

# City of Bay Minette Site Plan Review Application 

301 D’0live Street • Bay Minette, Alabama 36507

Office Use Only
Case No.SP. 24003
Fee: $\mathbf{\$ 5 0 0 . 0 0}$
Paid: $\square$ Cash $\square$ Check暑 Credit Card

Phone (251) 580-1650 • COBM_ Planning@cityofbayminetteal.gov
Are you the property owner? ㅁ Yes 夏 No
(If you are not the property owner, you must submit an Agent Authorization Form signed by the property owner)
Applicant Name: Plasmine Technology (Bryan Wiggins)
Date: 1/24/24
Mailing Address: 251 Newport Parkway
City: Bay Minette
State: AL
Zip Code: 36507
Phone Number: 251-937-2771
Email: bryanwiggins@plasmine.com

## Site Information

Property Address: 251 Newport Pkwy
or Property Location: $\qquad$
*Parcel No.: 23-02-10-3-000-029.000 \& 23-02-10-3-000-082.000
*PPIN No.: 35534 \& 62861
*Parcel or PPIN information must be completed

Request: Any necessary permitting for addition of tanks and parking area.

I, the undersigned, do hereby request the City of Bay Minette Planning Commission to grant a Site Plan Review for the location to determine if it meets the regulations of the Zoning Ordinance for the reason(s) stated above. I understand and authorize City Staff to conduct site visits, as needed in relation to this request.
Bryan Wiggins
Dyitally signed by Bryan Wiggins
Data: 2024.01.25 14:44:37-0600
1/25/24
Signature of Applicant (Owner of Property of Authorized Agent)
Date

## Submittal Requirements

## Application

Fee paid in full
Agent Authorization Form (if applicant is not the owner)
Complete Legal Description of Property
Plot Plan or Survey - indicating any existing structures, proposed structures, and setbacks from property lines Submittal Requirements listed in 8.9 Site Plan, as applicable


# Plasmine Technology, Inc. Trailer Storage \& Off-Street Parking Drainage Narrative 

## Existing Site Conditions:

Plasmine Technology, Inc. is located at 251 Newport Pkwy, Bay minette, AL. The proposed trailer storage area will be located in the southeast corner of the property along the north right of way of Newport Pkwy. Currently there is a 0.35 -acre asphalt parking lot located in the southeast corner of the property. The total pre-development drainage area is approximately 5.18 acres. Roughly 2.46 acres are currently wooded, and 1.2 acres are covered in heavy grass. The area currently drains south to Newport Pkwy right of way. See Drainage Area maps in Appendix E.

## Proposed Site Development:

The site is intended to be used as a tanker trailer storage and off-street parking area. All construction will be at grade level with no vertical construction. A 1.6-acre concrete surface will be provided for the tanker trailer storage area. A 0.4 -acre asphalt parking lot will be provided for office parking. All concrete parking surface will be contained within the interconnected north and south ponds and discharge will be controlled by slide gate valves to decrease the risk of contamination in case of tanker trailer spillage.

Primary site access during construction and operation will be from Newport pkwy, a paved, public right of way serving several industrial facilities, near and adjacent to this project.

The developed areas will be fenced and gated to limit access onto the site.
Two storm water retention ponds, North Pond and South Pond, will be constructed. To meet SPCC recommendations these should be sized to contain the $25-\mathrm{YR}, 24 \mathrm{HR}$ storm runoff from the area they will receive storm water from. However, these ponds have been designed to contain the calculated 100-Year, 24 -Hour storm runoff. The ponds will be interconnected via a 24 " diameter reinforced concrete pipe with a slide gate valve in the north pond outfall structure. The south pond outfall structure will include an additional slide gate valve to prevent discharge from both the north and south ponds during rain events. These valves will only be opened after impounded storm water has been tested and is found to be free of potential chemical leakage. The outfalls of both ponds will discharge water to a riprap pad adjacent to the existing Newport Pkwy right of way once the valves are opened.

A smaller storm water detention pond, Office Parking lot pond will be constructed to meet the stormwater detention requirements for the office parking lot. The pond outfall will also drain to the riprap pad adjacent to the existing Newport Pkwy right of way separate from the north and south pond outfall.

See Drainage Area maps in Appendix E.

## Methodology:

Methodology used to assess the hydrology and hydraulics of the existing and proposed conditions are considered regionally acceptable by multiple governing jurisdictions within the state of Alabama. They are as follows: - Modified Rational Method for converting rainfall to runoff (Appendix D: Driven Engineering Inc. Calculation Spreadsheets).

- TR55 for calculating retention pond volume. (See appendix C for calculations)



## Results:

The results of the analysis are provided as appendices of this narrative; however, we have summarized them below: The drainage area map was used to determine a drainage area based on contours using topographic survey data.

## Pre- and Post- Development Runoff:

The Pre-Development drainage area to the subject outfall location including portions of the site to not be developed is 5.18 -acres. The calculated pre-development runoff for a $10-\mathrm{yr}$ storm is 13.32 cfs , and a 100 -yr return period storm is 16.75 cfs . (see page 6 for more details) The outfall pipe size for the containment/detainment ponds was chosen to be a 15 " to throttle the flow once the valves are opened. The parking lot pond flow would be finished by the time the valves are opened. During a storm event up to a $100-\mathrm{yr}$ storm, the calculated postdevelopment discharge will be no more than 4.24 cfs from the parking lot pond only (see page 8 ). After the $100-$ yr storm event is over, the off street parking pond outflow should be finished, and after testing the water the site's gate valves may be opened from the larger ponds. At that point no more than 4.96 cfs will be discharging, which is manning's full flow from a 15 " pipe @ $0.5 \%$, still less than calculated pre-development peak discharge. All of this is designed to enter a riprap stilling basin before exiting the site to the current discharge area in the existing ROW. At no time will calculated post-development peak flows exceed $40 \%$ of pre-development peak flows. Appendix D, Page 7 calculates a likely never to be needed emergency overflow for the two large ponds that assumes if all ponds have filled up due to a 100 -year rain event and another 100-year event occurs, the overflow weir will need to be roughly 16 ft wide at the available depth, to prevent a blow-out of the pond berms.

## North and South Pond:

Drainage area 1 is $2.57+/-\mathrm{AC}$ for the north $\&$ south detention ponds. The current use of the land is wooded and grassy. After construction, 1.45 -acres will be paved parking and trailer storage and 0.9 -acres used for detention, with the remaining area ( 0.22 acres) being grassed. The pond volume was checked using a depth of 10 inches of rain per the SCS rainfall intensity map for Bay Minette, AL for a 25 -year, 24 - hour storm (Appendix A, Fig B-6.) The volume was also checked for the 12 -inch rainfall depth acquired from the 100-year, 24-hour storm (Appendix B, Fig B-8.) Regardless of the finished surfaces within this area we have assumed no infiltration and no evaporation for a very conservative estimate of needed containment volume. See Appendix C, page 5 for volume calculations.

## Office Parking Pond:

Drainage area 2 is $0.90+/$ AC for the office parking lot pond. The current use of the land is mostly grass, with a 0.35 -acre asphalt parking lot. After construction, 0.38 -acres will be asphalted for office parking with the rest remaining grassy area. The pond volume was calculated for a 50 -year storm being detained and limiting the outflow to a $10-\mathrm{yr}$ storm release rate as required by the City of Bay Minette. (See Appendix D: Driven Engineering Inc. Modified Rational Method Drainage Calculation Spreadsheet, on page 8).

The point of discharge will be armored with riprap for energy dissipation and erosion control.


Approved by Avalisha Fisher, P.E.

Plasmine Technology, Inc. Trailer Storage \& Off-Street Parking Drainage Narrative

## Appendix A: 25-YR, 24-HR Rainfall Chart

Figure B-6 25-year, 24-hour rainfall


Figure B-6: 25-Year, 24-Hour Rainfall

## Appendix B: 100-YR, 24-HR Rainfall Chart

Figure B-8 100-year, 24-hour rainfall


Figure B-8: $100-\mathrm{YR}, 24$-HR Rainfall

## Appendix C: TR-55 Pond Volume Calculations

Assumptions: No Infiltration and No evaporation, every drop of rain will be stored in the detention ponds:

Drainage Area $1=2.57 \mathrm{AC}$
25-YR, 24-HR Rainfall from Figure B-6 Appendix A for Bay Minette, AL = 10" 100-YR, 24-HR Rainfall from Figure B-8 Appendix B for Bay Minette, AL = 12"

Pond Volume Required for 25 YR Storm $=$ $(2.57 \mathrm{AC}) \times(43,560 \mathrm{SF}) \times(0.83 \mathrm{FT})=92,900 \mathrm{CF}$

Pond Volume Required for 100 YR Storm $=$ $(2.57 \mathrm{AC}) \times(43,560 \mathrm{SF}) \times(1 \mathrm{FT})=112,000 \mathrm{CF}$

At Emergency Overflow EL: 262.25
North Pond Volume $=54,851 \mathrm{CF}$
South Pond Volume $=61,114$ CF
Total Pond Volume $=115,965 \mathrm{CF}>100$ YR STORM EVENT RUNOFF

## Appendix D: Driven Engineering Inc. Modified Rational

Method Drainage Calculation Spreadsheets


| 8005 Morris Hill Road |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Project Number |  |  |  |  |
| Semmes, AL 36575 |  |  |  |  |  |  | 23105 |  |
| (251)649-4011 |  |  |  | Date: |  |  |  |  |
|  |  |  |  |  |  |  | 3/5/2024 |  |
| PROJECT NAME |  |  |  |  |  |  |  |  |
| EMERGENCY OVERFLOW FOR ENTIRE AREA assumes all ponds full and another 100yr storm hits |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Runoff Coefficient Determination |  |  |  |  |  |  |  |  |
|  | Pre-Development |  |  |  |  | Post-Develop | ment |  |
| Area | Acres | Coefficient | C*A |  | Area | Acres | Coefficient | C*A |
| Exist. Pervious | 2.57 | 0.35 | 0.90 |  | Tot Imperv | 1.45 | 0.9 | 1.31 |
|  |  |  | 0.00 |  | Proposed P |  |  | 0.00 |
|  |  |  | 0.00 |  |  |  |  | 0.00 |
|  |  |  |  |  |  |  |  | 0.00 |
| Total Area | 2.57 |  |  |  | Undev | 1.12 | 0.35 | 0.39 |
| Weighted Average= |  | 0.35 | 0.90 |  | Weighted A |  | 0.66 | 1.70 |


| Q 100Pre $=9.89$ | Q 100 Post $=18.67$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Depth of emergency overflow | $11.00 \mathrm{in} / \mathrm{hr}$ |  |  |
| Min. Overflow weir length $=$ | 15.86 ft | 0.50 ft |  |  |



| Post Development Control Structure to meet Design release rate |
| :--- |
| Exist. Rel. Rate(CFS)= |
| Forced Release Rate (cfs)= |


| Release Rate used for calc |
| :--- |
| Pond/Box Invert= |
| Pond Storage |
| elevation/ |
| Popoff= |
| Top of berm= |
| Req'd Slot width $=$ |
| Min. Overflow weir length $=$ |
| Outflow Rate allowed |
| Pond Size Required |


| Rainfall |  | Rainfall | Peak | allowable | release | Storm | Storm | Required |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Duration |  | Intensity | Inflow | release | intensity | Inflow | Outflow | Storage |
| (Minutes) |  | (Inches) | (CFS) | (cfs) | (inches) | (Cubic Ft) | (Cubic Ft) | (Cubic Ft) |
|  | 5 | 10.1 | 5.88325 | 4.24 | 8.75 | 1764.98 | 1273.13 | 491.85 |
|  | 6 | 9.9 | 5.76675 | 4.24 | 8.42 | 2076.03 | 1527.75 | 548.28 |
|  | 7 | 9.7 | 5.65025 | 4.24 | 8.13 | 2373.11 | 1782.38 | 590.73 |
|  | 8 | 9.5 | 5.53375 | 4.24 | 7.86 | 2656.20 | 2037.00 | 619.20 |
|  | 9 | 9.2 | 5.359 | 4.24 | 7.61 | 2893.86 | 2291.63 | 602.24 |
|  |  | 9 | 5.2425 | 4.24 | 7.38 | 3145.50 | 2546.25 | 599.25 |
|  | 11 | 8.65 | 5.038625 | 4.24 | 7.15 | 3325.49 | 2800.88 | 524.62 |

## Detention Pond Capacity:

| Description | elevation | area of contour (sf) | volume incr to elev (cf) | total vol to elev (cf) | length | width | Volume <br> (Cubic Feet) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |
|  | 259.5 | 698 |  |  |  |  |  |
|  | 260 | 892 | 397.5 | 397.5 |  |  |  |
| Popoff el | 261 | 1320 | 1106 | 1503.5 |  |  |  |
| Top Berm | 261.5 |  |  |  |  |  | 1503.5 |
| Greatest Required Storage |  |  |  |  |  |  | 619.2 |
|  |  |  |  |  | ovided | is.... |  |

## APPENDIX E: DRAINAGE AREAS MAPS

## Pre-Development areas:



## Post-development areas:




general prouet notes













 12 AL FIL AND EmBANKMENT Construction Shall be Compacted as reaurred in Larers not to exceed


15. AL slopes must te stailized as scon as possilet to prevent excessve erosion

6. all materalls shall en new unless used or salvaged materblis are authorzed by the oune



















LEGEND


| $A$ |
| :---: |
|  |
|  |
|  |
|  |










