

Stormwater Drainage Report comments - Copy.pdf Markup Summary

Bret Dilts - DPW Engineering (3)

to MDDDP & DBPS and are
drainage swale along the west
amed to be bypassing through
and ultimately discharging
MDDDP, the existing conditions
to be conveyed in the Bent
s (30.3 cfs) are assumed to
l through Bent Grass Pond 1.
Residential Filing No. 1
Grass MDDP & DBPS
loodplain and it is in FEMA

Unresolved: Please indicate the specific MDDP you are referencing.

Service (NRCS) Web Soil
Columbine gravelly sandy loam,

Subject: Callout
Page Label: 4
Author: Bret Dilts - DPW Engineering

TAIT Response:

The report has been fully referenced here as, "MDDP & DBPS Amendment for the Bent Grass Development prepared by Galloway & Company, Inc dated Jan 2021 and revised September 2021"

Unresolved: Please indicate the specific MDDP you are referencing.

APPENDIX E

HYDRAULIC COMPUTATIONS

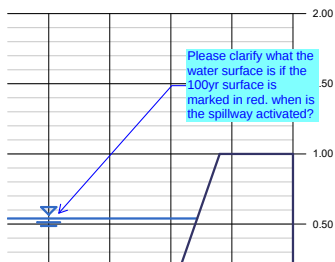
Unresolved: Provide all riprap sizing calculations anywhere riprap is called for (could not locate if added)

Subject: Engineer
Page Label: 20
Author: Bret Dilts - DPW Engineering

TAIT Response:

Riprap sizing provided. There is a section in the report body for the description and calculations in the appendices.

Unresolved: Provide all riprap sizing calculations anywhere riprap is called for (could not locate if added)



Subject: Engineer
Page Label: 20
Author: Bret Dilts - DPW Engineering

TAIT Response:

The lower water surface is the operational 100-year storm water surface elevation. In the regular operating conditions, it discharges over the top of the outlet structure but does not discharge through the emergency overflow spillway. The upper surface has been labeled as the Clogged Outlet condition for the 100-year storm and flow is conservatively take as the sum of peak flows across the site for the 100-year storm. This surface would only be applicable to a 100-year storm paired with an emergency situation like a clogged outlet. Storms exceeding the 100-year storm may also over top through the emergency overflow spillway.

Please clarify what the water surface is if the 100yr surface is marked in red, when is the spillway activated?

These flows were not described in the Bent Grass Resident drainage report but were documented in the Bent Grass MI floodplain.

Regarding the stormwater pond and high groundwater:

Since groundwater was not found within ~10 ft of the bottom of the proposed pond I agree that no changes to the design are required to address this. However, since shallow groundwater was observed elsewhere on the site and seasonal monitoring was not done I do believe there is some risk that the pond is impacted. If groundwater is observed in the pond during construction we may request something like a pond liner is installed. To get ahead of this and prevent delays during construction it may be worthwhile to provide a pond liner detail in this design. This is just a suggestion and is not required. If you would like me to send you some example designs for a pond liner please reach out to myself.

no groundwater encountered in Bore B-8 located in north there is up to 5 feet of excavation in the north end of the pond.

Subject: SW - Textbox
Page Label: 4
Author: EPC Stormwater- Zachary

TAIT Response:
Noted.

This has been considered but it has been decided by our construction team to pursue construction and address this issue if encountered at the time of construction.

Regarding the stormwater pond and high groundwater:

Since groundwater was not found within ~10 ft of the bottom of the proposed pond I agree that no changes to the design are required to address this. However, since shallow groundwater was observed elsewhere on the site and seasonal monitoring was not done I do believe there is some risk that the pond is impacted. If groundwater is observed in the pond during construction we may request something like a pond liner is installed. To get ahead of this and prevent delays during construction it may be worthwhile to provide a pond liner detail in this design. This is just a suggestion and is not required. If you would like me to send you some example designs for a pond liner please reach out to myself.

basin OS-25, flow will fill up inlet structure and flows into during the maximum 100-year nt Grass Meadows Drive have

Separate pervious area?
eparate, ensuring that all efer to Appendix E for swale

Subject: SW - Textbox with Arrow
Page Label: 8
Author: EPC Stormwater- Zachary

TAIT Response:
Revised to separate pervious area.

Separate pervious area?

irectly into ROW, but the flow of 1.04 cfs in le to the total flow within Bent Grass Meadc .A.1.a, flows from A7 have been excluded f al flow does not exceed 1 acre and it is not 2CM for treatment of flows.

nsidered on-site basins, they will not be rout led within Pond 1 sizing volume. Runoff in ds within the basin.

Subject: SW - Textbox with Arrow
Page Label: 9
Author: EPC Stormwater- Zachary

TAIT Response:
Corrected to Area.

area?

[illegible]

stage = 0 ft)

Calculated Parameters for Spillway

If you will override the CUHP values please do so for all storms, the spreadsheet currently shows there is less runoff in the 50 year than the 5 year.

[illegible]

Sharp
20.00
1.00
4.00

Depth
Q (cfs)
Area (s)
Velocity
Top W

3.10
nown Q
26.24

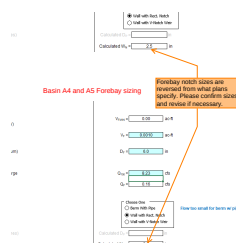
5.0 in MHFD calcs.
Please confirm.

TAIT Response:
The CUHP values are being used on the MHFD Detention calculations instead of being overridden using rational. Updates have been made to the orifice plate in order to meet requirements.

If you will override the CUHP values please do so for all storms, the spreadsheet currently shows there is less runoff in the 50 year than the 5 year.

TAIT Response:
Side slopes have been changed to 4:1.

5.0 in MHFD calcs. Please confirm.



TAIT Response:
The forebay calculations were updated. The plans have been corrected to match the report.

Forebay notch sizes are reversed from what plans specify. Please confirm sizes and revise if necessary.

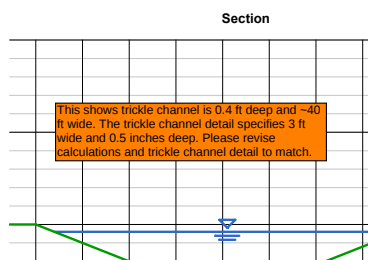
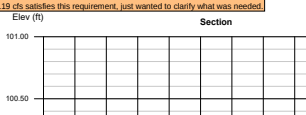
Sluice (70)	= 0.00	Q (cfs)
N-Value	= 0.030	Area (sq ft)
Calculations		Velocity (ft/s)
Compute by:	Known Q	Wetted Perimeter (ft)
Known Q (cfs)	= 8.19	Crit Depth (ft)
		Total Width (ft)
		EGL (ft)

(Sta, El, n)-(Sta, El, n)...

TAIT Response:
The trickle channels have been sized to convey 2 x the upstream forebay discharge rates.

Note: Per DCMv2 – Chap 4.2, trickle channel should at a minimum provide capacity equal to twice the release capacity at the upstream forebay outlet(s).

8.19 cfs satisfies this requirement, just wanted to clarify what was needed.



TAIT Response:
The trickle channels have been sized to convey 2 x the upstream forebay discharge rates. Updated channel calculations are included in the report.

This shows trickle channel is 0.4 ft deep and ~40 ft wide. The trickle channel detail specifies 3 ft wide and 0.5 inches deep. Please revise calculations and trickle channel detail to match.

Author: Laura Besler

TAIT Response:

The channel has been evaluated and Turf Reinforcement Mat was added at one of the corners in order to stabilize the surface longterm. See the description in the report and the appendices for calculations.

Comment in Email from Jeff Rice

There is a section in the report describing the headwater conditions. A culvert report has been added to the appendix to show the Headwater conditions and that it aligns with the exhibits that were previously providing showing the overtopping flows along Bent Grass Drive.

Also, regarding the drainage report, we need to make sure the inflow/headwater calculations for the proposed public storm drain are included as that will affect the overtopping.