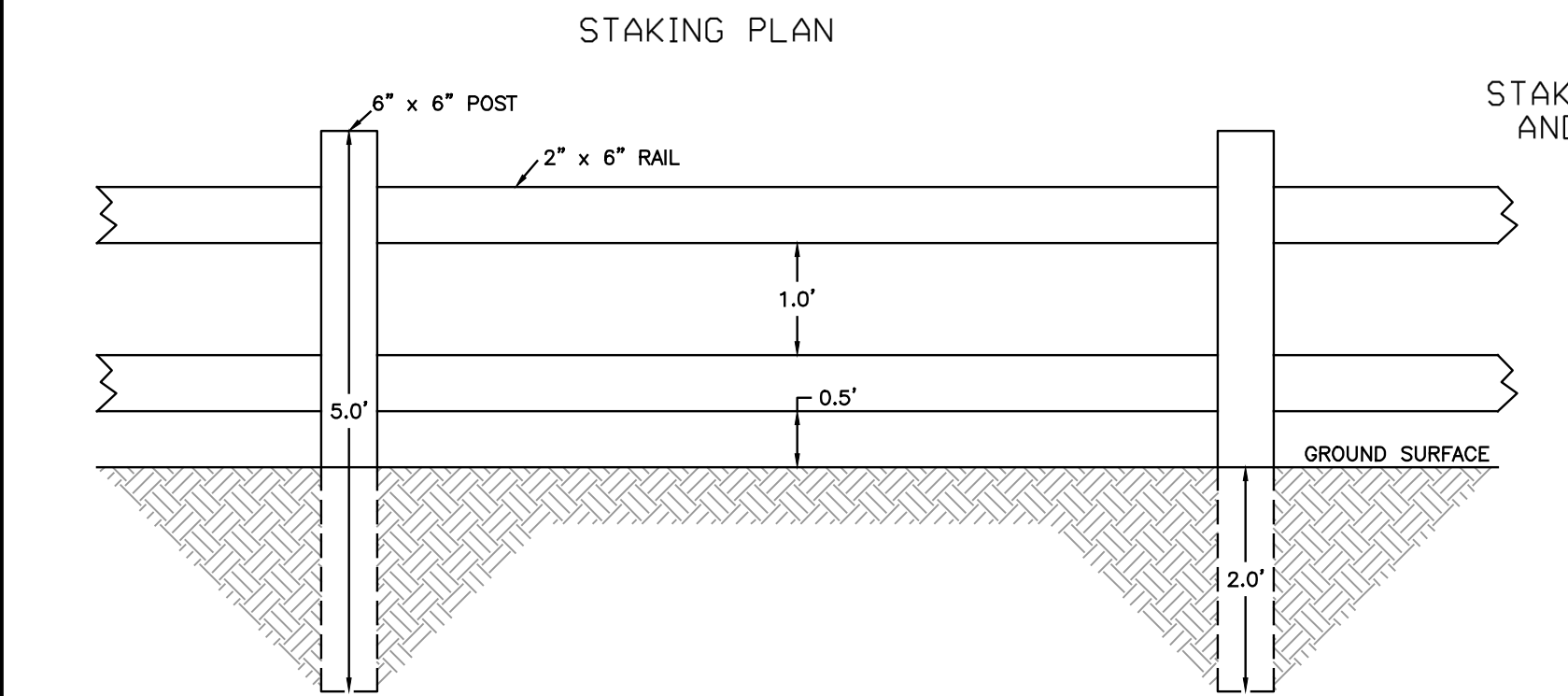
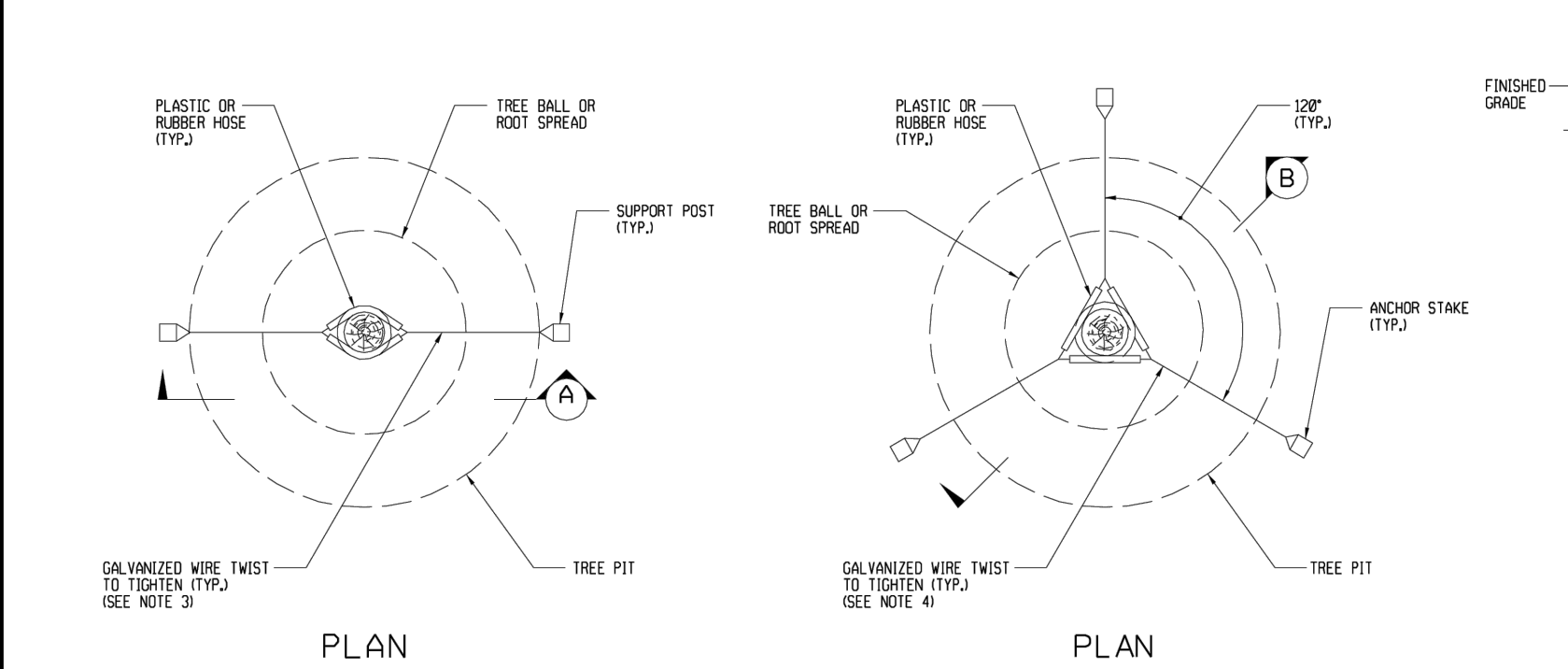
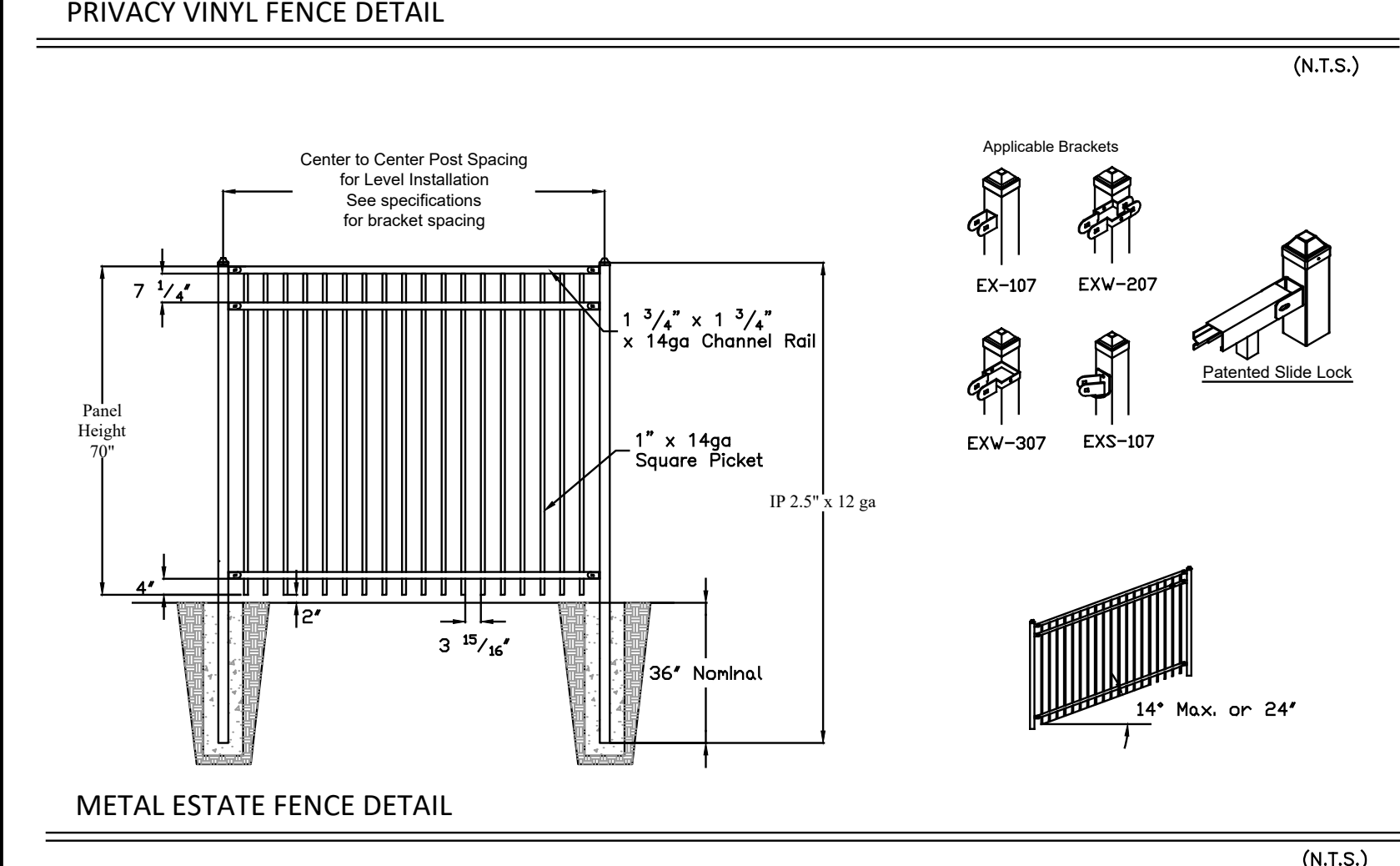
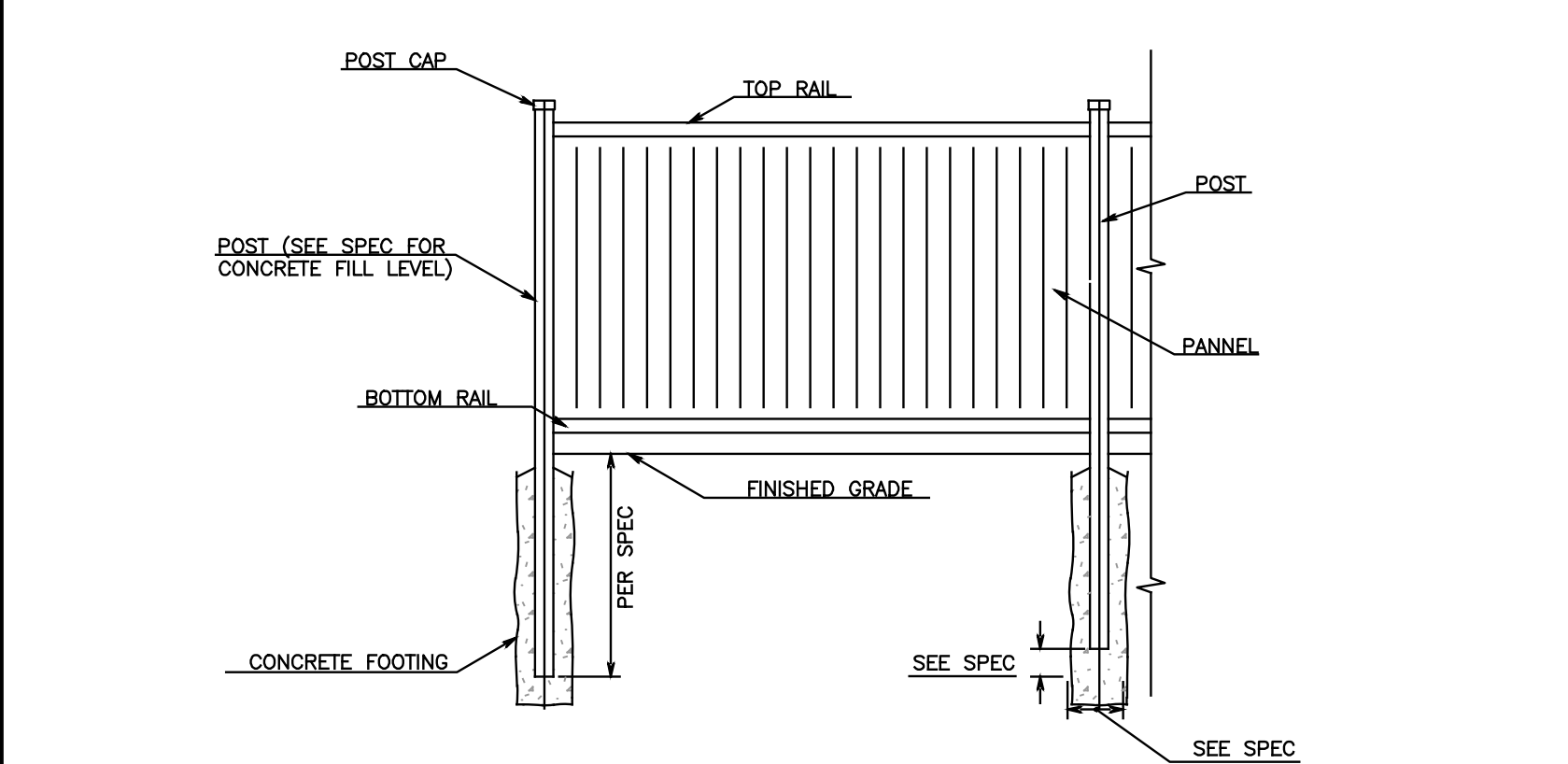


NOTE:
USE 3 POSTS FOR STAKING DECIDUOUS TREES 3" CALIPER OR GREATER
AND EVERGREEN TREES 8" HIGH OR GREATER. USE 2 POSTS FOR STAKING
DECIDUOUS TREES LESS THAN 3" CALIPER AND EVERGREEN TREES LESS
THAN 8' HIGH.

GUYING PLAN



SPLIT RAIL VINYL FENCE DETAIL



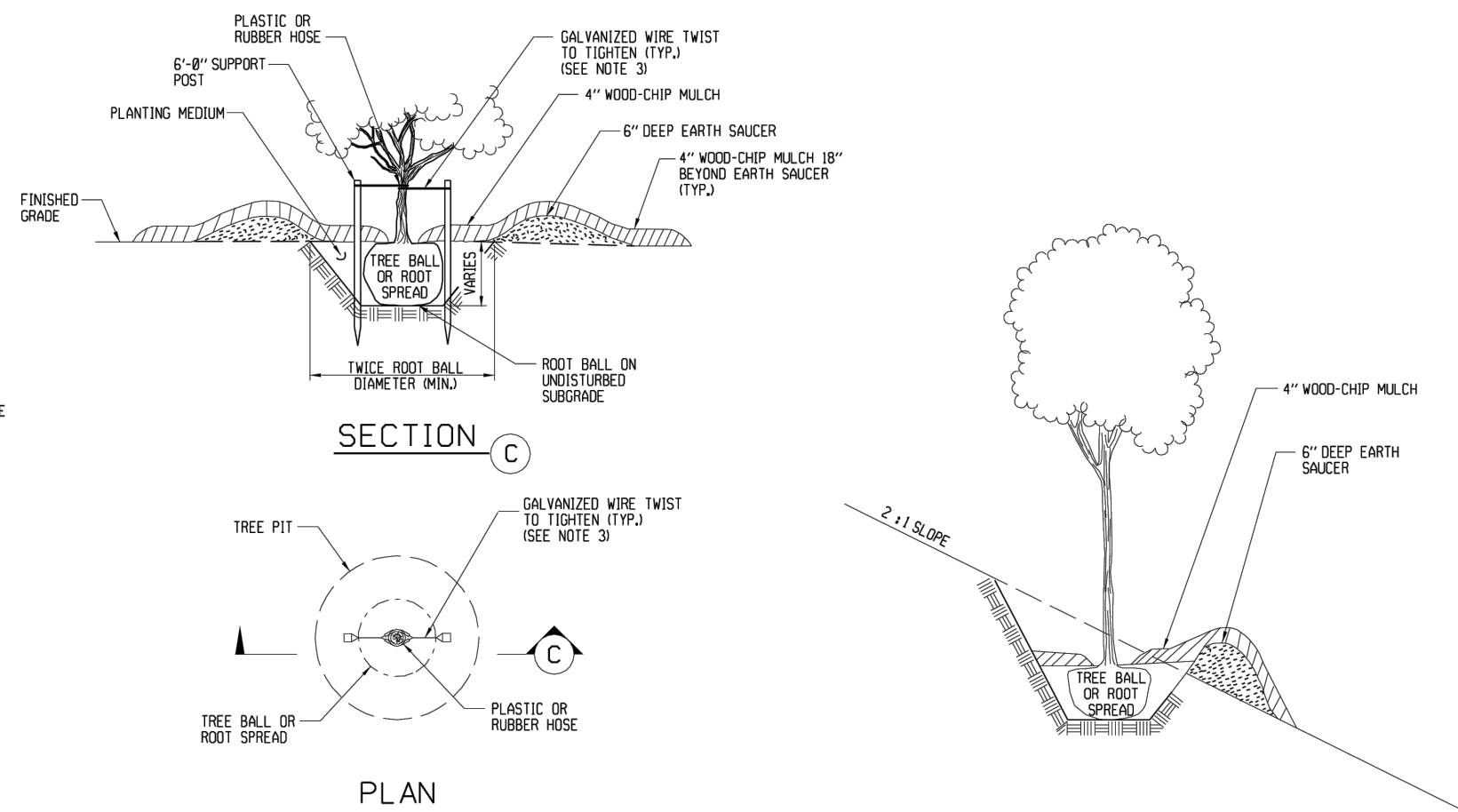
EXAMPLES OF MINIMUM SIZE OF ROOT BALL FOR NURSERY GROWN PLANTS.

CALIPER INCHES	BALL DIAMETER INCHES	PLANTING PIT SIZE INCHES
-	8	15
1/2	12	24
3/4	14	28
1	16	32
1 1/2	20	48
2	24	48
2 1/2	28	56
3	32	64
3 1/2	38	76
4	42	84
5	54	98
6+		

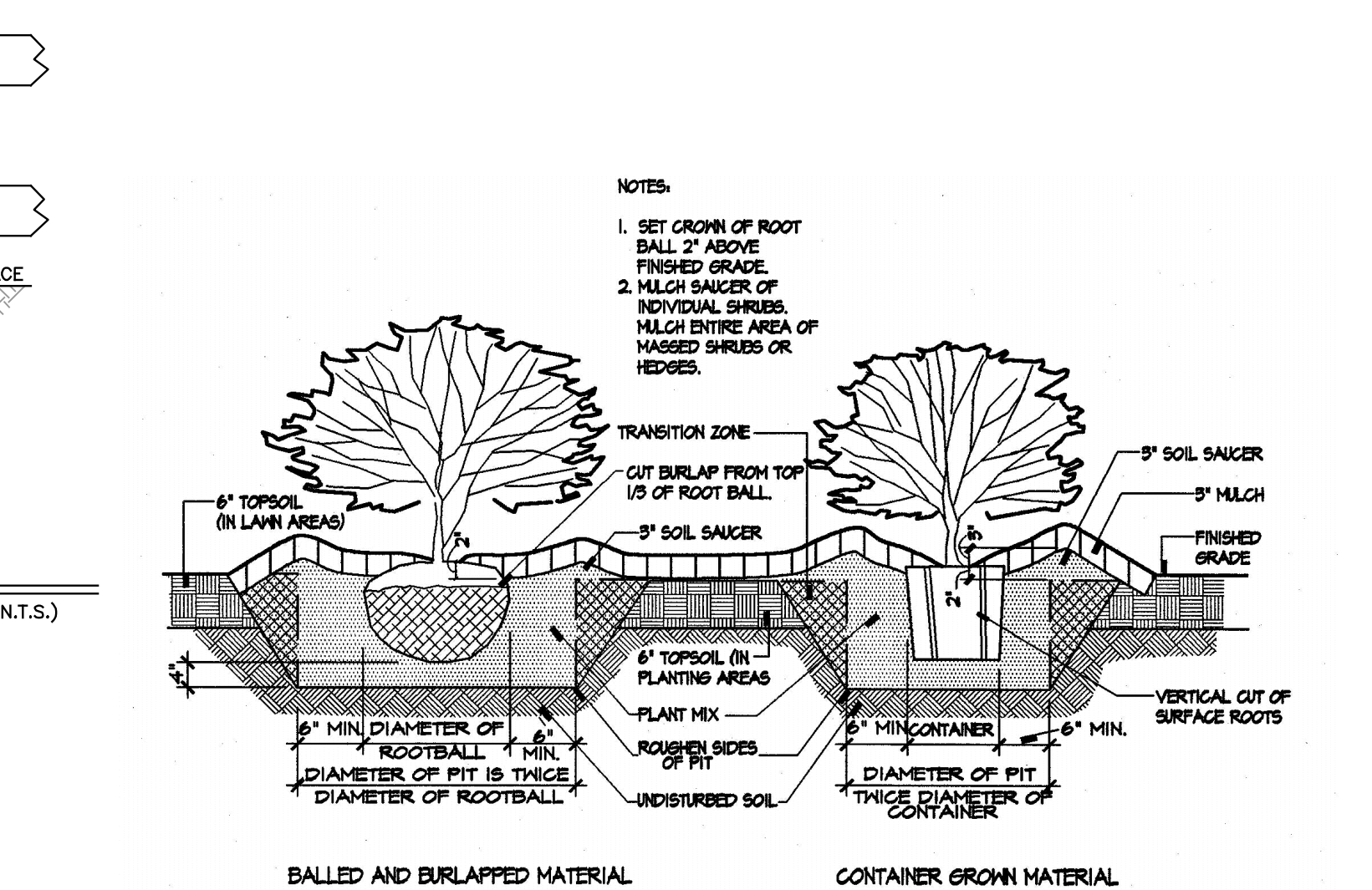
* THE CALIPER OF THE TRUNK IS MEASURED 6" ABOVE THE GROUND UP TO AND INCLUDING 4" SIZES AND 12" ABOVE THE GROUND FOR LARGER SIZES OR AS SPECIFIED IN THE MOST RECENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERMEN.

** TREES GREATER THAN OR EQUAL TO 6" CALIPER SHALL HAVE A ROOT BALL DIAMETER EQUAL TO 18" PER INCH OF TRUNK CALIPER. A 7" CALIPER TREE SHOULD HAVE A ROOT BALL DIAMETER EQUAL TO 78".

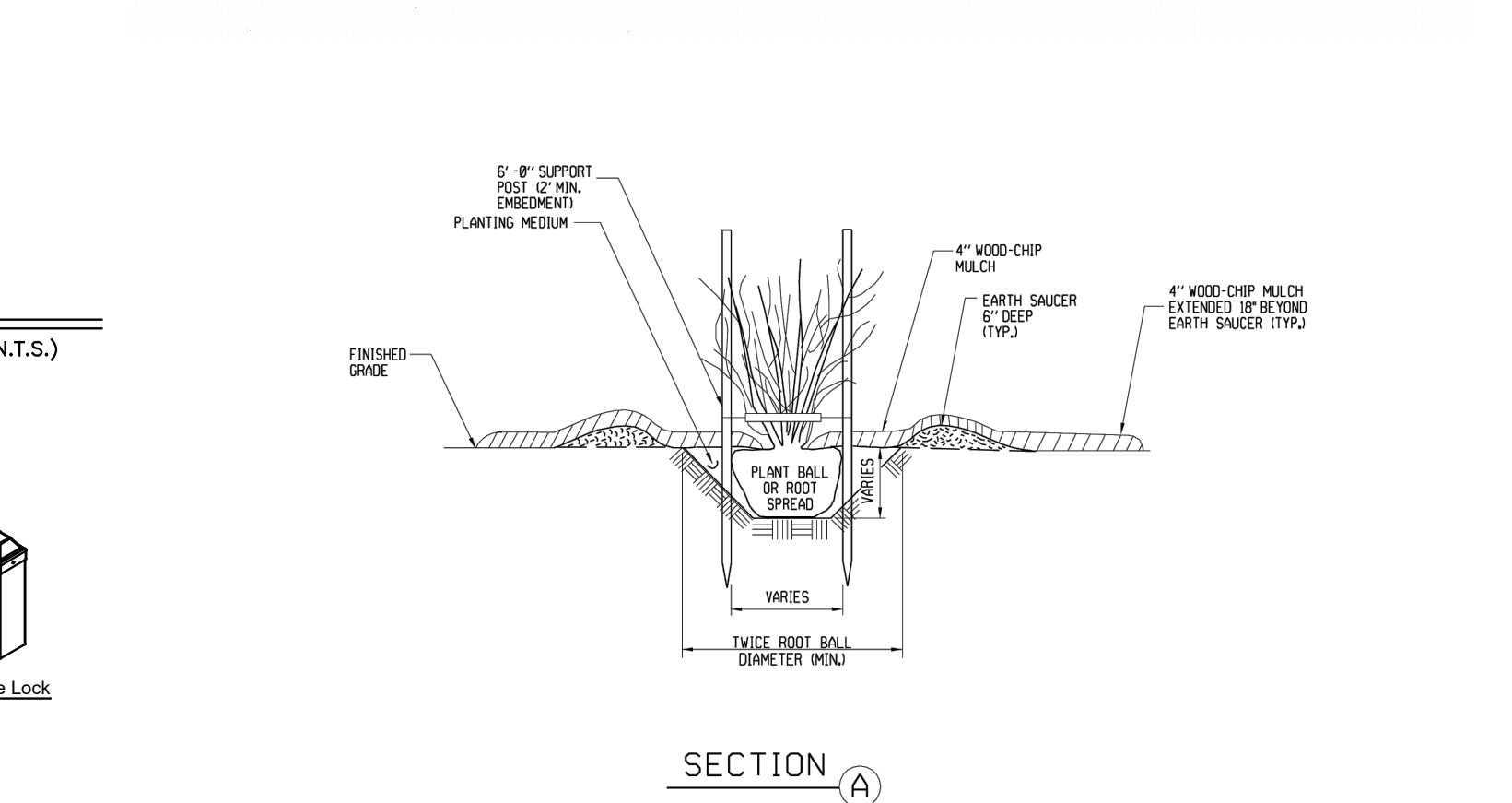
- Notes:
1. THE PLANTING PIT SIZE SHALL BE TWICE THE DIAMETER OF THE ROOT BALL IN WIDTH AND 2" LESS THAN THE HEIGHT OF THE ROOT BALL.
 2. ALL EXTERIOR PACKAGING MATERIAL APPLIED TO PLANTS SHALL BE REMOVED AFTER THE PLANT IS LOCATED IN THE PLANTING PIT, CUT AND REMOVE TWINE, BURLAP OR WIRE BASKETS FROM THE TOP 2/3RDS OF THE ROOT BALL.
 3. USE DOUBLE STRAND NO. 12 WIRE FOR DECIDUOUS TREES GREATER THAN OR EQUAL TO 3" CALIPER AND USE DOUBLE STRAND NO. 18 WIRE FOR EVERGREEN TREES GREATER THAN OR EQUAL TO 8" CALIPER.
 4. TREE TRUNK WRAPPING MATERIAL SHALL BE USED AS DIRECTED BY THE ENGINEER.
 5. PLANTING PITS FOR INDIVIDUAL SHRUBS ON SLOPES SHALL BE THREE TIMES THE DIAMETER OF THE ROOT BALL IN WIDTH.



STAKING PLAN FOR LOW BRANCHING DECIDUOUS AND EVERGREEN TREES FROM 5' TO 8' HIGH.



Plant Pit For Shrubs

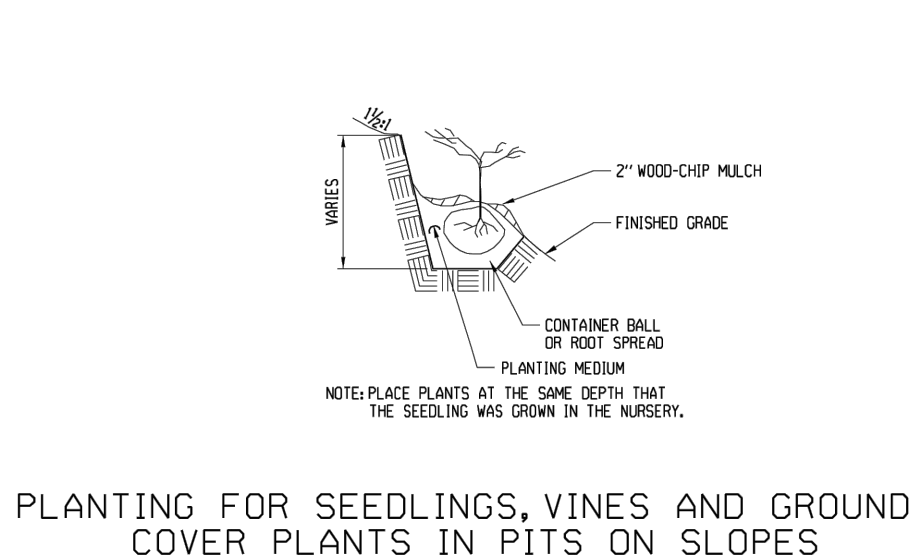
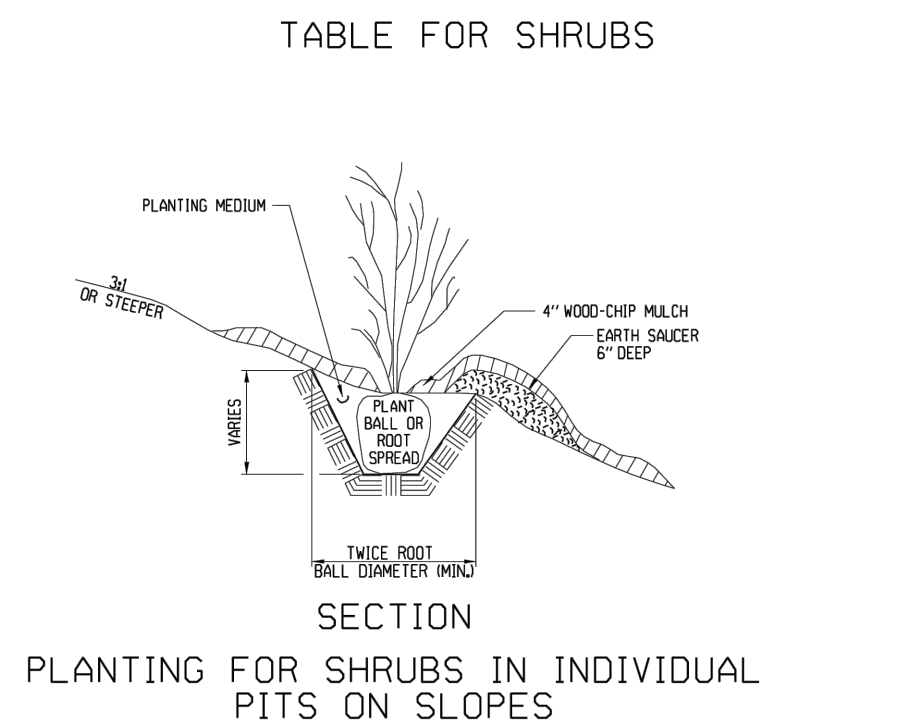


EXAMPLES OF MINIMUM CONTAINER SIZES FOR NURSERY GROWN PLANTS.

CALIPER INCHES	HEIGHT+ FEET	CONTAINER SIZE GALLONS
-	1	0.7-1.1
1/2	2	0.7-1.1
3/4	3	0.7-1.1
1	4	1.4-2.0
1 1/2	5	3.4-4.2
2	6	4.7-5.4
2 1/2	7	5.8-7.8
3	8	9.8-11.5
3 1/2	9	12.8-16.8
4	10	25.8-29.7
5	11	25.8-29.7

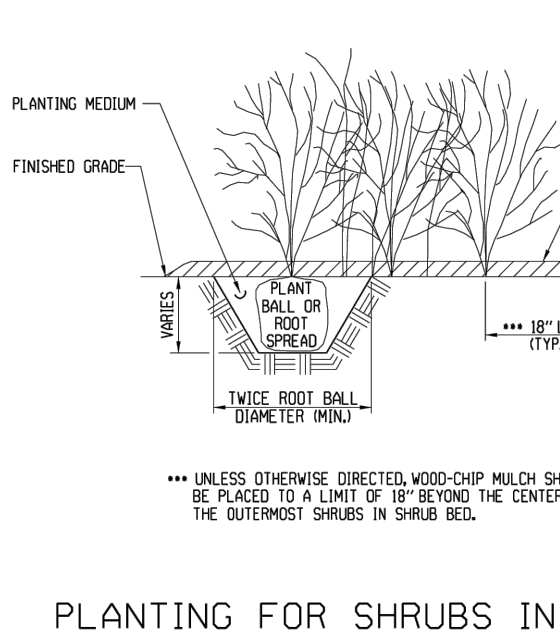
* THE CALIPER IS MEASURED 4" ABOVE GROUND LEVEL.

** ONLY DECIDUOUS SHRUBS ARE INCLUDED IN THIS TABLE. EVERGREEN SHRUBS ARE MEASURED BY HEIGHT. BALL CONTAINER SIZE DEPENDS ON BOTH SIZE AND SHAPE AND ARE GENERALLY 1 TO 2 SIZES LARGER THAN DECIDUOUS PLANTS.

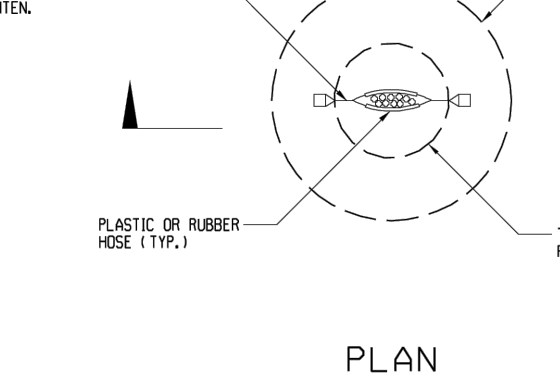


PLANTING FOR SEEDLINGS, VINES AND GROUND COVER PLANTS IN PITS ON SLOPES

- Notes:
1. THE PLANTING PIT SIZE SHALL BE TWICE THE DIAMETER OF THE ROOT BALL IN WIDTH AND 2" LESS THAN THE HEIGHT OF THE ROOT BALL.
 2. ALL EXTERIOR PACKAGING MATERIAL APPLIED TO PLANTS SHALL BE REMOVED AFTER THE PLANT IS LOCATED IN THE PLANTING PIT, CUT AND REMOVE TWINE, BURLAP OR WIRE BASKETS FROM THE TOP 2/3RDS OF THE ROOT BALL.
 3. USE DOUBLE STRAND NO. 12 WIRE FOR DECIDUOUS TREES GREATER THAN OR EQUAL TO 3" CALIPER AND USE DOUBLE STRAND NO. 18 WIRE FOR EVERGREEN TREES GREATER THAN OR EQUAL TO 8" CALIPER.
 4. TREE TRUNK WRAPPING MATERIAL SHALL BE USED AS DIRECTED BY THE ENGINEER.
 5. PLANTING PITS FOR INDIVIDUAL SHRUBS ON SLOPES SHALL BE THREE TIMES THE DIAMETER OF THE ROOT BALL IN WIDTH.



PLANTING FOR SHRUBS IN BEDS



STAKING FOR MULTI-STEMMED DECIDUOUS TREES FROM 5' TO 10' HIGH

Double Unit Configuration

Scale: 1" = 10'

Triple Unit Configuration

Scale: 1" = 10'

PLANT PALETTE OPTIONS (NORTH/WEST ORIENTATION)

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
⊗	AZALEA VISCOSUM "LOLLIPOP"	LOLLIPOP AZALEA	3 GAL.	5' O.C.
⊗	ILEX x MESERVEAE "BLUE PRINCESS" AND "BLUE PRINCE"	BLUE PRINCESS & PRINCE HOLLY	3 GAL.	5' O.C.
⊗	TAXUS CUSPIDATA "NANA PYRAMIDALIS"	UPRIGHT NANA YEW	3 GAL.	5' O.C.
⊙	CLETHRA ALNIFOLIA "RUBY SPICE"	RUBY SPICE SUMMERSWEET	3 GAL.	4' O.C.
⊙	ILEX GLABRA "SHAMROCK"	SHAMROCK INKBERRY	3 GAL.	4' O.C.
⊙	PIERIS x BROUWER'S BEAUTY	BROUWER'S BEUTY ANDROMEDA	3 GAL.	4' O.C.
⊙	ITEA VIRGINICA "LITTLE HENRY"	"LITTLE HENRY" SWEETSPICE	3 GAL.	3' O.C.
⊙	KALMIA MYRTIFOLIA "LITTLE LINDA"	MINIATURE MOUNTAIN LAUREL	3 GAL.	3' O.C.
⊙	RHODODENDRON "PURPLE GEM"	PURPLE GEM RHODODENDRON	3 GAL.	3' O.C.
⊙	HEMEROCALLIS "HAPPY RETURNS"	HAPPY RETURNS DAYLILY	1 GAL.	2' O.C.
⊙	HOSTA "GUACAMOLE"	GUACAMOLE HOSTA	1 GAL.	2' O.C.
⊙	LIRIOPE MUSCARI "BIG BLUE"	BIG BLUE LILY TURF	1 GAL.	2' O.C.

PLANT PALETTE OPTIONS (SOUTH/EAST ORIENTATION)

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
⊗	HIBISCUS SYRIACUS "VIOLET SATIN"	VIOLET SATIN ROSE OF SHARON	5 GAL.	5' O.C.
⊗	JUNIPERUS COMMUNIS "GOLD CONE"	GOLD CONE COMMON JUNIPER	3 GAL.	5' O.C.
⊗	PRUNUS CISTENA	PURPLE LEAF SAND CHERRY	3 GAL.	5' O.C.
⊙	FOTHERGILLA MAJOR "MT. AIRY"	MT. AIRY FOTHERGILLA	3 GAL.	4' O.C.
⊙	ILEX CRENATA "STEEDS"	STEED'S UPRIGHT JAPANESE HOLLY	3 GAL.	4' O.C.
⊙	PHYSOCARPUS OPULIFOLIUS "SUMMER WINE"	SUMMER WINE COMMON NINEBARK	3 GAL.	4' O.C.
⊙	AZALEA "GIRARDS" FUCHSIA"	GIRARDS' FUCHSIA AZALEA	3 GAL.	3' O.C.
⊙	PINUS STROBUS "SOFT TOUCH"	SOFT TOUCH DWARF WHITE PINE	3 GAL.	3' O.C.
⊙	MICROBIOTA DECUSSATA	SIBERIAN CARPET CYPRESS	3 GAL.	3' O.C.
⊙	LEUCANTHEMUM x SUPERBUM "BECKY"	BECKY SHASTA DAISY	1 GAL.	2' O.C.
⊙	NEPETA FAASSENII "WALKERS LOW"	NEPETA FAASSENII "WALKERS LOW"	1 GAL.	2' O.C.
⊙	PENNETSETUM ALOPECUROIDES "HAMELN"	DWARF FOUNTAIN GRASS	1 GAL.	2' O.C.

Model Unit Landscaping Plan

Land of
Little House Living LLC
#1676 & #1688 Berlin Turnpike
(Connecticut Route #15)
Berlin, Connecticut

Project no.:	23-100	Date:	12/05/23	Scale:	NTS
Work map:	CJULIANO	Checked:	ZGEORGINA	Sheet:	6 of 18
Final map:	ZGEORGINA	Released:	CJULIANO	Revision:	A
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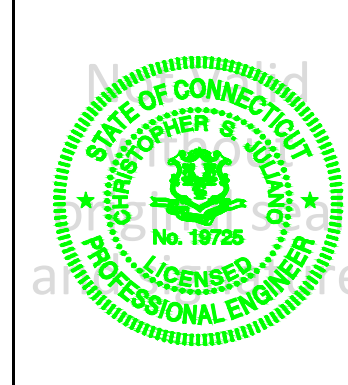
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Christopher S. Juliano PELS #19725

REVISIONS	
DATE	DESCRIPTION
12/11/23	TOWN COMMENTS

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Engineers & Surveyors
Established 1973
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Wallingford, Connecticut 06492
Voice (203)265-1489 Fax (203)949-1523
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SITE PLAN NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH TOWN OF BERLIN, AND STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS IN THE ABOVE REFERENCED HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
2. THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING PERMITS REQUIRED BY ALL APPLICABLE GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL TOWN CONSTRUCTION PERMITS, INCLUDING DOT PERMITS AND SEWER AND WATER CONNECTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
3. REFER TO OTHER PLANS, DETAILS AND NOTES FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE SITE ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE LOCAL CONSTRUCTION MANAGER PRIOR TO BIDDING.
4. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS AND PLAN SPECIFICATIONS TO THE OWNER AND SITE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 BUSINESS DAYS FOR REVIEW.
5. THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION CONTROL PLAN.
6. THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS AND CONSTRUCTION DETAILS OF BUILDING.
7. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED, EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING WITH FURTHER WITH WORK IN THIS AREA.
8. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITIES. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
9. ALL SITE DIMENSIONS ARE REFERENCED TO THE FACE OF CURBS OR EDGE OF PAVING UNLESS OTHERWISE NOTED. ALL BUILDING DIMENSIONS ARE REFERENCED TO THE OUTSIDE FACE OF THE FOUNDATION.
10. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES, TRAFFIC CONTROLLERS AND UNIFORMED TRAFFIC OFFICERS AS REQUIRED, ORDERED BY THE ENGINEER OR REQUIRED BY THE LOCAL GOVERNING AUTHORITIES.
11. REFER TO DETAIL SHEETS FOR PAVEMENT, CURBING, AND SIDEWALK INFORMATION.
12. TRAFFIC CONTROL SIGNAGE SHALL CONFORM TO THE STATE DOT STANDARD DETAIL SHEETS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. SIGNS SHALL BE INSTALLED PLUMB WITH THE EDGE OF THE SIGN 2 FEET OFF THE FACE OF THE CURB, AND WITH 7 FOOT VERTICAL CLEARANCE UNLESS OTHERWISE DETAILED OR NOTED.
13. THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
14. THE CONTRACTOR SHALL SUBMIT A SHOP DRAWING OF THE PAINT MIXTURE PRIOR TO STRIPING.
15. PAVEMENT MARKING KEY: PAINT FOR TRAFFIC MARKINGS SHALL BE EPOXY IN ACCORDANCE WITH CT DOT FORM 818.
- | | |
|----------|---|
| 4" SYDL | 4" SOLID YELLOW DOUBLE LINE |
| 4" SYL | 4" SOLID YELLOW LINE |
| 4" SWL | 4" SOLID WHITE LINE |
| 12" SWSB | 12" SOLID WHITE STOP BAR |
| 4" BWL | 4" BROKEN WHITE LINE 10' STRIPE 30' SPACE |
16. PARKING SPACES SHALL BE STRIPED WITH 4 SWL. HATCHED AREA SHALL BE STRIPED WITH 4" SWL AT A 45°ANGLE. 2' ON CENTER. HATCHING STIPPLES, AND STRIPING FOR HANDICAPPED SPACES SHALL BE PAINTED BLUE IF REQUIRED BY BUILDING DEPARTMENT FOR RESIDENTIAL DEVELOPMENTS. OTHER MARKINGS SHALL BE PAINTED WHITE OR AS NOTED.
17. THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE ENGINEER.
18. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
19. THE ARCHITECT OR ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ARCHITECT AND ENGINEER HAVE NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
20. THE CONTRACTOR SHALL COMPLY WITH CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
21. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, SITE ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING PROCESS.
22. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT "1(800)922-4455" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
23. PAVEMENT MARKINGS SHALL BE HOT APPLIED TYPE IN ACCORDANCE WITH CT DOT SPECIFICATIONS, UNLESS WHERE EPOXY RESIN PAVEMENT MARKINGS ARE INDICATED.
24. CT DOT ENCRoACHMENT PERMIT SHALL BE OBTAINED BY CONTRACTOR WHO SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC PROTECTION NECESSARY FOR THE WORK PRIOR TO CONSTRUCTION.
25. AN EROSION CONTROL BOND IS REQUIRED TO BE POSTED BY THE CONTRACTOR BEFORE THE START OF ANY ACTIVITY ON OR OFF SITE.
26. THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
27. THESE PLANS ARE FOR PERMITTING.
28. THE SITE IS PROPOSED TO BE SERVICED BY PUBLIC WATER AND PUBLIC SEWER.
29. 12" SWSB (STOP BAR) AND 4" SYDL AND SWL PAVEMENT MARKINGS LOCATED IN DRIVEWAYS AND IN STATE HIGHWAY SHALL BE EPOXY RESIN TYPE ACCORDING TO CT DOT SPECIFICATIONS.
30. FIRE LANES SHALL BE ESTABLISHED AND PROPERLY DESIGNATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN FIRE MARSHAL.
31. THE APPLICANT WILL PROVIDE AND MAINTAIN ADEQUATE SIGHT DISTANCES AT ALL DRIVEWAY INTERSECTIONS. CURRENT STATE OF CONNECTICUT HIGHWAY DESIGN STANDARDS WILL APPLY TO REQUIRED SIGHT DISTANCES.
32. THE APPLICANT WILL REGISTER BUILDING ALARMS PER TOWN AS REQUIRED BY ORDINANCE.
33. THE APPLICANT WILL CONTROL DUST AND DEBRIS ON THE SURROUNDING ROADWAYS DURING CONSTRUCTION. PROPER SAFETY PRECAUTIONS AND EQUIPMENT ARE TO BE UTILIZED WHEN WORKING ON PUBLIC ROADWAYS AND ARE THE APPLICANT'S RESPONSIBILITY TO PROVIDE.
34. THE APPLICANT WILL OBTAIN A CONNECTICUT DEPARTMENT OF TRANSPORTATION ENCROACHMENT PERMIT FOR ANY WORK DONE IN THE STATE RIGHT OF WAY.
35. THE APPLICANT MUST COMPLY WITH CONNECTICUT DEPARTMENT OF TRANSPORTATION STIPULATIONS/REGULATIONS WHEN APPLICABLE.
36. ALL DISTURBED PAVEMENT MARKINGS MUST BE REPLACED WITH EPOXY PAINT.
37. THERE WILL BE NO OUTDOOR STORAGE ON THIS SITE.
38. AN AS-BUILT PLAN MUST BE SUBMITTED PRIOR TO BOND RELEASE.
39. ANY PROPOSED SIGNAGE OR FENCING WILL REQUIRE THE FILING OF APPLICATIONS WITH THE ZONING ENFORCEMENT OFFICER.
40. CONSTRUCTION HOURS TO COMPLY WITH THE TOWN OF BERLIN NOISE ORDINANCE, CHAPTER 180 OF THE BERLIN TOWN CODE. THE ORDINANCE IS APPLICABLE ONCE BUILDINGS ARE OCCUPIED.
41. PER THE TOWN ZONING REGULATIONS SECTION 4.B.2, THE FOLLOWING USES ARE PERMITTED ON THE PROPERTY WITH SPECIAL PERMIT/SITE PLAN APPROVAL: WHOLESALE COMMERCIAL, AUTOMOTIVE SERVICE STATION IN ACCORDANCE WITH SECTION 6.1, PUBLIC AND PRIVATE RECREATION, GENERAL WAREHOUSING AND DISTRIBUTION, CONTRACTORS' YARDS AND LUMBER YARDS, PUBLIC SCHOOLS AND PUBLIC BUILDINGS, PRIVATE SCHOOLS INCLUDING NURSERY SCHOOLS, CHILD CARE CENTERS, ADULT CARE CENTERS, CHURCHES, SYNAGOGUES, PLACES OF WORSHIP, COMMUNITY BUILDINGS/CENTER, AND COMMERCIAL GREENHOUSES. PER THE TOWN ZONING REGULATIONS SECTION 4.B.2, THE FOLLOWING USES ARE PERMITTED ON THE PROPERTY WITH SITE PLAN APPROVAL: OFFICES, RESEARCH/DEVELOPMENT, ADVANCED MANUFACTURING, MANUFACTURING, ASSEMBLY, LIGHT ASSEMBLY AND WAREHOUSING/DISTRIBUTION OF GOODS MANUFACTURED OR ASSEMBLED ON PREMISES.
42. PER THE TOWN ZONING REGULATIONS SECTION 4.B.2, THE FOLLOWING USES ARE PERMITTED ON THE PROPERTY WITH NO ZONING APPROVAL REQUIRED: FARMS, ORCHARDS, RAISING OF CROPS, PLANT NURSERY AND RAISING OF LIVESTOCK IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES AS PROMULGATED.

GRADING AND DRAINAGE NOTES

GRADING GENERAL NOTES:

1. SEE THIS PLAN SHEET FOR ADDITIONAL SITE PLAN AND GENERAL NOTES.
2. THE GRADING AND DRAINAGE PLAN IS INTENDED TO DESCRIBE GRADING AND DRAINAGE ONLY. REFER TO SITE PLAN FOR GENERAL INFORMATION, AND DETAIL SHEETS FOR DETAILS. SEE MEP DRAWINGS FOR BUILDING CONNECTION LOCATIONS AND DETAILS.
3. THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON DRAWINGS. REFER TO EROSION CONTROL PLAN FOR LIMIT OF DISTURBANCE AND NOTES.
4. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING.
5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS REQUIRED BY GOVERNMENT AND LOCAL AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE LOCAL MUNICIPALITIES REQUIRED TO PERFORM ALL REQUIRED WORK, INCLUDING FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
6. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES AND UNIFORMED TRAFFIC CONTROLLERS AS REQUIRED, ORDERED BY THE ENGINEER OR REQUIRED BY THE STATE AND LOCAL GOVERNING AUTHORITIES.
7. THE CONTRACTOR SHALL COMPACT FILL IN 12" MAXIMUM LIFTS UNDER ALL PARKING, BUILDING, AND DRIVE AREAS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 (MODIFIED PROCTOR TEST), OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
8. UNDERDRAINS SHALL BE ADDED, IF DETERMINED NECESSARY IN THE FIELD BY THE DESIGN OR TOWN ENGINEER AFTER SUBGRADE IS ROUGH GRADED, AS APPROVED BY THE BERLIN TOWN STAFF.
9. VERTICAL DATUM IS NGVD 1988.
10. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD AND APPROVED BY THE TOWN OF BERLIN AGENT PRIOR TO THE START OF WORK ON THE SITE.
11. PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR WETLANDS IN ACCORDANCE WITH THE REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION GUIDELINES FOR SOIL EROSION AND SEDIMENT POLLUTION CONTROL. IN ADDITION, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE "EROSION CONTROL PLAN" CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY THE LOCAL MUNICIPALITIES, OR SOIL CONSERVATION SERVICE WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
12. ALL SITE WORK, MATERIALS OR CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK, STORM DRAINAGE, AND UTILITY WORK SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION UNLESS OTHERWISE STATED IN THE PROJECT MANUAL SPECIFICATIONS. ALL FILL MATERIALS UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE DOT, UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN 12" LIFTS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT 3 +/- PERCENT OF OPTIMUM MOISTURE CONTENT.
13. ALL DISTURBANCE INCURRED TO TOWN OR STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF BERLIN AUTHORITY AND STATE OF CONNECTICUT.
14. ALL CONSTRUCTION SHALL COMPLY WITH THE LOCAL MUNICIPALITY'S STANDARDS AND STATE OF CONNECTICUT'S DOT SPECIFICATIONS. ALL CONSTRUCTION WITHIN A DOT RIGHT OF WAY SHALL COMPLY WITH ALL DEPARTMENT OF TRANSPORTATION STANDARDS. WHERE SPECIFICATIONS OR STANDARDS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION OR STANDARD SHALL BE SUPERIOR.

PRODUCT NOTES:

1. SHOP DRAWINGS: THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF MATERIALS AND STRUCTURES FOR REVIEW AND APPROVAL PRIOR TO DELIVERY TO THE SITE. ALLOW 14 BUSINESS DAYS FOR REVIEW.
2. POLY VINYL CHLORIDE PIPE (PVC/P) FOR STORM AND SANITARY PIPING SHALL HAVE BUILT-IN RUBBER GASKET JOINTS. PVC/P SHALL CONFORM TO ASTM D-3034 (SDR35) WITH COMPRESSION JOINTS AND MOLDED FITTINGS. PVC/P SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS; ASTM-D5231 AND MANUFACTURERS RECOMMENDED PROCEDURE.
3. ALL RCP SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-76; ALL RCP SHALL BE CLASS IV UNLESS OTHERWISE SHOWN. JOINTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-443.
4. MANHOLE SECTIONS AND CONSTRUCTION SHALL CONFORM TO ASTM C-478.
5. HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER 12" OR GREATER IN DIAMETER SHALL BE HI-Q SURE-LOK 10.8 PIPE AS MANUFACTURED BY HANCOR INC. OR APPROVED EQUAL HDPE PIPE SHALL HAVE SMOOTH INTERIOR AND CORRUGATED EXTERIOR AND SHALL MEET THE REQUIREMENTS OF AASHTO M294. TYPE PIPE SECTIONS SHALL BE JOINED WITH BELL-AND-SPIGOT JOINT MEETING THE REQUIREMENTS OF AASHTO'S M294. THE BELL SHALL BE AN INTEGRAL PART OF THE PIPE AND PROVIDE A MINIMUM PULL-APART STRENGTH OF 400 POUNDS. THE JOINT SHALL BE WATERTIGHT ACCORDING TO THE REQUIREMENTS OF ASTM D3212. GASKETS SHALL BE MADE OF POLYISOPRENE MEETING THE REQUIREMENTS OF ASTM F477. ALTERNATIVE HDPE PIPE MAY BE USED IF APPROVED BY THE ENGINEER AND CONSTRUCTION MANAGER PRIOR TO ORDERING.
6. HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER LESS THAN 12" IN DIAMETER SHALL BE HI-Q PIPE AS MANUFACTURED BY HANCOR INC. OR APPROVED EQUAL HDPE PIPE SHALL HAVE SMOOTH INTERIOR AND CORRUGATED EXTERIOR AND SHALL MEET THE REQUIREMENTS OF AASHTO 252, TYPE S. PIPE SECTIONS SHALL BE JOINED WITH COUPLING BANDS OR EXTERNAL SNAP COUPLERS COVERING AT LEAST 2 FULL CORRUGATIONS ON EACH END OF THE PIPE. SILT-TIGHT (GASKET) CONNECTIONS SHALL INCORPORATE A CLOSED SYNTHETIC EXPANDED RUBBER GASKET. MEETING THE REQUIREMENTS OF AASHTO D1056 GRADE 2A2. GASKETS SHALL BE INSTALLED ON THE CONNECTION BY THE PIPE MANUFACTURER. ALTERNATIVE HDPE PIPE MAY BE USED IF APPROVED BY THE ENGINEER AND CONSTRUCTION MANAGER PRIOR TO ORDERING.

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE SITE ENGINEER AND ARCHITECT IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS.
2. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITIES. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
3. THE CONTRACTOR SHALL ABIDE BY ALL OSHA FEDERAL STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
5. THE ARCHITECT OR ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ARCHITECT AND ENGINEER HAVE NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
6. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT "1-(800)-922-4455" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
7. DO NOT SCALE DRAWINGS. DIMENSIONS GOVERN OVER SCALED DIMENSIONS.
8. IF PLANS AND OR SPECIFICATIONS ARE IN CONFLICT, THE MOST EFFECTIVE SHALL APPLY AS DETERMINED BY A LICENSED PROFESSIONAL AND APPROVED BY TOWN STAFF.
9. ALL CONTRACTORS AND SUBCONTRACTORS SHALL OBTAIN COMPLETE DRAWING PLAN SETS FOR BIDDING AND CONSTRUCTION. PLAN SETS SHALL NOT BE DISASSEMBLED INTO PARTIAL PLAN SETS FOR USE BY CONTRACTORS AND SUBCONTRACTORS OF INDIVIDUAL TRADES. IT SHALL BE THE CONTRACTOR'S AND SUBCONTRACTOR'S RESPONSIBILITY TO OBTAIN COMPLETE PLAN SETS FOR USE IN BIDDING AND CONSTRUCTION.
10. ALL NOTES AND DIMENSIONS DESIGNATED "TYPICAL" APPLY TO ALL LIKE OR SIMILAR CONDITIONS THROUGHOUT THE PROJECT.
11. CONTRACTORS TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK AND BE RESPONSIBLE FOR COORDINATION OF SAME. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK.
12. THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.

UTILITIES NOTES

UTILITY CONSTRUCTION NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE LOCAL MUNICIPALITIES TO SECURE PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
2. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES, FOR PROTECTION OF VEHICLES AND PEDESTRIANS, CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS FENCES AND UNIFORMED TRAFFIC CONTROLLERS AS REQUIRED, ORDERED BY THE ENGINEER OR REQUIRED BY THE LOCAL GOVERNING AUTHORITIES.
3. THIS PLAN DETAILS SITE INSTALLED PIPES UP TO 5' FROM THE BUILDING FACE. REFER TO DRAWINGS BY OTHERS FOR BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT.
4. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DIG AT ALL LOCATIONS WHERE SEWERS CROSS UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE SITE ENGINEER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
5. UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY CO. AND TOWN STAFF REVIEW.
6. THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY COMPANIES AND TOWN STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER, TOWN OF BERLIN PUBLIC WORKS DEPARTMENT AND CENTRAL CONNECTICUT HEALTH DISTRICT.
7. THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY COMPANIES AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTION, RELOCATIONS, INSPECTIONS, AND DEMOLITION.
8. ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED THE SITE CONTRACTOR SHALL INSTALL TEMPORARY OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE PLANS OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
9. ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
10. SANITARY LATERAL SHALL MAINTAIN (10' MIN. HORIZONTAL 1.5' VERTICAL MIN.) SEPARATION DISTANCE FROM WATER LINES, OR ADDITIONAL PROTECTION MEASURES WILL BE REQUIRED WHERE PERMITTED.
11. RELOCATION OF UTILITY COMPANY FACILITIES SUCH AS POLES, TO BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE FACILITY OWNERS.
12. THE CONTRACTOR SHALL COMPACT THE PIPE BACKFILL IN 12" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED IN AREAS OF ROCK EXCAVATION. STORM SEWERS MAY BE PLACED PRIOR TO PLACING FILL.
13. CONTRACTOR TO PROVIDE SLEEVES UNDER FOOTINGS FOR UTILITY CONNECTIONS.
14. UTILITY PENETRATIONS AND LOCATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE MEP DRAWINGS AND CONSTRUCTION MANAGER.
15. ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY COMPANY AND/OR THE LOCAL MUNICIPALITIES' REQUIREMENTS.
16. A THREE-FOOT MINIMUM CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM SEWERS SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM AND SANITARY SEWER WITH A CONCRETE ENCASEMENT.
17. CONTRACTOR SHALL PROVIDE ALL BENDS, FITTINGS, ADAPTERS, ETC., AS REQUIRED FOR PIPE CONNECTIONS TO BUILDING STUB OUTS, INCLUDING ROOF/FOOTING DRAIN CONNECTIONS TO ROOF LEADERS AND TO STORM DRAINAGE SYSTEM.
18. MANHOLE RIMS SHALL BE SET TO ELEVATIONS SHOWN. SET ALL EXISTING MANHOLE FRAMES AND VALVE COVERS TO BE RAISED OR LOWERED FLUSH WITH FINAL GRADE AS NECESSARY.
19. SITE CONTRACTOR SHALL COORDINATE INSTALLATION OF CONDUIT AND CABLES FOR SITE LIGHTING WITH THE BUILDING ELECTRICIAN/ELECTRICAL CONTRACTOR.
20. CONTRACTOR SHALL COORDINATE INSTALLATION FOR ELECTRICAL SERVICES TO PYLON SIGNS AND SITE LIGHTING WITH THE BUILDING ELECTRICAL/ELECTRICAL CONTRACTOR.
21. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER.
22. INFORMATION ON EXISTING UTILITIES HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY COMPANY AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES INCLUDING SERVICES. CONTACT "CALL BEFORE YOU DIG AT 811 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY ALL UNDERGROUND AN OVERHEAD UTILITY LOCATIONS.
23. THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY COMPANIES AND THE TOWN OF BERLIN FOR WORK TO BE PERFORMED BY UTILITY COMPANIES OR BY THE TOWN OF BERLIN. THE CONTRACTOR SHALL PAY ALL UTILITY FEES AND REPAIR PAVEMENTS AS NECESSARY.
24. ELECTRIC, AND TELEPHONE SERVICES SHALL BE INSTALLED UNDERGROUND FROM SERVICE POLE #CL&P 4813. THE CONTRACTOR SHALL INSTALL AND BACKFILL TWO 4" PVC CONDUITS FOR TELEPHONE SERVICE, FOUR 4" PVC CONDUITS FOR ELECTRIC SERVICE PRIMARY, PVC CONDUITS FOR ELECTRICAL SECONDARY PER BUILDING ELECTRICAL PLANS (SCHEDULE 80N UNDER PAVEMENT, SCHEDULE 40 IN NON-PAVEMENT AREAS). SERVICES MAY BE INSTALLED IN A COMMON TRENCH WITH 1" CLEAR SPACE BETWEEN. MINIMUM COVER IS 36" ON ELECTRIC CONDUITS, AND 24" ON TELEPHONE CONDUITS. SERVICES SHALL BE MARKED WITH MAGNETIC LOCATOR TAPE AND SHALL BE BEDDED, INSTALLED, AND BACKFILLED IN ACCORDANCE WITH ELECTRIC COMPANY, AND PHONE COMPANY STANDARDS. GALVANIZED STEEL ELECTRICAL CONDUIT SHALL BE USED AT POLE AND TRANSFORMER LOCATIONS. INSTALL MANHOLES AS REQUIRED. INSTALL CONCRETE ENCASEMENT ON PRIMARY ELECTRIC CONDUITS IF REQUIRED BY ELECTRIC COMPANY.
25. ALL WATER LINES SHALL BE BURIED WITH 48" OF COVER UNLESS OTHERWISE APPROVED BY THE REGIONAL WATER AUTHORITY. ALL LINES SHALL BE BEDDED IN 6" OF SAND AND BACKFILLED WITH 12" OF SAND.
26. ALL WATER MAINS, WATER SERVICES AND SANITARY SEWER LATERAL SHALL CONFORM TO THE DEPARTMENT OF ENVIRONMENTAL HEALTH, APPLICABLE TOWN OF BERLIN SPECIFICATIONS, AS WELL AS TO OTHER APPLICABLE CODES AND SPECIFICATIONS FOR POTABLE WATER SYSTEMS.
27. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER, ENGINEER, UTILITY PROVIDER AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
28. THE CONTRACTOR SHALL MAINTAIN ALL UTILITY CONNECTIONS TO EXISTING ABUTTING HOUSES WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE OWNERS, THE PROJECT ENGINEER, UTILITY PROVIDER AND GOVERNING AUTHORITIES.
29. ANY EXISTING POTABLE WATER WELLS AND SEPTIC TANKS/ABSORPTION AREAS SHALL BE ABANDONED AND REMOVED PER THE DEPARTMENT OR ENVIRONMENTAL PROTECTION AND HEALTH CODE REQUIREMENTS.
30. THE CONTRACTOR MAY SUBSTITUTE MASONRY STRUCTURES FOR PRECAST STRUCTURES IF APPROVED BY THE SITE ENGINEER AND ALLOWED BY THE TOWN ENGINEER OR BY GOVERNING AUTHORITY.

POST CONSTRUCTION STORM WATER POLLUTION PLAN

THE FOLLOWING PROCEDURES WILL BE IMPLEMENTED CONTINUALLY BY THE OWNER AND OR DESIGNATED RESPONSIBLE PARTIES:

1. PAVEMENT SWEEPING: PARKING LOTS AND DRIVES SHALL BE SWEEPED A MINIMUM OF TWICE A YEAR (SPRING AND FALL).
2. CATCH BASIN SUMPS: CATCH BASIN SUMPS SHALL BE INSPECTED ON A REGULAR BASIS (AT LEAST TWICE PER YEAR) AND SEDIMENT SHALL BE REMOVED AS NECESSARY (A MINIMUM OF ONCE A YEAR TO ENSURE FUNCTIONING OF THE SYSTEM, UTILIZING A VACUUM TRUCK).
3. THE COLLECTION SYSTEM PIPES SHALL BE INSPECTED AT SIX-MONTH INTERVALS. REGULAR MAINTENANCE INCLUDES THE FOLLOWING ITEMS:
-INSPECTION OF THE OUTLETS TO ENSURE THEY ARE NOT BLOCKED.
-CHECKING THE OUTLETS FROM THE LEVEL SPREADER TO BE OPEN AND NOT ERODING.
-REMOVING PAPER AND DEBRIS FROM OBSTRUCTING THE FLOW WITHIN THE SYSTEM.
4. THE ISOLATION ROW SHALL BE INSPECTED A MINIMUM OF EVERY SIX MONTHS, ONCE IN THE SPRING AND ONCE IN THE FALL. ALL TRASH, DEBRIS, SEDIMENT DEPOSITS, ETC. SHALL BE NOTED AND ANY DEPOSITS FOUND TO BE 4 INCHES OR MORE, AS MEASURED FROM THE BOTTOM OF THE SYSTEM SHALL BE CLEANED AND REMOVED. ANY DEBRIS OR TRASH, ETC., SHALL BE REMOVED DURING NORMAL LANDSCAPE MAINTENANCE OPERATIONS. BARE AREAS SHALL BE SEEDD.
5. LANDSCAPING: LANDSCAPED AREAS WILL BE MAINTAINED. NORMAL LANDSCAPING MAINTENANCE WILL CONSIST OF PRUNING, MULCHING, PLANTING, MOWING LAWNS, RAKING LEAVES, ETC. USE OF FERTILIZERS AND PESTICIDE WILL BE CONTROLLED AND LIMITED TO MINIMAL AMOUNTS NECESSARY FOR HEALTHY LANDSCAPE MAINTENANCE. THE LAWN AREAS, ONCE ESTABLISHED, WILL BE MAINTAINED AT A TYPICAL HEIGHT OF 3 1/2". THIS WILL ALLOW FOR THE GRASS TO BE MAINTAINED WITH A MINIMAL IMPACT FROM WEEDS AND/OR PEST. PESTICIDE WILL ONLY BE USED AS A CONTROL METHOD WHEN A PROBLEM HAS BEEN IDENTIFIED AND OTHER NATURAL CONTROL METHODS ARE NOT SUCCESSFUL. ALL PESTICIDE APPLICATION SHALL BE BY LICENSED APPLICATORS, WHERE NECESSARY. TOPSOIL, BRUSH, LEAVES, CHIPPINGS, MULCH, EQUIPMENT, AND OTHER MATERIALS SHALL BE STORED OFF SITE.
6. TRASH COLLECTION: ALL TRASH WILL BE CONTAINED IN DUMPSTERS. ALL DUMPSTERS WILL BE EQUIPPED WITH COVERS. ALL TRASH WILL BE COLLECTED ON A REGULAR BASIS AND DISPOSED OF LEGALLY OFF-SITE.
7. OUTDOOR STORAGE: THERE WILL BE NO OUTDOOR STORAGE OF HAZARDOUS CHEMICALS, FERTILIZER, PESTICIDES, OR HERBICIDES ANYWHERE AT THE FACILITY.
8. THE OWNER SHALL KEEP AN ON-SITE LOG OF STORMWATER MAINTENANCE MEASURES PERFORMED AND DATES THEY WERE IMPLEMENTED. THIS LOG BOOK SHALL BE AVAILABLE FOR THE TOWN OF BERLIN INSPECTION.

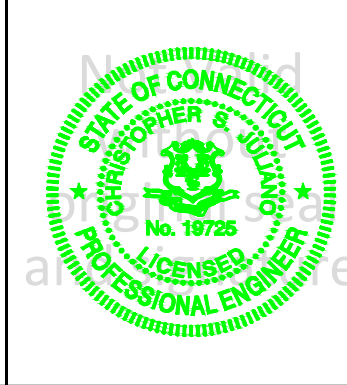
General Notes

Land of
Little House Living LLC
#1676 & #1688 Berlin Turnpike
(Connecticut Route #15)
Berlin, Connecticut

Project no.:	23-100	Date:	12/05/23	Scale:	NTS
Work map:	CJULIANO	Checked:	ZGEORGINA	Sheet:	7 of 18
Final map:	ZGEORGINA	Released:	CJULIANO	Revision:	0
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Christopher S. Juliano PELS #19725



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DATE	DESCRIPTION

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SEDIMENT BARRIERS

1. DEFINITION

A temporary barrier installed across or at the toe of a slope.

2. PURPOSE

To intercept and retain small amounts of sediment from disturbed or unprotected areas of limited extent.

3. APPLICABILITY

The sediment barrier is used where:

- Sedimentation can pollute or degrade adjacent wetland and/or watercourses.
- Sedimentation will reduce the capacity of storm drainage systems or adversely affect adjacent areas.
- Contributing drainage area is less than 1 acre and the length of slope above the barrier is less than 150 feet. If the slope length is greater, other measures such as diversions may be necessary to reduce slope length.

4. PLANNING CONSIDERATIONS

Sediment barriers may consist of filter fence, straw, hay bales, stone berms, or other filter materials. Planned lifespan of sediment barriers varies. Straw or hay bales shall only be used as a temporary barrier for no longer than 60 days. Synthetic filter fences can be used for 60 days or longer depending on their stability and manufacturer's recommendations. Stone barriers can be used for longer periods of time.

5. INSTALLATION REQUIREMENTS

a. Straw/Hay Bales

(1) Sheet Flow Applications

- Bales shall be placed in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another.
- Bales shall be wire-bound only and shall be installed so that binding does not contact the earth.
- The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. After the bales are staked and chinked, the excavated soil shall be backfilled against the barrier. Backfilled soil shall conform to the ground level on the downhill side and shall be built up to 4 inches against the uphill side of the barrier. Ideally, bales shall be placed 10 feet away from toe of slope.
- Each bale shall be securely anchored by at least two stakes driven through the bale. The first stake in each bale shall be driven toward the previously laid bale to force the bales together. Stakes shall be driven deep enough into the ground to securely anchor the bales.
- Gaps between bales shall be chinked (filled by wedging) with straw to prevent water from escaping between bales. (Loose straw scattered over the area immediately uphill from a straw bale barrier tends to increase barrier efficiency.)

In sloping areas where surface flow follows the bale line, perpendicular bale checks shall be installed at appropriate intervals (100 feet maximum).
- Inspection, repair and/or replacement shall be made on a continuing basis.
- Bale barriers shall be removed when they have served their usefulness, but not before construction areas have been permanently stabilized.

(2) Channel Flow Applications

- Bales shall be placed in a single row, lengthwise, oriented perpendicular to the channel, with ends of adjacent bales tightly abutting one another.
- Specifications for installing a bale barrier for sheet flow applications apply here with the following addition:
 - The barrier shall be extended to such a length that the bottoms of the end bales are higher in elevation than the top of the lowest middle bale to assure that sediment laden runoff will flow either through or over the barrier, but not around it.
- Catch Basin Application
 - Bales shall be placed in a square or rectangular shape around depressed catch basin inlets. Catch basins constructed on sloping areas should not be encircled by bales, but shall have downhill side left open.
 - The areas immediately around the catch basin may be excavated slightly to increase ponding of runoff water around catch basin.
 - Remaining specifications for installing a bale barrier for sheet flow applications apply here.

(4) Maintenance

- Inspection shall be made weekly and after each storm and repair or replacement shall be made promptly as needed.
- Cleanout of accumulated sediment behind the bales is necessary if 1/2 of the original height of the bales becomes filled in with sediment.

b. Filter Fences

(1) Materials

(a) Synthetic Filter Fabric

Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene filaments and certified by the manufacturer or supplier as conforming to the following requirements:

Physical Property	Requirements
Filtering Efficiency	75% (min.)
Tensile Strength at 20% (max.) Elongation	Extra Strength 50 lbs./lin. inch (min.) Standard Strength 30 lbs./lin. inch (min.)
Flow Rate	0.3 gal./sq. ft./min (min.)

- Burlap shall be 10 ounce per square yard fabric.

- Stakes for filter fences shall be 1" x 2" wood or equivalent metal with a minimum length of 3 feet.

Where additional strength is required, posts for filter fences shall be either 2 x 3 or 2 x 4 inch wooden studs or 0.5 (min.) pounds/linear foot steel with a minimum length of 5 feet. Steel posts shall have projections for fastening wire.

- Wire fence reinforcement for silt fences using standard strength filter cloth shall be a minimum of 42 inches in height, a minimum of 14 gauge and shall have a maximum mesh spacing of 6 inches.

Some silt fences do not require a wire backing. Consult manufacturer's instructions for proper installation requirements.

(2) Installation Requirements

This sediment barrier utilizes burlap, standard or extra strength synthetic filter fabrics. It is designed for situations in which only sheet or overland flows are expected. In special cases burlap may be used in drainageways.

- The height of the barrier shall not exceed 36 inches. (Higher barriers may impound volumes of water sufficient to cause failure of the structure.) Ideally the filter fence shall be placed 10 feet away from the toe of slope.
- When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6 inch overlap, and securely sealed. See manufacturer's recommendations.
- Posts shall be spaced a maximum of 10 feet apart at the barrier location and driven securely into the ground (minimum of 12 inches). When extra strength fabric is used without the wire support fence, space posts as manufacturer recommends.
- A trench shall be excavated approximately 6 inches wide and 6 inches deep along the line of posts as manufacturer recommends.
- When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least 1 inch long, tie wires or hog rings. The wire shall extend into the trench a minimum of 2 inches and shall not extend more than 36 inches above the original ground surface.
- The standard strength filter fabric shall be stapled, wired or tied to the wire fence, and 8 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
- When extra strength filter fabric or burlap and closer post spacing are used, the wire mesh support fabric is stapled, wired or tied directly to the posts with all specifications of (f) above applying.
- The trench shall be backfilled and the soil compacted over the filter fabric.
- Filter barriers shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

(3) Maintenance

- Filter barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.
- Should the fabric decompose or become ineffective, the fabric shall be replaced promptly.
- Sediment deposits shall be removed when they reach approximately one-half the height of the barrier.
- Any sediment deposits remaining in place after the silt fence or filter barrier is not longer required shall be dressed to conform to the existing grade, prepared and seeded.

c. Stone Barrier

The stone shall meet ASTM C-33 size no. 2 or 3 (3" or 2-1/2").

(1) Installation Requirements

- The stone shall be piled to a natural angle of repose with a height of at least 2 feet.
- The barrier shall be constructed so water cannot bypass the barrier around the ends

(2) Maintenance

- Inspection shall be frequent and repair and/or replacement made promptly as needed.
- The barrier shall be removed when it has served its usefulness so as not to block or impede storm flow or drainage.

d. Vegetative Filter

Vegetative filters shall be used to filter sediment from overland flow only where concentrations of sediment and rates of runoff are low.

(1) Installation Requirements

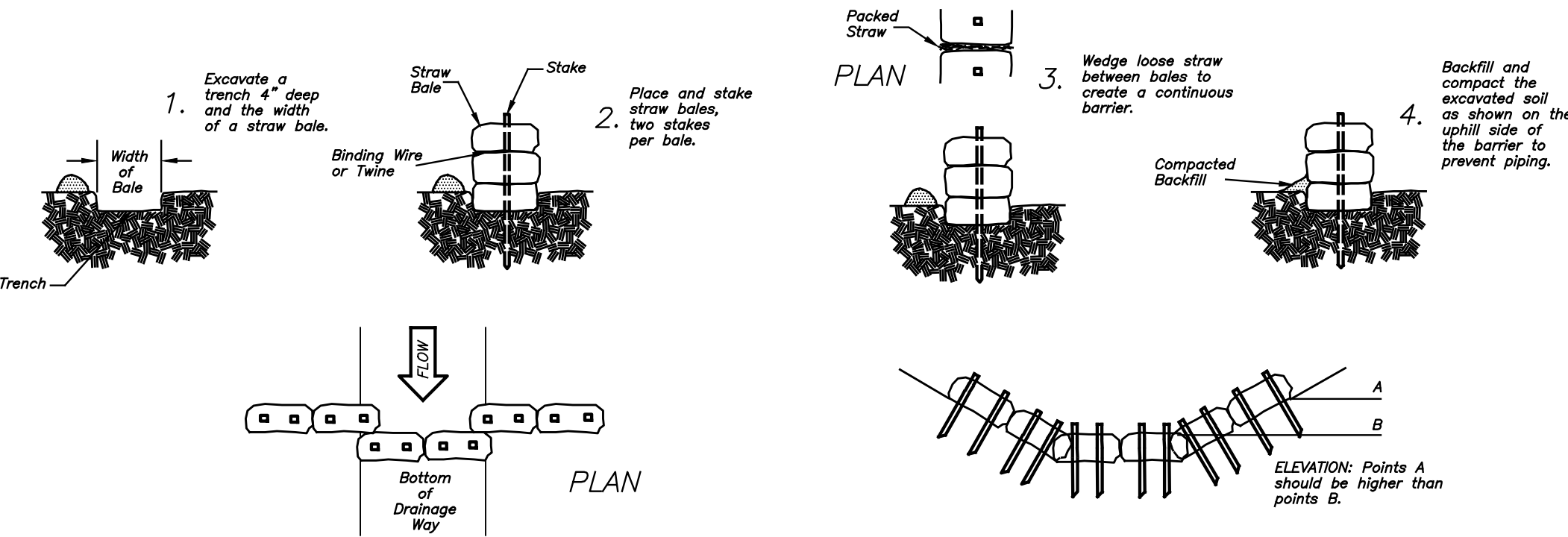
The minimum width of the filter strip shall be at least 15 feet.

The width of the filter strip shall be increased proportionately for slopes longer than 150 feet or for higher sediment concentrations. When using filter strips at inlets to storm sewers, as large an area as possible shall be provided. Filters shall be placed along the contours whenever possible. No construction shall be allowed within filter strip areas.

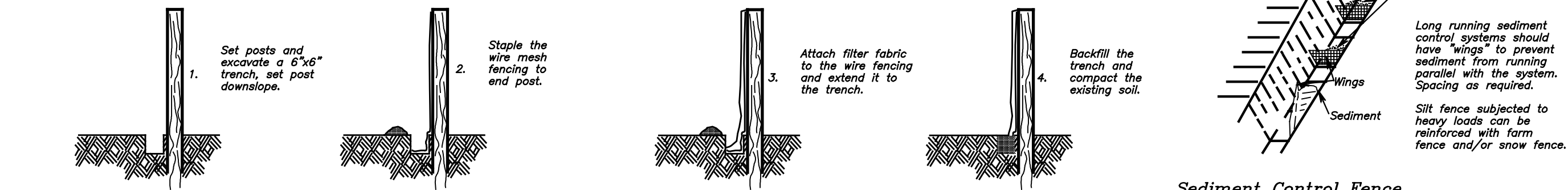
Vegetation must be adapted to sediment producing areas. Either existing or established vegetation must be healthy and have a vigorous growth habit. Establishing vegetation by seed or sodding shall be done in accordance with the specifications for Permanent Vegetative Cover or Sodding and shall be established prior to land disturbance.

(2) Maintenance

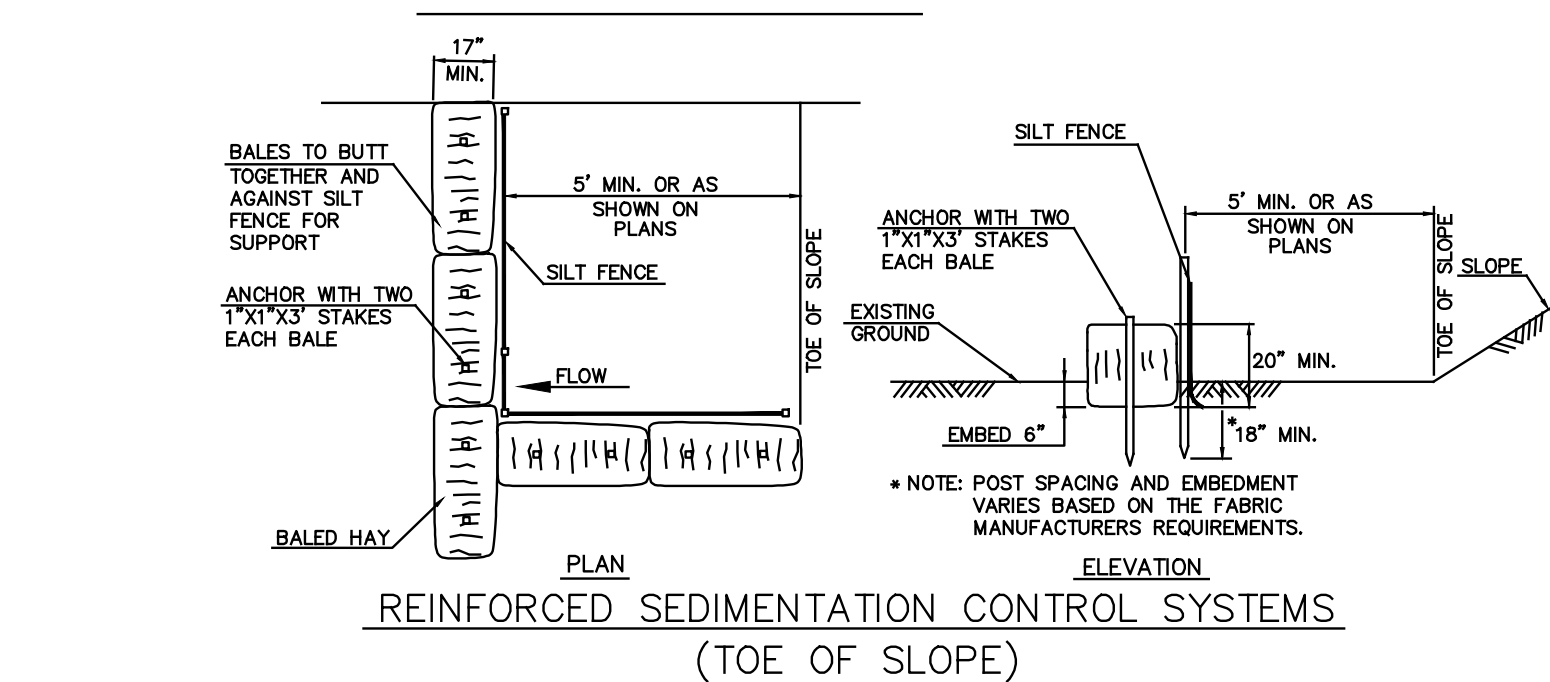
Maintenance of vegetative filter strips is the same as that recommended for any vegetation as specified in Permanent Vegetative Cover. A healthy growth of vegetation can best be maintained by fertilizing, removing sediment when the filter becomes clogged, and by preventing construction traffic from driving upon or across filter strips.



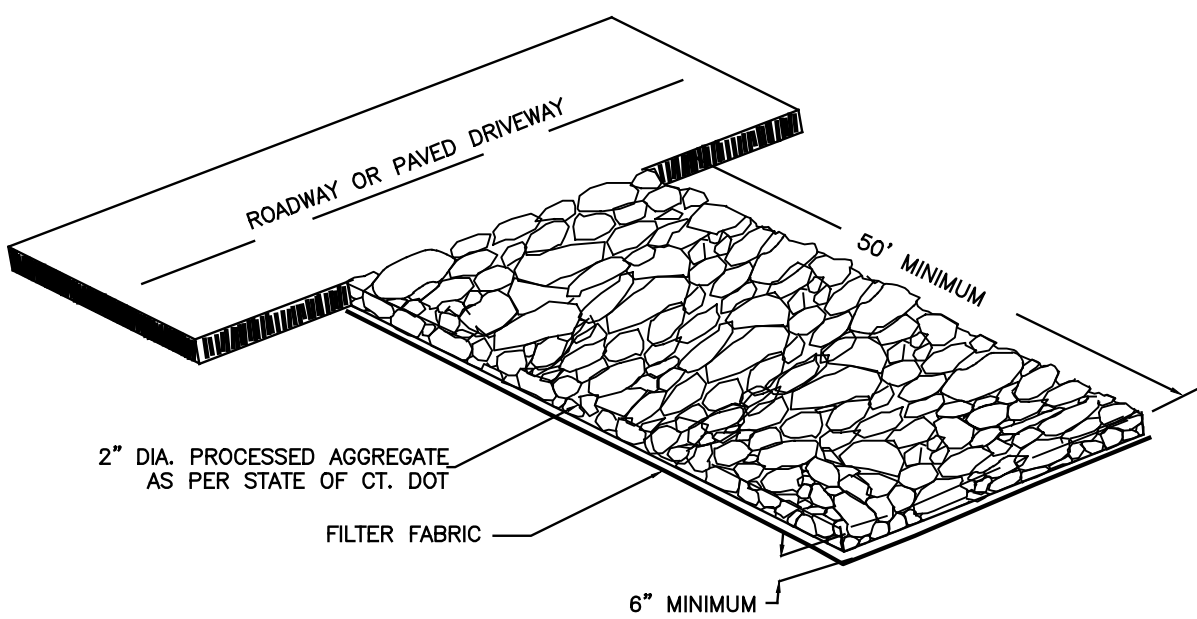
Placement and Construction of a Hay Bale Barrier



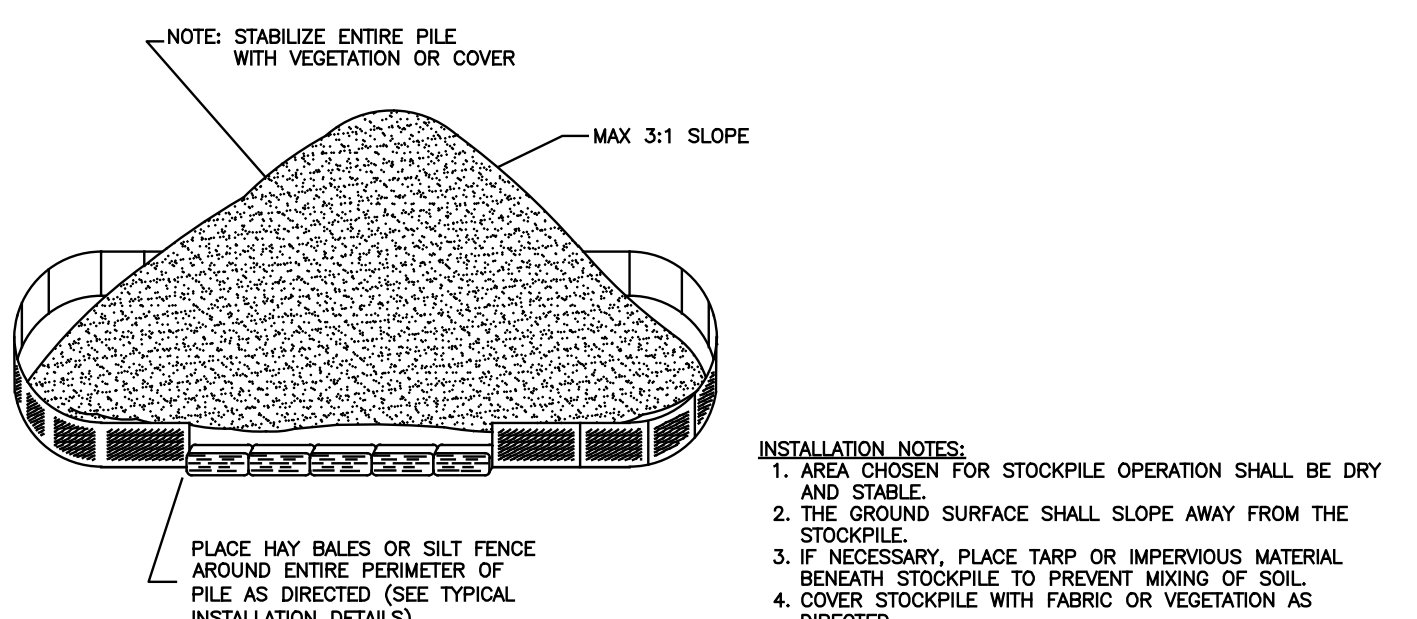
Placement and Construction of a Synthetic Filter Barrier



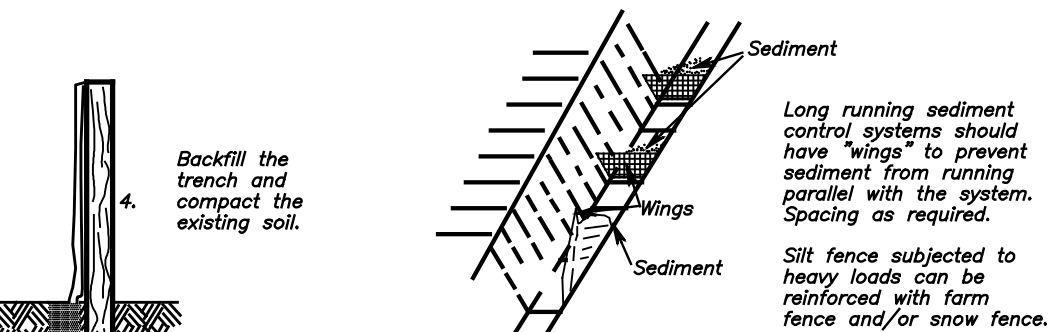
REINFORCED SEDIMENTATION CONTROL SYSTEMS (TOE OF SLOPE)



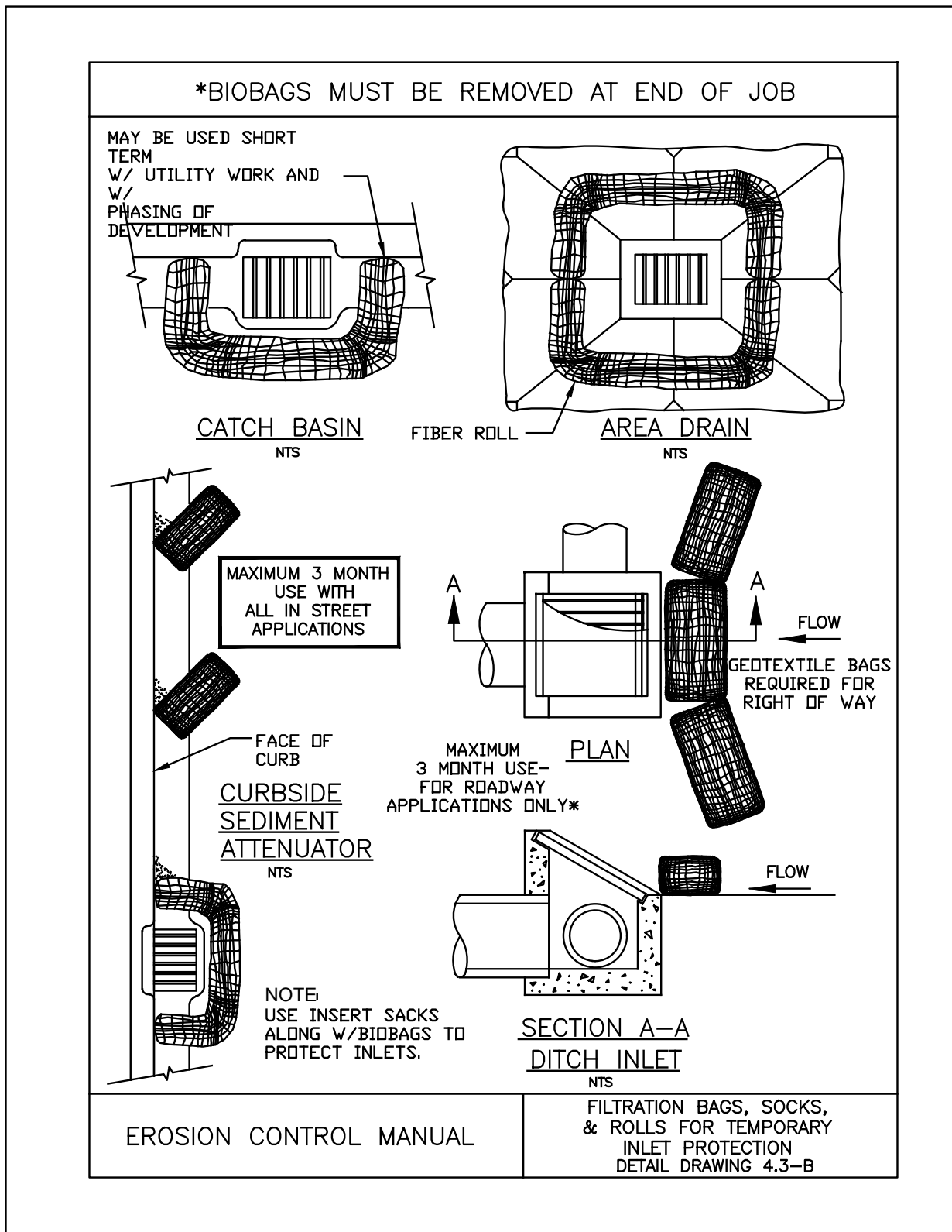
CONSTRUCTION ENTRANCE



TEMPORARY SOIL STOCKPILE



Sediment Control Fence



EROSION CONTROL MANUAL

Erosion Control Details & Specifications

Land of
Little House Living LLC
#1676 & #1688 Berlin Turnpike
(Connecticut Route #15)
Berlin, Connecticut

DURING CONSTRUCTION THERE SHALL BE A SUPPLY OF SILT FENCE AND/OR HAY BALES STORED ON SITE FOR EMERGENCY SEDIMENT AND EROSION CONTROL PURPOSES.

THIS DOCUMENT HAS BEEN PREPARED AS PART A MUNICIPAL (HEALTH DEPARTMENT/DISTRICT, IWWC, TPZ, OR ZBA) LAND USE APPLICATION PROCESS. THIS DOCUMENT CAN NOT BE CONSIDERED FINAL NOR USED FOR ANY CONSTRUCTION PURPOSES UNTIL ALL NECESSARY LOCAL, STATE, AND FEDERAL APPROVALS HAVE BEEN SECURED.

Christopher S. Juliano PELS #19725

REVISIONS	
DATE	DESCRIPTION

Juliano Associates, LLC

Engineers & Surveyors
Established 1973
405 Main Street (Yalesville)
Wallingford, Connecticut 06492
Voice (203)265-1489 Fax (203)949-1523
www.JulianoAssociates.com
JulianoAssociatesLLC@gmail.com

Project no.:	23-100	Date:	12/05/23	Scale:	NTS
Work map:	CIJULIANO	Checked:	ZGEORGINA	Sheet:	8 of 18
Final map:	CIJULIANO	Released:	ZGEORGINA	Revision:	0
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CULTEC RECHARGER 180HD SPECIFICATIONS

GENERAL
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.
- 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 180HD STAND ALONE UNIT SHALL BE 25.25 FT³ (0.72 M³) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER® 180HD 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.
- THE NOMINAL STORAGE VOLUME OF THE HVLV® FC-24 FEED CONNECTOR SHALL BE 0.913 FT³ / FT (0.085 M³ / M) - WITHOUT STONE.
- THE RECHARGER® 180HD CHAMBER SHALL HAVE SEVENTY-EIGHT DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNITS CORE TO PROMOTE LATERAL CONVEYANCE OF WATER.
- THE RECHARGER® 180HD CHAMBER SHALL HAVE 14 CORRUGATIONS.
- THE ENDWALL OF THE CHAMBER, WHEN PRESENT, SHALL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE END PLATES CANNOT BE USED WITH THIS UNIT.
- THE RECHARGER® 180HD 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.
- 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.
- 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.
- CHAMBERS MUST HAVE HORIZONTAL STIFFENING FLEX REDUCTION STEPS BETWEEN THE RIBS.
- 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.
- THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION ON THE LARGE RIB END.
- THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2015 CERTIFIED FACILITY.
- MAXIMUM ALLOWABLE COVER OVER THE TOP OF THE CHAMBER SHALL BE 12.0' (3.66 M).
- 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.
- THE CHAMBER SHALL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.

CULTEC FC-24 FEED CONNECTOR SPECIFICATIONS

GENERAL
CULTEC HVLV (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.

CHAMBER PROPERTIES

- THE CHAMBERS SHALL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT (203-775-4416).
- 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.
- THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR SHALL BE 0.819 CF/LF.
- THE CHAMBER SHALL BE VACUUM THERMOFORMED OF HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HMWHDPE) WITH A BLACK INTERIOR AND BLUE EXTERIOR.
- 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 THE RECHARGER 180HD.
- ALL CHAMBERS SHALL BE ARCHED IN SHAPE.
- 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.
- THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2015 CERTIFIED FACILITY.

CULTEC NO. 4110™ NON-WOVEN GEOTEXTILE

CULTEC NO. 4110™ NON-WOVEN GEOTEXTILE MAY BE USED WITH CULTEC CONTACTOR® AND RECHARGER® STORMWATER INSTALLATIONS TO PROVIDE A BARRIER THAT PREVENTS SOIL INTRUSION INTO THE STONE.

GEOTEXTILE PARAMETERS

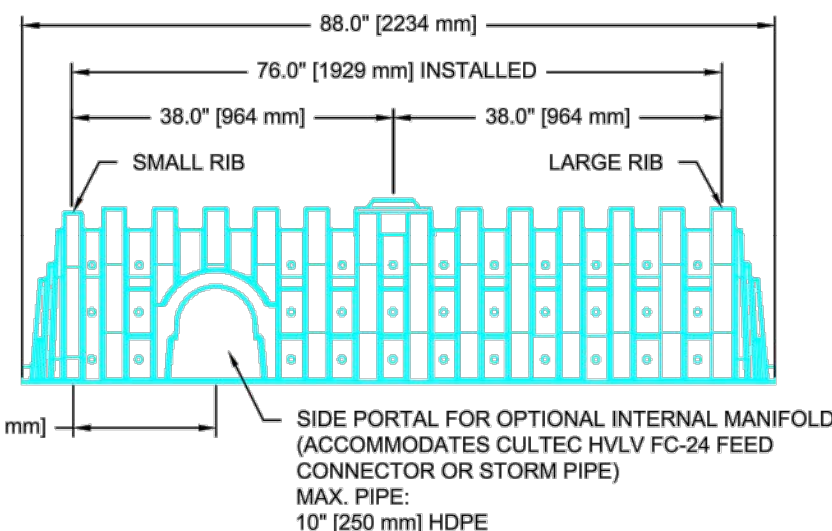
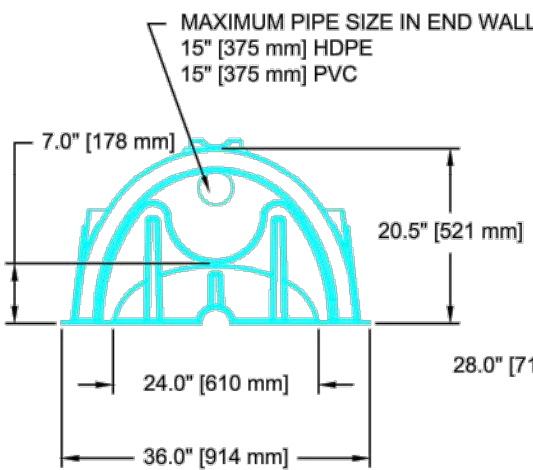
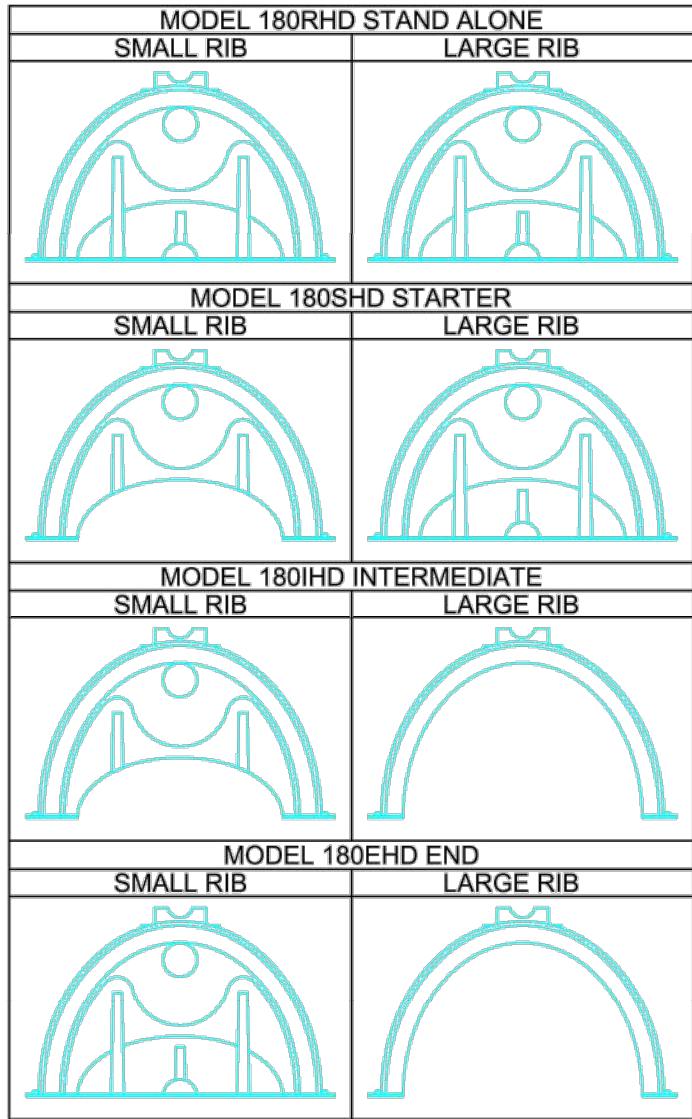
- THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- THE GEOTEXTILE SHALL HAVE A TYPICAL WEIGHT OF 4.5 OZ/SY (142 G/M).
- THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH VALUE OF 120 LBS (533 N) PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE AN ELONGATION @ BREAK VALUE OF 50% PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A MULLEN BURST VALUE OF 225 PSI (1551 KPA) PER ASTM D3786 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PUNCTURE STRENGTH VALUE OF 65 LBS (289 N) PER ASTM D4833 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE VALUE OF 340 LBS (1513 N) PER ASTM D6241 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A TRAPEZOID TEAR VALUE OF 50 LBS (222 N) PER ASTM D4533 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A AOS VALUE OF 70 U.S. SIEVE (0.212 MM) PER ASTM D4751 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PERMITTIVITY VALUE OF 1.7 SEC-1 PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WATER FLOW RATE VALUE OF 135 GAL/MIN/SF (5500 L/MIN/SM) PER ASTM D4491 TESTING METHOD.
- 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 MAINTENANCE.

GEOTEXTILE PARAMETERS

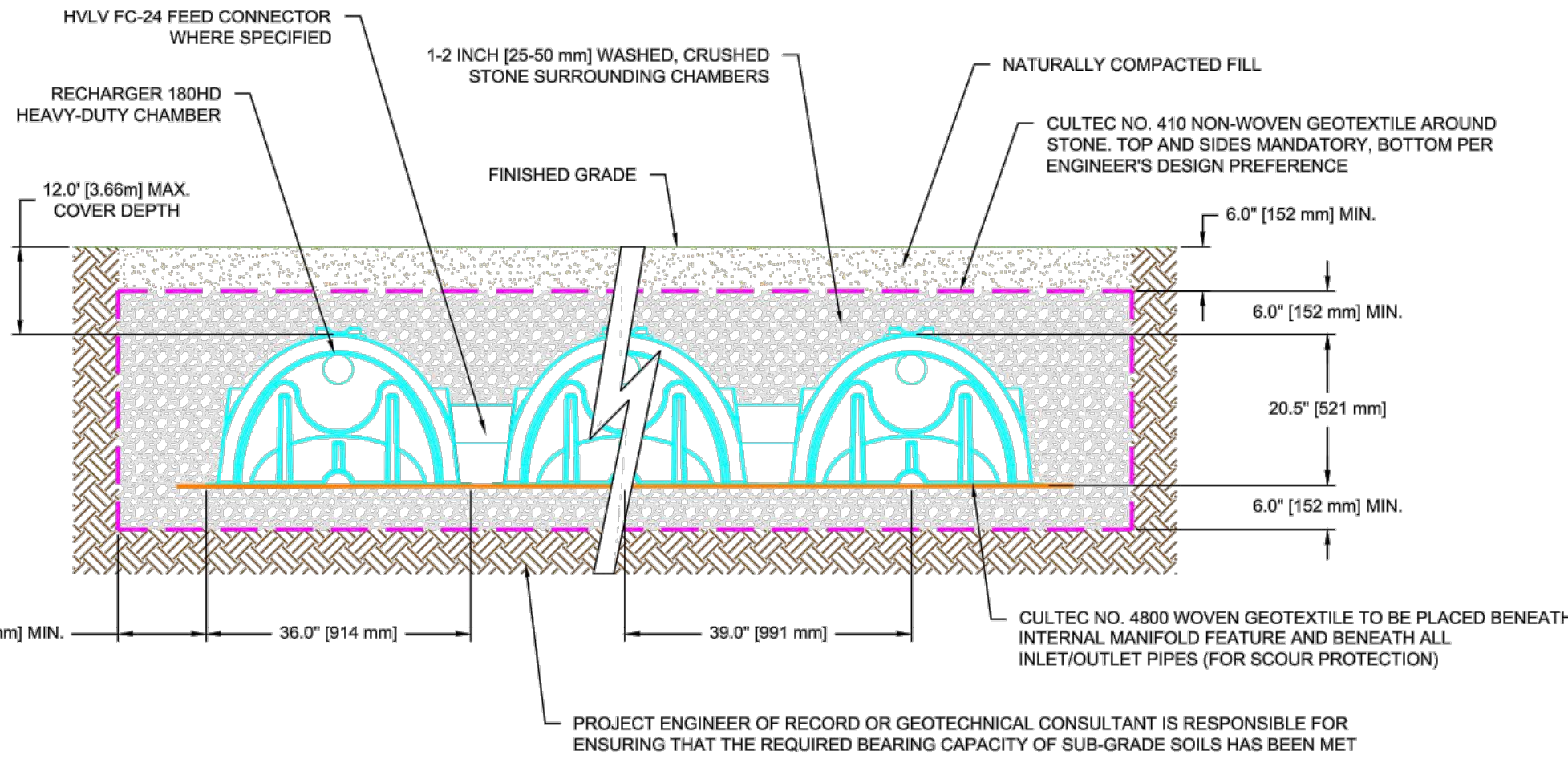
- THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 550 X 550 LBS (2,448 X 2,448 N) PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A ELONGATION @ BREAK RESISTANCE OF 20 X 20% PER ASTM D4632 TESTING METHOD.
- 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.
- 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.
- THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 1,700 LBS (7,560 N) PER ASTM D6241 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A TRAPEZOIDAL TEAR RESISTANCE OF 180 X 180 LBS (801 X 801 N) PER ASTM D4533 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (0.425 MM) PER ASTM D4751 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.15 SEC-1 PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 11.5 GPM/FT² (470 LPM/M²) PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 80% @ 500 HRS. PER ASTM D4355 TESTING METHOD.



CULTEC RECHARGER 180HD CHAMBER STORAGE = 3.445 FT³ / FT (0.32 M³ / M)
INSTALLED LENGTH ADJUSTMENT = 1.0' [306 mm]

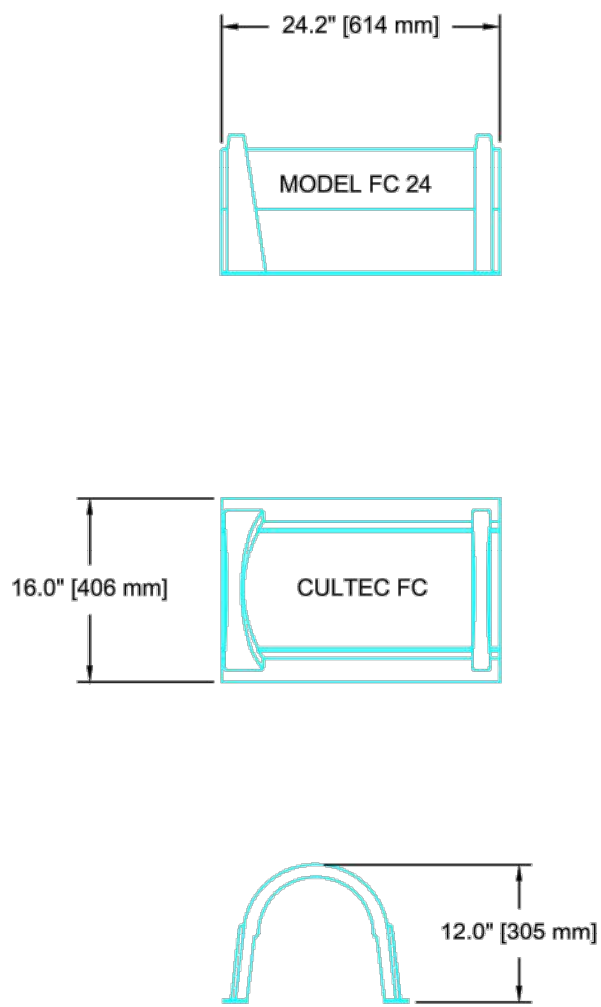
180HD
2.0

CULTEC RECHARGER 180HD HEAVY DUTY THREE VIEW



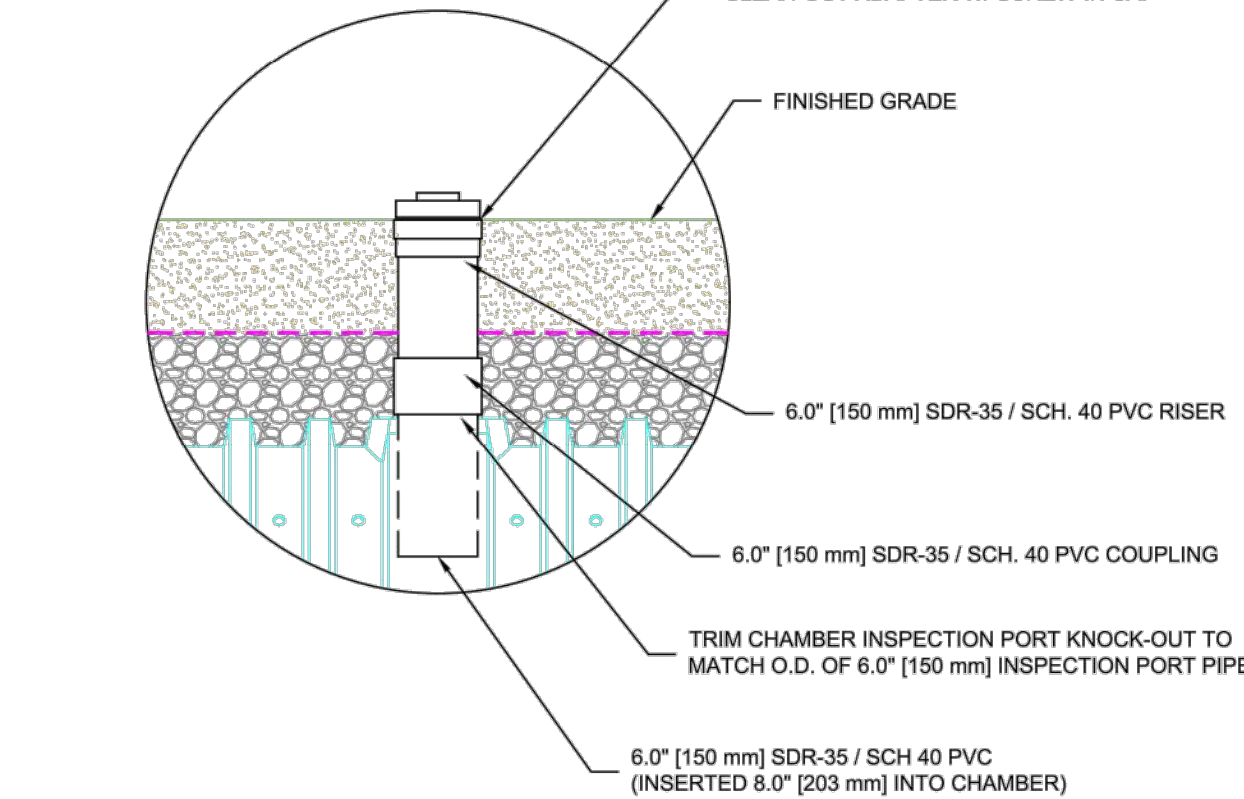
180HD
4.0

CULTEC RECHARGER 180HD HEAVY DUTY CROSS SECTION



180HD
7.0

CULTEC HVLV FC-24 FEED CONNECTOR THREE VIEW

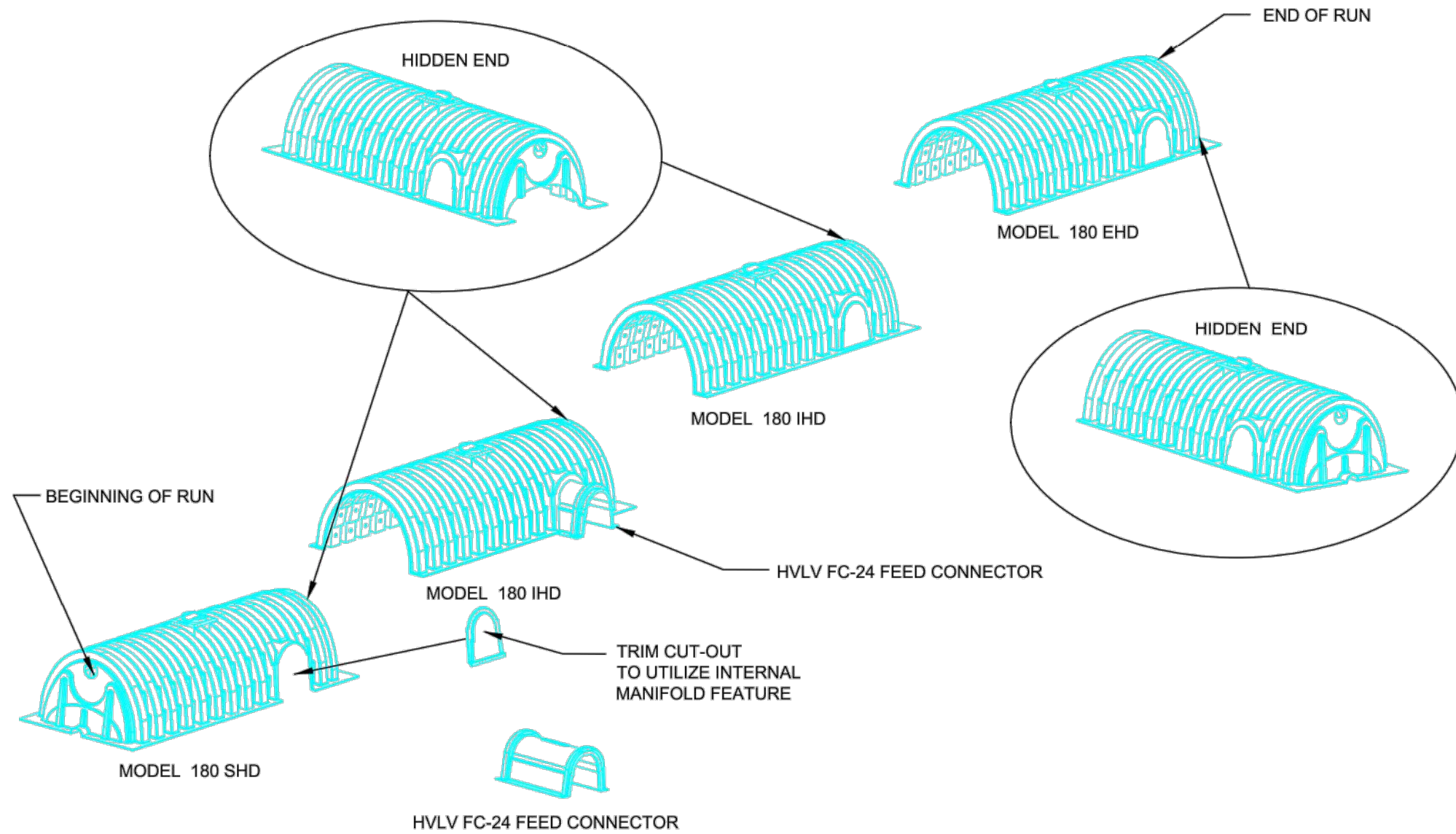


180HD
8.0

OPTIONAL INSPECTION PORT - ZOOM DETAIL

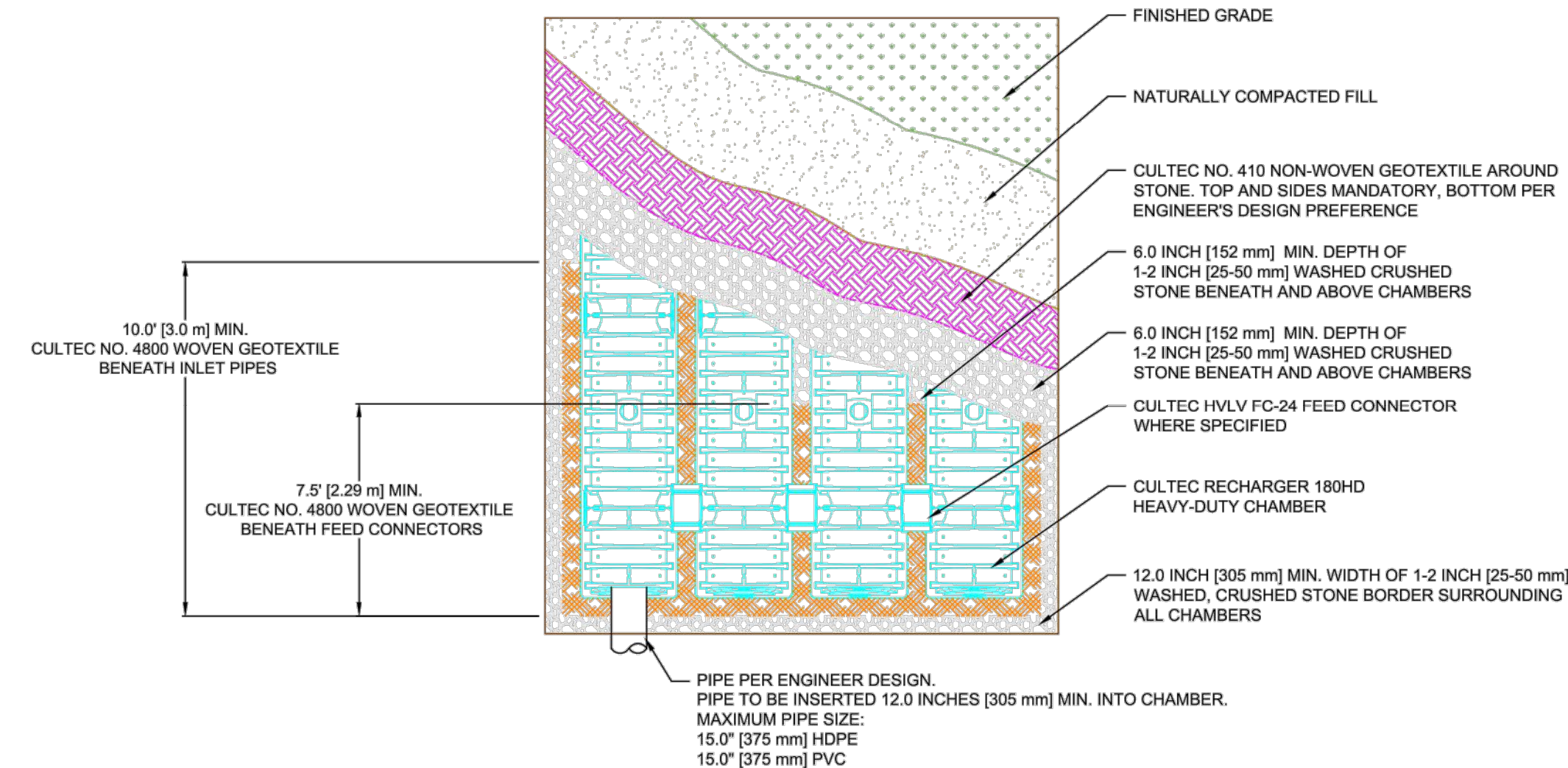
180HD
3.0

CULTEC RECHARGER 180HD HEAVY DUTY END DETAIL INFORMATION



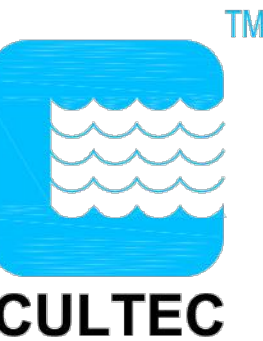
180HD
1.0

GENERAL NOTES



180HD
6.0

CULTEC RECHARGER 180HD HEAVY DUTY PLAN VIEW



CULTEC, Inc.

Subsurface Stormwater Management Systems

P.O. Box 280
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FX: (203) 775-1462
tech@cultec.com

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:	23-100	DATE:	12/05/23
DRAWN BY:	CULTEC, INC	CHECKED BY:	TECH
SCALE:	N.T.S.	SHEET NO:	9 OF 18

CULTEC RECHARGER® 280HD SPECIFICATIONS

GENERAL

CULTEC RECHARGER 280HD 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 WILL 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 WILL BE ARCHED IN SHAPE.
- THE CHAMBER WILL BE OPEN-BOTTOMED.
- THE CHAMBER WILL 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 280HD SHALL BE 26.5 INCHES (673 mm) TALL, 47 INCHES (1194 mm) WIDE AND 8 FEET (2.44 m) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER 280HD SHALL BE 7 FEET (2.13 m).
- MAXIMUM INLET OPENING ON THE CHAMBER ENDWALL IS 21 INCHES (525 mm) HDPE.
- THE CHAMBER WILL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV® FC-24 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. NOMINAL INSIDE DIMENSIONS OF THE SIDE PORTAL SHALL HAVE A WIDTH OF 11.25" (286 mm) AND HEIGHT OF 11.5" (292 mm). THE SIDE PORTAL CAN ACCEPT A MAXIMUM OUTER DIAMETER (O.D.) PIPE SIZE OF 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.
- THE NOMINAL STORAGE VOLUME OF THE RECHARGER 280HD CHAMBER WILL BE 6.079 FT³ / FT (0.585 m³ / m) - WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER 280HD SHALL BE 42.553 FT³ / UNIT (1.205 m³ / UNIT) - WITHOUT STONE.
- THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT³ / FT (0.085 m³ / m) - WITHOUT STONE.
- THE RECHARGER 280HD CHAMBER WILL SEVENTY-TWO DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNITS CORE TO PROMOTE LATERAL CONVEYANCE OF WATER.
- THE RECHARGER 280HD CHAMBER SHALL HAVE 15 CORRUGATIONS.
- THE ENDWALL OF THE CHAMBER, WHEN PRESENT, WILL BE AN INTEGRAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE END PLATES CANNOT BE USED WITH THIS UNIT.
- THE RECHARGER 280RHD STAND ALONE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL ENDWALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS.
- THE RECHARGER 280SHD STARTER UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 9 INCHES (229 mm) HIGH X 35 INCHES (889 mm) WIDE.
- THE RECHARGER 280IHD INTERMEDIATE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY OPEN ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 9 INCHES (229 mm) HIGH X 35 INCHES (889 mm) WIDE.
- THE RECHARGER 280EHD 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.
- 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 WILL FIT INTO THE SIDE PORTALS OF THE RECHARGER 280HD AND ACT AS CROSS FEED CONNECTIONS.
- CHAMBERS MUST HAVE HORIZONTAL STIFFENING FLEX REDUCTION STEPS BETWEEN THE RIBS.
- THE CHAMBER WILL 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.
- THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION.
- THE CHAMBER SHALL BE MANUFACTURED IN AN IN AN ISO 9001:2015 CERTIFIED FACILITY.
- THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S INSTALLATION INSTRUCTIONS.
- THE CHAMBER SHALL BE DESIGNED AND MANUFACTURED TO MEET THE MATERIAL AND STRUCTURAL REQUIREMENTS OF APMO PS 63-2018, INCLUDING RESISTANCE TO AASHTO H-10 AND H-20 HIGHWAY LIVE LOADS, WHEN INSTALLED IN ACCORDANCE WITH CULTEC'S INSTALLATION INSTRUCTIONS.
- MAXIMUM ALLOWED COVER OVER TOP OF UNIT SHALL BE 12 FEET (3.65 m).

CULTEC HVLV® FC-24 FEED CONNECTOR PRODUCT SPECIFICATIONS

GENERAL

CULTEC HVLV FC-24 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER 280HD STORMWATER CHAMBERS.

CHAMBER PARAMETERS

- THE CHAMBERS WILL 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 WILL BE ARCHED IN SHAPE.
- THE CHAMBER WILL BE OPEN-BOTTOMED.
- 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.
- THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT³ / FT (0.085 m³ / m) - WITHOUT STONE.
- THE HVLV FC-24 FEED CONNECTOR CHAMBER SHALL HAVE 2 CORRUGATIONS.
- 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 WILL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
- THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2015 CERTIFIED FACILITY.

CULTEC NO. 410™ NON-WOVEN GEOTEXTILE

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

GEOTEXTILE PARAMETERS

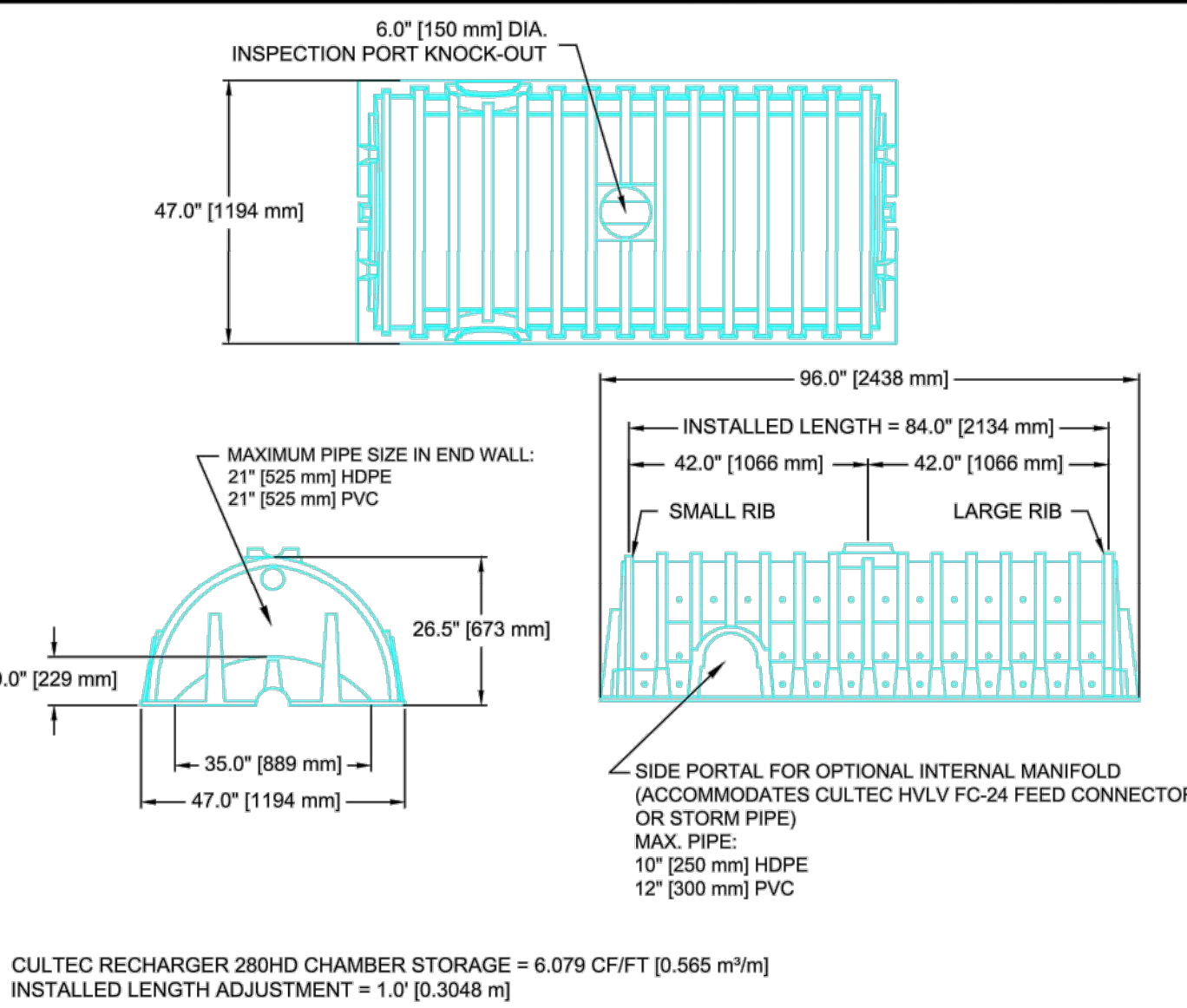
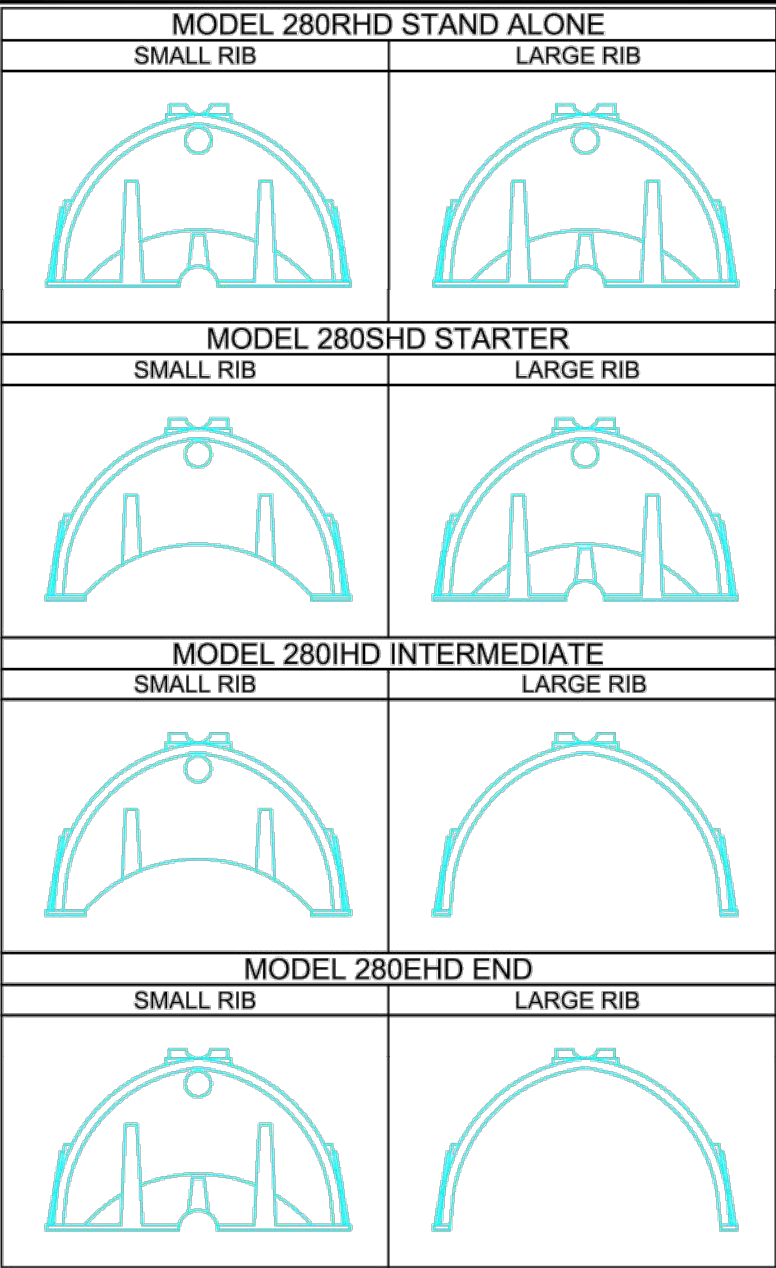
- THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- THE GEOTEXTILE SHALL HAVE A TYPICAL WEIGHT OF 4.5 OZ/SY (142 G/M).
- THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH VALUE OF 120 LBS (533 N) PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE AN ELONGATION @ BREAK VALUE OF 50% PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A MULLEN BURST VALUE OF 225 PSI (1551 KPA) PER ASTM D3786 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PUNCTURE STRENGTH VALUE OF 65 LBS (289 N) PER ASTM D4833 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE VALUE OF 340 LBS (1513 N) PER ASTM D6241 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A TRAPEZOID TEAR VALUE OF 50 LBS (222 N) PER ASTM D4533 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A AOS VALUE OF 70 U.S. SIEVE (0.212 MM) PER ASTM D4751 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PERMITTIVITY VALUE OF 1.7 SEC-1 PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WATER FLOW RATE VALUE OF 135 GAL/MIN/SF (5500 L/MIN/SQ) PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A UV STABILITY @ 500 HOURS VALUE OF 70% PER ASTM D4355 TESTING METHOD.

CULTEC NO. 4800™ WOVEN GEOTEXTILE

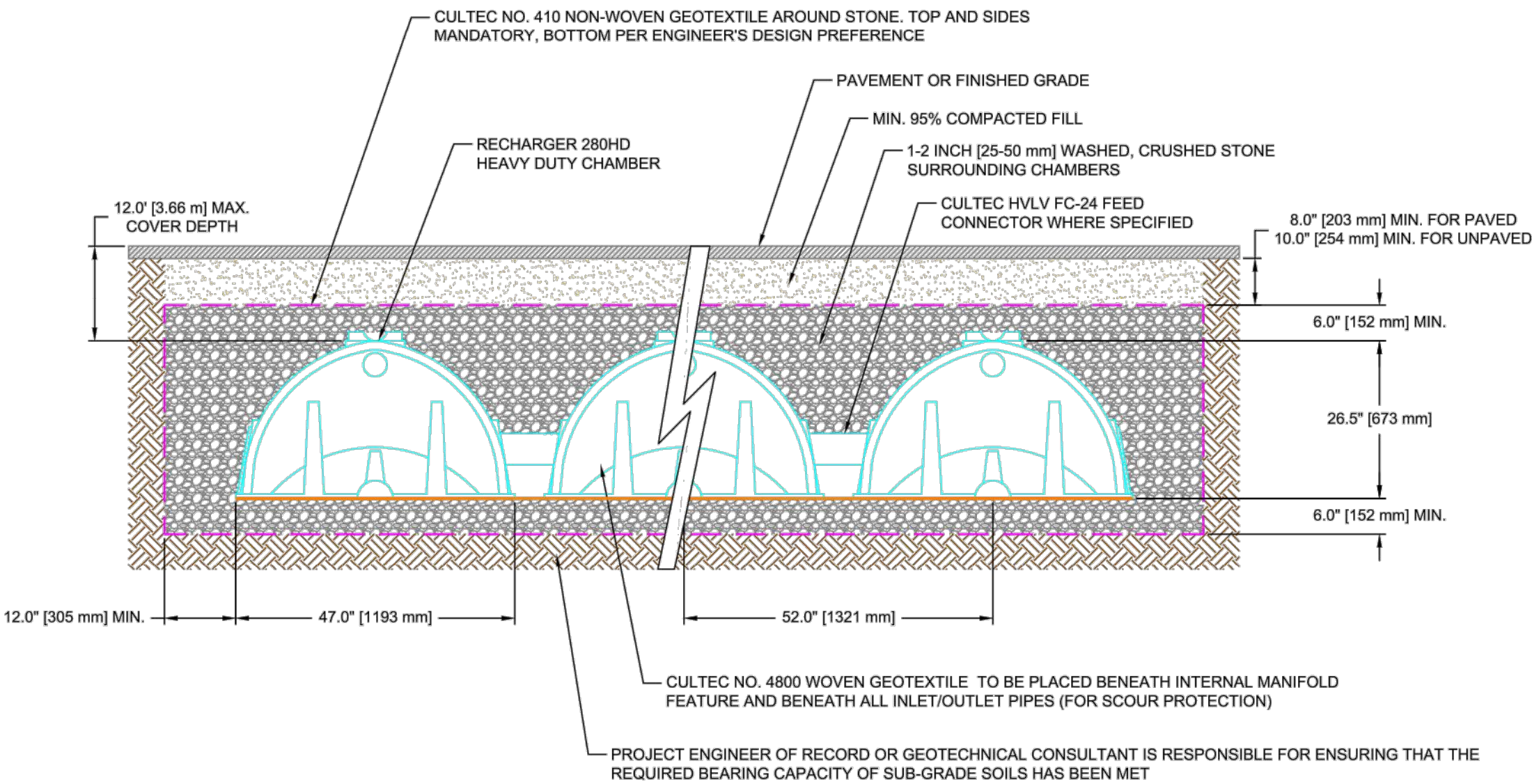
CULTEC NO. 4800 WOVEN GEOTEXTILE IS DESIGNED AS A UNDERLAYMENT TO PREVENT SCOURING CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS UTILIZING THE CULTEC MANIFOLD FEATURE. IT MAY ALSO BE USED AS A COMPONENT OF THE CULTEC SEPARATOR ROW TO ACT AS A BARRIER TO PREVENT SOIL/CONTAMINANT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

GEOTEXTILE PARAMETERS

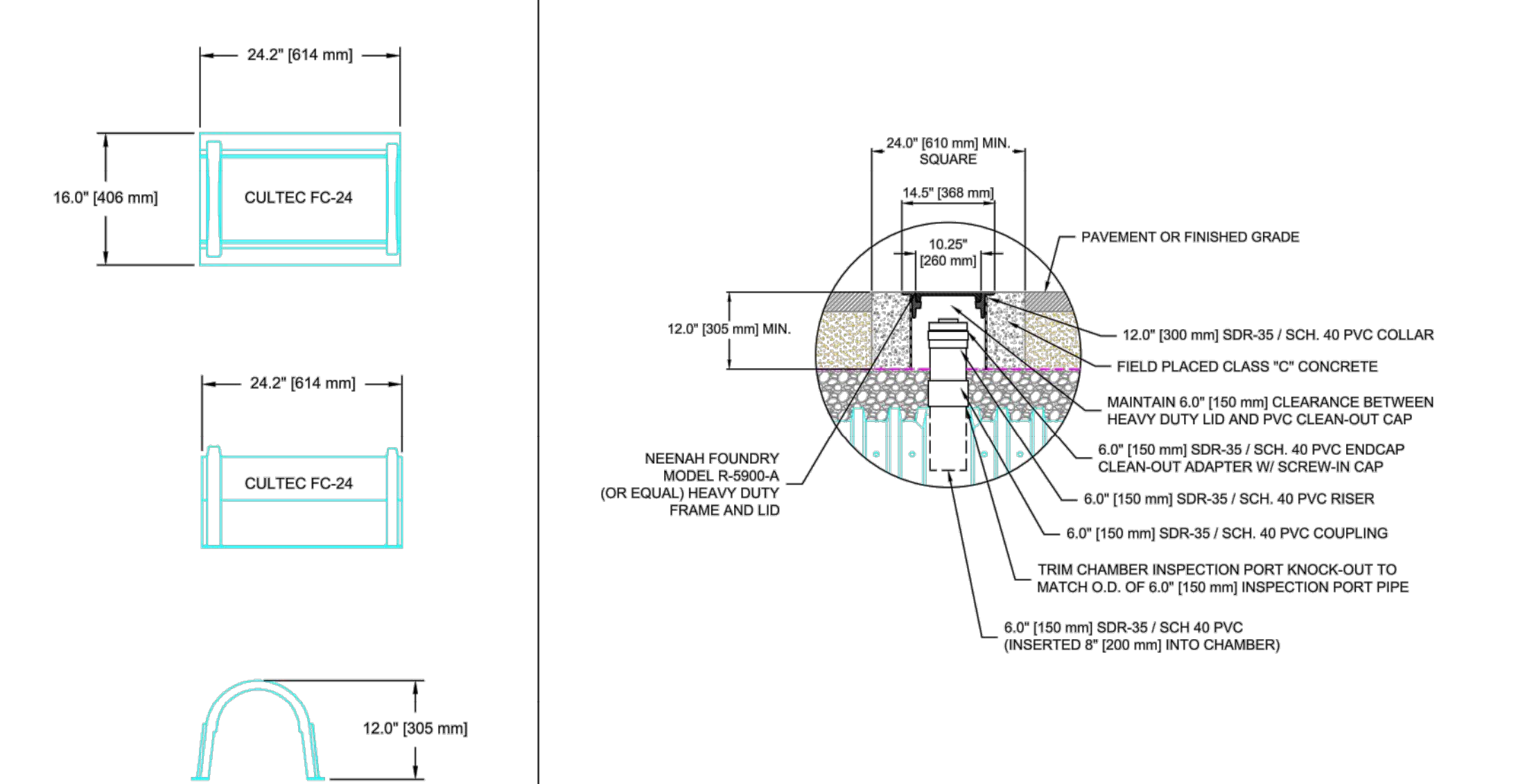
- THE GEOTEXTILE SHALL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)
- THE GEOTEXTILE SHALL BE BLACK IN APPEARANCE.
- THE GEOTEXTILE SHALL HAVE A TENSILE STRENGTH OF 550 X 550 LBS (2,448 X 2,448 N) PER ASTM D4632 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A ELONGATION @ BREAK RESISTANCE OF 20 X 20% PER ASTM D4632 TESTING METHOD.
- 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.
- 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.
- THE GEOTEXTILE SHALL HAVE A CBR PUNCTURE RESISTANCE OF 1,700 LBS (7,560 N) PER ASTM D6241 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A TRAPEZOIDAL TEAR RESISTANCE OF 180 X 180 LBS (801 X 801 N) PER ASTM D4533 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE AN APPARENT OPENING SIZE OF 40 US STD. SIEVE (0.425 MM) PER ASTM D4751 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A PERMITTIVITY RATING OF 0.15 SEC-1 PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A WATER FLOW RATING OF 11.5 GPM/FT² (470 LPM/M²) PER ASTM D4491 TESTING METHOD.
- THE GEOTEXTILE SHALL HAVE A UV RESISTANCE OF 80% @ 500 HRS. PER ASTM D4355 TESTING METHOD.



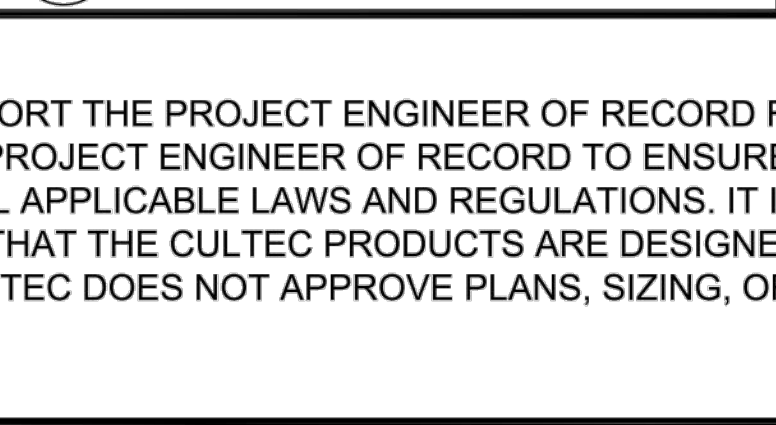
CULTEC RECHARGER 280HD HEAVY DUTY THREE VIEW



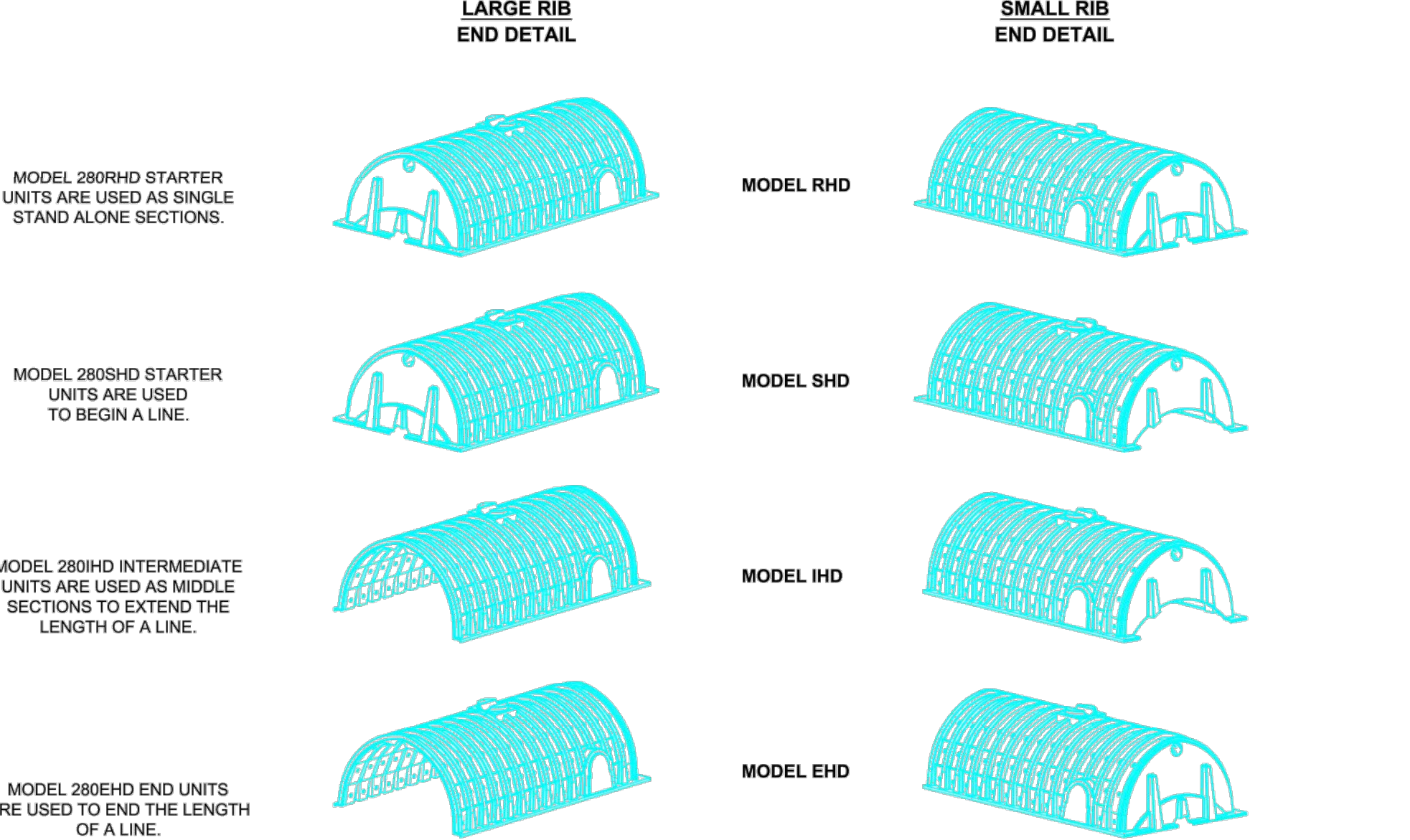
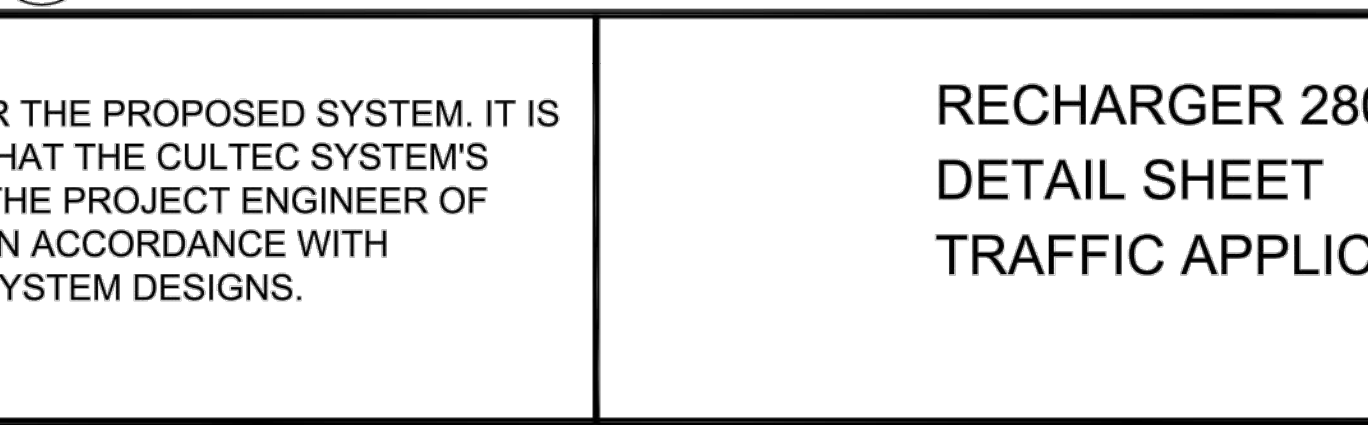
CULTEC RECHARGER 280HD HEAVY DUTY CROSS SECTION



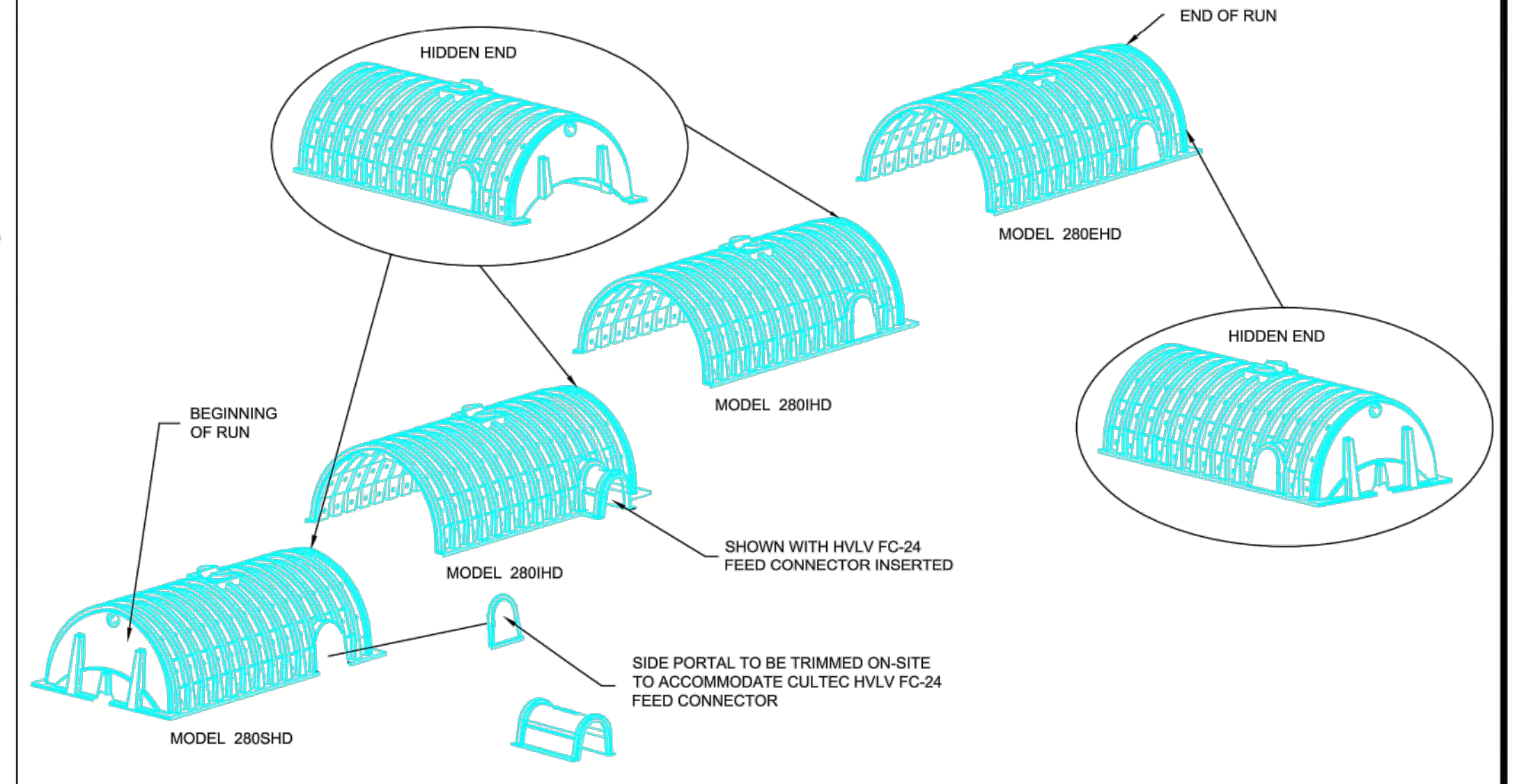
CULTEC HVLV FC-24 FEED CONNECTOR THREE VIEW



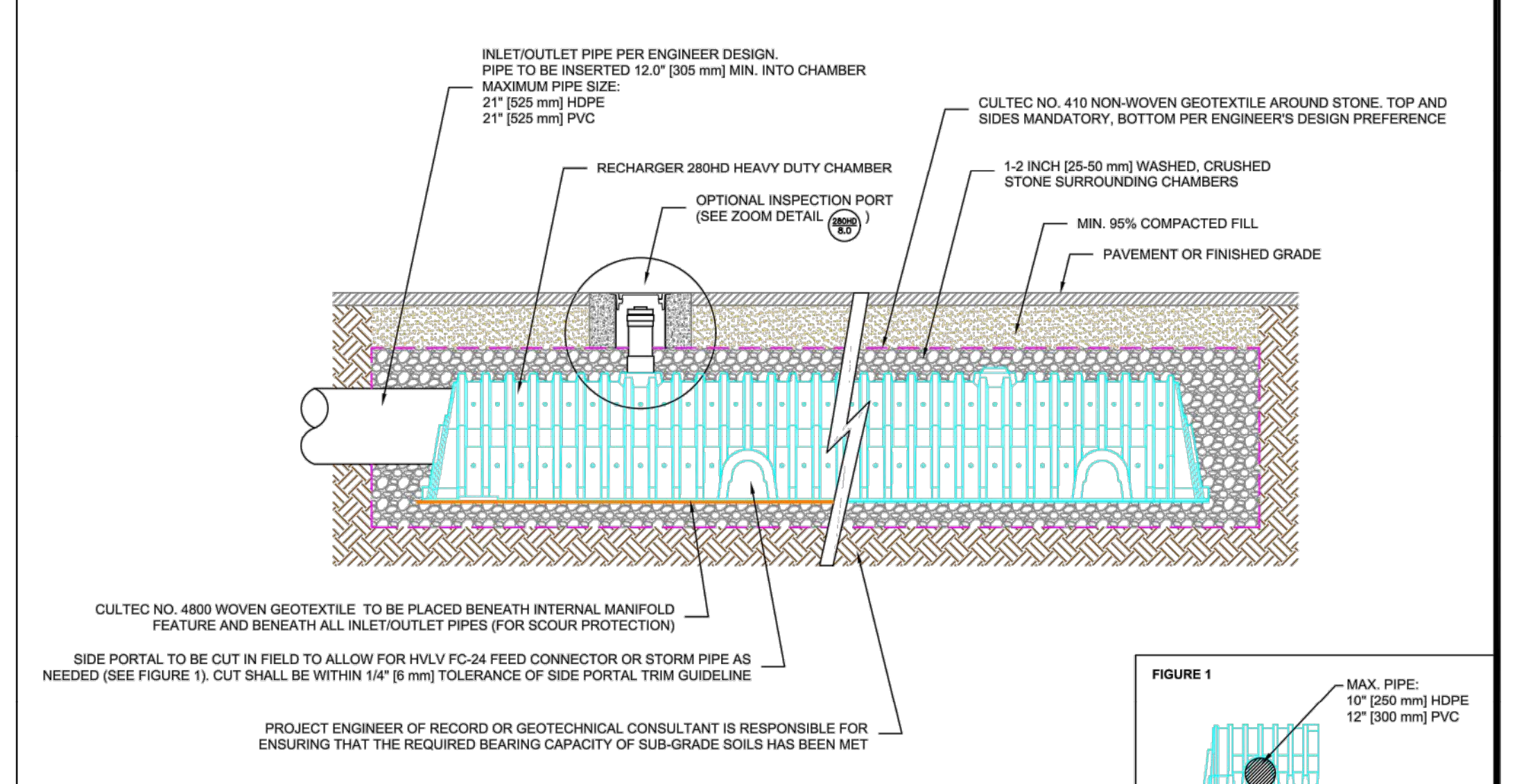
OPTIONAL INSPECTION PORT - ZOOM DETAIL



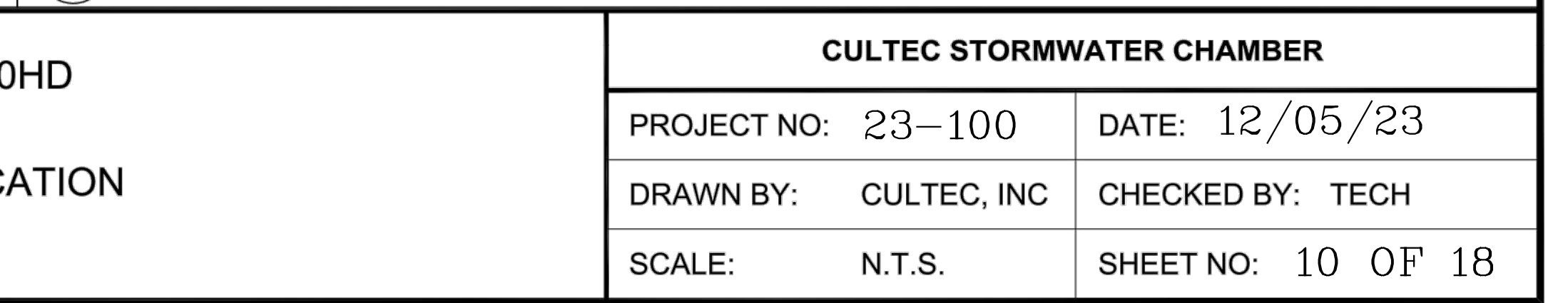
CULTEC RECHARGER 280HD HEAVY DUTY END DETAIL INFORMATION



CULTEC RECHARGER 280HD HEAVY DUTY TYPICAL INTERLOCK



CULTEC INTERNAL MANIFOLD - OPTIONAL INSPECTION PORT DETAIL



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RECHARGER 280HD
DETAIL SHEET
TRAFFIC APPLICATION

CULTEC STORMWATER CHAMBER

PROJECT NO: 23-100
DATE: 12/05/23

DRAWN BY: CULTEC, INC
CHECKED BY: TECH

SCALE: N.T.S.
SHEET NO: 10 OF 18

SEPARATOR ROW™ SPECIFICATIONS

GENERAL

1. CULTEC'S SEPARATOR ROW IS USED AS AN INEXPENSIVE MEANS OF REMOVING TOTAL SUSPENDED SOLIDS FROM THE CHAMBER SYSTEM, AS WELL AS PROVIDING EASIER ACCESS FOR INSPECTION AND MAINTENANCE.
2. THE SEPARATOR ROW PERFORMANCE SHALL BE TESTED AND VERIFIED TO THE PROTOCOLS AND PROCEDURES AS DEFINED BY ENVIRONMENTAL TECHNOLOGY VERIFICATION (ETV) CANADA TO ACHIEVE 80% TSS REMOVAL.

INSTALLATION INSTRUCTIONS

A SEPARATOR ROW IS INSTALLED ON A 1-2 INCH [25-51 mm] WASHED, CRUSHED STONE BASE. TYPICALLY, THE CULTEC CHAMBER MODEL USED FOR THE SEPARATOR ROW IS THE SAME CHAMBER USED THROUGHOUT THE ENTIRE CHAMBER BED.

STORMWATER IS DISTRIBUTED TO THE SEPARATOR ROW BY A PRIMARY FEED SYSTEM THAT DIVERTS FLOW TO THE SEPARATOR ROW AND A SECONDARY BYPASS FEED SYSTEM THAT DIVERTS THE FLOW OF CLEAN WATER TO THE OTHER PARTS OF THE UNDERGROUND STORMWATER MANAGEMENT SYSTEM. THE DISTRIBUTION SYSTEM MAY BE BY PIPES SET AT A LOWER ELEVATION THAT PERMIT THE FIRST FLUSH TO THE SEPARATOR ROW VERSUS OTHER PARTS OF THE UNDERGROUND STORMWATER SYSTEM. THIS INITIAL FLOW MAY BE MANAGED BY A BAFFLE OR WEIR, THE SIZING OF THE PIPE(S) THAT PROVIDE STORM WATER TO THE SEPARATOR ROW IS TO BE DETERMINED BY THE DESIGN ENGINEER AND IS BASED UPON THE REQUIREMENT TO ACCOMMODATE THE DESIGN FLOW AND SERVICE CONVENIENCE.

THE CHAMBERS UTILIZED IN THE SEPARATOR ROW ARE TO BE COMPLETELY WRAPPED WITH CULTEC NO. 410 NON-WOVEN GEOTEXTILE. THIS CREATES A PASS-THROUGH FILTER ARRANGEMENT TO SEPARATE TOTAL SUSPENDED SOLIDS IN THE TRANSFER OF STORM WATER TO OTHER CHAMBERS THROUGHOUT THE UNDERGROUND STORMWATER MANAGEMENT SYSTEM.

ONCE WRAPPED, THE SEPARATOR ROW IS TO THEN PLACED ENTIRELY OVER 1 LAYER OF CULTEC No. 4800 WOVEN GEOTEXTILE. THIS WOVEN GEOTEXTILE PROVIDES A DURABLE SURFACE WITHIN THE ROW FOR MAINTENANCE PROCEDURES AS WELL AS TO PREVENT ANY SCOURING OF THE STONE BASE DURING HIGH PRESSURE JETTING.

THE RECOMMENDED INSTALLATION OF SEPARATOR ROW CHAMBERS, IN REGARD TO STONE SEPARATION AND STONE ABOVE THE UNIT, ALONG WITH OTHER MINIMUM BURIAL, MATERIALS AND METHOD SPECIFICATIONS DETAILED FOR THE PROPER INSTALLATION, IS THE SAME AS CULTEC'S REQUIREMENT DETAILED IN THE COMPANY'S INSTALLATION GUIDELINES WITH THE EXCEPTION OF THE PLACEMENT OF THE REQUIRED FILTERING FABRICS. PLEASE REFER TO CULTEC'S CURRENT INSTALLATION INSTRUCTIONS FOR STORMWATER CHAMBERS AS A GUIDE.

MAINTENANCE PROCEDURES

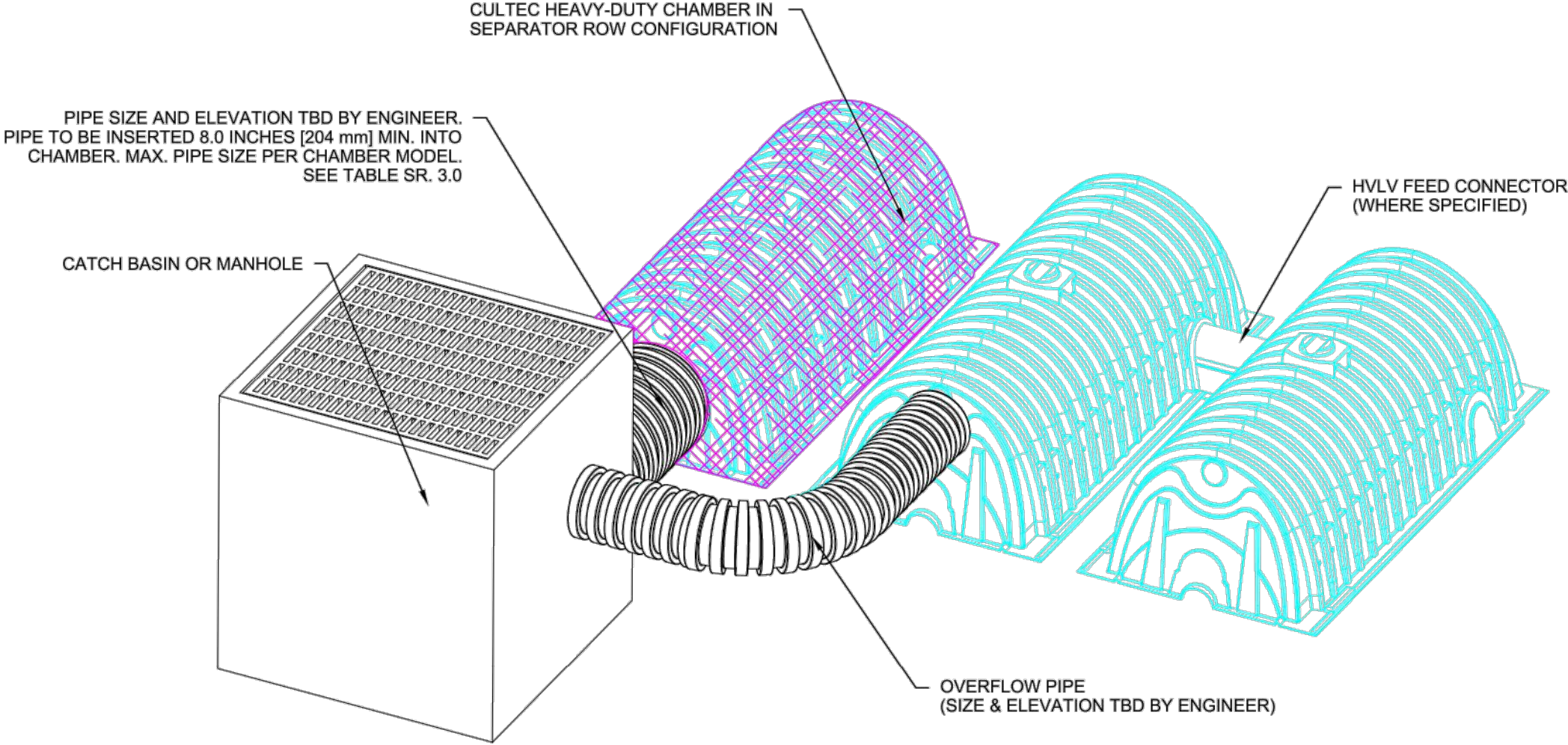
CULTEC RECOMMENDS INSPECTIONS OF THE SEPARATOR ROW TO BE PERFORMED EVERY SIX MONTHS FOR THE FIRST YEAR. THE FREQUENCY OF INSPECTION CAN THEN BE ADJUSTED BASED UPON PREVIOUS OBSERVATION OF SEDIMENT DEPOSITION.

WHILE CLEANING IS POSSIBLE FROM A SINGLE MANHOLE IN SHORTER LINES, A CLEAN-OUT OPTION FROM EITHER END OF A LINE IS PREFERABLE, PARTICULARLY FOR LONGER RUNS. CLEANING INVOLVES FLUSHING SEDIMENT FROM THE BASE FABRIC OF THE SEPARATOR ROW.

ACCESS WILL BE PROVIDED VIA A MANHOLE(S) LOCATED AT THE END(S) OF THE ROW FOR CLEAN OUT.

MAINTENANCE OF THE SEPARATOR ROW IS TO BE ACCOMPLISHED WITH A JETVAC PROCESS.

THE JETVAC IS TO BE SENT DOWN THE ENTIRE LENGTH OF THE SEPARATOR ROW. AS THE HIGH PRESSURE WATER NOZZLE IS RETRIEVED, THE CAPTURED SEDIMENTS ARE PUSHED BACK INTO THE MANHOLE FOR VACUUMING.

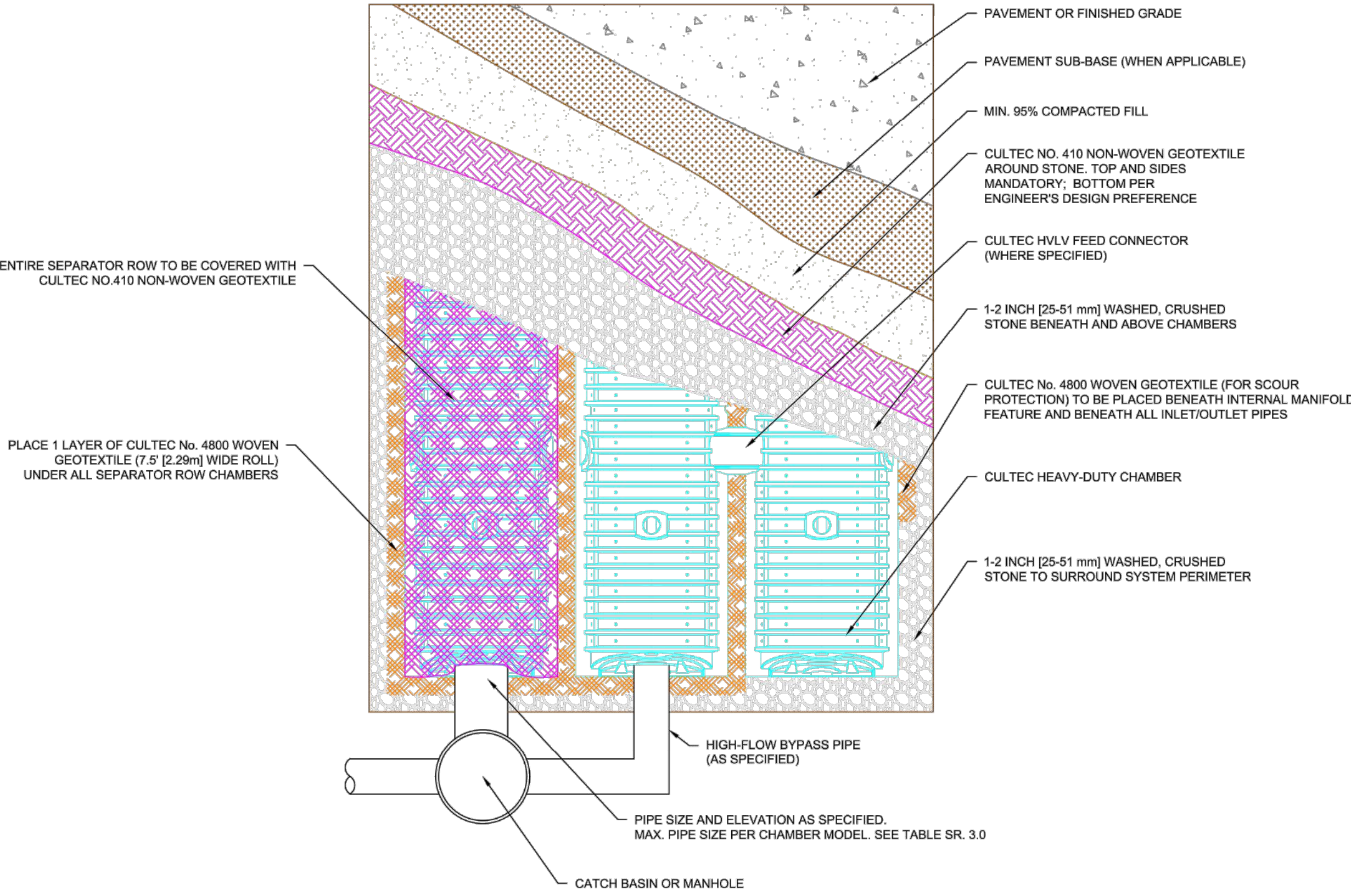


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TYPICAL SEPARATOR ROW CONFIGURATION INLET CONNECTION

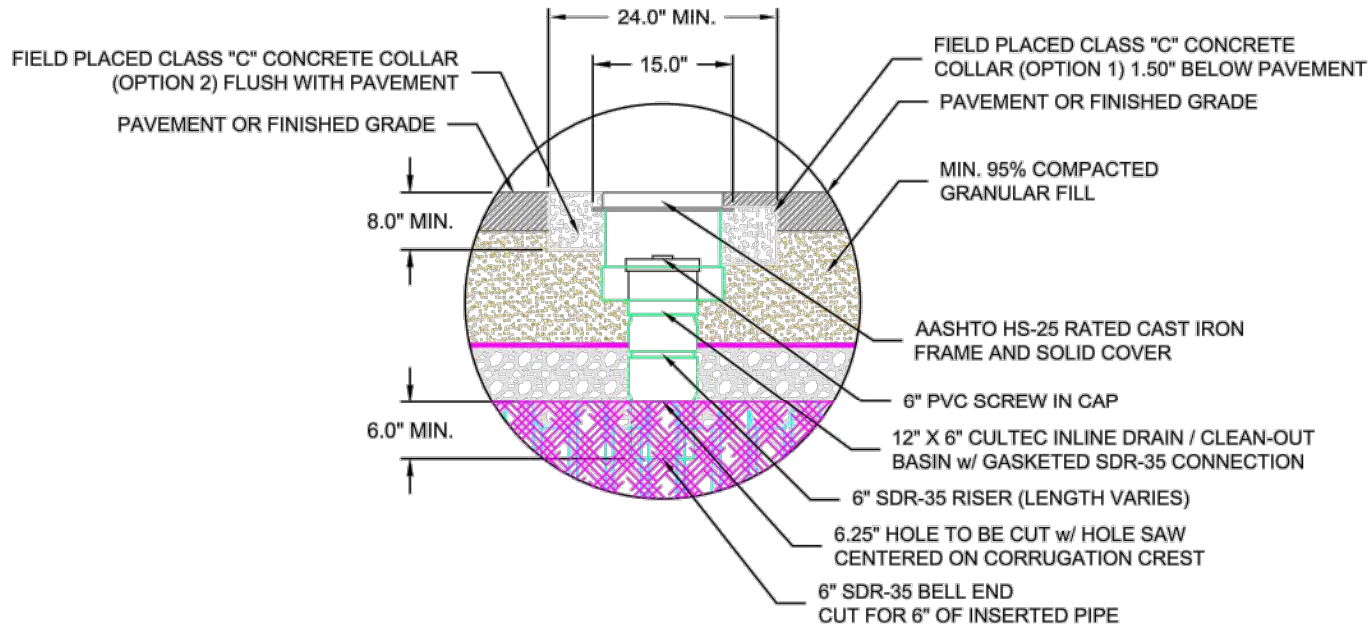
CULTEC CHAMBER MODEL						
	DESCRIPTION	CONTACTOR 100HD	RECHARGER 150XLHD	RECHARGER 280HD	RECHARGER 330XLHD	RECHARGER 902HD
A'	MIN. DEPTH OF STONE BASE	6" 152 mm	6" 152 mm	6" 152 mm	6" 152 mm	9" 229 mm
B	CHAMBER HEIGHT	12.5" 318 mm	18.5" 470 mm	26.5" 673 mm	30.5" 775 mm	48" 1219 mm
C'	MIN. DEPTH OF STONE REQUIRED ABOVE UNITS FOR TRAFFIC APPLICATIONS	6" 152 mm	6" 152 mm	6" 152 mm	6" 152 mm	12" 305 mm
D	MIN. DEPTH REQUIRED OF 95% COMPACTED FILL FOR PAVED TRAFFIC	8" 203 mm	8" 203 mm	8" 203 mm	10" 254 mm	12" 305 mm
E	MAX. DEPTH OF COVER ALLOWED ABOVE CROWN OF CHAMBER	12" 3.65 m	12" 3.65 m	12" 3.65 m	12" 3.65 m	8.3" 2.53 m
	MAX. PIPE SIZE TO CHAMBER ENDWALL/ENDCAP	10" 250 mm	12" 300 mm	18" 450 mm	24" 600 mm	24" 600 mm

NOTE¹: STONE ABOVE AND BELOW UNITS MAY VARY PER SYSTEM.
SEE SYSTEM LAYOUT FOR STONE REQUIREMENTS



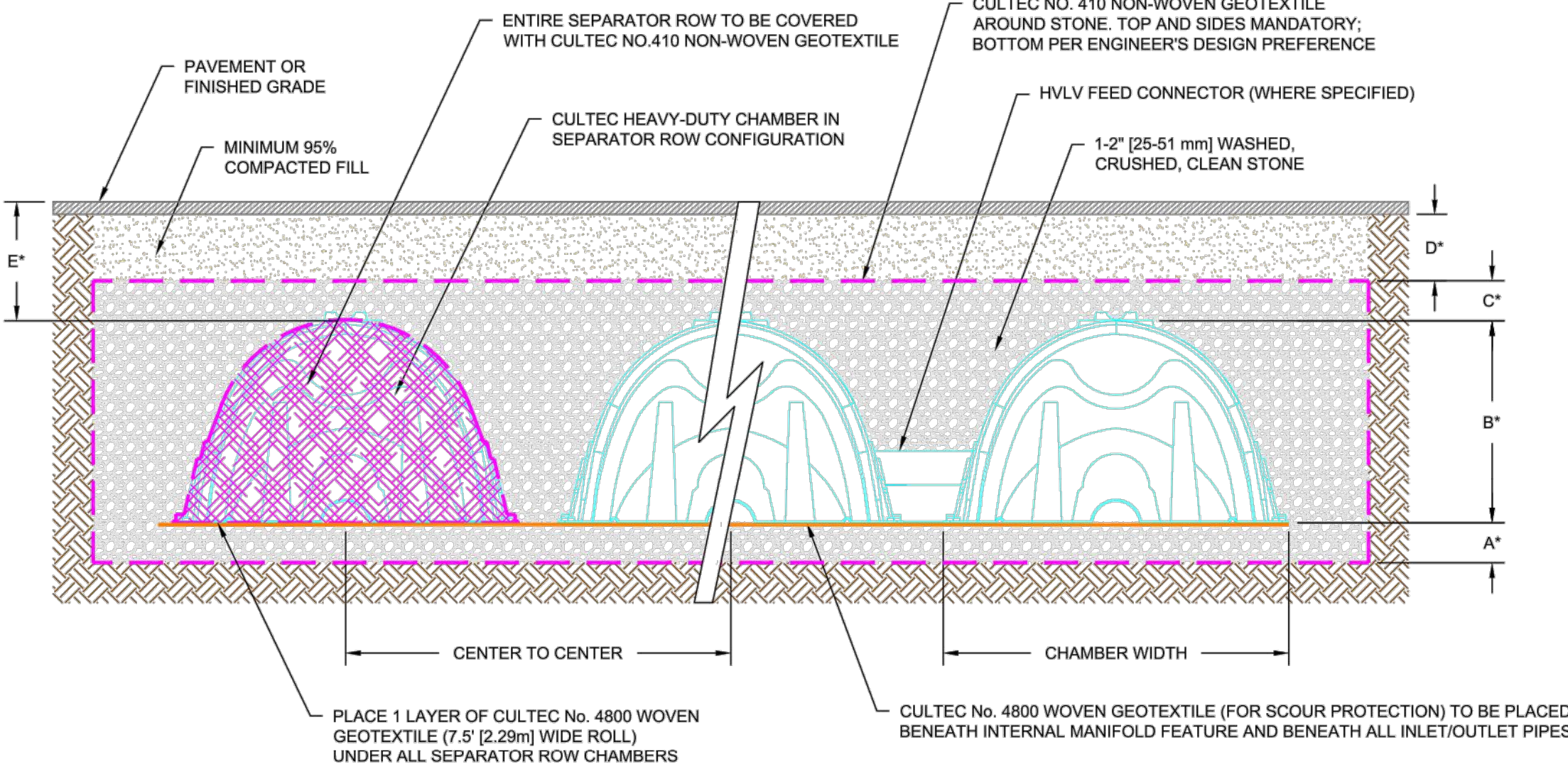
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TYPICAL SEPARATOR ROW CONFIGURATION PLAN VIEW



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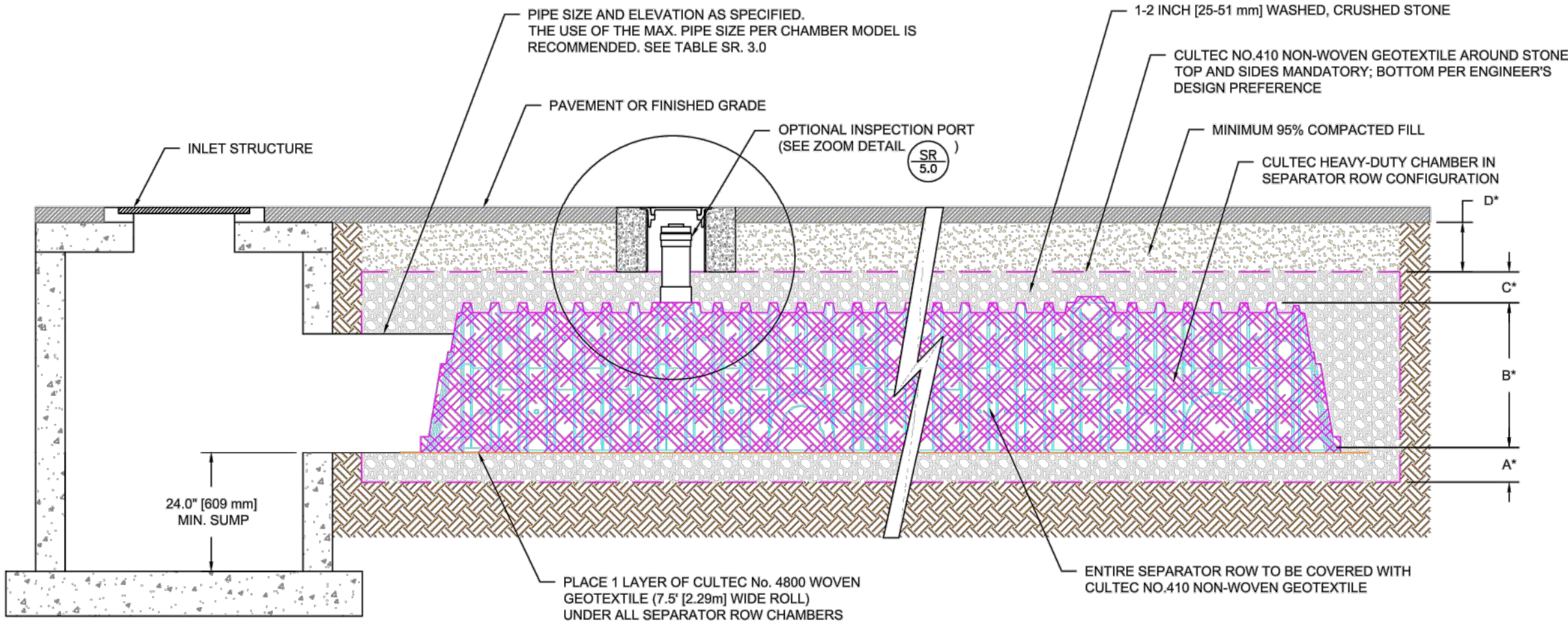
TYPICAL INSPECTION PORT - ZOOM DETAIL



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TYPICAL SEPARATOR ROW CONFIGURATION CROSS SECTION

* SEE SR 3.0 - CROSS SECTION TABLE REFERENCE



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TYPICAL SEPARATOR ROW CONFIGURATION CROSS SECTION WITH INSPECTION PORT DETAIL



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SEPARATOR ROW
DETAIL SHEET
TRAFFIC APPLICATION

SEPARATOR ROW DETAIL SHEET

PROJECT NO: 23-100	DATE: 12/05/23
DESIGNED BY: CULTEC, INC	CHECKED BY: TECH
SCALE: N.T.S.	SHEET NO: 11 OF 18