



**alcorn**  
CONSTRUCTION

# SUBMITTAL SHEET

Alcorn Construction, Inc.  
23010- - 73rd & Washington

**Project:** 23010-  
73rd & Washington

**Spec Section Num:** 33.0000.6  
**Submittal:** 53  
**Revision:** 0  
**Package:** Utilities  
**Date:** 9/13/2023 UTC

**Submittal Title:** Detention  
**Submittal Detail:**  
**Response Due By:** 9/27/2023 UTC

**Contractor:**  
Josh Duff  
Alcorn Construction, Inc.

## Contractor's Stamp

**Project Name:** 73rd & Washington  
**Architect:** Ware Malcomb  
**Submittal ID:** 33.0000.6  
**Provided By:** JBS  
**Reviewer:** JoshDuff  
**Date:** 09/13/2023  
**Status:** Reviewed



**Architect:**  
Catalina Pedraza  
Ware Malcomb

## Architect's Stamp

**Response:**  
**Comment:** Please see updates on Page 27

## WARE MALCOMB

project name 73rd & Washington

project no. DEN21-0057-00

- |  |  |
|--|--|
| <input type="checkbox"/> NO EXCEPTIONS TAKEN | <input checked="" type="checkbox"/> MAKE CORRECTIONS NOTED |
| <input type="checkbox"/> FOR REVIEW ONLY     | <input type="checkbox"/> REVISE AND RESUBMIT               |
| <input type="checkbox"/> REJECTED            | <input type="checkbox"/> SUBMIT SPECIFIED ITEM             |

Review is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. As action shown is subject to the requirements of the plans and specifications. Contractor is responsible for: dimensions which shall be confirmed and correlated at the job site; fabrication processes and techniques of construction; coordination of his work with that of all other trades; and the satisfactory performance of his work.

date 10/2/2023 by Greg Blount

| PROJECT INFORMATION        |   |
|----------------------------|---|
| ENGINEERED PRODUCT MANAGER | JEROME MAGSINO<br>303-349-7555<br>JEROME.MAGSINO@ADSPIPE.COM      |
| ADS SALES REP              | CHRISTOPHER MOTT<br>303-229-2291<br>CHRISTOPHER.MOTT@ADS-PIPE.COM |
| PROJECT NO.                | S311081   |



# 73RD & WASHINGTON

## DENVER, CO, USA

### MC-7200 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-7200.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- 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 SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. 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-7200 CHAMBER SYSTEM

- STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR 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 - 9" (230 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 SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
- 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 MATERIAL 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-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-7200 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-7200 CONSTRUCTION GUIDE".
  - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 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 BAYFILTER SPECIFICATIONS

### PRODUCTS

- A. INTERNAL COMPONENTS: ALL COMPONENTS INCLUDING CONCRETE STRUCTURE(S), PVC MANIFOLD PIPING AND FILTER CARTRIDGES, SHALL BE PROVIDED BY BAYSAVER TECHNOLOGIES LLC, 1030 DEER HOLLOW DRIVE, MOUNT AIRY, MD (800.229.7283).
- B. PVC MANIFOLD PIPING: ALL INTERNAL PVC PIPE AND FITTINGS SHALL MEET ASTM D1785. MANIFOLD PIPING SHALL BE PROVIDED TO THE CONTRACTOR PARTIALLY PRE-CUT AND PRE-ASSEMBLED.
- C. FILTER CARTRIDGES: EXTERNAL SHELL OF THE FILTER CARTRIDGES SHALL BE SUBSTANTIALLY CONSTRUCTED OF POLYETHYLENE OR EQUIVALENT MATERIAL ACCEPTABLE TO THE MANUFACTURER. FILTRATION MEDIA SHALL BE ARRANGED IN A SPIRAL LAYERED FASHION TO MAXIMIZE AVAILABLE FILTRATION AREA. AN ORIFICE PLATE SHALL BE SUPPLIED WITH EACH CARTRIDGE TO RESTRICT THE FLOW RATE TO A MAXIMUM OF 45 GPM.
- D. FILTER MEDIA: FILTER MEDIA SHALL BE BY BAYSAVER TECHNOLOGIES LLC AND SHALL CONSIST OF THE FOLLOWING MIX: A BLEND OF ZEOLITE, PERLITE AND ACTIVATED ALUMINA.
- E. PRECAST CONCRETE VAULT: CONCRETE STRUCTURES SHALL BE PROVIDED ACCORDING TO ASTM C. THE MATERIALS AND STRUCTURAL DESIGN OF THE DEVICES SHALL BE PER ASTM C478, C857 AND C858. PRECAST CONCRETE SHALL BE PROVIDED BY BAYSAVER TECHNOLOGIES, LLC.

### PERFORMANCE

- A. THE STORMWATER FILTER SYSTEM SHALL BE AN OFFLINE DESIGN CAPABLE OF TREATING 100% OF THE REQUIRED TREATMENT FLOW AT FULL SEDIMENT LOAD CONDITIONS.
- B. THE STORMWATER FILTER SYSTEM'S CARTRIDGES SHALL HAVE NO MOVING PARTS.
- C. THE STORMWATER TREATMENT UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 85% OF SUSPENDED SOLIDS, 65% OF TOTAL PHOSPHORUS, 65% OF TURBIDITY, 40% OF TOTAL COPPER, AND 40% OF TOTAL ZINC BASED ON FIELD DATA COLLECTED IN COMPLIANCE WITH THE TECHNOLOGY ACCEPTANCE RECIPROCITY PARTNERSHIP TIER II TEST PROTOCOL.
- D. THE STORMWATER FILTRATION SYSTEM SHALL REDUCE INCOMING TURBIDITY (MEASURED AS NTUs) BY 50% OR MORE AND SHALL NOT HAVE ANY COMPONENTS THAT LEACH NITRATES OR PHOSPHATES.
- E. THE STORMWATER FILTRATION CARTRIDGE SHALL BE EQUIPPED WITH A HYDRODYNAMIC BACKWASH MECHANISM TO EXTEND THE FILTER'S LIFE AND OPTIMIZE ITS PERFORMANCE.
- F. THE STORMWATER FILTRATION SYSTEM SHALL BE DESIGNED TO REMOVE A MINIMUM OF 65% OF THE INCOMING TOTAL PHOSPHORUS (TP) LOAD.
- G. THE STORMWATER FILTRATION SYSTEM'S CARTRIDGES SHALL HAVE A TREATED SEDIMENT CAPACITY FOR 80% TSS REMOVAL BETWEEN 150-350 LBS.

## BAYFILTER MAINTENANCE

THE BAYFILTER SYSTEM REQUIRES PERIODIC MAINTENANCE TO CONTINUE OPERATING AT ITS PEAK EFFICIENCY DESIGN. THE MAINTENANCE PROCESS COMPRISES THE REMOVAL AND REPLACEMENT OF EACH BAYFILTER CARTRIDGE AND THE CLEANING OF THE VAULT OR MANHOLE WITH A VACUUM TRUCK. FOR BEST RESULTS, BAYFILTER MAINTENANCE SHOULD BE PERFORMED BY A CERTIFIED MAINTENANCE CONTRACTOR. A QUICK CALL TO AN ADS ENGINEER OR CUSTOMER SERVICE REPRESENTATIVE WILL PROVIDE YOU WITH A LIST OF RELIABLE CONTRACTORS IN YOUR AREA.

WHEN BAYFILTER IS INITIALLY INSTALLED, WE RECOMMEND THAT AN INSPECTION BE PERFORMED ON THE SYSTEM IN THE FIRST SIX (6) MONTHS. AFTER THAT, THE INSPECTION CYCLE TYPICALLY FALLS INTO A BIANNUAL PATTERN GIVEN NORMAL STORM OCCURRENCE AND ACTUAL SOLIDS LOADS.

WHEN BAYFILTER EXHIBITS FLOWS BELOW DESIGN LEVELS, THE SYSTEM SHOULD BE INSPECTED AND MAINTAINED AS SOON AS PRACTICAL. REPLACING A BAYFILTER CARTRIDGE SHOULD BE CONSIDERED AT OR ABOVE THE LEVEL OF THE MANIFOLD.

### MAINTENANCE PROCEDURES

1. REMOVE THE MANHOLE COVERS AND OPEN ALL ACCESS HATCHES.
2. BEFORE ENTERING THE SYSTEM MAKE SURE THE AIR IS SAFE PER OSHA STANDARDS OR USE A BREATHING APPARATUS. USE LOW O2, HIGH CO, OR OTHER APPLICABLE WARNING DEVICES PER REGULATORY REQUIREMENTS.
3. USING A VACUUM TRUCK, REMOVE ANY LIQUID AND SEDIMENTS THAT CAN BE REMOVED PRIOR TO ENTRY.
4. USING A SMALL LIFT OR THE BOOM OF THE VACUUM TRUCK, REMOVE THE USED CARTRIDGES BY LIFTING THEM OUT.
5. ANY CARTRIDGES THAT CANNOT BE READILY LIFTED CAN BE EASILY SLID ALONG THE FLOOR TO A LOCATION THEY CAN BE LIFTED VIA A BOOM LIFT.
6. WHEN ALL THE CARTRIDGES HAVE BEEN REMOVED, IT IS NOW PRACTICAL TO REMOVE THE BALANCE OF THE SOLIDS AND WATER. LOOSEN THE STAINLESS CLAMPS ON THE FERNCO COUPLINGS FOR THE MANIFOLD AND REMOVE THE DRAINPIPES AS WELL. CAREFULLY CAP THE MANIFOLD AND THE FERNCO'S AND RINSE THE FLOOR, WASHING AWAY THE BALANCE OF ANY REMAINING COLLECTED SOLIDS.
7. CLEAN THE MANIFOLD PIPES, INSPECT, AND REINSTALL.
8. INSTALL THE EXCHANGE CARTRIDGES AND CLOSE ALL COVERS.
9. THE USED CARTRIDGES MUST BE SENT BACK TO ADS FOR EXCHANGE/RECYCLING AND CREDIT ON UNDAMAGED UNITS.

## BAYFILTER INSTALLATION NOTES

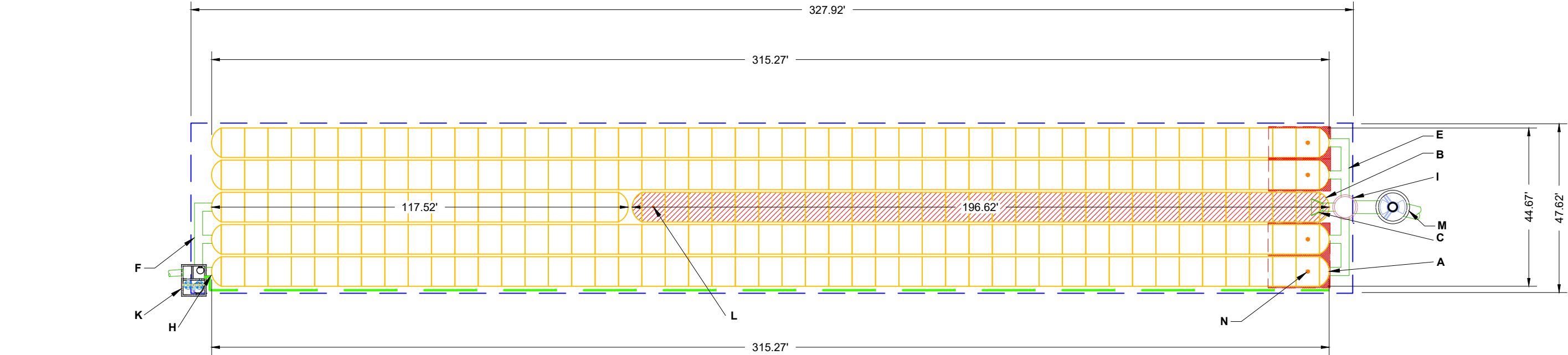
1. CONTACT UTILITY LOCATOR TO MARK ANY NEARBY UNDERGROUND UTILITIES AND MAKE SURE IT IS SAFE TO EXCAVATE.
2. REFERENCE THE SITE PLAN AND STAKE OUT THE LOCATION OF THE BAYFILTER VAULT.
3. EXCAVATE THE HOLE, PROVIDING ANY SHEETING AND SHORING NECESSARY TO COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY REGULATIONS.
4. LEVEL THE SUB-GRADE TO THE PROPER ELEVATION. VERIFY THE ELEVATION AGAINST THE MANHOLE DIMENSIONS, THE INVERT ELEVATIONS, AND THE SITE PLANS. ADJUST THE BASE AGGREGATE, IF NECESSARY.
5. HAVE THE SOIL BEARING CAPACITY VERIFIED BY A LICENSED/ENGINEER FOR THE REQUIRED LOAD BEARING CAPACITY. ON SOLID SUB-GRADE, SET THE FIRST SECTION OF THE BAYFILTER PRE-CAST VAULT.
6. CHECK THE LEVEL AND ELEVATION OF THE FIRST SECTION TO ENSURE IT IS CORRECT BEFORE ADDING ANY RISER SECTIONS.
7. IF ADDITIONAL SECTION(S) ARE REQUIRED, ADD A WATERTIGHT SEAL TO THE FIRST SECTION OF THE BAYFILTER VAULT. SET ADDITIONAL SECTION(S) OF THE VAULT, ADDING A WATERTIGHT SEAL TO EACH JOINT.
8. INSTALL THE PVC OUTLET MANIFOLD.
9. INSTALL THE PVC OUTLET PIPE IN BAYFILTER VAULT.
10. INSTALL THE INLET PIPE TO THE BAYFILTER VAULT.
11. AFTER THE SITE IS STABILIZED, REMOVE ANY ACCUMULATED SEDIMENT OR DEBRIS FROM THE VAULT AND INSTALL THE FLOW DISKS, DRAINDOWN MODULES (IF APPLICABLE), AND THE BAYFILTER CARTRIDGES.
12. PLACE FULL SET OF HOLD DOWN BARS AND BRACKETS INTO PLACE.

CONCEPTUAL LAYOUT

|        |  |
|--------|--|
| 234    | STORMTECH MC-7200 CHAMBERS   |
| 12     | STORMTECH MC-7200 END CAPS   |
| 24     | STONE ABOVE (in)   |
| 9      | STONE BELOW (in)   |
| 30     | % STONE VOID   |
| 61,012 | INSTALLED SYSTEM VOLUME BELOW ELEVATION 5129.75 (CF)<br>(PERIMETER STONE INCLUDED) |
| 15737  | SYSTEM AREA (ft²)  |
| 751    | SYSTEM PERIMETER (ft)  |

CONCEPTUAL ELEVATIONS

|         |   |
|---------|---|
| 5135.75 | MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)   |
| 5131.25 | MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)      |
| 5130.75 | MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)        |
| 5130.75 | MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT) |
| 5130.75 | MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)     |
| 5130.75 | TOP OF STONE  |
| 5128.75 | TOP OF MC-7200 CHAMBER                              |
| 5125.67 | 24" TOP MANIFOLD INVERT                             |
| 5124.42 | INSERTA TEE SIDE INLET CONNECTION INVERT            |
| 5123.94 | 24" ISOLATOR ROW PLUS CONNECTION INVERT             |
| 5123.94 | 24" BOTTOM MANIFOLD INVERT                          |
| 5123.75 | BOTTOM OF MC-7200 CHAMBER                           |
| 5123.00 | UNDERDRAIN INVERT                                   |
| 5123.00 | BOTTOM OF STONE                                     |



- ISOLATOR ROW PLUS  
(SEE DETAIL)
- PLACE MINIMUM 17.50' OF ADSPLUS175 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS
- BED LIMITS

- NOTES
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH 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.
- NOT FOR CONSTRUCTION:

THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

\*INVERT ABOVE BASE OF CHAMBER

| PART TYPE             | ITEM ON LAYOUT | DESCRIPTION   | INVERT* | MAX FLOW    |
|-----------------------|----------------|---|---------|-------------|
| PREFABRICATED END CAP | A              | 24" TOP PARTIAL CUT END CAP, PART#: MC7200IEPP24T / TYP OF ALL 24" TOP CONNECTIONS                                    | 23.05"  |             |
| PREFABRICATED END CAP | B              | 24" BOTTOM PARTIAL CUT END CAP, PART#: MC7200IEPP24B / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS       | 2.26"   |             |
| FLAMP                 | C              | INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MC720024RAMP  |         |             |
| MANIFOLD              | E              | 24" x 24" TOP MANIFOLD, ADS N-12 (TYP 2 PLACES)   | 23.05"  |             |
| MANIFOLD              | F              | 24" x 24" BOTTOM MANIFOLD, ADS N-12   | 2.26"   | 7.0 CFS OUT |
| CONNECTION            | H              | 24" ADS N-12, BOTTOM CONNECTION   | 2.26"   | 7.0 CFS OUT |
| CONCRETE STRUCTURE    | I              | STRUCTURE SHOWN AS 72", MANIFOLD & ISO ROW SIZED TO HANDLE LISTED FLOW RATE (DESIGN BY ENGINEER / PROVIDED BY OTHERS) |         | 45.3 CFS IN |
| CONCRETE STRUCTURE    | K              | BAYFILTER SEE DETAIL  |         |             |
| INSPECTION PORT       | L              | 6" SEE DETAIL   |         |             |
| 8' FDHC UNIT          | M              | DETAIL IN SEPARATE DRAWING  |         |             |
| INSPECTION PORT       | N              | 10" SEE DETAIL (TYP 4 PLACES)   |         |             |

73RD & WASHINGTON

DENVER, CO, USA

DATE: 03/15/23

PROJECT #: S311081

CHECKED: JEK

StormTech®  
Chamber System

888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD  
HILLIARD, OH 43026  
1-800-733-7473

0

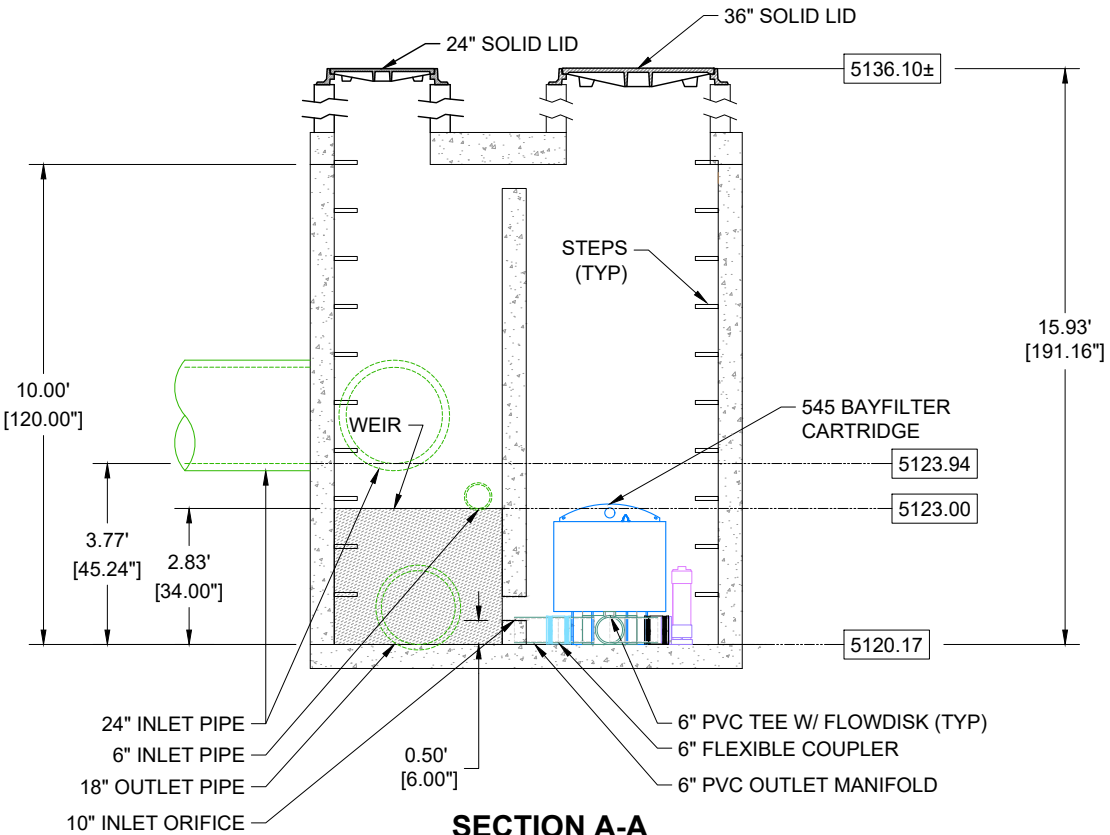
30'

60'

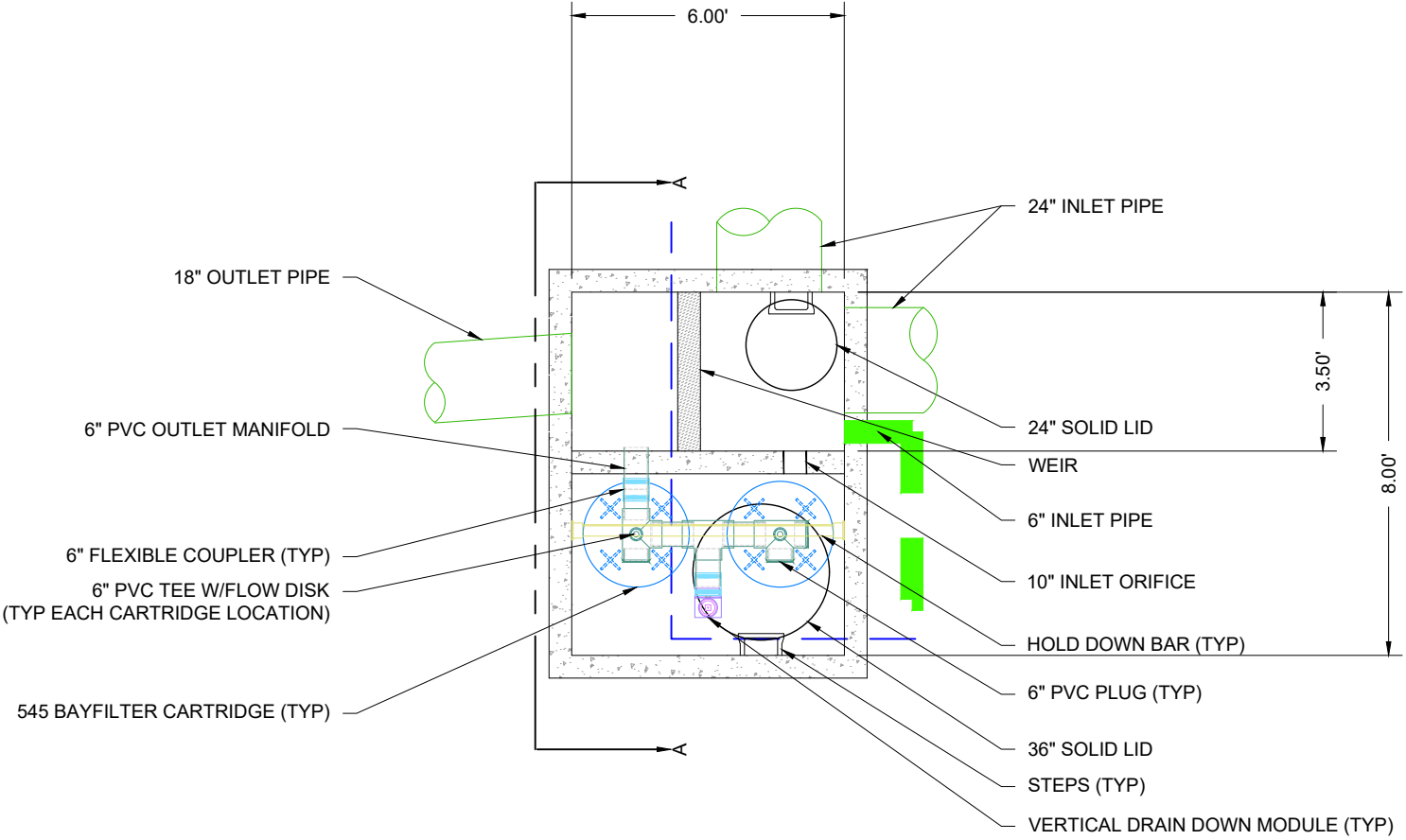
SHEET

3 OF 7

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) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

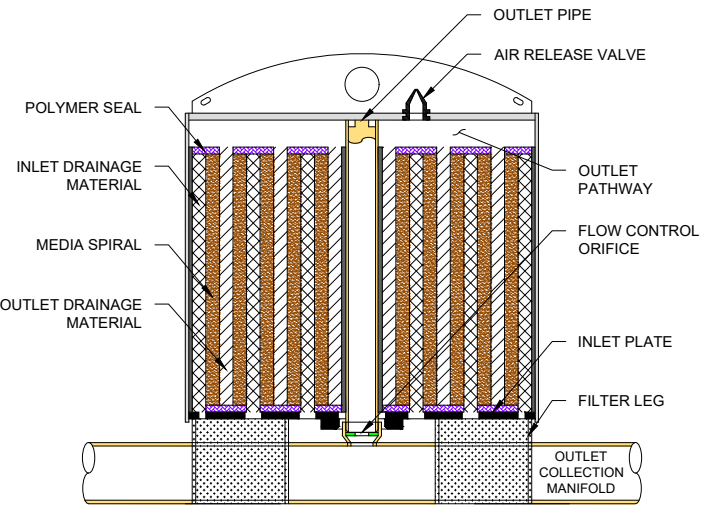


SECTION A-A  
SCALE : 1/4" = 1'



PLAN VIEW  
SCALE : 1/4" = 1'

**NOTE:** THIS DETAIL SHOWS A FUNCTIONAL FILTER DESIGN PER SITE SPECIFIC INFORMATION PROVIDED. THE FINAL APPROVED PRECAST DRAWINGS WILL DETERMINE THE FINAL SIZE, INCLUDING BUT NOT LIMITED TO; OVERALL DIMENSIONS, RISER SIZE, RISER TYPE & HEIGHT AND FRAMES & COVERS BEING PROVIDED.



THE BAYFILTER STORMWATER MANAGEMENT SYSTEM IS A STORMWATER FILTRATION DEVICE DESIGNED TO REMOVE FINE SEDIMENTS, HEAVY METALS, AND PHOSPORUS. THE BAYFILTER SYSTEM RELIES ON A SPIRAL WOUND MEDIA FILTER CARTRIDGE WITH APPROXIMATELY 90 SQUARE FEET OF FILTRATION AREA. THE FILTER CARTRIDGES ARE HOUSED IN A CONCRETE STRUCTURE THAT EVENLY DISTRIBUTES THE FLOW BETWEEN CARTRIDGES. THE SYSTEM IS INLINE WITH AN INTERNAL BYPASS THAT ROUTES HIGH INTENSITY STORMS AROUND THE CARTRIDGES. THE FILTER CARTRIDGES REMOVE POLLUTANTS FROM RUNOFF BY FILTRATION (INTERCEPTION/ATTACHMENT) AND ADSORPTION.

|                            |          |
|----------------------------|----------|
| 545 BAYFILTER<br>6-8-2     | WQU-1    |
| WATER QUALITY FLOW RATE    | 0.12 CFS |
| DRAINAGE AREA              | ---      |
| CARTRIDGE DESIGN FLOW RATE | 45 GPM   |
| # BAYFILTER CARTRIDGES     | 2        |
| TREATED SEDIMENT CAPACITY  | 700 LBS  |

**ADS**  
4640 TRUEMAN BLVD  
HILLIARD, OH 43026  
1-800-733-7473

AS NOTED

**Bayfilter®**  
Stormwater Media & Filters  
1-800-228-7288 | WWW.BAYFILTER.COM

CHAMBERS

73RD & WASHINGTON

DENVER, CO, USA

DATE: 03/15/23  
PROJECT #: S311081  
DRAWN: MM  
CHECKED: JEK

DISCOUNT 12" OF CVR STN. ADDED

ADDED ELEV./INVERTS, BF, AND FDHC

PER EPM DIRECTION

REVISE THE LAYOUT AS PER EPM NOTES

SHORTENED SYSTEM

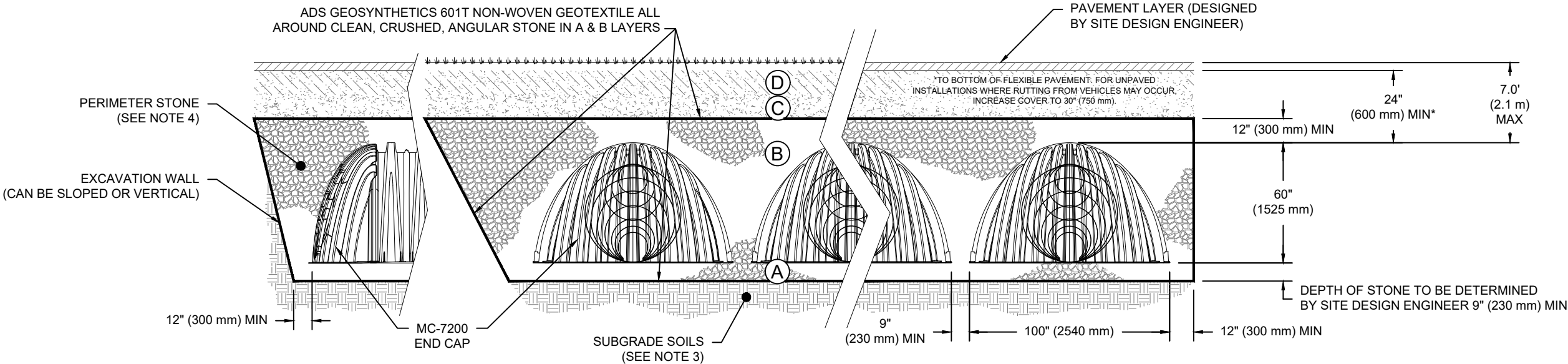
ADDED 5TH ROW

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) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

| MATERIAL LOCATION |  | DESCRIPTION  | AASHTO MATERIAL CLASSIFICATIONS   | COMPACTION / DENSITY REQUIREMENT  |
|-------------------|--|--|---|---|
| D                 | <b>FINAL FILL:</b> 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  | ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.  | N/A   | PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.   |
| C                 | <b>INITIAL FILL:</b> 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. | GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE.<br><br>MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER. | AASHTO M145 <sup>1</sup><br>A-1, A-2-4, A-3<br><br>OR<br><br>AASHTO M43 <sup>1</sup><br>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                 | <b>EMBEDMENT STONE:</b> FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.  | CLEAN, CRUSHED, ANGULAR STONE  | AASHTO M43 <sup>1</sup><br>3, 4   | NO COMPACTION REQUIRED.   |
| A                 | <b>FOUNDATION STONE:</b> FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.   | CLEAN, CRUSHED, ANGULAR STONE  | AASHTO M43 <sup>1</sup><br>3, 4   | PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>   |

- 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".
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  - 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:

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  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. 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.

MPV

JKL

REVISION PER MARKUP

09/12/23

07/14/23

07/14/23

07-12-23

06/14/23

06/13/23

04/10/23

04/07/23

CTS

CTS

CTS

LAH

CTS

AMC

MM

JEK

EVENT ROWS

DISCOUNT 12" OF CVR STN. ADDED CHAMBERS

ADDED ELEV INVERTS, BF, AND FDHC

PER EPM DIRECTION

REVISE THE LAYOUT AS PER EPM NOTES

SHORTENED SYSTEM

ADDED 5TH ROW

DATE

DATE

PROJECT #

CHECKED

73RD & WASHINGTON

DENVER, CO, USA

03/15/23

S311081

StormTech®

Chamber System

888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD  
HILLIARD, OH 43026  
1-800-733-7473

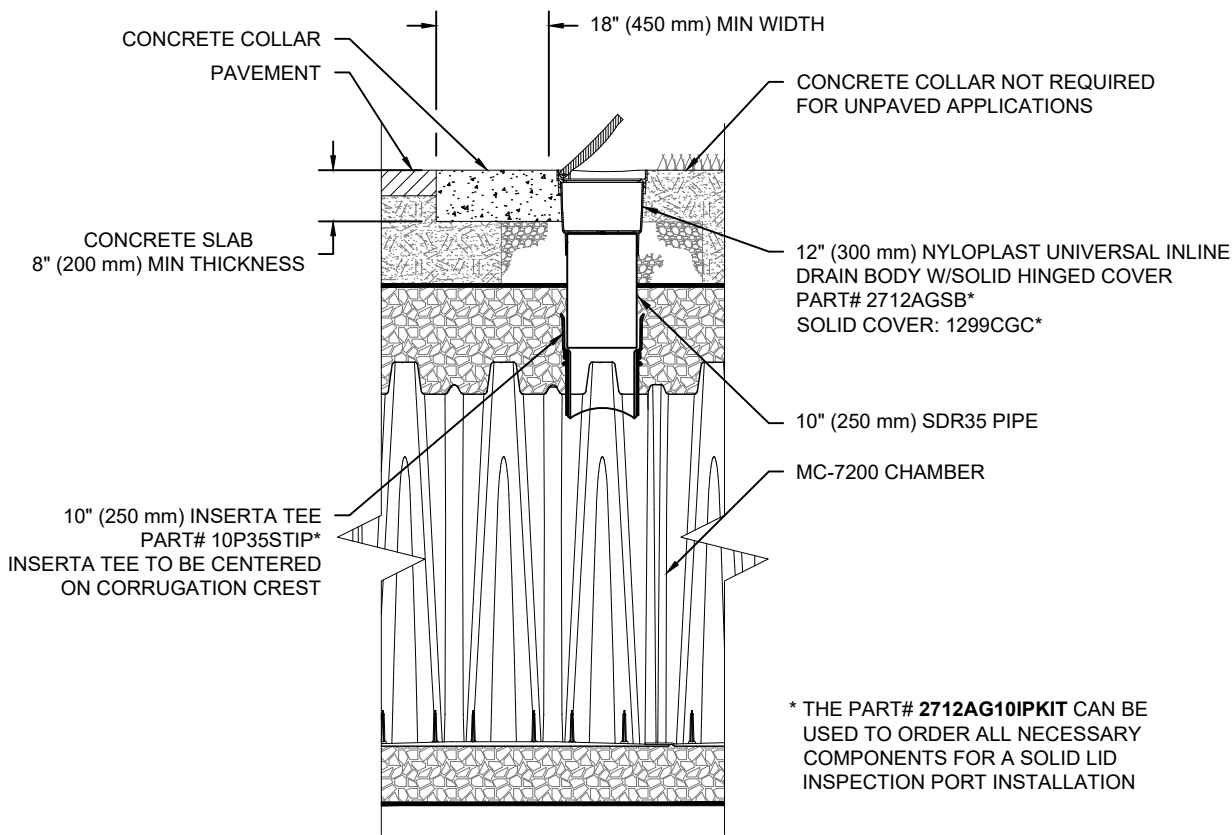
SHEET

5 OF 7

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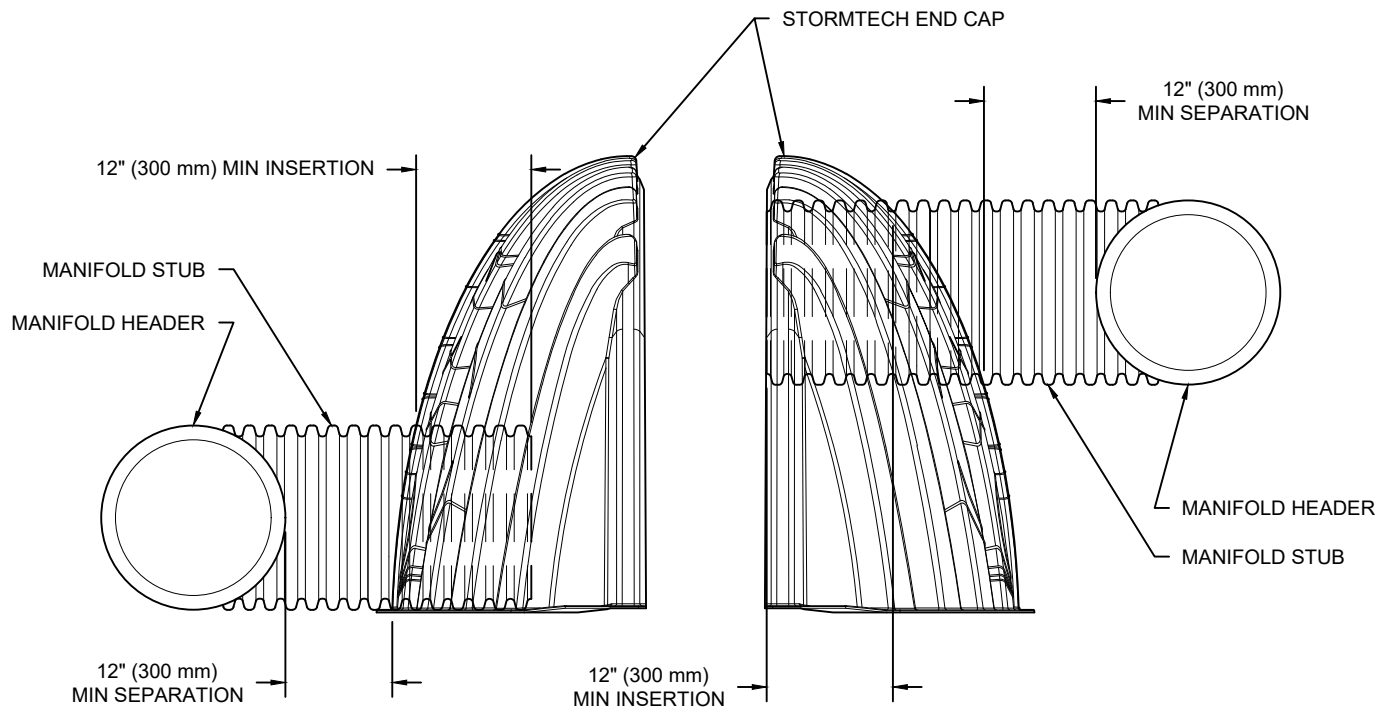


**MC-7200 6" (150 mm) INSPECTION PORT DETAIL**  
NTS



MC-7200 10" (250 mm) INSPECTION PORT DETAIL  
NTS

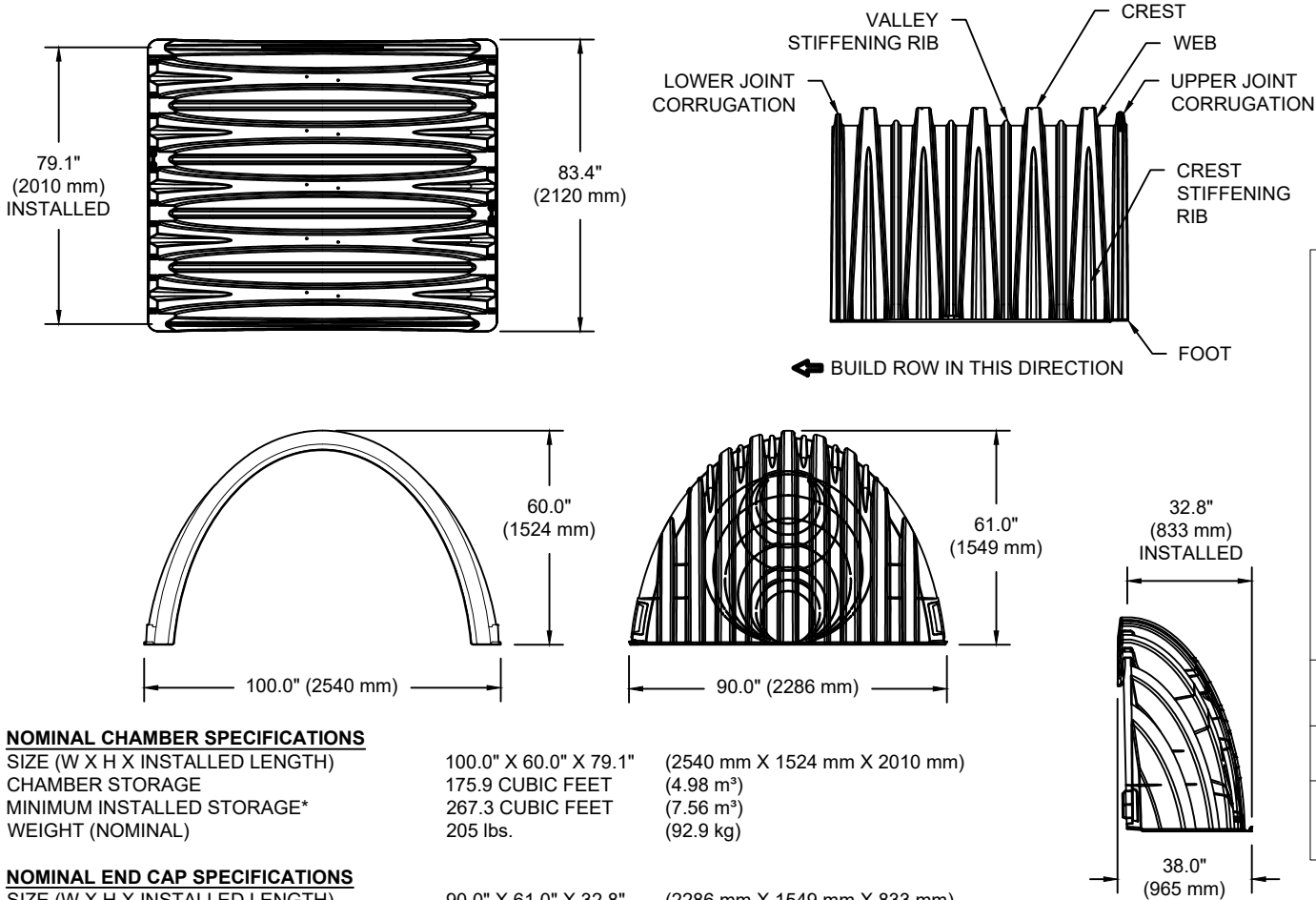
MC-SERIES END CAP INSERTION DETAIL  
NTS



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

MC-7200 TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS

|                                 |                        |                               |
|---------------------------------|------------------------|-------------------------------|
| SIZE (W X H X INSTALLED LENGTH) | 100.0" X 60.0" X 79.1" | (2540 mm X 1524 mm X 2010 mm) |
| CHAMBER STORAGE                 | 175.9 CUBIC FEET       | (4.98 m³)                     |
| MINIMUM INSTALLED STORAGE*      | 267.3 CUBIC FEET       | (7.56 m³)                     |
| WEIGHT (NOMINAL)                | 205 lbs.               | (92.9 kg)                     |

NOMINAL END CAP SPECIFICATIONS

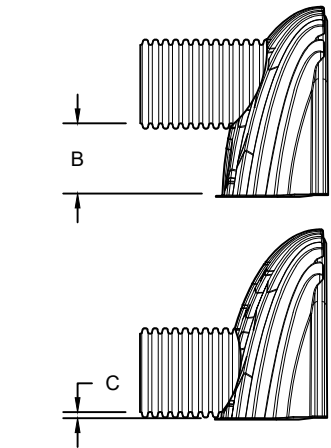
|                                 |                       |                              |
|---------------------------------|-----------------------|------------------------------|
| SIZE (W X H X INSTALLED LENGTH) | 90.0" X 61.0" X 32.8" | (2286 mm X 1549 mm X 833 mm) |
| END CAP STORAGE                 | 39.5 CUBIC FEET       | (1.12 m³)                    |
| MINIMUM INSTALLED STORAGE*      | 115.3 CUBIC FEET      | (3.26 m³)                    |
| WEIGHT (NOMINAL)                | 90 lbs.               | (40.8 kg)                    |

\*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION AND BETWEEN CHAMBERS, 12" (305 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"

| PART #         | STUB          | B                | C             |
|----------------|---------------|------------------|---------------|
| MC7200IEPP06T  | 6" (150 mm)   | 42.54" (1081 mm) | ---           |
| MC7200IEPP06B  |               | ---              | 0.86" (22 mm) |
| MC7200IEPP08T  | 8" (200 mm)   | 40.50" (1029 mm) | ---           |
| MC7200IEPP08B  |               | ---              | 1.01" (26 mm) |
| MC7200IEPP10T  | 10" (250 mm)  | 38.37" (975 mm)  | ---           |
| MC7200IEPP10B  |               | ---              | 1.33" (34 mm) |
| MC7200IEPP12T  | 12" (300 mm)  | 35.69" (907 mm)  | ---           |
| MC7200IEPP12B  |               | ---              | 1.55" (39 mm) |
| MC7200IEPP15T  | 15" (375 mm)  | 32.72" (831 mm)  | ---           |
| MC7200IEPP15B  |               | ---              | 1.70" (43 mm) |
| MC7200IEPP18T  | 18" (450 mm)  | 29.36" (746 mm)  | ---           |
| MC7200IEPP18TW |               | ---              | 1.97" (50 mm) |
| MC7200IEPP18B  |               |                  |               |
| MC7200IEPP18BW | 24" (600 mm)  | 23.05" (585 mm)  | ---           |
| MC7200IEPP24T  |               |                  |               |
| MC7200IEPP24TW |               | ---              | 2.26" (57 mm) |
| MC7200IEPP24B  |               |                  |               |
| MC7200IEPP24BW | 30" (750 mm)  | ---              | 2.95" (75 mm) |
| MC7200IEPP30BW |               | ---              | 2.95" (75 mm) |
| MC7200IEPP36BW | 36" (900 mm)  | ---              | 3.25" (83 mm) |
| MC7200IEPP42BW | 42" (1050 mm) | ---              | 3.55" (90 mm) |

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

73RD & WASHINGTON

CHAMBERS

DISCOUNT 12" OF CVR STN. ADDED CHAMBERS

ADDED ELEV /INVERTS, BF, AND FDHC

PER EPM DIRECTION

REVISE THE LAYOUT AS PER EPM NOTES

SHORTENED SYSTEM

ADDED 5TH ROW

DATE: 03/15/23

PROJECT #: S311081

CHECKED: JEK

MPV

CTJ

CTJ

LAH

CTJ

AMC

MM

JEK

CHK

DATE

DRW

DESCRIPTION

09/12/23

07/14/23

07/14/23

07-12-23

06/14/23

06/13/23

04/10/23

04/07/23

JKL

CTS

CTS

CJD

CTS

CTS

MM

JEK

CHK

REVISE PER MARKUP

EVEN ROWS

DISCOUNT 12" OF CVR STN. ADDED CHAMBERS

ADDED ELEV /INVERTS, BF, AND FDHC

PER EPM DIRECTION

REVISE THE LAYOUT AS PER EPM NOTES

SHORTENED SYSTEM

ADDED 5TH ROW

DATE

DESCRIPTION

StormTech®

Chamber System

888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD

HILLIARD, OH 43026

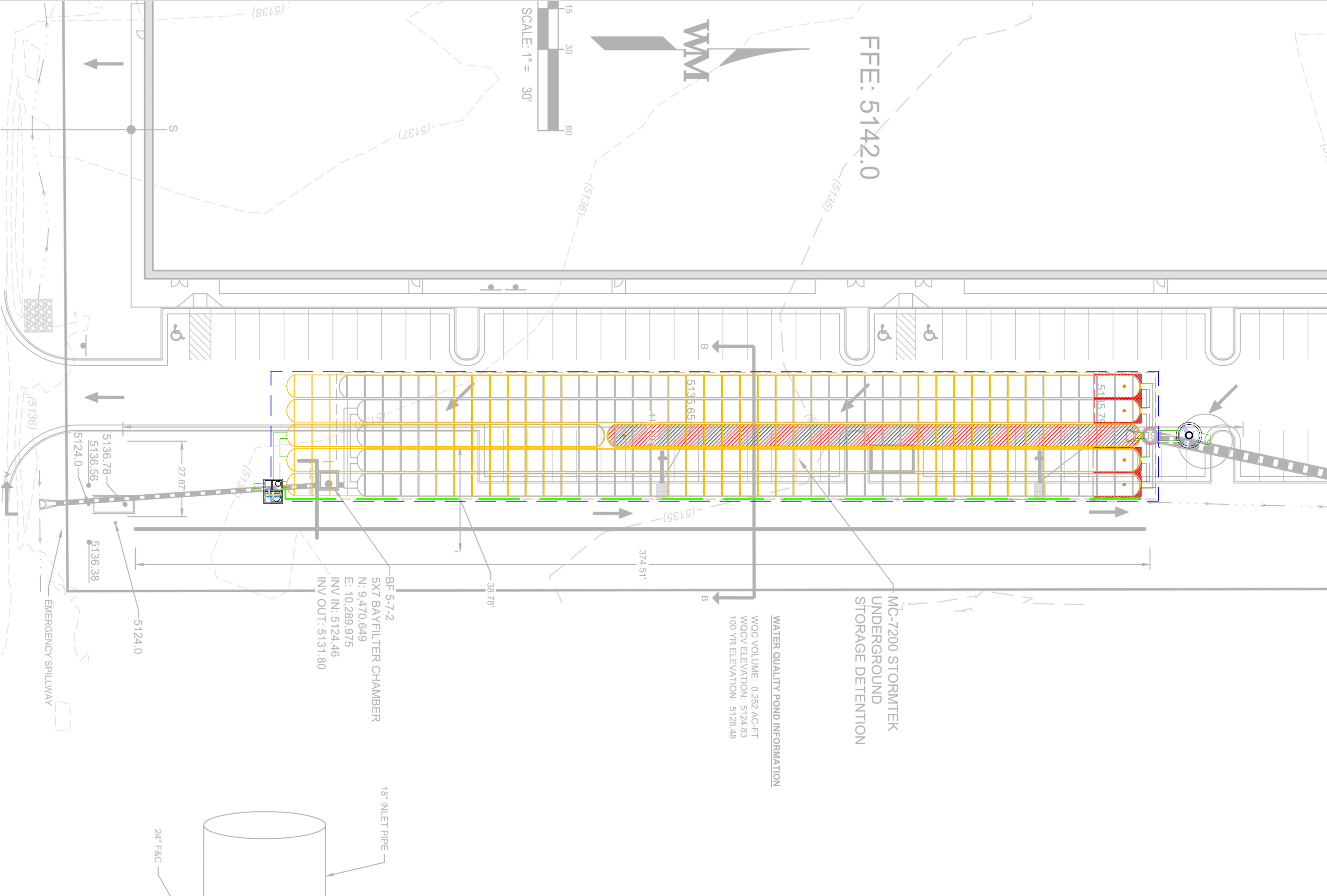
1-800-733-7473

ADS

SHEET

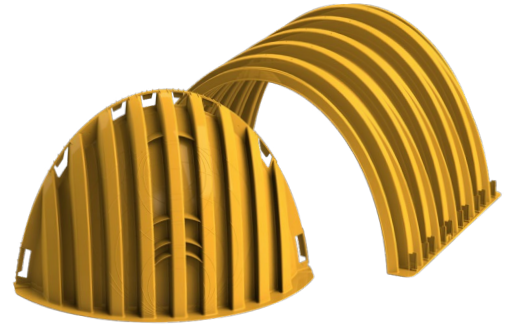
7 OF 7

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# ADS StormTech MC-7200 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.



## Nominal Chamber Specifications (not to scale)

**Size (L x W x H)**  
83" x 100" x 60"  
2108 mm x 2540 mm x 1524 mm

**Chamber Storage**  
175.9 ft<sup>3</sup> (4.98 m<sup>3</sup>)

**Min. Installed Storage\***  
267.3 ft<sup>3</sup> (7.57 m<sup>3</sup>)

**Weight**  
202 lbs (91.6 kg)

**Shipping**  
7 chambers/pallet  
5 end caps/pallet  
6 pallets/truck

\*Assumes a minimum of 12" (300 mm) of stone above, 9" (230 mm) of stone below chambers, 9" (230 mm) of stone between chambers/ end caps and 40% stone porosity.

## Nominal End Cap Specifications (not to scale)

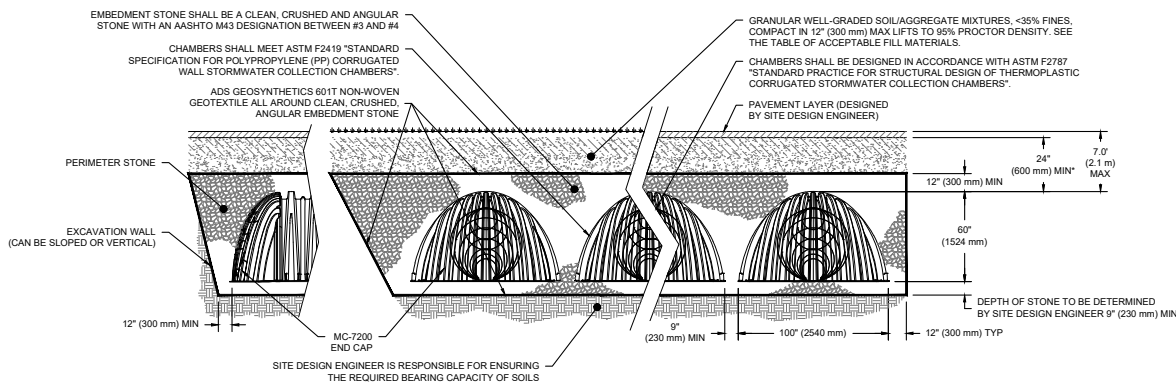
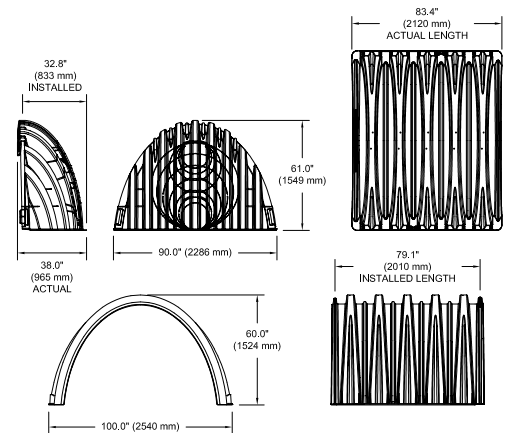
**Size (L x W x H)**  
38" x 90" x 61"  
965 mm x 2286 mm x 1549 mm

**End Cap Storage**  
39.5 ft<sup>3</sup> (1.12 m<sup>3</sup>)

**Min. Installed Storage\***  
115.3 ft<sup>3</sup> (3.26 m<sup>3</sup>)

**Weight**  
Nominal 90.0 lbs (40.8 kg)

\*Assumes a minimum of 12" (300 mm) of stone above, 9" (230 mm) of stone below, 12" (300 mm) of stone perimeter, 9" (230 mm) of stone between chambers/ end caps and 40% stone porosity.



\*MINIMUM COVER TO BOTTOM OF FLEXIBLE PAVEMENT. FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 30" (750 mm).

# StormTech MC-7200 Specifications

## Storage Volume Per Chamber

|         | Bare Chamber Storage<br>ft <sup>3</sup> (m <sup>3</sup> ) | Chamber and Stone Foundation Depth in. (mm) |                |                |                |
|---------|---|---|----------------|----------------|----------------|
|         |   | 9 in (230 mm)                               | 12 in (300 mm) | 15 in (375 mm) | 18 in (450 mm) |
| Chamber | 175.9 (4.98)  | 267.3 (7.57)                                | 273.3 (7.74)   | 279.3 (7.91)   | 285.3 (8.08)   |
| End Cap | 39.5 (1.12)   | 115.3 (3.26)                                | 118.6 (3.36)   | 121.9 (3.45)   | 125.2 (3.54)   |

**Note:** Assumes 9" (230 mm) row spacing, 40% stone porosity, 12" (300 mm) stone above and includes the bare chamber/end cap volume. End cap volume assumes 12" (300 mm) stone perimeter in front of end cap.

## Amount of Stone Per Chamber

| English<br>Tons (yds <sup>3</sup> ) | Stone Foundation Depth |             |             |             |
|-------------------------------------|------------------------|-------------|-------------|-------------|
|                                     | 9 in                   | 12 in       | 15 in       | 18 in       |
| Chamber                             | 12.1 (8.5)             | 12.9 (9.0)  | 13.6 (9.6)  | 14.3 (10.1) |
| End Cap                             | 9.8 (7.0)              | 10.2 (7.3)  | 10.6 (7.6)  | 11.1 (7.9)  |
| Metric Kilograms (m <sup>3</sup> )  | 230 mm                 | 300 mm      | 375 mm      | 450 mm      |
| Chamber                             | 10977 (6.5)            | 11703 (6.9) | 12338 (7.3) | 12973 (7.7) |
| End Cap                             | 8890 (5.3)             | 9253 (5.5)  | 9616 (5.8)  | 10069 (6.0) |

**Note:** Assumes 12" (300 mm) of stone above and 9" (230 mm) row spacing and 12" (300 mm) of perimeter stone in front of end caps. 1 yd<sup>3</sup> = 1.42 english tons.

## Volume Excavation Per Chamber yd<sup>3</sup> (m<sup>3</sup>)

|         | Stone Foundation Depth |                |               |                |
|---------|------------------------|----------------|---------------|----------------|
|         | 9 in (230 mm)          | 12 in (300 mm) | 15 in (375mm) | 18 in (450 mm) |
| Chamber | 17.2 (13.2)            | 17.7 (13.5)    | 18.3 (14.0)   | 18.8 (14.4)    |
| End Cap | 9.7 (7.4)              | 10.0 (7.6)     | 10.3 (7.9)    | 10.6 (8.1)     |

**Note:** Assumes 9" (230 mm) of separation between chamber rows, 12" (300 mm) of perimeter in front of the end caps, and 24" (600 mm) of cover. The volume of excavation will vary as depth of cover increases.

**Working on a project?**

Visit us at [www.stormtech.com](http://www.stormtech.com) and utilize the Design Tool



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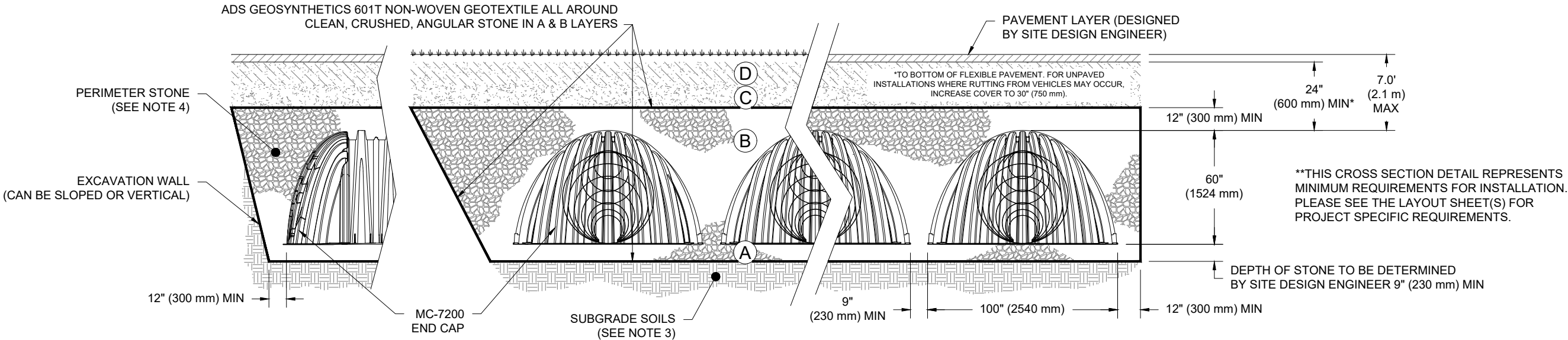
[adspipe.com](http://adspipe.com)

800-821-6710

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

| MATERIAL LOCATION |  | DESCRIPTION  | AASHTO MATERIAL CLASSIFICATIONS   | COMPACTION / DENSITY REQUIREMENT  |
|-------------------|--|--|---|---|
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\*FOR COVER DEPTHS GREATER THAN 7.0' (2.1 m) PLEASE CONTACT STORMTECH

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MC-7200

STANDARD CROSS SECTION

DATE: 09/21/21

DRAWN: MWH

CHECKED: MWH


PROJECT #:

DESCRIPTION

DATE

DRWN

CHKD

**ADS**

4640 TRUEMAN BLVD  
HILLIARD, OH 43026

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1

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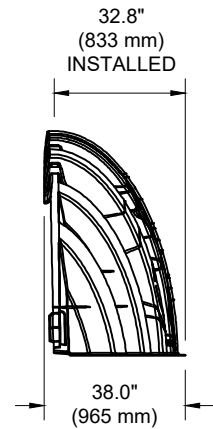
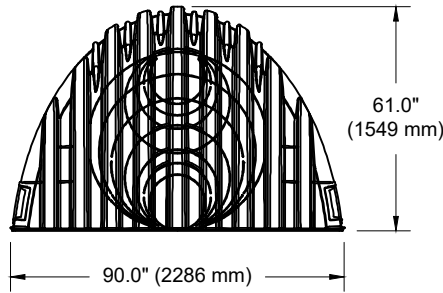
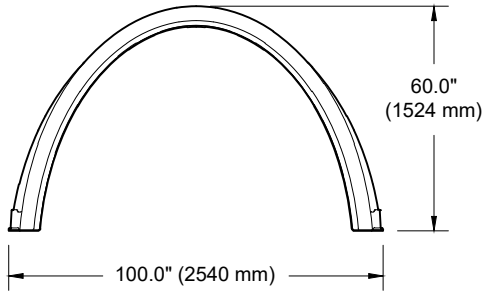
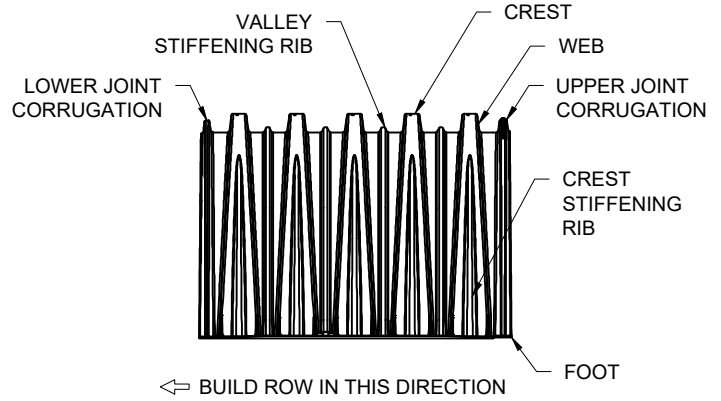
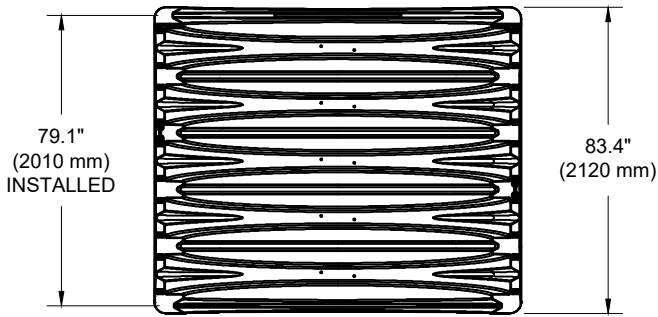
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OF

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# MC-7200 TECHNICAL SPECIFICATION

NTS



## NOMINAL CHAMBER SPECIFICATIONS

|                                 |                        |                               |
|---------------------------------|------------------------|-------------------------------|
| SIZE (W X H X INSTALLED LENGTH) | 100.0" X 60.0" X 79.1" | (2540 mm X 1524 mm X 2010 mm) |
| CHAMBER STORAGE                 | 175.9 CUBIC FEET       | (4.98 m <sup>3</sup> )        |
| MINIMUM INSTALLED STORAGE*      | 267.3 CUBIC FEET       | (7.56 m <sup>3</sup> )        |
| WEIGHT (NOMINAL)                | 205 lbs.               | (92.9 kg)                     |

## NOMINAL END CAP SPECIFICATIONS

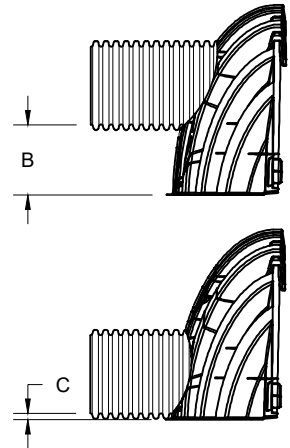
|                                 |                       |                              |
|---------------------------------|-----------------------|------------------------------|
| SIZE (W X H X INSTALLED LENGTH) | 90.0" X 61.0" X 32.8" | (2286 mm X 1549 mm X 833 mm) |
| END CAP STORAGE                 | 39.5 CUBIC FEET       | (1.12 m <sup>3</sup> )       |
| MINIMUM INSTALLED STORAGE*      | 115.3 CUBIC FEET      | (3.26 m <sup>3</sup> )       |
| WEIGHT (NOMINAL)                | 90 lbs.               | (40.8 kg)                    |

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

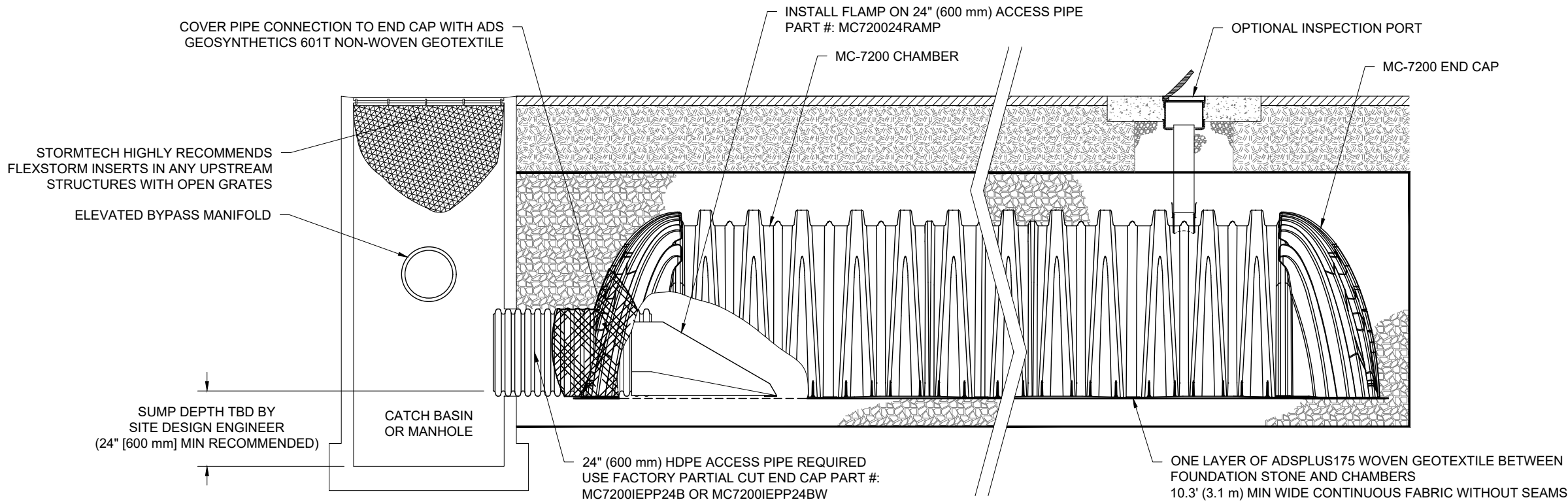
PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"  
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"  
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

| PART #         | STUB          | B                | C             |
|----------------|---------------|------------------|---------------|
| MC7200IEPP06T  | 6" (150 mm)   | 42.54" (1081 mm) | ---           |
| MC7200IEPP06B  |               | ---              | 0.86" (22 mm) |
| MC7200IEPP08T  | 8" (200 mm)   | 40.50" (1029 mm) | ---           |
| MC7200IEPP08B  |               | ---              | 1.01" (26 mm) |
| MC7200IEPP10T  | 10" (250 mm)  | 38.37" (975 mm)  | ---           |
| MC7200IEPP10B  |               | ---              | 1.33" (34 mm) |
| MC7200IEPP12T  | 12" (300 mm)  | 35.69" (907 mm)  | ---           |
| MC7200IEPP12B  |               | ---              | 1.55" (39 mm) |
| MC7200IEPP15T  | 15" (375 mm)  | 32.72" (831 mm)  | ---           |
| MC7200IEPP15B  |               | ---              | 1.70" (43 mm) |
| MC7200IEPP18T  | 18" (450 mm)  | 29.36" (746 mm)  | ---           |
| MC7200IEPP18TW |               | ---              | 1.97" (50 mm) |
| MC7200IEPP18B  |               |                  |               |
| MC7200IEPP18BW |               | ---              | ---           |
| MC7200IEPP24T  | 24" (600 mm)  | 23.05" (585 mm)  | ---           |
| MC7200IEPP24TW |               | ---              | 2.26" (57 mm) |
| MC7200IEPP24B  |               |                  |               |
| MC7200IEPP24BW |               | ---              | ---           |
| MC7200IEPP30BW | 30" (750 mm)  | ---              | 2.95" (75 mm) |
| MC7200IEPP36BW | 36" (900 mm)  | ---              | 3.25" (83 mm) |
| MC7200IEPP42BW | 42" (1050 mm) | ---              | 3.55" (90 mm) |

NOTE: ALL DIMENSIONS ARE NOMINAL



CUSTOM PREFABRICATED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-7200 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.



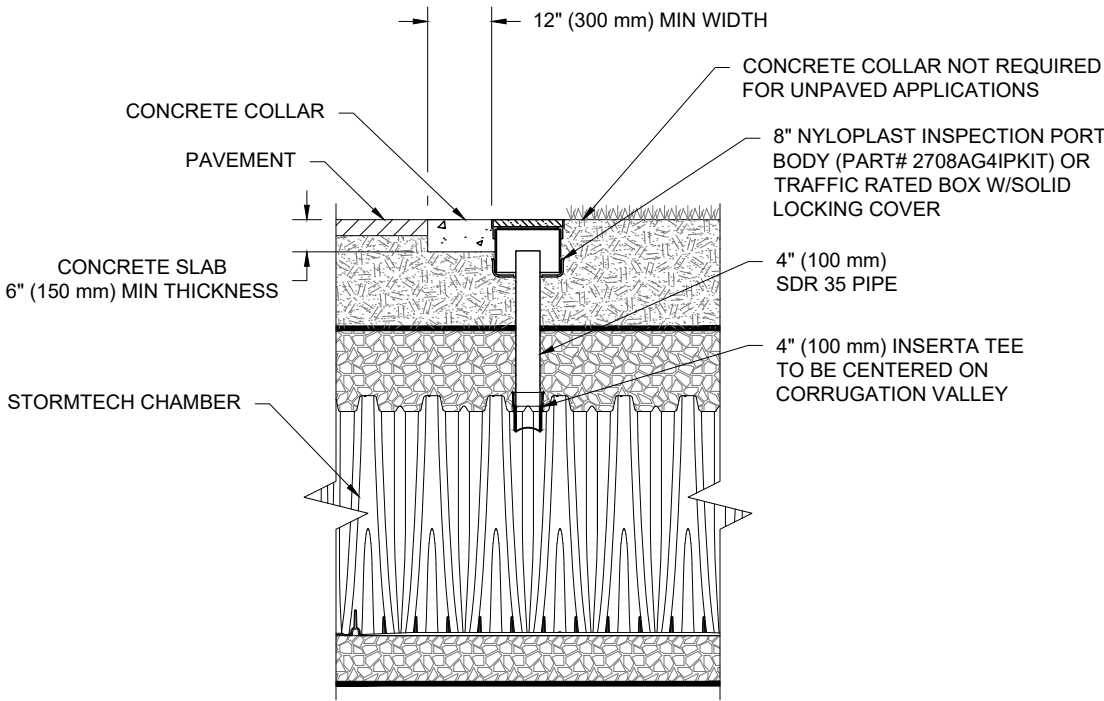
MC-7200 ISOLATOR ROW PLUS DETAIL  
NTS

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS 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 PLUS 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 PLUS ROWS
- B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
- B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS 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 PLUS 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.



NOTE:  
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

4" PVC INSPECTION PORT DETAIL  
(MC SERIES CHAMBER)  
NTS

MC-7200

ISOLATOR ROW PLUS DETAILS

DATE: 09/21/21 DRAWN: MWH

PROJECT #: CHECKED: MWH

DESCRIPTION

DRWN

DATE

StormTech®  
Chamber System

888-892-2694 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD  
HILLIARD, OH 43026

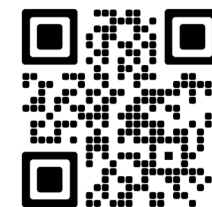
ADS

1 SHEET  
OF 1

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# StormTech® Installation Guide

## MC-7200 Chamber



StormTech  
Installation Video

### Required Materials and Equipment List

- Acceptable fill materials per Table 1
- ADS PLUS and non-woven geotextile fabrics
- StormTech solid end caps, pre-cored and pre-fabricated end caps
- StormTech chambers, manifolds and fittings

*Note: MC-7200 chamber pallets are 100" x 84" (2.5 m x 2.1 m) and weigh about 1435 lbs. (651 kg). Unloading chambers requires 72" (1.8 m) (min.) forks and/or tie downs (straps, chains, etc).*

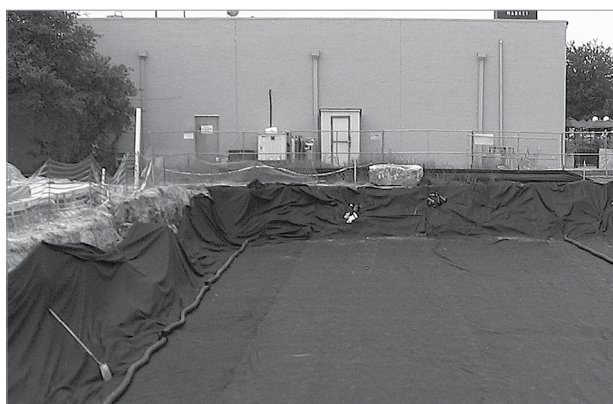
### Important Notes:

- This installation guide provides the minimum requirements for proper installation of chambers. Non-adherence to this guide may result in damage to chambers during installation. Replacement of damaged chambers during or after backfilling is costly and very time consuming. It is recommended that all installers are familiar with this guide, and that the contractor inspects the chambers for distortion, damage and joint integrity as work progresses.
- 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.
- Care should be taken in the handling of chambers and end caps. End caps must be stored standing upright. Avoid dropping, prying or excessive force on chambers during removal from pallet and initial placement.

## Requirements for System Installation



Excavate bed and prepare subgrade per engineer's plans. Plans and specifications should include Best Management Practices (BMPs) to deter contamination of open pits during construction.



Place non-woven geotextile over prepared soils and up excavation walls.



Place clean, crushed, angular stone foundation 9" (230 mm) min. Install underdrains if required. Compact to achieve a flat surface.

# Manifold, Scour Fabric and Chamber Assembly



Install manifolds and lay out ADS Plus fabric at inlet rows [min. 17.5 ft (5.33 m)] at each inlet end cap. Place a continuous piece (no seams) along entire length of Isolator® Plus Row(s). Align the first chamber and end cap of each row with inlet pipes. Contractor may choose to postpone stone placement around end chambers and leave ends of rows open for easy inspection of chambers during the backfill process.



The MC-7200 contains built in ropes at the feet on both sides of the chambers to be used to lift and place the chambers using an excavator. No more than two chambers should be lifted at a time using the ropes. A 14' x 3/8" (10 mm) chain is recommended along with a 5/8" (16 mm) Jaw and Eye Swivel. Using this method, chambers can be placed directly on an existing row. Using too long of a chain may cause the chambers to be less stable during picking.



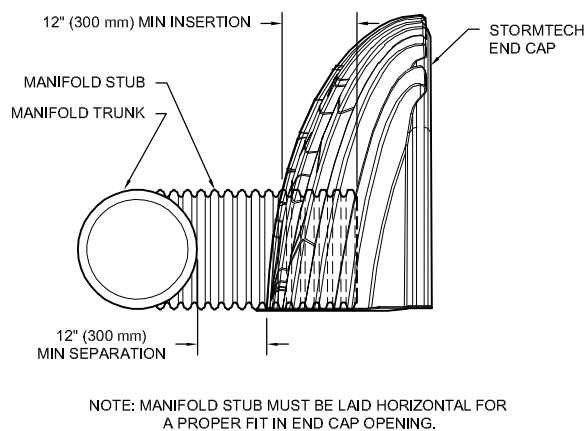
Continue installing chambers by overlapping chamber end corrugations. Chamber joints are labeled "Lower Joint - Overlap Here" and "Build this direction - Upper Joint" Be sure that the chamber placement does not exceed the reach of the construction equipment used to place the stone. Maintain minimum 9" (230 mm) spacing between MC-7200 rows.



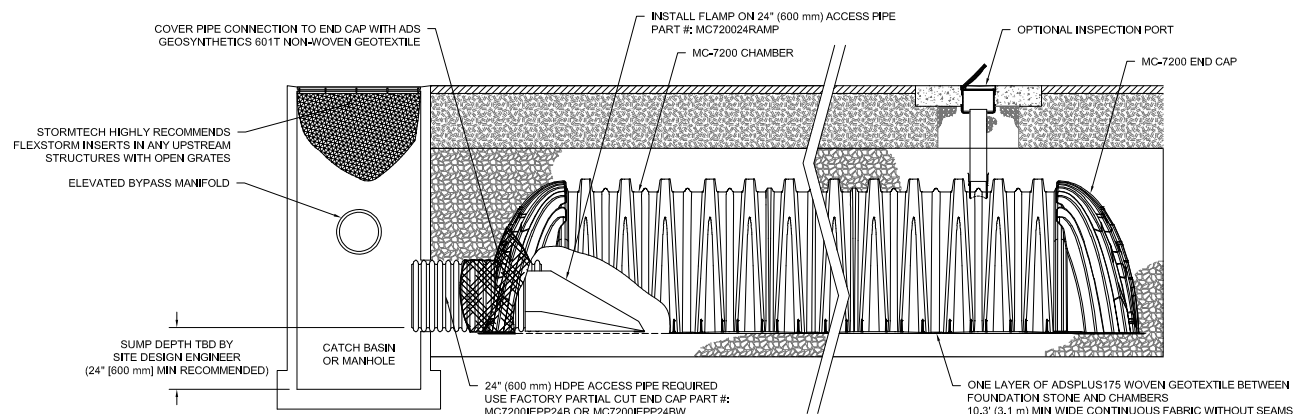
Place a continuous layer of ADS Plus fabric between the foundation stone and the Isolator Row Plus chambers, making sure the fabric lays flat and extends the entire width of the chamber feet. When used on an Isolator Row Plus, a 24" FLAMP (flared end ramp) is attached to the inside of the inlet pipe with a provided threaded rod and bolt. The FLAMP then lays on top of the ADS Plus fabric.

## Manifold Insertion

## StormTech Isolator Row Plus Detail



Insert inlet and outlet manifolds a minimum 12" (300 mm) into chamber end caps. Manifold header should be a minimum 12" (300 mm) from base of end cap.



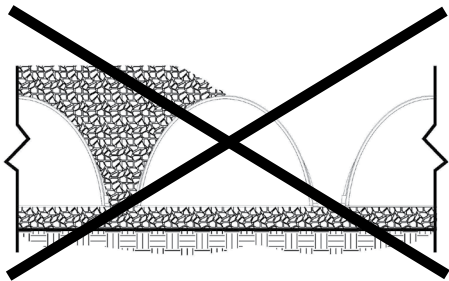
## Initial Anchoring of Chambers – Embedment Stone



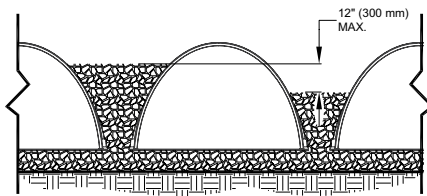
Initial embedment shall be spotted along the centerline of the chamber evenly anchoring the lower portion of the chamber. This is best accomplished with a stone conveyor or excavator reaching along the row.

No equipment shall be operated on the bed at this stage of the installation. Excavators must be located off the bed. Dump trucks shall not dump stone directly on to the bed. Dozers or loaders are not allowed on the bed at this time.

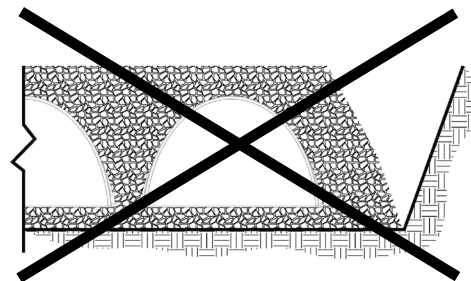
## Backfill of Chambers – Embedment Stone



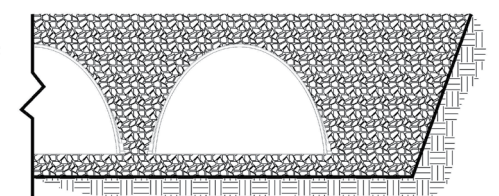
**Uneven Backfill**



**Even Backfill**



**Perimeter Not Backfilled**

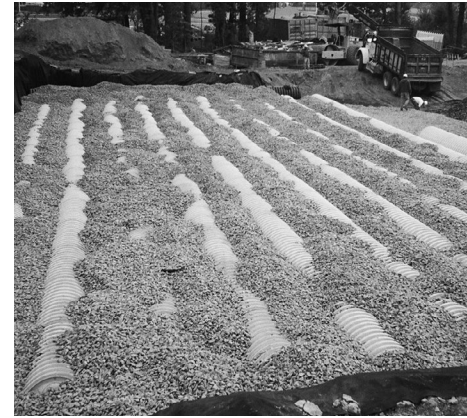


**Perimeter Fully Backfilled**

Backfill chambers evenly. Stone column height should never differ by more than 12" (300 mm) between adjacent chamber rows or between chamber rows and perimeter.

Perimeter stone must be brought up evenly with chamber rows. Perimeter must be fully backfilled, with stone extended horizontally to the excavation wall.

## Backfill of Chambers – Embedment Stone and Cover Stone



Continue evenly backfilling between rows and around perimeter until embedment stone reaches tops of chambers and a minimum 12" (300 mm) of cover stone is in place. Perimeter stone must extend horizontally to the excavation wall for both straight or sloped sidewalls. The recommended backfill methods are with a stone conveyor outside of the bed or build as you go with an excavator inside the bed reaching along the rows. Backfilling while assembling chambers rows as shown in the picture will help to ensure that equipment reach is not exceeded.

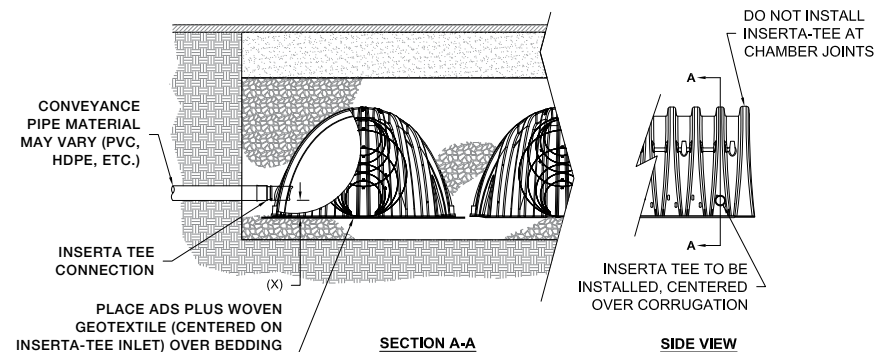
**Only after chambers have been backfilled to top of chamber and with a minimum 12" (300 mm) of cover stone on top of chambers can skid loaders and small LGP dozers be used to final grade cover stone and backfill material in accordance with ground pressure limits in Table 2.** Equipment must push material parallel to rows only. Never push perpendicular to rows. StormTech recommends the contractor inspect chamber rows before placing final backfill. Any chambers damaged by construction equipment shall be removed and replaced.

## Final Backfill of Chambers – Fill Material



Install non-woven geotextile over stone. Geotextile must overlap 24" (600 mm) where edges meet. Compact at 24" (600 mm) of fill. Roller travel parallel with rows.

## Inserta Tee Detail



**NOTE:**  
PART NUMBERS WILL VARY BASED ON  
INLET PIPE MATERIALS. CONTACT  
STORMTECH FOR MORE INFORMATION.

| CHAMBER  | MAX DIAMETER OF INSERTA TEE | HEIGHT FROM BASE OF CHAMBER (X) |
|--|-----------------------------|---------------------------------|
| MC-4500  | 12" (250 mm)                | 8" (200 mm)                     |
| INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON |                             |                                 |

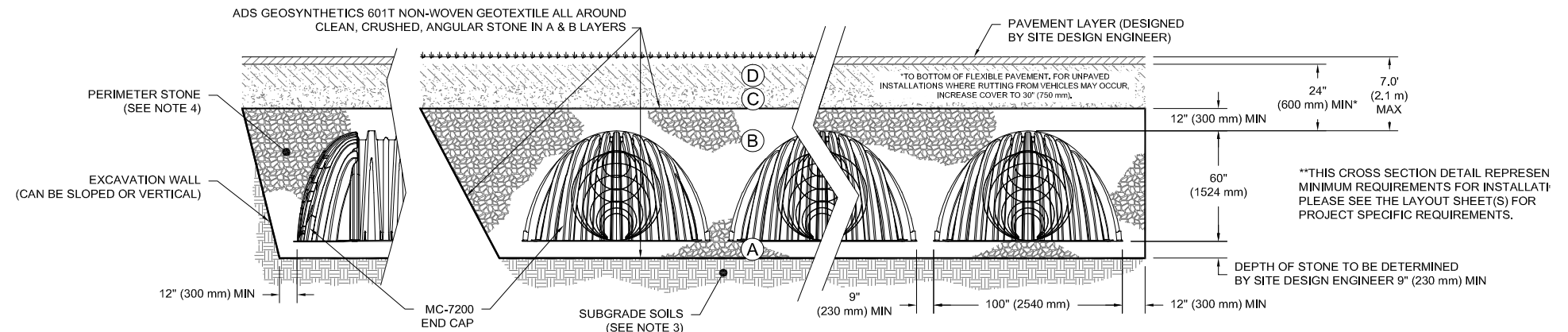
**Table 1- Acceptable Fill Materials**

| Material Location  | Description   | AASHTO M43 Designation <sup>1</sup>  | Compaction/Density Requirement   |
|--|---|--|--|
| <b>D Final Fill:</b> 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 the pavement subbase may be part of the 'D' layer. | Any soil/rock materials, native soils or per engineer's plans. Check plans for pavement subgrade requirements.                                      | N/A  | Prepare per site design engineer's plans. Paved installations may have stringent material and preparation requirements.  |
| <b>C Initial Fill:</b> 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 part of the 'C' layer.       | Granular well-graded soil/aggregate mixtures, <35% fines or processed aggregate. Most pavement subbase materials can be used in lieu of this layer. | AASHTO M145 A-1, A-2-4, A-3 or AASHTO M431 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10 | Begin compaction after min. 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>B Embedment Stone:</b> Fill the surrounding chambers from the foundation stone ('A' layer) to the 'C' layer above.  | Clean, crushed, angular stone   | AASHTO M43 <sup>1</sup> 3, 4   | No compaction required.  |
| <b>A Foundation Stone:</b> Fill below chambers from the subgrade up to the foot (bottom) of the chamber.   | Clean, crushed, angular stone,  | AASHTO M43 <sup>1</sup> 3, 4   | Place and compact in 9" (230 mm) max lifts using two full coverages with a vibratory compactor. <sup>2,3</sup>   |

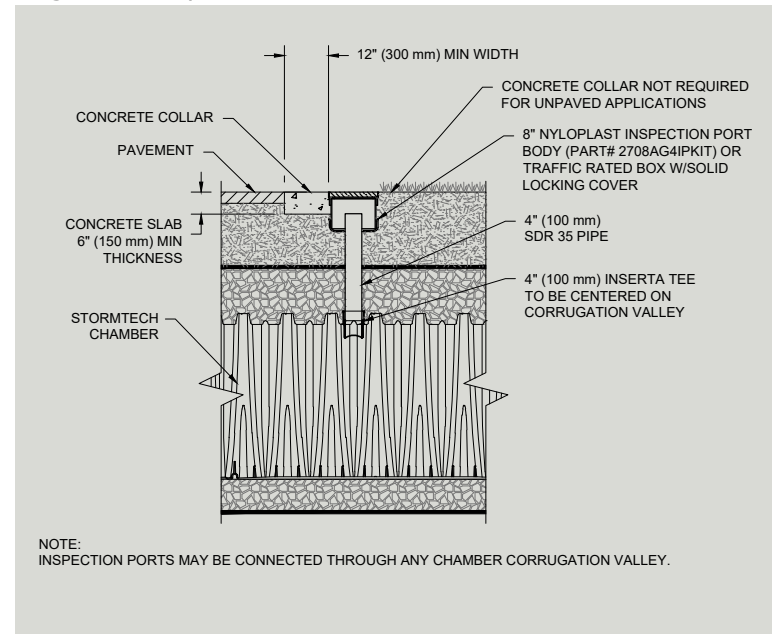
**Please Note:**

1. 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".
2. 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.
3. Where infiltration surfaces may be comprised by compaction, for standard installations and 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.

**Figure 2 - Fill Material Locations**



**Figure 1- Inspection Port Detail**



Notes:

- 36" (900 mm) of stabilized cover materials over the chambers is recommended during the construction phase if general construction activities, such as full dump truck travel and dumping, are to occur over the bed.
- During paving operations, dump truck axle loads on 18" (450 mm) of cover for MC-7200s may be necessary. Precautions should be taken to avoid rutting of the road base layer, to ensure that compaction requirements have been met, and that a minimum of 18" (450 mm) of cover for MC-7200s exists over the chambers. Contact StormTech for additional guidance on allowable axle loads during paving.
- Ground pressure for track dozers is the vehicle operating weight divided by total ground contact area for both tracks. Excavators will exert higher ground pressures based on loaded bucket weight and boom extension.
- Mini-excavators (<8,000 lbs/3,628 kg) can be used with at least 12" (300 mm) of stone over the chambers and are limited by the maximum ground pressures in Table 2 based on a full bucket at maximum boom extension.
- StormTech does not require compaction of initial fill at 18" (450 mm) of cover. However, requirements by others for 6" (150 mm) lifts may necessitate the use of small compactors at 18" (450 mm) of cover.
- Storage of materials such as construction materials, equipment, spoils, etc. should not be located over the StormTech system. The use of equipment over the StormTech system not covered in Table 2 (ex. soil mixing equipment, cranes, etc) is limited. Please contact StormTech for more information.
- Allowable track loads based on vehicle travel only. Excavators shall not operate on chamber beds until the total backfill reaches 3 feet (900 mm) over the entire bed.

Call StormTech at **888.892.2694** for technical and product information or visit [www.stormtech.com](http://www.stormtech.com)

**Table 2 - Maximum Allowable Construction Vehicle Loads<sup>6</sup>**

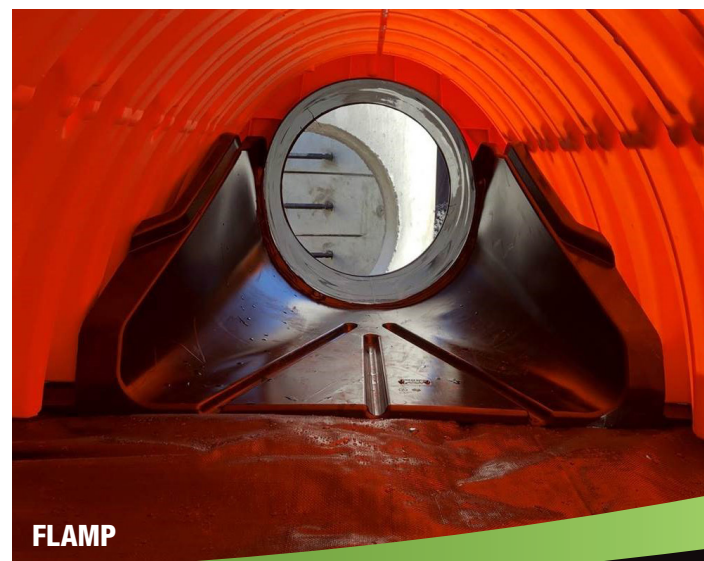
| Material Location       | Fill Depth over Chambers in. (mm) | Maximum Allowable Wheel Loads     |                                     | Maximum Allowable Track Loads <sup>6</sup>                    |  | Maximum Allowable Roller Loads                 |
|-------------------------|-----------------------------------|-----------------------------------|-------------------------------------|---|--|--|
|                         |                                   | Max Axle Load for Trucks lbs (kN) | Max Wheel Load for Loaders lbs (kN) | Track Width in. (mm)  | Max Ground Pressure psf (kPa)                                    | Max Drum Weight or Dynamic Force lbs (kN)      |
| Ⓓ Final Fill Material   | 36" (900) Compacted               | 32,000 (142)                      | 16,000 (71)                         | 12" (305)<br>18" (457)<br>24" (610)<br>30" (762)<br>36" (914) | 4050 (194)<br>2760 (132)<br>2130 (102)<br>1770 (84)<br>1530 (73) | 38,000 (169)                                   |
| Ⓒ Initial Fill Material | 24" (600) Compacted               | 32,000 (142)                      | 16,000 (71)                         | 12" (305)<br>18" (457)<br>24" (610)<br>30" (762)<br>36" (914) | 2750 (131)<br>1920 (92)<br>1520 (73)<br>1310 (63)<br>1180 (56)   | 20,000 (89)                                    |
|                         |                                   |                                   |                                     | 12" (305)<br>18" (457)<br>24" (610)<br>30" (762)<br>36" (914) | 2430 (116)<br>1730 (82)<br>1390 (66)<br>1210 (58)<br>1100 (52)   | 16,000 (71)                                    |
|                         |                                   |                                   |                                     | 12" (305)<br>18" (457)<br>24" (610)<br>30" (762)<br>36" (914) | 2140 (102)<br>1530 (73)<br>1260 (60)<br>1120 (53)<br>1030 (49)   | 5,000 (22)<br>(static loads only) <sup>5</sup> |
|                         |                                   |                                   |                                     | 12" (305)<br>18" (457)<br>24" (610)<br>30" (762)<br>36" (914) | 1100 (53)<br>710 (34)<br>660 (32)<br>580 (28)                    | Not Allowed                                    |
|                         |                                   |                                   |                                     | 12" (305)<br>18" (457)<br>24" (610)<br>30" (762)<br>36" (914) | 1100 (53)<br>710 (34)<br>660 (32)<br>580 (28)                    | Not Allowed                                    |
|                         | 6" (150)                          | Not Allowed                       | Not Allowed                         | Not Allowed   | Not Allowed  | Not Allowed                                    |
| Ⓑ Embedment Stone       | 12" (300)                         | Not Allowed                       | Not Allowed                         | 12" (305)<br>18" (457)<br>24" (610)<br>30" (762)              | 1100 (53)<br>710 (34)<br>660 (32)<br>580 (28)                    | Not Allowed                                    |
|                         | 6" (150)                          | Not Allowed                       | Not Allowed                         | Not Allowed   | Not Allowed  | Not Allowed                                    |

**Table 3 - Placement Methods and Descriptions**

| Material Location       | Placement Methods/ Restrictions  | Wheel Load Restrictions  | Track Load Restrictions   | Roller Load Restrictions   |
|-------------------------|--|--|---|--|
|                         |  | See Table 2 for Maximum Construction Loads   |   |  |
| Ⓓ Final Fill Material   | A variety of placement methods may be used. All construction loads must not exceed the maximum limits in Table 2.  | 36" (900 mm) minimum cover required for dump trucks to dump over chambers.                                   | Dozers to push parallel to rows. <sup>4</sup>   | Roller travel parallel to rows only until 36" (900 mm) compacted cover is reached.   |
| Ⓒ Initial Fill Material | Excavator positioned off bed recommended. Small excavator allowed over chambers. Small dozer allowed.  | Asphalt can be dumped into paver when compacted pavement subbase reaches 24" (600 mm) above top of chambers. | Small LGP track dozers & skid loaders allowed to grade cover stone with at least 12" (300 mm) stone under tracks at all times. Equipment must push parallel to rows at all times. | Use dynamic force of roller only after compacted fill depth reaches 24" (600 mm) over chambers. Roller travel parallel to chamber rows only. |
| Ⓑ Embedment Stone       | No equipment allowed on bare chambers. Use excavator or stone conveyor positioned off bed or on foundation stone to evenly fill around all chambers to at least the top of chambers. | No wheel loads allowed. Material must be placed outside the limits of the chamber bed.                       | No tracked equipment is allowed on chambers until a min. 12" (300 mm) cover stone is in place.  | No rollers allowed.  |
| Ⓐ Foundation Stone      | No StormTech restrictions. Contractor responsible for any conditions or requirements by others relative to subgrade bearing capacity, dewatering or protection of subgrade.          |  |   |  |



# *Isolator® Row PLUS O&M Manual*



# THE ISOLATOR® ROW PLUS

## INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row PLUS is a technique to inexpensively enhance Total Suspended Solids (TSS) and Total Phosphorus (TP) removal with easy access for inspection and maintenance.

## THE ISOLATOR ROW PLUS

The Isolator Row PLUS is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-4500 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row PLUS and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC-310-3 and SC-740 models) allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row PLUS protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

ADS geotextile fabric is placed between the stone and the Isolator Row PLUS chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber. The non-woven fabric is not required over the SC-160, DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

The Isolator Row PLUS is designed to capture the “first flush” runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole not only provides access to the Isolator Row PLUS but includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row PLUS bypass through a manifold to the other chambers. This is achieved with either an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row PLUS row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row PLUS. After Stormwater flows through the Isolator Row PLUS and into the rest of the StormTech chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

The Isolator Row FLAMP™ (patent pending) is a flared end ramp apparatus that is attached to the inlet pipe on the inside of the chamber end cap. The FLAMP provides a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance over time by enhancing outflow of solid debris that would otherwise collect at an end of the chamber. It also serves to improve the fluid and solid flow into the access pipe during maintenance and cleaning and to guide cleaning and inspection equipment back into the inlet pipe when complete.

The Isolator Row PLUS may be part of a treatment train system. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row PLUS is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

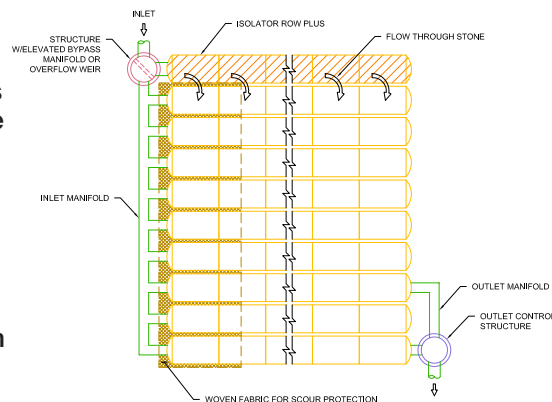
*Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row PLUS.*

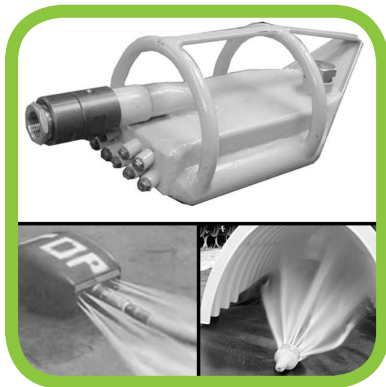


Looking down the Isolator Row PLUS from the manhole opening, ADS PLUS Fabric is shown between the chamber and stone base.



**StormTech Isolator Row PLUS with Overflow Spillway (not to scale)**





## ISOLATOR ROW PLUS INSPECTION/MAINTENANCE

### INSPECTION

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row PLUS should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row PLUS incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row PLUS, clean-out should be performed.

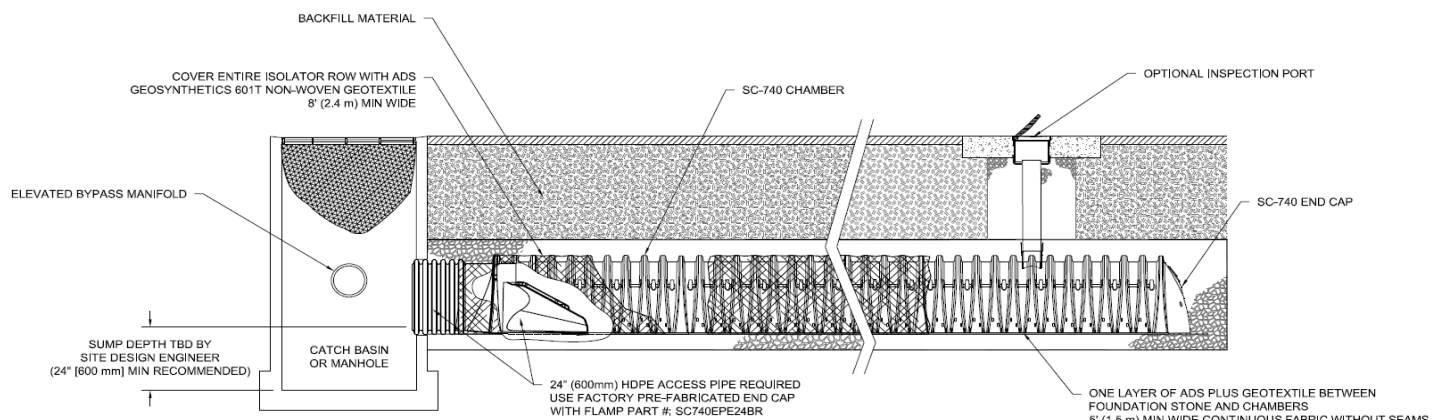
### MAINTENANCE

The Isolator Row PLUS was designed to reduce the cost of periodic maintenance. By “isolating” sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row PLUS while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45° are best. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row PLUS up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Row PLUS that have ADS PLUS Fabric (as specified by StormTech) over their angular base stone.**

### StormTech Isolator Row PLUS (not to scale)

*Note: Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-4500 chamber models and is not required over the entire Isolator Row PLUS.*



# ISOLATOR ROW PLUS STEP BY STEP MAINTENANCE PROCEDURES

## STEP 1

Inspect Isolator Row PLUS for sediment.

- A) Inspection ports (if present)
  - i. Remove lid from floor box frame
  - ii. Remove cap from inspection riser
  - iii. Using a flashlight and stadia rod, measure depth of sediment and record results on maintenance log.
  - iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.
- B) All Isolator Row PLUS
  - i. Remove cover from manhole at upstream end of Isolator Row PLUS
  - ii. Using a flashlight, inspect down Isolator Row PLUS through outlet pipe
    1. Mirrors on poles or cameras may be used to avoid a confined space entry
    2. Follow OSHA regulations for confined space entry if entering manhole
  - iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

## STEP 2

Clean out Isolator Row PLUS using the JetVac process.

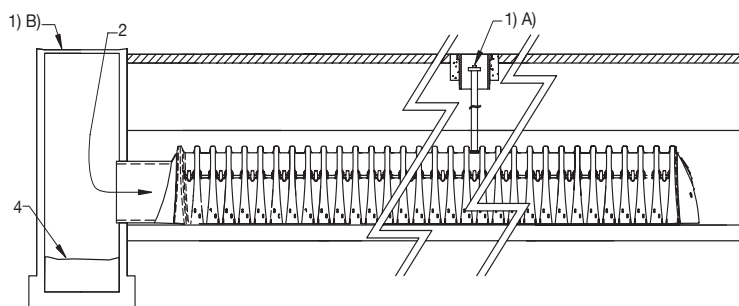
- A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
- B) Apply multiple passes of JetVac until backflush water is clean
- C) Vacuum manhole sump as required

## STEP 3

Replace all caps, lids and covers, record observations and actions.

## STEP 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



## SAMPLE MAINTENANCE LOG

| Date    | Stadia Rod Readings                  |                                       | Sediment Depth<br>(1)-(2) | Observations/Actions  | Inspector |
|---------|--------------------------------------|---------------------------------------|---------------------------|---|-----------|
|         | Fixed point to chamber<br>bottom (1) | Fixed point to top of<br>sediment (2) |                           |   |           |
| 3/15/11 | 6.3 ft                               | none                                  |                           | New installation. Fixed point is CI frame at grade                              | DJM       |
| 9/24/11 |                                      | 6.2                                   | 0.1 ft                    | Some grit felt  | SM        |
| 6/20/13 |                                      | 5.8                                   | 0.5 ft                    | Mucky feel, debris visible in manhole and in Isolator Row PLUS, maintenance due | NV        |
| 7/7/13  | 6.3 ft                               |                                       | 0                         | System jetted and vacuumed  | DJM       |

# 17.0 Standard Limited Warranty



## STANDARD LIMITED WARRANTY OF STORMTECH LLC ("STORMTECH"): PRODUCTS

- (A) This Limited Warranty applies solely to the StormTech chambers and end plates manufactured by StormTech and sold to the original purchaser (the "Purchaser"). The chambers and end plates are collectively referred to as the "Products."
- (B) The structural integrity of the Products, when installed strictly in accordance with StormTech's written installation instructions at the time of installation, are warranted to the Purchaser against defective materials and workmanship for one (1) year from the date of purchase. Should a defect appear in the Limited Warranty period, the Purchaser shall provide StormTech with written notice of the alleged defect at StormTech's corporate headquarters within ten (10) days of the discovery of the defect. The notice shall describe the alleged defect in reasonable detail. StormTech agrees to supply replacements for those Products determined by StormTech to be defective and covered by this Limited Warranty. The supply of replacement products is the sole remedy of the Purchaser for breaches of this Limited Warranty. StormTech's liability specifically excludes the cost of removal and/or installation of the Products.
- (C) **THIS LIMITED WARRANTY IS EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE PRODUCTS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.**
- (D) This Limited Warranty only applies to the Products when the Products are installed in a single layer. **UNDER NO CIRCUMSTANCES, SHALL THE PRODUCTS BE INSTALLED IN A MULTI-LAYER CONFIGURATION.**
- (E) No representative of StormTech has the authority to change this Limited Warranty in any manner or to extend this Limited Warranty. This Limited Warranty does not apply to any person other than to the Purchaser.
- (F) Under no circumstances shall StormTech be liable to the Purchaser or to any third party for product liability claims; claims arising from the design, shipment, or installation of the Products, or the cost of other goods or services related to the purchase and installation of the Products. For this Limited Warranty to apply, the Products must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and StormTech's written installation instructions.
- (G) **THE LIMITED WARRANTY DOES NOT EXTEND TO INCIDENTAL, CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES. STORMTECH SHALL NOT BE LIABLE FOR PENALTIES OR LIQUIDATED DAMAGES, INCLUDING LOSS OF PRODUCTION AND PROFITS; LABOR AND MATERIALS; OVERHEAD COSTS; OR OTHER LOSS OR EXPENSE INCURRED BY THE PURCHASER OR ANY THIRD PARTY. SPECIFICALLY EXCLUDED FROM LIMITED WARRANTY COVERAGE ARE DAMAGE TO THE PRODUCTS ARISING FROM ORDINARY WEAR AND TEAR; ALTERATION, ACCIDENT, MISUSE, ABUSE OR NEGLIGENCE; THE PRODUCTS BEING SUBJECTED TO VEHICLE TRAFFIC OR OTHER CONDITIONS WHICH ARE NOT PERMITTED BY STORMTECH'S WRITTEN SPECIFICATIONS OR INSTALLATION INSTRUCTIONS; FAILURE TO MAINTAIN THE MINIMUM GROUND COVERS SET FORTH IN THE INSTALLATION INSTRUCTIONS; THE PLACEMENT OF IMPROPER MATERIALS INTO THE PRODUCTS; FAILURE OF THE PRODUCTS DUE TO IMPROPER SITING OR IMPROPER SIZING; OR ANY OTHER EVENT NOT CAUSED BY STORMTECH. A PRODUCT ALSO IS EXCLUDED FROM LIMITED WARRANTY COVERAGE IF SUCH PRODUCT IS USED IN A PROJECT OR SYSTEM IN WHICH ANY GEOTEXTILE PRODUCTS OTHER THAN THOSE PROVIDED BY ADVANCED DRAINAGE SYSTEMS ARE USED. THIS LIMITED WARRANTY REPRESENTS STORMTECH'S SOLE LIABILITY TO THE PURCHASER FOR CLAIMS RELATED TO THE PRODUCTS, WHETHER THE CLAIM IS BASED UPON CONTRACT, TORT, OR OTHER LEGAL THEORY.**



An  company

20 Beaver Road, Suite 104 | Wethersfield | Connecticut | 06109  
888.892.2694 fax 866.328.8401  
[www.stormtech.com](http://www.stormtech.com)

| PROJECT INFORMATION         |   |
|-----------------------------|---|
| ENGINEERED PRODUCT MANAGER: | JEROME MAGSINO<br>303-349-7555<br>JEROME.MAGSINO@ADSPIPE.COM    |
| ADS SALES REP:              | MARK KAELEBERER<br>720-256-8225<br>MARK.KAELEBERER@ADS-PIPE.COM |
| PROJECT NO:                 | S311081   |

APPROVED BY:

SIGNED: \_\_\_\_\_

DATE: \_\_\_\_\_

COMPANY: \_\_\_\_\_

PHONE / EMAIL: \_\_\_\_\_



THE DOWNSTREAM DEFENDER ® AND FIRST DEFENSE ®  
ARE DESIGNED, MANUFACTURED AND SUPPLIED BY HYDRO  
INTERNATIONAL PLC, AND ALL TRADEMARKS ARE THE  
PROPERTY OF HYDRO INTERNATIONAL PLC.

73RD & WASHINGTON

ADAMS COUNTY, CO

CONTRACTOR PROVIDED DELIVERY SCHEDULE & SITE INFORMATION:

| SCHEDULING INFORMATION    |  |  |  |  |  |  |  |  |  |
|---------------------------|--|--|--|--|--|--|--|--|--|
| SYSTEM DESIGNATION / SIZE |  |  |  |  |  |  |  |  |  |
| SYSTEM DELIVERY DATE      |  |  |  |  |  |  |  |  |  |

\*ACTUAL DATE REQUIRED, ASAP IS NOT ACCEPTABLE AND A MINIMUM OF 4 WEEKS MUST BE PROVIDED UNLESS OTHERWISE DISCUSSED WITH A SALES REPRESENTATIVE.

| DELIVERY INFORMATION    |  |                 |  |
|-------------------------|--|-----------------|--|
| JOB SITE STREET ADDRESS |  | CITY            |  |
| CONTACT                 |  | CONTACT PHONE   |  |
| ALTERNATE CONTACT       |  | ALTERNATE PHONE |  |

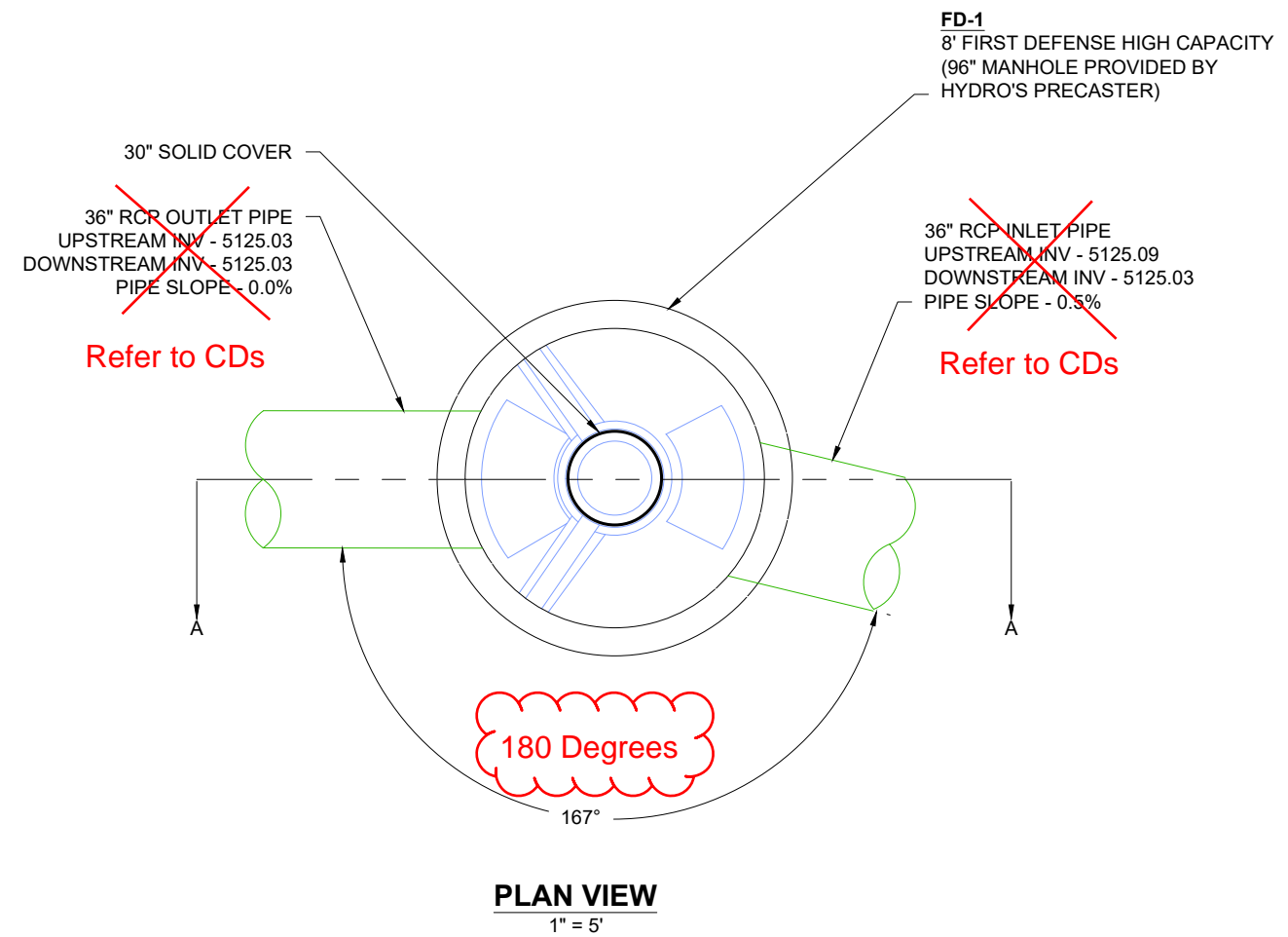
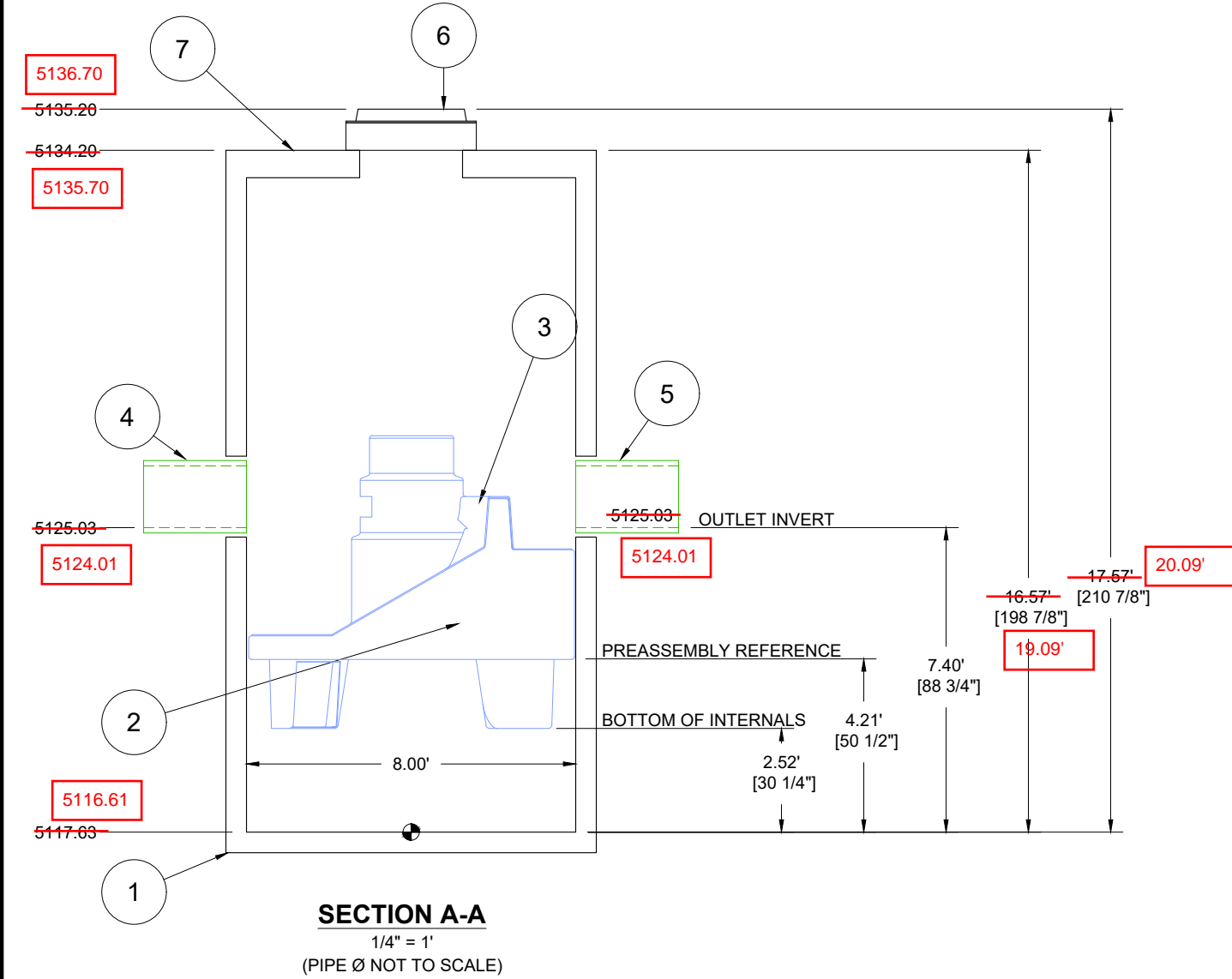
DIRECTIONS TO JOB SITE FROM NEAREST INTERSTATE:  
(PLEASE NO MAPS)

| PARTS LIST : <b>8' FIRST DEFENSE HIGH CAPACITY</b> |           |          |  |
|--|-----------|----------|--|
| ITEM   | SIZE (IN) | MATERIAL | DESCRIPTION  |
| 1  | 96        | -        | I.D. PRECAST MANHOLE                                   |
| 2  | -         | -        | LEDGER SUPPORT   |
| 3  | -         | -        | SEPARATION MODULE                                      |
| 4  | 36        | RCP      | INLET PIPE (BY OTHERS)                                 |
| 5  | 36        | RCP      | OUTLET PIPE (BY OTHERS)                                |
| 6  | 30        | -        | FRAME & COVER  |
| 7  | -         | -        | MATERIALS AND LABOR TO ACHIEVE FINAL GRADE (BY OTHERS) |

| ITEM | SIZE (IN) | MATERIAL | DESCRIPTION  |
|------|-----------|----------|--|
| 1    | 96        | -        | I.D. PRECAST MANHOLE                                   |
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| 7    | -         | -        | MATERIALS AND LABOR TO ACHIEVE FINAL GRADE (BY OTHERS) |

- ENGINEER / CONTRACTOR TO CONFIRM PIPE MATERIALS.
- CONTRACTOR IS RESPONSIBLE FOR MATERIALS AND LABOR TO BRING CASTINGS TO FINISHED GRADE
- ACTUAL DEPTH OF STRUCTURE MAY VARY DEPENDING ON AVAILABLE PRECAST FORMS. CONTRACTOR TO MEASURE HEIGHT OF STRUCTURE TO ENSURE THAT DEPTH OF EXCAVATION IS CORRECT.
- UNIT SHALL CONFORM TO HS20-44 LOAD RATINGS.

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- UNIT SHALL CONFORM TO HS20-44 LOAD RATINGS.



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ADAMS COUNTY, CO

|            |          |          |     |
|------------|----------|----------|-----|
| DATE:      | 07-12-23 | DRAWN:   | LAH |
| PROJECT #: | S311081  | CHECKED: | CJD |

STORMWATER SOLUTIONS  
94 HUTCHINS DR.  
PORTLAND, ME 04102-1930  
(207) 756-6200  
WWW.HYDRO-INT.COM



4640 TRUEMAN BLVD  
HILLIARD, OH 43026



AS NOTED

| DATE  | DRWN | CHKD | DESCRIPTION | PROJECT #. | DATE CHECKED | CHKD |
|---|------|------|-------------|------------|--------------|------|
| 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) DEPICTED AND ALL ASSOCIATED DETAILS MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS. |      |      |             |            |              |      |

