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Stormwater Control Plan

**Stormwater Control Plan
For a Regulated Project
For Use Permit Application,
Portocork America, Inc.
Second Submittal
Gateway Road East,
Napa County, CA 94558
(APN: 057-210-041)**

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APPENDIX A SELECT IMPROVEMENT PLAN SHEETS

I. PROJECT DATA

Specific project information is summarized in the following **Table 1. Project Data Form**.

Table 1. Project Data Form	
Project Name/Number	Portocork America-Gateway Road East
Application Submittal Date	Use Permit Submitted in October 2016
Project Location	Gateway Road East, Napa, California APN: 057-210-041
Project Phase No.	N/A
Project Type and Description	Commercial Warehouse and Office
Total Project Site Area	2.49-Acre Site Area
Total New and Replaced Impervious Surface Area	81,424 Square Feet (1.87 acres)
Total Pre-Project Impervious Surface Area	0 Square Feet
Total Post-Project Impervious Surface Area	Approximately 75% of developed area (2.49 acres developed)

II. SETTING

II.A. PROJECT LOCATION AND DESCRIPTION:

The project location and Site Plan is shown on Sheet C0.1 of **Appendix A, Select Improvement Plan Sheets**. The project is located at Gateway Road East, in Unincorporated Napa County, California, and the Assessor's Parcel Number is 057-210-041. The property is a roughly 2.49 acres, with all 2.49 acres of undeveloped land. As shown Sheet C0.3 of **Appendix A, Select Improvement Plan Sheets**, the proposed project includes a 54,915 SF one-story warehouse building with an asphalt parking lot.

II.B. EXISTING SITE FEATURES AND CONDITIONS:

The parcel is roughly rectangular, and is approximately 400 feet wide by 270 feet deep. The ground elevation of the parcel ranges from approximately 45 to 55 feet (Napa County Datum). Soils at the site are loam (Hydrologic Soil Group D). Group D soils have low

infiltration rates and high runoff rates.¹ There are no significant drainage features on the property. The property site is currently undeveloped, prior land use was agriculture.

II.C. OPPORTUNITIES AND CONSTRAINTS FOR STORMWATER CONTROL:

Opportunities for stormwater control at the site are afforded by landscaping requirements. There are existing storm drains in Gateway East that are fairly deep and can connect to the projects proposed storm drains, which can provide fall for needed hydraulic head.

The site also includes constraints. The industrial land use is high density/intensity and vehicular traffic, space is limited by the land use objectives, and by architectural and design criteria and constraints. Also, clayey soils will limit infiltration potential.

III. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

III.A. OPTIMIZATION OF SITE LAYOUT:

III.A.1. LIMITATION OF DEVELOPMENT ENVELOPE

There are no significant natural areas on the property. The development envelope includes the entire property.

III.A.2. PRESERVATION OF NATURAL DRAINAGE FEATURES

There are no significant natural drainage features on the property. Stormwater discharging from the property will be made to mimic natural drainage patterns to the maximum extent practicable.

III.A.3. SETBACKS FROM CREEKS, WETLANDS, AND RIPARIAN HABITATS

Creeks, wetlands, and riparian habitats are not near the property. Setbacks for these items were not considered.

III.A.4. MINIMIZATION OF IMPERVIOUSNESS

Imperviousness was minimized with respect to land use objectives and to architectural and civil design criteria and constraints.

¹ USDA Soil Map Viewer,
http://websoilsurvey.sc.egov.usda.gov/WssProduct/uqtvhwib5ifzfg3e30glbdyz/GN_00000/20160212_16010204921_131_Soil_Report.pdf.

III.A.5. USE OF DRAINAGE AS A DESIGN ELEMENT

There are no significant natural drainage features on the property. The entire site has soils with low infiltration rates. Infiltration of runoff will be promoted by the use of bioretention facilities. Stormwater discharging from the property will be made to mimic natural drainage patterns to the maximum extent practicable.

III.B. USE OF PERMEABLE PAVEMENTS:

Permeable pavements were not used. Soils at the project site have low infiltration rates, and the permeable pavement would be ineffective.

III.C. DISPERSAL OF RUNOFF TO PERVIOUS AREAS:

Because of grading and drainage constraints, an insignificant amount of impervious area could be directed to landscape areas. Instead, most of the expansion area is routed to bioretention facilities.

III.D. STORMWATER CONTROL MEASURES:

Source control measures are proposed for potential sources of pollution, such as storm drain inlets and parking lots, as described below.

IV. DOCUMENTATION OF DRAINAGE DESIGN

IV.A. DESCRIPTIONS OF EACH DRAINAGE MANAGEMENT AREA:

The drainage management areas (DMAs) for the site are shown on Sheet C0.3 of **Attachment 1, Select Improvement Plan Sheets**, summarized in **Table 2. DMA Summary Information** and described in more detail below.

IV.A.1. TABLE OF DRAINAGE MANAGEMENT AREAS

The following table is a summary of Drainage Management Areas (DMA) – **Table 2. DMA Summary Information**.

Table 2. DMA Summary Information			
DMA Name	Surface Type	Area (Square Feet)	Area (Acres)
1	Impervious	23,534	0.53
2	Impervious	64,454	1.48
3	Impervious	21,228	0.489
4A	Impervious/Dock	1,980	0.045
4B	Pervious/Landscape	3,771	0.086
4C	Dock Canopy	122	0.0028
5	Impervious/Pervious	2,301	0.053

IV.A.2. DMA DESCRIPTIONS

DMAs 1 through 5: Drain primarily impervious areas, the parking lot and proposed building. DMAs 1 through 4 drain to Bioretention Facilities 1 through 4 (BF1 through BF4), respectively. After being treated in the Bioretention Facilities, runoff that does not infiltrate into the natural soil underneath will be captured by underdrains. The underdrains will convey runoff to the onsite storm drains that drain to the public storm system in Gateway Road East. DMA 5 will drain directly offsite and not to a bioretention facility due to civil design criteria and grading constraints. However, DMA 5 will be partially self-treating. It should be noted that DMAs 1 and 3 accounts for potential runoff from a future commercial development on the parcel to the north. DMA 4B/C is the truck dock area. Runoff from these DMAs will be pumped to BF4 for treatment. DMA 4C will be a canopy over the dock loading area. The canopy will prevent direct runoff from the loading area, and slot drains will prevent run-on to the loading area. That is, the dock loading area will not have any run-on/off, and it will have a spill collection system that will be hydraulically isolated from the drainage system.

IV.B. TABULATION AND SIZING CALCULATIONS:

This Section describes sizing and design of Bioretention Facilities 1 through 4, as shown on Sheet C0.3 of **Appendix A, Select Improvement Plan Sheets**, and as specified in the 2014 BASMAA Design Manual². As discussed above, it is not feasible to fully treat the

² BASMAA Post-Construction Manual, Design Guidance for Stormwater Treatment and Control for Projects in Marin, Sonoma, Napa, and Solano Counties. Bay Area Stormwater Management Agencies Association (BASMAA) Phase II Committee. July 14, 2014.

relatively small DMA 5 on the south west corner of the property. DMA 5 is not discussed further.

IV.B.1. INFORMATION SUMMARY FOR BIORETENTION FACILITY DESIGN

Summary information for DMA's draining to bioretention facilities is shown in **Table 3. Areas Draining to Bioretention Facilities.**

Table 3. Areas Draining to Bioretention Facilities	
DMA Name	Area (Square Feet)
1	23,534
2	64,454
3	21,228
4A/4B/4C	5,873

IV.B.2. AREAS DRAINING TO BIORETENTION FACILITIES

Table 4A. Sizing Information for Bioretention Facility 1, through Table 4D, Sizing Information for Bioretention Facility 4, show the sizing information for Bioretention Facilities 1 through 4 (BF1 through BF4). BF1 will treat runoff from the DMAs with the corresponding numbers (that is DMA 1 through DMA 4, respectively).

Table 4A. Sizing Information for Bioretention Facility 1.							
DMA Name	DMA Area (Square Feet)	Post-Project Surface Type	DMA Runoff Factor	DMA Area X Runoff Factor	Facility Name:		
					Bioretention Facility 1		
					Sizing Factor	Minimum Facility Size	Proposed Facility Size
1	23,534	Impervious	1.0	23,534			
Total				23,534	0.04	941	981

Table 4B. Sizing Information for Bioretention Facility 2.							
DMA Name	DMA Area (Square Feet)	Post-Project Surface Type	DMA Runoff Factor	DMA Area X Runoff Factor	Facility Name:		
					Bioretention Facility 2		
					Sizing Factor	Minimum Facility Size	Proposed Facility Size
2	64,454	Impervious	1.0	64,454			
Total				64,454	0.04	2,578	3,179

Table 4C. Sizing Information for Bioretention Facility 3.							
DMA Name	DMA Area (Square Feet)	Post-Project Surface Type	DMA Runoff Factor	DMA Area X Runoff Factor	Facility Name:		
					Bioretention Facility 3		
					Sizing Factor	Minimum Facility Size	Proposed Facility Size
3	21,228	Impervious	1.0	21,228			
Total				21,228	0.04	849	1,596

Table 4D. Sizing Information for Bioretention Facility 4.							
DMA Name	DMA Area (Square Feet)	Post-Project Surface Type	DMA Runoff Factor	DMA Area X Runoff Factor	Facility Name:		
					Bioretention Facility 4		
					Sizing Factor	Minimum Facility Size	Proposed Facility Size
4A/4B/ 4C	5,873	Impervious/ Landscape/ Dock	0.36	2,114			
Total				2,114	0.04	85	1,153

Notes:

DMA 4B/C is the truck dock area. Runoff from these DMAs will be pumped to BF4 for treatment. DMA 4C will be a canopy over the dock loading area. The canopy will prevent direct runoff from the loading area, and slot drains will prevent run-on to the loading area. That is, the dock loading area will not have any run-on/off, and it will have a spill collection system that will be hydraulically isolated from the drainage system.

V. SOURCE CONTROL MEASURES

V.A. SITE ACTIVITIES AND POTENTIAL SOURCES OF POLLUTANTS:

Potential pollutant sources were identified for the project. The sources are listed in **Table 5. Sources and Source Control Measures**.

V.B. SOURCE CONTROL TABLE:

Source control measures were selected for the potential pollutant sources, as shown in the following **Table 5. Sources and Source Control Measures**. The most feasible measures were selected, considering site and design constraints.

Table 5. Sources and Source Control Measures		
Potential Source Of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
On-site Storm Drain Inlets	Mark all inlets with the words "No Dumping! Flows to Bay" or similar.	Maintain and periodically repaint or replace inlet markings. Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."
Landscape/Outdoor Pesticide Use/Building and Grounds Maintenance	Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.	Maintain landscaping using minimum or no pesticides.
Sidewalks and Parking Lots		Sweep sidewalks and parking lots regularly to prevent accumulation of litter and debris.
Truck Dock	Loading portion of dock shall be covered and is graded to minimize run-on and runoff from the loading area. The loading area will have a spill collection system.	Move loaded and unloaded items indoors as soon as possible.
Refuse Area	Area is enclosed and covered, and graded to prevent run-on and to minimize runoff.	Inspect receptacles regularly, pick up litter, and clean up spills. Keep receptacles covered.

V.C. FEATURES, MATERIALS, AND METHODS OF CONSTRUCTION OF SOURCE CONTROL BMPS:

Features, materials, and methods of construction of source control BMPs will be as shown on selected sheets of the Improvement Plans provided in **Appendix A, Select Improvement Plan Sheets**. Unless specified otherwise, all construction and materials shall be in accordance with the plans and with County Design Standards.

VI. STORMWATER FACILITY MAINTENANCE

VI.A. OWNERSHIP AND RESPONSIBILITY FOR MAINTENANCE IN PERPETUITY:

Maintenance of stormwater facilities will be the responsibility of the property owner and will be performed by the owner's contractors or employees as part of routine maintenance of buildings, grounds, and landscaping. The applicant will commit to execute any necessary written agreements prior to the County's approval of the building permit. With this agreement, the applicant will accept responsibility for interim operation and maintenance of stormwater treatment and flow-control facilities until such time as this responsibility is formally transferred to a subsequent owner.

VI.B. SUMMARY OF MAINTENANCE REQUIREMENTS FOR EACH STORMWATER FACILITY:

The four (4) bioretention facilities will be inspected and maintenance activities will be completed at least annually. The frequency may be adjusted based on results of inspections. The maintenance activities will be specified in a Maintenance Plan to be approved by the County. The activities are summarized as follows:

Bioretention Facilities:

- a. Clean Up: Remove any soil or debris blocking planter inlets or overflows. Remove trash that typically collects near inlets or gets caught in vegetation.
- b. Prune Or Cut Back Plants: For health and to ensure flow into inlets and across the surface of the facility. Remove and replant as necessary.
- c. Control Weeds: By manual methods and soil amendment.
- d. Add Mulch: Replace compost mulch to maintain 1-inch to 2-inch thickness.
- e. Check Signage: Remove graffiti and replace, if necessary.

VII. CONSTRUCTION CHECKLIST

Table 6. Construction Plan C.3 Checklist shown below summarizes the source control and treatment control measures proposed in for this project. Referenced Improvement Plan sheets are included in **Appendix A, Select Improvement Plan Sheets**.

Table 6. Construction Plan C.3 Checklist		
Stormwater Control Plan Section	Source Control or Treatment Control Measure	See Plan Sheet Nos.
V.B	Mark all inlets with the words "No Dumping! Flows to Bay" or similar.	C0.3
IV.C.4	Bioretention Facilities 1 through 4	C0.3

VIII. CERTIFICATIONS

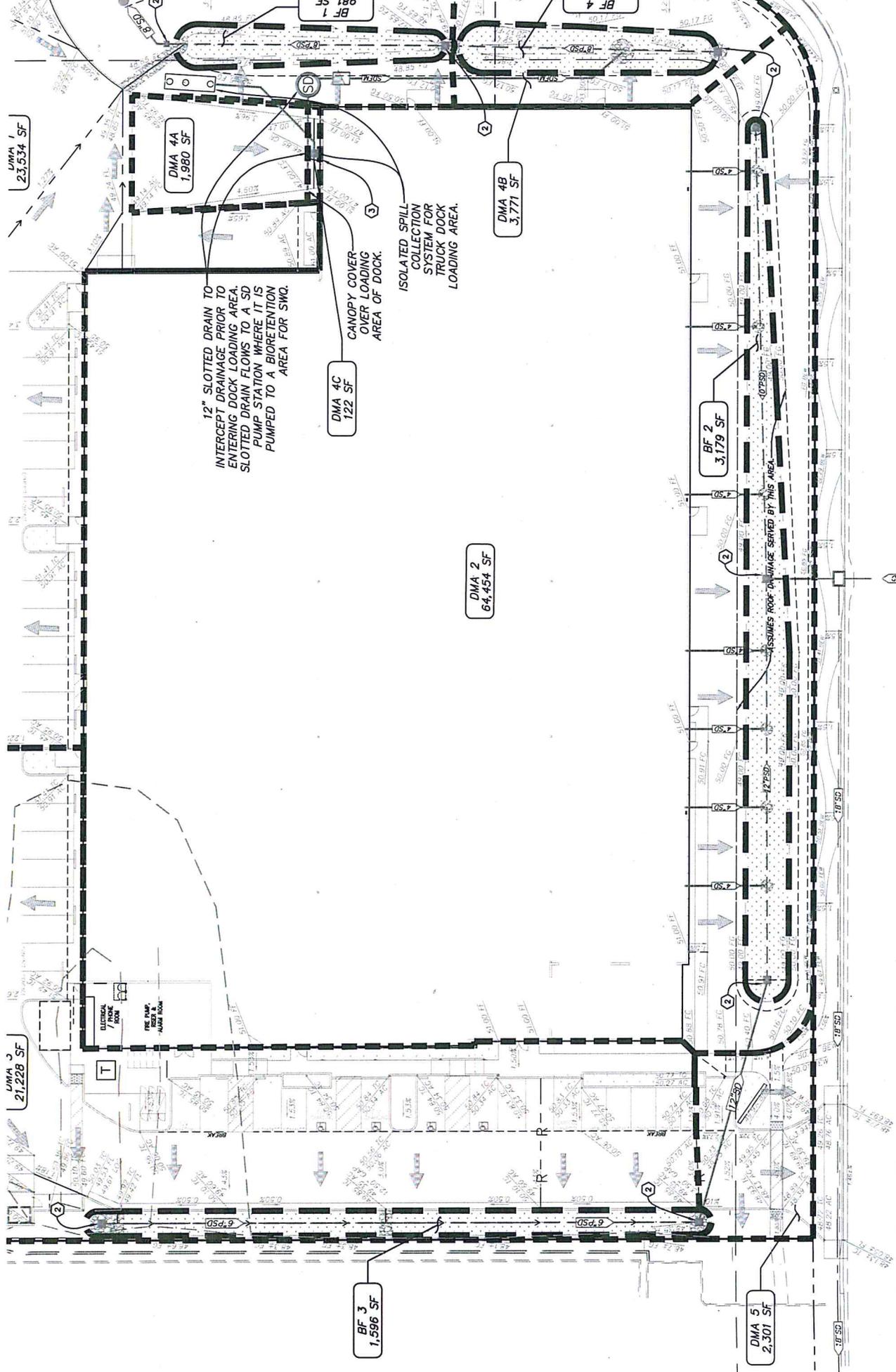
The design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the current edition of the BASMAA Post-Construction Manual, to the maximum extent practicable.

APPENDIX A

SELECT

IMPROVEMENT PLAN

SHEETS



GATEWAY ROAD EAST