



GENERAL

1. CHAMBERS MUST BE XERXES® HYDROCHAIN™ S-29B. ONLY CHAMBERS APPROVED BY THE ENGINEER OF RECORD ARE PERMITTED.
2. CHAMBERS MUST BE MANUFACTURED BY COMPRESSION MOLDING OF FIBERGLASS REINFORCED COMPOSITE POLYPROPYLENE.
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, UNOBSTRUCTED, 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/FT/% 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 85% OF TSS REMOVAL FOLLOWING NJCAT TESTING PROTOCOLS.

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 PLACING ROWS USING 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 5-INCH (125 MM) SPACING MUST BE MAINTAINED BETWEEN CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE CLEAN, CRUSHED, ANGULAR STONE MEASURING 3/8 - 2 INCHES (9.5-50 MM).
8. ANY DISCREPANCIES WITH CHAMBER FOUNDATION BEARING CAPACITIES MUST BE REPORTED TO THE ENGINEER OF RECORD.
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: stormwater.support@mattr.com
 Outside North America: hydrochain.int@mattr.com



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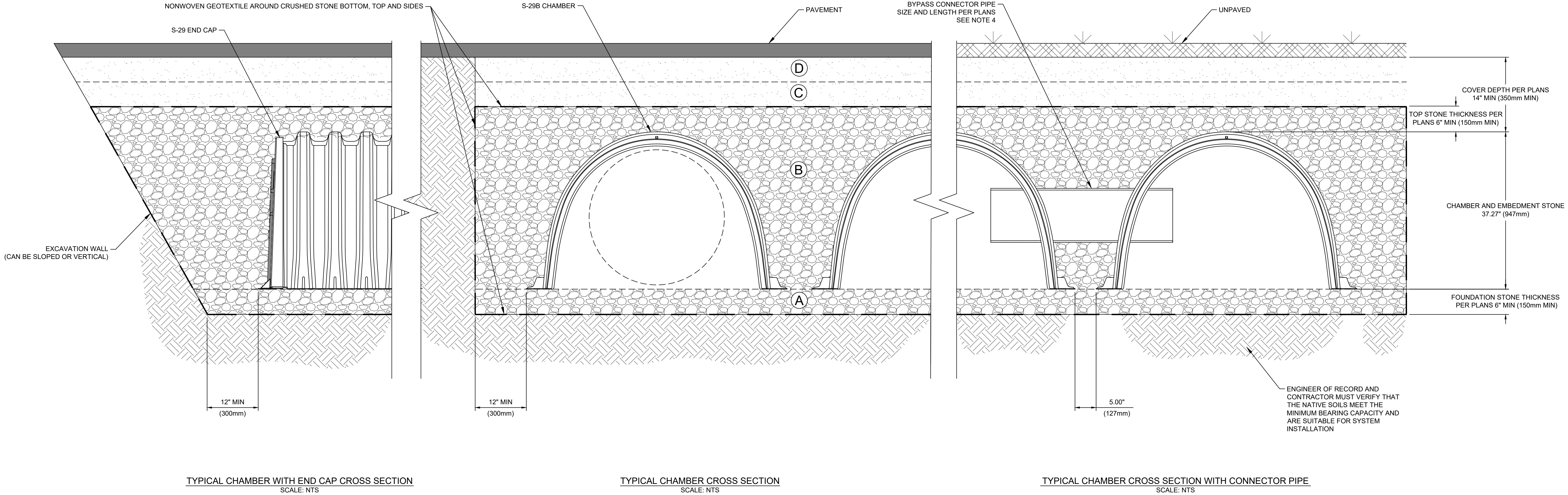


HYDROCHAIN™
S-29B CHAMBER
SPECIFICATIONS

DATE	06/10/2025	SHEET	1	OF	1
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CHAMBER STANDARD FILL MATERIALS				
	MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION	COMPACT/DENSITY REQUIREMENT
D	FILL MATERIAL FROM 18" (450mm) ABOVE CHAMBER TO GRADE	PER CONSTRUCTION PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	PER PLANS	PER CONSTRUCTION PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.
C	FILL MATERIAL FOR 6" (150mm) TO 18" (450mm) ABOVE THE CHAMBER AND 24" (600mm) FOR UNPAVED INSTALLATIONS	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES. MOST PAVEMENT SUB-BASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10 M145: A-1, A-2, A-3	COMPACT TO ≥ 95% STANDARD DENSITY IN MAXIMUM 6" (150mm) LIFTS. SEE NOTES.
B	EMBEDMENT AND TOP STONE	3/8" - 2" (9.5-50mm) CLEAN, CRUSHED, ANGULAR STONE	3, 357, 4, 467, 5, 56, 57	EMBEDMENT STONE: COMPACTION NOT REQUIRED. TOP STONE: COMPACT TO ≥ 95% STANDARD DENSITY AFTER 6" (150mm) THEN IN MAXIMUM 6" (150mm) LIFTS. SEE NOTES.
A	FOUNDATION STONE	3/8" - 2" (9.5-50mm) CLEAN, CRUSHED, ANGULAR STONE	3, 357, 4, 467, 5, 56, 57	COMPACT TO ≥ 95% STANDARD DENSITY IN MAXIMUM 6" (150mm) LIFTS. SEE NOTES.

- NOTES:
1. INSTALL CHAMBERS AND END CAPS IN ACCORDANCE WITH SITE SPECIFIC PLANS, HYDROCHAIN INSTALLATION MANUAL AND SUPPLEMENTAL DOCUMENTS. REFERENCE THE QR CODE BELOW FOR PRODUCT DOCUMENTS.
 2. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. 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 6" (150mm) MAXIMUM LIFTS USING TWO FULL PASSES WITH A VIBRATORY COMPACTOR.
 4. EXTEND CROSS CONNECTION PIPES INTO THE CHAMBER BY A LENGTH EQUAL OR GREATER THAN 1/2 THE PIPE O.D.



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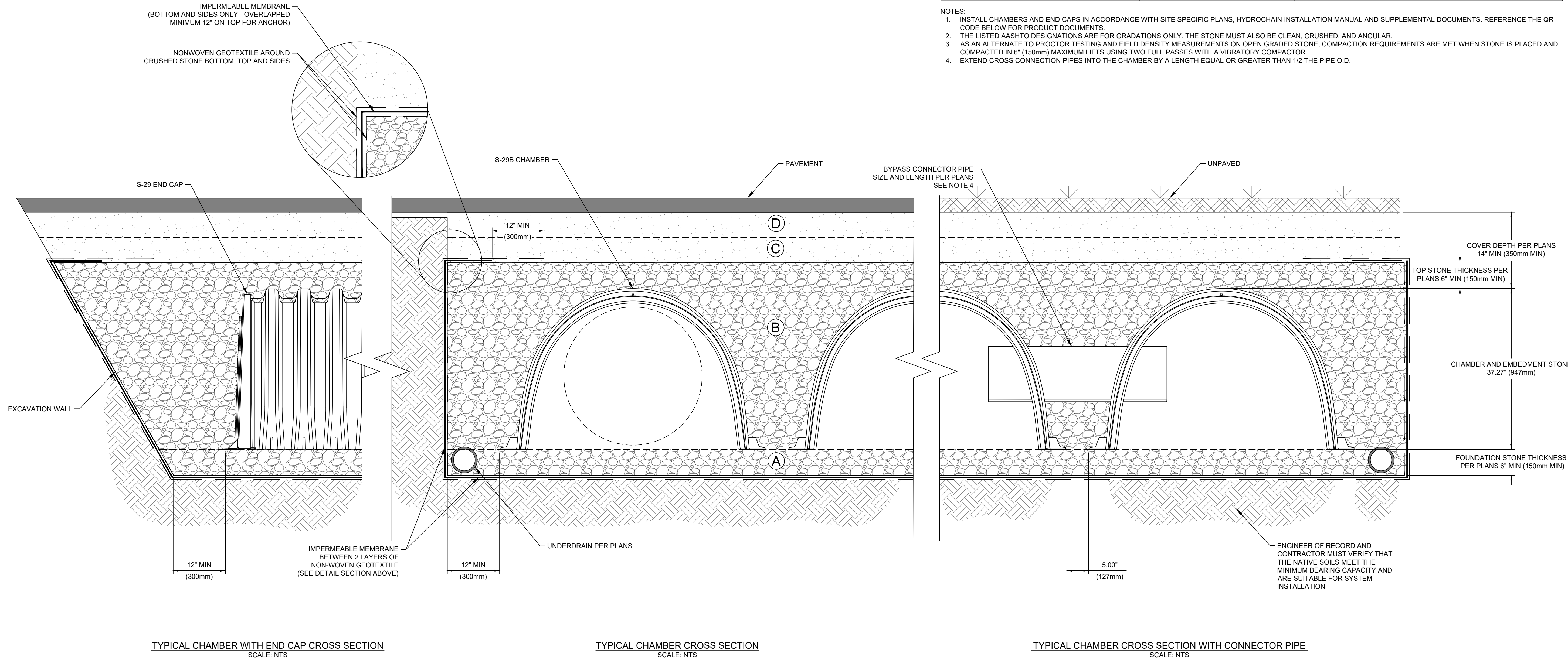
HYDROCHAIN™
S-29B CHAMBER
CROSS SECTION DETAIL

CHAMBER STANDARD FILL MATERIALS

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B	EMBEDMENT AND TOP STONE	3/8" - 2" (9.5-50mm) CLEAN, CRUSHED, ANGULAR STONE	3, 357, 4, 467, 5, 56, 57	EMBEDMENT STONE: COMPACTION NOT REQUIRED. TOP STONE: COMPACT TO ≥95% STANDARD DENSITY AFTER 6" (150mm) THEN IN MAXIMUM 6" (150mm) LIFTS. SEE NOTES.
A	FOUNDATION STONE	3/8" - 2" (9.5-50mm) CLEAN, CRUSHED, ANGULAR STONE	3, 357, 4, 467, 5, 56, 57	COMPACT TO ≥95% STANDARD DENSITY IN MAXIMUM 6" (150mm) LIFTS. SEE NOTES.

NOTES:

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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 6" (150mm) MAXIMUM LIFTS USING TWO FULL PASSES WITH A VIBRATORY COMPACTOR.
4. EXTEND CROSS CONNECTION PIPES INTO THE CHAMBER BY A LENGTH EQUAL OR GREATER THAN 1/2 THE PIPE O.D.



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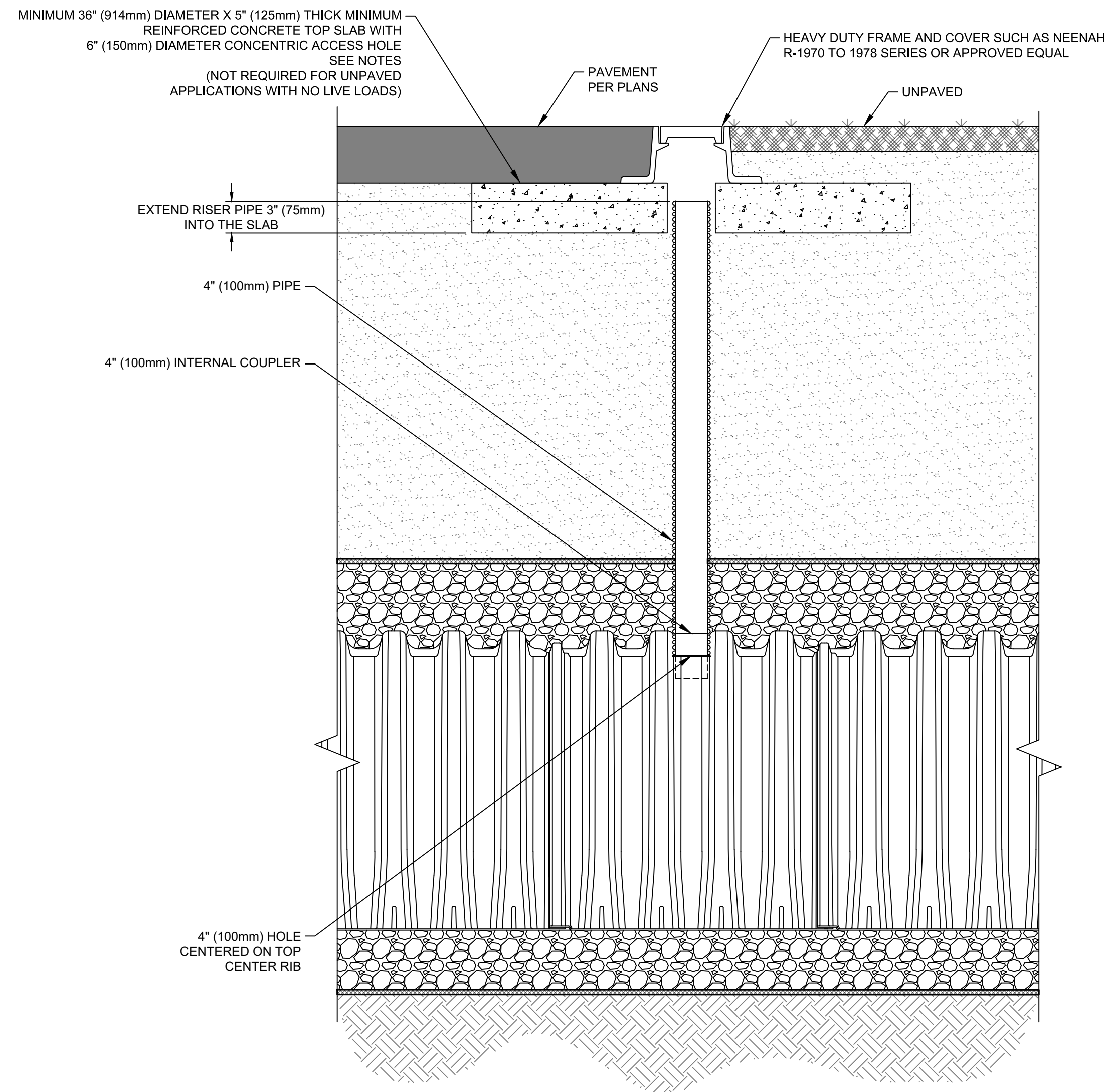
HYDROCHAIN™
S-29B CHAMBER
CROSS SECTION WITH LINER DETAIL

DATE 09/04/2025 SHEET 1 OF 1

PARTS LIST		
ITEM	QTY	PROVIDER
HEAVY DUTY FRAME AND COVER SUCH AS NEENAH R-1970 TO 1978 SERIES OR APPROVED EQUAL	1	CONTRACTOR/OTHERS
MINIMUM 36" (914mm) REINFORCED CONCRETE TOP SLAB	1	CONTRACTOR/OTHERS
4" (100mm) PIPE	PER PLANS	CONTRACTOR/OTHERS
4" (100mm) INTERNAL COUPLER	1	XERXES

- NOTES:
- INSTALL INSPECTION PORTS IN ACCORDANCE WITH THE SITE SPECIFIC PLANS, HYDROCHAIN INSTALLATION MANUAL AND SUPPLEMENTAL DOCUMENTS. REFERENCE THE QR CODE BELOW FOR PRODUCT DOCUMENTS.
 - THE INSPECTION PORT PIPE MUST BE DISCONNECTED FROM THE TOP SLAB. THE RISER PIPE MUST NOT BE SUBJECT TO SURFACE LOADS.
 - SEE HYDROCHAIN CHAMBER CROSS SECTION STANDARD DETAIL FOR CHAMBER AND MINIMUM BACK FILL DIMENSIONS.

- OPERATION AND MAINTENANCE:
- REMOVE CASTING LID.
 - USE A LIGHT AND STADIA 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 CHAMBERS.
 - 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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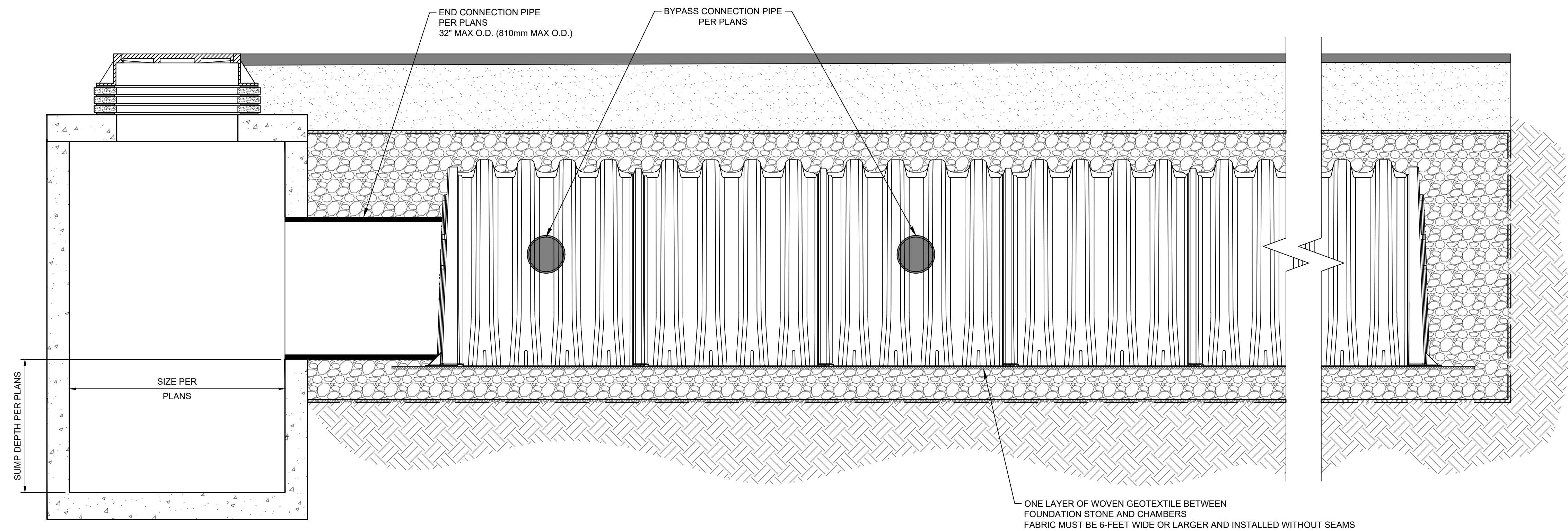


HYDROCHAIN™
S-29B CHAMBER
4-INCH INSPECTION PORT

DATE 07/11/2025 SHEET 1 OF 1

NOTES:

1. INSTALL THE MAIN HEADER ROW, CHAMBERS, AND END CAPS IN ACCORDANCE WITH THE SITE SPECIFIC PLANS, HYDROCHAIN INSTALLATION MANUAL AND SUPPLEMENTAL DOCUMENTS. REFERENCE THE QR CODE BELOW FOR PRODUCT DOCUMENTS.
2. CONDUCT INSPECTION AND MAINTENANCE IN ACCORDANCE WITH HYDROCHAIN CHAMBER MAIN HEADER ROW OPERATION AND MAINTENANCE MANUAL.



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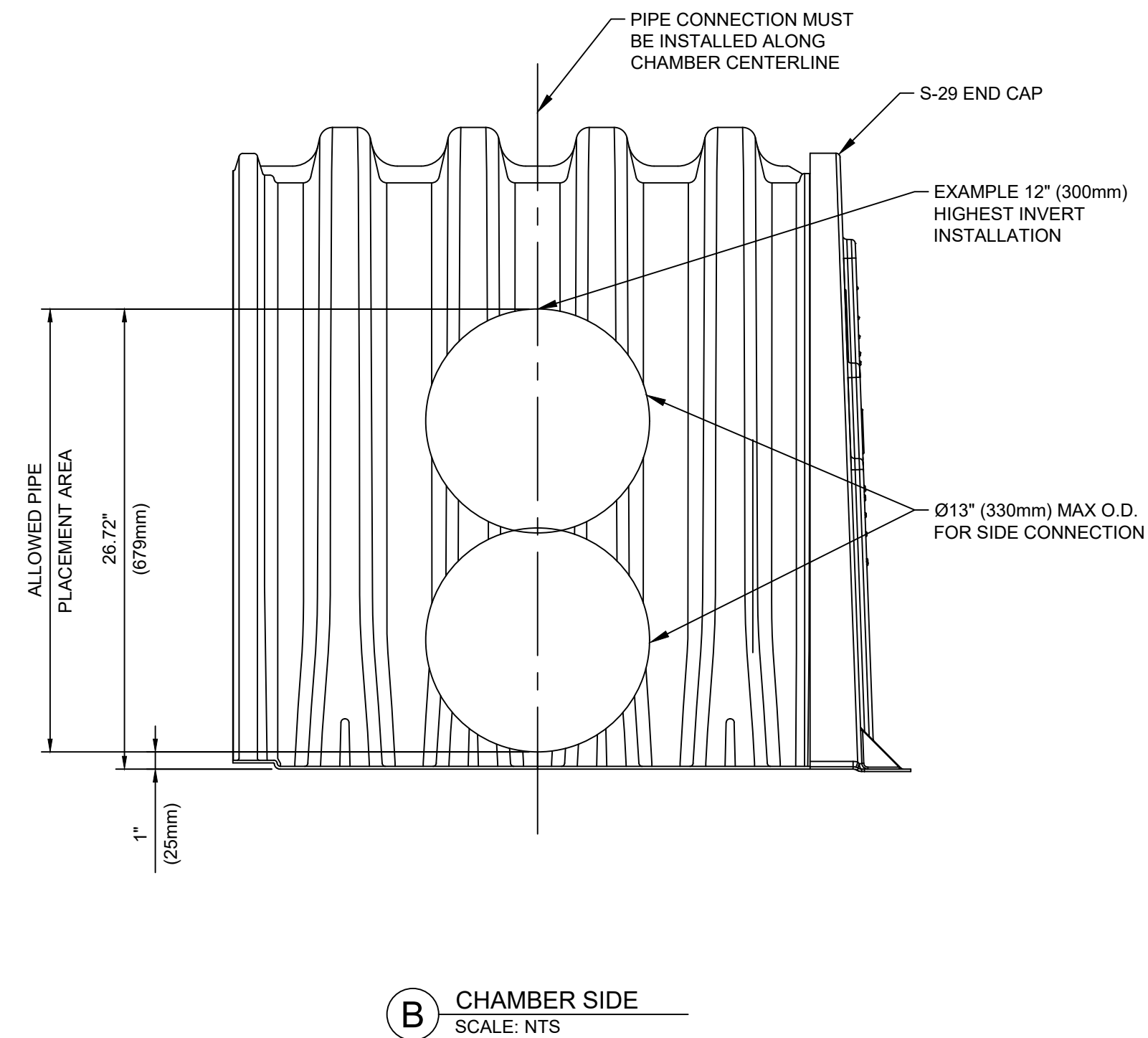
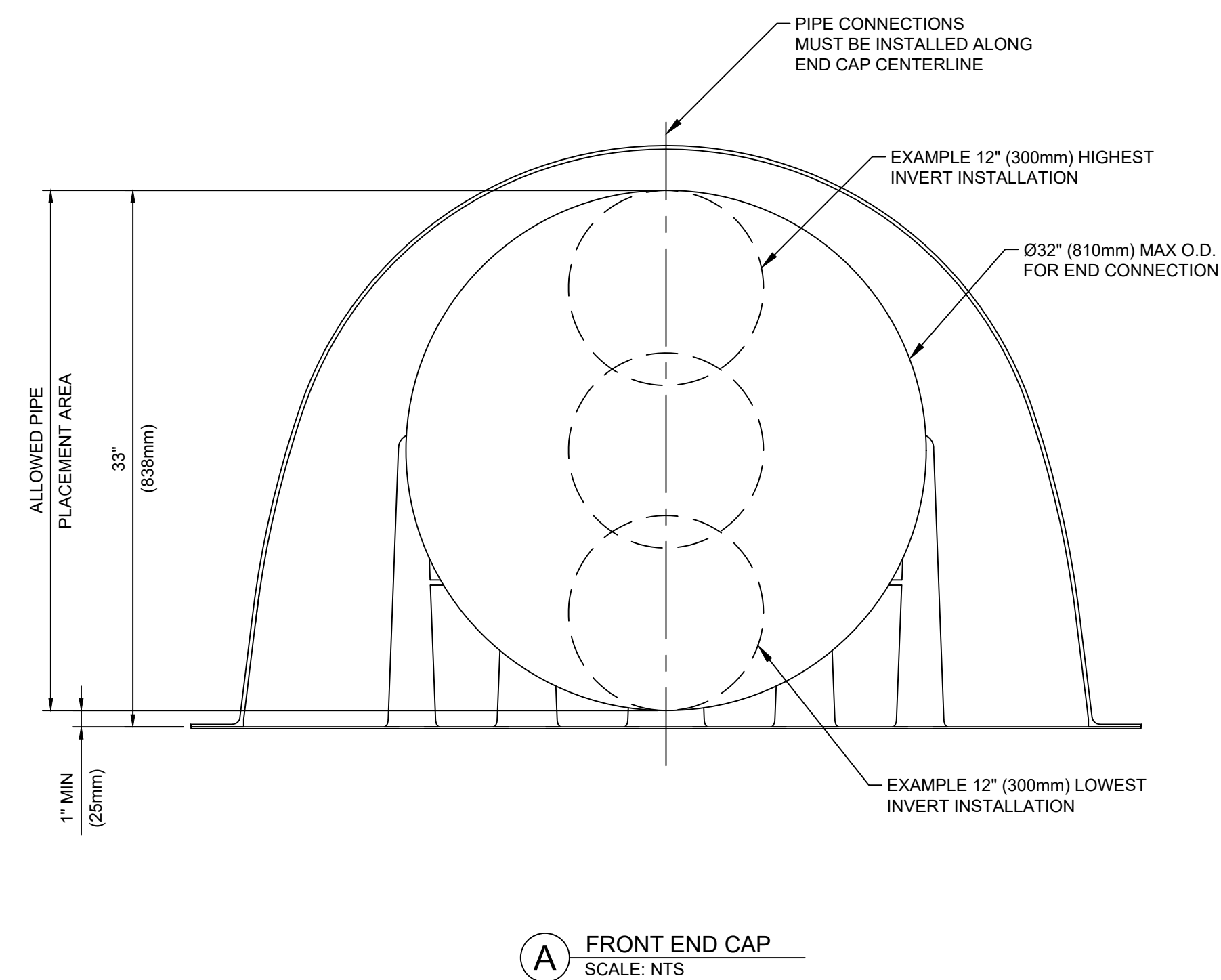
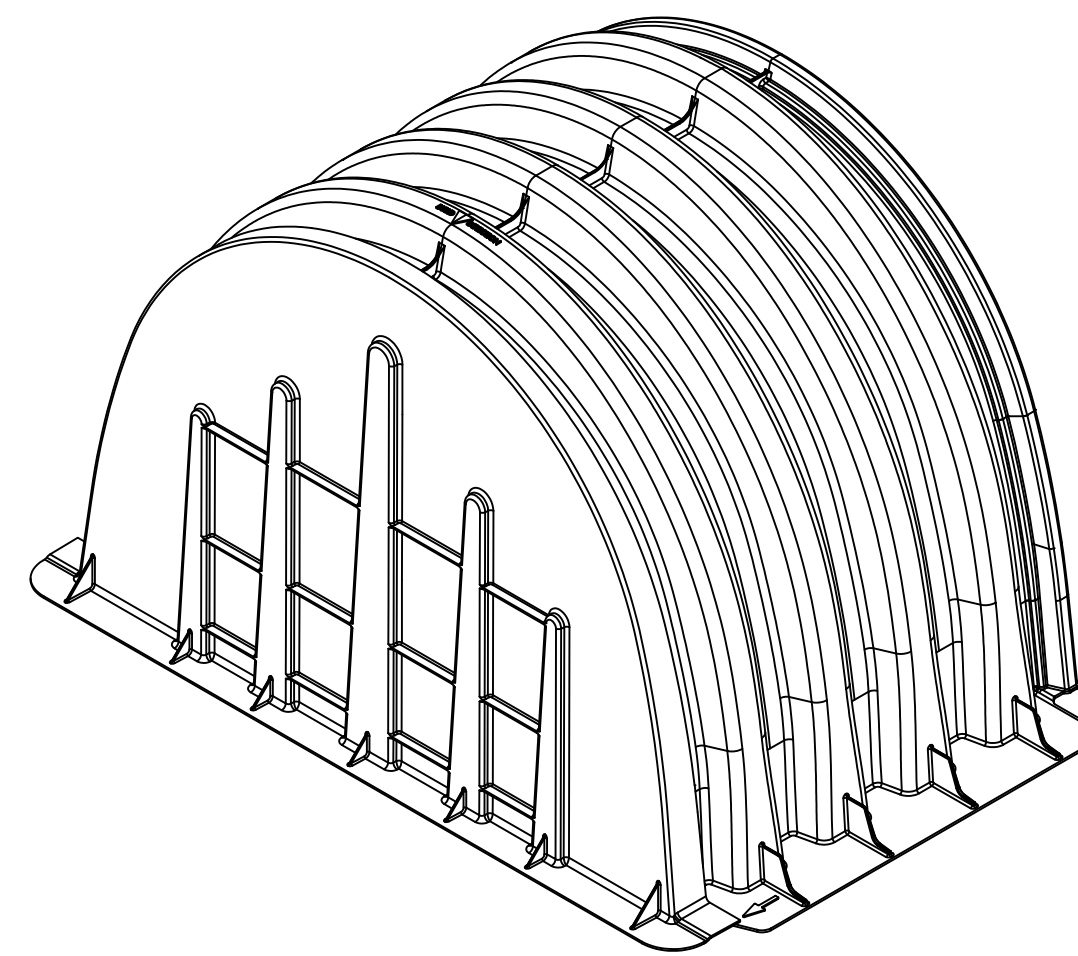
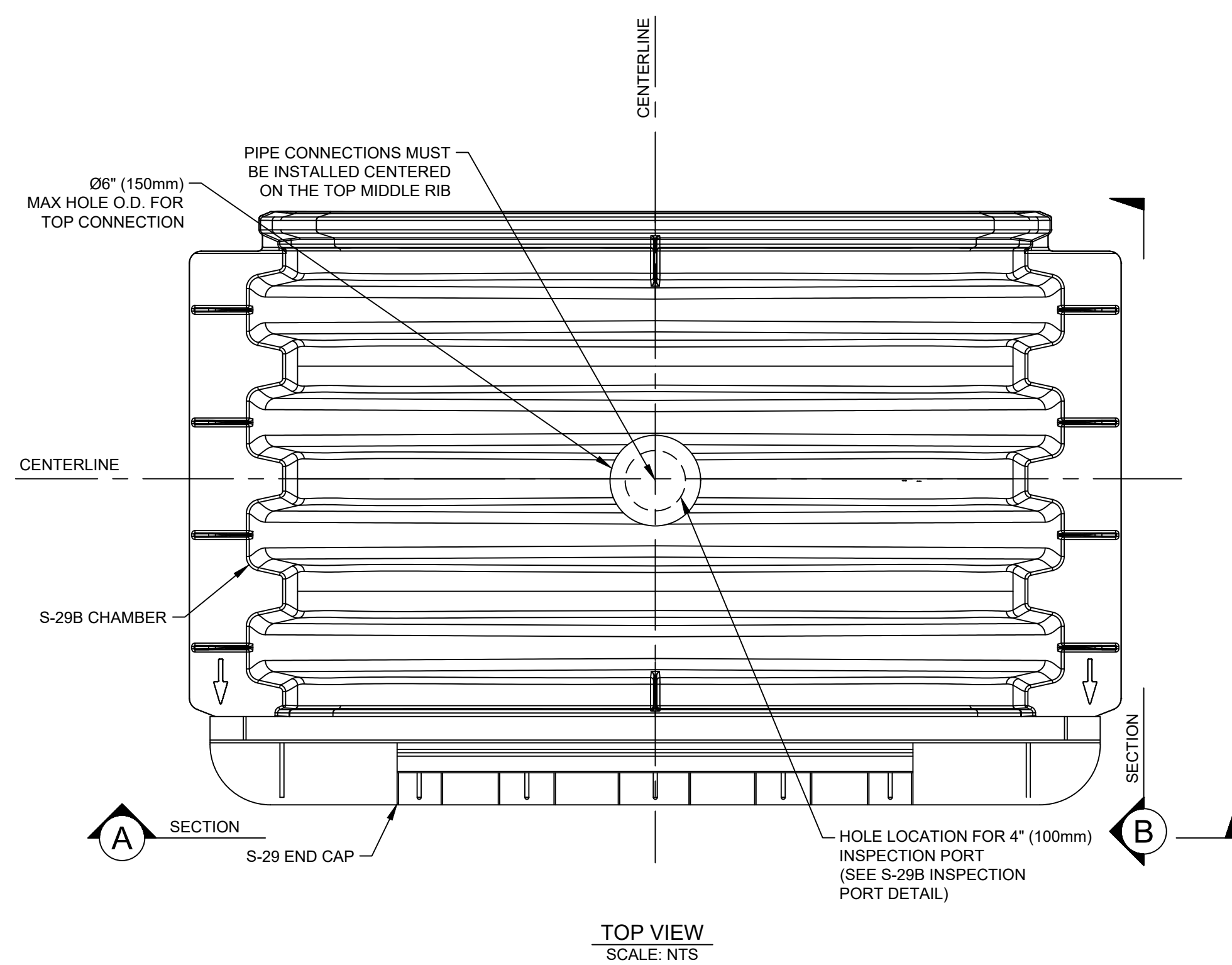


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HYDROCHAIN™
S-29B CHAMBER
MAIN HEADER ROW (MHR) DETAIL

DATE	07/11/2025	SHEET	1	OF	1
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CONNECTION PIPE COMPATIBILITY TABLE					
PIPE SIZE	PIPE MATERIAL ¹	HOLE CUT ² MIN-MAX	SIDE CONNECTION	TOP CONNECTION	END CAP
4" (100mm)	PVC	4.5"-5.5" (114mm-140mm)	X	X	X
	HDPE/PP	4.8"-5.8" (122mm-147mm)	X	X	X
6" (150mm)	PVC	6.625"-7.625" (168mm-194mm)	X	X	X
	HDPE/PP	6.9"-7.9" (175mm-201mm)	X	X	X
8" (200mm)	PVC	8.625"-9.625" (219mm-244mm)	X		X
	HDPE/PP	9.1"-10.1" (231mm-257mm)	X		X
10" (250mm)	PVC	10.50" - 11.50" (267mm-292mm)	X		X
	HDPE/PP	11.10" - 12.10" (282mm-307mm)	X		X
	RCP	11.75"-12.75" (298mm-324mm)	X		X
12" (300mm)	PVC	12.75"-13.75" (324mm-349mm)	X		X
	HDPE/PP	14.5"-15.5" (368mm-394mm)			X
	RCP	17.5"-18.5" (445mm-470mm)			X
15" (400mm)	PVC	16"-17" (406mm-431mm)			X
	HDPE/PP	22"-23" (559mm-584mm)			X
	RCP	23"-24" (584mm-610mm)			X
18" (450mm)	PVC	18"-19" (457mm-483mm)			X
	HDPE/PP	22"-23" (559mm-584mm)			X
	RCP	23"-24" (584mm-610mm)			X
24" (600mm)	PVC	24"-25" (610mm-635mm)			X
	HDPE/PP	28"-29" (711mm-737mm)			X
	RCP	30"-31" (762mm-787mm)			X

- 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 F2881/F2306/F2648. RCP HOLE CUT SIZES BASED ON INDUSTRY STANDARD PIPES CONFORMING TO ASTM C76/C855.
- CUT THE HOLE TO MINIMIZE GAPS BETWEEN THE CONNECTING PIPE O.D. AND CHAMBER HOLE I.D.



SCAN FOR STEP-BY-STEP VIDEO INSTRUCTIONS AND DEMONSTRATION OF CUTTING HOLES FOR PIPES
<https://www.youtube.com/watch?v=h3VjsUkOkIY>

NOTES:

- CUT CHAMBERS AND END CAPS IN ACCORDANCE WITH THE HYDROCHAIN CHAMBER SUPPLEMENTAL INSTRUCTIONS AND INSTALLATION MANUAL. REFERENCE THE QR CODE BELOW FOR PRODUCT DOCUMENTS.

RECOMMENDED EQUIPMENT:

- PERSONAL PROTECTION EQUIPMENT (PPE): GLOVES, SAFETY GLASSES, FACE SHIELD, LONG-SLEEVE SHIRT, RESPIRATOR MASK, HEARING PROTECTION, SAFETY-TOED SHOES, HARDHAT, HIGH-VISIBILITY CLOTHING.
- HAND TOOLS: MARKER, RECIPROCATING SAW WITH BIMETAL TAPERED BLADES, DRILL WITH 0.5" BITS, ANGLE GRINDER, TAPE MEASURE.
- EXPENDABLES: SPRAY FOAM GAP SEALER TO FILL GAPS BETWEEN PIPE O.D. AND HOLE.

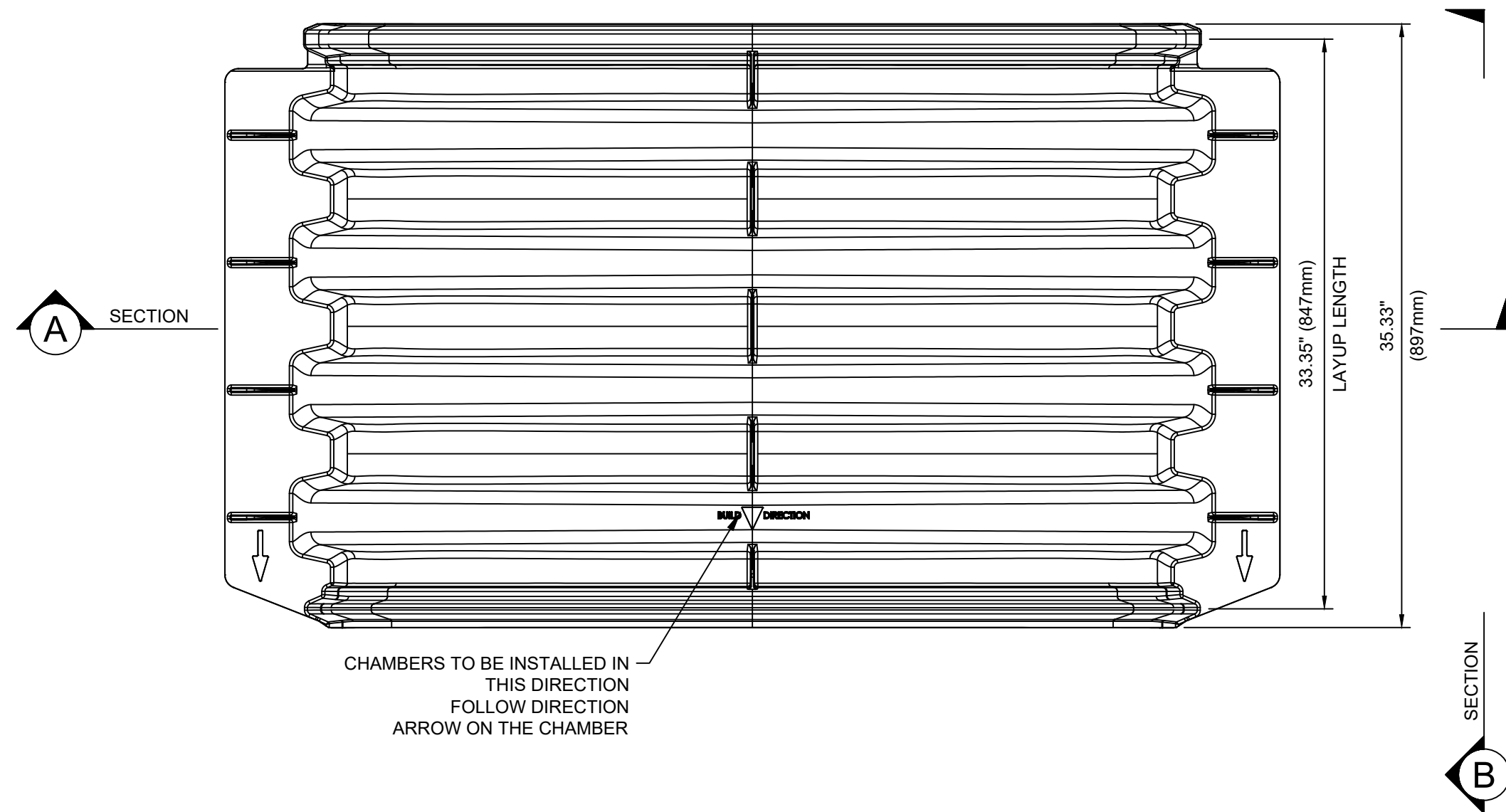
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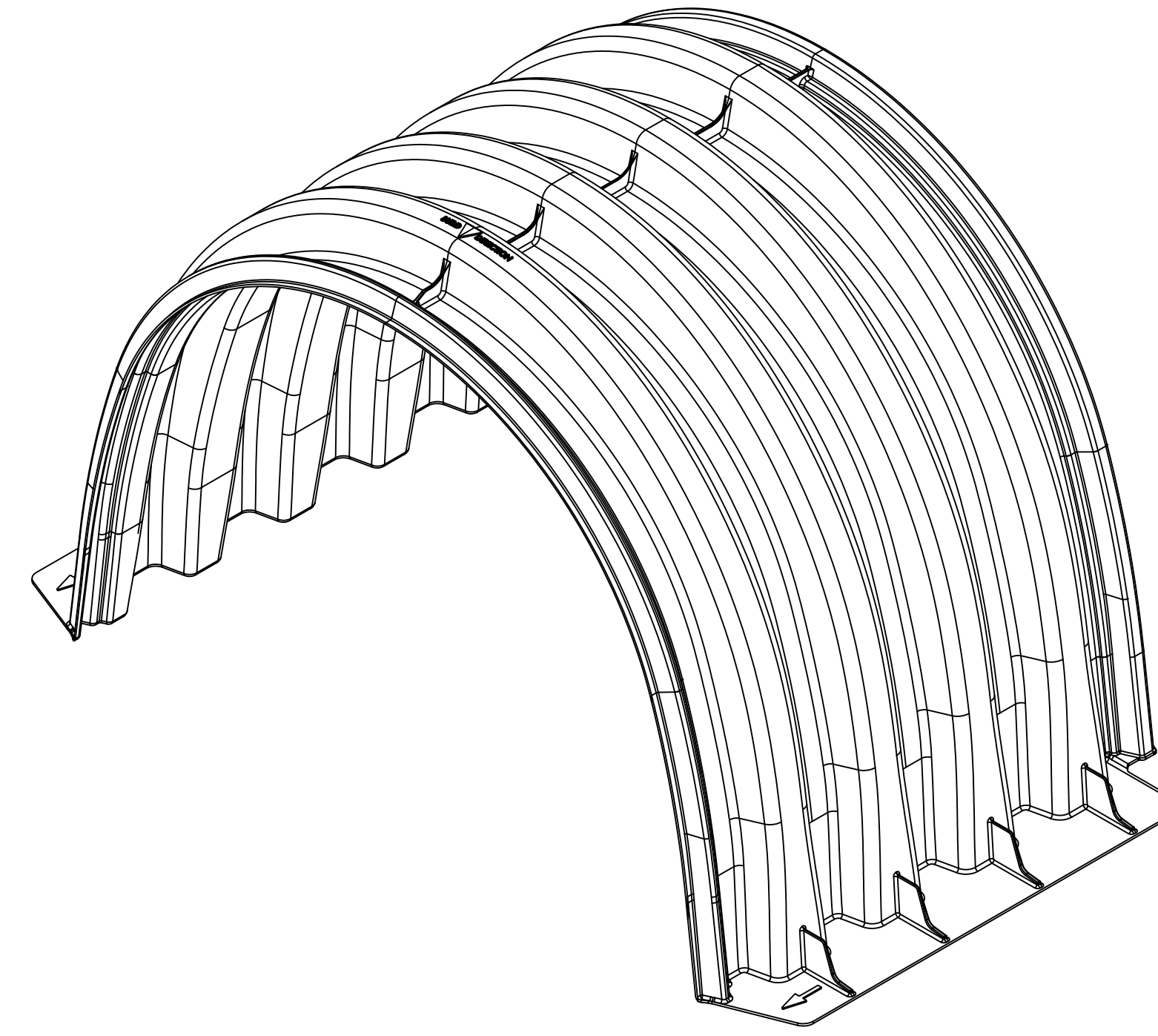
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HYDROCHAIN™
 S-29B CHAMBER AND END CAP
 HOLE CUTTING DETAIL



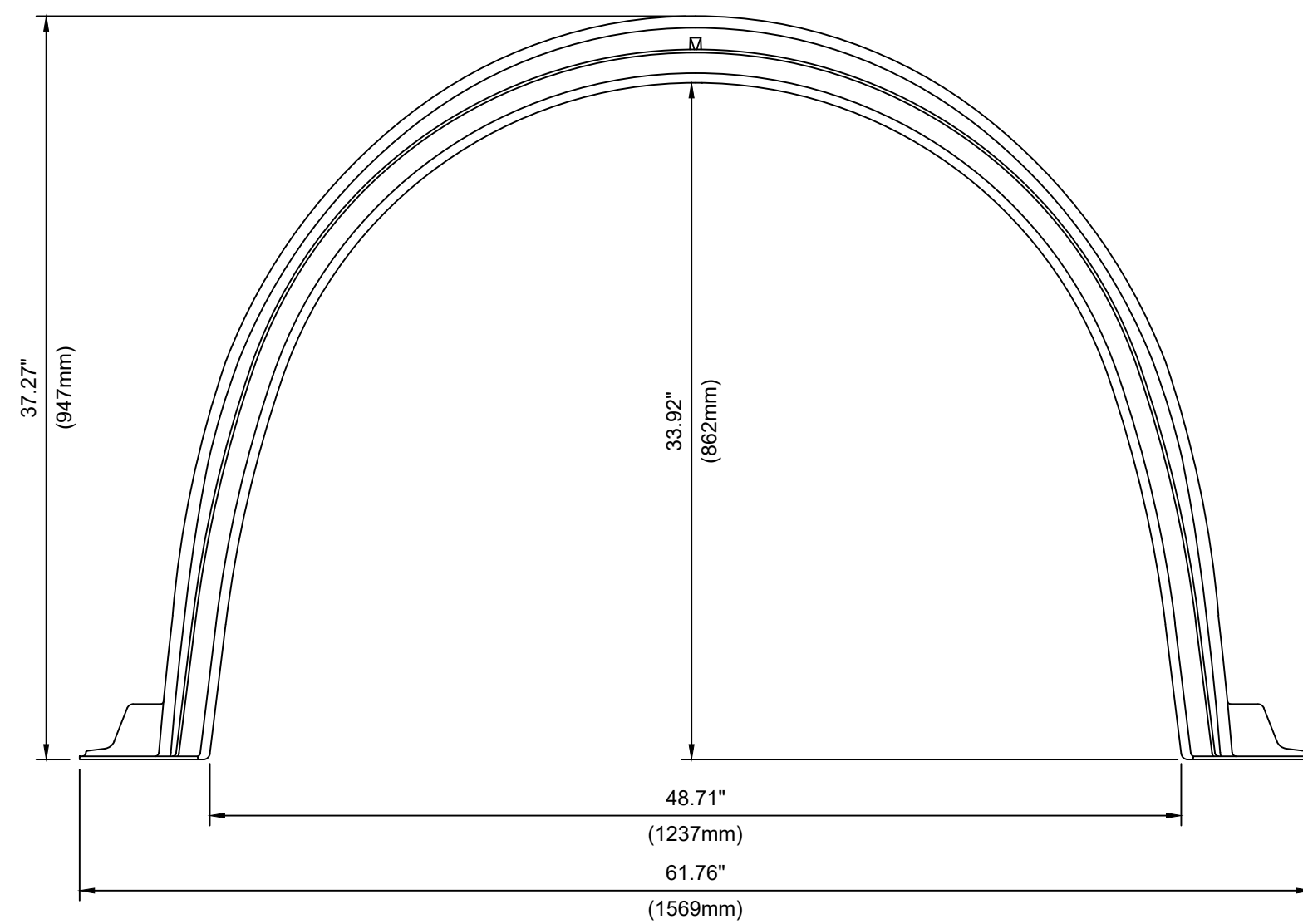
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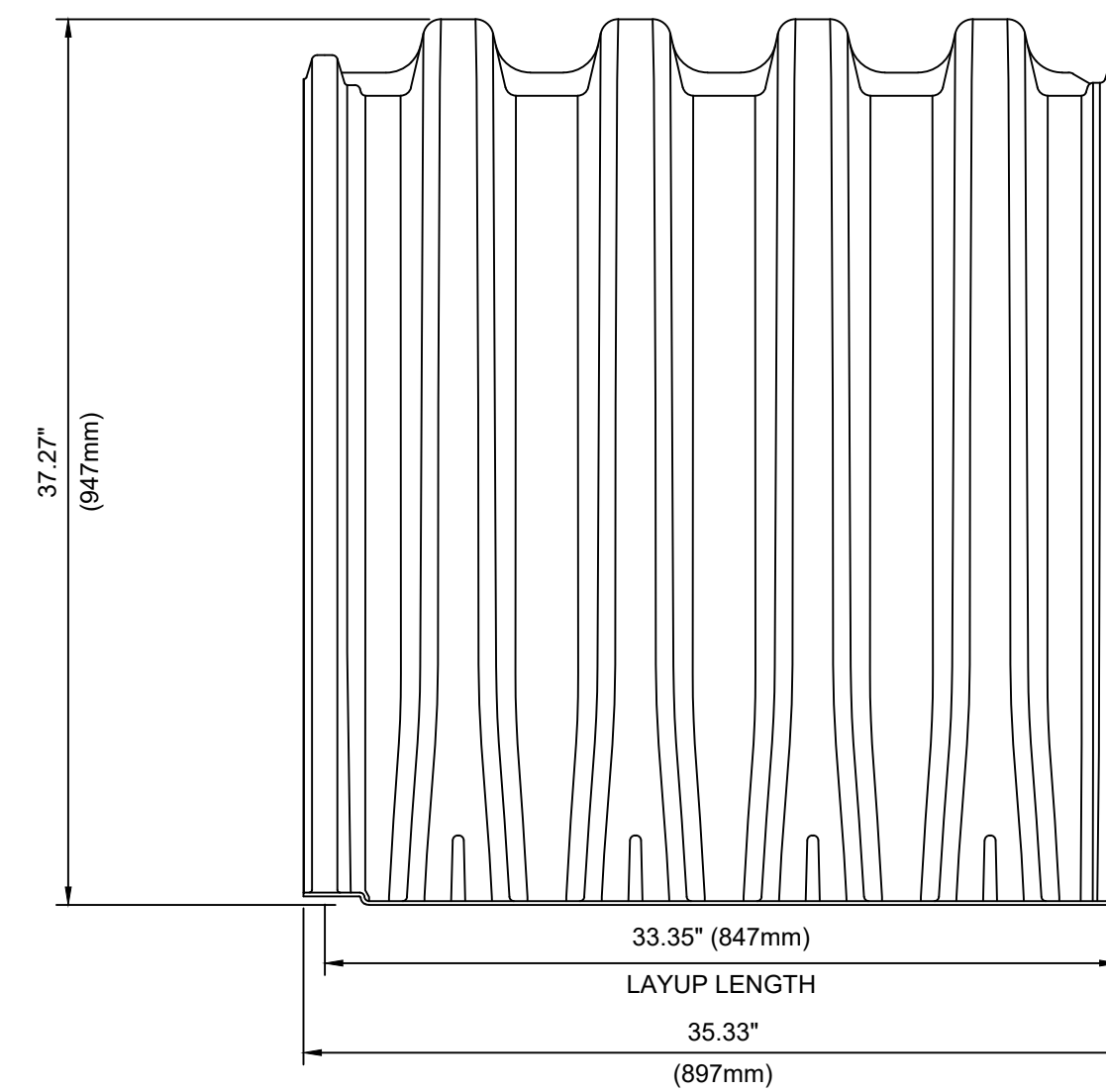
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S-29B CHAMBER PROPERTIES	
NOMINAL DIMENSIONS (LAYUP LENGTH × WIDTH × HEIGHT)	33.35" × 61.76" × 37.27" (847mm × 1569mm × 947mm)
BARE CHAMBER STORAGE	27.80 CUBIC FEET (0.787 CUBIC METERS)
*MIN INSTALLED STORAGE	42.07 CUBIC FEET (1.191 CUBIC METERS)
CHAMBER WEIGHT	34 LBS (15.42 kg)
STORAGE PER LINEAR UNIT WITHOUT STONE	10.0 FT ³ /FT (0.929 M ³ /M)
STORAGE PER LINEAR UNIT WITH STONE	15.1 FT ³ /FT (1.406 M ³ /M)

*ASSUMING A MIN OF 6" (150mm) STONE ABOVE AND BELOW AND 5" (125mm) BETWEEN ROWS WITH 40% STONE POROSITY (DOES NOT INCLUDE 12" (300mm) PERIMETER STONE VOLUME)

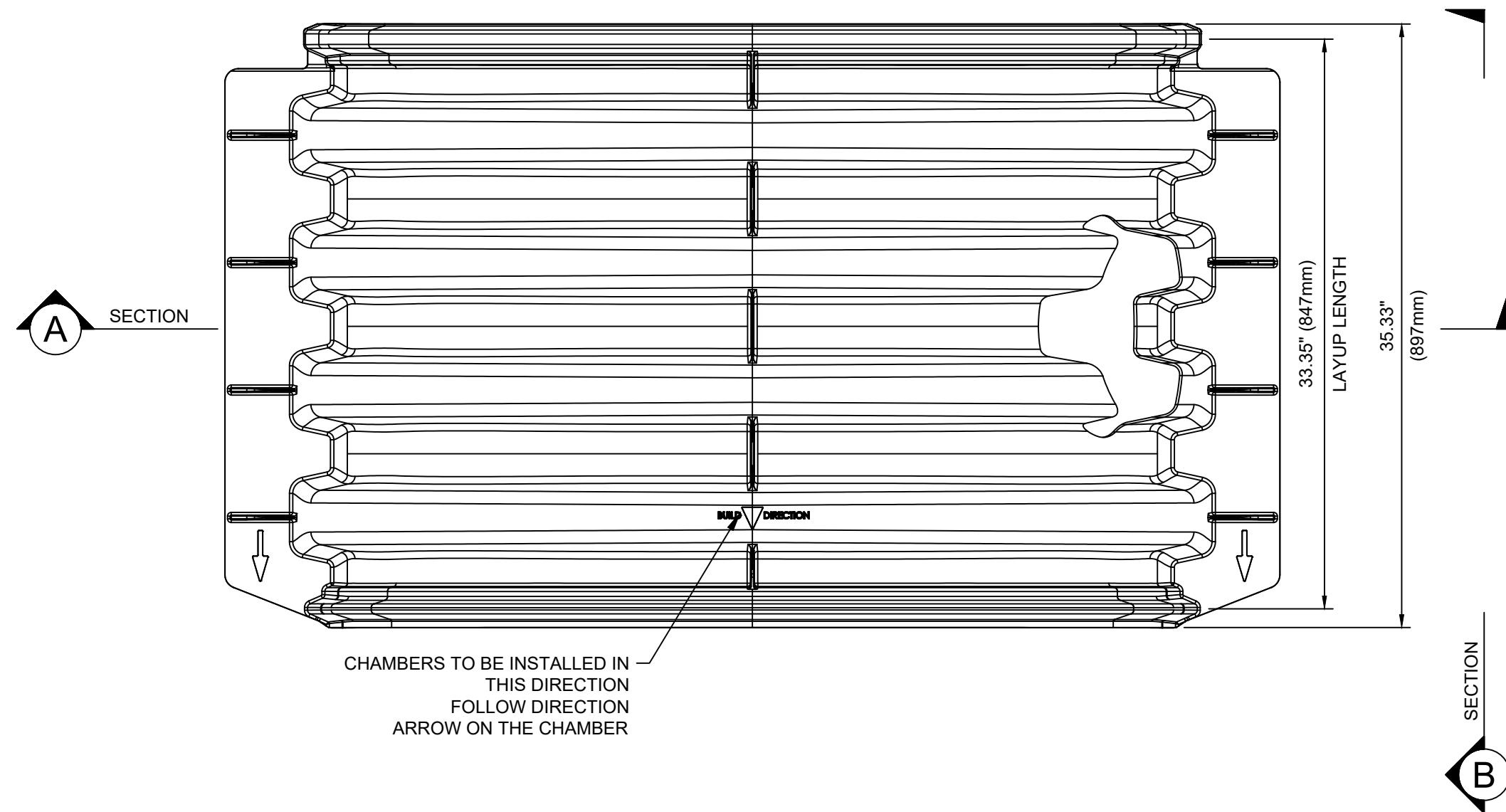


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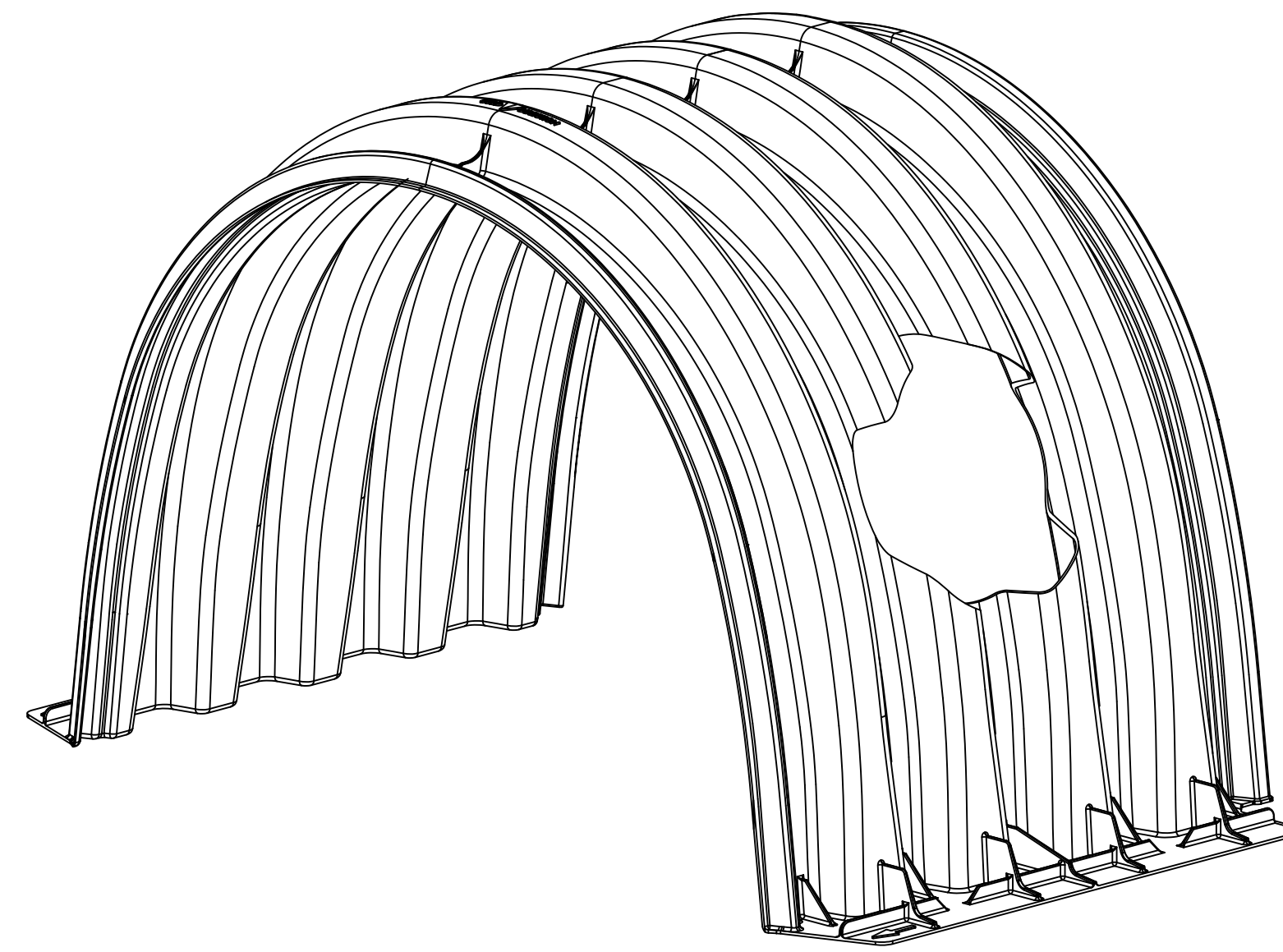


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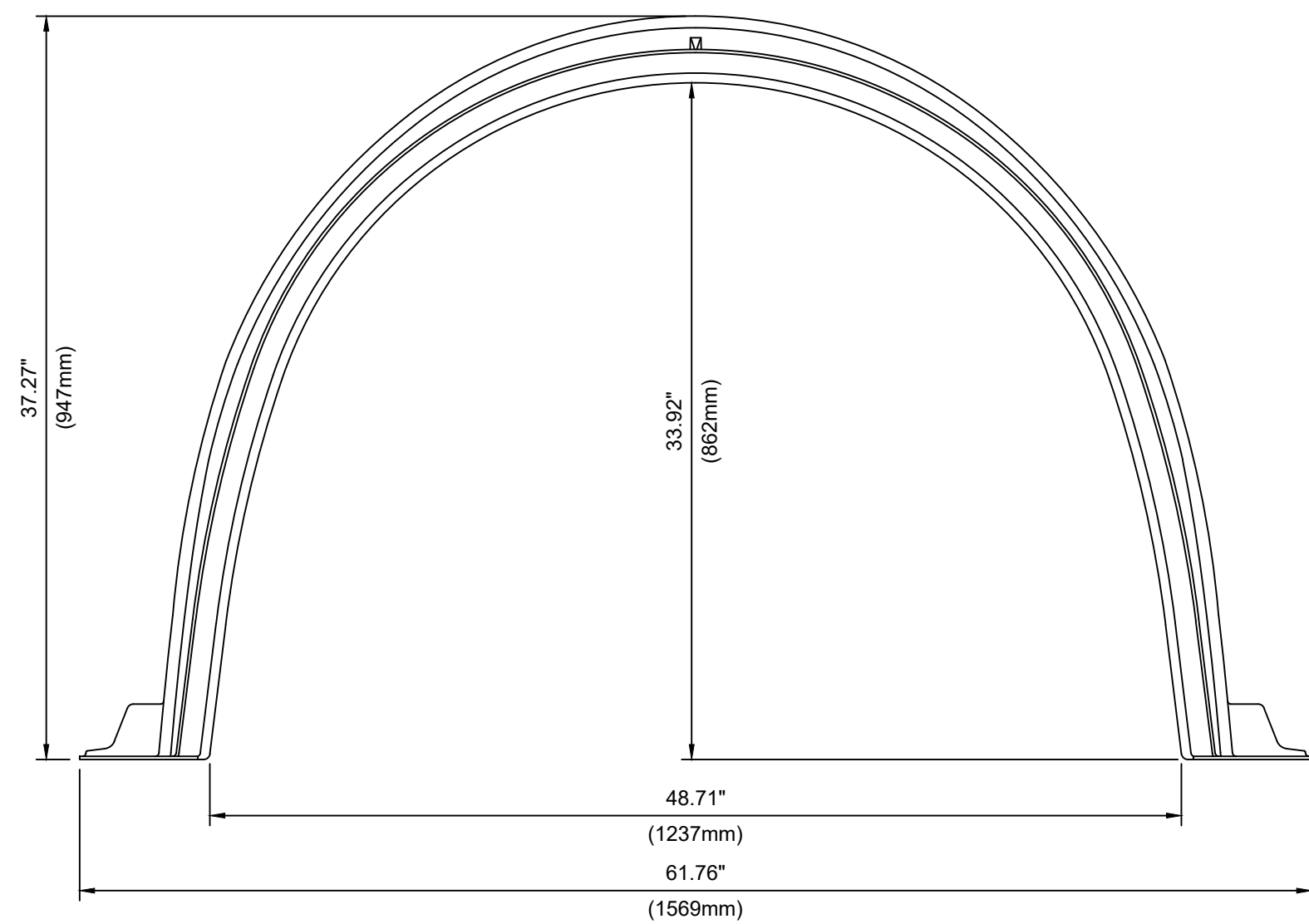




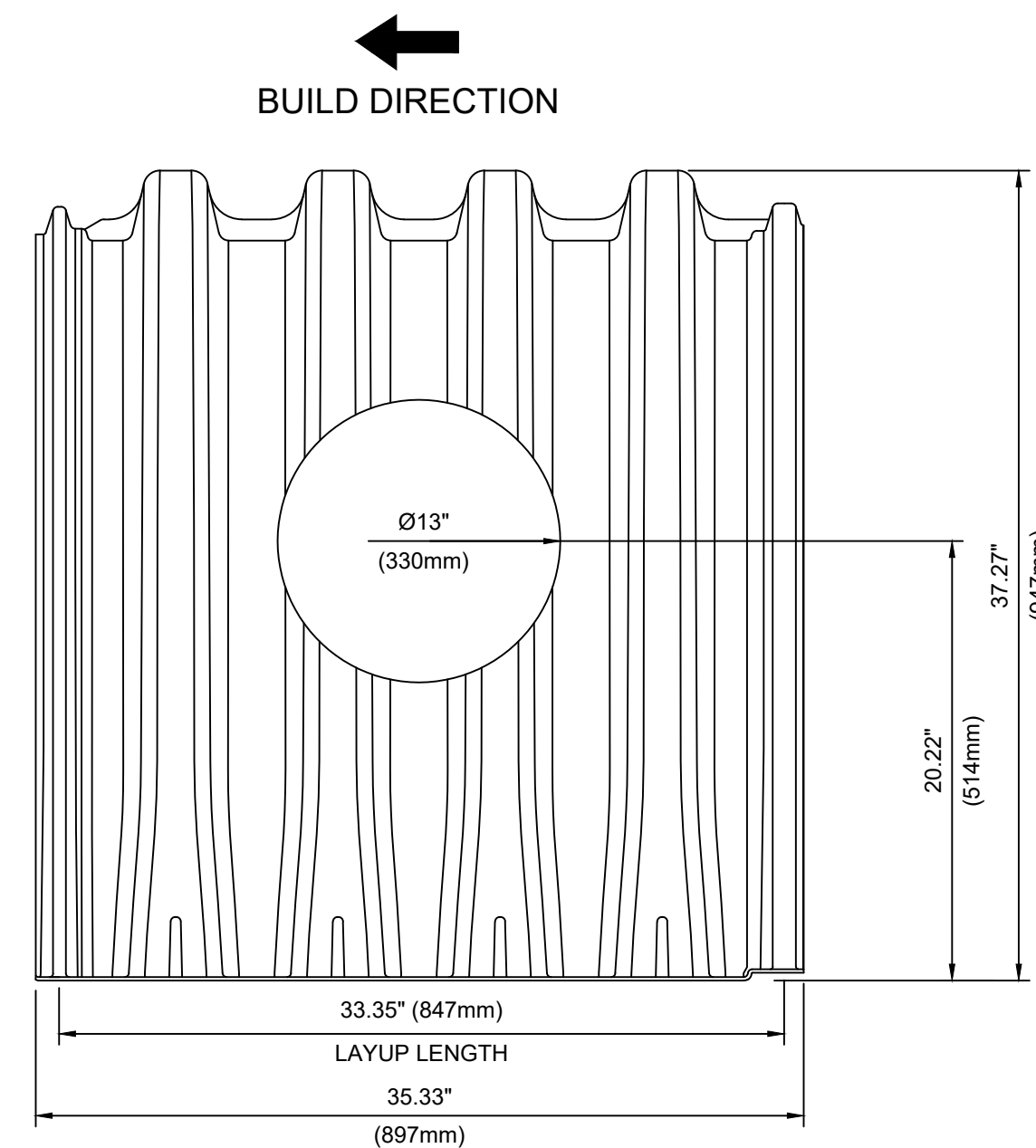
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SECTION A
SCALE: NTS



SECTION B
SCALE: NTS

S-29B CHAMBER PROPERTIES	
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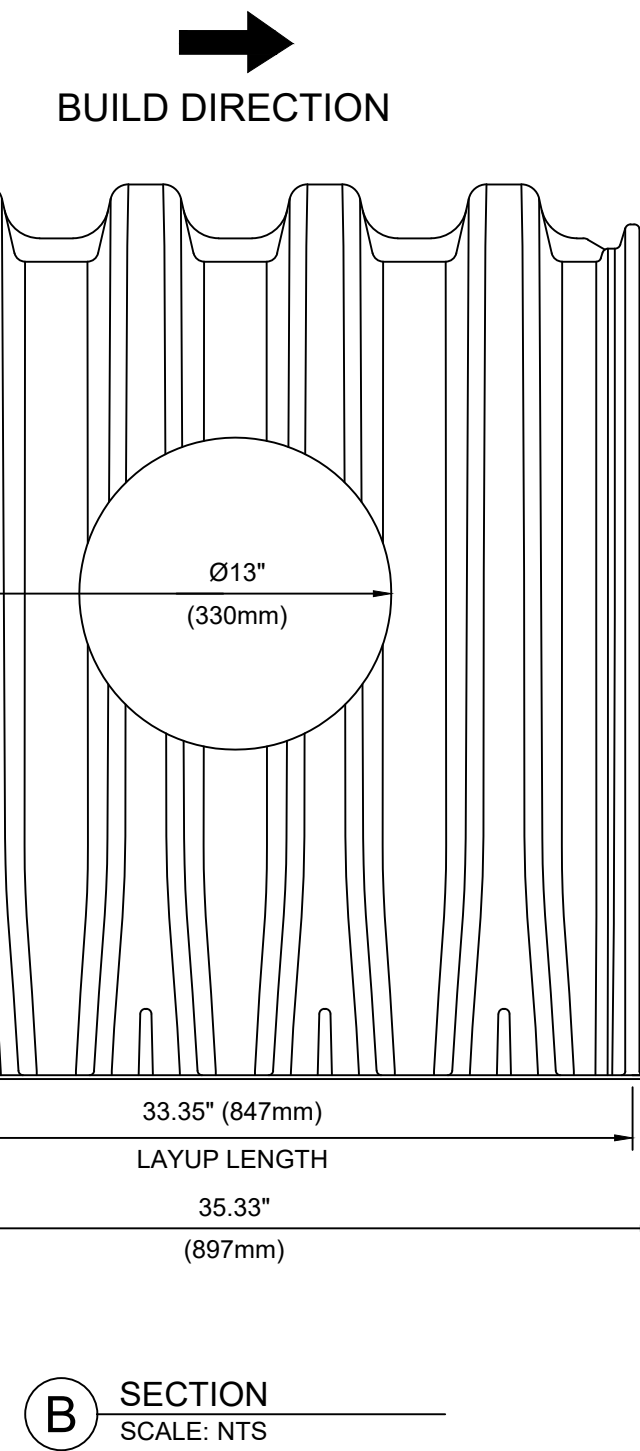
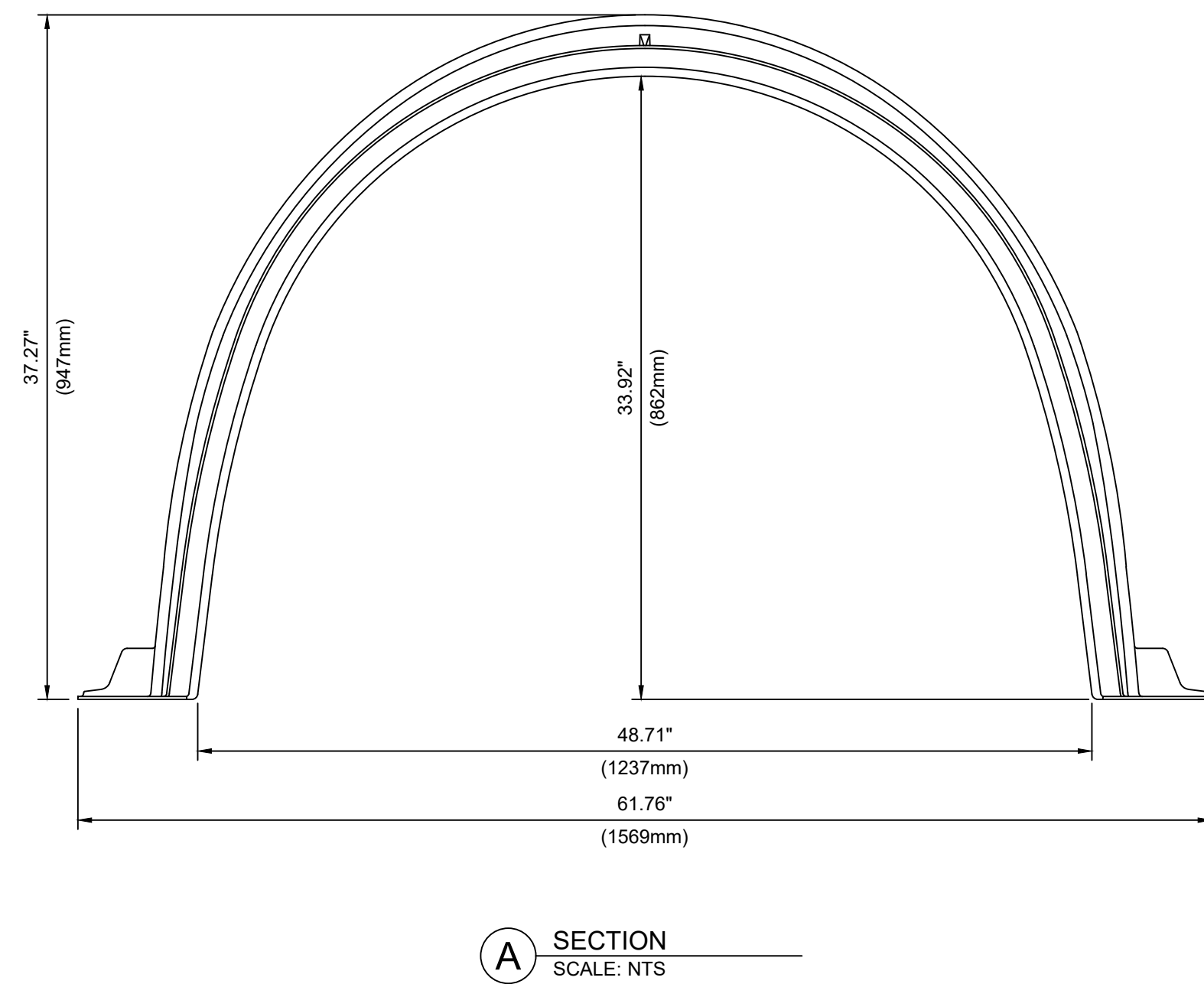
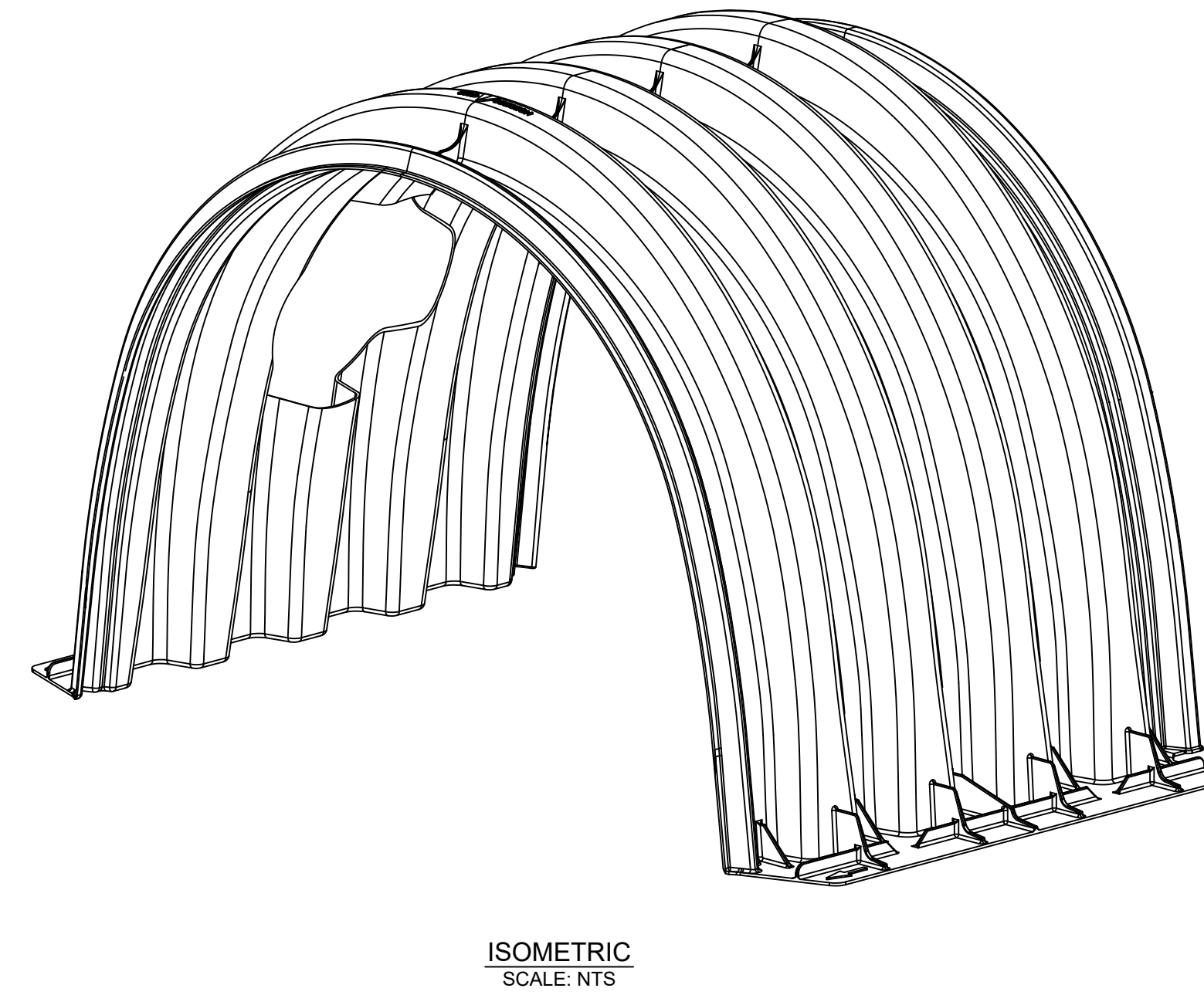
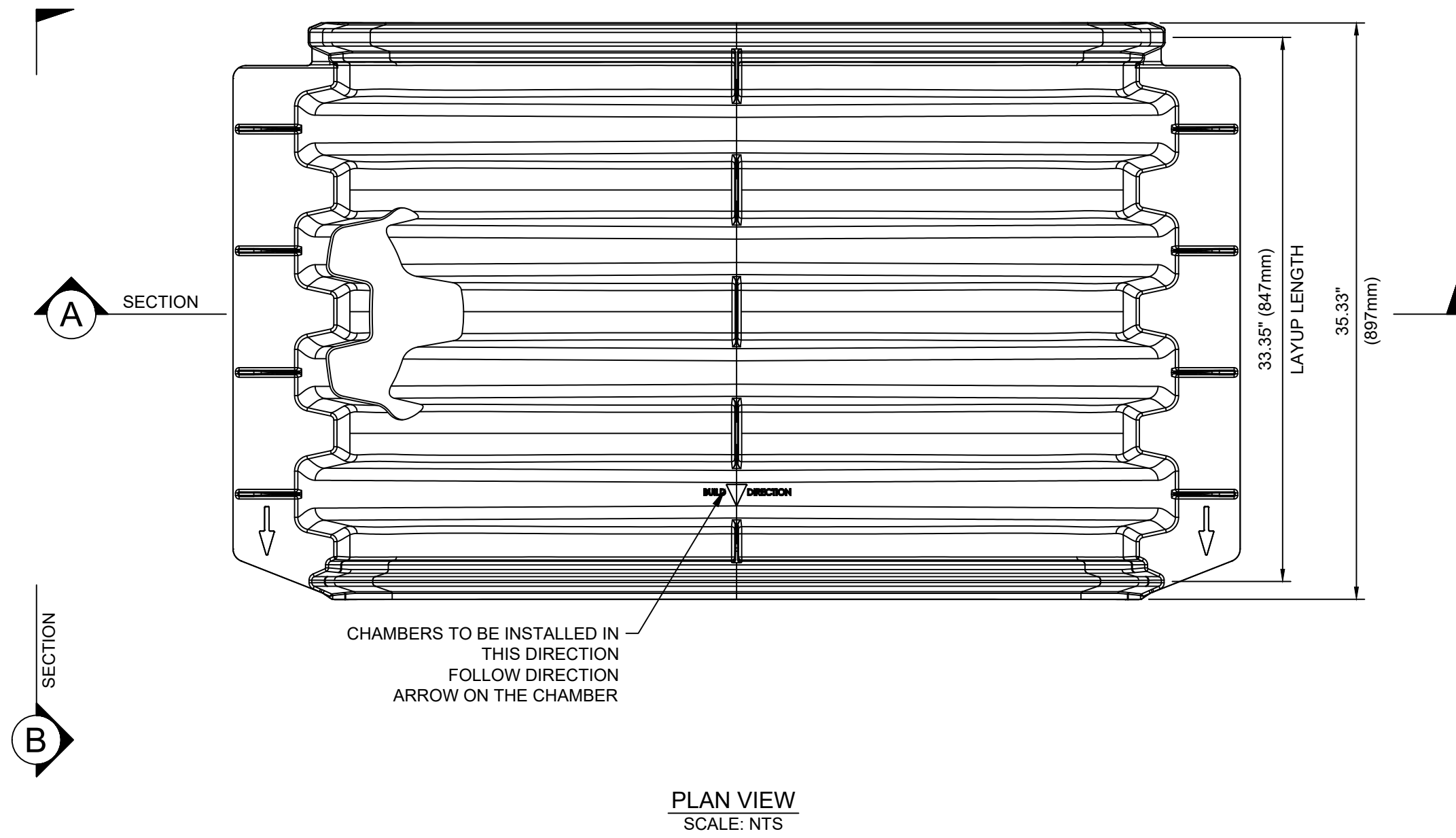
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HYDROCHAIN™
S-29B CHAMBER
12-IN PRECUT LEFT

S-29B CHAMBER PROPERTIES	
NOMINAL DIMENSIONS (LAYUP LENGTH × WIDTH × HEIGHT)	33.35" × 61.76" × 37.27" (847mm × 1569mm × 947mm)
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WITH 40% STONE POROSITY (DOES NOT INCLUDE 12" (300mm) PERIMETER STONE VOLUME)



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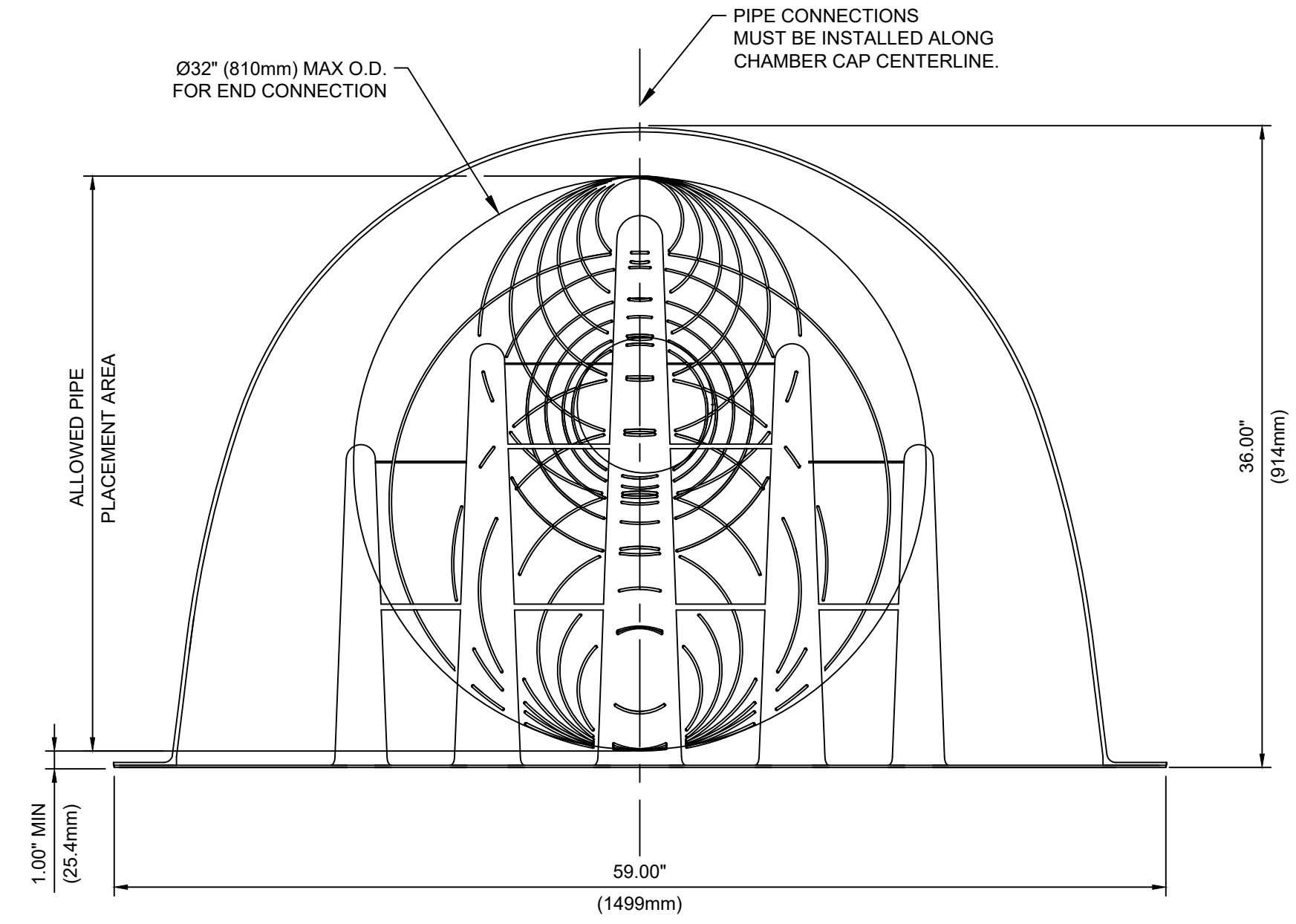
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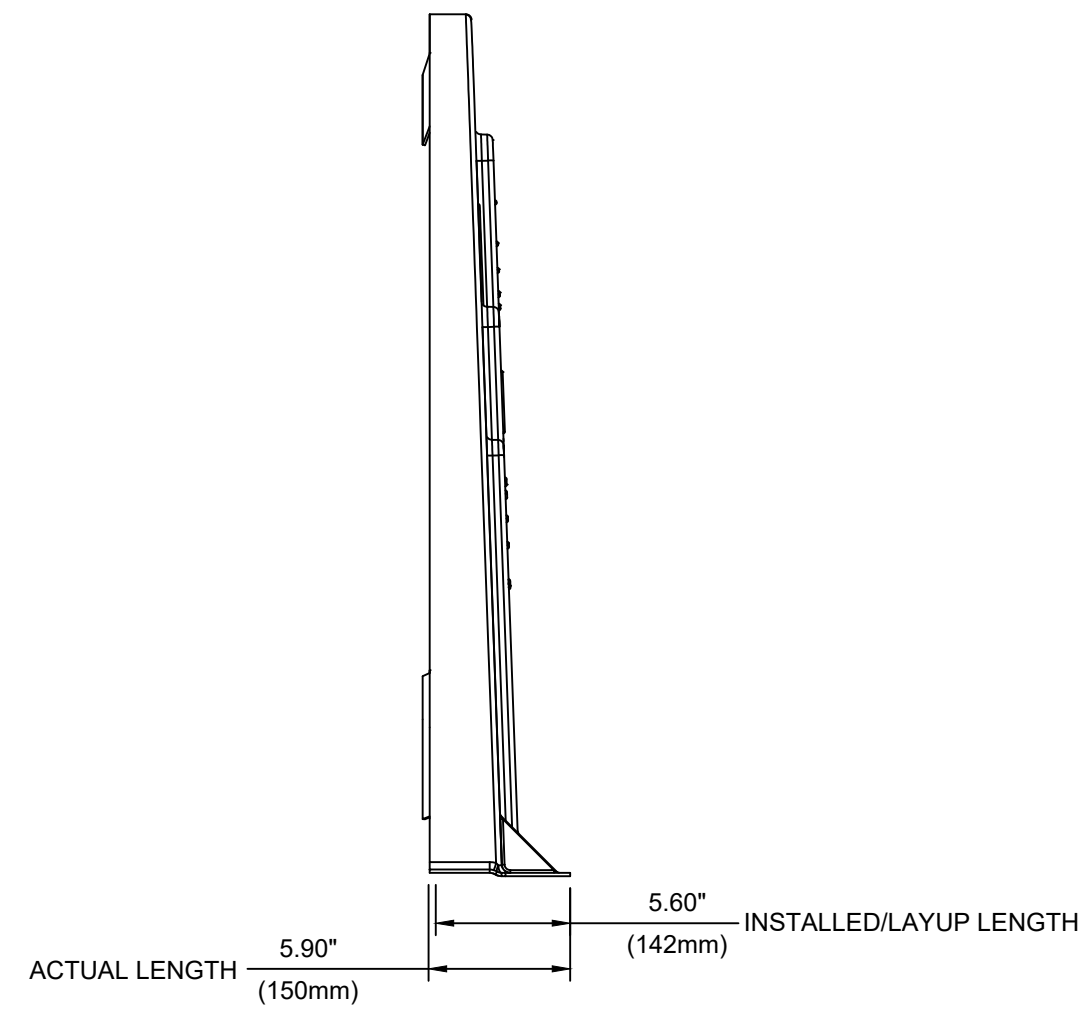
HYDROCHAIN™
S-29B CHAMBER
12-IN PRECUT RIGHT

DATE: 06/10/2025 SHEET 1 OF 1

S-29 END CAP PROPERTIES	
NOMINAL DIMENSIONS (LAYUP LENGTH × WIDTH × HEIGHT)	5.90" × 59.00" × 36.00" (150mm × 1499mm × 914mm)
BARE END CAP STORAGE	1.031 CUBIC FEET (0.029 CUBIC METERS)
*MIN INSTALLED STORAGE	4.98 CUBIC FEET (0.141 CUBIC METERS)
*ASSUMING A MIN OF 6" (150mm) STONE ABOVE AND BELOW AND 7.5" (191mm) BETWEEN ROWS WITH 40% STONE POROSITY (DOES NOT INCLUDE 12" (300mm) PERIMETER STONE VOLUME)	

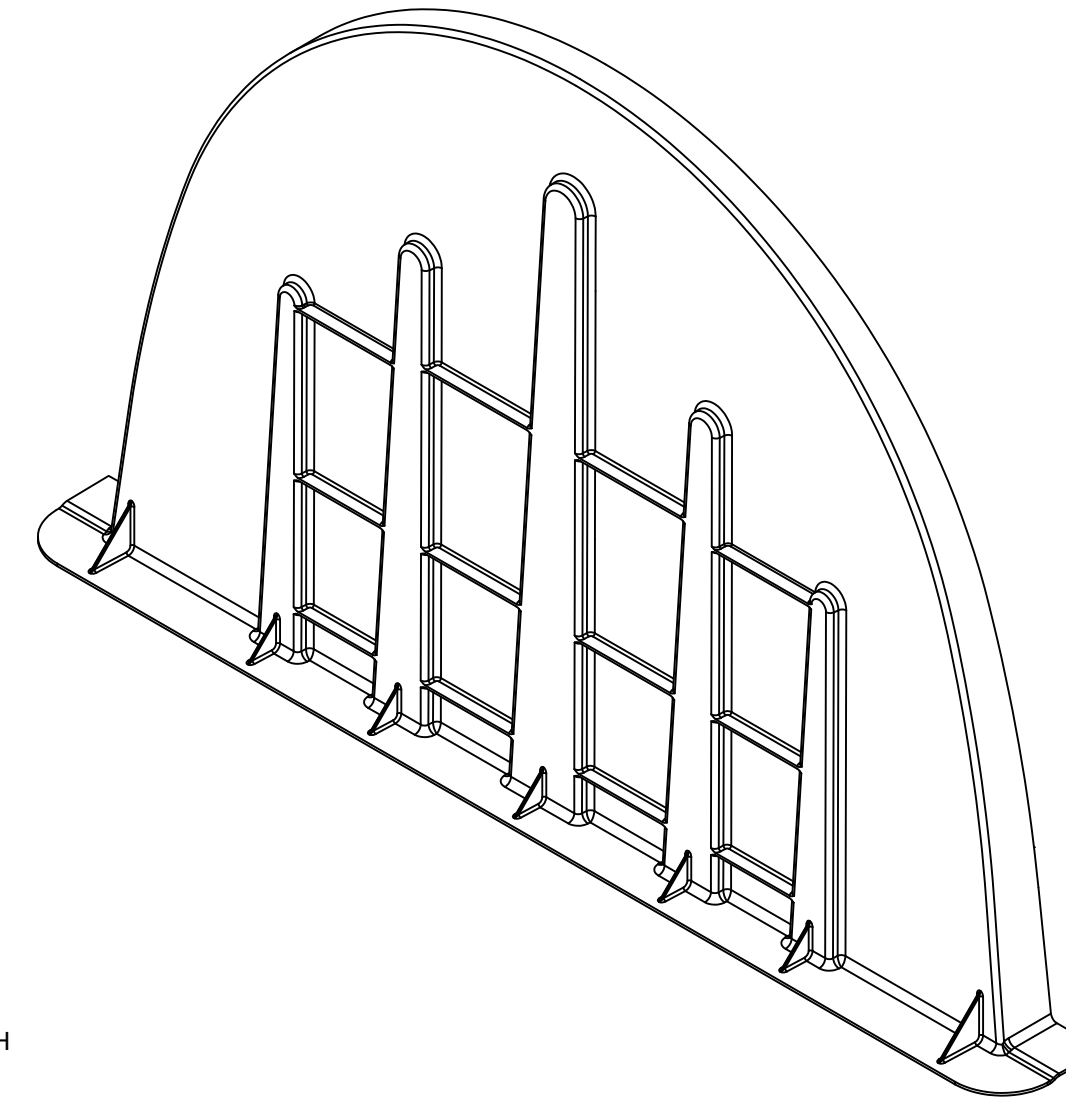


S-29 END CAP: ALLOWED PIPE PLACEMENT AREA
SCALE: NTS

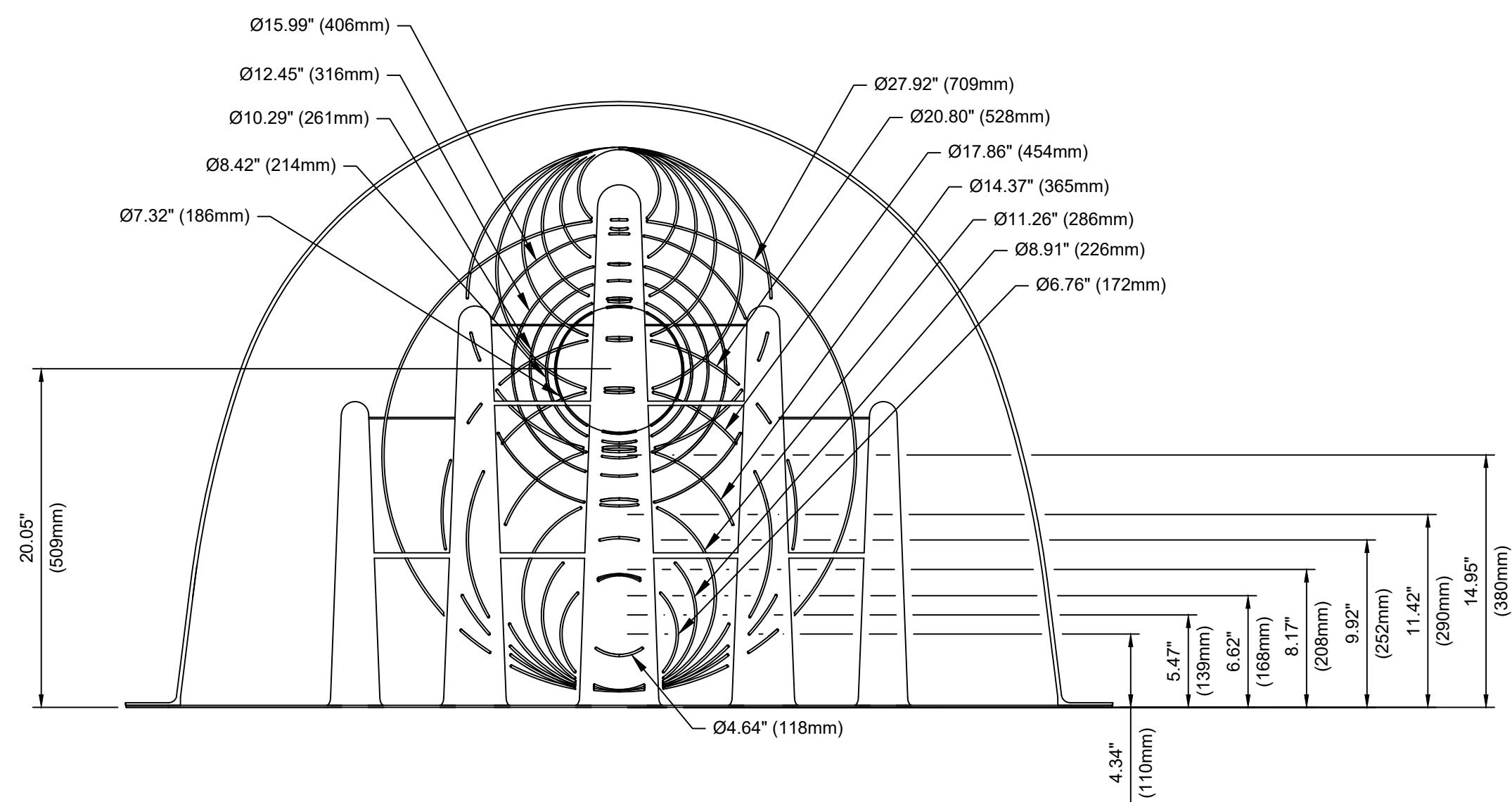


THE END CAP FITS UP ON THE OUTSIDE OF THE S-29B CHAMBER. REFER TO INSTALLATION MANUAL FOR FURTHER DETAIL.

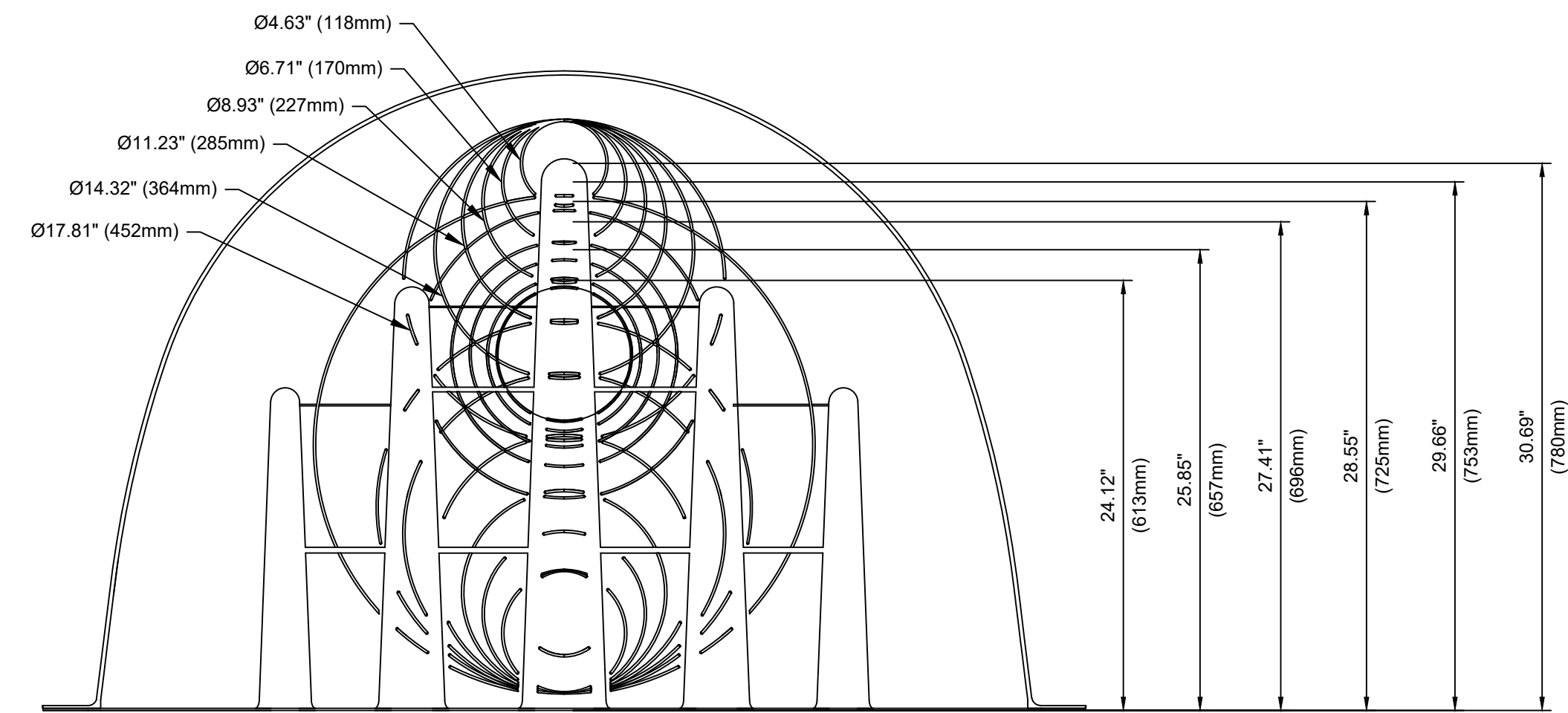
SIDE VIEW
SCALE: NTS



ISOMETRIC
SCALE: NTS



S-29 END CAP: CENTER AND BOTTOM HOLE DIMENSIONS
SCALE: NTS



S-29 END CAP: TOP HOLE DIMENSIONS
SCALE: NTS

XS-005669



XERXES.COM
STORMWATER.SUPPORT@MATTR.COM

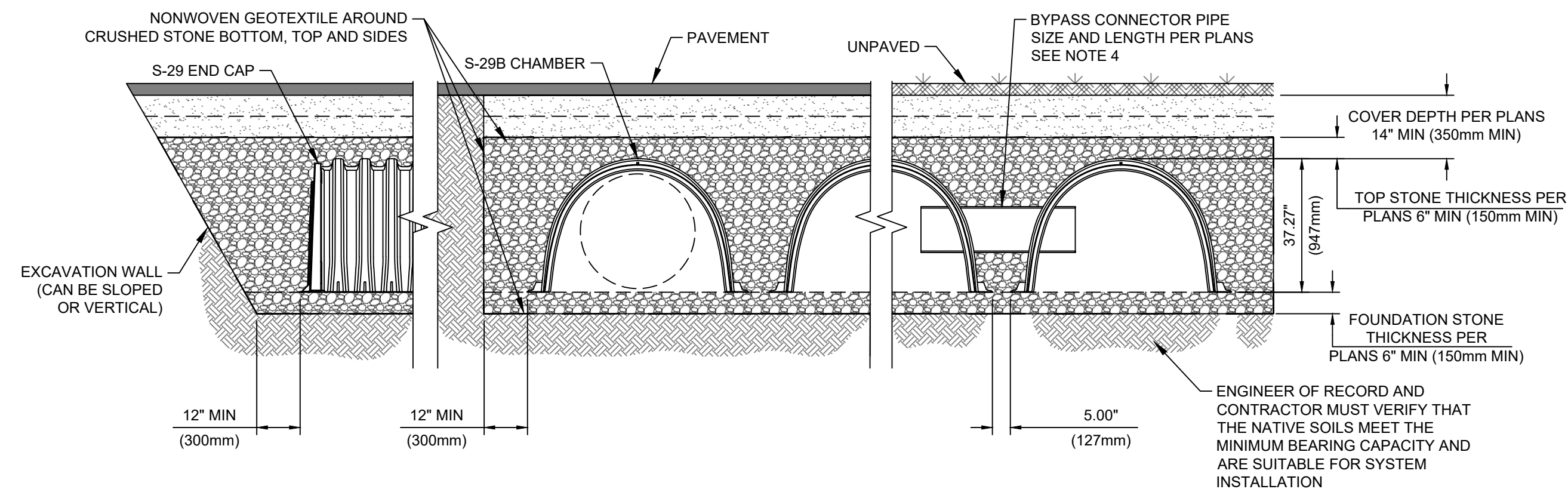


HYDROCHAIN™
S-29B END CAP

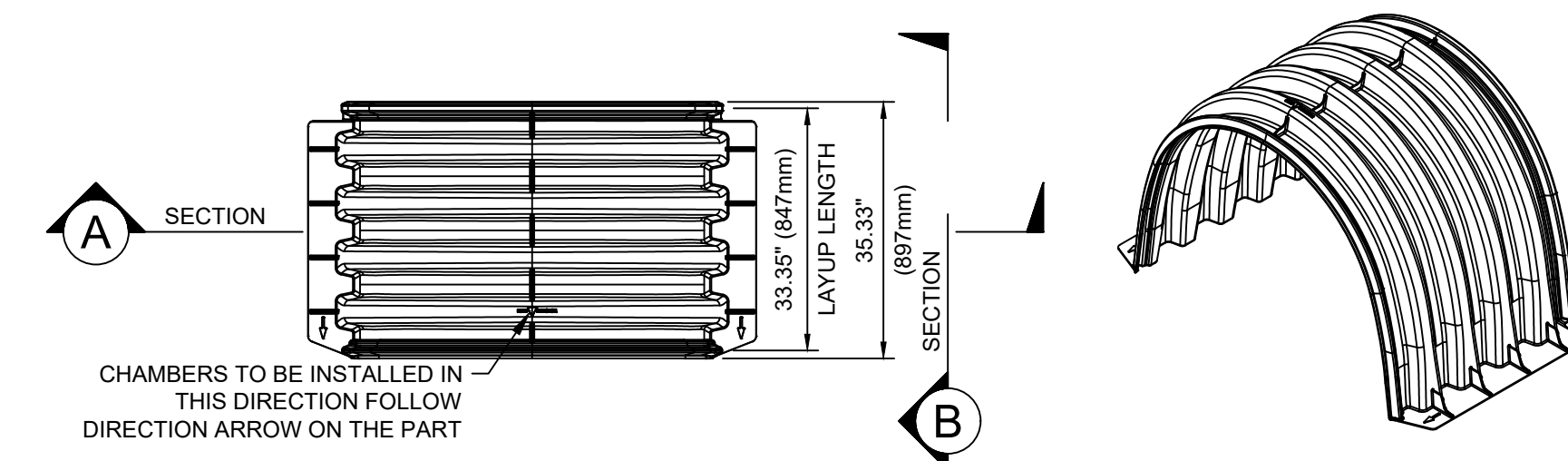
CHAMBER STANDARD FILL MATERIALS

	MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION	COMPACT/DENSITY REQUIREMENT
D	FILL MATERIAL FROM 18" (450mm) ABOVE CHAMBER TO GRADE	PER CONSTRUCTION PLANS. CHECK PLANS FOR PAVEMENTS SUBGRADE REQUIREMENTS.	PER PLANS	PER CONSTRUCTION PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.
C	FILL MATERIAL FOR 6" (150mm) TO 18" (450mm) ABOVE THE CHAMBER AND 24" (600mm) FOR UNPAVED INSTALLATIONS	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES. MOST PAVEMENT SUB-BASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10 M145: A-1, A-2, A-3	COMPACT TO ≥95% STANDARD DENSITY AFTER 6" (150mm) LIFTS. SEE NOTES.
B	EMBEDMENT AND TOP STONE	3/8" - 2" (9.5-50mm) CLEAN, CRUSHED, ANGULAR STONE	3, 357, 4, 467, 5, 56, 57	EMBEDMENT STONE: COMPACTION NOT REQUIRED. TOP STONE: COMPACT TO ≥95% STANDARD DENSITY AFTER 6" (150mm) THEN IN MAXIMUM 6" (150mm) LIFTS. SEE NOTES.
A	FOUNDATION STONE	3/8" - 2" (9.5-50mm) CLEAN, CRUSHED, ANGULAR STONE	3, 357, 4, 467, 5, 56, 57	COMPACT TO ≥95% STANDARD DENSITY IN MAXIMUM 6" (150mm) LIFTS. SEE NOTES.

- NOTES:
- INSTALL CHAMBERS AND END CAPS IN ACCORDANCE WITH SITE SPECIFIC PLANS, HYDROCHAIN INSTALLATION MANUAL AND SUPPLEMENTAL DOCUMENTS. REFERENCE THE QR CODE BELOW FOR PRODUCT DOCUMENTS.
 - THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, AND ANGULAR.
 - 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 6" (150mm) MAXIMUM LIFTS USING TWO FULL PASSES WITH A VIBRATORY COMPACTOR.
 - EXTEND CROSS CONNECTION PIPES INTO THE CHAMBER BY A LENGTH EQUAL OR GREATER THAN 1/2 THE PIPE O.D.

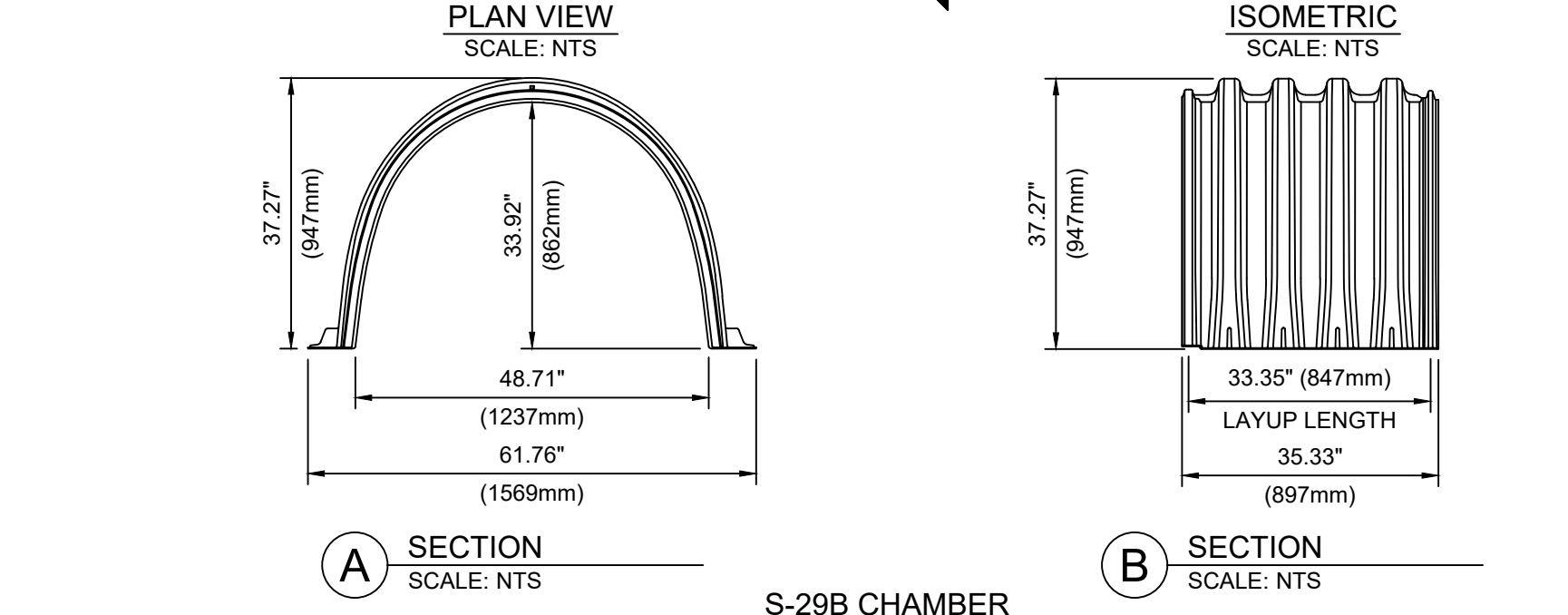


S-29B CHAMBER CROSS SECTION



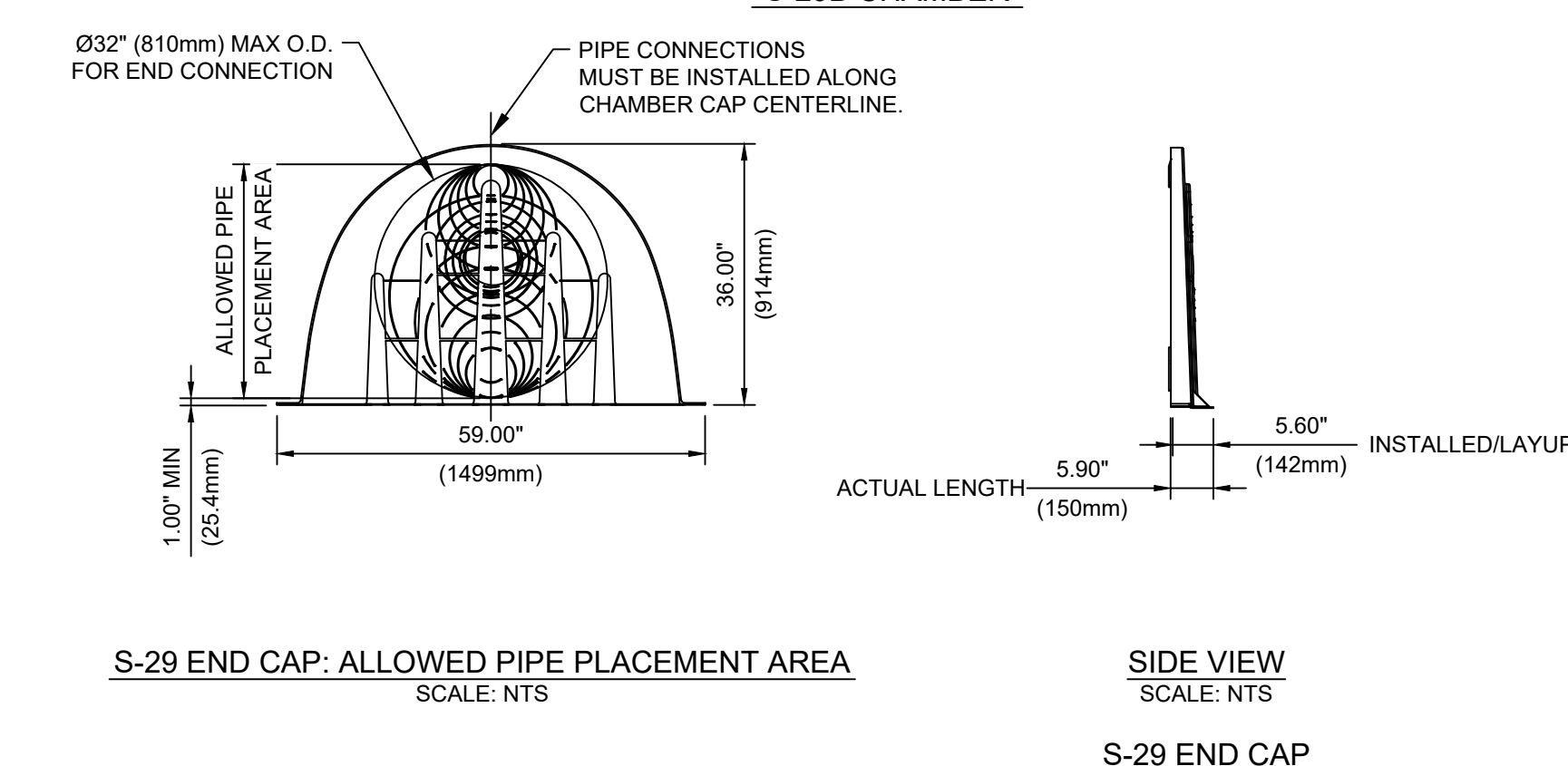
S-29B CHAMBER PROPERTIES	
NOMINAL DIMENSIONS (LAYUP LENGTH × WIDTH × HEIGHT)	33.35" × 61.76" × 37.27" (847mm × 1569mm × 947mm)
BARE CHAMBER STORAGE	27.80 CUBIC FEET (0.787 CUBIC METERS)
*MIN INSTALLED STORAGE	42.07 CUBIC FEET (1.191 CUBIC METERS)
CHAMBER WEIGHT	34 LBS (15.42 kg)
STORAGE PER LINEAR UNIT WITHOUT STONE	10.0 FT ³ /FT (0.929 M ³ /M)
STORAGE PER LINEAR UNIT WITH STONE	15.1 FT ³ /FT (1.406 M ³ /M)

*ASSUMING A MIN OF 6" (150mm) STONE ABOVE AND BELOW AND 5" (127mm) BETWEEN ROWS WITH 40% STONE POROSITY (DOES NOT INCLUDE 12" (300mm) PERIMETER STONE VOLUME)



S-29 END CAP PROPERTIES	
NOMINAL DIMENSIONS (LAYUP LENGTH × WIDTH × HEIGHT)	5.90" × 59.00" × 36.00" (150mm × 1499mm × 914mm)
BARE END CAP STORAGE	1.031 CUBIC FEET (0.029 CUBIC METERS)
*MIN INSTALLED STORAGE	4.98 CUBIC FEET (0.141 CUBIC METERS)

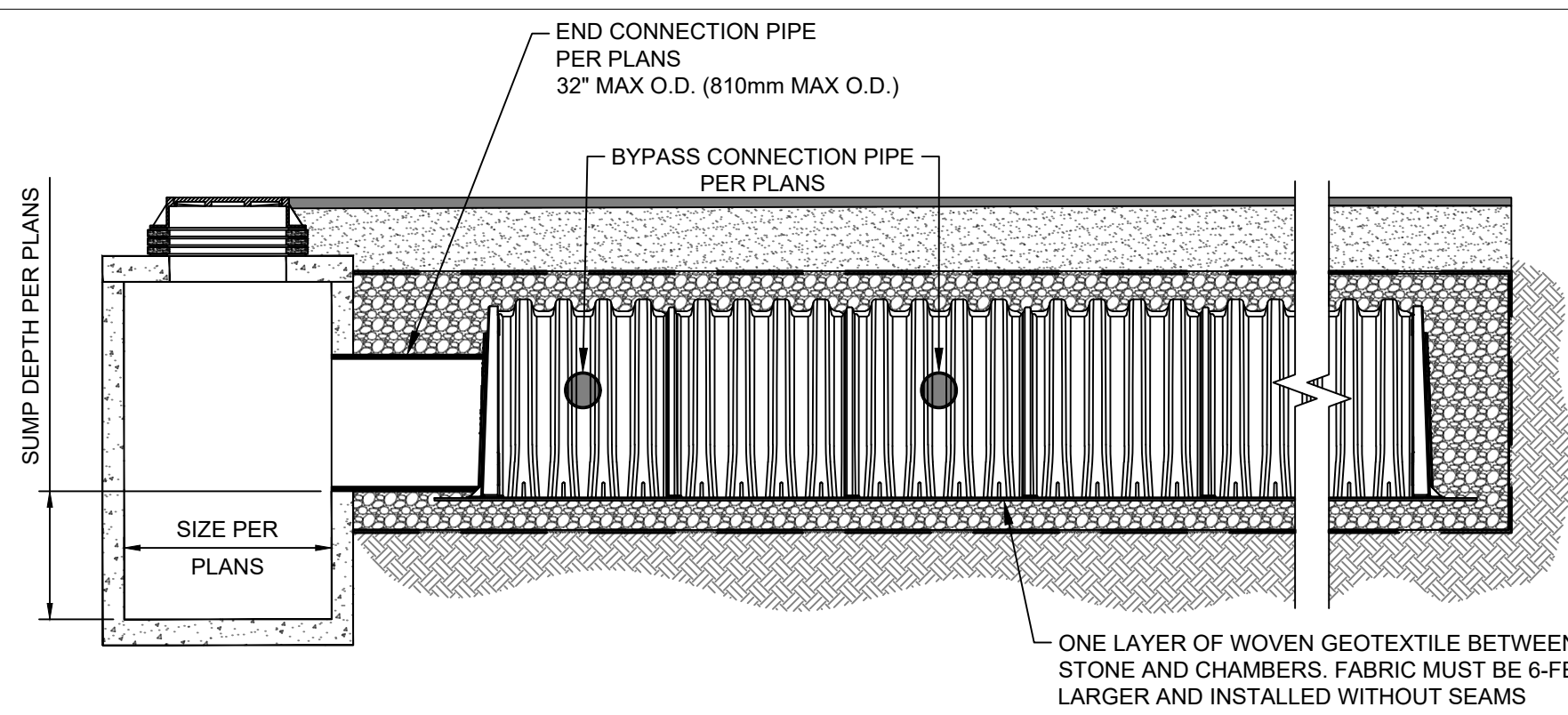
*ASSUMING A MIN OF 6" (150mm) STONE ABOVE AND BELOW AND 7.5" (191mm) BETWEEN ROWS WITH 40% STONE POROSITY (DOES NOT INCLUDE 12" (300mm) PERIMETER STONE VOLUME)



S-29 END CAP: ALLOWED PIPE PLACEMENT AREA SCALE: NTS

SIDE VIEW SCALE: NTS

S-29 END CAP ISOMETRIC SCALE: NTS



S-29B CHAMBER CROSS SECTION

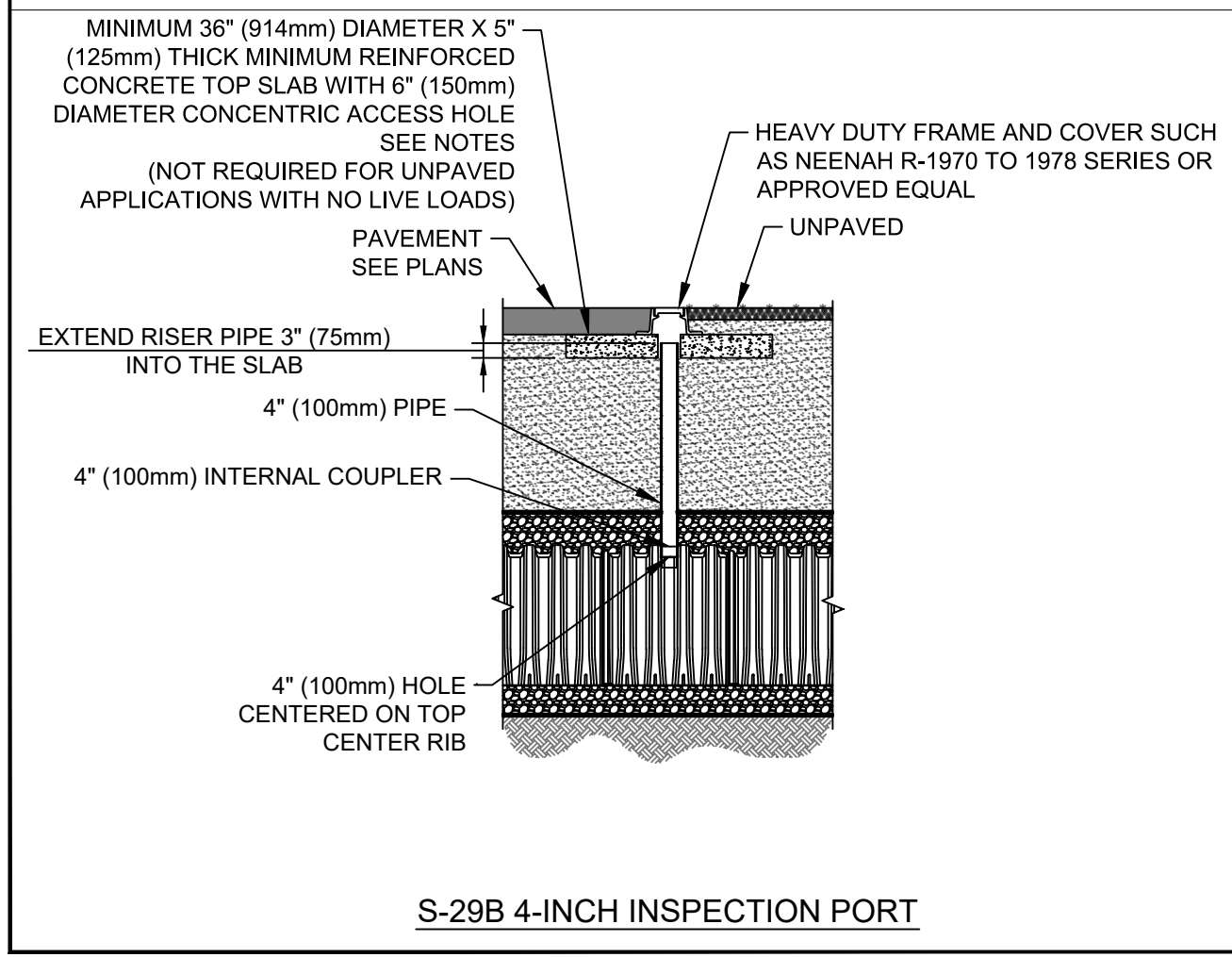
- NOTES:
- INSTALL THE MAIN HEADER ROW, CHAMBERS, AND END CAPS IN ACCORDANCE WITH THE SITE SPECIFIC PLANS, HYDROCHAIN INSTALLATION MANUAL AND SUPPLEMENTAL DOCUMENTS. REFERENCE THE QR CODE BELOW FOR PRODUCT DOCUMENTS.
 - CONDUCT INSPECTION AND MAINTENANCE IN ACCORDANCE WITH HYDROCHAIN CHAMBER MAIN HEADER ROW OPERATION AND MAINTENANCE MANUAL.

GENERAL

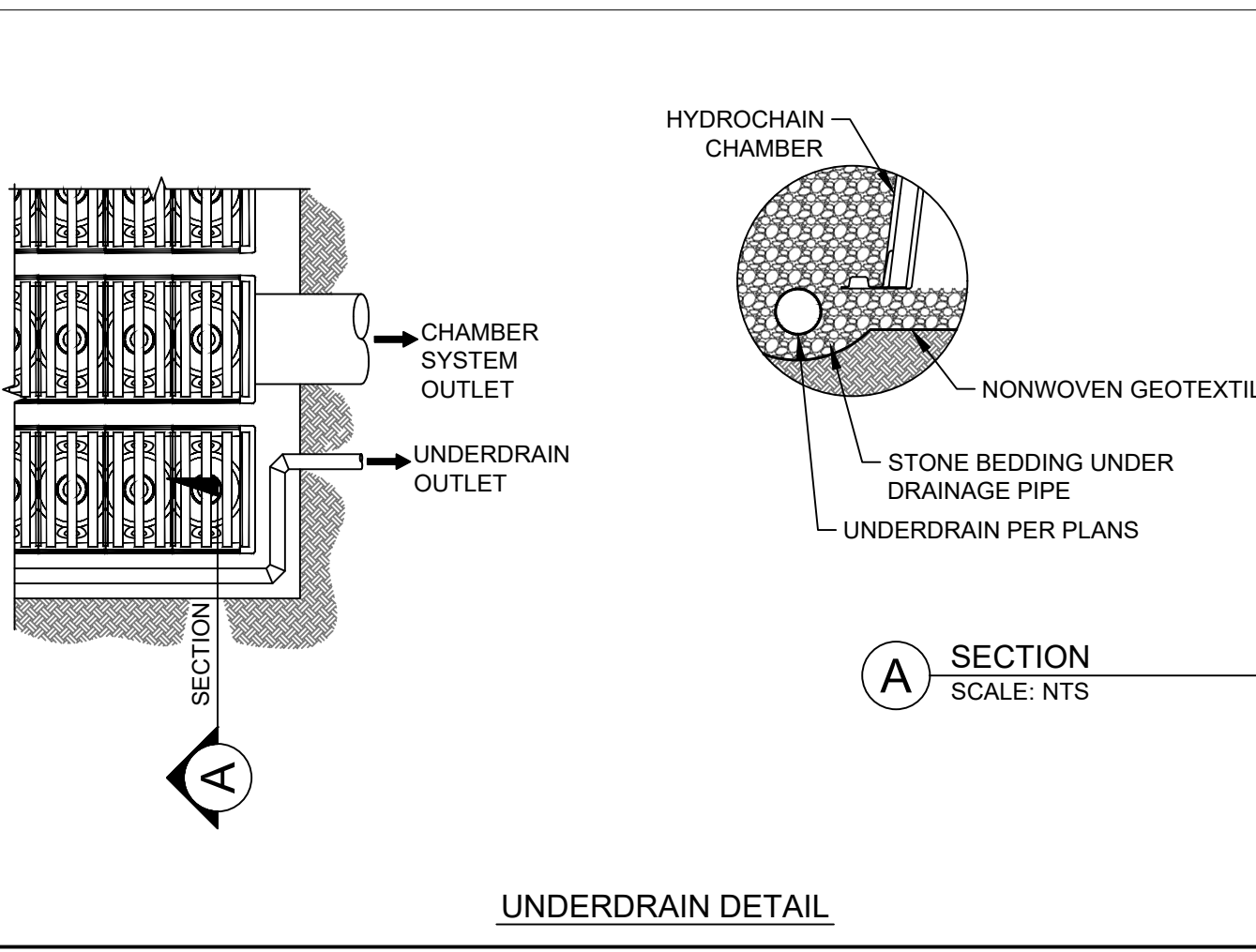
- CHAMBERS MUST BE XERXES® HYDROCHAIN™ S-29B. ONLY CHAMBERS APPROVED BY THE ENGINEER OF RECORD ARE PERMITTED.
- CHAMBERS MUST BE MANUFACTURED BY COMPRESSION MOLDING OF FIBERGLASS REINFORCED COMPOSITE POLYPROPYLENE.
- CHAMBERS MUST BE EVALUATED AND TESTED TO MEET OR EXCEED THE STANDARDS IN ASTM F2418 STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS.
- CHAMBERS MUST BE ARCH-SHAPED AND HAVE AN OPEN BOTTOM. CHAMBER ROWS MUST BE CONTINUOUS, UNOBSTRUCTED, AND WITHOUT INTERNAL SUPPORT THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION AND MAINTENANCE.
- 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
- 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
- CHAMBERS MUST HAVE AN ARCH STIFFNESS CONSTANT (ASC) ≥ 700 LBS/FT³ PER ASTM F2418, SECTION 6.2.8 AND MAINTAIN STIFFNESS THROUGH TEMPERATURE RANGES OF -40 DEGREES FAHRENHEIT TO 180 DEGREES FAHRENHEIT.
- THE CHAMBER MUST INTERCONNECT USING AN OVERLAPPING CORRUGATION JOINT.
- THE STORMWATER CHAMBER SYSTEM SHALL INCORPORATE A MAIN HEADER ROW FOR STORMWATER TREATMENT AND SYSTEM MAINTENANCE WHICH HAS BEEN TESTED TO A MINIMUM OF 85% OF TSS REMOVAL FOLLOWING NJCAT TESTING PROTOCOLS.

INSTALLATION

- INSTALLATION MUST NOT START UNTIL A PRE-CONSTRUCTION MEETING HAS BEEN HELD WITH THE MANUFACTURER'S REPRESENTATIVE AND THE INSTALLERS.
- INSTALLATION MUST BE IN ACCORDANCE WITH THE CONSTRUCTION PLANS AND HYDROCHAIN™ INSTALLATION MANUAL.
- 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:
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- THE FOUNDATION STONE MUST BE LEVELED AND COMPACTED BEFORE PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS MUST BE PROPERLY SEATED BEFORE PLACING STONE.
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- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE CLEAN, CRUSHED, ANGULAR STONE MEASURING 3/8-2 INCHES (9.5-50 MM).
- ANY DISCREPANCIES WITH CHAMBER FOUNDATION BEARING CAPACITIES MUST BE REPORTED TO THE ENGINEER OF RECORD.
- IT IS RECOMMENDED TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF CONSTRUCTION.



S-29B 4-INCH INSPECTION PORT



UNDERDRAIN DETAIL

XS-005669



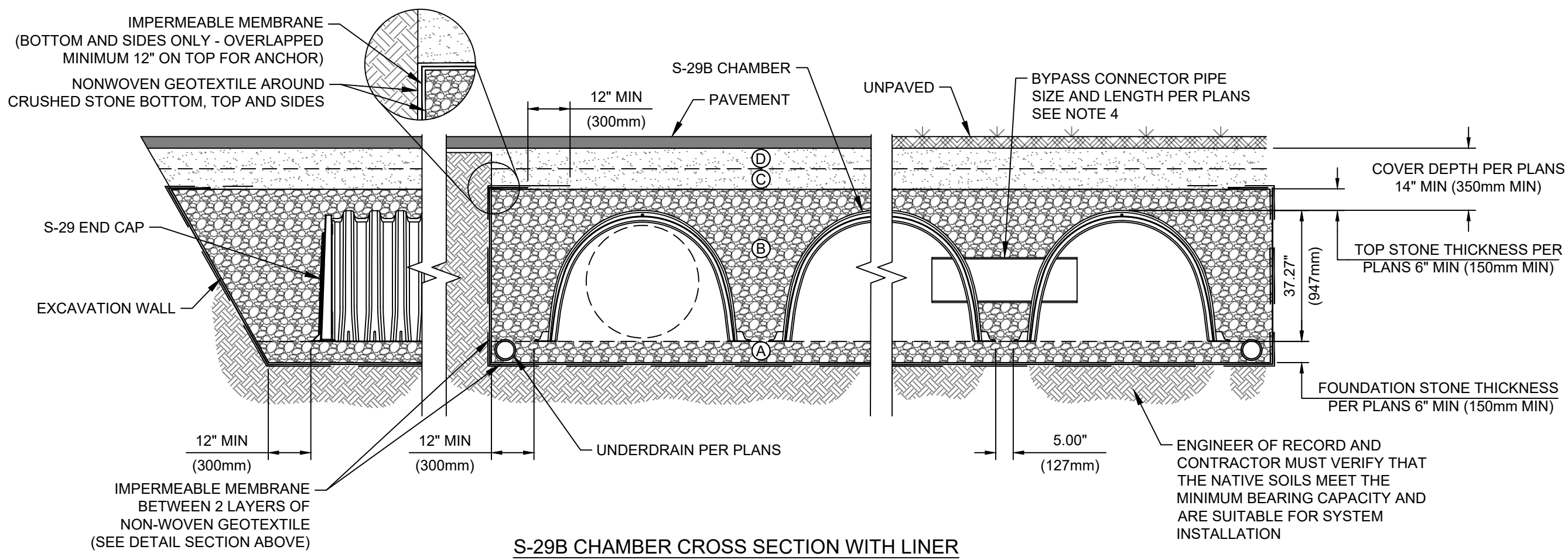
HYDROCHAIN™
S-29B STANDARD DETAILS

CHAMBER STANDARD FILL MATERIALS

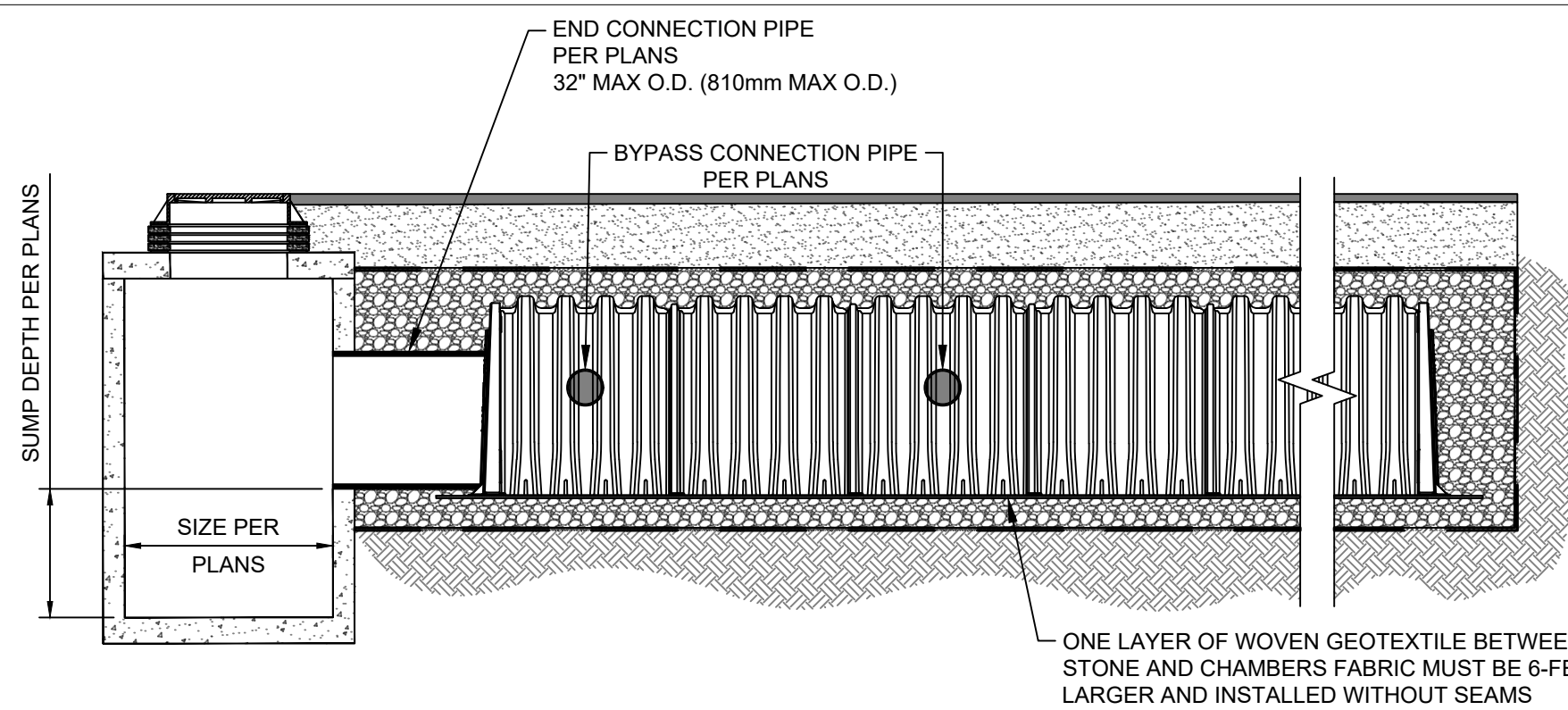
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NOTES:

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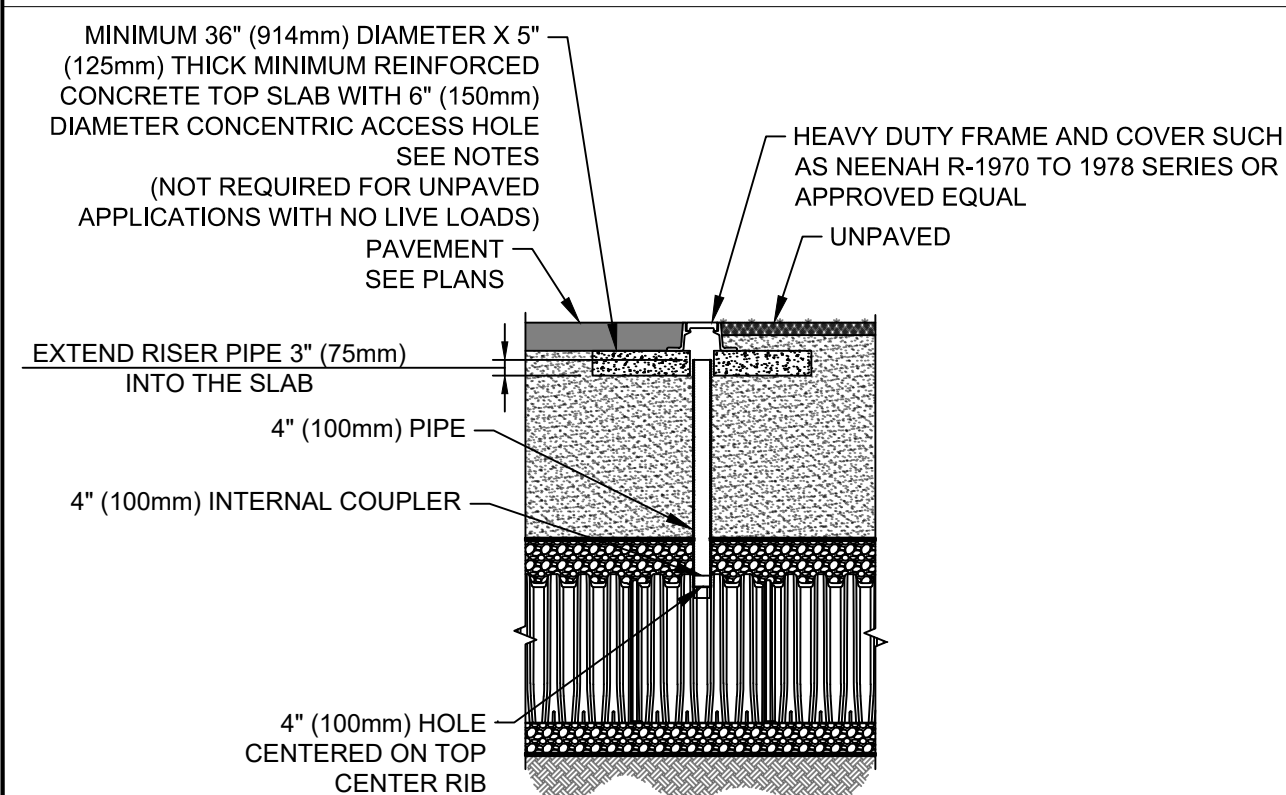
S-29B CHAMBER CROSS SECTION WITH LINER



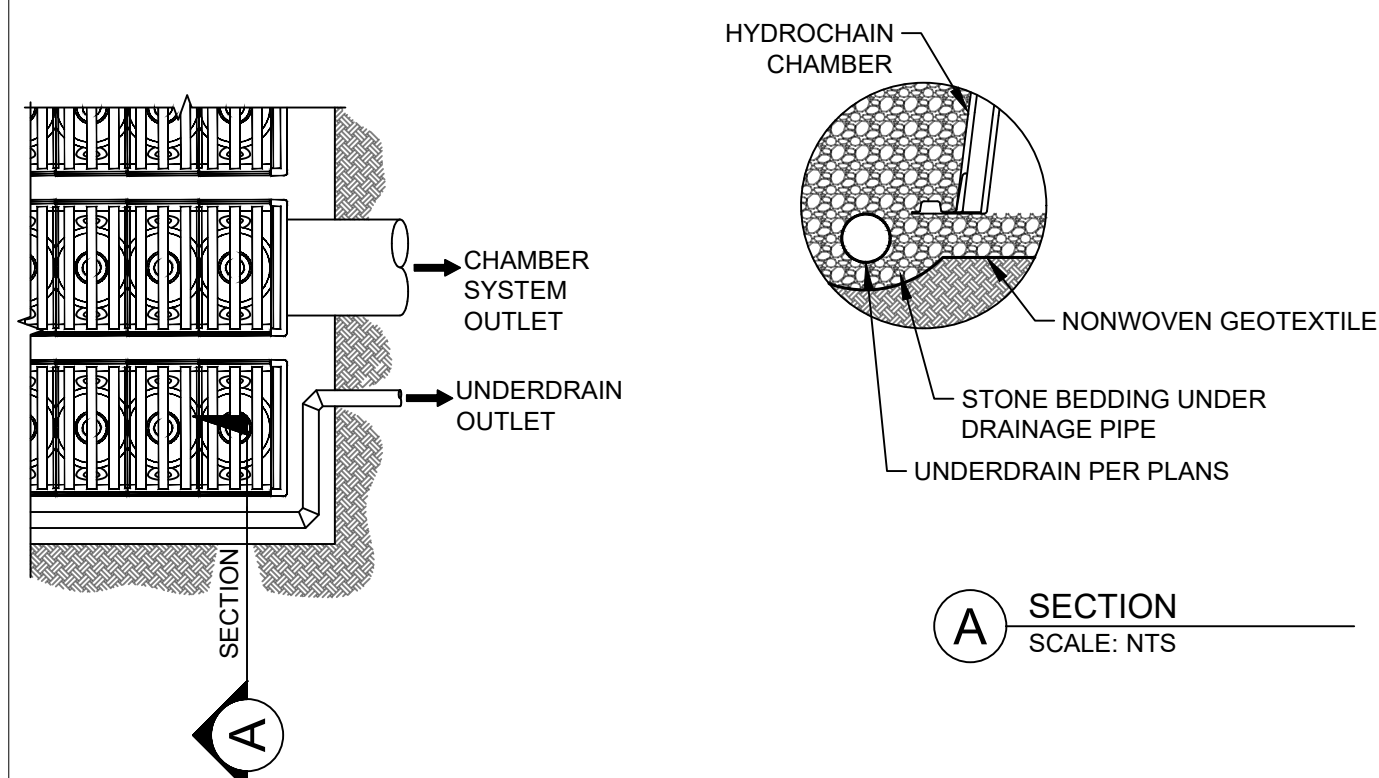
S-29B CHAMBER CROSS SECTION

NOTES:

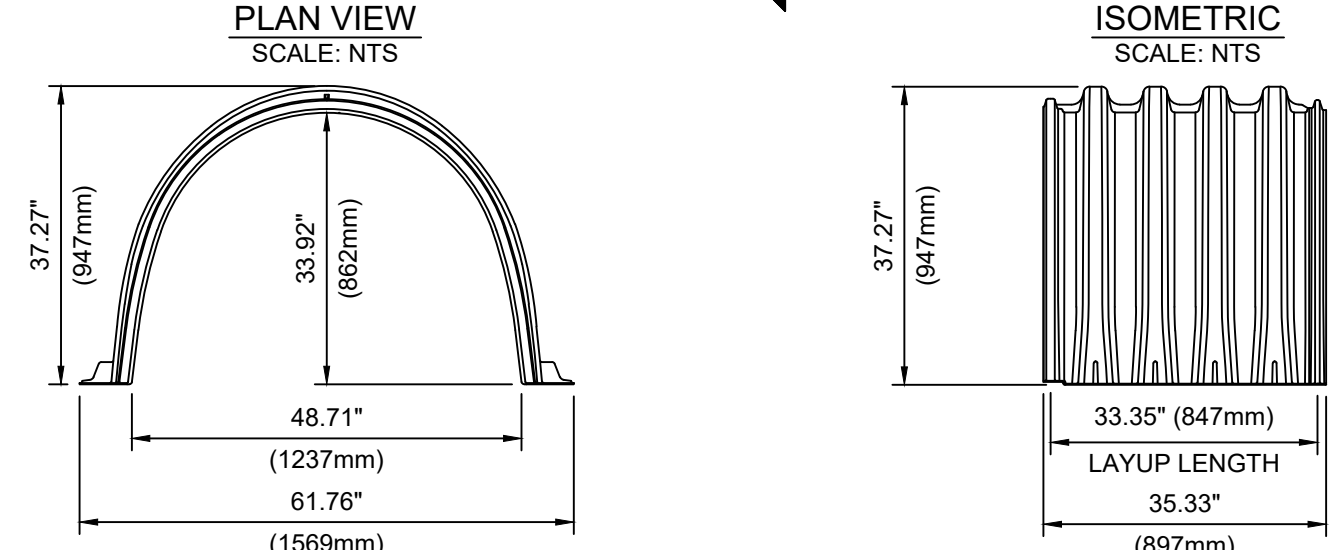
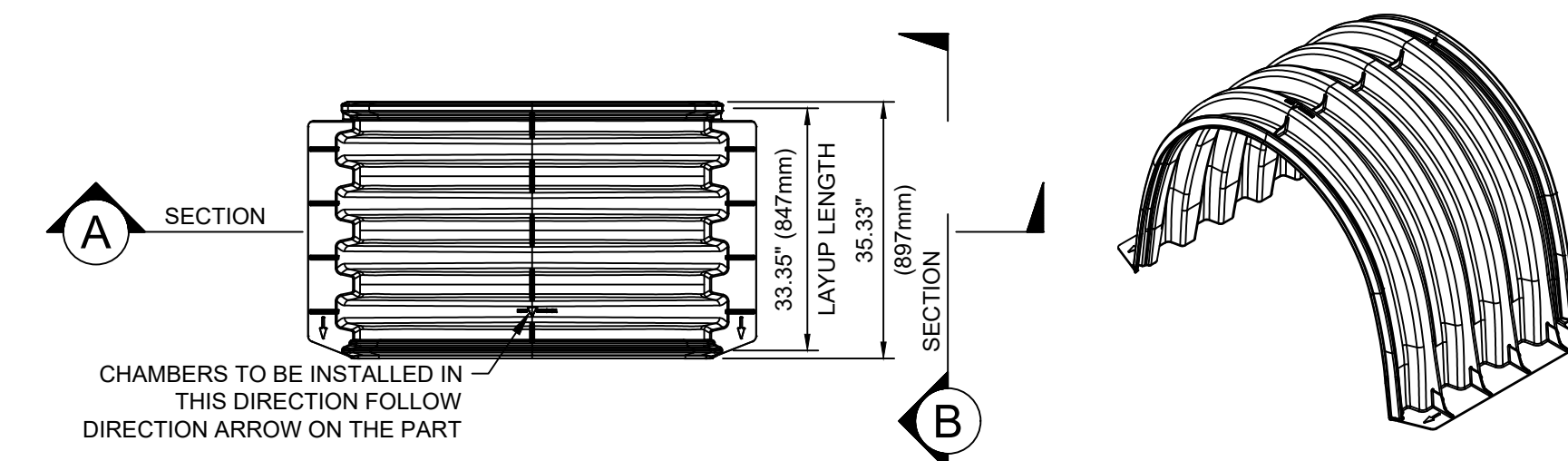
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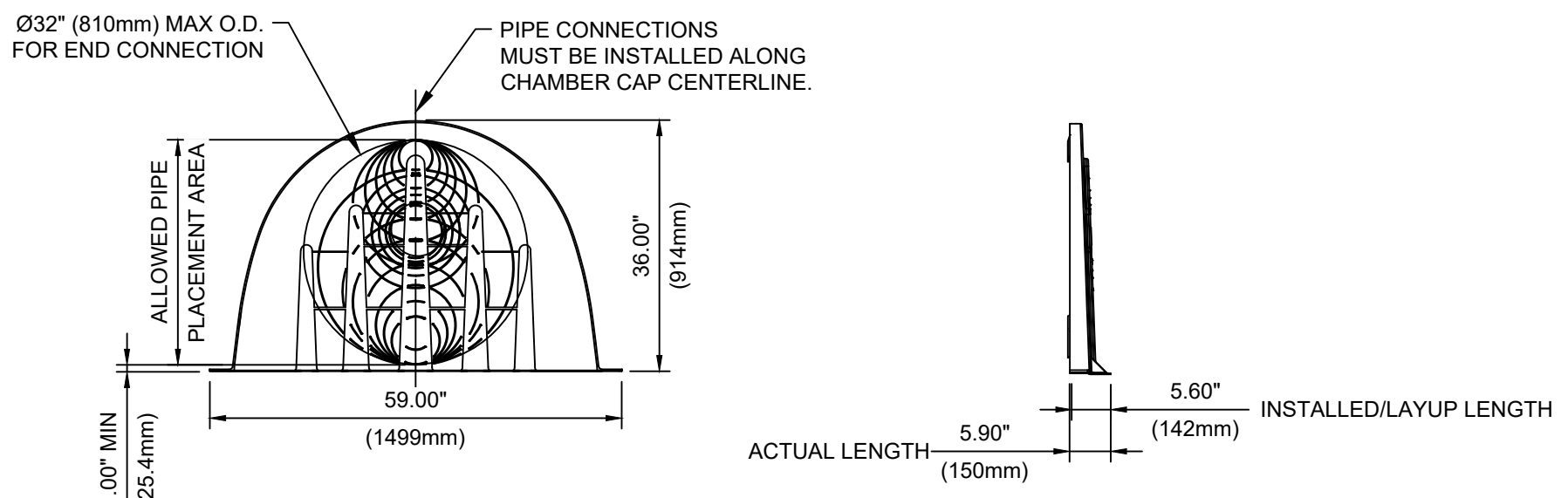
S-29B 4-INCH INSPECTION PORT



UNDERDRAIN DETAIL



S-29B CHAMBER SECTION SCALE: NTS



S-29 END CAP: ALLOWED PIPE PLACEMENT AREA SCALE: NTS

SIDE VIEW SCALE: NTS

S-29 END CAP

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XS-005669



HYDROCHAIN™
S-29B STANDARD DETAILS
WITH LINER