Water Resource Engineering Division
Dane County Land & Water Resources Department
Jeremy Balousek, P.E., Division Manager

Urban Water Quality Grant Application

Section 1: Project Information

Project Name: Wingra Park Screen Structure

Municipality: City of Madison

Contact:

Name: Greg Fries, P.E. Title: Principal Sanitary and Storm Engineer

Address: 210 Martin Luther King Jr Blvd Phone: 608-267-1199

Madison, WI 53703 Email: gfries@cityofmadison.com

Section 2: Summary of Project

Project Location:

Municipality: Madison

Latitude/Longitude: 43.056869 / -89.426947
(Decimal coordinates to 6 places required, coordinates at the center of the project)

Expected Project Costs: $350,000

Cost share requested: 100,000

- ☒ 50% (Not to Exceed $100,000)
- ☐ 75% (Top Ten Outfall only, no cap. Outfall Name: _____)

*If checked- please include checklist item 9

Please sign and return this application to Dane County Land and Water Resources. Projects will be evaluated and awarded cost sharing as funds remain available.

Authorized signature G. J. Fries Date 6/23/17

Printed or typed name GREGORY J. FRIES Title PRINCIPAL ENGINEER 2

LWRD Use:
Application Received: _____ Date: _____

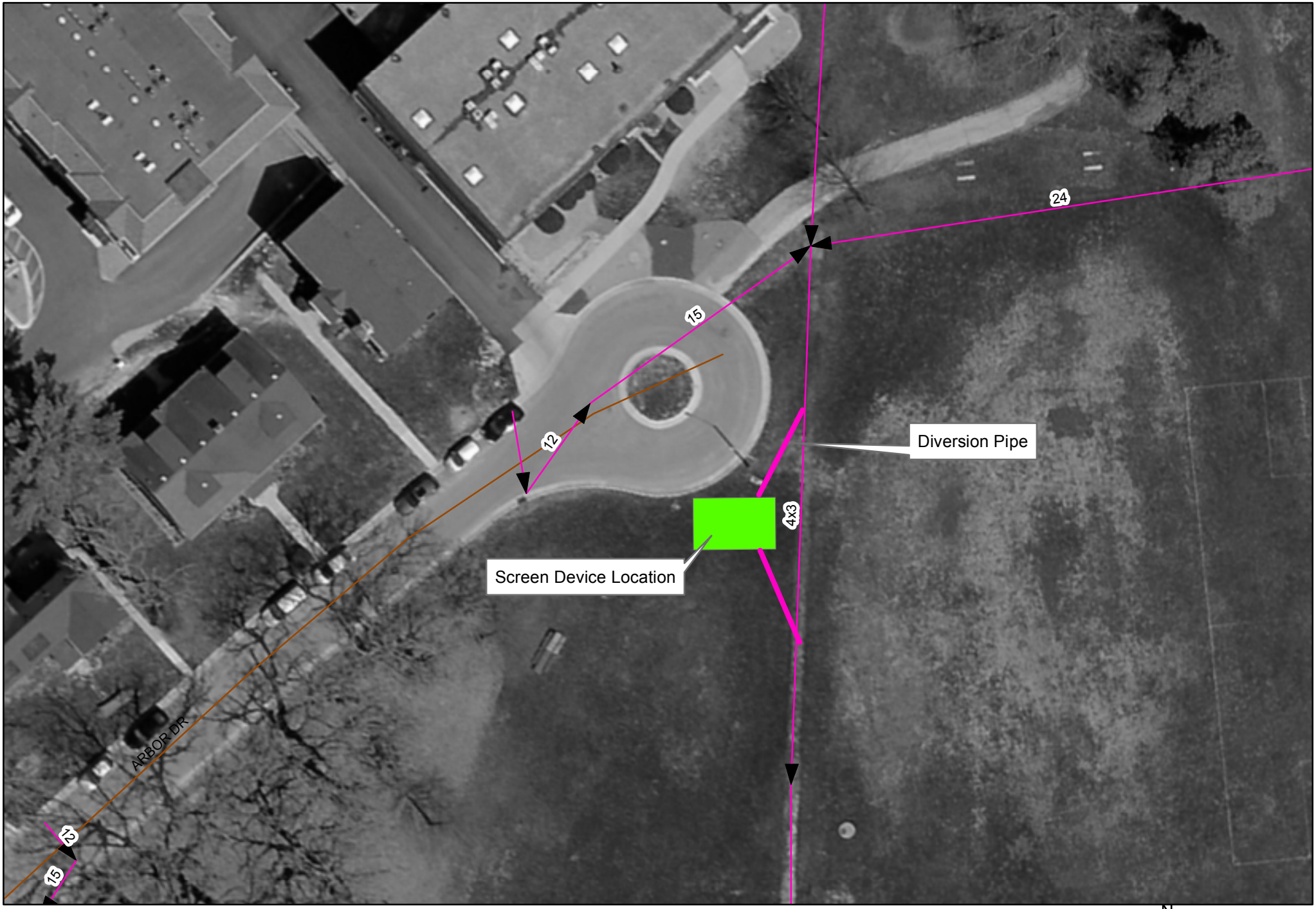
	UWQG Requirements	X	Location of Information: Page Number or Attachment
1.	**Narrative describing the proposed project** Include public visibility, accessibility, and educational value		pg 1
2.	**Preliminary Design Drawings** Sufficient information to develop cost estimate and calculate estimated benefits.		pg 2-5
3.	**Preliminary Construction Schedule** Begin Date, Milestones, Completion Date		pg 6
4.	**Watershed Characteristics** o Size(acres) o Land use/cover o Current level of pollutant control o Receiving waters		pg 6-7
5.	**Water Quality Benefit** Calculated using methods and means approved for WPDES permit compliance o TSS *load* (lbs) *before & after* project at outlet of proposed project o Phosphorus *load* (lbs) *before & after* project at outlet of proposed project o Other qualitative or quantities improvements		pg 8-9
6.	**Cost** o Total project cost o Cost-benefit ratio (assistance-pollutant load reduction) o Local match amount o Additional funding source amounts		pg 9
7.	**Draft Operation and Maintenance Plan** o Monitoring plan o Maintenance Schedule o Estimated annual maintenance cost/budget		pg 10
8.	**Additional information** Any supplemental information that is relevant to ranking the project, e.g. letter of support		pg 10
9.	**Top Ten Outfall Information** Include information in table 2 (pg. 3)		pg 10

Wingra Park Screen Structure

1. Narrative

This design consists of a screen structure that will be placed in Wingra Park and will be sized to treat the 2-yr 24-hr MSE4 design storm. The screen structure will be designed to the City of Madison Screen Structure Specification with a slight modification to allow for citizen viewing of the screen. This effectiveness of this design has been monitored by the USGS and preliminary data indicate that a 43% reduction in TSS is being achieved. The location of the device provides a great opportunity for public education and interaction as it is a public park will a many visitors. The screen structure will include a view port and internal lights so park visitors can look into the device and see how it functions. A small sign will detail the treatment area and how the device works. Maintenance will be conducted by city staff and it is our intent for the vac-truck to be able to access the clean outs from the existing driveway in the park.

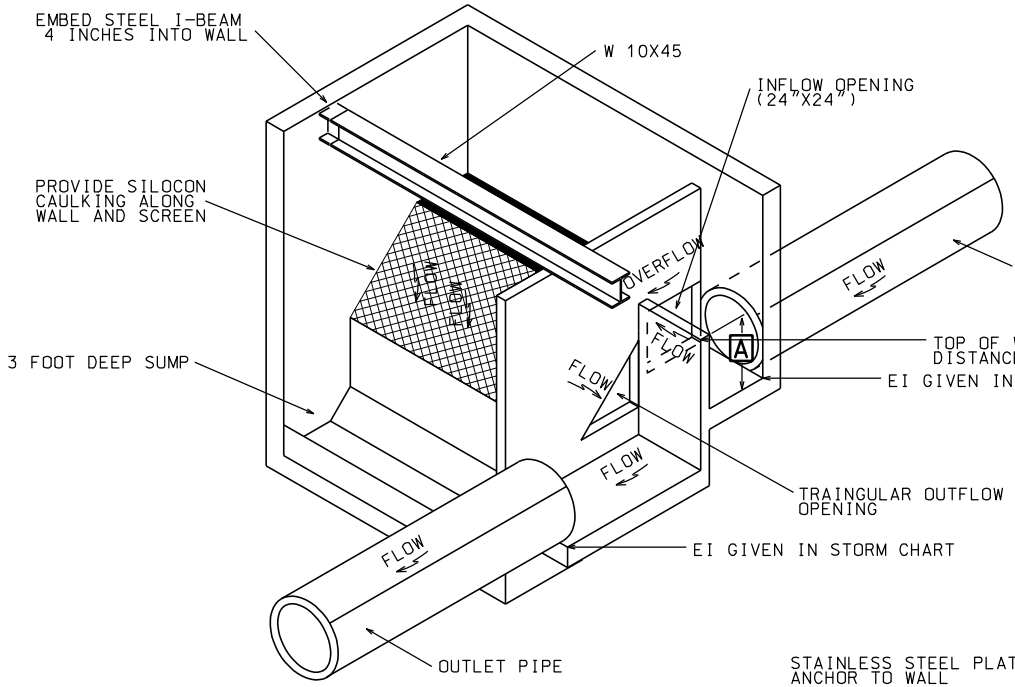
2. Preliminary Design Drawings



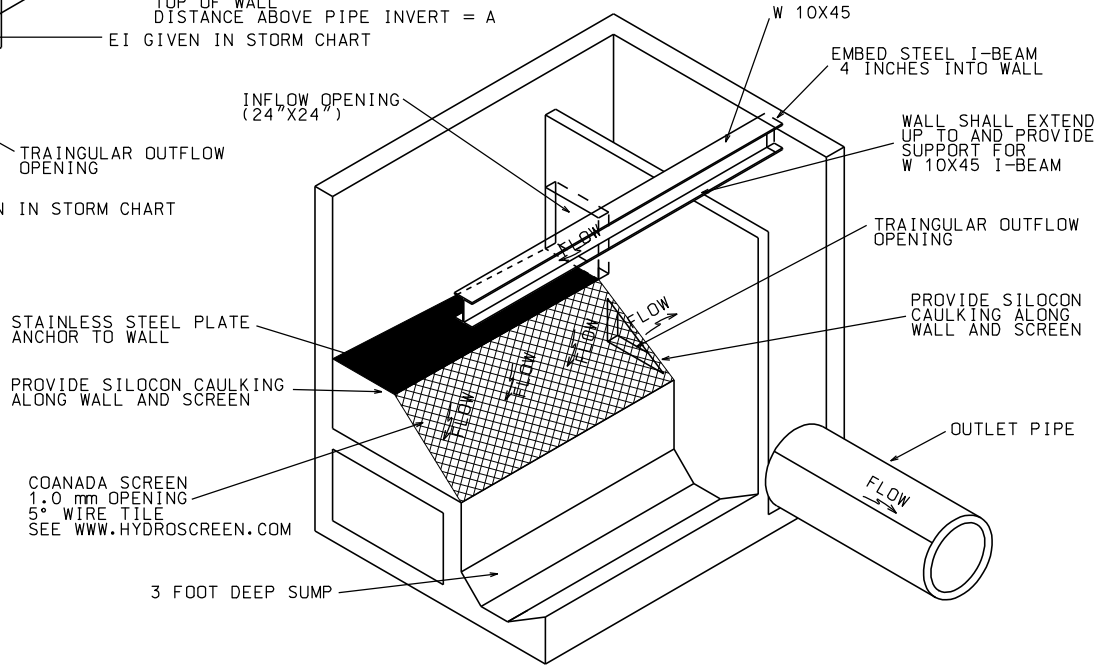
Wingra Park Screen Structure

SEE SDD 5.7.39 FOR FURTHER INFORMATION
NOTE: DIMENSIONS ARE IN UNITS OF INCHES

NW ISOMETRIC VIEW
(SIDEWALLS & ROOF NOT SHOWN)



NE ISOMETRIC VIEW
(SIDEWALLS & ROOF NOT SHOWN)



NOTE: DEISGN ENGINEER SHALL CONFIRM
THAT OUTLET AND INLET PIPE INVERTS HAVE
A MINIMUM VERTICAL ELEVATION DIFFERENCE OF 30"
ALSO, CONFIRM DIMENSION B IS SATISFIED

PIPE SIZE	DIMENSION A	DIMENSION B (MINIMUM)
LESS THAN 24"	15"	81"
27"	18"	84"
30"	20"	87"

2015

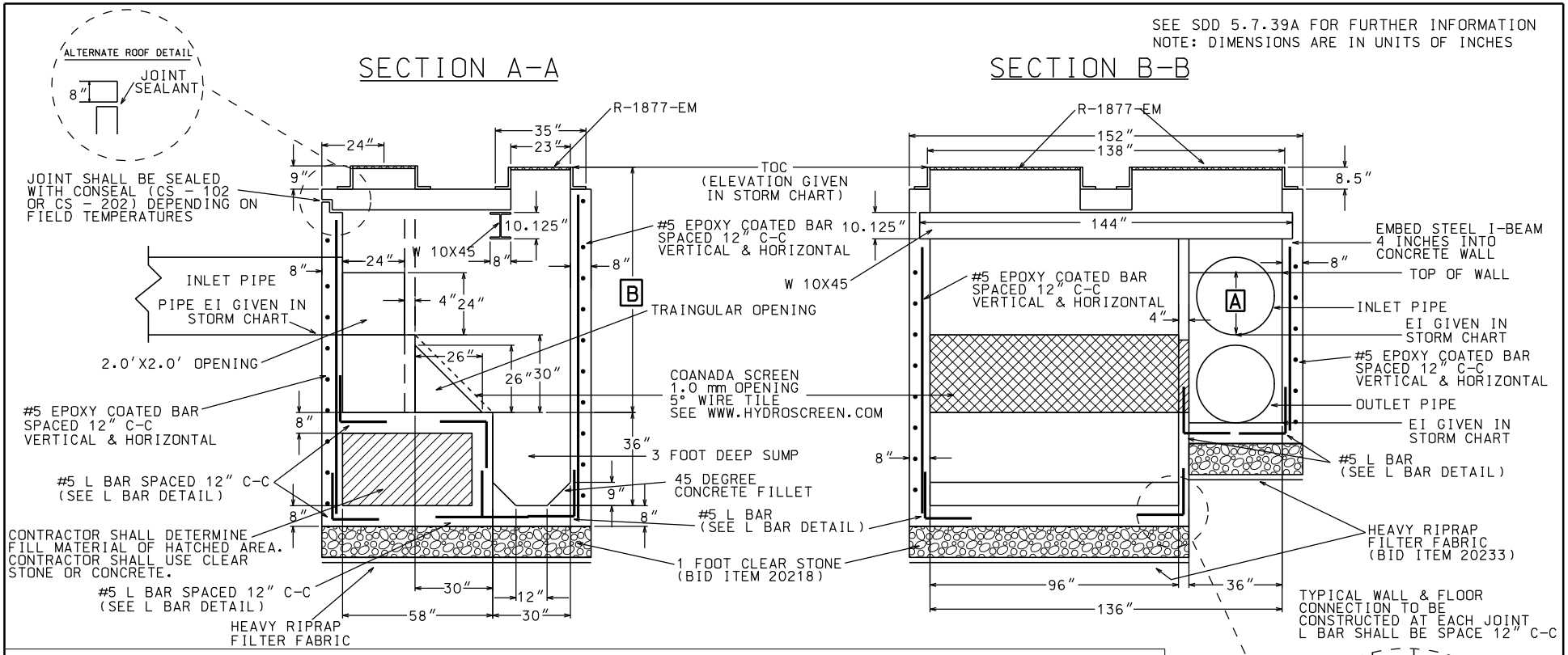
CITY OF MADISON
ENGINEERING DIVISION

SCREEN TREATMENT DEVICE

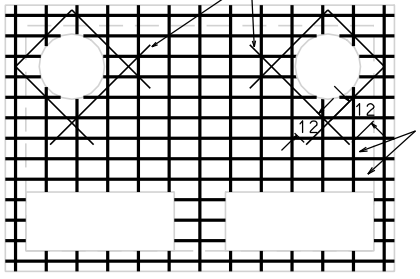
STANDARD DETAIL DRAWING 5.7.39A

5.7.39A

SEE SDD 5.7.39A FOR FURTHER INFORMATION
NOTE: DIMENSIONS ARE IN UNITS OF INCHES



ROOF REINFORCEMENT



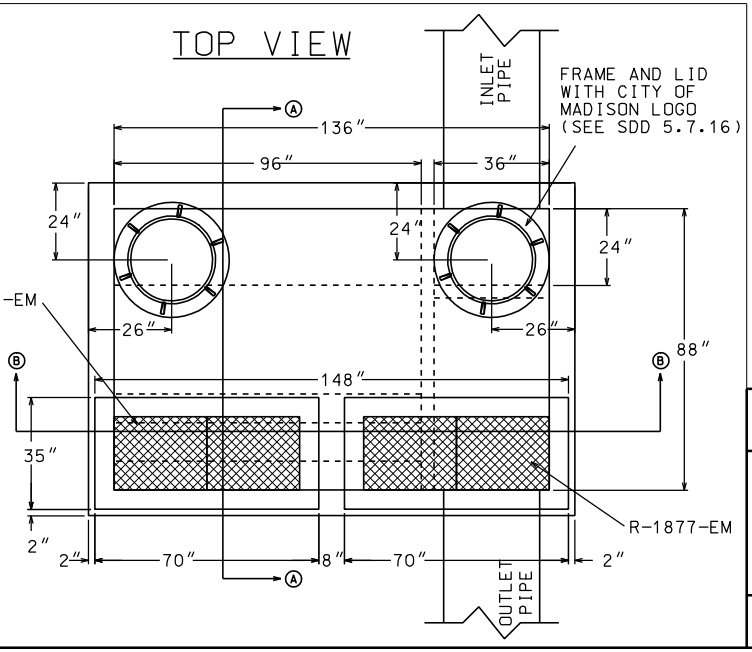
NOT ALL REBAR SHOWN FOR CLARITY

ROOF REINFORCEMENT NOTES:

1. EPOXY COATED REBARS SHALL BE USED IN ALL CASES
2. #6 REBARS PLACED ON 6″ CENTERS
3. 3″ CLEAR SHALL BE MAINTAINED
4. ROOF THICKNESS SHALL BE 8″ MINIMUM

FRAME AND LID
WITH CITY OF
MADISON LOGO
(SEE SDD 5.7.16)

TOP VIEW



2015

CITY OF MADISON
ENGINEERING DIVISION

SCREEN TREATMENT DEVICE

STANDARD DETAIL DRAWING 5.7.39

5.7.39

3. Preliminary Construction Schedule

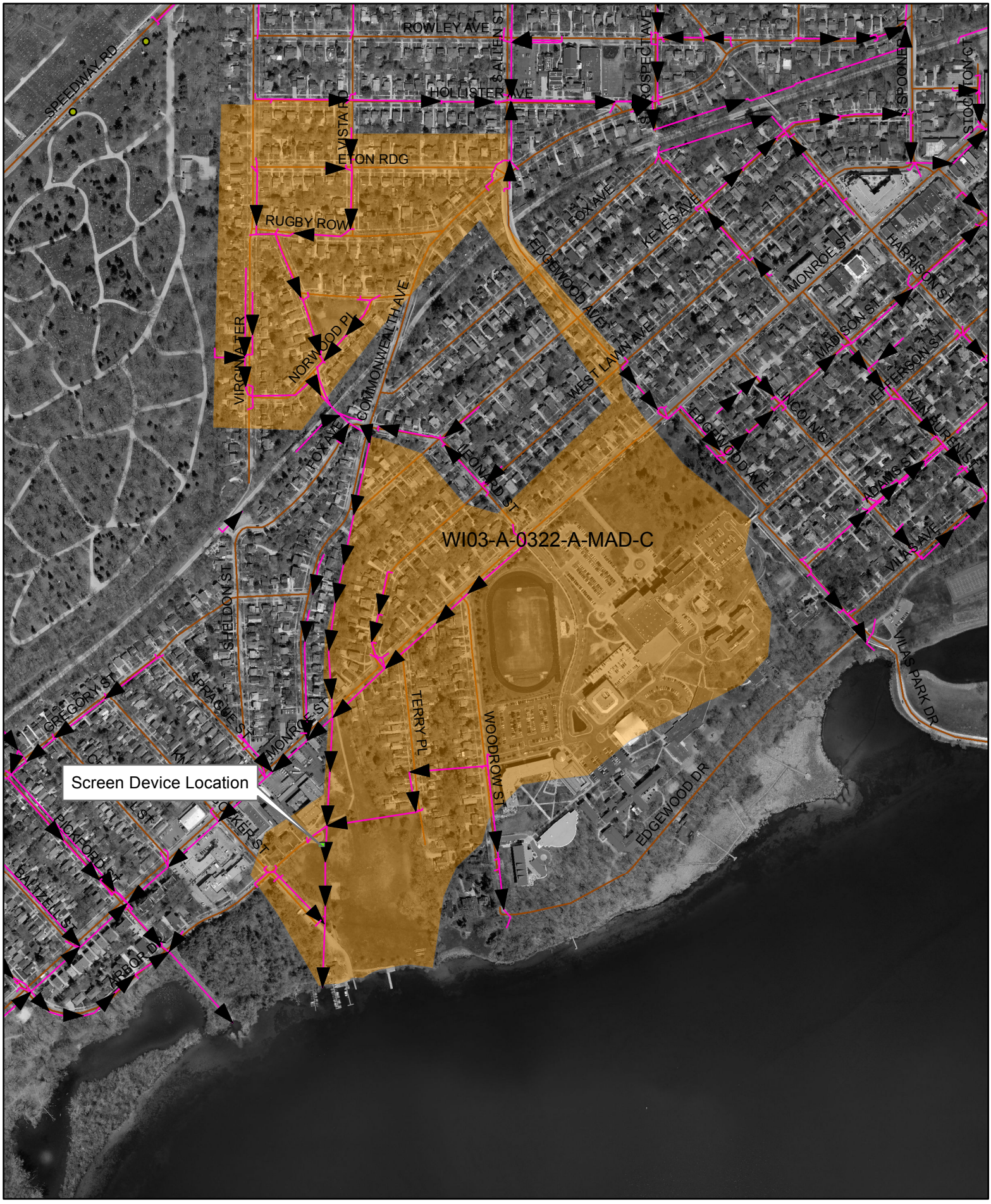
The screen structure will be constructed in conjunction with the Monroe Street reconstruction project in 2018. It is our estimate that construction on the screen structure will begin in mid July 2018 and be completed by the end of September.

4. Watershed Characteristics.

The watershed draining through the proposed screen structure is 112 acres. The land use is a mix of educational land, medium and high density residential, and park. 1.8 acres of Monroe Street will be treated by the device.

The current pollution control in this area is monthly street sweeping.

The receiving water is Lake Wingra near the Wingra Boats building.



Wingra Park Screen Structure

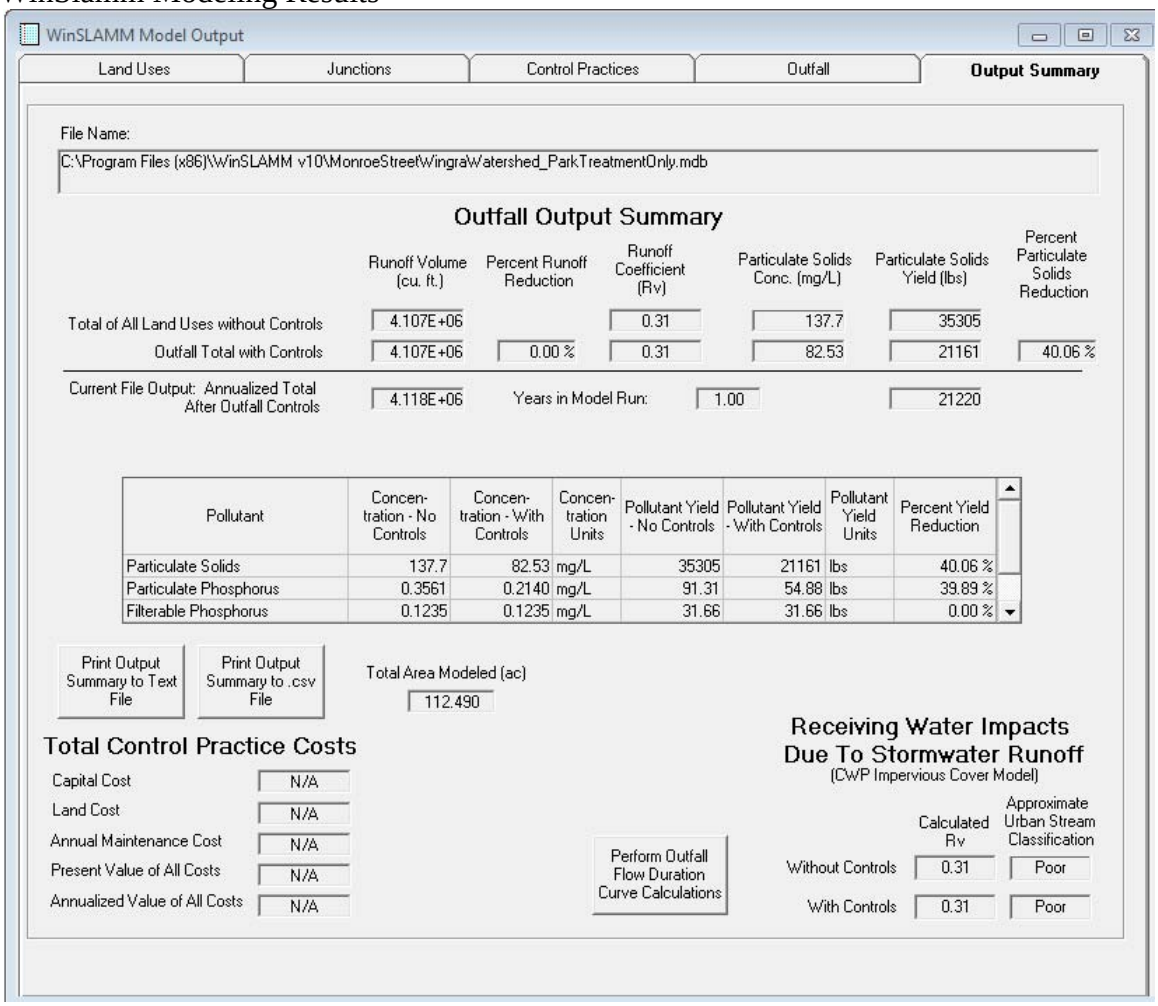
550 275 0 550 Feet

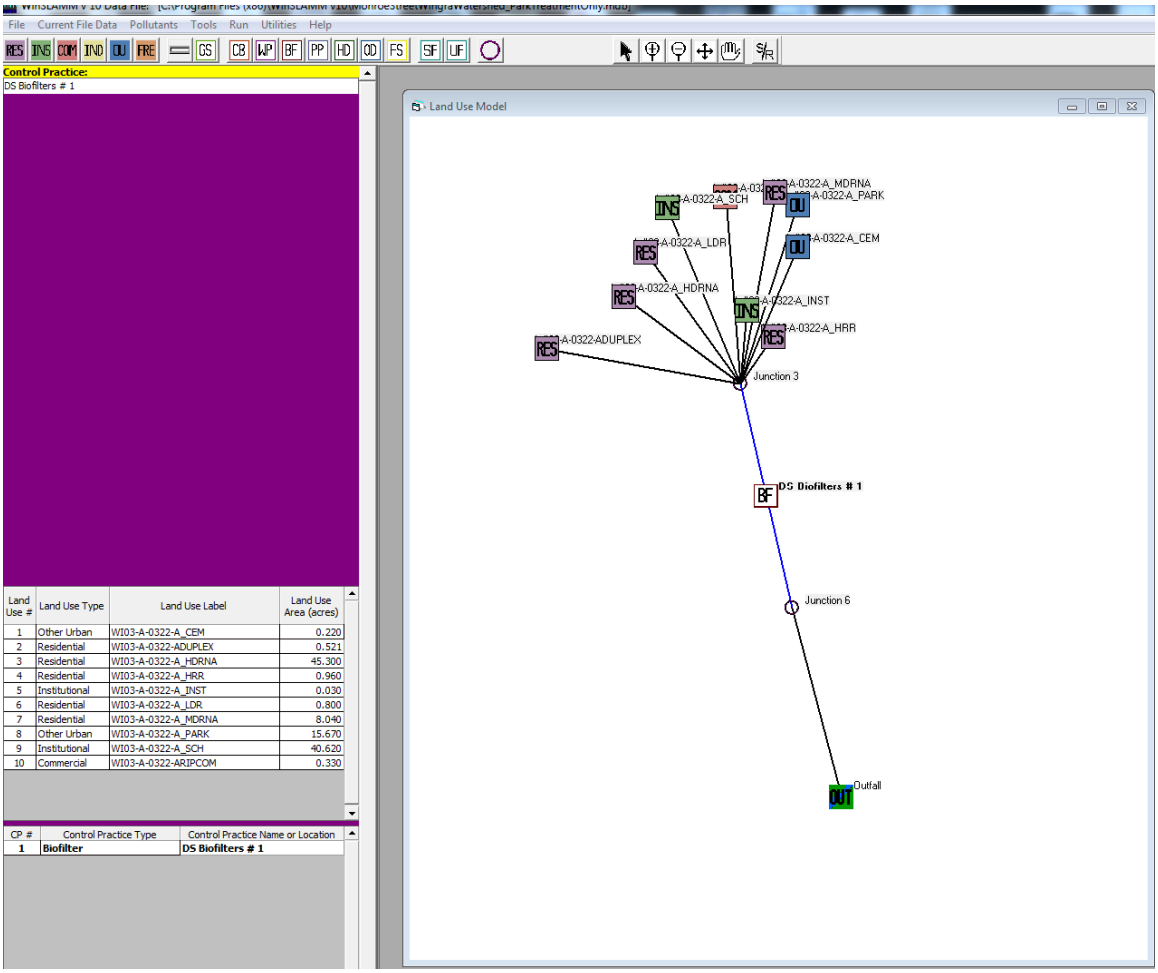
N

5. Water Quality Benefits.

Watershed = 112.49 acres				
Pollutant	Before lb	After lb	Pounds Reduced	%
TSS	35,305	21161	14,144	40.1%
TP	91.31	54.88	36	39.9%
Other Pollutants	Course Sediments and Trash Reduced			

WinSlamm Modeling Results





6. Cost Estimate

Dimensions: 26ft x 16ft foot print.

$ 350,000 included structure, lid and lighting.

Cost benefit

$350,000/ 36.43 lb P / 20 year life = 480 $/lb TP on an Average Annual Basis.

Local Match Amount
$250,000

No additional funding sources

7. Draft Operation and Maintenance Plan

The device will be maintained by City of Madison Engineering Operations crews. The device will have a standard Spring and Fall cleaning schedule and will be monitored bi-monthly during the first 2 years to assess debris accumulation rates. Clean out will consist of vacuuming debris from the surface. Assuming a crew of 2 and 1 hour per cleanout, yearly maintenance costs will be approximately $500.

8. Additional information

This structure is included in the Wingra Watershed plan is one of the few ways to provide treatment for this section of the Wingra Watershed.

9. Top Ten Outfall list

This outfall is not one the Top Ten outfall list