlands or Riparian Habitats near the proposed project site.

III.A.4. Minimization of Imperviousness

51% of the overall project site has been dedicated for Landscape/Open Space.

III.A.5. Use of Drainage as a Design Element

Drainage has been considered in the design to allow drainage and minimize ponding on the hardscaped areas.

III.B. Use of Permeable Pavement

The project does not propose the use of permeable pavement.

III.C. Dispersal of Runoff to Pervious areas

Stormwater runoff from impervious surface areas is directed towards the on-site infiltration basin through a combination of gutters and catch basin spread out to minimize ponding.

III.D. Stormwater Control Measures

The stormwater control measures (SCMs) are designed to retain and infiltrate stormwater. The Drainage Management Areas (DMAs) drain to the infiltration areas (see Appendix A).

IV. Documentation of Drainage Design

IV.A. Description of each Drainage Management Areas

IV.A.1. Tables

Table 1: DMA Exhibit 1 reference

DMA	AREA (SF)	Drains to
DMA 1	431,138	SCM 1
DMA 2	422,439	SCM 1
DMA 3	101,664	SCM 1
DMA 4	436,647	SCM 1
DMA 5	100,000	SELF-RET
DMA 6	73,187	SELF-TRTNG

Table 2: SCM Exhibit 1 reference

SCM #	TYPE	AREA (SF)
SCM 1	Infiltration Basin	177,325

IV.A.2. Drainage Management Area Descriptions

DMA 1, totaling 431,138 square feet, drains landscaped areas. DMA 1 sheet flows into SCM 1.

DMA 2, totaling 422,439 square feet, drains hardscaped areas. DMA 2 sheet flows into SCM 1.

DMA 3, totaling 101,664 square feet, drains Class II Based parking lot. DMA 3 sheet flows into a catch basin and into SCM 1.

DMA 4, totaling 436,647 square feet, drains structure roofs. DMA 4 flows through roof drains onto DMA's 1 and 2 and into SCM 1.

DMA 5, totaling 100,000 square feet, is a process waste-water pond. DMA 5 is self-retaining.

DMA 6, totaling 73,187 square feet, drains native, untouched landscape areas along the perimeter of the project. DMA 6 is self-treating.

SCM 1, totaling 177,325 square feet x 6" deep, is an infiltration basin located along the western limits of the development area. SCM 1 collects run-off from DMA's 1-4. SCM 1 discharges overflows into the existing drainage ditch to the north along Betteravia Road. SCM 1 has been sized using the Water Quality Design Volume (WQDV) Calculation as noted below;

WQDV = (.05 + 0.9 x IMP) x 1.2" x A x 3630
WQDV = (.05 + 0.9 x 0.62) x 1.2 x 31.95 x 3630
WQDV = (0.608) x 1.2 x 31.95 x 3630
WQDV = 84,618 c.f. storage volume required
177,325 square feet x 6" deep = 88,663 c.f. storage volume provided.

IV.A.3. On-Site Retention Requirement

All 1.2 inch storm event runoff will be retained on-site within the proposed infiltration basin (see Appendix A).

IV.A.4. Pre Development Flows for 2-10 Year Storm Events

Though not required for Tier 2 projects, the summary table below contains the results showing the post development runoff being less that the pre-development runoff.

PRE-DEVELOPMENT RUNOFF	
2 YEAR	**4.21 cfs**
5 YEAR	**13.60 cfs**
10 YEAR	**20.95 cfs**

POST DEVELOPMENT RUNOFF			
SCM #	**2 YEAR**	**5 YEAR**	**10 YEAR**
SCM 1	2.07 cfs	4.13 cfs	4.27 cfs
TOTALS:	**2.07 cfs**	**4.13 cfs**	**4.27 cfs**

IV.B. Tabulation and Size Calculations

For stormwater control measure calculation and tabulations refer to Central Coast Region Stormwater Control Measure Sizing Calculator in “Appendix B”.

V. Source Control Measures

V.A. Site Activities and Potential Sources of Pollutants

Any potential sources of pollutants that could be transported to the infiltration basin could also be transported off-site. Pollutants could be from the illegal dumping of chemicals into catch basins as-well-as pollutants left by vehicles that visit the site. In addition, the materials used to construct and maintain the site could also be possible sources of pollution. Overflow from landscape areas can carry pesticides. Storm water from roofs can carry metals. Drains made of copper or other materials with an unprotected surface may cast-off metal particles to the main basins. Parking areas and hardscapes may contribute litter that can be carried into the basin. All areas should be kept clean to minimize the possibility of litter making its way into the storm water control facilities.

V.B. Source Control Table

Potential source of runoff pollutants	Permanent source control BMPs	Operational Source Control BMPs
On-site storm drain inlet (unauthorized non-stormwater discharges and accidental spills or leaks)	Mark all inlets with the words “No Dumping! Flows to Bay” or similar	Maintain and periodically replace inlet markings. Provide stormwater pollution prevention information to new site owners, lessees or operators See Appendix E in this report.
Landscape/ Outdoor Pesticide Use/Building and Grounds Maintenance	State that final landscape plans will accomplish all of the following. Preserve existing native trees, shrubs, and ground cover to the maximum extent possible. Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. Where landscaped areas are used to retain or detain stormwater,	Maintain landscaping using minimum or no pesticides.

	specify plants that are tolerant of saturated soil conditions. Consider using pest-resistant plants, especially adjacent to hardscape. To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	
Plazas, sidewalks, and parking lots.		Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect wash water containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

V.C. Features, Materials and Methods of Construction of Source Control BMP's

The stormwater features are to be built per the grading, landscape and architectural plans and material and methods of construction are to be determined by the owner/developer and contractors.

VI. Stormwater Facility Maintenance

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

Signed ownership and responsibility for maintenance agreement to be on file at the Santa Barbara County Public Works Division.

VI.B. Summary of Maintenance Requirements for Each Stormwater Facility

For maintenance requirements, refer to the Stormwater Maintenance Plan (To be included with final Storm Water Control Plan).

VII. Construction Checklist

Layout (to be confirmed prior to beginning excavation)

- ❒ Square footage of the facility meets or exceeds minimum shown in Stormwater Control Plan
- ❒ Site grading and grade breaks are consistent with the boundaries of the tributary Drainage Management Area(s) (DMAs) shown in the Stormwater Control Plan
- ❒ Inlet elevation of the facility is low enough to receive drainage from the entire tributary DMA

- ❒ Locations and elevations of overland flow or piping from impervious areas to the facility have been laid out and any conflicts resolved
- ❒ Rim elevation of the facility is laid out to be level all the way around, or elevations are consistent with a detailed cross-section showing location and height of interior dams
- ❒ Locations for vaults, utility boxes, and light standards have been identified so that they will not conflict with the facility
- ❒ Location for signage is identified
- ❒ Facility is protected as needed from construction-phase runoff and sediment

Excavation (to be confirmed prior to backfilling or pipe installation)

- ❒ Excavation conducted with materials and techniques to minimize compaction of soils within the facility area
- ❒ Excavation is to accurate area and depth
- ❒ Slopes or side walls protect from sloughing of native soils into the facility
- ❒ Vertical moisture barrier, if specified, has been added to protect adjacent pavement or structures.
- ❒ Native soils at bottom of excavation are ripped or loosened to promote infiltration

Drain Rock/Subdrain (to be confirmed prior to installation of soil mix)

- ❒ Rock is installed as specified. 3” depth of pea gravel is installed at the top of the ¾” float rock layer to prevent migration of fines into gravel layer
- ❒ Rock is smoothed to a level top elevation. Depth and top elevation are as shown in plans
- ❒ Slopes or side walls protect from sloughing of native soils into the facility
- ❒ No filter fabric is placed between the subdrain and soil mix layers

Soil Mix

- ❒ Soil mix is as specified.
- ❒ Mix installed in lifts not exceeding 12"
- ❒ Mix is not compacted during installation but may be thoroughly wetted to encourage consolidation
- ❒ Mix is smoothed to a level top elevation. Depth of mix (24" min.) and top elevation are as shown in plans, accounting for depth of mulch to follow and required reservoir depth

Irrigation

- ❒ Irrigation system is installed so it can be controlled separately from other landscaped areas. Smart irrigation controllers and drip emitters are recommended
- ❒ Spray heads, if any, are positioned to avoid direct spray into outlet structures

Planting

- ❒ Plants are installed consistent with approved planting plan
- ❒ Any trees and large shrubs are staked securely
- ❒ No fertilizer is added; compost tea may be used
- ❒ No native soil or clayey material are imported into the facility with plantings
- ❒ 1"-2" mulch may be applied following planting; mulch selected to avoid floating

- ❒ Final elevation of soil mix maintained following planting
- ❒ Curb openings are free of obstructions

Final Engineering Inspection

- ❒ Drainage Management Area(s) are free of construction sediment and landscaped areas are stabilized
- ❒ Rock or other energy dissipation at piped or surface inlets is adequate
- ❒ Inflows from roof leaders and pipes are connected and operable
- ❒ Temporary flow diversions are removed
- ❒ Plantings are healthy and becoming established
- ❒ Irrigation is operable
- ❒ Facility drains rapidly; no surface ponding is evident
- ❒ Any accumulated construction debris, trash, or sediment is removed from facility
- ❒ Permanent signage is installed and is visible to site users and maintenance personnel

VII.A. Stormwater Control Measures

Page Number in Stormwater Control Plan	Source or Treatment Control Measure.	Plan Sheet #
6	Mark all inlets with the words “No Dumping! Flows to Bay” or similar.	GRP sheet# TBD
6	Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.	Landscape Plan Sheet # TBD
6	Specify plants that are tolerant to saturated soil conditions, where landscaped areas are used to retain or detain stormwater.	Landscape Plan Sheet # TBD
6	Consider using pest-resistant plants, especially adjacent to hardscapes.	Landscape Plan Sheet # TBD
7	To insure successful establishment, select plants appropriate to site soil, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency and plant interactions.	Landscape Plan Sheet # TBD

VIII. Certifications

The preliminary design of stormwater treatment and other stormwater pollution control measures in this plan are in accordance with the current edition of the Santa Barbara County Project Clean Water’s Stormwater Technical Guide.

Exhibit / Report Overview

The California Regional Water Quality Control Board of the Central Coast Region adopted the Post-Construction Requirements (PCRs) in July 2013. The County of Santa Barbara obtained a grant to assist designers and municipalities with the implementation of the PCRs. Through this grant, the County has developed, published, and released The Stormwater Technical Guide for Low Impact Development to ensure compliance with the Regional Board's PCRs. The development of the Post-Construction Stormwater Control Measures/LID features throughout the project site will adhere to the Technical Guide as described below.

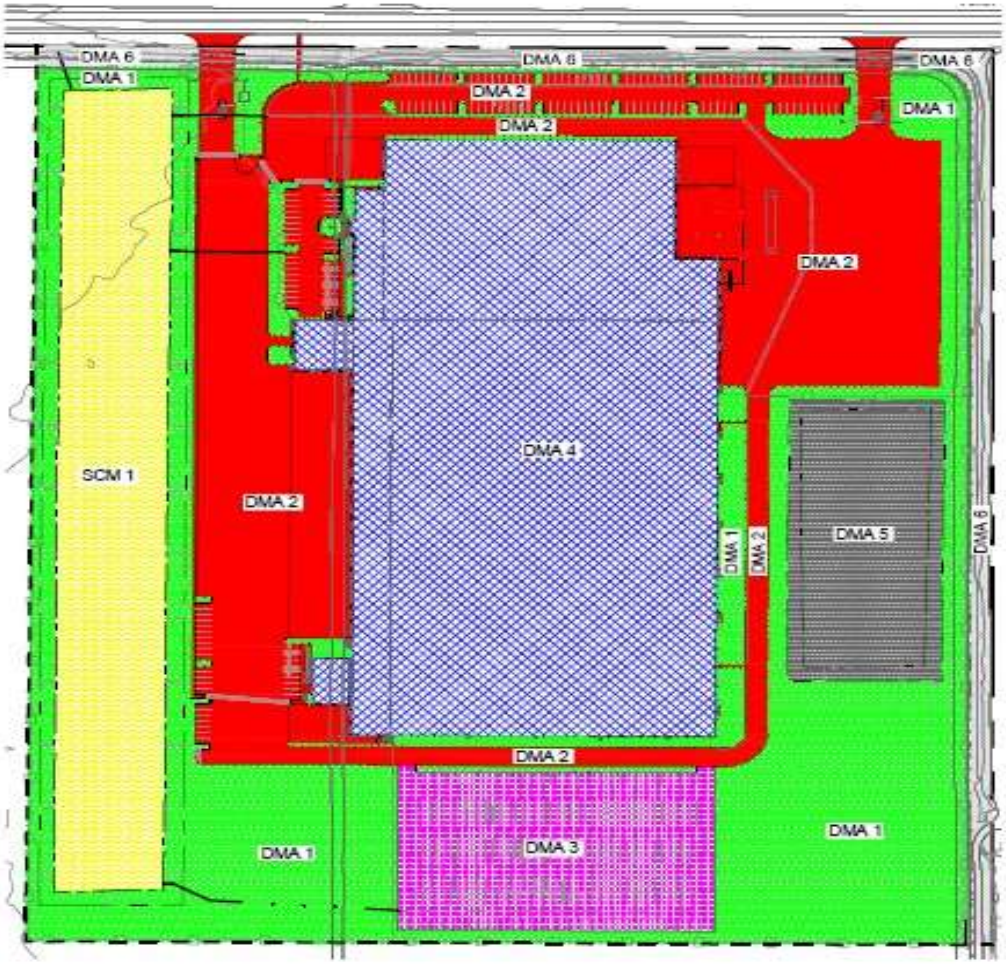
For the purposes of this report the post construction stormwater requirements the net impervious was calculated as follows
New impervious = 859,086 S.F.
This project is located outside the NPDES Permit Area.
Therefore, this project is designated as a Tier 2 project. This development proposes the following:

- Limit the disturbance of natural drainage features
- Limit clearing, grading, and soil compaction
- Minimize impervious surfaces
- Minimize runoff by dispersing/distributing runoff to landscape
- Treat runoff with an approved and appropriately sized LID treatment system prior to discharge from the site (1.2 inch design storm)

Appendix A: DMA & SCM Map

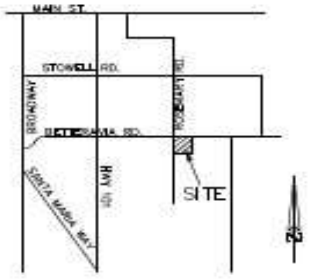
ARCTIC COLD
COLD STORAGE & PACKAGING

PRELIMINARY GRADING PLAN for A.P.N. 128-097-001 AND 128-097-002



LEGEND

- DMA #1 - LANDSCAPE (PERVIOUS)
- DMA #2 - HARDSCAPE (IMPERVIOUS)
- DMA #3 - BASE SURFACE (PERVIOUS)
- DMA #4 - ROOFS (IMPERVIOUS)
- DMA #5 - PROCESS WASTEWATER BASIN (PERVIOUS)
- DMA #6 - NATIVE LANDSCAPING (PERVIOUS)
- SCM #1 - INFILTRATION BASIN (PERVIOUS)



VICINITY MAP
NO SCALE

BETHEL engineering
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DRAWN BY: A.M.P.
CHECKED BY:
DATE: SEPT. 9, 2020
SHEET 1 OF 1 SHEETS
REFERENCES
FILE NUMBER

Appendix B: SWCP Sizing Calculator

Central Coast Region Stormwater Control Measure Sizing Calculator

Version: 7/2/2018

1. Project Information

Project name:	Arctic Cold Cold Storage & Packaging
Project location:	1750 East Betteravia Road
Tier 2/Tier 3:	Tier 3 - Retention
Design rainfall depth (in):	1.4
Total project area (ft2):	1742400
Total DMA area (ft2):	1565075
Total new impervious area (ft2):	859086
Total replaced impervious within a USA (ft2):	0
Total replaced impervious not in a USA (ft2):	0
Total pervious/landscape area (ft2):	705989
Total SCM area (ft2):	177325

2. DMA Characterization

Add DMA Row | Remove DMA Row

Name	DMA Type	Area (ft2)	Surface Type	New, Replaced?	Connection
DMA 1	Drains to SCM	431138	Landscape	New	SCM 1
DMA 2	Drains to SCM	422439	Concrete or asphalt	New	SCM 1
DMA 3	Drains to SCM	101664	Crushed aggregate	New	SCM 1
DMA 4	Drains to SCM	436647	Roof	New	SCM 1
DMA 5	Self-Retaining	100000			
DMA 6	Self-Treating	73187			

DMA Summary Area	
Total assigned DMA area (ft2):	1565075
New impervious area (ft2):	859086
Replaced impervious within a USA (ft2):	0
Replaced impervious not in a USA (ft2):	0
Total pervious/landscape area (ft2):	705989

3. SCM Characterization

Add SCM Row | Remove SCM Row

Name	SCM Type	Safety Factor	SCM Soil Type	Infilt. Rate (in/hr)	Area (ft2)	Flow Control Orifice?	Reservoir Depth (in)
SCM 1	Direct Infiltration	2	HSG A/B	0.75	177325		

4. Run SBUH Model

Launch Model | Clear Results

5. SCM Minimum Sizing Requirements

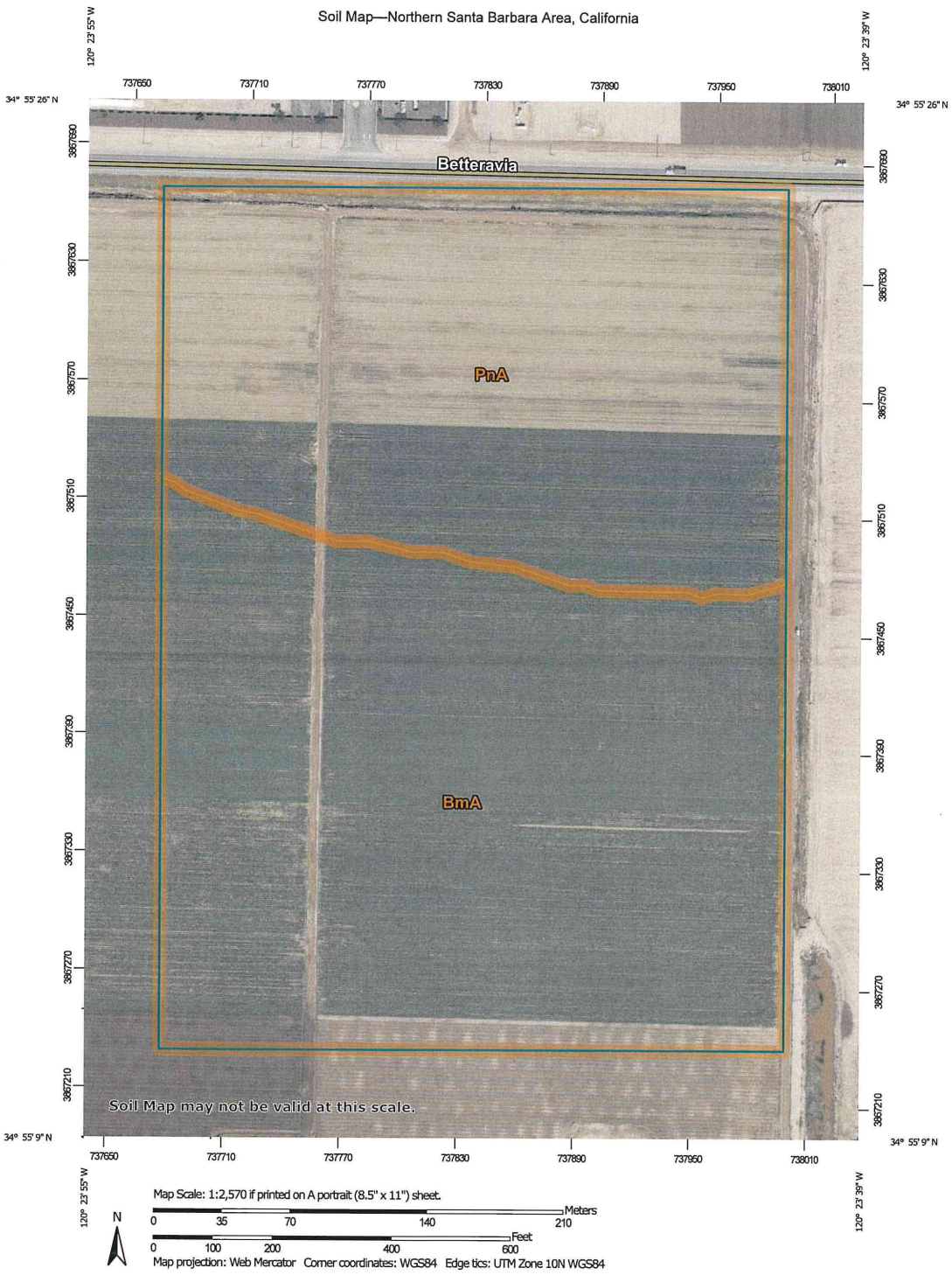
SCM Name	Min. Required Storage Vol. (ft3)	Depth Below Underdrain (ft)	Drain Time (hours)	Orifice Diameter (in)
SCM 1	70930	1.00	1.1	

Results are out of date.
Click 'Launch Model' to update.

6. Self-Retaining Area Sizing Checks

Self-Retaining DMA Name	Self-Retaining DMA Area (ft2)	Tributary DMA Name(s)	Eff. Tributary DMA Area (ft2)	Effective Tributary / SRA Area Ratio
DMA 5	100000		0	0.00

Appendix C: Soil Map


Soil Map—Northern Santa Barbara Area, California
120° 23' 55" W
120° 23' 39" W
34° 55' 26" N
34° 55' 9" N
737650
737710
737770
737830
737890
737950
738010
3867690
3867630
3867570
3867510
3867450
3867390
3867330
3867270
3867210
Betteravia
PnA
BmA
Soil Map may not be valid at this scale.
Map Scale: 1:2,570 if printed on A portrait (8.5" x 11") sheet.
N
0 35 70 140 210 Meters
0 100 200 400 600 Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84
USDA
Natural Resources Conservation Service
Web Soil Survey
National Cooperative Soil Survey
3/26/2020
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Northern Santa Barbara Area, California
Survey Area Data: Version 14, Sep 17, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 14, 2019—Mar 15, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BmA	Betteravia loamy sand, 0 to 2 percent slopes	20.0	57.3%
PnA	Pleasanton sandy loam, 0 to 2 percent slopes	14.9	42.7%
Totals for Area of Interest		**34.9**	**100.0%**

Appendix D: Maintenance Agreement

A Maintenance Agreement will be provided as part of the Final Storm Water Control Plan