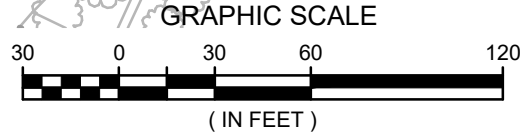


PROPOSED ADS
CHAMBER #1
V_{REQ}=35,264 CF
V_{PROV}=35,331 CF
DRAWDOWN=37.50 HR
33.913° N; -117.889° W

BREA MALL AND RESIDENCES AT BREA

1065 Brea Mall, Brea, CA 92821



WQMP EXHIBIT

raSmith
CREATIVITY BEYOND ENGINEERING

8911 Research Drive
Irvine, CA 92618-4237
(949) 872-2378
rasmith.com

WQ-01

Scale 1" = 60'
Job No. 2018-170
Date 9/20/23

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RAS JOB NO.	3180011.03
PROJECT MANAGER:	CHRIS T. BRATTY
DESIGNED BY:	CJN
CHECKED BY:	RMK

q:\318001\318001.03\eng data\WQMP\Exhibits\318001.03 - WQMP.dwg, WQ-02 ADS CHAMBER DETAILS, 8/9/2023 11:01:53 AM, cjin

PROJECT INFORMATION

ENGINEERED PRODUCT MANAGER

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ADS SALES REP


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MATT.NOBLE@ADSPIPE.COM

PROJECT NO.


S179336



Advanced Drainage Systems, Inc.



FOR STORMTECH
INSTALLATION INSTRUCTIONS
VISIT OUR APP



BREA MALL
BREA, CA

DC-780 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH DC-780.

2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.

3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".

4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.

5. 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.

6. 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.

7. 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 2".
- TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT³%, 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.

8. 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.

9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE DC-780 CHAMBER SYSTEM

1. STORMTECH DC-780 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.

2. STORMTECH DC-780 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".

3. 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.

4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.

5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.

6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.

7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4"-2" (20-50 mm).

8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.

9. 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

1. STORMTECH DC-780 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".

2. THE USE OF CONSTRUCTION EQUIPMENT OVER DC-780 CHAMBERS IS LIMITED:


- NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
- NO RUBBER Tired LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".

3. 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 THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY 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.

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1-800-733-7473



SHEET
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PROPOSED LAYOUT

CONCEPTUAL ELEVATIONS

329

STORMTECH DC-780 CHAMBERS

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):

16.50

38

STORMTECH DC-780 END CAPS

MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):

6.50

12

STONE ABOVE (B)

MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):

6.00

24

STONE BELOW (B)

MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):

6.00

40

STONE VOID

MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):

6.00

35331

INSTALLED SYSTEM VOLUME (CF)

TOP OF STONE

2.10

11908

PERIMETER STONE INCLUDED

TOP OF DC-780 CHAMBER

2.10

468.1

SYSTEM AREA (SQ)

12' x 12' BOTTOM MANIFOLD INVERT:

2.10

24' x 24' BOTTOM MANIFOLD INVERT:

2.10

24' ISOLATOR ROW PLUS INVERT:

2.01

BOTTOM OF DC-780 CHAMBER

2.01

BOTTOM OF STONE

0.00

PART TYPE

ITEM ON LAYOUT

DESCRIPTION

INVERT

MAX FLOW

A

24" BOTTOM PREFABRICATED EZ END CAP PART# SC740ECEZ / TYP OF ALL 24" BOTTOM

0.10"

N/A

B

INSTALL FLAMP ON 24" ACCESS PIPE / PART# SC74024RAMP

C

24" x 24" BOTTOM MANIFOLD, ADS N-12

0.10"

2EA @ 26.82FS

D

12' x 12' BOTTOM MANIFOLD, ADS N-12

1.20"

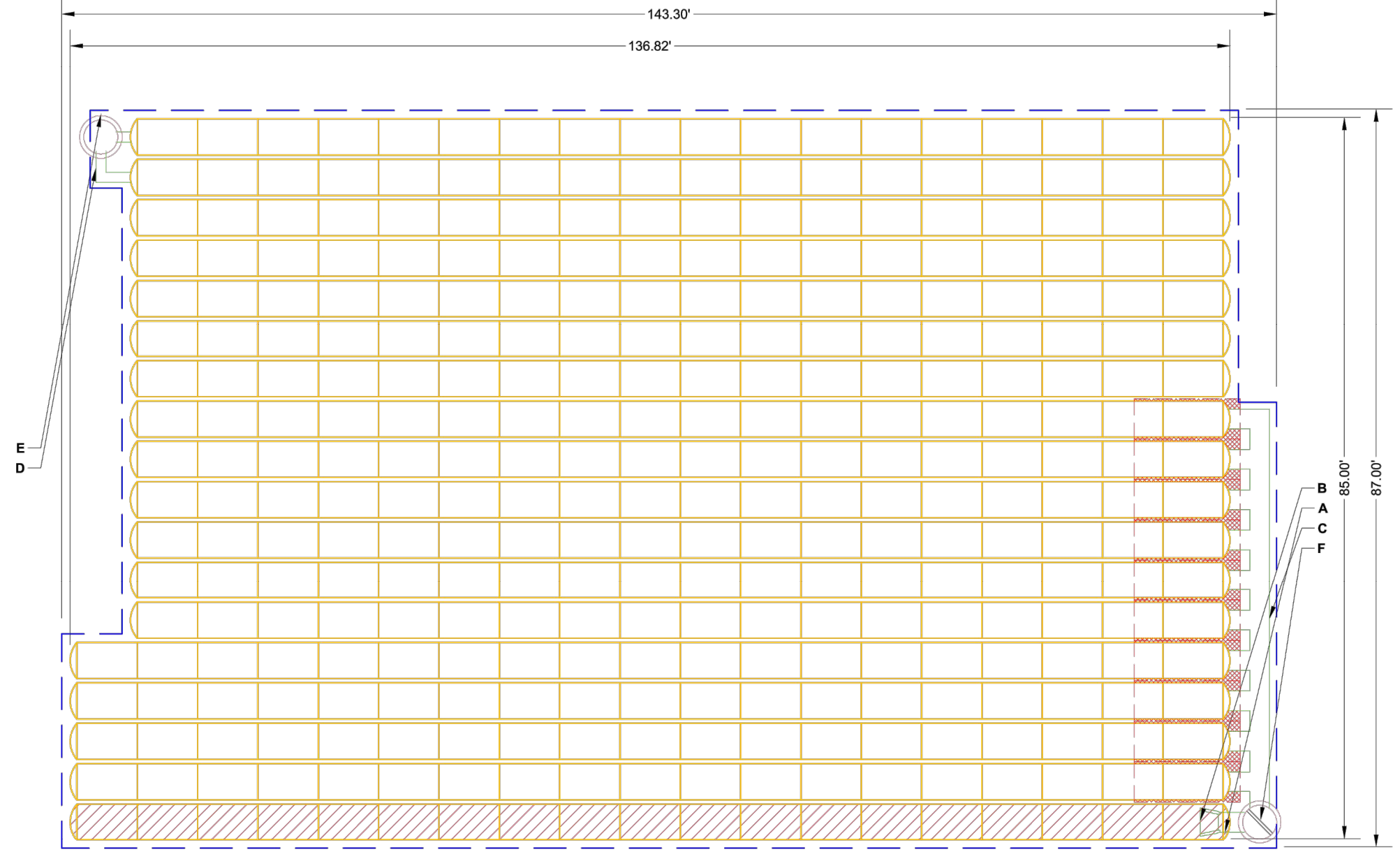
4.0 DFS

E

OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)

F

(DESIGN BY ENGINEER / PROVIDED BY OTHERS)



143.30'
136.82'

85.00'
87.00'

143.30'
136.82'

85.00'
87.00'

ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 12.50' OF ADSPPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNATH 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.

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SHEET
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ACCEPTABLE FILL MATERIALS: STORMTECH DC-780 CHAMBER SYSTEMS

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.

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

INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 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.

AASHTO M43¹
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 COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).

B

EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.

CLEAN, CRUSHED, ANGULAR STONE.

AASHTO M43¹
3, 357, 4, 467, 5, 56, 57

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 M43¹
3, 357, 4, 467, 5, 56, 57

PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.^{2,3}

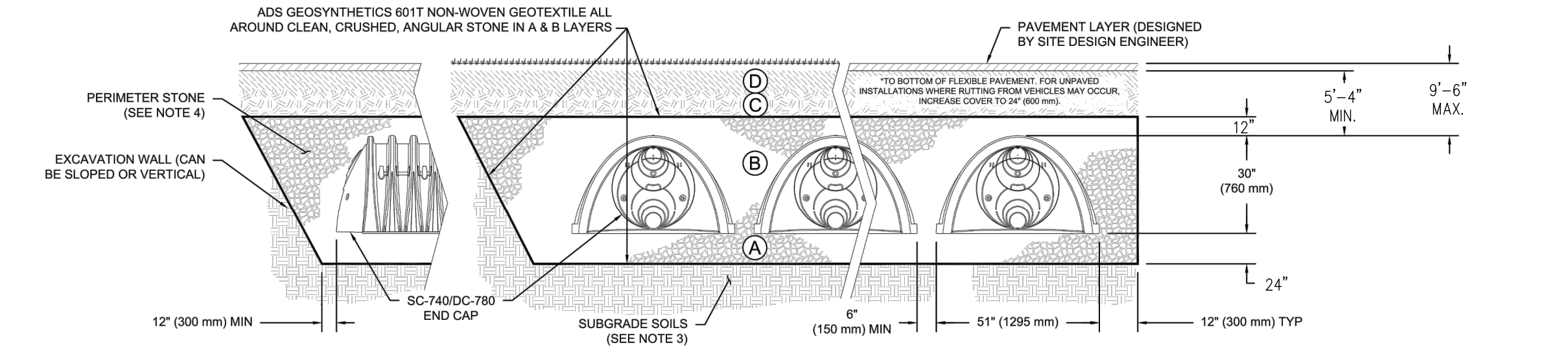
PLEASE NOTE:

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 6" (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.



ADS GEOSYNTHETICS 601T NON-WOVEN GEOTEXTILE ALL AROUND CLEAN, CRUSHED, ANGULAR STONE IN A & B LAYERS

PAVEMENT LAYER (DESIGNED BY SITE DESIGN ENGINEER)

TO BOTTOM OF FLEXIBLE PAVEMENT: FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 24" (600 mm)

12" (300 mm) MIN

30" (760 mm)

24"

12" (300 mm) TYP

51" (1295 mm)

5'-4" MIN.

9'-6" MAX.

PERIMETER STONE (SEE NOTE 4)

EXCAVATION WALL (CAN BE SLOPED OR VERTICAL)

SC-740/DC-780 END CAP

SUBGRADE SOILS (SEE NOTE 3)

8" (150 mm) MIN

NOTES:

CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".

DC-780 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 2".
- TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT³%, 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.

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SHEET
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OPTIONAL: COVER ENTIRE ISOLATOR ROW PLUS WITH ADS GEOSYNTHETICS 801T NON-WOVEN GEOTEXTILE 8" (2.4 m) MIN WIDE

INSTALL FLAMP ON 24" (600 mm) ACCESS PIPE PART# SC74024RAMP

OPTIONAL INSPECTION PORT

DC-780 CHAMBER

DC-780/SC-740 END CAP

24" (600 mm) HDPE ACCESS PIPE REQUIRED USE EZ END CAP PART # SC740ECEZ

ONE LAYER OF ADSPPLUS125 WOVEN GEOTEXTILE BETWEEN FOUNDATION STONE AND CHAMBERS 5' (1.5 m) MIN WIDE CONTINUOUS FABRIC WITHOUT SEAMS

CATCH BASIN OR MANHOLE

SUMP DEPTH TBD BY SITE DESIGN ENGINEER (24" (600 mm) MIN RECOMMENDED)

STORMTECH HIGHLY RECOMMENDS FLEXSTORM INSERTS IN ANY UPSTREAM STRUCTURES WITH OPEN GRATES

DC-780 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 NYLON PLAST 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 OR 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 BACKLUSH 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

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.

CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

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SHEET
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NOT FOR
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R.A. Smith, Inc.
RAS JOB NO. 318001.03
PROJECT MANAGER:
CHRIS T. BRATTY
DESIGNED BY: CJN
CHECKED BY: RMK

BREA MALL AND RESIDENCES AT BREA
1065 Brea Mall, Brea, CA 92821

ADS CHAMBER DETAILS

raSmith
CREATIVITY BEYOND ENGINEERING

8911 Research Drive
Irvine, CA 92618-4237
(949) 872-2378
rasmih.com

WQ-02
Scale AS SHOWN
Job No. 2018-170
Date 8/9/23

BAYSAYER 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 2132C02. GASKETS SHALL BE MADE OF MATERIAL MEETING THE REQUIREMENTS OF ASTM F417.

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 IN LINE 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 80% 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 NUDEP/NJCAT HDS PROTOCOL .

MANUFACTURER
EACH STORMWATER TREATMENT SYSTEM SHALL BE A BARRACUDA SYSTEM AS MANUFACTURED BY BAYSAYER, 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-BAYSAYER), EMAIL INFO@BAYSAYER.COM

BARRACUDA MAINTENANCE

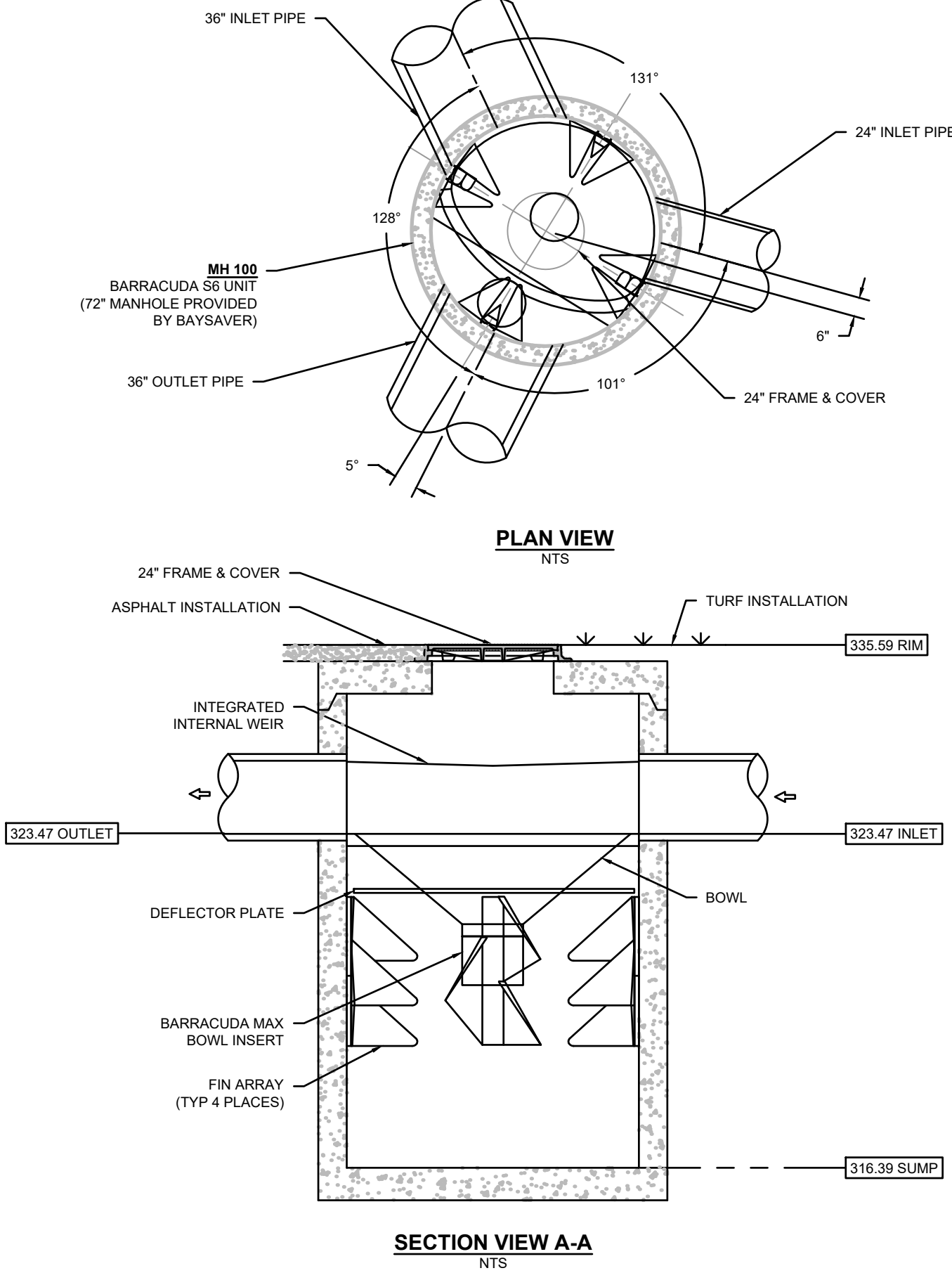
BARRACUDA SYSTEMS MUST BE INSPECTED AND MAINTAINED PERIODICALLY. INSPECTION IS MADE BY CHECKING THE DEPTH OF SEDIMENT IN EACH MANHOLE WITH A GRADE STICK OR SIMILAR DEVICE. MAINTENANCE IS REQUIRED WHEN THE SEDIMENT DEPTH IN EXCEEDS 20 INCHES. MINIMUM INSPECTION IS RECOMMENDED TWICE A YEAR TO MAINTAIN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



BREA MALL AND RESIDENCES AT BREA

1065 Brea Mall, Brea, CA 92821

StormTech®
Chamber System

4640 TRUEMAN BLVD
BREA, CA 92606
1-800-752-7473

ADS

DATE: 10/12/17
DRAWN: CN
PROJECT #: 318001-1
DESCRIPTION: BREA MALL AND RESIDENCES AT BREA
CHECKED: N/A

DATE: 10/12/17
DRAWN: CN
PROJECT #: 318001-1
DESCRIPTION: BREA MALL AND RESIDENCES AT BREA
CHECKED: N/A

SHEET
5 OF 5

StormTech®
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PROJECT #: 318001-1
DESCRIPTION: BREA MALL AND RESIDENCES AT BREA
CHECKED: N/A

SHEET
5 OF 5

NOTES:

1. Filter insert shall have a high flow bypass feature.
2. Filter outlet adaptor shall be constructed from stainless steel Type 304. Alternate outlet adaptor for shallow installations shall be PVC SCH-40. See detail B, sheet 2 of 2.
3. Filter medium shall be *Fossil Rock*™, installed and maintained in accordance with manufacturer specifications.
4. Storage capacity reflects 80% of maximum solids collection prior to impeding filtering bypass.
5. For alternate outlet adapter configurations used for extremely shallow trench drains contact Oldcastle Stormwater Solutions for engineering assistance.
6. Filter element should be a minimum of one half the length of trench. Confirm flow rate upon order.

FloGard®
Catch Basin Insert Filter
Trench Drain Style

Oldcastle®
Stormwater Solutions

7821 Southpark Plaza, Suite 200 | Ellicott City, MD 21043 | P: 800.578.8818 | oldcastlestormwater.com

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FG-LP-0002

G

ECO-0127

JPR 5/18/15

JPR 2/21/07

SHEET 1 OF 2

NOTES:

1. Filter insert shall have a high flow bypass feature.
2. Filter outlet adaptor shall be constructed from stainless steel Type 304. Alternate outlet adaptor for shallow installations shall be PVC SCH-40. See detail B, sheet 2 of 2.
3. Filter medium shall be *Fossil Rock*™, installed and maintained in accordance with manufacturer specifications.
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FG-LP-0002

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ECO-0127

JPR 5/18/15

JPR 2/21/07

SHEET 2 OF 2

BIO CLEAN FULL CAPTURE FILTER

FOR USE IN GRATE INLETS

DRAWING: BIO CLEAN GRATE INLET FILTER DETAILS	MEETS FULL CAPTURE REQUIREMENTS
WARRANTY: 5 YEAR MANUFACTURERS	PROJECT:
BIO CLEAN ENVIRONMENTAL SERVICES, INC. 390 VIA EL CENTRO, OCEANSIDE, CA 92039 PHONE: 760-433-7640 FAX: 760-433-3176	REVISIONS: DATE:
DATE: 10/12/17 SCALE: 1" = 15'	REVISIONS: DATE:
DRAWN: M.C.P.	REVISIONS: DATE:

MODEL #	TREATMENT FLOW (CFS)	BYPASS FLOW (CFS)	SOLIDS STORAGE CAPACITY (CF)
BC-GRATE-FC 12-12-12	1.55	1.55	0.27
BC-GRATE-FC 18-18-18	4.32	3.68	1.05
BC-GRATE-FC 24-24-24	7.67	4.83	2.41
BC-GRATE-FC 30-30-24	12.97	6.21	3.98
BC-GRATE-FC 25-38-24	13.53	6.59	4.16
BC-GRATE-FC 36-36-24	19.64	7.60	5.94
BC-GRATE-FC 48-48-18	25.59	10.13	7.92

Bio Clean
A Forterra Company

NOT FOR CONSTRUCTION

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R.A. Smith, Inc.
RAS JOB NO. 3180011.03
PROJECT MANAGER:
CHRIS T. BRATTY
DESIGNED BY: CJN
CHECKED BY: RMK

ADS CHAMBER, FILTER, AND BARRACUDA DETAILS

raSmith

CREATIVITY BEYOND ENGINEERING

8911 Research Drive
Irvine, CA 92618-4237
(949) 872-2378
rasmith.com

WQ-03

Scale AS SHOWN
Job No. 2018-170
Date 8/9/23