

## LGU Operations and Maintenance Agreement

**Landowner:** City of New Germany  
(Name, address, telephone and email) c/o Joan Guthmiller  
300 Broadway Street East  
New Germany, MN 55367  
952-353-2488

**Project** Paul Moline  
**Cooperator:** Planning and Water Management Manager  
(Name, address, telephone and email) 600 4<sup>th</sup> Street East  
Chaska, MN 55318  
952-361-1816  
pmoline@co.carver.mn.us

**Location (County):** Carver

This agreement dated 7/3/12 between the City of New Germany, and Carver County Water Management Organization (CCWMO) is entered into in order to operate and maintain stormwater BMPs as outlined within this agreement.

This Agreement covers lands in T 116, R 026, S. 4 adjacent and within the following watercourse Crow River as specified in the project proposal. The term of this Agreement shall be ten (10) years, from 7/3/12 to 7/3/22.

### Recitals

- A) Multiple Best Management Practices (BMPs) will be installed within the city boundaries of New Germany along city right of way. The total number of BMPs installed will be twelve separate practices, and include sump structures, SAFL Baffles, Custom Catch Basin Media Filters, grass swale, and Rain Guardian Boxes. This mix of BMPs will treat stormwater as it enters the storm sewer system for New Germany. Currently there is no treatment for stormwater.
- B) The City will agree to the following operating and maintenance schedule.
  - a. Inspect sump structures after spring melt and fall leaf down.
  - b. Vacuum out sump structures during inspection times.
  - c. Inspect and clean out Rain Guardian Boxes after spring melt and fall leaf down.
  - d. Inspect grass swale for erosion.
  - e. Log all inspections and actions taken during site visits.
  - f. Maintain the water quality purpose of installed BMPs.
- C) Attached to this agreement is an O&M document detailing all aspects of operation and maintenance for the BMPs installed during this project.
- D) The City will coordinate with Carver County Soil and Water District to help with the first inspection of the newly installed BMPs to ensure that all questions are answered.

### I. CITY RESPONSIBILITIES

- A) The City is responsible for maintaining the project. The City will return to Carver County any cost share funds it already received under paragraph II. B, in the event that this condition is not satisfied. Minimum maintenance requirements are outlined in the Recitals, paragraph B.
- B) The City agrees to the terms of operation and maintenance and monitoring outlined in the attached operation and maintenance manual.

- C) The City agrees to allow the CCWMO access to the project area for maintenance, evaluation and monitoring of the project. The City agrees to make the site available as a demonstration site to the general public with prior notification from Carver County Staff.

II. CCWMO RESPONSIBILITIES


- A) The CCWMO assumes no liability for injury or damage, other than that caused by it's own negligence, in the project area. The CCWMO assumes no jurisdiction over the project area for purposes of controlling trespass, noxious weeds, granting rights-of-way, or other incidents of ownership.
- B) As a condition subsequent to Carver County obligations herein, the City must maintain the Project for a period of ten (10) years after installation. Any damages to installed BMPs not caused by negligence of City staff will be repaired or replaced by Carver County Staff.
- C) Carver County Staff may monitor the Project periodically to evaluate short- and long-term performance. Data collected as a result of this monitoring effort will be made available to both the City and to the general public.

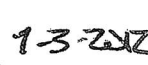
III. MISCELLANEOUS:

- A) Nothing contained in this agreement is intended or shall be construed in any manner as creating or establishing a partnership, joint venture, or agency relationship between parties.
- B) Except if arising from or out of Carver County Staff's fault or negligence, the City agrees to indemnify and defend Carver County Staff, its successors, and assigns against and will hold harmless Carver County Staff, its successors, and assigns from any claims, expenses, or damages, including attorney's fees, arising from the City performance of this agreement.
- C) This agreement shall be binding upon and inure to the benefit of the City and Carver County Staff, and their respective successors and assigns: provided, however, that neither party may assign this agreement without the prior written consent of the other. Any modification, alteration, amendments, deletions, or waivers of the provisions of this agreement will be valid only when mutually agreed upon in writing by both parties.
- D) This agreement will be effective as of the date of all signatures required below have been provided. The date of the last signature will be the date of this agreement and will be inserted in the first paragraph on page 1.

  
\_\_\_\_\_  
CCWMO

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
City

  
\_\_\_\_\_  
Date

## **Operations and Maintenance Plan**

### **Sumps Structures with SAFL Baffles**

Sumps structures are constructed to provide storm water with an area to slow and drop out sediment. SAFL baffles are a patent pending plate developed at the St. Anthony Fall Laboratory (SAFL) at the U of MN. The plate breaks up the flow of stormwater as it enters the sump and prevents heavy flows from resuspending the sediment previously collected by the sump. The following are some operation and maintenance guidelines to be followed to ensure that these practices are operating at peak efficiency.

#### **General**

Sumps should be inspected, at a minimum, after spring melt and after fall street sweeping. If possible, more frequent inspections should be done after major storms or if known erosion as entered the storm sewer system

Recognizing this, the SWCD has prepared these guidelines for operating and maintaining your sump and SAFL baffle. The following lists the anticipated major, as well as uncommon, items of operation and maintenance for these structures. Contact the SWCD office (952) 466-5230 for assistance in the initial inspection to determine the annual or periodic operation and maintenance needs.

#### **Operation, Maintenance, and Safety Guidelines**

##### **Sump Structures**

- 1.) Clean out the structure after spring melt and fall street sweeping
  - a. Remove all debris and sediment out of the structure
- 2.) Inspect the structure every two months after spring melt until fall freeze.
  - a. Note the amount of debris and sediment currently in structure
  - b. If amount is less than 4" from the bottom of the SAFL baffle, remove sediment and debris and dispose of properly.

##### **SAFL Baffle**

- 1) Inspect condition of SAFL Baffle and note any excessive wear and tear.
  - a. Remove any debris that may be impeding the flow of water through the holes of the Baffle
  - b. Contact Carver County WMO Staff if major wear and tear is evident
  - c. Contact Carver County WMO Staff if SAFL Baffle has broken off from Sump walls

## **Sump Structures with Custom Catch Basin Media Filters**

Sumps are constructed to provide storm water to slow and drop coarse sediment. The Custom Catch Basin Filter Boxes are boxes installed within the sump with a filter media to reduce the amount of fine particulates and nutrients discharging. The following are some operation and maintenance guidelines to be followed to ensure these practices are operating at peak efficiency

### **General**

Sumps should be inspected, at a minimum, after spring melt and after fall street sweeping. If possible, more frequent inspections should be done after major storms or if known erosion has contributed sediment to the storm sewer system

Recognizing this, the SWCD has prepared these guidelines for operating and maintaining your sump and Custom Filter Box. The following lists the anticipated major, as well as uncommon, items of operation and maintenance for these structures. Contact the SWCD office (952) 466-5230 for assistance in the initial inspection to determine the annual or periodic operation and maintenance needs.

### **Operation, Maintenance, and Safety Guidelines**

#### **Sump**

- 1.) Inspect the structure after spring melt and fall street sweeping .
  - a. Remove any debris and sediment out of the structure with vacuum truck.
- 2.) If possible check structure every two months after spring melt until fall street sweeping
  - a. Note amount of debris and sediment currently in structure
  - b. If amount is less than 42" from the water level (outlet elevation), remove sediment and debris

#### **Custom Media Filter Box**

- 1) Inspect condition of the Custom Filter Box and note any wear and tear
  - a. Contact Carver County WMO Staff if major wear and tear is evident
  - b. Contact Carver County WMO Staff if the filter has broken off from Sump walls
- 2) Upon recommendation from Carver County Staff, vacuum out filter media and replace (media replacement likely to be 1x/yr or 1x/2yr). Maintenance consists of the following:
  - a. Remove diversion plate by unhooking chains from the underside of the catch basin top slab. Temporarily loop the chain hooks over the vertical steel wall and let diversion plate hang (to ensure it is out of the way for maintenance of the filter basket).
  - b. Remove locking pins (6) from locking brackets.
  - c. Lift locking bars (3) from their positions. Remove from catch basin and set aside.
  - d. Reach down and grab the handle along the edge of the center mesh screen section; pull up and remove the center screen section from the catch basin through the casting. Set aside.
  - e. Position vacuum hose in catch basin basket, taking care not to damage rubber gaskets surrounding the screen frame.

- f. Inspect all 3 top sections (one removed, two in place) for damage, replace or repair as needed.
  - g. Place new media in basket (11 ft--3), wet to compact, and top off until basket is full.
  - h. Ensure no grit remains along rubber seal and inspect for seal damage; wipe with damp cloth if necessary. Place center screen back on basket ensuring basket is full of filter media, add media as needed.
  - i. Replace locking bars and pins. Return deflector plate to its original position, hanging from the hooks on the underside of the manhole top slab.
- 3) Once every 5 years: Inspect caulking along vertical steel plate for signs of wear and tear. Replace caulk as needed with appropriate RTV-silicone caulk suitable for submerged use (ASI-335, or equivalent).

## **Grass Swale with Rain Guardians**

Grass swales are constructed to provide treatment to storm water by slowing the water, causing sediment to drop out of the water. Also, swales allow for water to interact with vegetation increasing the amount of nutrients removed. Rain Guardian Boxes are installed at the entrance to the swale to both reduce the velocity of the water entering and to remove large size debris. The following are some operation and maintenance guidelines to be followed to ensure these practices are operating at peak efficiency.

### **General**

The swale should be inspected immediately after connection is made to the road; annually during the first three years; after major storms; and at least once every two years after the initial three year period.

Rain Guardians should be inspected, at a minimum, after spring melt and after fall street sweeping. If possible, more frequent inspections should be done after major storms or if known erosion has entered the swale.

Recognizing this, the SWCD has prepared these guidelines for operating and maintaining your swale and Rain Guardian boxes. The following lists the anticipated major, as well as uncommon, items of operation and maintenance for these structures. Contact the SWCD office (952) 466-5230 for assistance in the initial inspection to determine the annual or periodic operation and maintenance needs.

### **Operation, Maintenance, and Safety Guidelines**

#### **Swale**

1. Inspect the structure periodically, especially after a large runoff event.
2. Check damage to embankment by rilling, waves, or rodents.
  - a) Replace eroded material, fertilize, seed or sod where needed promptly.
3. Check for sloughing or sliding fill.
  - a) Contact the SWCD office for remedial recommendations.
4. Check for cracking or settlement of fill.
  - a) Contact your local SWCD Technician for remedial recommendations.
5. Check for sparse vegetation, bare spots, trails.
  - a) Repair damage of vegetative cover promptly with soil, fertilizer, seed or sod.
  - b) Control weed growth by mowing or spraying.
  - c) Control foot travel, grazing and motor vehicle travel.
6. Prevent shrub, tree or woody vegetative growth.
  - a) Remove all trees and shrubs growing on the embankment.

#### **Rain Guardian Box**

- 1) Inspect condition of Rain Guardian Box and note any wear and tear
  - a. Contact Carver County WMO Staff if the device has become nonfunctional
- 2) If box is greater than ½ full of sediment, remove all sediment.
- 3) Clean the filter screen in the box.

- a. Remove the screen and run water through the screen in the opposite direction of normal flow.

CONSTRUCTION PLANS FOR THE  
**NEW GERMANY STORMWATER TREATMENT RETROFITS**  
 CARVER COUNTY WATERSHED MANAGEMENT ORGANIZATION  
 APRIL, 2012



CITY OF  
 NEW GERMANY

COUNTY WMO  
 PROJECT NO. 11-212-2012-01

**SHEET INDEX**

- 1) TITLE SHEET
- 2) TREATMENT RETROFIT OVERVIEW
- 3) CATCH BASIN FILTER LOCATIONS
- 4) SAFI Baffle Locations
- 5) BIOFILTRATION IMPROVEMENTS
- 6 & 7) CONSTRUCTION DETAILS

**PLAN REFERENCES:**  
 1) MINNESOTA DEPT. OF TRANSPORTATION - STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2005 (XXXX) OR MIN/DOT XXXX  
 2) FEDERAL SPECIFICATIONS  
 3) AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)  
 4) AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)  
 5) BOLTON & MENK, INC. (B&M) CONSTRUCTION DOCUMENTS FOR THE NEW GERMANY 2011 INFRASTRUCTURE IMPROVEMENT PROJECT.  
 6) SHF CONSULTING GROUP, INC. (SHF) CONSTRUCTION DOCUMENTS FOR THE DAKOTA RAIL REGIONAL TRAIL PHASE II- NEW GERMANY TRAILHEAD PROJECT.

THE EXISTING UTILITY INFORMATION SHOWN IN THIS PLAN HAS BEEN SURVEYED BY OTHERS; THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY Gopher State One Call (1.800.252.1166 OR 651.454.0002)

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DAVID M. POGGI  
 LICENSE # 4573 DATE 09/29/2012

**HYDROMETHODS, LLC**  
 1551 Livingston Avenue, Suite 104  
 West St. Paul, MN 55118  
 o: 763.210.5713 | f: 763.219.1273

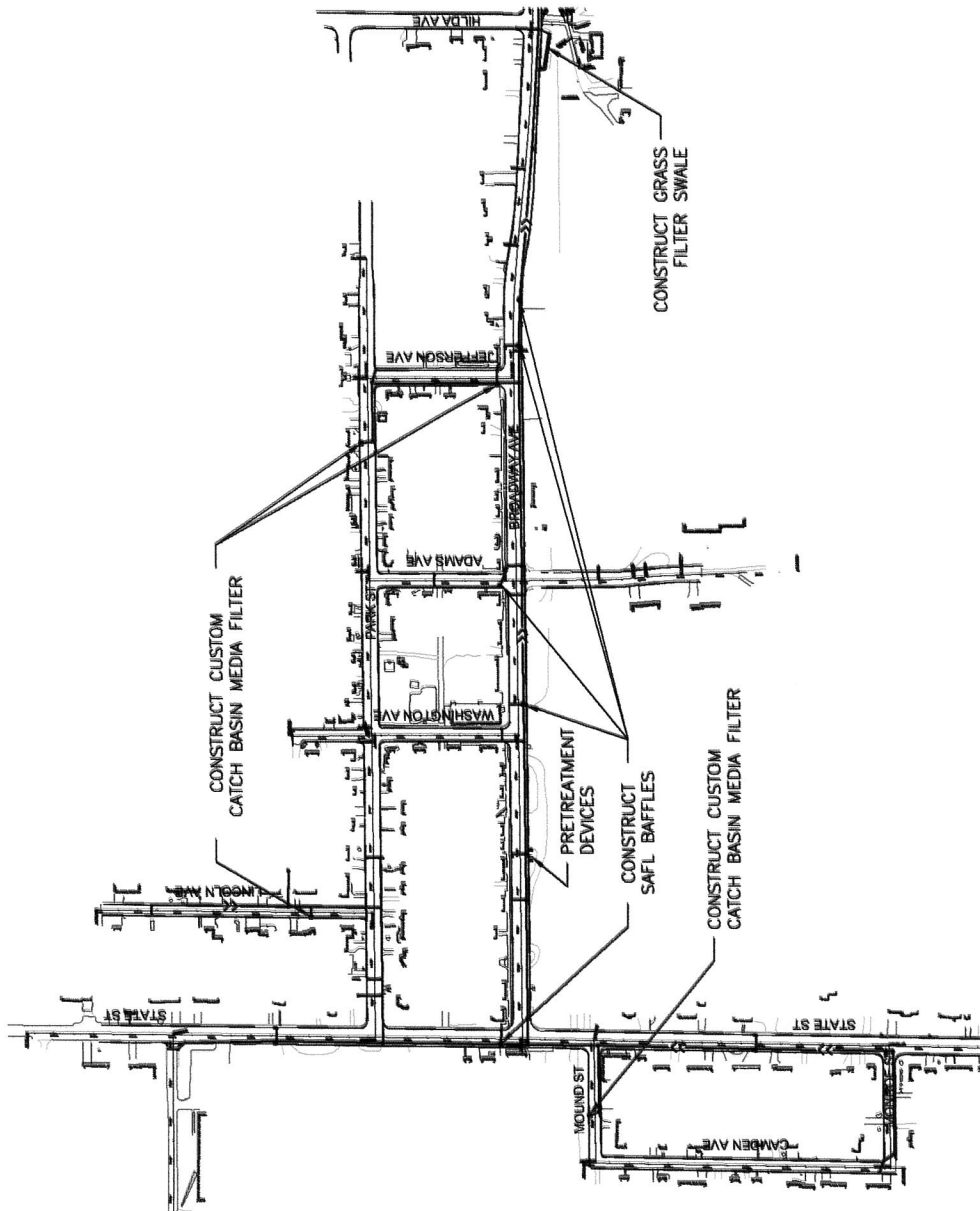
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NEW GERMANY STORMWATER TREATMENT RETROFITS  
 CARVER COUNTY WATER MANAGEMENT ORGANIZATION  
 TITLE SHEET



**SCHEDULE OF ESTIMATED QUANTITIES**

Item	Description	Approx. Quantity	Unit
1	Swale Excavation & Hauloff (EV) (P)	36	CY
2	Aggregate, 0.5"-1.5" (Clean, Washed)	9	CY
3	Filter Swale Media (See Sheet 5 Specifications) (CV)	18	CY
4	6" TP Perforated Pipe with 3/8" Holes (3245)	80	LF
5	6" PVC Riser Cleanout	1	EA
6	Drainage Fabric, Type 1 (3733)	36	SY
7	MH, Design H w/ Casting Neenah R-4342	1	EA
8	12" RCP, Class V	30	LF
9	Sand Bag Temporary Bypass	1	EA
10	Seed, Mix 240 (3876), Fertilizer (Type 2)	70	SY
11	Erosion Control Blanket, Cat. 3 (3885)	70	SY
12	Seed, Mix 250 (3876), Fertilizer (Type 2) & Mulch (Type 1)	140	SY
13	Silt Fence, Machine-Sliced (3886)	120	LF
14	Custom Catch Basin Media Filter, 48"	4	EA
15	Catch Basin Sand Filter Media (Clear, Washed)	44	CF
16	SAFL Baffle, 48"	1	EA
17	SAFL Baffle, 60"	2	EA
18	SAFL Baffle, 72"	2	EA
19	Rain Guardfan	3	EA
20	Class V Aggregate (3138)	60	CF
21	Concrete (Rain Guardian Spillways & Pads) (P) (3301)	43	CF



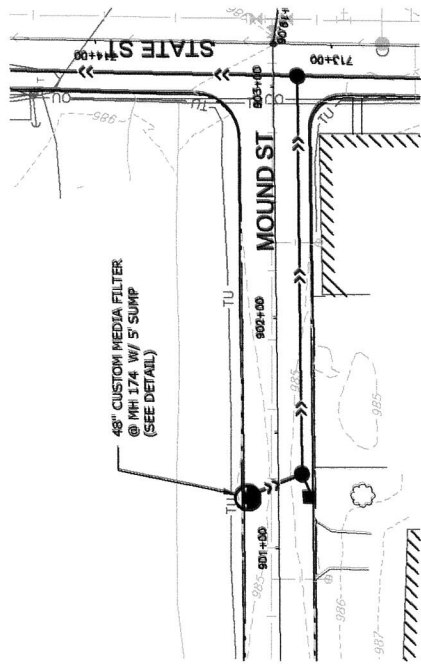
**HYDROMETHODS, LLC**  
 1551 Livingston Avenue, Suite 104  
 West St. Paul, MN 55118  
 ☎ 763.210.5713 | f 763.219.1273

PROJECT NO: 1551 LIVINGSTON AVE  
 SHEET NO: 2 OF 7  
 DATE: 04/25/2012  
 DRAWN BY: P. P. P. P.

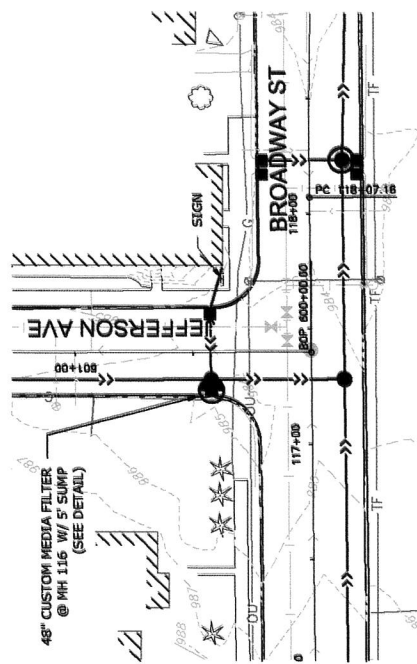
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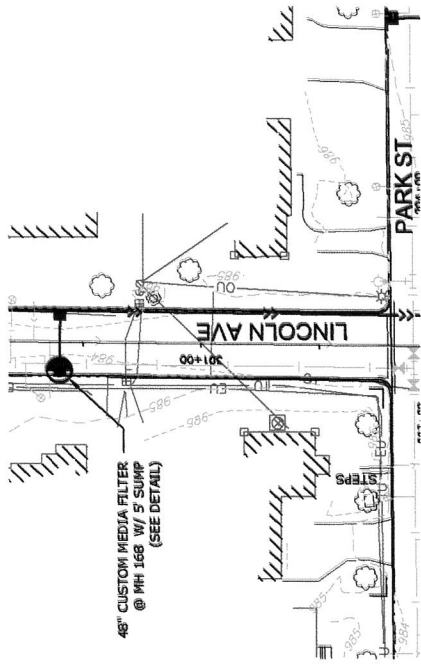
NEW GERMANY STORMWATER TREATMENT RETROFIT  
 CHAMBER COUNTY WATER MANAGEMENT ORGANIZATION  
 TREATMENT RETROFIT OVERVIEW



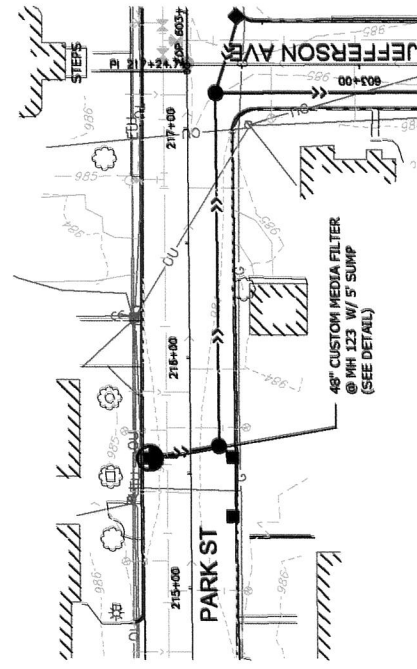
**MOUND STREET @ MH 174**



**JEFFERSON AVENUE @ MH 116**



**LINCOLN STREET @ MH 168**



**PARK STREET @ MH 123**

- CONSTRUCTION NOTES:**
1. ALL FILTERS TO BE 48" CUSTOM CATCH BASIN MEDIA FILTERS (SEE DETAIL).
  2. PROPOSED UTILITIES ARE SHOWN PER BALCON & MENK (B/M) PROJECT PLANS FOR THE 2012 NEW GERMANY RECONSTRUCTION PROJECT. EXISTING UTILITIES SHOWN PER B/M SURVEY. FOR CLARITY, NOT ALL PRE-PROJECT UTILITIES ARE SHOWN; SEE B/M FOR ADDITIONAL INFORMATION.
  3. ALL UTILITIES ARE SHOWN IN AN APPROXIMATE WAY. CONTRACTOR RESPONSIBLE FOR FIELD VERIFICATION AND AVOIDANCE.
  4. ANY UTILITY CONFLICTS SHALL BE BROUGHT TO ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION. ANY UNPLANNED UTILITY DISRUPTION SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
  5. EQUIVALENT SUBSTITUTIONS MUST BE SUBMITTED TO ENGINEER FOR APPROVAL A MINIMUM OF 5 BUSINESS DAYS PRIOR TO BID CLOSING DATE.

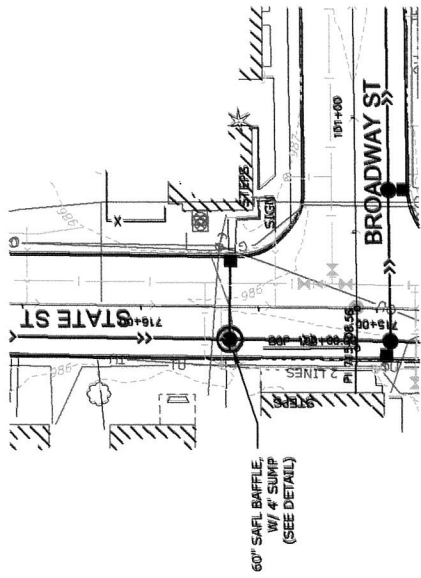


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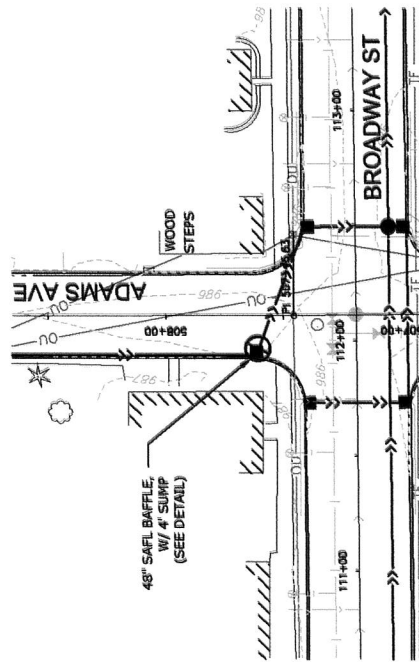
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 SHEET: 3 OF 7

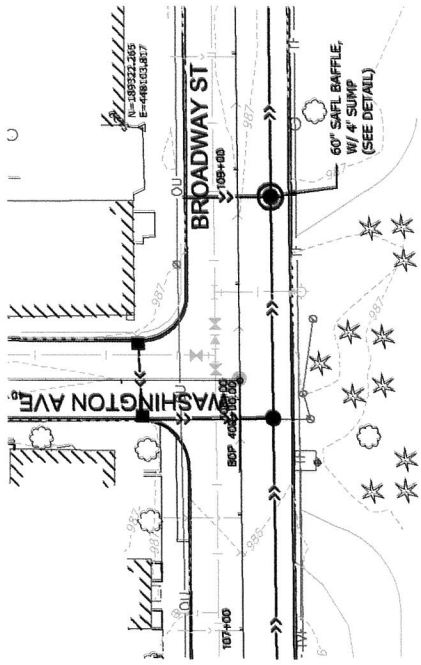
NEW GERMANY STORMWATER TREATMENT RETROFITS  
 CARRER COUNTY WATER MANAGEMENT ORGANIZATION  
 CATCH BASIN FILTER LOCATIONS



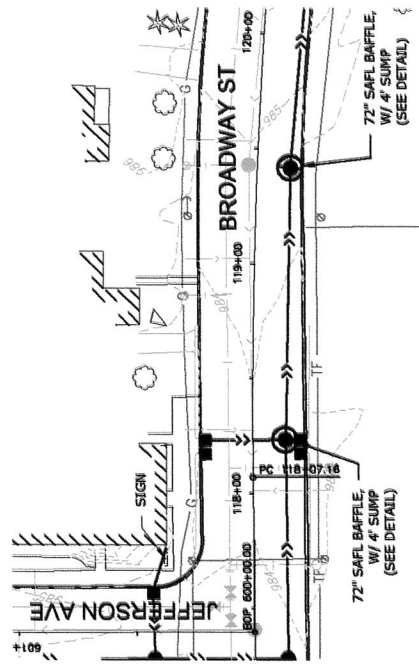
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**ADAMS AVENUE @ MH 130**



**BROADWAY STREET @ MH 133**



**BROADWAY STREET @ MH 109 & 108**

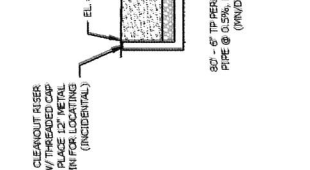
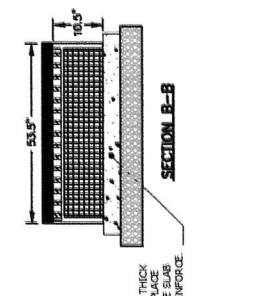
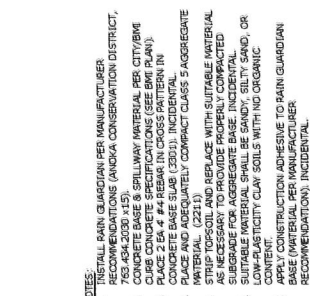
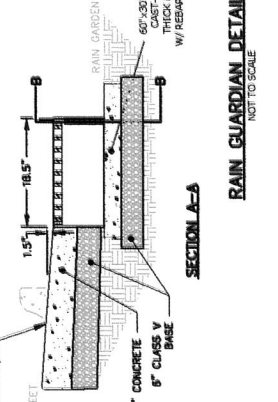
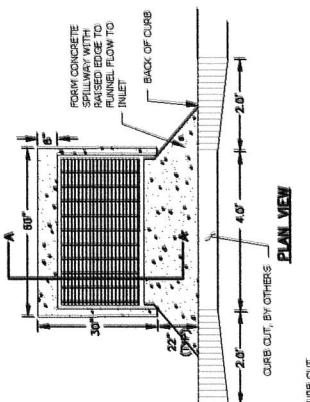
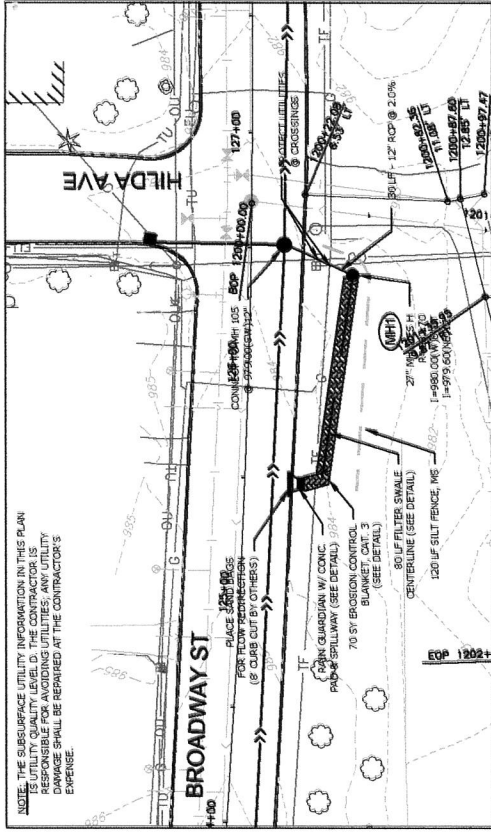
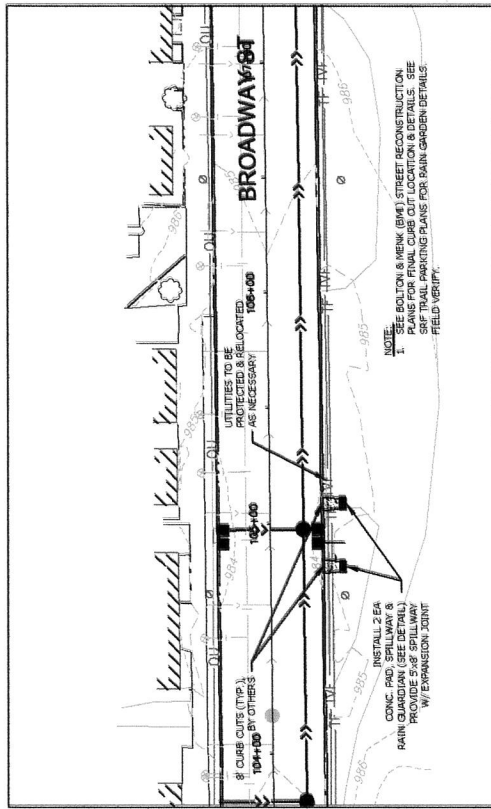
- CONSTRUCTION NOTES:**
1. VERIFY EXISTING UTILITY DEPT. RECORDS FOR APPROXIMATE HORIZONTAL DIAMETERS AND INLET/OUTLET PIPES (SEE DETAIL).
  2. PROPOSED UTILITIES ARE SHOWN PER BOLDON & NEWK (B&N) PROJECT PLANS FOR THE 2012 NEW GERMANY RECONSTRUCTION PROJECT. EXISTING UTILITIES SHOWN PER B&N SURVEY. FOR CLARITY, NOT ALL PRE-PROJECT UTILITIES ARE SHOWN; SEE B&N PLAN FOR VERIFICATION AND ADDITIONAL UTILITY INFORMATION.
  3. ALL UTILITIES SHOWN ARE THE CONTRACTOR'S RESPONSIBILITY FOR FIELD IDENTIFICATION AND AVOIDANCE.
  4. ANY UTILITY CONFLICTS SHALL BE BROUGHT TO ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION. ANY UNPLANNED UTILITY DISRUPTION SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
  5. ALL UNITS SHALL BE PROVIDED AS INDICATED, OR APPROVED EQUIVALENT.
  6. ALL UNITS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL A MINIMUM OF 5 BUSINESS DAYS PRIOR TO BID CLOSING DATE.



**HYDROMETHODS, LLC**  
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NO.	DATE	DESCRIPTION

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 DATE: 05/25/2012  
 DRAWN BY: P. GREGG  
 CHECKED BY: J. GREGG



**NOTE:** THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE UTILITY INFORMATION. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

**NOTE:** SEE BOLTON & MENI (B&M) STREET RECONSTRUCTION RECOMMENDATIONS (ANCKA CONSERVATION DISTRICT, 763.434.2030 (415)).

- INSTALL B&M CURB/GUARDIAN PER MANUFACTURER'S RECOMMENDATIONS (ANCKA CONSERVATION DISTRICT, 763.434.2030 (415)).
- CONCRETE BASE & SPILLWAY MATERIAL PER CITY/B&M RECOMMENDATIONS (ANCKA CONSERVATION DISTRICT, 763.434.2030 (415)).
- PLACE 2 EA #4 REBAR IN CROSS PATTERNS IN CONCRETE BASE SLAB (3301). INCIDENTAL.
- PLACE AND ADEQUATELY COMPACT CLASS 5 AGGREGATE STRIP TOPSOIL AND REPLACE WITH SUITABLE MATERIAL AS NECESSARY TO PROVIDE PROPERLY COMPACTED SUBGRADE FOR AGGREGATE BASE. INCIDENTAL.
- LOW PLASTICITY CLAY SOILS WITH NO ORGANIC CONTENT.
- APPLY CONSTRUCTION ADHESIVE TO RAIN GUARDIAN RECOMMENDATION. INCIDENTAL.

**NOTE:** 6\"/>

**NOTES:**

- INSTALL SILT FENCE PRIOR TO INITIATING SWALE GRADING.
- STRIP TOPSOIL TO FORM SWALE AS NEEDED.
- DISPOSE EXCESS MATERIAL AS NEEDED.
- SWALE FILTRATION MEDIA TO BE 50% SAND (MVDOT 3149.25), 30% LEAF COMPOST (3890.6), 20% TOPSOIL (PREMIUM TOPSOIL BORROW, MVDOT 3877).
- TRAFFIC ALLOWED ON MEDIA AFTER PLACEMENT.
- FILTER FABRIC TO BE MVDOT TYPE 1 (3723).
- SAND BAGS TO BE PLACED AT TIME OF CURB CUT AND LEFT IN PLACE UNTIL SWALE BLANKET, CAT. 2 (3889).
- SWALE AREA SEED MIX 240 (3876), FERTILIZER TYPE 2 (3981), EROSION CONTROL BLANKET, CAT. 2 (3889).
- OTHER DISTURBED AREAS: SEED MIX 250, FERT. TYPE 2, MULCH TYPE 1.
- MINIMUM OF 5 BUSINESS DAYS PRIOR TO BID CLOSING DATE.
- EQUIVALENT SUBSTITUTIONS MUST BE SUBMITTED TO ENGINEER FOR APPROVAL.

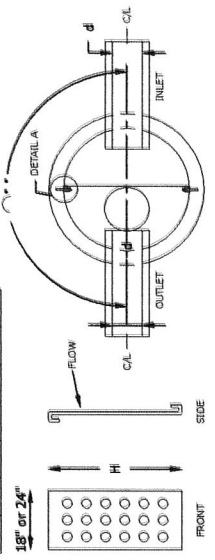
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 West St. Paul, MN 55118  
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**NEW GERMANY STORMWATER TREATMENT RETROFITS**  
 CARRIER COUNTY WATER MANAGEMENT ORGANIZATION  
**BIOFILTRATION IMPROVEMENTS**

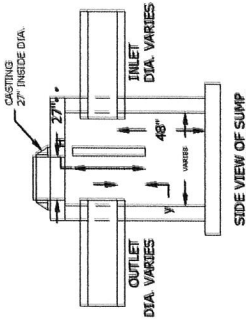
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5 of 7

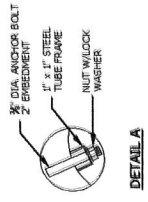
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27	44	140	220	12	12
30	54	150	210	12	12
36	54	150	210	12	12



TOP VIEW OF SUMP



SIDE VIEW OF SUMP

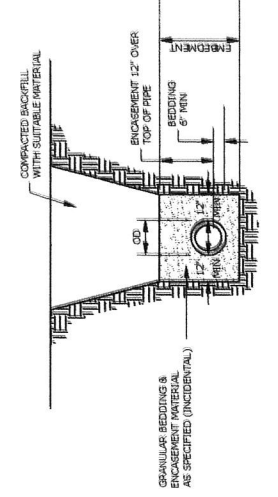


DETAIL A

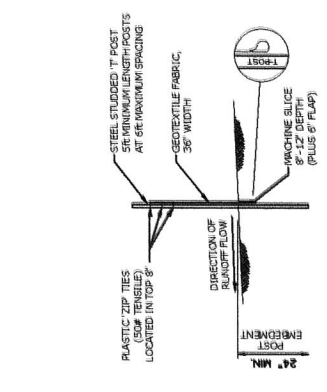
NOTES:  
 1. UPSTREAM TECHNOLOGIES INC. IS THE EXCLUSIVE LICENSEE OF THE SAFI BAFFLE. CONTACT: 651.295.3369  
 2. CONTACT UPSTREAM TECHNOLOGIES INC. FOR MANUFACTURER RECOMMENDATION AND INSTALLATION PER.

**SAFI BAFFLE STRUCTURE  
STANDARD SUMP MANHOLE W/BAFFLE**  
NOT TO SCALE

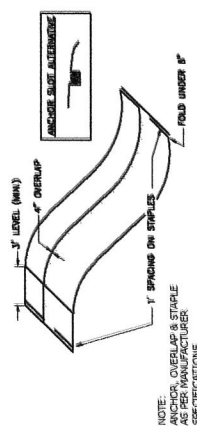
- NOTES:
- 1) GRANULAR BEDDING & ENCASUREMENT SHALL CONFORM TO M/A/DOT SPECIFICATION 3149.F
  - 2) ALL SUMP SHALL BE FILL WITH SUITABLE FILL WITH BREAK.
  - 3) ENCASUREMENT SHALL BE 12\"/>



**R.C. STORM SEWER TRENCH**  
NOT TO SCALE



**SILT FENCE -- MACHINE SLICED**



**EROSION CONTROL BLANKET INSTALLATION**

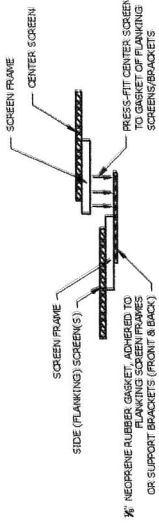
NOTE:  
 1. OR OVERLAP & STAPLE AS SPECIFIED BY MANUFACTURER SPECIFICATIONS

**HYDROMETHODS, LLC**  
 1551 Livingston Avenue, Suite 104  
 West St. Paul, MN 55118  
 67.763.210.5713 | f: 763.219.1273

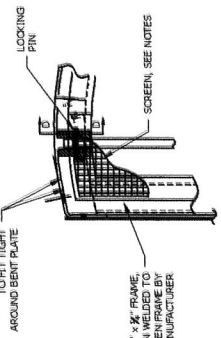
REV	BY	DATE	DESCRIPTION

DATE OF ISSUE: 04/25/2012  
 DWG NO: 170501  
 PROJECT: NEW GERMANY STORMWATER TREATMENT RETROFITS  
 SHEET NO: 6 OF 7

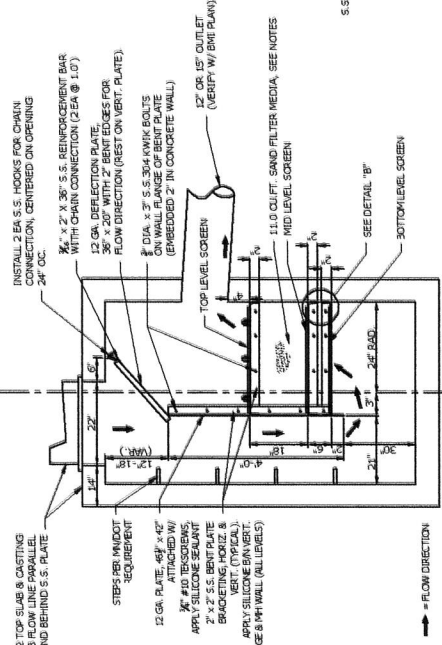
NEW GERMANY STORMWATER TREATMENT RETROFITS  
 CARVER COUNTY WATER MANAGEMENT ORGANIZATION  
 CONSTRUCTION DETAILS



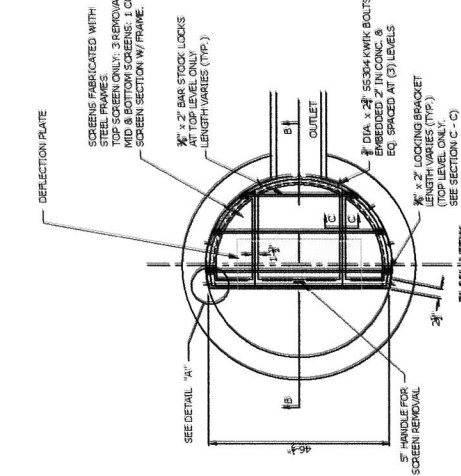
SECTION C - C



DETAIL 'A'



SECTION B - B



PLAN VIEW

CUSTOM CATCH BASIN MEDIA FILTER

NOT TO SCALE

NOTE:  
CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND MATERIALS TO BE USED ARE AS SHOWN ON THE DRAWING.  
FOR INFORMATION ON THE PUBLICATION OF THIS CUSTOM-DESIGNED FILTER.

**HYDROMETHODS, LLC**  
155L Livingston Avenue, Suite 104  
West St. Paul, MN 55118  
e: 763.210.5713 | f: 763.219.1273

NO.	DATE	DESCRIPTION

DATE: 04/25/2012  
DRAWN BY: P. G. GIBSON  
SCALE: AS SHOWN

NEW GERMANY STORMWATER TREATMENT RETROFITS  
CARRIER COUNTY WATER MANAGEMENT ORGANIZATION  
CONSTRUCTION DETAILS

- NOTES & SPECIFICATIONS:**
- PROJECT ENGINEER TO BE NOTIFIED PRIOR TO FILTER INSTALLATION.
  - ALL MATERIALS TO BE USED SHALL BE APPROVED BY THE PROJECT ENGINEER.
  - ALL STEEL WOVEN WIRE MESH TO BE 304 STAINLESS. MESH SIZES AS FOLLOWS:
    - TOP & MID-LEVEL SCREENS: NO. 50 WOVEN WIRE MESH WITH 0.0032" SQ. OPENINGS & 0.005" DIA. 304 S.S. WIRE. ADD REINFORCING WOVEN WIRE WITH 2" SQ. OPENINGS & 0.12" DIAMETER 304 S.S. WIRE (TOP-LEVEL SCREEN)
    - BOTTOM LEVEL SCREEN: 1-1/2" SQ. OPENING WOVEN WIRE MESH WITH 0.125" DIAMETER 304 S.S. WIRE.
  - ALL WELDS TO BE NON-FACED RIVET-SILICONE APPROVED FOR SUBMERGED USE AND MEETING SPECIFICATIONS OF MIL-A-46404A TYPE 1, SLOTT AS A61-65S, OR APPROVED EQUIVALENT.
  - IF EQUIVALENT SEALANT SELECTED, PRIME CONCRETE WALL AS REQUIRED PER APPROVED EQUIVALENT.
  - APPLY BEAD OF SEALANT ON ARCHED METAL FLANGE SURFACE PRIOR TO WALL MOUNTING. ONCE INSTALLED, APPLY ADDITIONAL SILICONE SEALANT TO FILL ANY REMAINING VOIDS AT METAL/CONCRETE JOINT AND PROVIDE WATERTIGHT SEAL. HANDLING RECOMMENDATIONS:
  - CONTRACTOR TO SUBMIT FILTER SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
  - CONTRACTOR TO SUBMIT MATERIALS RESISTANCE TEST REPORTS PER ASTM D6984 RUBBER WITH A FINE CELL FINISH AND TEMPERATURE RANGE OF -80F - 150F. SHALL MEET SPECIFICATIONS OF ASTM D1056 24G UL 94HF1 AND UL 94HF2. TESTING OF SCREEN UNDER LOAD TO SCREEN FRAME. ENSURE PROPER SNUG CHAIN TO BE ZINC-PLATED WITH MINIMUM 20 LB LOAD CAPACITY.
  - PRIOR TO TOP SCREEN PLACEMENT, CONTRACTOR TO FILL FILTER AREA WITH 0.41 CY OF SAND TO 11.0 OUTF. SAND FILTER MEDIA. SEE NOTES.
  - (CONTRACTOR TO SUBMIT GRADATION TEST FOR APPROVAL PRIOR TO PLACEMENT):
 

SIEVE #	PERCENT
10	100
45-60	0-10
40	5-35
15	0-15
100	0-4

 OR  
 15.1. MODIFIED MIN DOT 3149.2J AS FOLLOWS
  - QUIRKITE NO. 1983 - COARSE (#12 - #30), OR APPROVED EQUIVALENT.
  - CONTRACTOR TO ADD SAND FILTER MEDIA, WET TO COMPACT, AND TOP OFF AS NEEDED TO PROVIDE CONTINUOUS MEDIA SECTION FLUSH TO SCREENS.
  - ALL RELATED INSTALLATION MATERIALS SHOWN TO BE INCLUDED IN PRICE BID FOR EQUIVALENT SUBSTITUTIONS MUST BE SUBMITTED TO ENGINEER FOR APPROVAL. A MINIMUM OF 5 BUSINESS DAYS PRIOR TO BID CLOSING DATE.