## CULTEC RECHARGER 902HD® SPECIFICATIONS

CULTEC RECHARGER® 902HD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

### **CHAMBER PARAMETERS**

- 1. THE CHAMBERS SHALL BE MANUFACTURED IN THE U.S.A. OR CANADA BY CULTEC, INC. OF BROOKFIELD, CT (CULTEC.COM, 203-775-4416).
- 2. THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". THE LOAD CONFIGURATION SHALL INCLUDE:
- A. INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER B. MAXIMUM PERMANENT (50-YEAR) COVER LOAD C. 1-WEEK PARKED AASHTO DESIGN TRUCK LOAD
- 3. THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS
- 4. THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION
- 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING:
- A. THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430
- B. THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75 C. THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95
- 5. THE CHAMBER SHALL BE STRUCTURAL FOAM INJECTION MOLDED OF BLUE VIRGIN HIGH MOLECULAR WEIGHT IMPACT-MODIFIED POLYPROPYLENE.
- 6. THE CHAMBER SHALL BE ARCHED IN SHAPE.
- 7. THE CHAMBER SHALL BE OPEN-BOTTOMED.
- 8. THE CHAMBER SHALL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE
- 9. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER® 902HD SHALL BE 48 INCHES (1219 MM) TALL, 78 INCHES (1981 MM) WIDE AND 4.25 FEET (1.30 M) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER 902HD SHALL BE 3.67 FEET (1.12 M). 10. MULTIPLE CHAMBERS MAY BE CONNECTED TO FORM DIFFERENT LENGTH ROWS. EACH
- ROW SHALL BEGIN AND END WITH A SEPARATELY FORMED CULTEC RECHARGER® 902HD END CAP. MAXIMUM INLET OPENING ON THE END CAP IS 30 INCHES (750 MM) HDPE OR 36 INCHES (900 MM) PVC 11. THE CHAMBER SHALL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV™ FC-48 FEED
- CONNECTORS TO CREATE AN INTERNAL MANIFOLD. MAXIMUM ALLOWABLE PIPE SIZE IN THE SIDE PORTAL IS 10 INCHES (250 MM) HDPE AND 12 INCHES (300 MM) PVC. 12. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV™ FC-48 FEED CONNECTOR
- SHALL BE 12 INCHES (305 MM) TALL, 16 INCHES (406 MM) WIDE AND 49 INCHES (1245 MM) LONG. 13. THE NOMINAL STORAGE VOLUME OF THE RECHARGER 902HD CHAMBER SHALL BE 17.31
- $\mathsf{FT}^3/\mathsf{FT}$  (1.61  $\mathsf{M}^3$  /  $\mathsf{M}$ ) WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER 902HD SHALL BE 63.47 FT<sup>3</sup> / UNIT (1.80 M<sup>3</sup> / UNIT) - WITHOUT STONE. 14. THE NOMINAL STORAGE VOLUME OF THE HVLV™ FC-48 FEED CONNECTOR SHALL BE  $0.913 \text{ FT}^3 / \text{FT } (0.085 \text{ M}^3 / \text{M}) - \text{WITHOUT STONE}.$
- 15. THE RECHARGER 902HD CHAMBER SHALL HAVE 5 CORRUGATIONS.
- 16. THE CHAMBER SHALL BE CAPABLE OF ACCEPTING A 6 INCH (150 MM) INSPECTION PORT OPENING AT THE TOP CENTER OF EACH CHAMBER, CENTERED ON THE CORRUGATION
- 17. THE CHAMBER SHALL BE MANUFACTURED IN A FACILITY EMPLOYING CULTEC'S QUALITY CONTROL AND ASSURANCE PROCEDURES.
- 18. MAXIMUM ALLOWABLE COVER OVER THE TOP OF THE CHAMBER SHALL BE 8.3 FEET (2.53

- 1. THE CULTEC RECHARGER<sup>(R)</sup> 902HD END CAP (REFERRED TO AS 'END CAP') SHALL BE MANUFACTURED IN THE U.S.A. BY CULTEC, INC. OF BROOKFIELD, CT (CULTEC.COM, 203-775-4416).
- 2. THE END CAP SHALL BE TWIN-SHEET THERMOFORMED OF VIRGIN HIGH MOLECULAR WEIGHT POLYETHYLENE. 3. THE END CAP SHALL BE JOINED AT THE BEGINNING AND END OF EACH ROW OF CHAMBERS
- USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS. 4. THE NOMINAL DIMENSIONS OF THE END CAP SHALL BE 48.5 INCHES (1231 MM) TALL, 78
- INCHES (1982 MM) WIDE AND 9.7 INCHES (246 MM) LONG. WHEN JOINED WITH A RECHARGER 902HD CHAMBER. THE INSTALLED LENGTH OF THE END CAP SHALL BE 6.2 INCHES (157 MM). 5. THE NOMINAL STORAGE VOLUME OF THE END CAP SHALL BE 5.34  $\mathrm{FT}^3/\mathrm{FT}$  (0.50  $\mathrm{M}^3/\mathrm{M})$  -
- WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF AN INTERLOCKED END CAP SHALL BE 2.76  $\text{FT}^3$  / UNIT (0.08  $\text{M}^3$  / UNIT) - WITHOUT STONE. 6.MAXIMUM INLET OPENING ON THE END CAP IS 30 INCHES (750 MM) HDPE OR 36 INCHES
- (900 MM) PVC. 7. THE END CAP SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS
- DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12.

### **CULTEC HVLV FC-48 FEED CONNECTOR PRODUCT SPECIFICATIONS**

- CULTEC HVLV FC-48 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER MODEL 902HD STORMWATER CHAMBERS.
- FEED CONNECTOR PARAMETERS 1. THE FEED CONNECTOR SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- 2. THE FEED CONNECTOR SHALL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE).
- 3. THE FEED CONNECTOR SHALL BE ARCHED IN SHAPE.
- 4. THE FEED CONNECTOR SHALL BE OPEN-BOTTOMED.
- 5. THE NOMINAL DIMENSIONS OF THE CULTEC HVLV FC-48 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 49 INCHES (1245 mm) LONG.
- 6. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-48 FEED CONNECTOR SHALL BE 0.913 FT<sup>3</sup> / FT  $(0.085 \text{ m}^3 / \text{m})$  - WITHOUT STONE.
- 7. THE HVLV FC-48 FEED CONNECTOR SHALL HAVE 4 CORRUGATIONS.
- 8 THE HVI V FC-48 FEED CONNECTOR MUST BE FORMED AS A WHOLE LINIT HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT SHALL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
- 9. THE FEED CONNECTOR SHALL BE DESIGNED TO WITHSTAND AASHTO HS-25 DEFINED LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- 10. THE FEED CONNECTOR SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY

### **CULTEC NO. 410™ NON-WOVEN GEOTEXTILE**

CULTEC NO. 410™ NON-WOVEN GEOTEXTILE MAY BE USED WITH CULTEC CONTACTOR® AND RECHARGER® STORMWATER INSTALLATIONS TO PROVIDE A BARRIER THAT PREVENTS SOIL

### **GEOTEXTILE PARAMETERS**

D4632 TESTING METHOD.

- 1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- 2. THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- 3. THE GEOTEXTILE SHALL HAVE A TYPICAL WEIGHT OF 4.5 OZ/SY (142 G/M). 4. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH VALUE OF 120 LBS (533 N) PER ASTM
- 5. THE GEOTEXTILE SHALL HAVE AN ELONGATION @ BREAK VALUE OF 50% PER ASTM D4632 TESTING METHOD.
- 6. THE GEOTEXTILE SHALL HAVE A MULLEN BURST VALUE OF 225 PSI (1551 KPA) PER ASTM D3786 TESTING METHOD.
- 7. THE GEOTEXTILE SHALL HAVE A PUNCTURE STRENGTH VALUE OF 65 LBS (289 N) PER ASTM
- 8. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE VALUE OF 340 LBS (1513 N) PER ASTM
- 9. THE GEOTEXTILE SHALL HAVE A TRAPEZOID TEAR VALUE OF 50 LBS (222 N) PER ASTM D4533 TESTING METHOD.
- 10. THE GEOTEXTILE SHALL HAVE A AOS VALUE OF 70 U.S. SIEVE (0.212 MM) PER ASTM D4751 TESTING METHOD 11. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY VALUE OF 1.7 SEC-1 PER ASTM D4491
- TESTING METHOD.
- 12. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATE VALUE OF 135 GAL/MIN/SF (5500 L/MIN/SM) PER ASTM D4491 TESTING METHOD.
- 13. THE GEOTEXTILE SHALL HAVE A UV STABILITY @ 500 HOURS VALUE OF 70% PER ASTM D4355 TESTING METHOD.

### **CULTEC NO. 4800™ WOVEN GEOTEXTILE**

CULTEC NO. 4800 WOVEN GEOTEXTILE IS DESIGNED AS A UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE. IT MAY ALSO BE USED AS A COMPONENT OF THE CULTEC SEPARATOR ROW TO ACT AS A BARRIER TO PREVENT SOIL/CONTAMINANT INTRUSION INTO THE STONE WHILE ALLOWING FOR

### **GEOTEXTILE PARAMETERS**

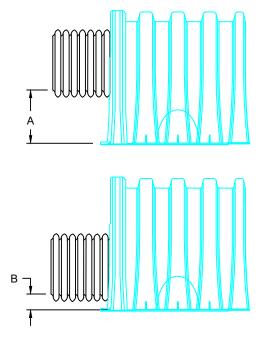
- 1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- 3. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 550 X 550 LBS (2,448 X 2,448 N) PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A FLONGATION @ BREAK RESISTANCE OF 20 X 20% PER ASTM D4632 TESTING METHOD.
- 5. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE OF 5,070 X 5,070 LBS/FT
- (74 X 74 KN/M) PER ASTM D4595 TESTING METHOD. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 2% STRAIN OF 960 X 1,096 LBS/FT
- (14 X 16 KN/M) PER ASTM D4595 TESTING METHOD. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 5% STRAIN OF 2,740 X 2, 740 LBS/FT (40 X 40 KN/M) PER ASTM D4595 TESTING METHOD.
- 8. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 10% STRAIN OF 4,800 X 4,800 LBS/FT (70 X 70 KN/M) PER ASTM D4595 TESTING
- 9. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 1,700 LBS (7,560 N) PER ASTM D6241 TESTING METHOD.
- 10. THE GEOTEXTILE SHALL HAVE A TRAPEZOIDAL TEAR RESISTANCE OF 180 X 180 LBS (801 X 801 N) PER ASTM D4533 TESTING METHOD.
- 11. THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (0.425 MM) PER ASTM D4751 TESTING METHOD.
- 12. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.15 SEC-1 PER ASTM D4491 TESTING METHOD.
- 13. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 11.5 GPM/FT2 (470 LPM/M2) PER ASTM D4491 TESTING METHOD.
- 14. THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 80% @ 500 HRS. PER ASTM D4355 TESTING METHOD.

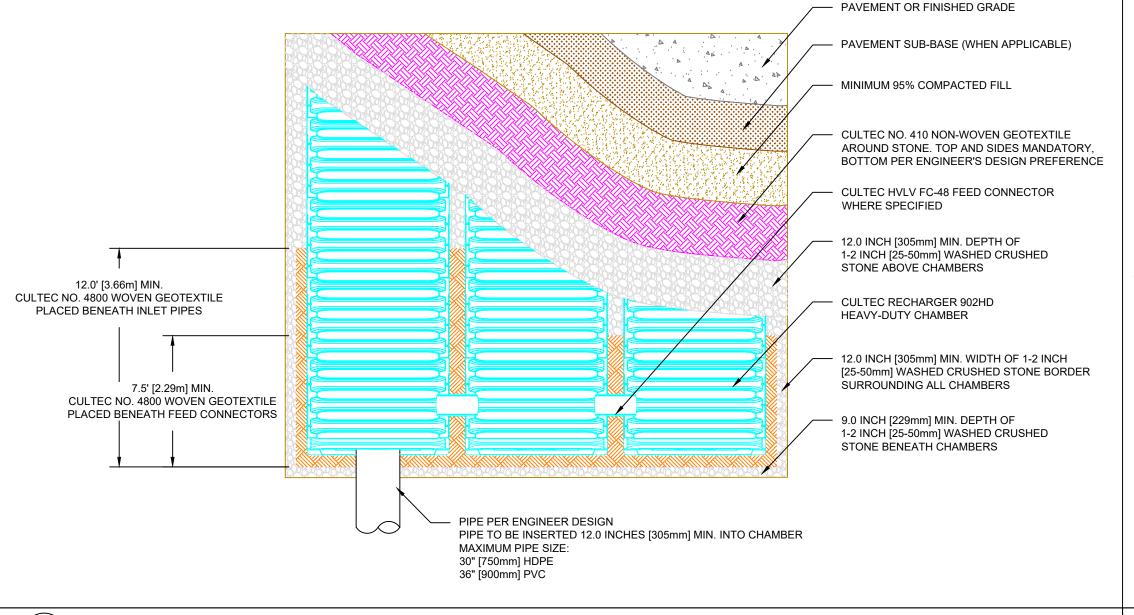
## **GENERAL NOTES**

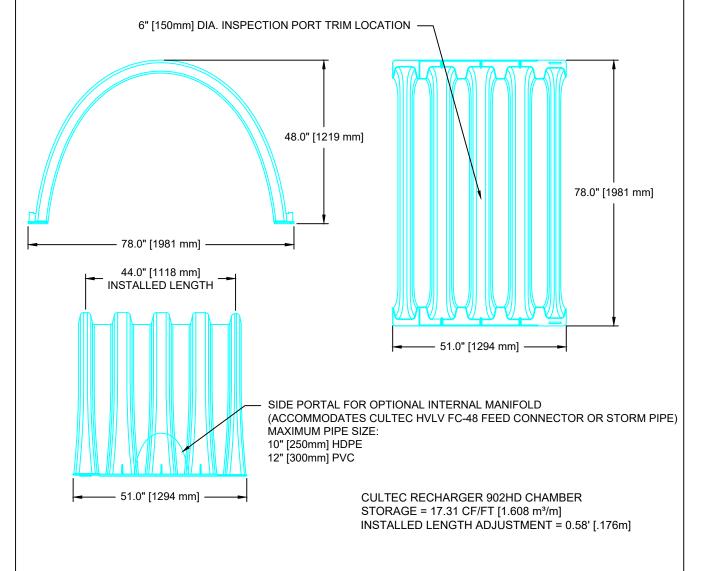
**CULTEC RECHARGER 902HD TYPICAL PIPE INVERTS** 

PIPE	Α	В
6" [150 mm]	N/A	N/A
8" [200 mm]	N/A	N/A
10" [250 mm]	N/A	N/A
12" [300 mm]	29.50" [749 mm]	2.25" [57 mm]
15" [375 mm]	26.50" [673 mm]	2.25" [57 mm]
18" [450 mm]	23.50" [597 mm]	2.50" [64 mm]
24" [600 mm]	16.50" [420 mm]	3.00" [76 mm]

THE TYPICAL INVERT TABLE ABOVE IS BASED ON THE INSIDE DIAMETER OF STANDARD CORRUGATED PLASTIC PIPE. THE HEAVY DUTY END CAP HAS PRE-MARKED TRIM LINES FOR PIPE DIAMETERS 12" (300mm), 15" (375mm), 18" (450mm) AND 24" (600mm). PIPES OF ANY SIZE AND MATERIAL UP TO 24" MAY BE PLACED AT CUSTOM LOCATIONS AND CUSTOM INVERTS. THE CROWN OF THE PIPE MUST REMAIN A MINIMUM OF 4" (100mm) FROM THE EDGE OF THE HEAVY DUTY END CAP.







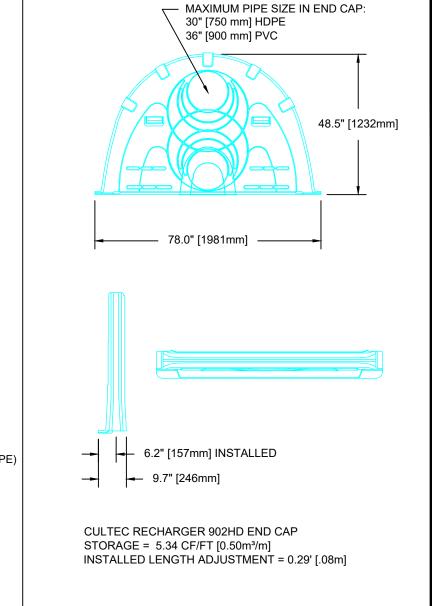
**CULTEC RECHARGER 902HD HEAVY DUTY THREE VIEW** 

HIDDEN END

MODEL 902HD

BEGINNING OF RUN -

MODEL 902HD END CAP



**CULTEC RECHARGER 902HD** 

**HEAVY DUTY END CAP THREE VIEW** 

HIDDEN END

MODEL 902HD END CAP

- END OF RUN

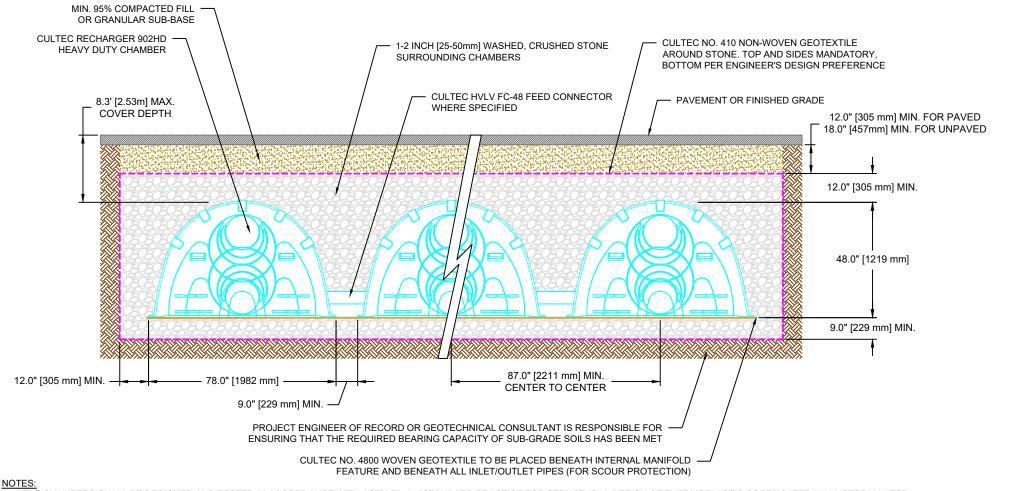
MODEL 902HD

MODEL 902HD

TRIM CUT-OUT TO UTILIZE

INTERNAL MANIFOLD FEATURE

FEED CONNECTOR



**CULTEC RECHARGER 902HD HEAVY DUTY PLAN VIEW** 

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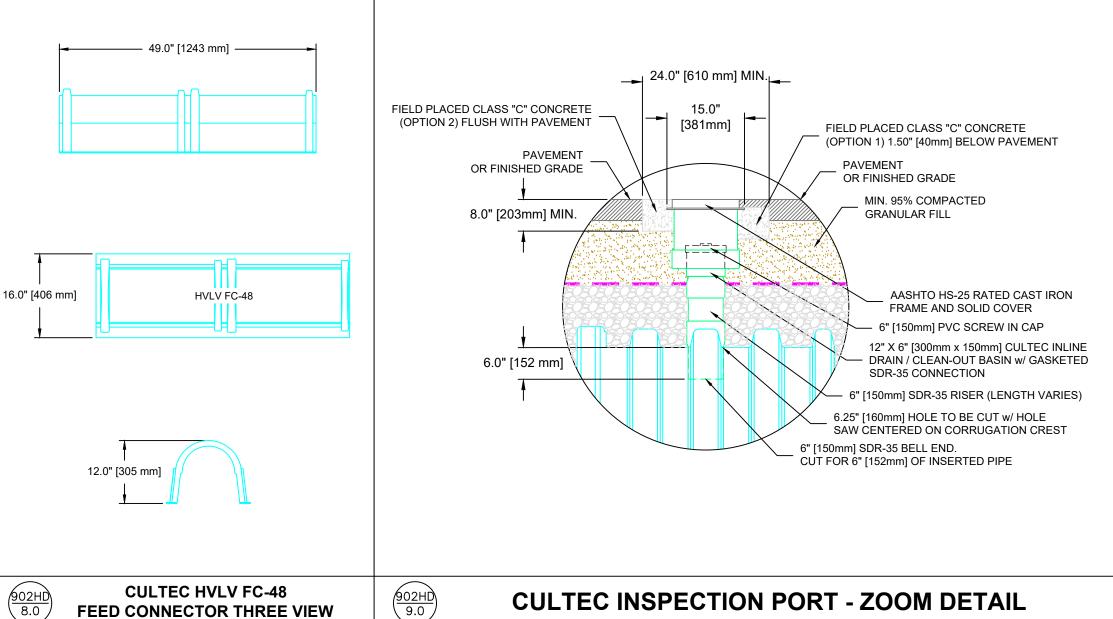
1-WEEK PARKED AASHTO DESIGN TRUCK LOAD THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS' THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING: 3 a THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430

THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75 THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.9

**CULTEC RECHARGER 902HD HEAVY DUTY CROSS SECTION** 

# 902HD 6.0 **CULTEC RECHARGER 902HD HEAVY DUTY TYPICAL INTERLOCK**

MODEL 902HD



INLET/OUTLET PIPE PER ENGINEER DESIGN. PIPE TO BE INSERTED 12.0" [305mm] MIN. INTO CHAMBER — 1-2 INCH [25-50mm] WASHED, CRUSHED STONE SURROUNDING CHAMBERS MAXIMUM PIPE SIZE: 30" [750mm] HDPE PAVEMENT OR FINISHED GRADE 36" [900mm] PVC OPTIONAL TRAFFIC RATED CULTEC NO. 410 NON-WOVEN GEOTEXTILE CULTEC INSPECTION PORT KIT (SEE DETAIL (902HD)) AROUND STONE. TOP AND SIDES MANDATORY BOTTOM PER ENGINEER'S DESIGN PREFERENCE — MIN. 95% COMPACTED FIL - CULTEC RECHARGER 902HD HEAVY DUTY CHAMBER OR GRANULAR SUB-BASE FIGURE 1 CULTEC NO. 4800 WOVEN GEOTEXTILE TO BE PLACED BENEATH — INTERNAL MANIFOLD FEATURE AND BENEATH ALL INLET/OUTLET PIPES (FOR SCOUR PROTECTION) SIDE PORTAL TO BE CUT IN FIELD TO ALLOW FOR — CULTEC HVLV FC-48 FEED CONNECTOR AS NEEDED. CUT SHALL BE WITHIN 1/4" [6mm] TOLERANCE OF SIDE PORTAL TRIM GUIDELINE PROJECT ENGINEER OF RECORD OR GEOTECHNICAL CONSULTANT IS RESPONSIBLE FOR — ENSURING THAT THE REQUIRED BEARING CAPACITY OF SUB-GRADE SOILS HAS BEEN MET

**CULTEC INTERNAL MANIFOLD - OPTIONAL INSPECTION PORT DETAIL** 

SCALE:

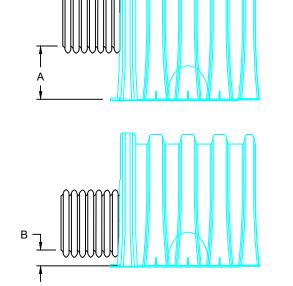
## **CULTEC STORMWATER CHAMBER** PROJECT NO: -03/2020 DESIGNED BY: TECH CHECKED BY: TECH

N.T.S.

SHEET NO:

1 OF 2

PIPE	A	В
6" [150 mm]	N/A	N/A
8" [200 mm]	N/A	N/A
10" [250 mm]	N/A	N/A
12" [300 mm]	29.50" [749 mm]	2.25" [57 mm]
15" [375 mm]	26.50" [673 mm]	2.25" [57 mm]
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# CULTEC, Inc.

P.O. Box 280 878 Federal Road Brookfield, CT 06804 www.cultec.com

PH: (203) 775-4416 PH: (800) 4-CULTEC FX: (203) 775-1462 tech@cultec.com

THIS DRAWING WAS PREPARED TO SUPPORT THE PROJECT ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE ULTIMATE RESPONSIBILITY OF THE PROJECT ENGINEER OF RECORD TO ENSURE THAT THE CULTEC SYSTEM'S DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IT IS THE PROJECT ENGINEER OF RECORD'S RESPONSIBILITY TO ENSURE THAT THE CULTEC PRODUCTS ARE DESIGNED IN ACCORDANCE WITH CULTEC'S MINIMUM REQUIREMENTS. CULTEC DOES NOT APPROVE PLANS, SIZING, OR SYSTEM DESIGNS.

**DETAIL SHEET** TRAFFIC APPLICATION

**CULTEC HVLV FC-48** FEED CONNECTOR THREE VIEW

**RECHARGER 902HD** 

MAX. PIPE: 10" [250mm] HDP 12" [300mm] PVC ZOOM OF SIDE PORTAL SHOWING MAX. PIPE O THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS." THE LOAD CONFIGURATION SHALL INCLUDE: MAXIMUM PERMANENT (50-YEAR) COVER LOAD 1-WEEK PARKED AASHTO DESIGN TRUCK LOAD THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430 THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75 THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.9

# Subsurface Stormwater Management Systems

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- 3. THE END CAP SHALL BE JOINED AT THE BEGINNING AND END OF EACH ROW OF CHAMBERS USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS.
- 4. THE NOMINAL DIMENSIONS OF THE END CAP SHALL BE 48.5 INCHES (1231 MM) TALL, 78 INCHES (1982 MM) WIDE AND 9.7 INCHES (246 MM) LONG. WHEN JOINED WITH A INCHES (157 MM).
- 5. THE NOMINAL STORAGE VOLUME OF THE END CAP SHALL BE 5.34  $\mathrm{FT}^3/\mathrm{FT}$  (0.50  $\mathrm{M}^3/\mathrm{M})$  -WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF AN INTERLOCKED END CAP SHALL BE 2.76  $\text{FT}^3$  / UNIT (0.08  $\text{M}^3$  / UNIT) - WITHOUT STONE.
- 6.MAXIMUM INLET OPENING ON THE END CAP IS 30 INCHES (750 MM) HDPE OR 36 INCHES (900 MM) PVC.
- 7. THE END CAP SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12.

### **CULTEC HVLV FC-48 FEED CONNECTOR PRODUCT SPECIFICATIONS**

### CULTEC HVLV FC-48 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER MODEL 902HD STORMWATER CHAMBERS.

- FEED CONNECTOR PARAMETERS
- 1. THE FEED CONNECTOR SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- 2. THE FEED CONNECTOR SHALL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR
- WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE).
- 3. THE FEED CONNECTOR SHALL BE ARCHED IN SHAPE.
- 4. THE FEED CONNECTOR SHALL BE OPEN-BOTTOMED.
- 5. THE NOMINAL DIMENSIONS OF THE CULTEC HVLV FC-48 FEED CONNECTOR SHALL BE 12 INCHES (305 mm) TALL, 16 INCHES (406 mm) WIDE AND 49 INCHES (1245 mm) LONG.
- 6. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-48 FEED CONNECTOR SHALL BE 0.913 FT<sup>3</sup> / FT (0.085 m<sup>3</sup> / m) - WITHOUT STONE.
- 7. THE HVLV FC-48 FEED CONNECTOR SHALL HAVE 4 CORRUGATIONS.
- 8. THE HVLV FC-48 FEED CONNECTOR MUST BE FORMED AS A WHOLE UNIT HAVING TWO OPEN FND WALLS AND HAVING NO SEPARATE FND PLATES OR SEPARATE FND WALLS. THE UNIT SHALL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
- 9. THE FEED CONNECTOR SHALL BE DESIGNED TO WITHSTAND AASHTO HS-25 DEFINED LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- 10. THE FEED CONNECTOR SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.

### **CULTEC NO. 410™ NON-WOVEN GEOTEXTILE**

CULTEC NO. 410™ NON-WOVEN GEOTEXTILE MAY BE USED WITH CULTEC CONTACTOR® AND RECHARGER® STORMWATER INSTALLATIONS TO PROVIDE A BARRIER THAT PREVENTS SOIL

### **GEOTEXTILE PARAMETERS**

- 1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- 2. THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- 3. THE GEOTEXTILE SHALL HAVE A TYPICAL WEIGHT OF 4.5 OZ/SY (142 G/M). 4. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH VALUE OF 120 LBS (533 N) PER ASTM
- D4632 TESTING METHOD. 5. THE GEOTEXTILE SHALL HAVE AN ELONGATION @ BREAK VALUE OF 50% PER ASTM D4632
- TESTING METHOD. 6. THE GEOTEXTILE SHALL HAVE A MULLEN BURST VALUE OF 225 PSI (1551 KPA) PER ASTM
- D3786 TESTING METHOD. 7. THE GEOTEXTILE SHALL HAVE A PUNCTURE STRENGTH VALUE OF 65 LBS (289 N) PER ASTM
- 8. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE VALUE OF 340 LBS (1513 N) PER ASTM
- 9. THE GEOTEXTILE SHALL HAVE A TRAPEZOID TEAR VALUE OF 50 LBS (222 N) PER ASTM D4533 TESTING METHOD.
- 10. THE GEOTEXTILE SHALL HAVE A AOS VALUE OF 70 U.S. SIEVE (0.212 MM) PER ASTM D4751 TESTING METHOD
- 11. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY VALUE OF 1.7 SEC-1 PER ASTM D4491 TESTING METHOD.
- 12. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATE VALUE OF 135 GAL/MIN/SF (5500 L/MIN/SM) PER ASTM D4491 TESTING METHOD.
- 13. THE GEOTEXTILE SHALL HAVE A UV STABILITY @ 500 HOURS VALUE OF 70% PER ASTM

### **CULTEC NO. 4800™ WOVEN GEOTEXTILE**

CULTEC NO. 4800 WOVEN GEOTEXTILE IS DESIGNED AS A UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE. IT MAY ALSO BE USED AS A COMPONENT OF THE CULTEC SEPARATOR ROW TO ACT AS A BARRIER TO PREVENT SOIL/CONTAMINANT INTRUSION INTO THE STONE WHILE ALLOWING FOR

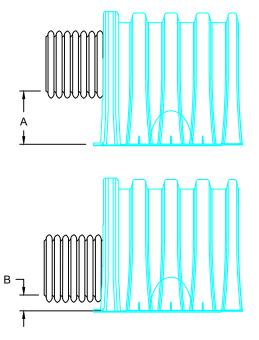
### **GEOTEXTILE PARAMETERS**

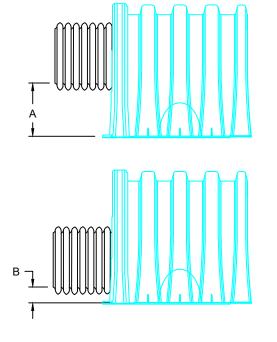
- 1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- 3. THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 550 X 550 LBS (2,448 X 2,448 N) PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A FLONGATION @ BREAK RESISTANCE OF 20 X 20% PER ASTM D4632 TESTING METHOD.
- 5. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE OF 5,070 X 5,070 LBS/FT
- (74 X 74 KN/M) PER ASTM D4595 TESTING METHOD. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 2% STRAIN
- OF 960 X 1,096 LBS/FT (14 X 16 KN/M) PER ASTM D4595 TESTING METHOD. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 5% STRAIN
- OF 2,740 X 2, 740 LBS/FT (40 X 40 KN/M) PER ASTM D4595 TESTING METHOD. 8. THE GEOTEXTILE SHALL HAVE A WIDE WIDTH TENSILE RESISTANCE @ 10% STRAIN OF 4,800 X 4,800 LBS/FT (70 X 70 KN/M) PER ASTM D4595 TESTING
- 9. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 1,700 LBS (7,560
- N) PER ASTM D6241 TESTING METHOD. 10. THE GEOTEXTILE SHALL HAVE A TRAPEZOIDAL TEAR RESISTANCE OF 180 X 180 LBS (801 X 801 N) PER ASTM D4533 TESTING METHOD.
- 11. THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE
- (0.425 MM) PER ASTM D4751 TESTING METHOD. 12. THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.15 SEC-1 PER ASTM
- D4491 TESTING METHOD. 13. THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 11.5 GPM/FT2 (470
- LPM/M2) PER ASTM D4491 TESTING METHOD. 14. THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 80% @ 500 HRS. PER ASTM

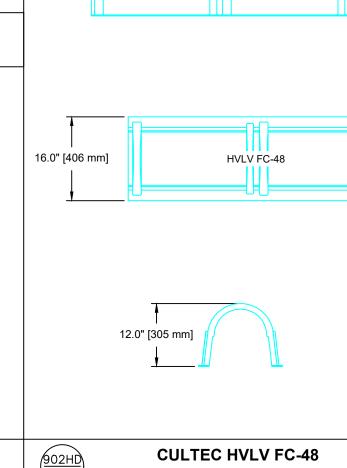
# D4355 TESTING METHOD. **GENERAL NOTES**

PIPE	Α	В
6" [150 mm]	N/A	N/A
8" [200 mm]	N/A	N/A
10" [250 mm]	N/A	N/A
12" [300 mm]	29.50" [749 mm]	2.25" [57 mm]
15" [375 mm]	26.50" [673 mm]	2.25" [57 mm]
18" [450 mm]	23.50" [597 mm]	2.50" [64 mm]
24" [600 mm]	16.50" [420 mm]	3.00" [76 mm]

THE TYPICAL INVERT TABLE ABOVE IS BASED ON THE INSIDE DIAMETER OF STANDARD CORRUGATED PLASTIC PIPE. THE HEAVY DUTY END CAP HAS PRE-MARKED TRIM LINES FOR PIPE DIAMETERS 12" (300mm), 15" (375mm), 18" (450mm) AND 24" (600mm). PIPES OF ANY SIZE AND MATERIAL UP TO 24" MAY BE PLACED AT CUSTOM LOCATIONS AND CUSTOM INVERTS. THE CROWN OF THE PIPE MUST REMAIN A MINIMUM OF 4" (100mm) FROM THE EDGE OF THE HEAVY DUTY END CAP.







902HD 5.0

12.0' [3.66m] MIN.

CULTEC NO. 4800 WOVEN GEOTEXTILE

PLACED BENEATH INLET PIPES

7.5' [2.29m] MIN.

**CULTEC NO. 4800 WOVEN GEOTEXTILE** 

PLACED BENEATH FEED CONNECTORS

NATURALLY COMPACTED FILL -

12.0" [305 mm] MIN. — 78.0" [1982 mm] —

MAXIMUM PERMANENT (50-YEAR) COVER LOAD

1-WEEK PARKED AASHTO DESIGN TRUCK LOAD

- 49.0" [1243 mm] ——

COLLECTION CHAMBERS." THE LOAD CONFIGURATION SHALL INCLUDE:

1.a. INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER

3.a. THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430

THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75

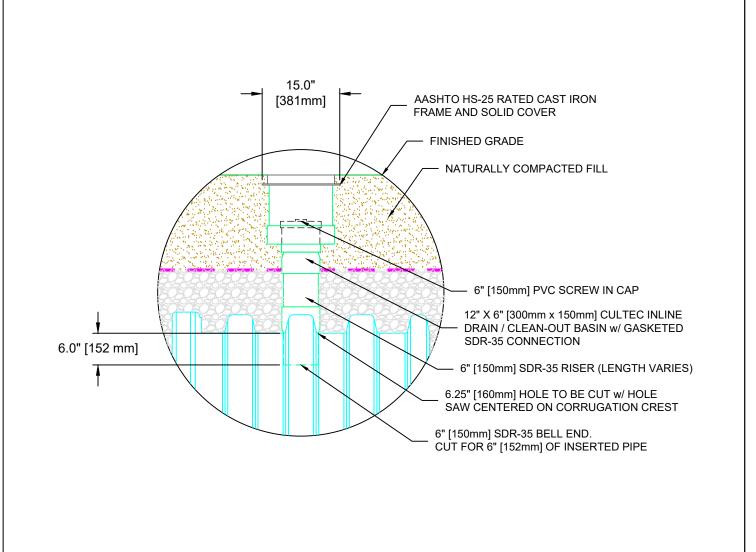
THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95

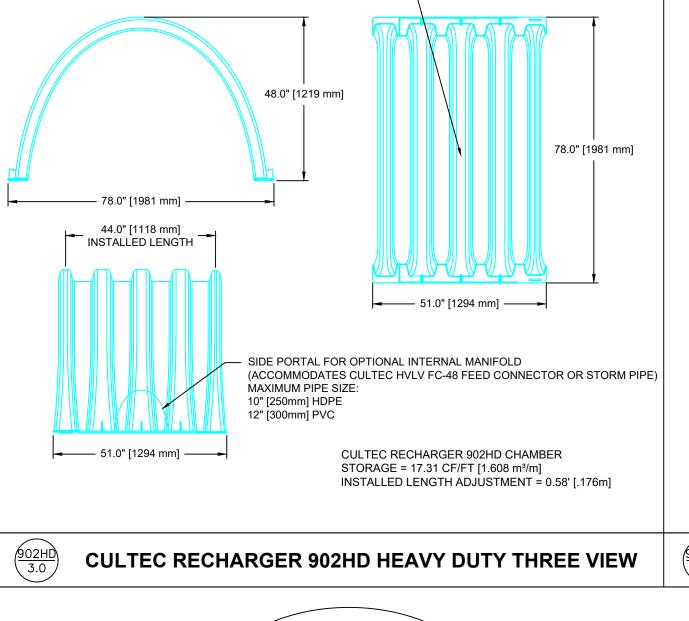
9.0" [229 mm] MIN. —

CULTEC RECHARGER 902HD

HEAVY DUTY CHAMBER

**COVER DEPTH** 





6" [150mm] DIA. INSPECTION PORT TRIM LOCATION —

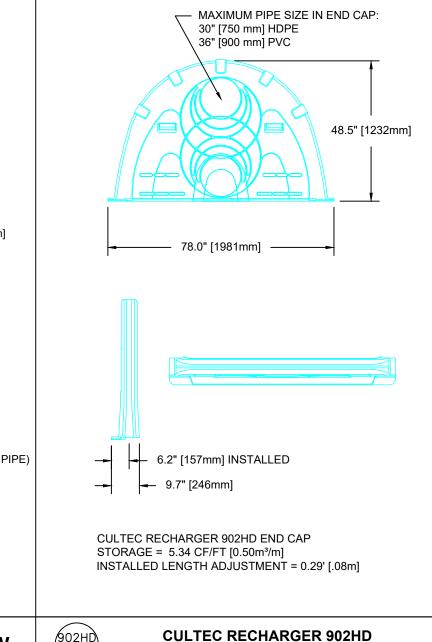
MODEL 902HD END CAP

THE MINIMUM SAFETY FACTOR FOR LIVE LOADS SHALL BE 1.75

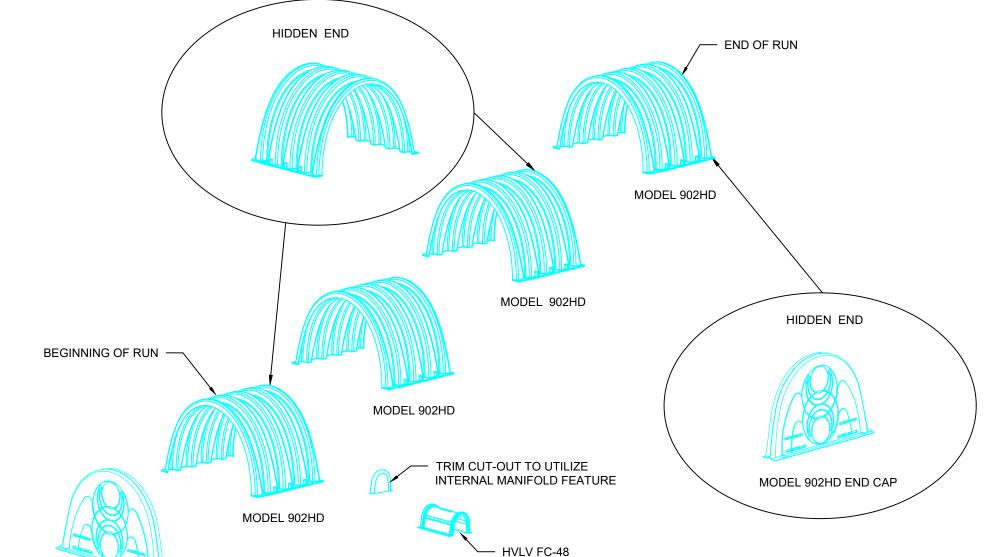
INLET/OUTLET PIPE PER ENGINEER DESIGN.

PIPE TO BE INSERTED 12.0" [305mm] MIN. INTO CHAMBER

902HD 6.0



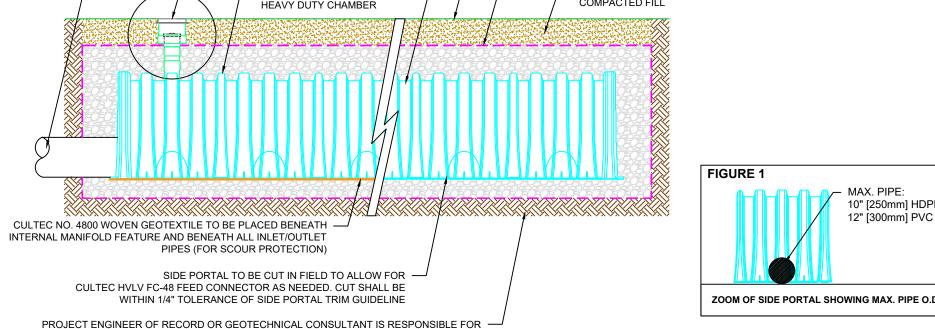
**HEAVY DUTY END CAP THREE VIEW** 



### MAXIMUM PIPE SIZE 30" [750mm] HDPE FINISHED GRADE 36" [900mm PVC CULTEC NO. 410 NON-WOVEN GEOTEXTILE OPTIONAL CULTEC AROUND STONE. TOP AND SIDES MANDATORY, INSPECTION PORT KIT BOTTOM PER ENGINEER'S DESIGN PREFERENCE (SEE DETAIL (902HD) NATURALLY CULTEC RECHARGER 902HD COMPACTED FILI HEAVY DUTY CHAMBER

FEED CONNECTOR

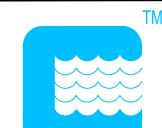
**CULTEC RECHARGER 902HD HEAVY DUTY TYPICAL INTERLOCK** 



ENSURING THAT THE REQUIRED BEARING CAPACITY OF SUB-GRADE SOILS HAS BEEN ME OTES.
THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER 1.a. INSTANTANEOUS AASHTO DESIGN TRUCK LIVE LOAD AT MINIMUM COVER MAXIMUM PERMANENT (50-YEAR) COVER LOA

1-WEEK PARKED AASHTO DESIGN TRUCK LOAD THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING: THE CREEP MODULUS SHALL BE 50-YEAR AS SPECIFIED IN ASTM F3430

THE MINIMUM SAFETY FACTOR FOR DEAD LOADS SHALL BE 1.95 **CULTEC INTERNAL MANIFOLD - OPTIONAL INSPECTION PORT DETAIL** 



Subsurface Stormwater Management Systems

P.O. Box 280 878 Federal Road

PH: (203) 775-4416 PH: (800) 4-CULTEC FX: (203) 775-1462 tech@cultec.com www.cultec.com

THIS DRAWING WAS PREPARED TO SUPPORT THE PROJECT ENGINEER OF RECORD FOR THE PROPOSED SYSTEM. IT IS THE ULTIMATE RESPONSIBILITY OF THE PROJECT ENGINEER OF RECORD TO ENSURE THAT THE CULTEC SYSTEM'S DESIGN IS IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. IT IS THE PROJECT ENGINEER OF RECORD'S RESPONSIBILITY TO ENSURE THAT THE CULTEC PRODUCTS ARE DESIGNED IN ACCORDANCE WITH CULTEC'S MINIMUM REQUIREMENTS. CULTEC DOES NOT APPROVE PLANS, SIZING, OR SYSTEM DESIGNS.

**DETAIL SHEET** NON-TRAFFIC APPLICATION

## **CULTEC STORMWATER CHAMBER** PROJECT NO: -03/2020 DESIGNED BY: TECH CHECKED BY: TECH SCALE: 2 OF 2 SHEET NO: N.T.S.

1-2 INCH [25-50mm] WASHED, CRUSHED STONE SURROUNDING CHAMBERS

# CULTEC, Inc.

Brookfield, CT 06804

**CULTEC RECHARGER 902HD TYPICAL PIPE INVERTS** 

FEED CONNECTOR THREE VIEW

902HD 9.0

PIPE PER ENGINEER DESIGN

**CULTEC RECHARGER 902HD HEAVY DUTY PLAN VIEW** 

SURROUNDING CHAMBERS

PROJECT ENGINEER OF RECORD OR GEOTECHNICAL CONSULTANT IS RESPONSIBLE FOR —

THE CHAMBERS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER

THE CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F3430-20 "STANDARD SPECIFICATION FOR CELLULAR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS"

ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS. THE STRUCTURAL DESIGN OF THE CHAMBERS SHALL INCLUDE THE FOLLOWING

THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE RESISTANCE TO THE LOADS AND LOAD FACTORS AS DEFINED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12, WHEN INSTALLED

**CULTEC RECHARGER 902HD HEAVY DUTY CROSS SECTION** 

CULTEC NO. 4800 WOVEN GEOTEXTILE TO BE PLACED BENEATH INTERNAL MANIFOLD —

FEATURE AND BENEATH ALL INLET/OUTLET PIPES (FOR SCOUR PROTECTION)

ENSURING THAT THE REQUIRED BEARING CAPACITY OF SUB-GRADE SOILS HAS BEEN MET

— 1-2 INCH [25-50mm] WASHED, CRUSHED STONE

- CULTEC HVLV FC-48 FEED CONNECTOR

87.0" [2211 mm] MIN.

CENTER TO CENTER

MAXIMUM PIPE SIZE:

30" [750mm] HDPE

PIPE TO BE INSERTED 12.0 INCHES [305mm] MIN. INTO CHAMBER

**CULTEC INSPECTION PORT - ZOOM DETAIL** 

**RECHARGER 902HD** 

FINISHED GRADE

WHERE SPECIFIED

NATURALLY COMPACTED FILL

 CULTEC NO. 410 NON-WOVEN GEOTEXTILE AROUND STONE. TOP AND SIDES MANDATORY,

CULTEC HVLV FC-48 FEED CONNECTOR

1-2 INCH [25-50mm] WASHED CRUSHED

12.0 INCH [305mm] MIN. WIDTH OF 1-2 INCH

[25-50mm] WASHED CRUSHED STONE BORDER

12.0" [305 mm] MIN.

2.0" [305 mm] MIN

48.0" [1219 mm]

9.0" [229 mm] MII

12.0 INCH [305mm] MIN. DEPTH OF

STONE ABOVE CHAMBERS

CULTEC RECHARGER 902HD

SURROUNDING ALL CHAMBERS

9.0 INCH [229mm] MIN. DEPTH OF

STONE BENEATH CHAMBERS

CULTEC NO. 410 NON-WOVEN GEOTEXTILE

FINISHED GRADE

AROUND STONE. TOP AND SIDES MANDATORY

BOTTOM PER ENGINEER'S DESIGN PREFERENCE

1-2 INCH [25-50mm] WASHED CRUSHED

HEAVY-DUTY CHAMBER

BOTTOM PER ENGINEER'S DESIGN PREFERENCE