

Meeting: Board of Managers
Meeting date: 02/22/24
Agenda Item #: 11.2
Request for Board Action

Title: Approval of 90% Design Plans for the Cottageville Park Iron-Sand Filter Maintenance and

Retrofit

Resolution number: 24-013

Prepared by: Name: Josh Wolf

Phone: 952-641-4588

jwolf@minnehahacreek.org

Reviewed by: Michael Hayman, Director of Project Planning

Chuck Holtman, Legal Counsel

Recommended action: Board approval of the 90% design for the 2024 90% design plans for the Cottageville Park

Iron-Sand Filter Maintenance and Retrofit

Board approval of project Disturbance and Restoration Terms.

Schedule: September 2023 – Design begins

December 2023 – January 2024 – Design review

February 9, 2024 – Bid opening

March 19, 2024 - Hopkins City Council awards bid

Summer 2024 – Construction begins

Budget considerations: Fund name and code: Project Maintenance & Land Management, 2003-4340

Fund budget: \$689,986.00 Expenditures to date: \$0

Res # 10-058	Approval of C	Cooperative Agreement	between MCWD and	City of

Hopkins

Res # 10-083 Approval of purchase for 427-429 Blake Road, Hopkins

Res # 14-023 Cottageville Project Ordering

Res # 14-027 Approval of Cooperative Agreement amendment, approval of BWSR

grant agreement, and authorization of design contracts with Wenck

Associates and Hart Howerton

Res # 15-005 Authorization to Award Bid for Construction of Cottageville Park Phase

1 Project and Enter Into Construction Oversight Contracts

Res # 17-010 Approval of the City of Hopkins Regional Stormwater Plan for the

stormwater facility at Cottageville Park and approval of an easement affording Hopkins all rights necessary to meet its inspection and maintenance obligations for the Cottageville Park stormwater

management system

Summary:

In 2010, the City of Hopkins and MCWD entered into a cooperative agreement to expand and develop Cottageville Park to improve and integrate community park amenities with the riparian system for public recreation and education purposes, while also naturalizing and stabilizing the creek channel and providing regional stormwater treatment. The Cottageville Park Agreement, and subsequent amendments, defined the partnership roles and responsibilities

surrounding land acquisition, design, construction, and long-term maintenance of the constructed amenities at Cottageville Park.

The Cottageville Park Stormwater Management and Park Improvement Project was completed in 2016 (Phase 1 of the Cottageville Park project), and pursuant to the agreement, the City maintains its own park property as well as the stormwater management facilities located beneath MCWD land, and MCWD maintains the native vegetation, riparian buffer zone improvements, and signage on its own land.

Following investigations conducted by MCWD Research and Monitoring department and the City of Hopkins from 2017-2021 it was determined that the installed subsurface iron-sand filter system was not functioning to its original level of design intent. Coupled with the need for life-cycle maintenance of the filter medium, and in accordance with the cooperative agreement, MCWD coordinated with the City of Hopkins to develop the 2024 Iron-Sand Filter Maintenance and Retrofit project. This project seeks to retrofit the subsurface facility to improve access to the system for routine maintenance and address scouring and short-circuiting of the filter media, and perform life-cycle replacement of the current iron-sand filter medium.

The project will replace the iron-sand filter medium and add additional rate control measures to reduce scouring of the newly installed iron-sand filter medium. Additionally, the project will install ground-level manhole access risers to the existing header pipe to allow for future maintenance and replacement of the filter medium without excavation of the header pipe. This project is part of a larger City of Hopkins infrastructure initiative, the 2024 Central Avenues Improvements (City Project No. 2023-10), and will be performed by Hopkins at its cost. MCWD and Stantec have reviewed the 90% plans and concur in the plans for retrofit purposes and for the present and future use of the facility for stormwater permit compliance purposes.

Additionally, in accordance with the recorded easement (Doc. No. 11203275), MCWD and the City of Hopkins have consulted and determined a set of reasonable terms for the City's occupation and restoration of District property to perform the prescribed project. A letter included in the packet will document MCWD approval of the plans and the parties' concurrence in the site use terms, and is to be countersigned by the MCWD Administrator and Hopkins City Manager.

At the February 22, 2024 Board of Managers meeting, staff will present an overview of the 90% plans for life-cycle maintenance of the filter medium and a retrofit of the stormwater facilities at Cottageville Park. Staff will recommend the Board approve the 90% plans as final design and request authorization to make additional design changes as needed to complete 100% design documents, consistent with the 90% design. Additionally, staff will request approval of the draft letter and disturbance/restoration terms documents allowing the City of Hopkins to occupy MCWD lands for the duration of the project in accordance with the existing easement.

Supporting Documents:

- 90% design plans for the 2024 Cottageville Park Iron-Sand Filter Maintenance and Retrofit project
- Draft letter and disturbance/restoration terms and plan sheets



RESOLUTION

Resolution nur	nber: 24-013							
Title:	Approval of 90% Design Plans for the Cottageville Park Iron-Sand Filter Maintenance and Retrofit							
WHEREAS	the Minnehaha Creek Watershed District (MCWD) entered into a cooperative agreement with the City of Hopkins to develop the 427-429 Blake Road, Hopkins site and to maintain site improvements;							
WHEREAS	Hopkins maintains its own park property as well as the iron-enhanced stormwater filtration system located beneath MCWD land, and as part of the City of Hopkins Regional Stormwater Plan, Hopkins holds an easement to afford Hopkins rights necessary to meet inspection and maintenance obligations for the filtration system;							
WHEREAS	investigations from 2017-2021 by MCWD Research and Monitoring and the City of Hopkins determined that the filtration system was not functioning to its original level of design intent and the iron-sand filter medium is approaching the end of its useable life-cycle;							
WHEREAS	MCWD cooperated with the City of Hopkins to develop the 2024 Iron-Sand Filter Maintenance and Retrofit project. This project seeks to improve access to the system for routine maintenance, retrofit to address scouring and short-circuiting of the filter medium, and perform life-cycle replacement of the current iron-sand filter medium;							
WHEREAS	in accordance with the recorded easement (Doc. No. 11203275), MCWD and the City of Hopkins have consulted and determined a set of reasonable terms for the City's occupation and restoration of District property to perform the prescribed project, including a draft letter and disturbance/restoration terms documents.							
WHEREAS	at the February 22, 2024 Board of Managers meeting, staff presented the 90% plans for life-cycle maintenance of the filter medium and a retrofit of the stormwater filtration system at Cottageville Park as well as a draft letter and disturbance/restoration terms allowing the City of Hopkins to occupy MCWD lands for the duration of the project.							
90% design pla District adminis 100% design do	ORE, BE IT RESOLVED that the Minnehaha Creek Watershed District Board of Managers approves the ns for the 2024 Cottageville Park Iron-Sand Filter Maintenance and Retrofit project, authorizes the strator to approve additional design changes, consistent with the 90% plans, as needed to complete ocuments, and approves the draft letter and disturbance/restoration terms for signature of the and countersignature by City of Hopkins.							
	Resolution Number 24-013 was moved by Manager, seconded by Manager Motion to adopt the resolution ayes, nays,abstentions. Date: 2/22/2024							
	Date:							
Secretary								

City of Hopkins Mike Mornson 1010 1st Street S Hopkins, MN 55343

RE: Cottageville Park Iron-Sand Filter Maintenance and Retrofit

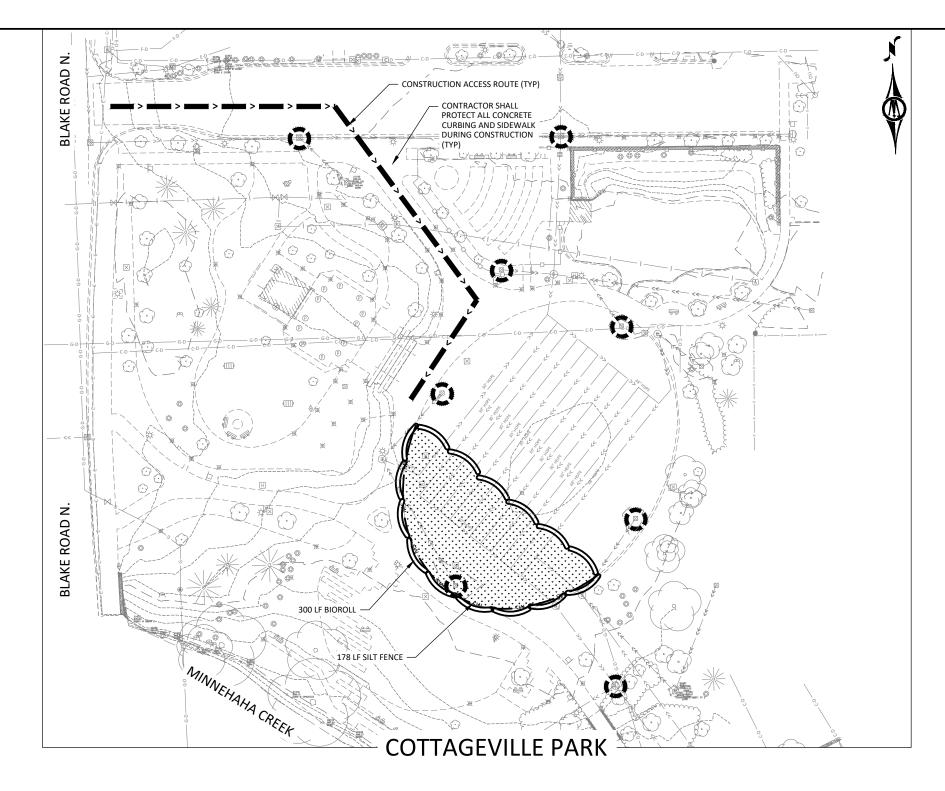
Dear Mr. Mornson:

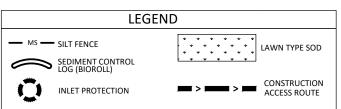
Minnehaha Creek Watershed District (MCWD), through its engineer, Stantec, has reviewed the plans for the Cottageville Park portion of the 2024 Central Avenues Improvements (City Project No. 2023-010) prepared by Bolton & Menk for the City of Hopkins. This work concerns the life-cycle maintenance and retrofit of the iron-enhanced sand filter subsurface stormwater facility located in Cottageville Park beneath MCWD property. The plans for the work are Attachment A hereto, consisting of Sheets C2.11 (Stormwater Pollution Prevention Plan) and C5.07 thru C5.10 (Cottageville Park Storm Sewer), all dated 1/16/24. The MCWD concurs in the plans for retrofit purposes and for the present and future use of the facility for permit compliance purposes.

Additionally, in accordance with the recorded easement (Doc. No. 11203275), MCWD and the City of Hopkins have consulted and determined a set of reasonable terms for the City's occupation and restoration of District property to perform the work, set forth in Attachment B hereto.

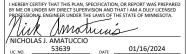
Please countersign below to indicate the City's agreement to perform the work in accordance with Attachments A and B. MCWD appreciates the City's coordination on this and looks forward to the completion of the work. Please be sure to contact me if the MCWD can facilitate the work in any fashion.

	Date:
James Wisker, Administrator	
COUNTERSIGNED:	
COONTENSIGNED.	Date:
Mike Mornson, City Manager	T











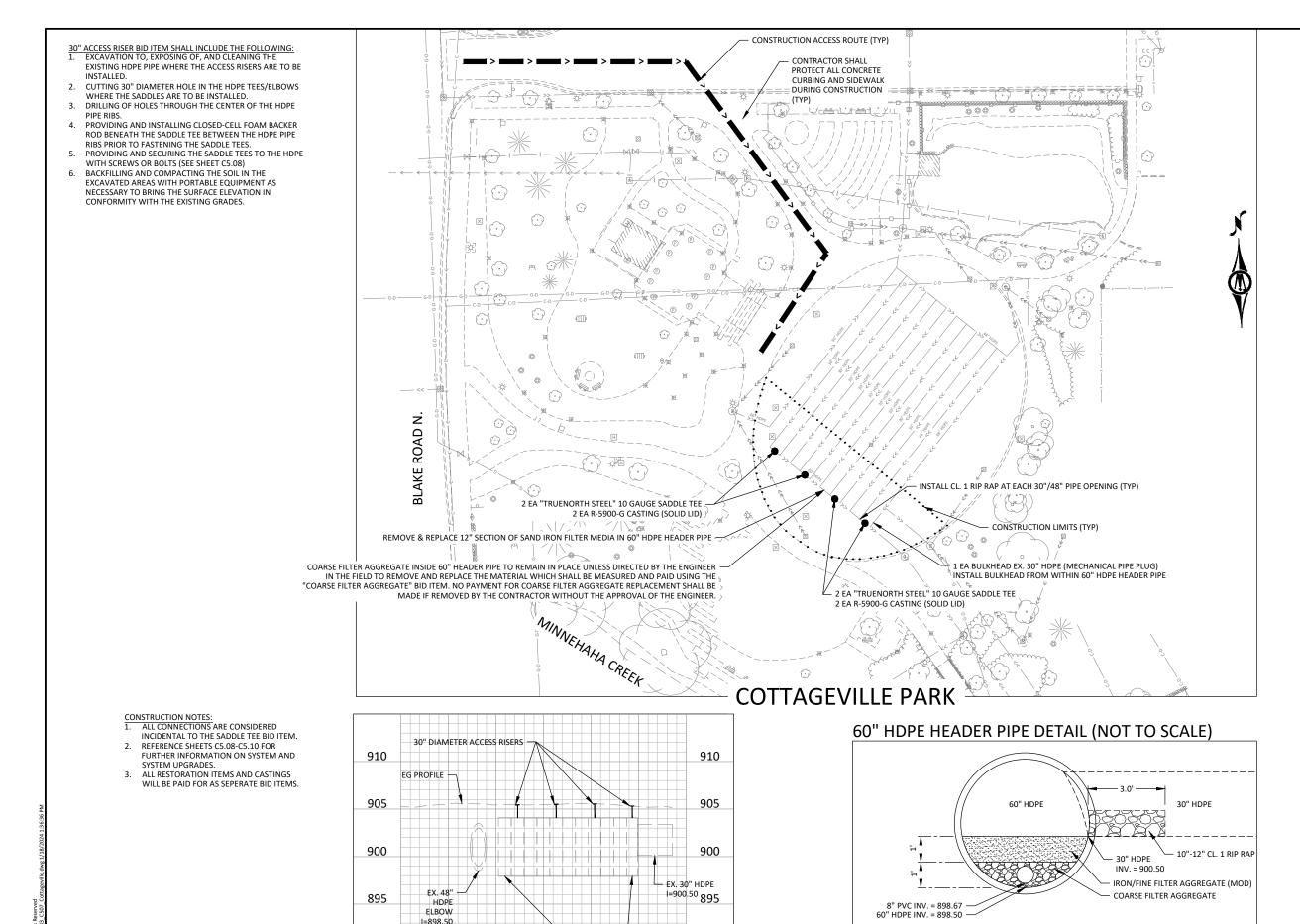


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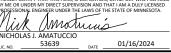
HOPKINS, MINNESOTA

2024 CENTRAL AVENUES IMPROVEMENTS
TORMWATER POLLUTION PREVENTION PLAN
COTTAGEVILLE PARK



HORZ. SCALE FEET





890



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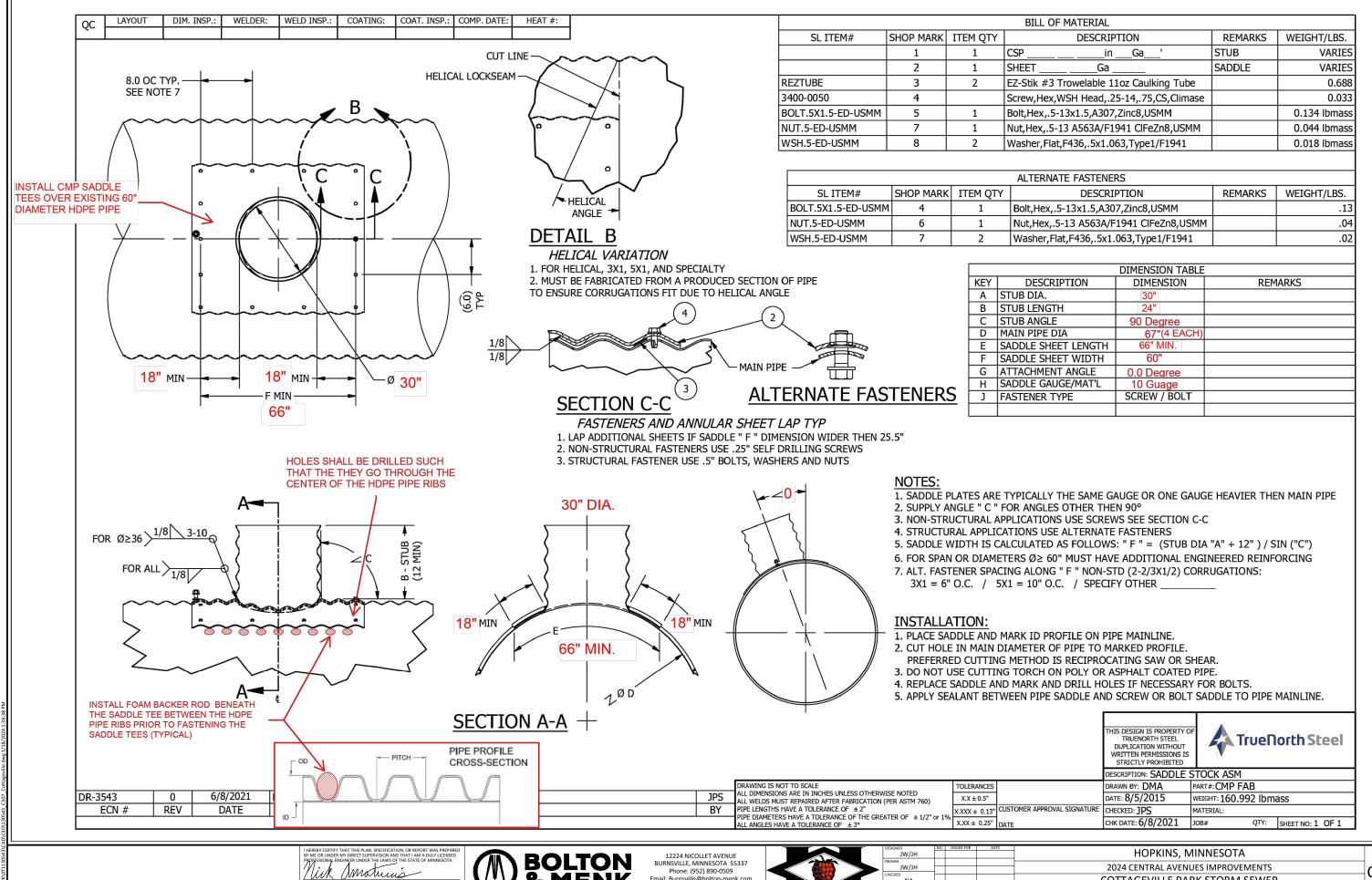
12224 NICOLLET AVENUE BURNSVILLE, MINNESOTA 55337 Phone: (952) 890-0509 Email: Burnsville@bolton-menk.com www.bolton-menk.com



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2024 CENTRAL AVENUES IMPROVEMENTS
COTTAGEVILLE PARK STORM SEWER
STORM PLAN & PROFILE



ICHOLAS J. AMATUCCIO

53639

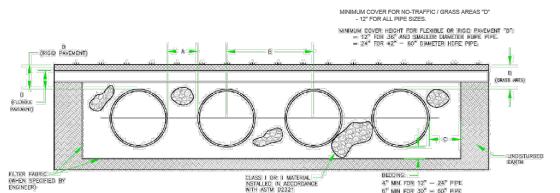
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C5.08 **COTTAGEVILLE PARK STORM SEWER** SADDLE TEE DETAILS

CROSS SECTION RETENTION / DETENTION



FOR REFERENCE **ONLY**

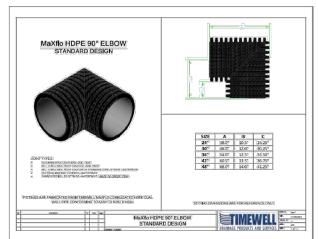
48" MF 11.25° ELBOW

48" MF 90° ELBOW

CONNECTION TO

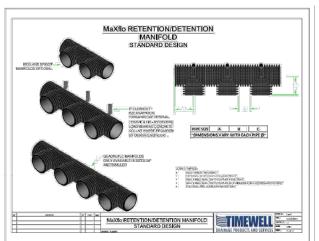
8" SDR 26

INV. 898.67



30" INV. 899.0

30" INV. 900.5



48" MF

48" MF

11.25° ELBOW

48" MF TEE-

48"X30" MF REDUCER

RIGID PIPE **ADAPTER**

"PLEASE CONTACT A REPRESENTATIVE FOR INSTALLATION CONSIDERATIONS WHEN FILL HEIGHTS EXCEED THE MAXIMUM B" OF COVER OVER FITTINGS

*FOR 60" DIAMETER APPLICATIONS, CLASS IT BACKFILL IS: REQUIRED AROUND FITTINGS

STORAGE CAPACITIES OF MAXFLO

Nominal Inside Diameter	Average Outside Diameter	"A" Spacing ^A	"B" Spacing*	"C" Spacing	Pipe Volume ^a	Stone Void Volume ^c	Total Retention Storage	Retention Surface Area Required	Detention Surface Area Required
in.	in.	in.	in.	in.	ft ³ /ft	ft ³ /ft	ft ³ /ft	ft²/ft³	ft2/ft3
(mm)	(mm)	(mm)	(mm)	(mm)	(m/m)	(m ³ /m)	(m ³ /m)	(m²/m³)	(m2/m2)
12	14.5	11	25.5	8	0.81	0.84	1.65	1.3	2.7
(300)	(368)	(280)	(650)	(210)	(0.07)	(0.08)	(0.15)		(8.6)
15	1B	10.5	28.5	8	1.2	1.1	2.3	1,1	1.97
(375)	(457)	(280)	(750)	(210)		(0.10)	(0.21)	(3.5)	(6.4)
1.B (450;	21 (533)	12.5 (360)	34 (900)	(530) 3	1.8 (0.16)	1,4 (0.13)	3.2	0.93	1,6 (5.4)
24 (600)	28 (711)	13	41 (1050)	10 (260)	3.1	2.0 (0.18)	5.1 (0.47)	0.68	1.1 (3.6)
30 (750)	36 (914)	18 (430)	54.5 (1350)	18 (460)	4.9 (0.46)	3.1 (0:28)	8.0 (0.74)	0.55	(3.0)
36	42	20	61.5	18	7.1	4.2	11/3	0.47	0.74
(900)	[1067]	(530)	(1600)		(0.56)	(0.39)	(1-05)	[1.5]	(2.4)
42	48	24	72	18	9.2	5.8	15.0	0.40	C.65
(1050)	[1219]	(800)	(1830)	(460)	(0.87)	(0.53)	(1.40)		(2.1)
48	54	24	72	18	12.4	6.7	19.1	0.34	(0.53
(1200)	(4972)	(800)	(2000)	(480)	[1:15]	(0.62)	[1.77]		(1.7)
60 (1500)	67 (1202)			18	19.3	8.5 (0.78)	27.8 [2.57]	0.27 (0.89)	(0.39

Typical cross section used in volume calculations. Bedding depth assumed 4" for 12" 24" pipe and 6" for 30" 60" pipe.

Actual Inside Diameter values used in paloulation.
Stone Porosity assumed 40%.
Stone height above pipe proxymmotinosused in void volume calculations.
Calculation is based on the givenage busside Diameters of the pipe.

For Perforated Systems Follow Engineers Recommendation for Aggregate Size.

GENERAL INSTALLATION PROCEDURES

Detention Systems shall be installed in accordance with the latest edition of ASTM D2321 and the manufacturer's installation guidelines.

FOUNDATION: Unsuitable tranch bottoms or unyielding material shall be excavated to a depth directed by the engineer and replaced with suitable material. Geotextile may be used to stabilize the trench bottom, if directed by the engineer.

BEDDING: Minimum bedding depth shall be 4". Material shall be Class I or II, as specified by ASTM D2321.

INITIAL BACKFILL: Initial backfill material shall be Class 1 or 2 material as specified by ASTHO D2321 and extend to not less than 6" above the top of the pipe. Compaction and beckfill shall be in accordance with ASTM D2321.

FINAL BACKFILL: Suitable materials shall be directed by the engineer for use in non-traffic applications. Areas subjected to traffic require 12" of compaction, and a separation layer of non-woven geotextile may be required. Compaction levels shall be specified at the discretion of the design engineer,

MINIMUM COVER: For up to H-25 traffic applications a minimum cover of 12" for pipe up to 36" diameter, 24" for sizes 42" through 60" diameter must be used. Minimum cover is measured from the top of the pipe to bottom of flexible pavement or to the top of rigid payement, Additional cover may be required for construction loads, for vehicles over 75 tons or to prevent flotation.

ENVIRONMENTAL IMPACT:

a integral part of your project's Best Management Practices.

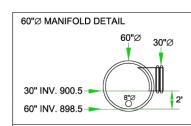
into the soil for groundwater recharge, or solid, containing the storm event for a controlled release into a municipal storm sewer. Timewell's underground systems are closed, mitigating and decreasing the health risks and thermal impacts associated with open water storage. Timewell's total approach provides developers a valuable tool to gain land for parking or green areas for ascetic enhance

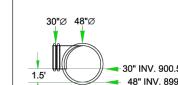


- Optorials perfors the same viola value to a celedulated set storage
 Optorial insers allow nan-entry and easy cleanout
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AND DETAILS ARE FOR REFERENCE ONLY. THEY

THE PURPOSE OF THE PROVIDED GRAPHS, NOTES SHOULD NOT BE USED TO DESIGN AND/OR ENGINEER A FINAL SYSTEM FOR INSTALLATION. ALL SYSTEM DESIGNS MUST BE APPROVED BY TIMEWELL AND JOBSITE ENGINEERS.





Timewell provides underground detention systems that have positive environmental impacts. These systems can serve as

Our perforated detention systems can allow for percolation

60"X30" MF TEE-30" INV. 900.5 48"X30" MF -DOUBLE MANIFOLD TEE 30" INV 900 5 30" MAXFLO HDPE 30" INV 900 5 60" INV. 898.5-48" INV. 899.0 30" INV. 900.5 85.5' 30" INV. 900.5 48"X30" MF DOUBLE 48"Ø MANIFOLD DETAIL MANIFOLD TEE 30" INV. 900.5 30" INV. 900.5 48"X48"X30" MF DOUBLE 30" INV. 900.5 MANIFOLD TEE 30" INV. 900.5 48" INV. 899.0 48" MAXFLO HDPE 48" MF RIGID PIPE 60"X30" MF REDUCER 48" INV. 899.0 **ADAPTER** 30" INV. 900.5 48" MAXFLO HDPE - PERF

TIMEWELL, INC. HAS PREPARED THIS DRAWING BASED ON INFORMATION THAT WAS PROVIDED TO TIMEWELL. THE DETAILS ARE INTENDED TO TREPRESENT THE COMPONENTS AS REQUESTED. TIMEWELL HAS NOT PERFORMED ANY DESIGN SERVICES OR ENGINEERING FOR THIS PROJECT, TIMEWELL HAS NOT INDEPENDENTLY VERFIELD THE INFORMATION SUPPLIED. INSTALLATION RECOMMENDATIONS ARE GENERAL AND ARE NOT SPECIFIC TO THIS PROJECT. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO REVIEW THESE DETAILS AND ENSURE THAT THEY RECOUREMENTS AND ENSURE THAT THEY ACCUREMENTS AND ENSURE THAT THEY ACCUREMENTS AND ENSURE THAT THEY ACCUREMENTS AND ENSURE THAT THE DETAILS PROVIDED ARE ACCEPTABLE FOR THIS PROJECT.

DATE INVERTS AND TEE DIMENSION VERIFICATIONS. BMH 3-31-15 DRAWING NUMBER:

MAXFLO UNDERGROUND DETENTION SYSTEM COTTAGEVILLE PARK - HOPKINS MN

48" MF RIGID PIPE ADAPTER

48"X30" MF REDUCER

48" INV. 899.0



48" MF TEE

BMH 2/19/2015 NTS 1 Of 1

C5.09

48" MF 45° ELBOW

Amoturus IICHOLAS J. AMATUCCIO 53639



CONNECTION TO 8" SDR 26 INV. 898.58

30" MF RIGID PIPE ADAPTER

(BELOW 30" STUB)

30" INV. 900.5

12224 NICOLLET AVENUE BURNSVILLE, MINNESOTA 55337 Phone: (952) 890-0509 www.bolton-menk.com

48"X30" MF

REDUCER

---- 13.5' --



-48"X18" MF TEE INV. 899.0

-18" MF RIGID PIPE ADAPT.

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48" INV. 899.0

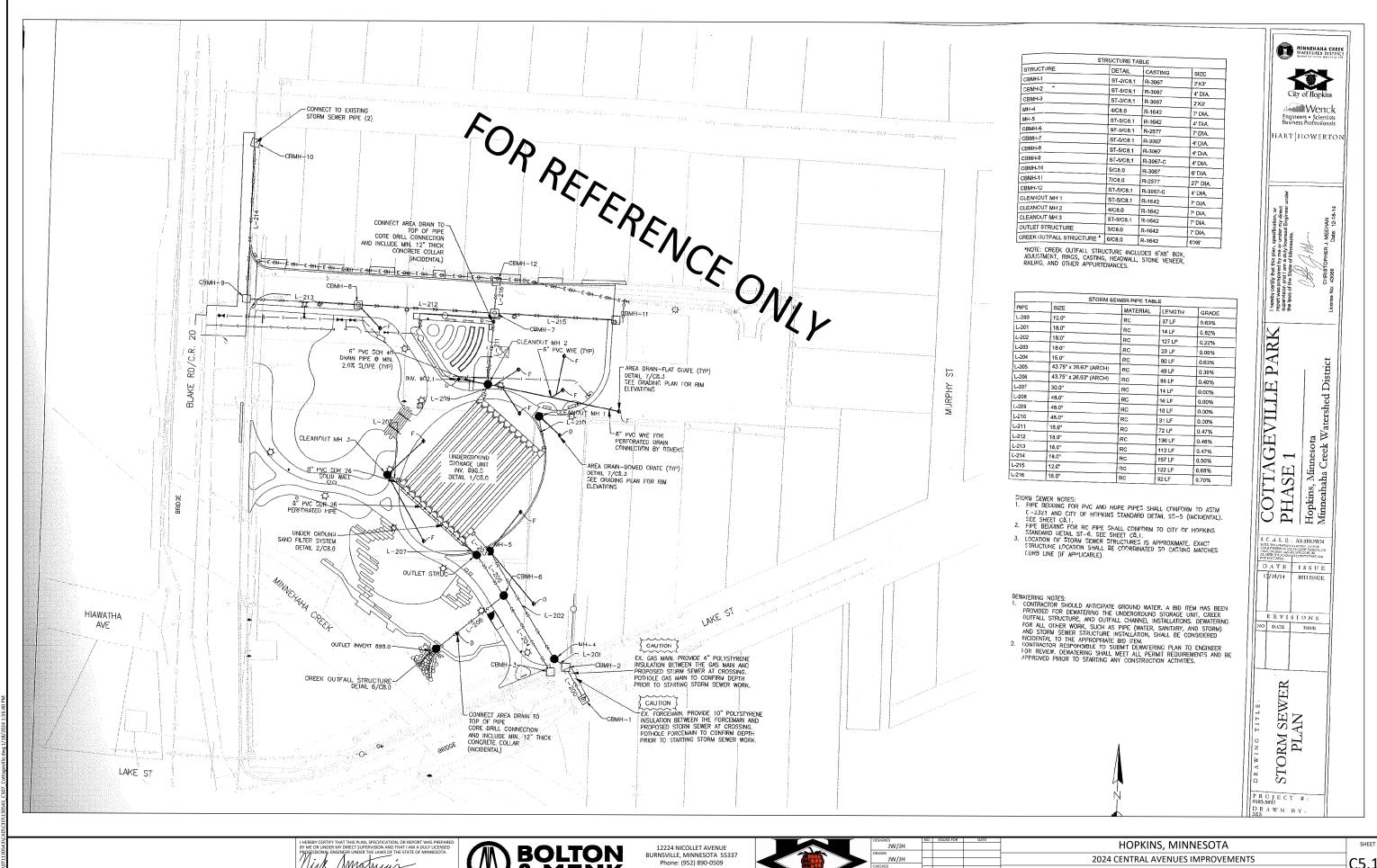
6 OZ WOVEN FILTER FABRIC,

OR AS REQUIRED BY ENGINEER

RECOMMENDED PERFORATED PIPE ENVELOPE:

BACKFILLED W/ 40% VOID POROSITY & WRAPPED WITH

HOPKINS, MINNESOTA 2024 CENTRAL AVENUES IMPROVEMENTS COTTAGEVILLE PARK STORM SEWER RECORD SUBMITTAL



Amoturus IICHOLAS J. AMATUCCIO 53639



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COTTAGEVILLE PARK STORM SEWER RECORD PLAN

C5.10

Attachment B

Cottageville Park: Terms for MCWD Property Occupation & Restoration

The City of Hopkins (City) is to perform maintenance and retrofit work on the underground stormwater management system at Cottageville Park. The system lies in part beneath MCWD property, which will be disturbed to access the system, and by staging for the work.

The existing easement that allows the City to enter MCWD property for this work provides that the City and MCWD will agree to terms governing the City's occupation and restoration of the property. Accordingly, the City agrees that it will conform to the following terms:

- 1. The City may occupy MCWD property for the work from 5/1/2024 to 11/1/2024.
- 2. After contract award, the City will notify MCWD and its engineer, Stantec, of the following coordination related to the construction at Cottageville Park, in which they may participate:
 - Preconstruction meeting
 - Any weekly meetings related to the contractor's schedule.
- 3. On the basis of the submitted plans, an MCWD erosion control permit is not required for the work. The City will conform the work to the ESC practices set forth on the project plans, including the following:
 - Area of vegetation removal is limited to the necessary excavation limits to complete the work.
 - The disturbance area will be surrounded with properly maintained silt fence or sediment control log to keep disturbed soil within that area.
 - Proper inlet protection will be maintained on all adjacent inlets near the disturbance areas and access route.
- 4. There are no other subsurface structures on the MCWD property proximate to the system. The City will protect all existing surface infrastructure and will repair or replace that infrastructure in the event of any damage.
- 5. The City will notify MCWD and Stantec 48 hours in advance of the following critical construction activities:
 - Installation of the pipe plug that is being retrofit to limit short circuiting.
 - Replacement and installation of the sand filter media.
 - Installation of access risers.
- 6. When the disturbance is complete, the City will install sod per specifications. This includes but is not limited to starter fertilizer, subgrade preparation and placement of topsoil, and maintenance. Before sodding, the City will remove all construction debris, rocks, and trash, and loosen topsoil to its full depth with a disc or harrow. The City will provide water for 30 days, or until MCWD acceptance, whichever later. The City will notify MCWD for restoration walkthrough.