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Stormwater Control Plan

**Stormwater Control Plan
For a Regulated Project
For Use Permit Application
Innova Napa Gateway Road East
151 Gateway Road East
Napa County, CA 94558**

March 28, 2018

**Innova Equity, Inc.
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APPENDIX A PRELIMINARY IMPROVEMENT PLANS

I. PROJECT DATA

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

Table 1. Project Data Form	
Project Name/Number	Innova Napa Gateway Road East
Application Submittal Date	March 2018
Project Location	151 Gateway Road East, Napa, California APN: 057-200-002, 057-200-003
Project Phase No.	N/A
Project Type and Description	Industrial Warehouse and Office
Total Project Site Area	4.37-Acre Site Area
Total New and Replaced Impervious Surface Area	144,892 Square Feet (3.33 Acres)
Total Pre-Project Impervious Surface Area	0 Square Feet
Total Post-Project Impervious Surface Area	Approximately 75% of developed area (3.33 acres developed)

II. SETTING

II.A. PROJECT LOCATION AND DESCRIPTION:

The project location and Site Plan are shown on Sheet C-201 of **Appendix A, Preliminary Improvement Plans**. The project is located at 151 Gateway Road East, in unincorporated Napa County, California (Assessor's Parcel Number: 057-200-002 & 057-200-003). The property is a roughly 4.37 acres, with all 4.37 acres being undeveloped land. As shown on Sheet C-201 of **Appendix A, Preliminary Improvement Plans**, the proposed project includes a 68,679 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 500 feet wide by 390 feet deep. The ground elevation of the parcel ranges from approximately 52 to 68 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. 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 that can connect to the project's 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. The east end of the property has a 45-foot landscape easement on it.

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.

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

There are no significant natural drainage features on the property. 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 for this project.

III.C. DISPERSAL OF RUNOFF TO PERVIOUS AREAS:

Runoff will be dispensed to pervious swales and/or bioretention facilities.

III.D. STORMWATER CONTROL MEASURES:

Source control measures are proposed for potential sources of pollution, such as storm drain inlets, truck dock, refuse areas 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 C-501 of **Appendix A, Preliminary Improvement Plans**, 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	35,680	0.82
2	Impervious	66,865	1.54
3	Impervious	21,515	0.49
4	Pervious/landscaped	14,850	0.34
5	Pervious/landscaped	6,968	0.16
6	Impervious	550	0.01
7	Impervious	43,707	1.00

IV.A.2. DMA DESCRIPTIONS

DMAs 1, 2, 3 and 7: Drain primarily impervious areas, the parking lot and proposed building. DMAs 1, 2, 3 and 7 drain to Bioretention Facilities 1, 2, 3 and 7 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.

DMAs 4 and 5: Drain to pervious landscaping areas. Swales will collect runoff allowing percolation into the soil. Excess runoff will flow into Bioretention facilities 2 and 7 respectively.

DMA 6: Several small areas on the edge of the property will flow directly offsite and not to a Bioretention facility due to design and grading constraints.

IV.B. TABULATION AND SIZING CALCULATIONS:

This Section describes sizing and design of Bioretention Facilities 1 through 3, as shown on Sheet C-501 of **Appendix A, Select Improvement Plan Sheets**, and as specified in the 2014 BASMAA Design Manual¹.

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

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

Table 3. Areas Draining to Bioretention Facilities	
DMA Name	Area (Square Feet)
1	35,680
2	66,865
3	21,515
4	14,850
5	6,968
7	43,707

IV.B.2. AREAS DRAINING TO BIORETENTION FACILITIES

Table 4A. Sizing Information for Bioretention Facility 1, through Table 4D, Sizing Information for Bioretention Facility 7, show the sizing information for BF1, 2, 3 and 7. The bioretention facilities will treat runoff from the DMAs shown in the tables.

¹ 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.

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	35,680	Impervious	1	35,680			
Total				35,680	0.04	1,427 SF	1,618 SF

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	66,865	Impervious	1.0	66,865			
4	14,850	Pervious/landscaped	0.1	1,485			
Total				68,350	0.04	2,734 SF	3,717 SF

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 2		
					Sizing Factor	Minimum Facility Size	Proposed Facility Size
3	21,515	Impervious	1.0	21,515			
Total				21,515	0.04	860 SF	887 SF

Table 4D. Sizing Information for Bioretention Facility 7.							
DMA Name	DMA Area (Square Feet)	Post-Project Surface Type	DMA Run off Factor	DMA Area X Runoff Factor	Facility Name:		
					Bioretention Facility 3		
					Sizing Factor	Minimum Facility Size	Proposed Facility Size
7	43,707	Impervious	1.0	43,707			
5	6,968	Pervious/landscaped	0.1	697			
Total				44,404	0.04	1,776 SF	2,051 SF

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."

Table 5. Sources and Source Control Measures		
Potential Source Of Runoff Pollutants	Permanent Source Control BMPs	Operational Source Control BMPs
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 prevent run-on and runoff from the loading area. Floor drains within the covered portion of the dock will be plumbed to the sanitary sewer.	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, Preliminary Improvement Plans**. 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 three (3) 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.	C-501
IV.C.4	Bioretention Facilities 1 through 3	C-501

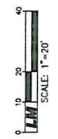
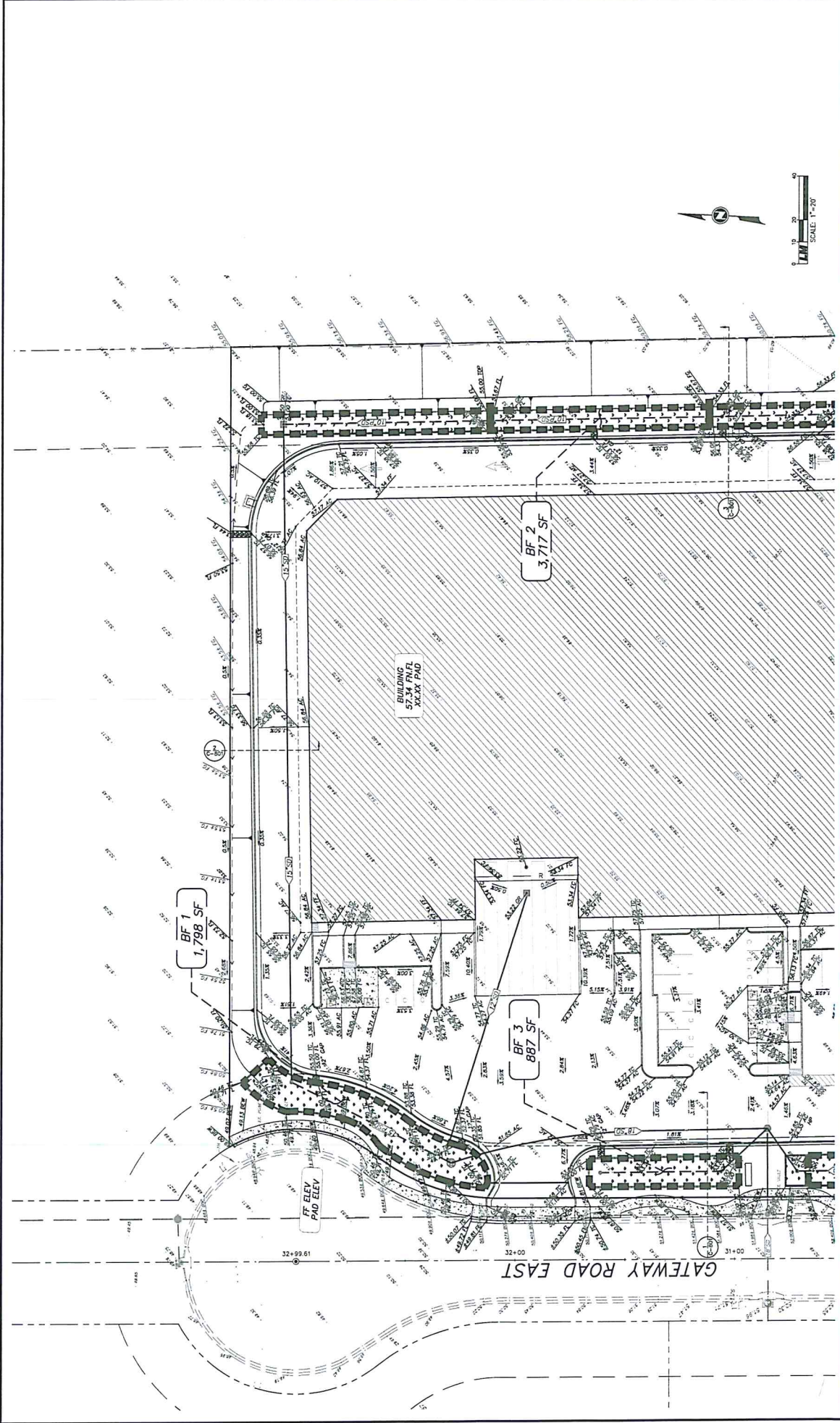
VIII. CERTIFICATIONS

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

PRELIMINARY

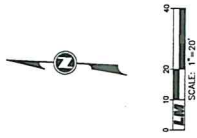
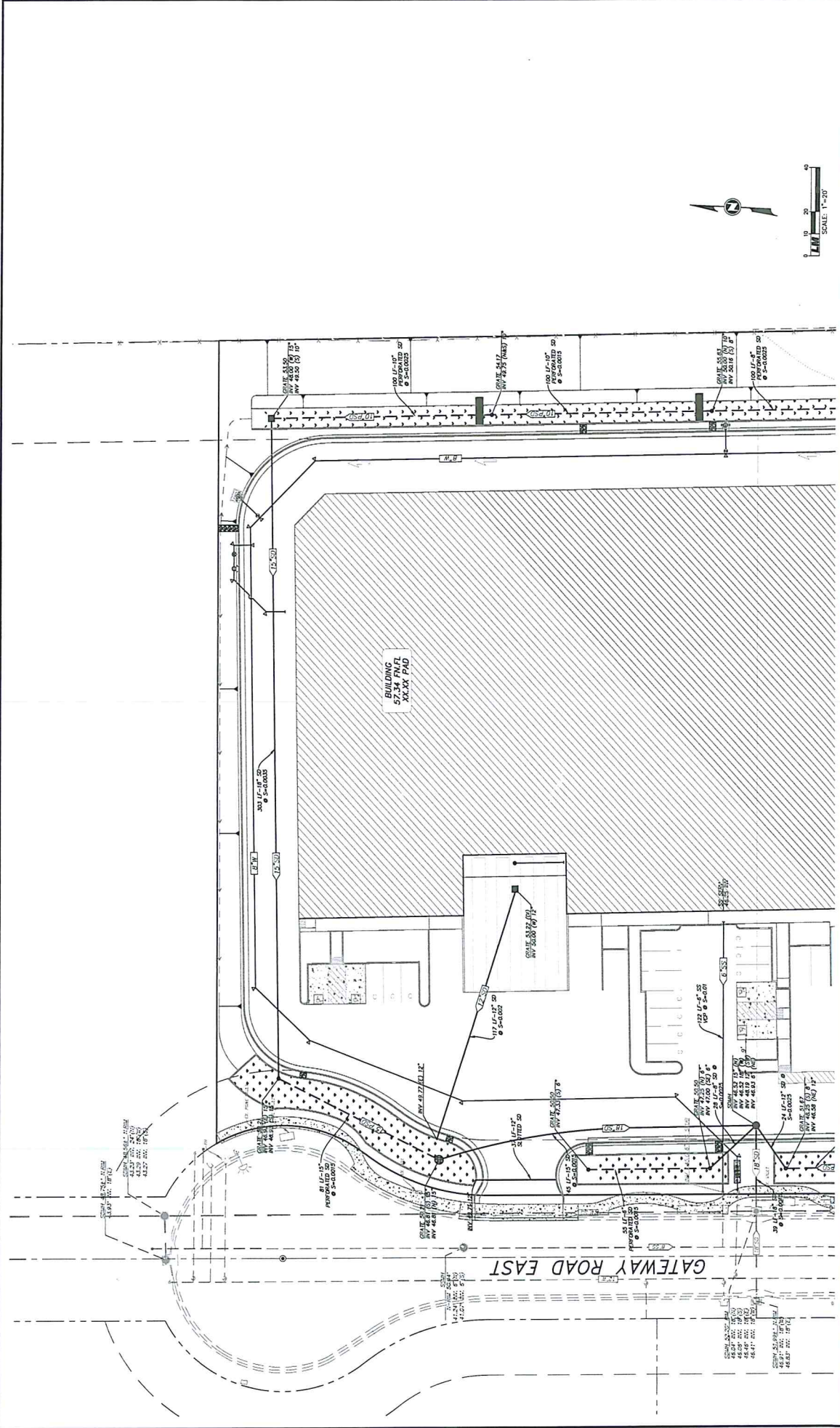
IMPROVEMENT PLANS



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 DATE: 1/29/18

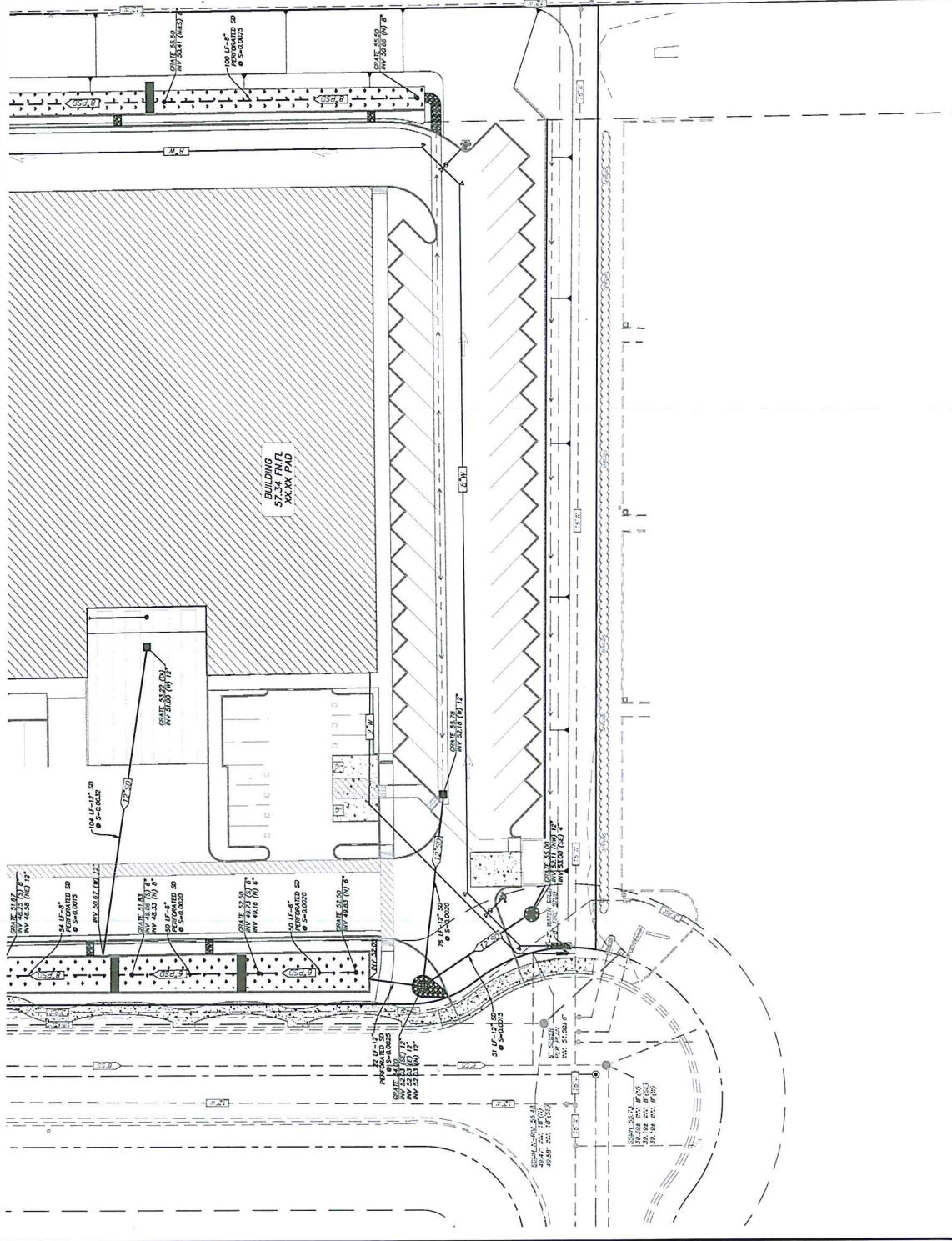


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CHECKED BY <u>BBB</u>				

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 DATE: 3/29/18

PRELIMINARY IMPROVEMENT PLANS
 FOR
INNOVA WAREHOUSE
 CITY OF NAPA CALIFORNIA
 UTILITIES PLAN

SCALE **1"=20'**
 CAD FILE: 5847-1-C401
 DATE: 3/29/18
 SHEET NO. 307-1
 SHEET 4 OF 8



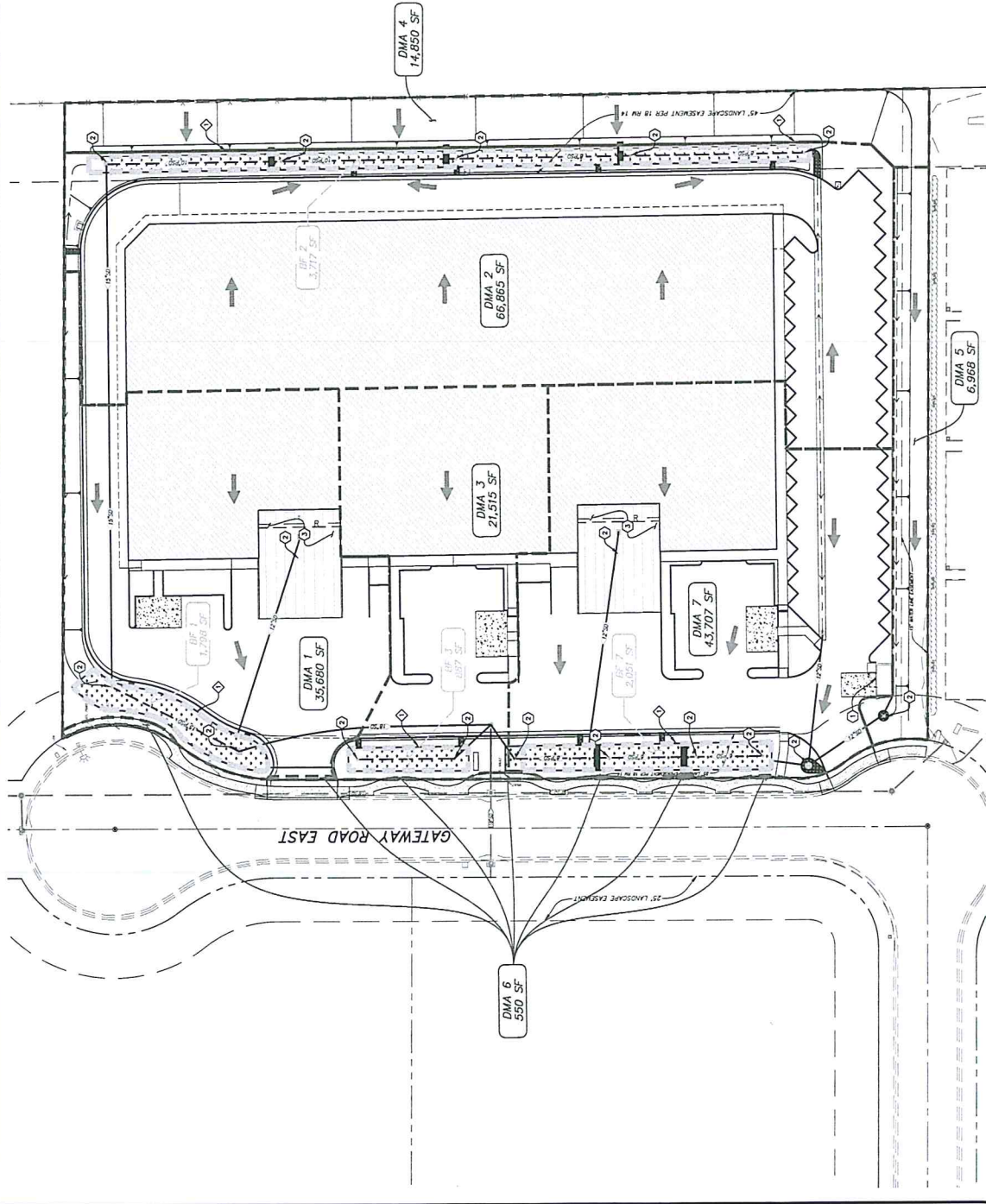
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<p>DATE <u>3/29/18</u> P.E. <u>41894</u> BY <u>BRYAN P. BOWING</u></p>			
<p>CITY OF MAPA CALIFORNIA</p>			
<p>UTILITIES PLAN</p>			
<p>PRELIMINARY IMPROVEMENT PLANS FOR INNOVA WAREHOUSE</p>			
SCALE 1"=20'		CAD FILE# <u>3847-1-C402</u>	
DATE: <u>3/29/18</u>		SHEET NO. <u>3847-1</u>	
JOB NO. <u>3847-1</u>		SHEET 5 OF 8	
<p>C-402</p>			

POTENTIAL POLLUTION SOURCES AND CONTROL MEASURES.

1. REFUSE AREA, COVERED AND ENCLOSED FOR STORAGE. PROVIDE STORMWATER RUN-ON AND SWAMP. SEE GRADING PLAN FOR FURTHER DETAIL.
2. STORM DRAIN INLET, MARK WITH WORDS "NO DUMPING" TO DAPT. SEE UTILITY PLAN FOR FURTHER DETAIL.
3. THE LOADING AREA WILL BE COVERED AND HYDRAULICALLY CONNECTED TO THE DRAINAGE DRAINS WITHIN THE COVERED PORTION OF THE DOCK AREA WILL BE FLOWED TO THE SANITARY SEWER.

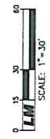
TREATMENT CONTROL MEASURES.

1. INSTALL BIOTRETION FACILITY PER RETAIN. 1 SHEET C-502 (DETAILS TO BE ADDED FOR BUILDING PERMIT APPLICATION). SEE GRADING PLAN AND LANDSCAPING PLAN FOR MORE DETAIL.



LEGEND

- DMA DRAINAGE MANAGEMENT AREA
- BF BIOTRETION FACILITY
- DMA 1 1,000 SF DRAINAGE MANAGEMENT AREA NAME AND SQUARE FOOTAGE
- BF 1 1,000 SF BIOTRETION FACILITY NAME AND SQUARE FOOTAGE
- WATER QUALITY AREA BOUNDARY
- BIOTRETION FACILITY NAME AND SQUARE FOOTAGE
- BIOTRETION FACILITY AREA
- DIRECTION OF FLOW
- BIOTRETION FACILITY BOUNDARY



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PRELIMINARY IMPROVEMENT PLANS
 FOR
INNOVA WAREHOUSE
 CITY OF MAPA
 CALIFORNIA
 STORMWATER CONTROL PLAN

SCALE 1"=30'
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 CAD FILE: 18-1-C501.dwg
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 SHEET 6 OF 8
 JOB NO. 1847-1

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