

STORM SEWER SYSTEM MAINTENANCE AGREEMENT
Between the City of Rochester Hills and Gerald Real Estate LLC

(SIGNATURES ON FOLLOWING PAGES)

THE GERALD
STORM SEWER SYSTEM MAINTENANCE AGREEMENT

THIS STORM SEWER SYSTEM MAINTENANCE AGREEMENT is made this 18th Day of June, 2024 by and between the City of Rochester Hills, a Michigan municipal corporation (the "City"), whose address is 1000 Rochester Hills Drive, Rochester Hills, Michigan 49309-3033, and Gerald Real Estate LLC, a Michigan limited liability company ("Developer"), whose address is 13500 Foley St, Detroit, MI 48227.

RECITALS:

A. Developer is the owner of certain real property located in the City of Rochester Hills, Oakland County, Michigan, which real property is more particularly described in Exhibit A attached hereto and incorporated herein (the "Property").

B. Developer intends to develop the Property as a residential community to be known as The Gerald, a single-family residential development (hereinafter known as the "Development").

C. The Development will alter the natural flow of surface and storm water drainage.

D. Developer desires to extend to the future condominium unit owners within the Development the right to utilize and benefit from the storm water detention facilities and to provide a permanent method for the support and upkeep of said detention facilities.

E. Developer has proposed and the City has approved a storm water drainage and detention system (the "Storm Sewer System") as shown in Exhibit B attached hereto and incorporated herein (the "Approved Plan") and both the Developer and the City will benefit from the proper operation, use and maintenance of the Storm Sewer System and desire to enter into this binding contract relative to the use and governance of the areas described and fully delineated in the condominium Development site plan (the "Condominium Subdivision Plan").

F. Developer also intends to bind the condominium unit owners in the Development to this Agreement so this Agreement is intended to run with the land;

NOW, THEREFORE, in consideration of the approval by the City of the Condominium Subdivision Plan and of the mutual promises contained herein, the parties hereto agree as follows:

L **Storm Sewer System.** Pursuant to the Condominium Subdivision Plan, Developer hereby makes available and will grant to each of the condominium unit owners in the Development the right to utilize, maintain, replace and repair the Storm Sewer System, including but not limited to the detention basin areas and the storm sewer lines existing within the Development and delineated in the Condominium Subdivision Plan. Components of the Storm Water System, including any and all water conveyance, detention facilities and devices, storm sewer pipe, catch basins, manholes, end-sections, ditches, swales, open water courses and rip-rap, shall be used solely for the purpose of conveying and detaining storm and surface drainage in the Development until such time as: (i) the City determines and notifies the Developer or Developer's successors and assigns, including the Association (as defined below), in writing that it is no longer necessary to convey, or detain the storm and surface drainage; and (ii) an adequate alternative for conveying and detaining storm and surface drainage has been provided which is acceptable to the City and which includes the granting of any easements to the City or third parties as may be required or necessary for the alternative drainage system.

2. **Condominium Association for The Gerald.** Control and jurisdiction over the Storm Sewer System shall be vested in the Condominiums at The Gerald Association (hereinafter referred to as "Association"). The Association is organized as a nonprofit corporation for a perpetual term under the laws of the State of Michigan. The Association was incorporated on ~~June~~ ^{April} ~~20, 2024~~ ^{29, 2022}. Membership in the Association shall be mandatory for all of the condominium unit owners in the Development. The Association shall be responsible at its sole expense for the proper maintenance of the Storm Sewer System and for compliance with the terms of this Agreement. The Bylaws of the Association shall provide for a Board of Directors of no less than three (3) members and no more than five (5).

The Association members shall each bear their prorata share of the total costs of maintaining the Storm Sewer System (including without limitation, the real and personal property taxes assessed against it, if any, and insurance policies maintained with respect to it),

which shall constitute a lien against each member's condominium unit. The prorated share of the cost shall be based on each condominium unit owner's percentage of value as set forth in the Master Deed for The Gerald. Each Association member shall be entitled to vote in accordance with the Master Deed for The Gerald.

The Association shall have the authority to make and enforce regulations pertaining to the use and maintenance of the Storm Sewer System, which regulations shall be binding upon all members of the Association.

3. **Maintenance of Storm Sewer System.** The Association shall be responsible for the proper maintenance, repair and replacement of the Storm Water System and all parts thereof as detailed in the Maintenance Plan attached hereto as Exhibit C (the "Maintenance Plan"). Proper maintenance of the Storm Water System shall include, but is not limited to, (i) keeping the bottom of the detention basin and at inlet pipes free from silt and debris; (ii) removing harmful algae; (iii) managing deleterious vegetative growth; (iv) maintaining the Storm Water System structures, end-sections and safety features; (v) controlling the effects of erosion; (vi) inspection of inlet and outlet pipes for structural integrity; (vii) inspection and replacement of rip-rap at inlet pipes; (viii) inspection and cleaning of storm sewer and catch basins upstream from the detention basin; (ix) inspection and replacement of stone around the outlet pipe; and (x) any other maintenance that is reasonable and necessary to facilitate and continue the proper operation of the Storm Water System. In no event shall the detention basin areas be utilized for any purpose other than detention of surface water without the prior written consent of the Association.

4. **Failure to Maintain Storm Sewer System.** In the event the Association fails at any time to maintain the Storm Sewer System (including without limitation the detention basins) in reasonable order and condition, the City may serve written notice upon the Association or upon its members setting forth the manner in which the Association has failed to maintain the Storm Sewer System in a reasonable condition and such notice shall include a demand that deficiencies of maintenance be cured within thirty (30) days thereof. The notice shall further state the date and place of a hearing thereon before the City Council or other such board, body or official to whom the City shall delegate such responsibility, which shall be held at least fourteen (14) days after the date of the notice. At such hearing, the City Council or other designated

board, body or official may affirm or modify the list and description of maintenance deficiencies and, for good cause shown, may give an extension of the time within they shall be cured.

Thereafter, if the deficiencies set forth in the original notice, or in the modification thereof, shall not be cured within the time allowed, the City may maintain the same for a period of one (1) year. Such maintenance by the City shall not be construed as a trespass, constitute a taking of the Storm Sewer System, nor vest in the public any rights to use or enter the Storm Water System. Thereafter, if the Association does not properly maintain the Storm Water System, the City may, after providing similar written notice, schedule and hold another hearing to determine whether the City should maintain the Storm Water System for another year, and subject to a similar notice, hearing and determination in subsequent years.

In the event the City determines an emergency condition caused by or relating to the Storm Water System threatens the public health, safety or general welfare, the City shall have the right to immediately and without notice enter the Storm Water System and undertake appropriate corrective action.

5. **Charges.** The cost of any maintenance by the City, plus a ten percent (10%) administrative fee, shall be assessed against the Association and, if not timely paid, added to the tax rolls, which charges shall be a lien on the Storm Water System and shall be collectable and enforceable in the same manner general property taxes are collected and enforced. The City shall be, at its option, subrogated to the right of the Association against its members to the extent of that cost and administrative charge, if the City shall, by an official resolution, give thirty (30) days written notice to each member of the Association of the City's election to be subrogated.

The Association members shall bear their prorata share of the total costs of maintaining the Storm Sewer System, which prorata share of the cost shall constitute a lien against each member's condominium unit and if not paid, the City shall have the right to add it to the tax rolls and collect it in the same manner as provided above. The prorated share of the cost shall be based on each condominium unit owner's percentage of value as set forth in the Master Deed for The Gerald. The cost of maintenance by the City shall be assessed against the Association or the Association members at the City's discretion.

In the event the City declares the existence of an emergency upon, caused by or relating to the Storm Sewer System, and the City takes appropriate corrective action, the City shall have the right to charge and collect the costs for such corrective action, as provided herein.

6. **Notice.** Any notices required under this Agreement shall be sent by certified mail to the address for each party set forth below, or to such other addresses as such party may notify the other parties in writing:

To the Developer: Gerald Real Estate, LLC
13500 Foley St
Detroit, MI 48227

To the City: City Clerk
City of Rochester Hills
1000 Rochester Hill Drive
Rochester Hills, Michigan 48309

To the Association: The Gerald Condominium Association
13500 Foley St
Detroit, MI 48227

7. **Successors and Assigns, etc.** This Agreement shall constitute restrictions and covenants running with the Property. The parties hereto make this Agreement on behalf of themselves and their respective successors and assigns, and hereby warrant that they have the authority and capacity to make this contract.

8. **Recording.** This Agreement shall be recorded at the Oakland County Register of Deeds.

[Signatures and Acknowledgements on Following Page]

Gerald Real Estate LLC

Mike Chaudhary

By: _____
Mike Chaudhary

Its: President

STATE OF MICHIGAN
COUNTY OF Wayne

This agreement was acknowledged before me on June 18, 2024,

By Mike Chaudhary, who is the President of Gerald Real Estate LLC a Michigan limited liability company, on behalf of the company.

Rachel McGowan
Notary Public, State of Michigan
County of Wayne
My Commission Expires Dec. 23, 2027
Acting in the County of Wayne

Rachel McGowan

, notary public

Wayne County, Michigan

My commission expires: 12/23/27

CITY OF ROCHESTER HILLS

By: _____
Bryan K. Barnett, Mayor

STATE OF MICHIGAN
COUNTY OF OAKLAND

This agreement was acknowledged before me on _____, 2024,

by Bryan K. Barnett, Mayor, of the City of Rochester Hills, on behalf of the City.

notary public

County, Michigan

My commission expires:

Drafted By:
Yash Chaudhary
13500 Foley
Detroit, MI 48227
When Recorded Return to:
Clerks Dept.
City of Rochester Hills
1000 Rochester Hills Drive
Rochester Hills, MI 48309

P. Dan Christ
Approved 7/1/24

EXHIBIT A

DESCRIPTION OF THE PROPERTY

The land which comprises the Condominium Project established in this Master Deed is particularly described as follows:

LOTS 1545 - 1548 OF "SUPERVISOR'S PLAT OF BROOKLANDS PARK NO. 4" A SUBDIVISION OF PART OF THE EAST 1/2 OF THE NORTHEAST 1/4 OF SECTION 36, T.3N., R.11E., CITY OF ROCHESTER HILLS, OAKLAND COUNTY MICHIGAN AS RECORDED IN LIBER 28 OF PLATS, PAGE 49, OAKLAND COUNTY RECORDS.

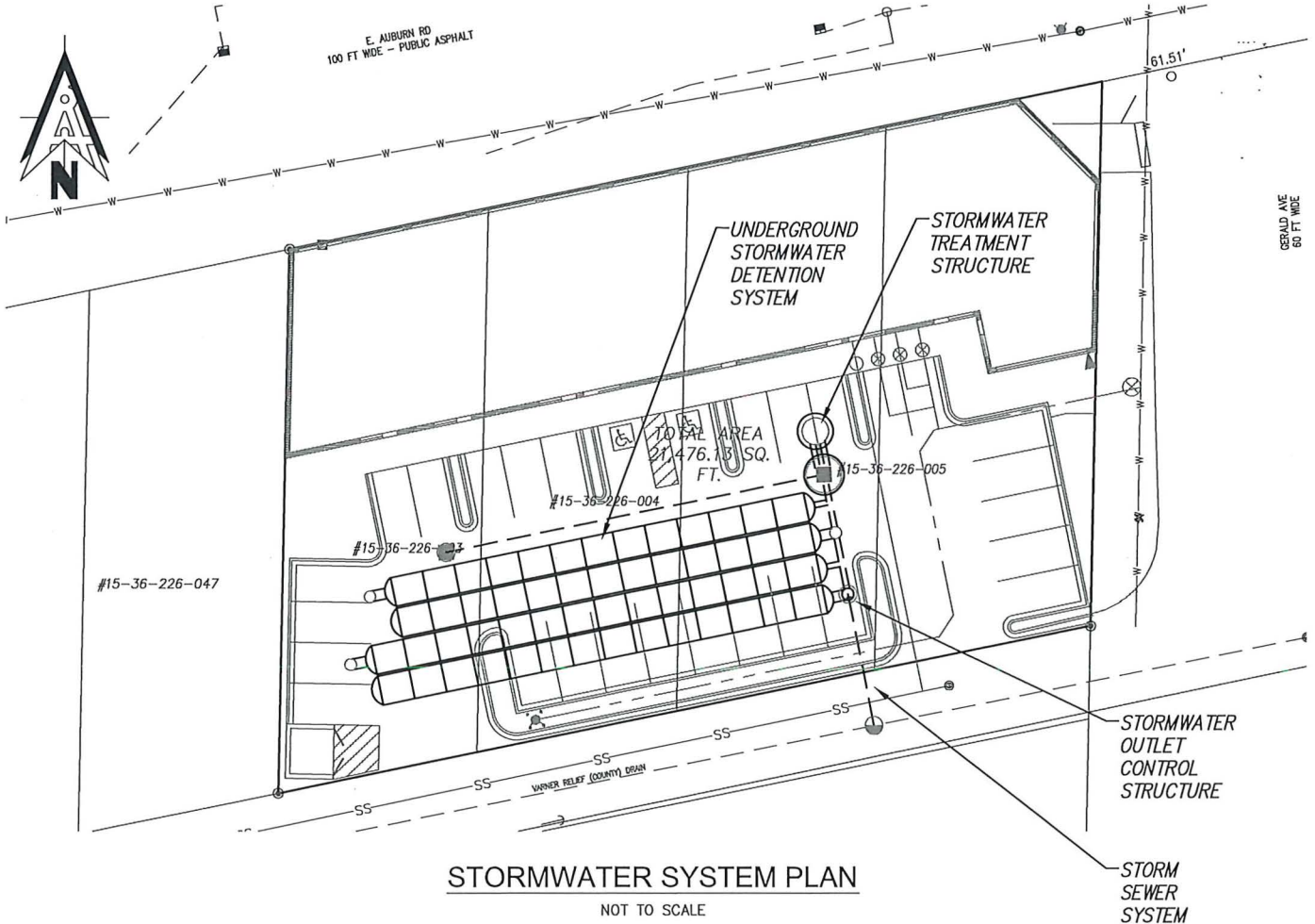
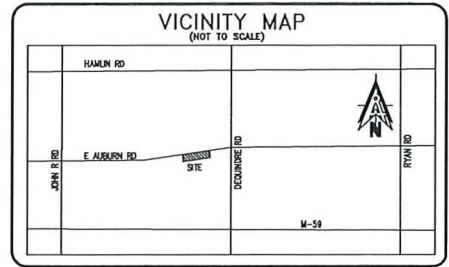
ADDRESS: (COMMONLY KNOWN AS VACANT E. AUBURN ROAD)

SIDWELL: 15-36-226-003, 15-36-226-004, 15-36-226-005

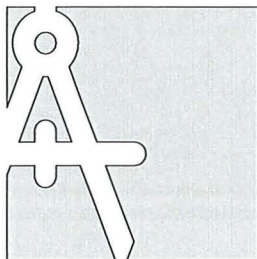
Approved
SB
City of Rochester Hills
06/27/2024

Now: 15-36-226-068

EXHIBIT "B"



ARS Approved
7/11/24



TRI-COUNTY
Engineering Consultants

48701 Hayes Road
Shelby Twp, MI 48315
T (810) 394-7887
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Drawn By: AS

Approved By: SS

Date: 07/11/24

Job No: TA20001

Job Name: GERALD PLAZA

Job Location: Rochester Hills

GERALD PLAZA

ROCHESTER HILLS
OAKLAND COUNTY
MICHIGAN

EXHIBIT "C"

OPERATIONS AND MAINTENANCE MANUAL

**GERALD PLAZA
1760 E AUBURN RD, ROCHESTER HILLS, MI 48307
CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN**

**OWNER / DEVELOPER
GERALD REAL ESTATE LLC
13500 FOLEY STREET
DETROIT, MI 48227
T 313-491-1815**

July 11, 2024

**ARS Approved
7/11/24**

OPERATION AND MAINTENANCE MANUAL

INTRODUCTION:

This manual identifies the ownership, operation and maintenance responsibilities for all stormwater management systems including the underground detention system, underground storm sewer system, outlet control structures, and mechanical pre-treatment devices as incorporated into and detailed on the approved Gerald Plaza construction plans as prepared by Tri-County Engineering. In order to comply with the local best management practices (BMP) and requirements, this manual should serve as a minimum performance standard. This manual should be retained intact and read in its entirety by all parties responsible for the operations and maintenance of the on-site BMP's.

OWNER / DEVELOPER:

GERALD REAL ESTATE LLC
13500 FOLEY STREET
DETROIT, MI 48227
T 313-491-1815

PROPERTY INFORMATION:

This Operations and Maintenance Manual covers the storm water system located on the property described in Exhibit A attached to the agreement for storm sewer system maintenance.

STORMWATER MAINTENANCE EXHIBIT:

Exhibit 'B' of the Storm Water Maintenance Agreement is the Storm Water System Plan which provides a clear presentation of all components of the storm water system. This system is subject to the long-term operation and maintenance responsibilities detailed in this manual. The system includes:

- Storm sewer pipes
- Storm sewer structures (manholes, inlets, catch basins... etc.)
- Outlet control structures
- Pre-Treatment Devices (ADS Barracuda Unit)

INSPECTIONS:

The frequency of system inspections outlined in the manual and attached exhibits should be considered the minimum if no events warrant additional inspections. The frequency of inspections should be fine-tuned over time as system specific conditions are better known and the rate at which certain maintenance operations need to be performed is better understood. Maintenance Inspection Checklists are provided for each of the BMPs in this system. Inspections should be performed by personnel responsible for maintenance and may need to be certified for confined space entry, depending on the component being Inspected. Operation of the detention system, outlet control structures and pre-treatment devices may need to be inspected by a practicing civil engineer familiar with their operation.

Records of all routine inspections and any work performed on the system for maintenance, repair or replacement should be maintained by the owner and kept for a minimum of ten (10) years. A copy of all records should be provided to the City of Rochester Hills Engineering Division. The records should include this manual, all inspection sheets, approved construction plans and as-built documents, a maintenance log of work performed to the system(s) and contact information for the system inspector, civil engineer, landscape architect, geotechnical engineer and contractor involved with the system.

STORM WATER SYSTEMS MAINTENANCE:

Regular inspection and maintenance of BMP's are necessary if these facilities are to consistently perform up to expectations. Stormwater systems are expected to perform quality and quantity control functions as long as the land use they serve exists. Failure to maintain these systems can create the following adverse impacts:

- Increased pollutants to surrounding surface water features.
- Potential loss of life or property resulting from catastrophic failure of the facility.
- Aesthetic or nuisance conditions, such as mosquitoes or reduced property values due to a degraded facility appearance.

Most of these impacts can be avoided through proper and timely inspection and maintenance. A major concern associated with these impacts is the general public's expectations related to the quality of life provided, in part, by construction of these systems. Inadequate maintenance means the general public may have a false sense of security. The most common cause of stormwater system failure is the lack of adequate and proper operation, inspection, maintenance, and management.

Good design and construction can reduce subsequent maintenance needs and costs, but they cannot eliminate the need for maintenance altogether. Maintenance requires a long-term commitment of time, money, personnel and equipment. Monitoring the overall performance of the stormwater management system is a major aspect of any maintenance program.

The maintenance responsibilities for these systems lie with the current property owner and transfer with the property in perpetuity. If maintenance of the system is not performed, the City of Rochester Hills reserves the right to enter the property and perform all necessary work at the property owners' cost. Refer to the Agreement for Storm Water System Maintenance for additional details.

General Maintenance Items:

Parking Lot Sweeping:

Routine sweeping of all paved surfaces provides a more attractive appearance and removes accumulations of sediment and trash that tend to migrate into stormwater management systems during rainfall events. Parking lot sweeping should be performed quarterly or as necessary to limit sediment and trash buildup.

Grass Mowing and Maintenance:

Mowing Requirements at a facility should be designed to the specific site conditions, grass types and seasonal variations in climate. Grassed areas require periodic fertilizing, de-thatching and soil conditioning in order to maintain healthy growth. Provisions will need to be made to reseed and reestablish grass cover in areas damaged by sediment accumulation, stormwater flow,

erosion, or other causes. Dead turf will need to be replaced after being discovered. Inspection of the grass areas and other landscaping features should be made annually.

Trash and Debris Removal:

Removal of trash and debris from all areas of the property should be performed monthly. Removal of these items will prevent damage to vegetated areas and eliminate their potential to inhibit the operation of any of the stormwater management systems. Sediment, debris and trash that are removed and collected should be disposed of according to local, State and Federal regulations at suitable disposal and/or recycling centers.

Stormwater System Maintenance Items:

The following narratives give an overview of the maintenance requirements of the different components of the stormwater system. The inspection checklists attached to this report offer a more complete listing of what should be inspected, when inspection should occur and the likely frequency of maintenance activities.

Storm Sewer and Structures:

Catch basins, inlets, manholes, outlet control structures, detention pipe and storm sewer pipes should be inspected to check for sediment accumulation and clogging, floatable debris, dead vegetation etc. The structures and sewers should also be observed during a wet weather event to ensure their proper operation. Accumulated sediment and debris should be removed on an annual basis or as needed based on observed conditions. Structural repairs or maintenance should occur as needed based on observed conditions such as cracks, spalling, joint failure, leakage, misalignment or settlement of structures. A civil engineer should be retained if problems are thought to exist.

Stormwater Pre-Treatment Devices:

Refer to the attached maintenance manuals from the manufacturer for all inspection and maintenance requirements for the pre-treatment structures. The following pages include inspection checklists for the various devices and components listed above as well as the manufacturer's manuals for the stormwater pre-treatment structures.

STORM WATER MANAGEMENT SYSTEM LONG-TERM MAINTENANCE SCHEDULE

Maintenance Activities	SYSTEM COMPONENT					Notes
	Catch Basins, Manholes, Storm Sewers	Underground Detention System	Outlet Control Structure & Pipes	Pavement & Grass Areas	Frequency	
Monitoring / Inspections						
Inspect for sediment accumulation	X	X	X		Annually	
Inspect for floatables and debris	X	X	X		Annually & after major events	
Inspection for erosion				X	Annually & after major events	
Monitor plantings / vegetation				X	Bi-Annually	
Inspect all components during wet weather & compare to as-built plans	X	X	X		Annually	
Ensure maintenance access remains open / clear	X	X			Annually	
Preventative Maintenance						
Mowing / landscaping clean-out				X	As needed	
Remove accumulated sediments	X	X	X		As needed *	
Remove floatables, debris, invasive & dead vegetation	X	X		X	As needed	
Sweeping of paved surfaces...etc.					As needed	
Remedial Actions						
Repair / stabilize areas of erosion				X	As needed	
Replace dead plantings & trees, re-seed bare areas				X	As needed	
Structural repairs	X	X	X		As needed	
Make adjustments / repairs to insure proper functioning	X	X	X		As needed	

* Components to be cleaned whenever sediment accumulates to a depth of 6-12 inches or if sediment re-suspension is observed.

SUMMARY:

INSPECTOR REMARKS:

OVERALL CONDITION:

RECOMMENDED ACTIONS NEEDED:

DATES ANY MAINTENANCE MUST BE COMPLETED BY:

Underground Detention System Inspection and Maintenance Checklist

Facility:			
Location/Address:			
Date:	Time:	Weather Conditions:	Date of Last Inspection:
Inspector:		Title:	
Rain in Last 48 Hours <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, list amount and timing:			
Pretreatment: <input type="checkbox"/> vegetated filter strip <input type="checkbox"/> swale <input type="checkbox"/> turf grass <input type="checkbox"/> forebay <input type="checkbox"/> other, specify: _____ <input type="checkbox"/> none			
Site Plan or As-Built Plan Available: <input type="checkbox"/> Yes <input type="checkbox"/> No			

*Do not enter underground detention chambers to inspect system unless Occupational Safety & Health Administration (OSHA) regulations for confined space entry are followed.

*Follow inspection and maintenance instructions and schedules provided by system manufacturer and installer.

* Properly dispose of all wastes.

Inspection Item	Comment	Action Needed
1. PRETREATMENT		
Sediment has accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Trash and debris have accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. INLETS		
Inlets are in poor structural condition.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sediment, trash, or debris have accumulated and/or is blocking the inlets.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. CHAMBERS		
Sediment accumulation threshold has been reached.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Trash and debris have accumulated in chambers.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. OTHER SYSTEM COMPONENTS		
Structural deterioration is evident.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. OUTLETS		
Outlets in poor structural condition.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sediment, trash or debris are blocking outlets.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Erosion is occurring around outlets.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
6. OTHER		
Evidence of ponding water on area draining to system.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Evidence that water is not being conveyed through the system.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Additional Notes		
Wet weather inspection needed <input type="checkbox"/> Yes <input type="checkbox"/> No		

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER:	MIGUEL VARGAS 419-215-8020 MIGUEL.VARGAS@ADS-PIPE.COM
ADS SALES REP:	RANDY NOSEK 810-348-8914 RANDY.NOSEK@ADS-PIPE.COM
PROJECT NO.:	S202323



ADVANCED DRAINAGE SYSTEMS, INC.

SiteASSIST™
+StormTech
FOR STORMTECH
INSTRUCTIONS,
DOWNLOAD THE
INSTALLATION APP



GERALD PLAZA

ROCHESTER HILLS, MI

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN/IN, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

- STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

BAYSAVER BARRACUDA SPECIFICATIONS

MATERIALS AND DESIGN

CONCRETE STRUCTURES: DESIGNED FOR H-20 TRAFFIC LOADING AND APPLICABLE SOIL LOADS OR AS OTHERWISE DETERMINED BY A LICENSED PROFESSIONAL ENGINEER. THE MATERIALS AND STRUCTURAL DESIGN OF THE DEVICES SHALL BE PER ASTM C857 AND ASTM C858.

48" HP MANHOLE STRUCTURES: MADE FROM AN IMPACT MODIFIED COPOLYMER POLYPROPYLENE MEETING THE MATERIAL REQUIREMENTS OF ASTM F2764. THE ECCENTRIC CONE REDUCER SHALL BE MANUFACTURED FROM POLYETHYLENE MATERIAL MEETING ASTM D3350 CELL CLASS 213320C. GASKETS SHALL BE MADE OF MATERIAL MEETING THE REQUIREMENTS OF ASTM F477.

SEPARATOR INTERNALS SHALL BE SUBSTANTIALLY CONSTRUCTED OF STAINLESS STEEL, POLYETHYLENE, OR OTHER THERMOPLASTIC MATERIAL APPROVED BY THE MANUFACTURER.

PERFORMANCE

THE STORMWATER TREATMENT UNIT SHALL BE AN INLINE UNIT CAPABLE OF CONVEYING 100% OF THE DESIGN PEAK FLOW. IF PEAK FLOW RATES EXCEED MAXIMUM HYDRAULIC RATE, THE UNIT SHALL BE INSTALLED OFFLINE.

THE STORMWATER TREATMENT UNIT INTERNALS SHALL CONSIST OF (1) SEPARATOR CONE ASSEMBLY, AND (1) SUMP ASSEMBLY WHICH INCLUDES (4) LEGS WITH "TEETH".

THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 90% OF THE SUSPENDED SOLIDS ON AN ANNUAL AGGREGATE REMOVAL BASIS. SAID REMOVAL SHALL BE BASED ON FULL-SCALE THIRD PARTY TESTING USING OK-110 MEDIA GRADATION OR EQUIVALENT AND 300 mg/L INFLUENT CONCENTRATION. SAID FULL SCALE TESTING SHALL HAVE INCLUDED SEDIMENT CAPTURE BASED ON ACTUAL TOTAL MASS COLLECTED BY THE STORMWATER TREATMENT UNIT.

-OR-

THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS USING A MEDIA MIX WITH d_{50} =75 MICRON AND 200 MG/L INFLUENT CONCENTRATION.

-OR-

THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS PER CURRENT NJDEP/NJCAT HDS PROTOCOL .

MANUFACTURER

EACH STORMWATER TREATMENT SYSTEM SHALL BE A BARRACUDA SYSTEM AS MANUFACTURED BY BAYSAVER, LLC, 1030 DEER HOLLOW DR., MOUNT AIRY, MD 21771. PHONE (301) 829-6470. FAX (301) 829-3747. TOLL FREE 1-800-229-7283 (1-800-BAYSAVER), EMAIL INFO@BAYSAVER.COM

BARRACUDA MAINTENANCE

BARRACUDA SYSTEMS MUST BE INSPECTED AND MAINTAINED PERIODICALLY. INSPECTION IS MADE BY CHECKING THE DEPTH OF SEDIMENT IN EACH MANHOLE WITH A GRADE STICK OR SIMILAR DEVICE. MAINTENANCE IS REQUIRED WHEN THE SEDIMENT DEPTH IN EXCEEDS 20 INCHES. MINIMUM INSPECTION IS RECOMMENDED TWICE A YEAR TO MAINTAIN OPERATION AND FUNCTION OF THE UNIT.

MAINTENANCE INSTRUCTIONS

1. REMOVE THE MANHOLE COVER TO PROVIDE ACCESS TO THE POLLUTANT STORAGE. POLLUTANTS ARE STORED IN THE SUMP, BELOW THE BOWL ASSEMBLY VISIBLE FROM THE SURFACE. YOU'LL ACCESS THIS AREA THROUGH THE 10" DIAMETER ACCESS CYLINDER.
2. USE A VACUUM TRUCK OR OTHER SIMILAR EQUIPMENT TO REMOVE ALL WATER, DEBRIS, OILS AND SEDIMENT.
3. USE A HIGH PRESSURE HOSE TO CLEAN THE MANHOLE OF ALL THE REMAINING SEDIMENT AND DEBRIS. THEN, USE THE VACUUM TRUCK TO REMOVE THE WATER.
4. FILL THE CLEANED MANHOLE WITH WATER UNTIL THE LEVEL REACHES THE INVERT OF THE OUTLET PIPE.
5. REPLACE THE MANHOLE COVER.
6. DISPOSE OF THE POLLUTED WATER, OILS, SEDIMENT AND TRASH AT AN APPROVED FACILITY.
 - LOCAL REGULATIONS PROHIBIT THE DISCHARGE OF SOLID MATERIAL INTO THE SANITARY SYSTEM. CHECK WITH THE LOCAL SEWER AUTHORITY FOR AUTHORITY TO DISCHARGE THE LIQUID.
 - SOME LOCALITIES TREAT THE POLLUTANTS AS LEACHATE. CHECK WITH LOCAL REGULATORS ABOUT DISPOSAL REQUIREMENTS.
 - ADDITIONAL LOCAL REGULATIONS MAY APPLY TO THE MAINTENANCE PROCEDURE.

BARRACUDA INSTALLATION NOTES

INSTALLATION OF THE STORMWATER TREATMENT UNIT(S) SHALL BE PERFORMED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. SUCH INSTRUCTIONS CAN BE OBTAINED BY CALLING ADVANCED DRAINAGE SYSTEMS AT (800) 821-6710 OR BY LOGGING ON TO

WWW.ADS-PIPE.COM OR WWW.BAYSAVER.COM.

PROPOSED LAYOUT

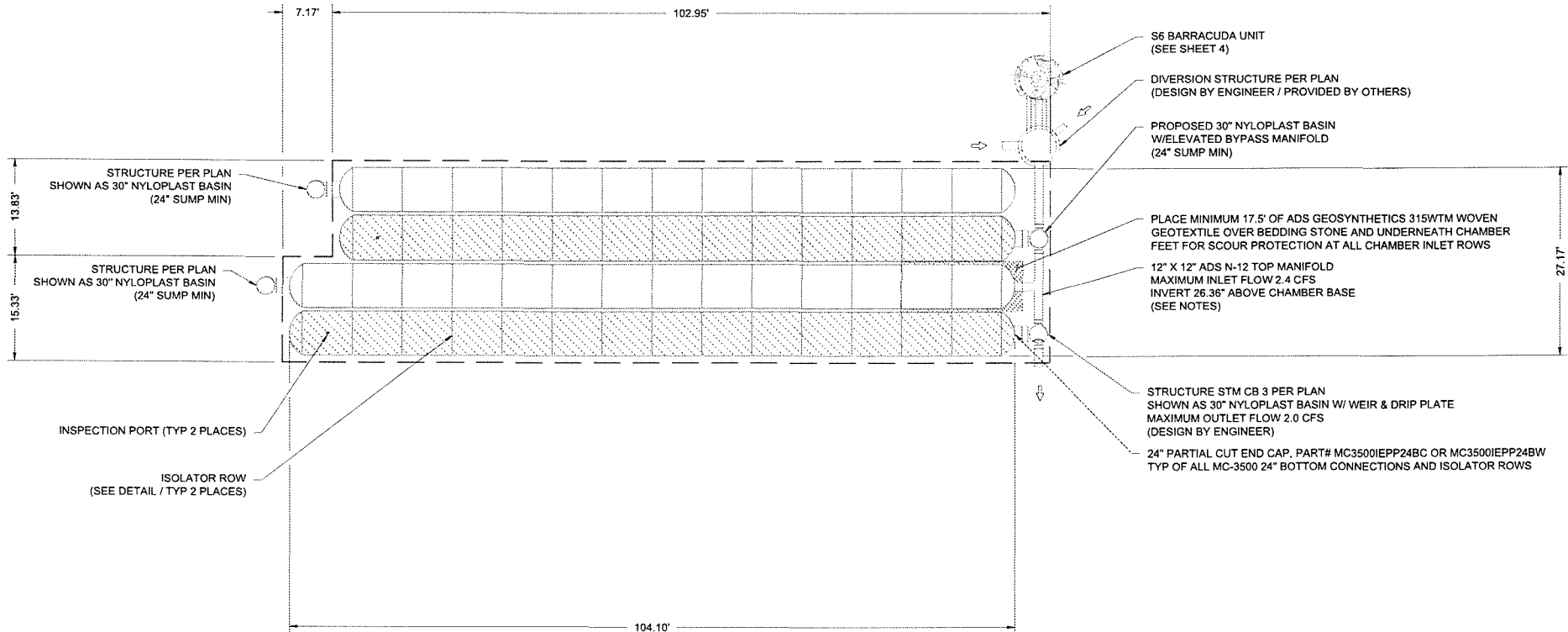
54	STORMTECH MC-3500 CHAMBERS
8	STORMTECH MC-3500 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
0	% STONE VOID
6,057	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
3,113	SYSTEM AREA (ft ²)
279	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS

716.60	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
710.60	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
710.10	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
710.10	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
710.10	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
709.60	TOP OF STONE
708.60	TOP OF MC-3500 CHAMBER
707.05	12" TOP MANIFOLD INVERT
705.02	24" ISOLATOR ROW CONNECTION INVERT
704.85	BOTTOM OF MC-3500 CHAMBER
704.10	BOTTOM OF STONE

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECHNICAL NOTE 6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- THE STORMTECH SYSTEM DEPICTED DOES NOT INCLUDE WATER QUALITY MEASURES AND/OR DOES NOT PROVIDE THE ABILITY TO BE INSPECTED, CLEANED, AND MAINTAINED. NOT MAINTAINING THE SYSTEM MAY LEAD TO A DECREASE IN STORAGE VOLUME OVER TIME. ADS RECOMMENDS THE USE OF THE ISOLATOR ROW ON ALL STORMTECH SYSTEMS.



GERALD PLAZA	
ROCHESTER HILLS, MI	
DATE: 09/22/20	DRAWN: CJM
PROJECT #: S202323	CHECKED: CID

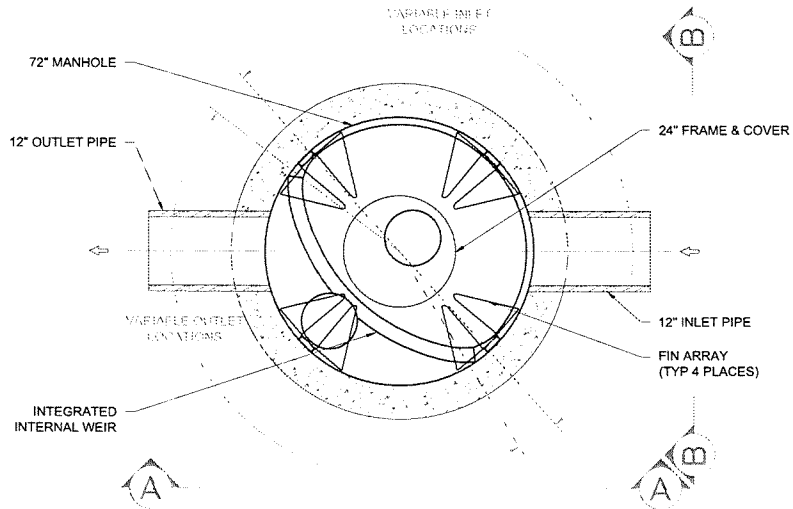
DATE	BY	DESCRIPTION
01/13/21	CJM	ADD NYLOPLAST BASIN
12/02/20	CJM	REVISE PER NEW PLAN
11/20/20	CJM	ANS
11/19/20	CJM	ANS
11/17/20	CJM	ANS
10/19/20	CJM	ANS

Stormtech
Advanced Drainage Systems, Inc.
 50 CROOKWELL AVENUE | ROCKY HILL, CT 06067
 860-524-6114 | 1.888.992.2884 | WWW.STORMTECH.COM

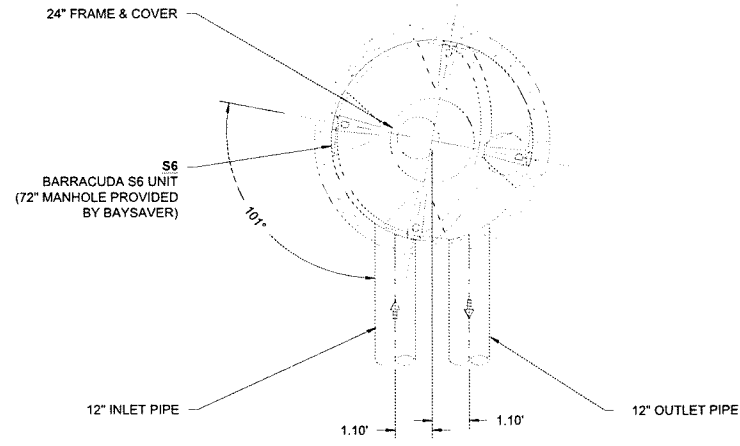
4840 TRUEMAN BLVD
 HILLIARD, OH 43026

ADS
ADVANCED DRAINAGE SYSTEMS, INC.

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGNER TO ASSURE THAT THE PROPOSED SYSTEMS AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

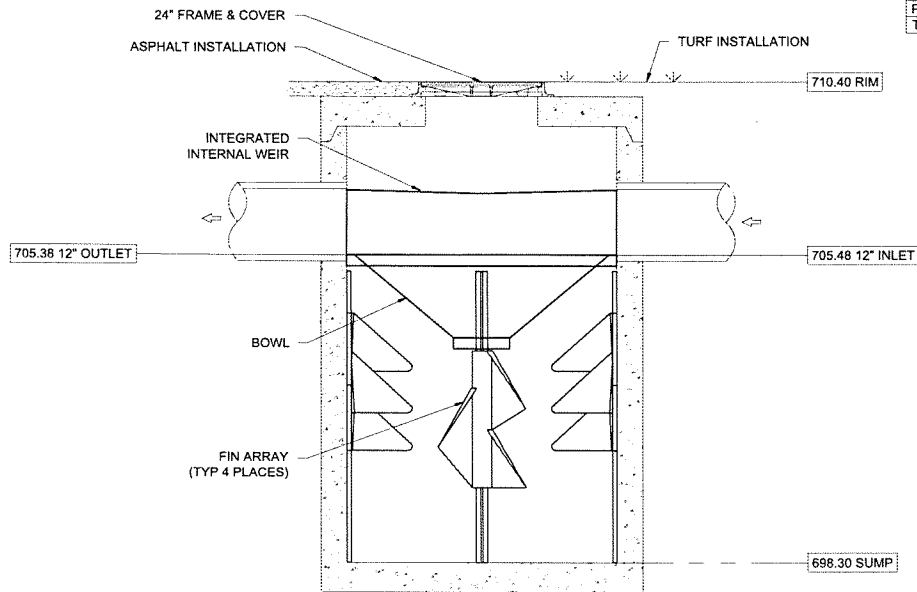


TYPICAL PLAN VIEW
NTS

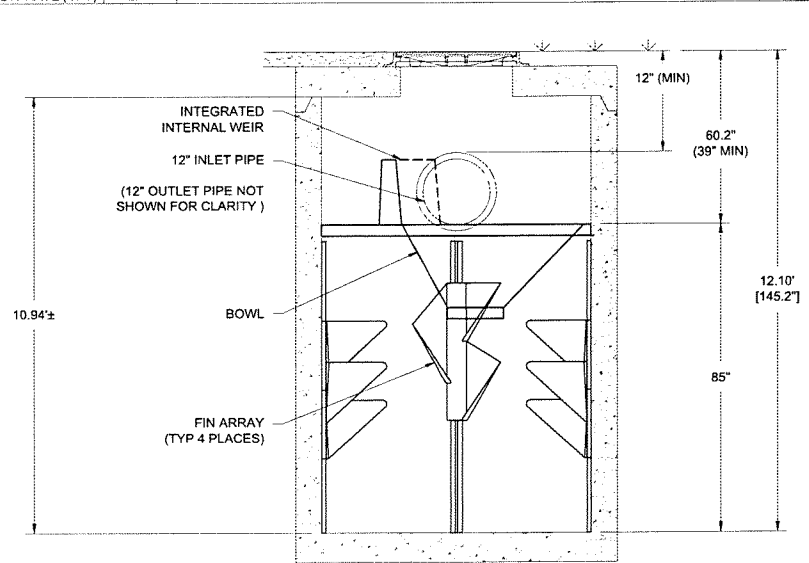


SITE SPECIFIC PLAN VIEW
NTS

BARRACUDA S6	
UNIT ID	S6
PEAK FLOW RATE (CFS)	
TREATMENT FLOW RATE (CFS)	2.43



SECTION VIEW A-A
NTS



SECTION VIEW B-B
NTS

GERALD PLAZA
ROCHESTER HILLS, MI

DATE: 09/22/20 DRAWN: CJM
PROJECT #: S202323 CHECKED: CJD

DATE	BY	DESCRIPTION
01/19/21	CJM	ADD NYC PLAST BASINS
12/03/20	CJM	REVISE PER NEW PLAN
11/23/20	CJM	ADD VOLUME
11/19/20	CJM	REVISE PER NEW PLAN
10/19/20	CJM	REVISE PER ENGINEER
10/19/20	CJM	REVISE PER ENGINEER

1800 Deer Hollow Drive
Mount Airy, NC 27171

Barracuda
1-800-BAYSAVER
1-800-229-7283

WSDS
4640 TRUENAN BLVD
HILLIARD, OH 43026

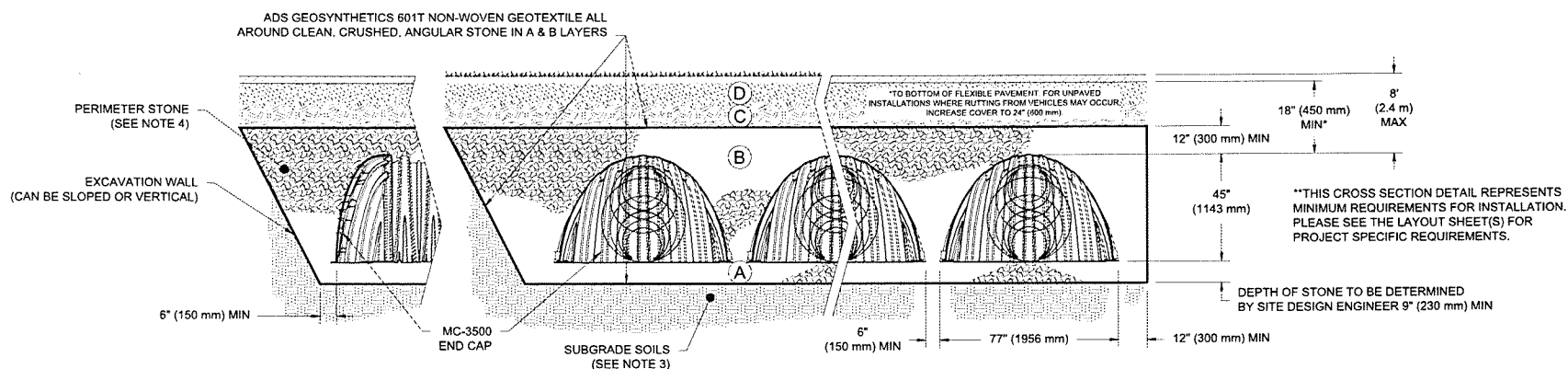
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ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145' A-1, A-2-4, A-3 OR AASHTO M43' 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE AASHTO M43' 3, 4	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE AASHTO M43' 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

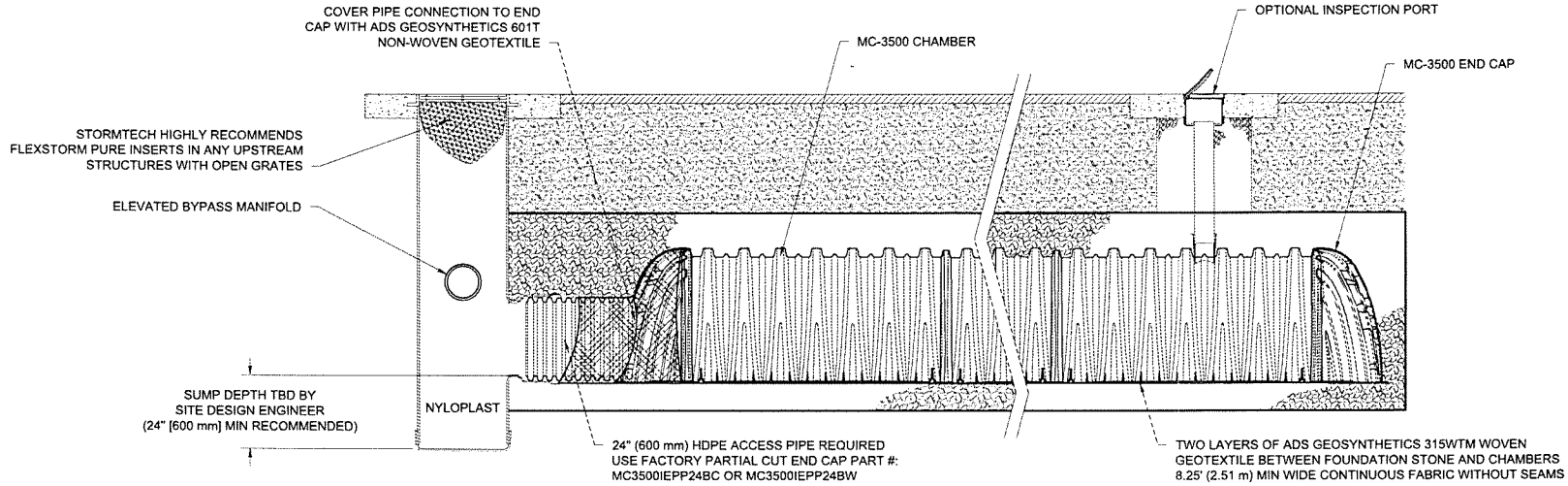
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/IN/IN. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

GERALD PLAZA		ROCHESTER HILLS, MI	
DATE: 09/22/20	DRAWN: CJM	CHECKED: CJD	
PROJECT #: S202323		DESCRIPTION	
01/13/21	CJM	ADD PRELIMINARY BASIS	DESCRIPTION
03/02/20	CJM	REVISE PER NEW PLAN	DESCRIPTION
11/20/20	CJM	NOB	NOB
11/16/20	CJM	REVISE PER NEW PLAN	DESCRIPTION
11/11/20	CJM	REVISE PER NEW PLAN	DESCRIPTION
10/19/20	CJM	REVISE PER ENGINEER	DESCRIPTION
10/19/20	CJM	REVISE PER ENGINEER	DESCRIPTION
DATE	DRAWN	CHECKED	DESCRIPTION

50 CROWELL AVENUE | ROCKY HILL, CT 06067
603-282-8188 | 1888-892-2884 | WWW.STORMTECH.COM

4640 TRUENMAN BLVD
HILLIARD, OH 43026

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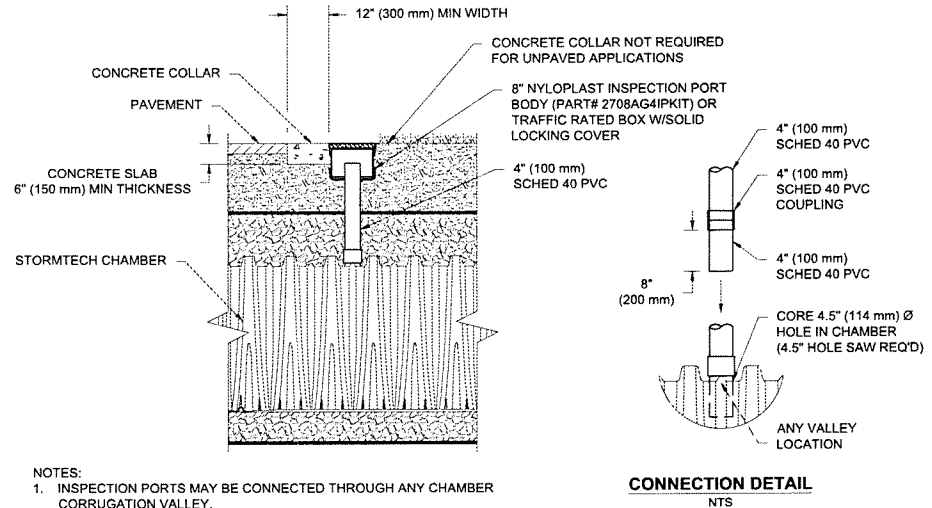
MC-3500 ISOLATOR ROW DETAIL
NTS

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
 - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - A.4. LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - A.5. IF SEDIMENT IS AT OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - B. ALL ISOLATOR ROWS
 - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
 - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - B.3. IF SEDIMENT IS AT OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
 - B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

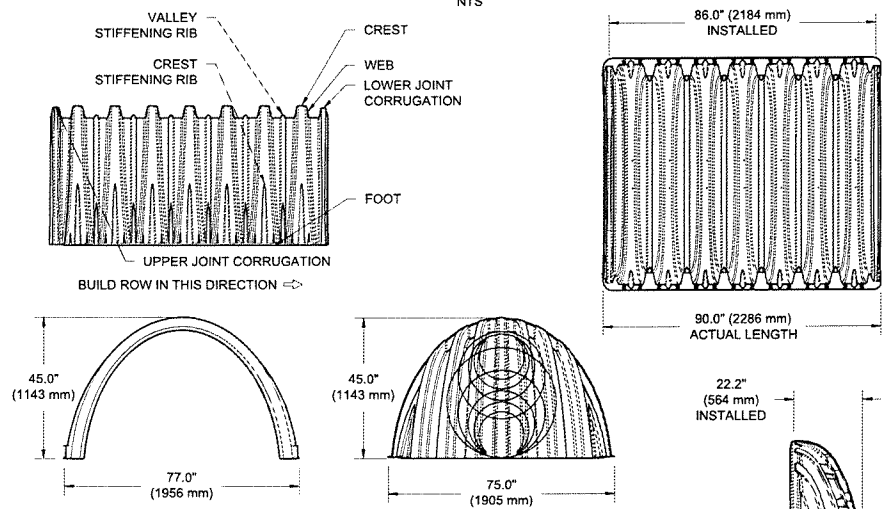


- NOTES:
1. INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.
 2. ALL SCHEDULE 40 FITTINGS TO BE SOLVENT CEMENTED (4" PVC NOT PROVIDED BY ADS).

4" PVC INSPECTION PORT DETAIL
NTS

GERALD PLAZA		ROCHESTER HILLS, MI	
DATE: 09/22/20		DRAWN: CIM	
PROJECT #: S202323		CHECKED: CJD	
01/18/21	CIM	CJD	DESCRIPTION
11/03/20	CIM	NAJ	ADD NYLOPLAST BASINS
11/23/20	CIM	NAJ	REVISE PER NEW PLAN
11/16/20	CIM	NAJ	REVISE PER NEW PLAN
11/17/20	CIM	NAJ	REVISE PER ENGINEER
10/19/20	CIM	CJD	REVISE PER ENGINEER
DATE	DRAWN	CHECKED	DESCRIPTION
530 CROAWELL AVENUE ROCKY HILL, CT 06067 860-298-8138 1888-882-2894 WWW.STORMTECH.COM <small>Division of Techno-Storm Quality</small>			
4640 TRUENAN BLVD HILLIARD, OH 43026 <small>ADVANCED DRAINAGE SYSTEMS, INC.</small>			
<small>THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) SPECIFIED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.</small>			
6 SHEET		7	
OF		7	

MC-3500 TECHNICAL SPECIFICATION



NOMINAL CHAMBER SPECIFICATIONS
 SIZE (W X H X INSTALLED LENGTH)
 CHAMBER STORAGE
 MINIMUM INSTALLED STORAGE*
 WEIGHT

77.0" X 45.0" X 86.0" (1956 mm X 1143 mm X 2184 mm)
 109.9 CUBIC FEET (3.11 m³)
 175.0 CUBIC FEET (4.96 m³)
 134 lbs. (60.8 kg)

NOMINAL END CAP SPECIFICATIONS
 SIZE (W X H X INSTALLED LENGTH)
 END CAP STORAGE
 MINIMUM INSTALLED STORAGE*
 WEIGHT

75.0" X 45.0" X 22.2" (1905 mm X 1143 mm X 564 mm)
 14.9 CUBIC FEET (0.42 m³)
 45.1 CUBIC FEET (1.28 m³)
 49 lbs. (22.2 kg)

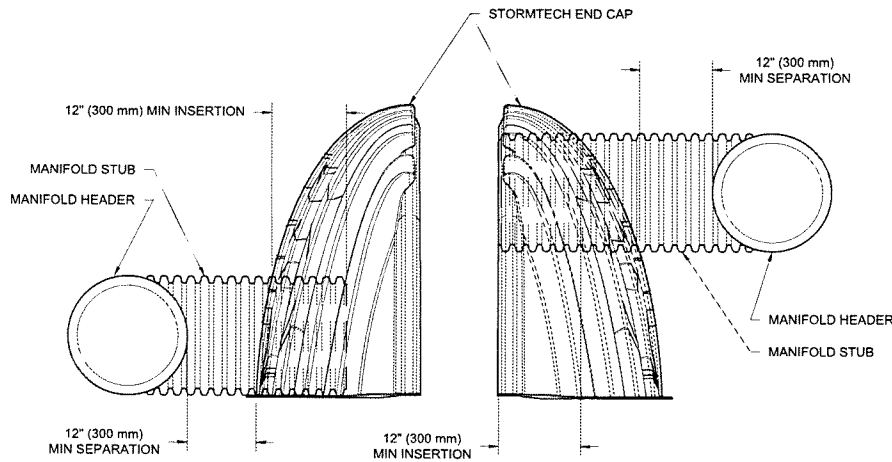
*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" (152 mm) STONE BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
 PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
 END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"
 END CAPS WITH A WELDED CROWN PLATE END WITH "C"

PART #	STUB	B	C
MC3500IEPP06T		33.21" (844 mm)	---
MC3500IEPP06B	6" (150 mm)	---	0.66" (17 mm)
MC3500IEPP08T		31.16" (791 mm)	---
MC3500IEPP08B	8" (200 mm)	---	0.81" (21 mm)
MC3500IEPP10T		29.04" (738 mm)	---
MC3500IEPP10B	10" (250 mm)	---	0.93" (24 mm)
MC3500IEPP12T		26.36" (670 mm)	---
MC3500IEPP12B	12" (300 mm)	---	1.35" (34 mm)
MC3500IEPP15T		23.39" (594 mm)	---
MC3500IEPP15B	15" (375 mm)	---	1.50" (38 mm)
MC3500IEPP18TC		20.03" (509 mm)	---
MC3500IEPP18TW	18" (450 mm)	---	---
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP18BW		14.48" (368 mm)	---
MC3500IEPP24TC		---	---
MC3500IEPP24TW	24" (600 mm)	---	---
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP24BW		---	---
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

MC-SERIES END CAP INSERTION DETAIL



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

GERALD GLAZA
 ROCHESTER HILLS, MI

DATE: 09/22/20 DRAWN: CJM
 PROJECT #: S202323 CHECKED: CJM

DATE	BY	CHKD	DESCRIPTION
01/13/21	CJM	CJM	ADD INTO PAST BASIS
12/03/20	CJM	CJM	REVISE PER NEW PLAN
11/23/20	CJM	CJM	ADD VOLUME
11/19/20	CJM	CJM	REVISE PER NEW PLAN
10/19/20	CJM	CJM	REVISE PER ENGINEER
09/22/20	CJM	CJM	REVISE PER ENGINEER

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ADS
 ADVANCED DESIGN SERVICES, INC.

4640 TRUEMAN BLVD
 HILLIARD, OH 43026

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SHEET **7** OF **7**