

# **CULTEC RECHARGER 180HD SPECIFICATIONS**

CULTEC RECHARGER® 180HD 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

- THE CHAMBERS SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT (203-775-4416 OR 1-800-428-5832)
- THE CHAMBER SHALL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE) WITH A BLACK INTERIOR AND BLUE **EXTERIOR**
- . THE CHAMBER SHALL BE ARCHED IN SHAPE.
- THE CHAMBER SHALL BE OPEN-BOTTOMED.
- THE CHAMBER SHALL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLINGS OR SEPARATE END WALLS.
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER® 180HD SHALL BE 20.5 INCHES (521 MM) TALL, 36 INCHES (914 MM) WIDE AND 7.33 FEET (2.23 M) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER® 180HD SHALL BE 6.33 FEET (1.93 M).
- MAXIMUM INLET OPENING ON THE CHAMBER ENDWALL IS 15 INCHES (375 MM) HDPE. THE CHAMBER SHALL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV® FC-24 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. MAXIMUM ALLOWABLE O.D. IN THE
- SIDE PORTAL IS 12.25 INCHES (311 MM). THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV® FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 MM) TALL, 16 INCHES (406 MM) WIDE AND 24.2 INCHES (614 MM) LONG.
- 10. THE NOMINAL STORAGE VOLUME OF THE RECHARGER® 180HD CHAMBER SHALL BE 3.445 FT3 / FT (0.32 M3 / M) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A SINGLE RECHARGER 180RHD STAND ALONE UNIT SHALL BE 25.25 FT3 (0.72 M3) -WITHOUT STONE, THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER® 180EHD AS AN INTERMEDIATE UNIT SHALL BE 21.81 FT3 (0.62 M3) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF THE LENGTH ADJUSTMENT AMOUNT PER RUN SHALL BE 3.445 FT3 (0.32 M3) - WITHOUT STONE.
- 11. THE NOMINAL STORAGE VOLUME OF THE HVLV® FC-24 FEED CONNECTOR SHALL BE 0.913 FT3 / FT (0.085 M3 / M) - WITHOUT STONE.
- 2. THE RECHARGER® 180HD CHAMBER SHALL HAVE SEVENTY-EIGHT DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNIT'S CORE TO PROMOTE LATERAL
- 13. THE RECHARGER® 180HD CHAMBER SHALL HAVE 14 CORRUGATIONS.

CONVEYANCE OF WATER.

- 14. THE ENDWALL OF THE CHAMBER, WHEN PRESENT, SHALL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE END PLATES CANNOT BE USED WITH
- 15. THE RECHARGER® 180RHD STAND ALONE/STARTER UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL ENDWALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS.
- 6. THE RECHARGER® 180EHD END UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE FULLY OPEN END WALL AND HAVING NO SEPARATE END PLATES OR END WALLS.
- 7. THE HVLV® FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER 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 RECHARGER® 180HD AND ACT AS CROSS FEED CONNECTIONS.
- 18. CHAMBERS MUST HAVE HORIZONTAL STIFFENING FLEX REDUCTION STEPS BETWEEN THE RIBS.
- 19. THE CHAMBER SHALL HAVE A RAISED INTEGRAL CAP AT THE TOP OF THE ARCH IN THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT
- 20. THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION ON THE LARGE RIB END.
- 22. MAXIMUM ALLOWABLE COVER OVER THE TOP OF THE CHAMBER SHALL BE 12.0' (3.66 M). 23. THE CHAMBER SHALL BE DESIGNED AND MANUFACTURED TO MEET THE MATERIAL AND STRUCTURAL REQUIREMENTS OF IAPMO PS 63-2019, INCLUDING RESISTANCE TO

AASHTO H-10 HIGHWAY LIVE LOADS, WHEN INSTALLED IN ACCORDANCE WITH CULTEC'S

INSTALLATION INSTRUCTIONS. 24. THE CHAMBER SHALL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.

- CULTEC HYLY (HIGH VOLUME, LOW VELOCITY) FEED CONNECTOR POLYETHYLENE CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED TO MANIFOLD CULTEC RECHARGER MODEL 180HD CHAMBER SYSTEMS FOR RETENTION, RECHARGING, DETENTION, AND CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

**CULTEC FC-24 FEED CONNECTOR SPECIFICATIONS** 

- 1. THE CHAMBERS SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT (203-775-4416).
- 2. CONTACT CULTEC, INC. AT 203-775-4416 FOR SUBMITTAL PACKAGES AND TO PURCHASE PRODUCT.
- THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC FEED CONNECTOR SHALL BE 12 INCHES TALL. 16 INCHES WIDE. THE HVLV FC-48 IS 54 INCHES LONG. THE HVLV FC-24 IS 24.2 INCHES LONG
- 4. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR SHALL BE 0.819 CF/LF.
- 5 THE CHAMBER SHALL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY
- 6. THE HVLV FC FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS, AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT SHALL FIT INTO THE SIDE PORTALS OF
- 8. HEAVY DUTY UNITS ARE DESIGNED ACCORDING TO AASHTO HS-25 LOAD RATING (40,000 LBS, /AXLE) WHEN BURIED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- HEAVY DUTY UNITS ARE DESIGNATED BY A COLORED STRIPE ALONG THE LENGTH OF THE CHAMBER.
- 10. THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2015 CERTIFIED FACILITY.

POLYETHYLENE (HMWHDPE) WITH A BLACK INTERIOR AND BLUE EXTERIOR.

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

1-800-428-5832)

- 1. THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR
- 2. THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- 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
- 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
- 7. THE GEOTEXTILE SHALL HAVE A PUNCTURE STRENGTH VALUE OF 65 LBS (289 N) PER ASTM D4833 TESTING
- METHOD. 8. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE VALUE OF 340 LBS (1513 N) PER ASTM D6241 TESTING
- METHOD. 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
- 13. THE GEOTEXTILE SHALL HAVE A UV STABILITY @ 500 HOURS VALUE OF 70% PER ASTM D4355 TESTING

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 MAINTENANCE.

- 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.
- THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 550 X 550 LBS (2,448 X 2,448 N) PER ASTM D4632 TESTING METHOD.

4. THE GEOTEXTILE SHALL HAVE A ELONGATION @ BREAK RESISTANCE OF 20 X 20% PER ASTM D4632 TESTING

- 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. 7. 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 METHOD. 9. THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 1,700 LBS (7,560 N) PER ASTM D6241
- 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 D475 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

### INSPECTION PORT KNOCK-OUT 36.0" [914 mm] - 88.0" [2234 mm] ----— 76.0" [1929 mm] INSTALLED — MAXIMUM PIPE SIZE IN END WALL: 15" [375 mm] HDPE — 38.0" [964 mm] — ►I< 38.0" [964 mm] — 15" [375 mm] PVC SIDE PORTAL FOR OPTIONAL INTERNAL MANIFOLD (ACCOMMODATES CULTEC HVLV FC-24 FEED CONNECTOR OR STORM PIPE) 36.0" [914 mm] — 10" [250 mm] HDPI 12" [300 mm] PVC CULTEC RECHARGER 180HD CHAMBER STORAGE = 3.445 FT3 / FT (0.32 M3 / M) INSTALLED LENGTH ADJUSTMENT = 1.0' [306 mm]

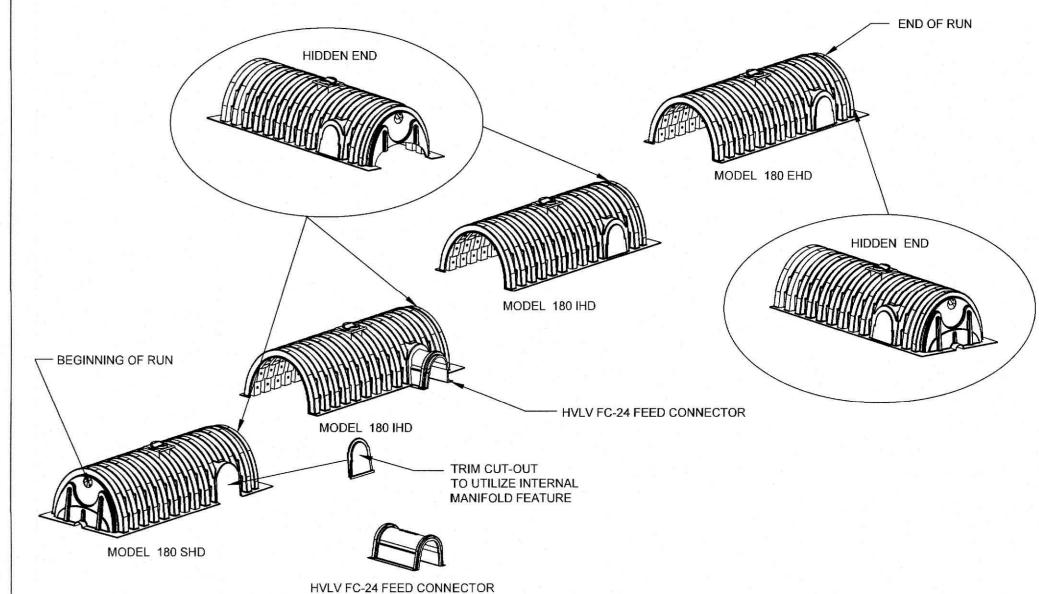
6" [150 mm] DIA.

## **CULTEC RECHARGER 180HD HEAVY DUTY THREE VIEW**

### HVLV FC-24 FEED CONNECTOR WHERE SPECIFIED 1-2 INCH [25-50 mm] WASHED, CRUSHED NATURALLY COMPACTED FILL STONE SURROUNDING CHAMBERS RECHARGER 180HD -HEAVY-DUTY CHAMBER CULTEC NO. 410 NON-WOVEN GEOTEXTILE AROUND STONE, TOP AND SIDES MANDATORY, BOTTOM PER ENGINEER'S DESIGN PREFERENCE FINISHED GRADE 12.0' [3.66m] MAX **COVER DEPTH** - 6.0" [152 mm] MIN 6.0" [152 mm] MIN 20.5" [521 mm] 6.0" [152 mm] MIN. CULTEC NO. 4800 WOVEN GEOTEXTILE TO BE PLACED BENEATH 12.0" [305 mm] MIN. — 36.0" [914 mm] — 36.0" INTERNAL MANIFOLD FEATURE AND BENEATH ALL INLET/OUTLET PIPES (FOR SCOUR PROTECTION) PROJECT ENGINEER OF RECORD OR GEOTECHNICAL CONSULTANT IS RESPONSIBLE FOR ENSURING THAT THE REQUIRED BEARING CAPACITY OF SUB-GRADE SOILS HAS BEEN MET

### LARGE RIB **SMALL RIB** END DETAIL MODEL 180 RHD STARTER UNITS ARE USED AS SINGLE STAND ALONE SECTIONS. MODEL 180 SHD STARTER UNITS ARE USED TO BEGIN A LINE. MODEL 180 IHD INTERMEDIATE UNITS ARE USED AS MIDDLE SECTIONS TO EXTEND THE LENGTH OF A LINE. MODEL 180 EHD END UNITS ARE USED TO END THE LENGTH OF A LINE.

# **CULTEC RECHARGER 180HD HEAVY DUTY END DETAIL INFORMATION** END OF RUN

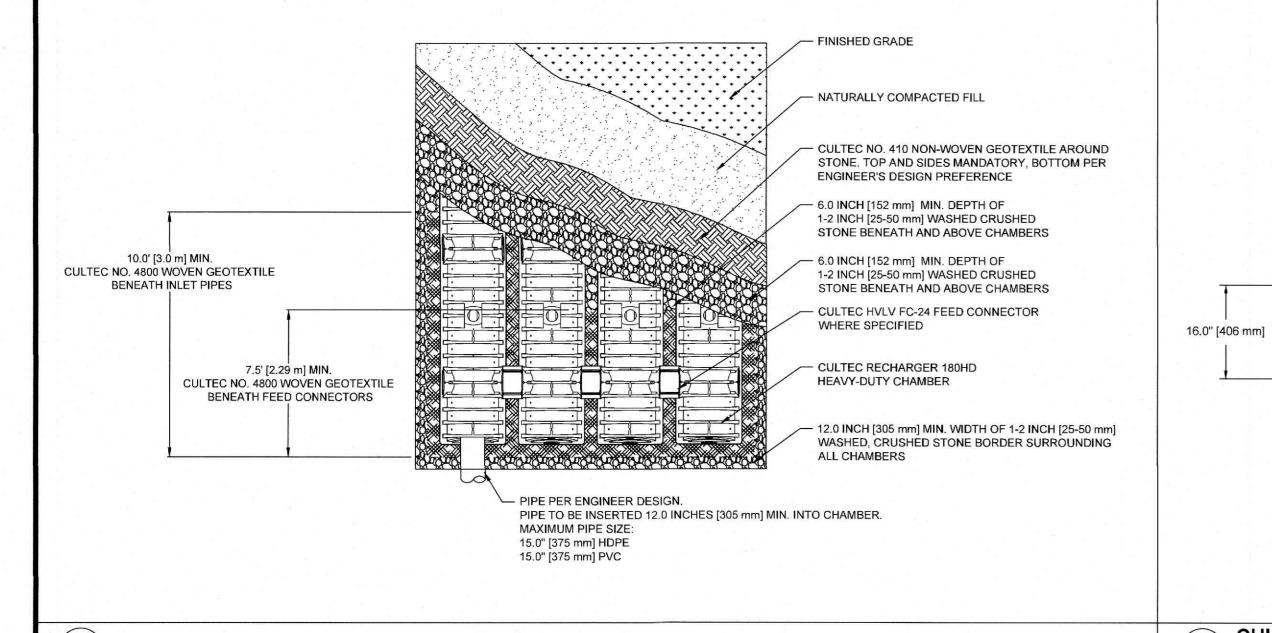


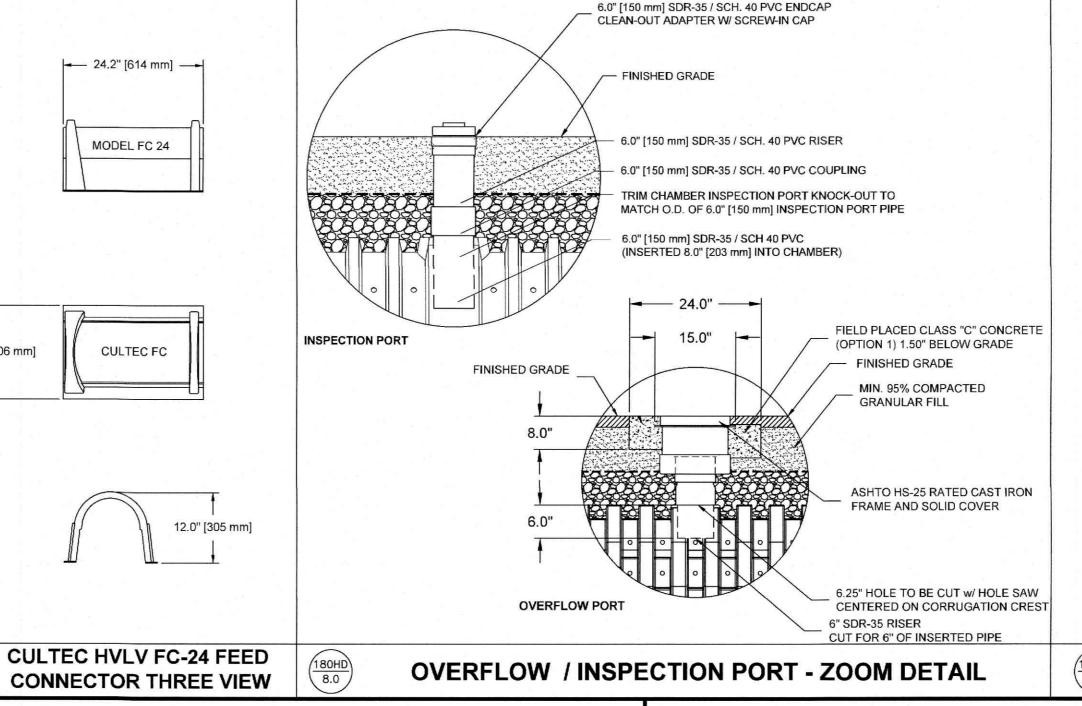
### 14. THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 80% @ 500 HRS, PER ASTM D4355 TESTING METHOD. (180HD) **GENERAL NOTES CULTEC RECHARGER 180HD HEAVY DUTY CROSS SECTION**

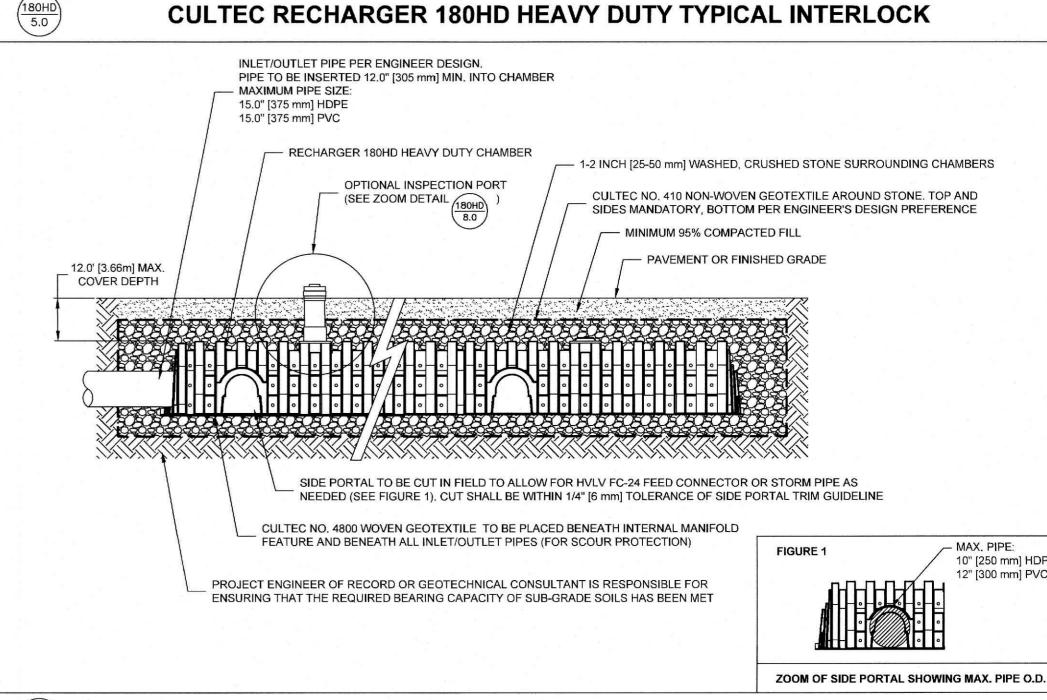
24.2" [614 mm] ---

MODEL FC 24

CULTEC FC







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

# **CULTEC RECHARGER 180HD HEAVY DUTY PLAN VIEW** CULTEC, Inc.

Subsurface Stormwater Management Systems

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

RECHARGER 180HD DETAIL SHEET NON-TRAFFIC APPLICATION

### **CULTEC STORMWATER CHAMBER** PROJECT NO: 2019 CULTEC, INC CHECKED BY: TECH DRAWN BY: SHEET NO: SCALE: 1 OF 1 N.T.S.