



GENERAL

1. CHAMBERS MUST BE XERXES® HYDROCHAIN™ M-6. ONLY CHAMBERS APPROVED BY THE SITE DESIGN ENGINEER ARE PERMITTED.
2. CHAMBERS MUST BE MANUFACTURED BY COMPRESSION MOLDING OF FIBERGLASS REINFORCED COMPOSITE.
3. CHAMBERS MUST BE EVALUATED AND TESTED TO MEET OR EXCEED THE STANDARDS IN ASTM F2418, STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS.
4. CHAMBERS MUST BE ARCH-SHAPED AND HAVE AN OPEN BOTTOM. CHAMBER ROWS MUST BE CONTINUOUS, UNOBSSTRUCTED, AND WITHOUT INTERNAL SUPPORT THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION AND MAINTENANCE.
5. THE INSTALLED CHAMBER SYSTEM MUST BE DESIGNED TO MEET THE LOAD REQUIREMENTS OF ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" FOR:
 - A. INSTANTANEOUS LIVE LOAD FROM AASHTO DESIGN TRUCK AT MINIMUM COVER
 - B. MAXIMUM DEAD LOAD (100-YEAR)
 - C. 1-WEEK AASHTO DESIGN TRUCK LOAD AT MINIMUM COVER
6. THE INSTALLED CHAMBER SYSTEM MUST BE DESIGNED TO MEET THE LOAD REQUIREMENTS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SPECIFICATION 12.12 FOR:
 - A. LONG-DURATION DEAD LOADS
 - B. SHORT-DURATION LIVE LOADS WITH IMPACT AND MULTIPLE VEHICLE PRESENCE
7. CHAMBERS MUST HAVE AN ARCH STIFFNESS CONSTANT (ASC) ≥ 700 LBS/FT²% PER ASTM F2418, SECTION 6.2.8 AND MAINTAIN STIFFNESS THROUGH TEMPERATURE RANGES OF -40 DEGREES FAHRENHEIT TO 180 DEGREES FAHRENHEIT.
8. THE CHAMBER MUST INTERCONNECT USING AN OVERLAPPING CORRUGATION JOINT.
9. THE STORMWATER CHAMBER SYSTEM SHALL INCORPORATE A MAIN HEADER ROW FOR STORMWATER TREATMENT AND SYSTEM MAINTENANCE WHICH HAS BEEN TESTED TO A MINIMUM OF 80% OF TSS REMOVAL FOLLOWING NJCAT TESTING PROTOCOLS.
10. CHAMBERS AND END CAPS MUST BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

INSTALLATION

1. INSTALLATION MUST NOT START UNTIL A PRE-CONSTRUCTION MEETING HAS BEEN HELD WITH THE MANUFACTURER'S REPRESENTATIVE AND THE INSTALLERS.
2. INSTALLATION MUST BE IN ACCORDANCE WITH THE CONSTRUCTION PLANS AND HYDROCHAIN™ INSTALLATION MANUAL.
3. BACKFILLING OVER CHAMBERS MUST NOT BE DONE WITH A DOZER OR AN EXCAVATOR LOCATED OVER THE CHAMBERS. SEE THE INSTALLATION MANUAL FOR MAXIMUM EQUIPMENT LOADS BASED ON THE DEPTH OF COVER OVER THE CHAMBERS. RECOMMENDED BACKFILL METHODS INCLUDE:
 - A. USING A STONE SHOOTER LOCATED OFF THE CHAMBER BED.
 - B. BACKFILLING WHILE DRIVING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - C. BACKFILLING FROM OUTSIDE THE EXCAVATION USING A LONG BOOM EXCAVATOR.
4. THE FOUNDATION STONE MUST BE LEVELED AND COMPACTED BEFORE PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS MUST BE PROPERLY SEATED BEFORE PLACING STONE.
6. A MINIMUM 6-INCH (150 MM) SPACING MUST BE MAINTAINED BETWEEN CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE CLEAN, CRUSHED, ANGULAR STONE MEASURING 3/4-2 INCHES (20-50 MM).
8. ANY DISCREPANCIES WITH CHAMBER FOUNDATION BEARING CAPACITIES MUST BE REPORTED TO THE SITE ENGINEER.
9. IT IS RECOMMENDED TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF CONSTRUCTION.



Visit www.xerxes.com for the installation manual and additional resources.
Contact your sales representative or email the following Xerxes contacts for support.
North America: eng.support@matr.com
Outside North America: hydrochain.intl@matr.com



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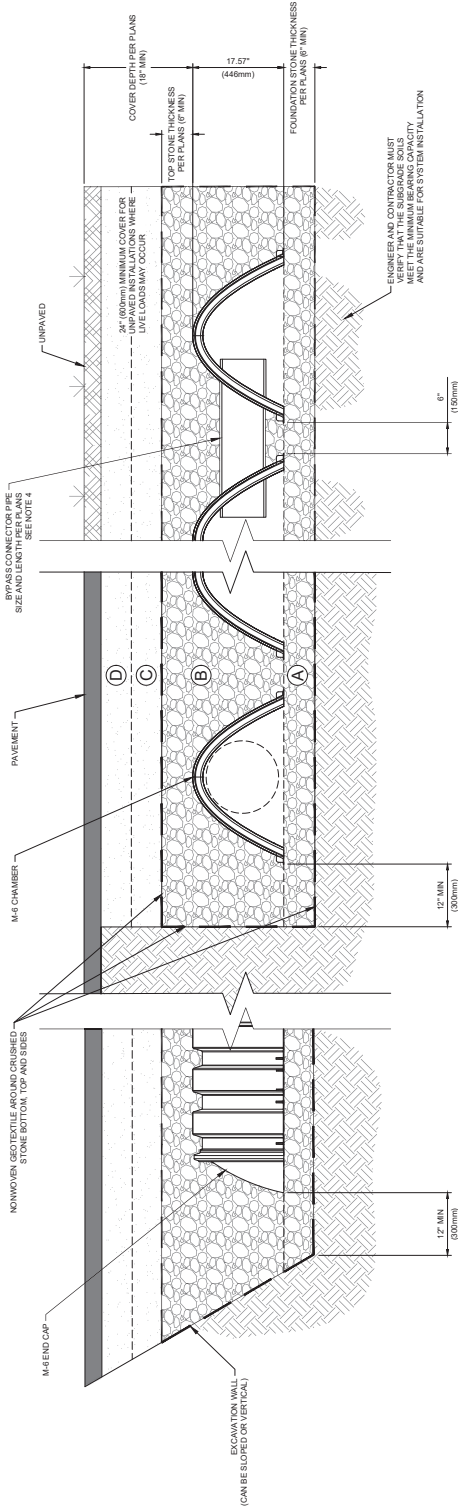


HYDROCHAIN
M-6 CHAMBER
SPECIFICATIONS

CHAMBER STANDARD FILL MATERIALS

	MATERIAL LOCATION	DESCRIPTION	ASTM M33 DESIGNATION	COMPACT/DENSITY REQUIREMENT
D	FILL MATERIAL FROM 18" (450mm) ABOVE CHAMBER TO GRADE	ANY SOIL ROCK MATERIALS NATIVE SOILS OR PER ENGINEERS PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS	PER PLANS	PREPARE PER ENGINEERS PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS
C	FILL MATERIAL FOR 6" (150mm) TO 18" (450mm) ABOVE CHAMBER TO GRADE	GRANULAR WELLS-GRADED SOIL/AGGREGATE (60% MIN. 4.75, 100% 7.5, 85% 9.5, 100% 12.5) OR UNPAVED INSTALLATIONS OF THIS LAYER	3, 357, 4, 467, 5, 56, 6, 67, 7, 78, 8, 88, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	COMPACT IN MAXIMUM 6" (150mm) LIFTS. SEE NOTES
B	EMBLEMENT AND TOP STONE	3/8" - 2" (8-50mm) CLEAN, CRUSHED, ANGULAR STONE	3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED
A	FOUNDATION STONE	3/8" - 2" (8-50mm) CLEAN, CRUSHED, ANGULAR STONE	3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL. SEE NOTES.

NOTES:
1. INSTALL CHAMBERS AND END CAPS IN ACCORDANCE WITH SITE SPECIFIC PLANS, HYDROCHAIN INSTALLATION MANUAL, AND SUPPLEMENTAL DOCUMENTS. REFERENCE THE OR CODE BELOW FOR PRODUCT DOCUMENTS.
2. THE STONE MUST ALSO BE CLEAN, CRUSHED AND ANGULAR.
3. AS AN ALTERNATE TO PROCTOR TESTING AND FIELD DENSITY MEASUREMENTS ON OPEN GRADED STONE, COMPACTION REQUIREMENTS ARE MET WHEN STONE IS PLACED AND COMPACTED IN 150mm MAXIMUM LIFTS USING TWO FULL PASSES WITH A VIBRATORY COMPACTOR.
4. EXISTING GROUND CONDITIONS MAY BE DIFFERENT FROM THE CHAMBER AT A LENGTH EQUAL OR GREATER THAN 12 FEET PER D.D.



TYPICAL CHAMBER CROSS SECTION WITH CONNECTOR PIPE
SCALE: NTS

TYPICAL CHAMBER CROSS SECTION
SCALE: NTS

TYPICAL CHAMBER WITH END CAP CROSS SECTION
SCALE: NTS



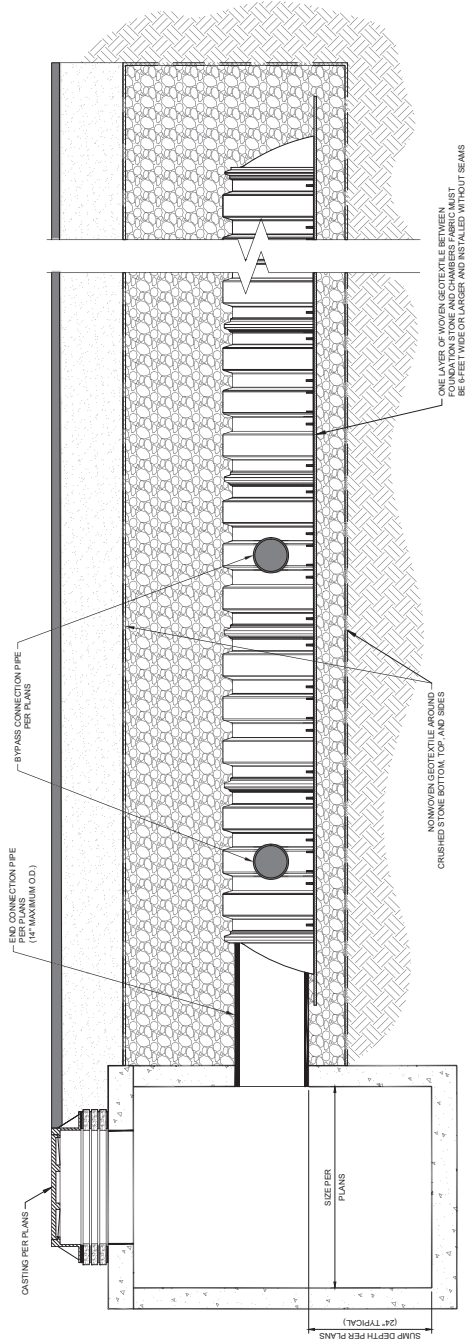
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HYDROCHAIN™
M-6 CHAMBER
CROSS SECTION DETAIL

NOTES:

1. INSTALL THE MAIN HEADER ROW, CHAMBERS, AND END CAPS IN ACCORDANCE WITH THE SITE SPECIFIC PLANS, HYDROCHAIN INSTALLATION MANUAL AND THE HYDROCHAIN CHAMBER MAINTENANCE AND REPAIR MANUAL.
2. CONDUCT INSPECTION AND MAINTENANCE IN ACCORDANCE WITH HYDROCHAIN CHAMBER MAIN HEADER ROW OPERATION AND MAINTENANCE MANUAL.



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XERXES

HYDROCHAIN™
M-6 CHAMBER
MAIN HEADER ROW (MHR) DETAIL

DATE: 04/09/2024 SHEET: 1 OF 1

CONNECTION PIPE COMPATIBILITY TABLE					
PIPE SIZE	PIPE MATERIAL ¹	MIN. GUT SIZE ² HMM-ASP	SIDE CONNECTION	TOP CONNECTION	END CAP
4"	PVC	4.8" x 5.8" (12mm x 147mm)	X	X	X
	HDPE (pp)	6.88" x 7.02" (175mm x 178mm)	X	X	X
	PVC	6.88" x 7.02" (175mm x 178mm)	X	X	X
6"	HDPE (pp)	8.6" x 9.7" (219mm x 244mm)	X	X	X
	PVC	8.62" x 9.02" (219mm x 244mm)	X		X
	HDPE (pp)	12.75" x 13.7" (324mm x 348mm)			X
12"	HDPE (pp)	14.2" x 15.5" (361mm x 394mm)			
	RCP	17.8" x 18.8" (451mm x 470mm)			

PVC HOLE CUT SIZES BASED ON SCH-40, SCH-80, SDR-35, AND SDR-26 PIPES. HDPE PP HOLE CUT SIZES BASED ON INDUSTRY STANDARD PIPES CONFORMING TO ASTM F281/F230/F2048. RCP HOLE CUT SIZES BASED ON INDUSTRY STANDARD PIPES CONFORMING TO ASTM C706/C665.

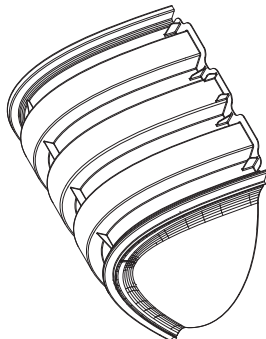


SCAN FOR STEP-BY-STEP VIDEO INSTRUCTIONS AND DEMONSTRATION OF CUTTING HOLES FOR PIPES.
<https://www.youtube.com/watch?v=h3vj5Uk0kiY>

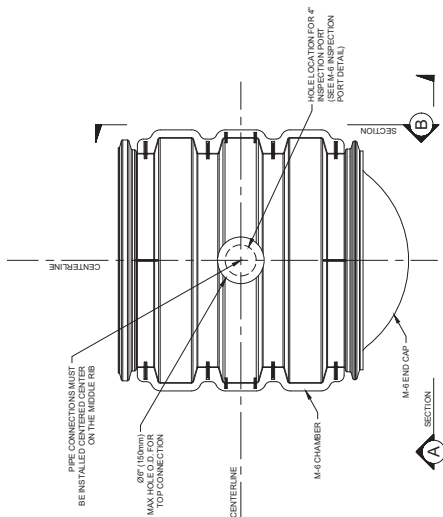
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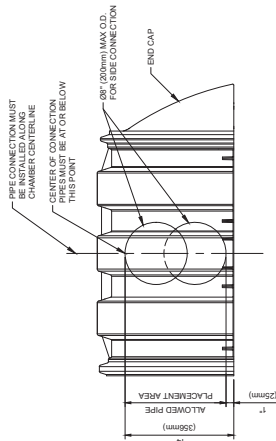
- RECOMMENDED EQUIPMENT:**
- 1. PERSONAL PROTECTION EQUIPMENT (PPE): GLOVES, SAFETY GLASSES, FACE SHIELD, LONG-SLEEVE SHIRT, RESPIRATOR MASK, HEARING PROTECTION, SAFETY-TOED SHOES, HANDHAUT, HIGH-VISIBILITY CLOTHING.
 - 2. TOOLS: HAND SAW, HAND SAW WITH BINE TAIL TAPERED BLADES, UNLL WITH 0.5" BITS, ANGLE GRINDER, TAP MEASURE.
 - 3. EXPENSES: SPRAY FOAM GAP SEALER, TO FILL GAPS BETWEEN PIPE O.D. AND HOLE.



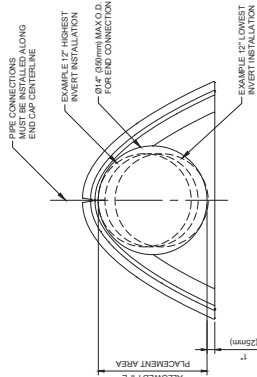
SOMETRIC VIEW
SCALE: NTS



TOP VIEW
SCALE: NTS



B CHAMBER SIDE
SCALE: NTS



A FRONT END CAP
SCALE: NTS

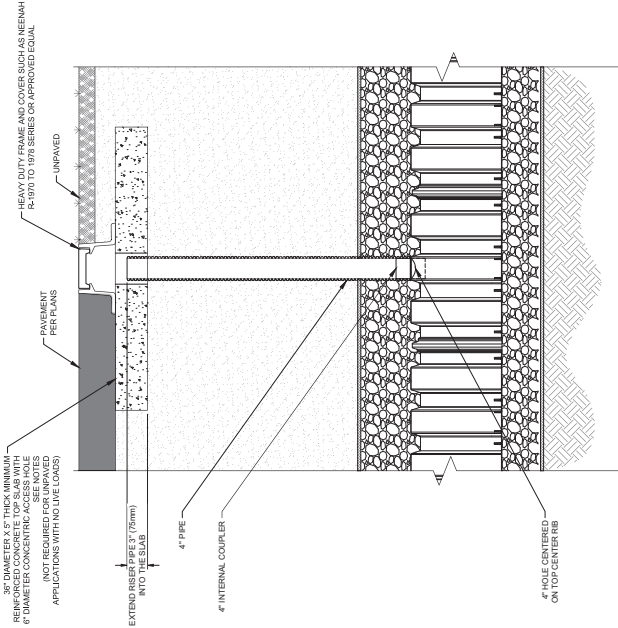
PARTS LIST			
ITEM	QTY	PROVIDER	
HEAVY DUTY FRAME AND COVER SUCH AS NEENAH R-1970 TO 1978 SERIES OR APPROVED EQUAL	1	CONTRACTOR/OTHERS	
3" REINFORCED CONCRETE TOP SLAB	1	CONTRACTOR/OTHERS	
4" PIPE		PER PLANS	
4" INTERNAL COUPLER	1	XERXES	

NOTES:

- INSTALL INSPECTION PORTS IN ACCORDANCE WITH THE SITE SPECIFIC PLANS, HYDROCHAIN INSTALLATION MANUAL AND SUPPLEMENTAL DOCUMENTS. REFERENCE THE OR CODE BELOW FOR PRODUCT DOCUMENTS:
1. HYDROCHAIN M-6 CHAMBER
2. RISER PIPE MUST NOT BE SUBJECT TO SURFACE LOADS.
3. SEE HYDROCHAIN CHAMBER INSPECTION STANDARD DETAIL FOR CHAMBER AND MINIMUM BACK FILL DIMENSIONS.

OPERATION AND MAINTENANCE:

- REMOVE CASTING.
- USE A LIGHT AND STADIUM ROD TO MEASURE THE SEDIMENT DEPTH IN THE BOTTOM OF THE CHAMBER.
- OPTIONALLY, A BORESCOPE CAMERA MAY BE USED TO INSPECT THE INSIDE OF THE CHAMBER.
- IF SEDIMENT DEPTH IS ABOVE ACCEPTABLE LEVELS THEN PERFORM MAINTENANCE IN ACCORDANCE WITH LOCAL REQUIREMENTS AND HYDROCHAIN CHAMBER OPERATION AND MAINTENANCE MANUAL.



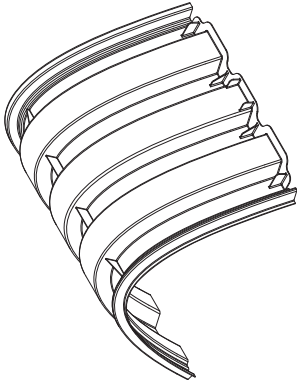
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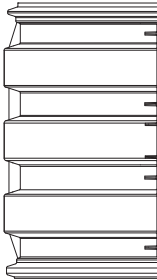
HYDROCHAIN™
M-6 CHAMBER
4-INCH INSPECTION PORT

DATE: 03/28/2024 SHEET: 1 OF 1

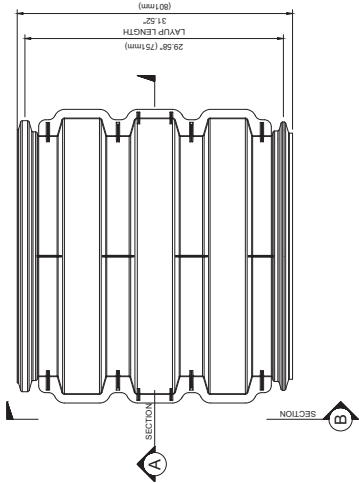
M-6 CHAMBER PROPERTIES	
NORMAL DIMENSIONS (LAYOUT LENGTH • WIDTH • HEIGHT)	29.58" • 33.61" • 17.5" (751mm • 854mm • 443mm)
BAKE CHAMBER STORAGE	6.186 CUBIC METERS (1.30 CUBIC FEET)
MIN INSTALLED STORAGE	6.186 CUBIC METERS (1.30 CUBIC FEET)
CHAMBER WEIGHT	(0.33 KGS) (0.73 LBS)
STORAGE PER LINEAR UNIT WITHOUT STONE	(0.21 MM)
STORAGE PER LINEAR UNIT WITH STONE	(4.61 FT ³ /FT)
*ASSUMING A MINIMUM 100mm STONE ABOVE AND BELOW AND 10" (254mm) BETWEEN ROWS WITH 40% STONE POROSITY (DOES NOT INCLUDE 12" (305mm) PERIMETER 3 TONE VOLUME)	



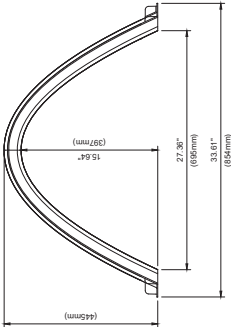
ISOMETRIC
SCALE NTS



(B) SECTION
SCALE NTS



PLAN VIEW
SCALE NTS



(A) SECTION
SCALE NTS



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HYDROCHAIN™
M-6 CHAMBER

DATE

03/28/2024

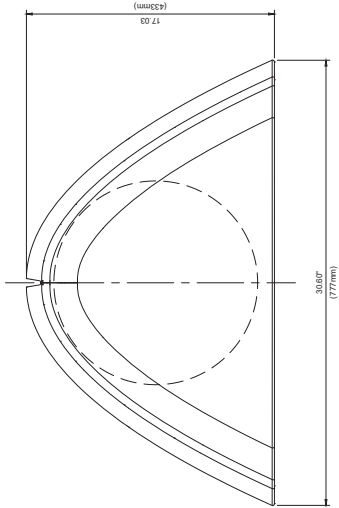
SHEET

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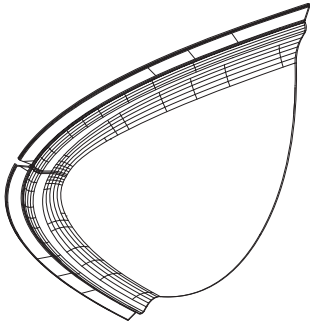
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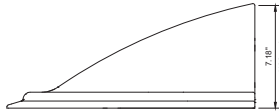
M-6 END CAP PROPERTIES	
NOMINAL DIMENSIONS (CAP LENGTH • WIDTH • HEIGHT) (182mm • 17.03" • 7.18" • 30.87" • 17.03" (182mm • 17.03" • 7.18" • 30.87" • 17.03")	7.18" • 30.87" • 17.03" (182mm • 17.03" • 7.18" • 30.87" • 17.03")
BAKE END CAP STORAGE	0.015 CUBIC FEET (0.015 CUBIC METERS)
"MIN" INSTALLED STORAGE	0.004 CUBIC FEET (0.004 CUBIC METERS)
"ASSUMING A MIN OF 6" (150mm) STONE ABOVE AND BELOW AND 6" (150mm) BETWEEN ROWS WITH 40% STONE POROSITY (DOES NOT INCLUDE 12" (300mm) PERIMETER STONE VOLUME)	0.004 CUBIC FEET (0.004 CUBIC METERS)



END VIEW
SCALE: NTS



ISOMETRIC
SCALE: NTS



SIDE VIEW
SCALE: NTS



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HYDROCHAIN™
M-6 CHAMBER END CAP

DATE

04/09/2024

SHEET

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