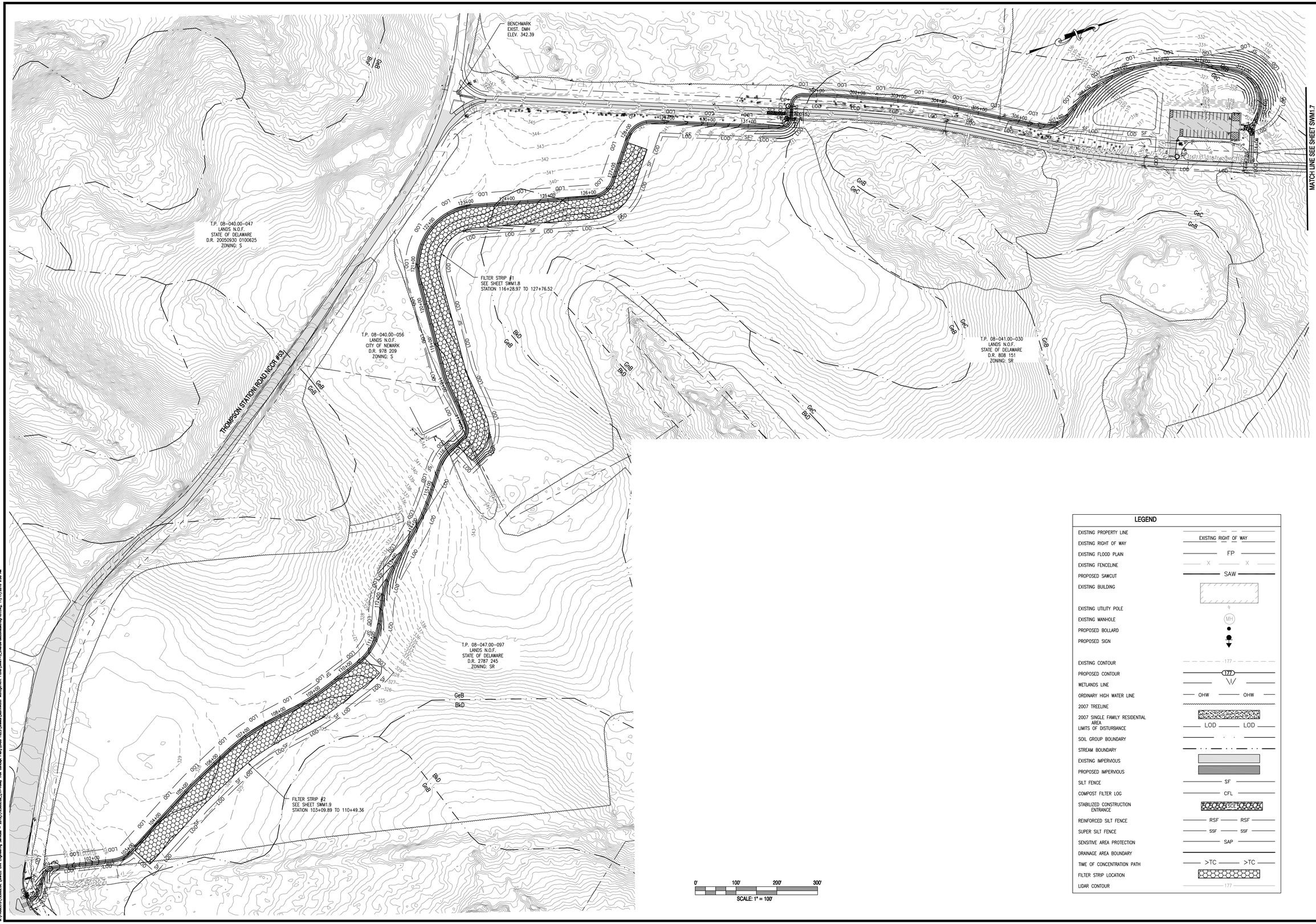


LEGEND

EXISTING PROPERTY LINE	
EXISTING RIGHT OF WAY	EXISTING RIGHT OF WAY
EXISTING FLOOD PLAIN	FP
EXISTING FENCELINE	X X
PROPOSED SAWCUT	SAW
EXISTING BUILDING	
EXISTING UTILITY POLE	
EXISTING MANHOLE	MH
PROPOSED BOLLARD	
PROPOSED SIGN	
EXISTING CONTOUR	177
PROPOSED CONTOUR	177
WETLANDS LINE	
ORDINARY HIGH WATER LINE	OHW OHW
2007 TREELINE	
2007 SINGLE FAMILY RESIDENTIAL AREA	
LIMITS OF DISTURBANCE	LOD LOD
SOIL GROUP BOUNDARY	
STREAM BOUNDARY	
EXISTING IMPERVIOUS	
PROPOSED IMPERVIOUS	
SILT FENCE	SF
COMPOST FILTER LOG	CFL
STABILIZED CONSTRUCTION ENTRANCE	SCE
REINFORCED SILT FENCE	RSF RSF
SUPER SILT FENCE	SSF SSF
SENSITIVE AREA PROTECTION	SAP
DRAINAGE AREA BOUNDARY	
TIME OF CONCENTRATION PATH	>TC >TC
FILTER STRIP LOCATION	
LIDAR CONTOUR	177

REVISIONS:

DATE:	DESCRIPTION:	BY:

WCCSP TRI-VALLEY TRAIL
SEDIMENT STORMWATER MANAGEMENT PLANS

OVERALL POST CONSTRUCTION MANAGEMENT PLAN

SEAL:

CIVIL ENGINEER:

CENTURY ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO. WCCSP-7A

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

DESIGNED BY: ATF

DRAWN BY: ATF

CHECKED BY: AES

DATE: NOVEMBER 14, 2016

SCALE: 1" = 100'

SHEET NO.: SWM1.6

CONTRACT NO.: 2016-WCCSP-100

O:\PROJECTS\150003.00 (DNREC Civil Engineering Services - 2013)\150003.02_Tri-Valley Trail Concept Plan\CADD FILES\Sheets\Stormwater Management Plans\SWM1-5_OverallPostConstMangPlan.dwg, 11/17/2016 9:06 AM

0' 100' 200' 300'
SCALE: 1" = 100'

LEGEND

EXISTING PROPERTY LINE	
EXISTING RIGHT OF WAY	EXISTING RIGHT OF WAY
EXISTING FLOOD PLAIN	FP
EXISTING FENCELINE	X X
PROPOSED SAWCUT	SAW
EXISTING BUILDING	
EXISTING UTILITY POLE	
EXISTING MANHOLE	MH
PROPOSED BOLLARD	
PROPOSED SIGN	
EXISTING CONTOUR	177
PROPOSED CONTOUR	177
WETLANDS LINE	\\/
ORDINARY HIGH WATER LINE	OHW OHW
2007 TREELINE	
2007 SINGLE FAMILY RESIDENTIAL AREA	
LIMITS OF DISTURBANCE	LOD LOD
SOIL GROUP BOUNDARY	
STREAM BOUNDARY	
EXISTING IMPERVIOUS	
PROPOSED IMPERVIOUS	
SILT FENCE	SF
COMPOST FILTER LOG	CFL
STABILIZED CONSTRUCTION ENTRANCE	SCE
REINFORCED SILT FENCE	RSF RSF
SUPER SILT FENCE	SSF SSF
SENSITIVE AREA PROTECTION	SAP
DRAINAGE AREA BOUNDARY	
TIME OF CONCENTRATION PATH	>TC >TC
FILTER STRIP LOCATION	
LIDAR CONTOUR	177

REVISIONS:

DATE:	DESCRIPTION:	BY:

WCCSP TRI-VALLEY TRAIL
SEDIMENT STORMWATER MANAGEMENT PLANS

OVERALL POST CONSTRUCTION MANAGEMENT PLAN

SEAL:

CIVIL ENGINEER:

CENTURY ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO. WCCSP-7A

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

DESIGNED BY: ATF

DRAWN BY: ATF

CHECKED BY: AES

DATE: NOVEMBER 14, 2016

SCALE: 1" = 100'

SHEET NO.: SWM1.7

CONTRACT NO.: 2016-WCCSP-100

G:\PROJECTS\155002.00 (DMEC: Civil Engineering Services — 2012)\155002.02_Tri-Valley Trail Concept Plan\CADD FILES\Sheets\Stormwater Management Plans\SWM1-6_3_OverallPostConstructionPlan.dwg, 11/17/2016 9:10 AM

LEGEND

EXISTING PROPERTY LINE	
EXISTING RIGHT OF WAY	EXISTING RIGHT OF WAY
EXISTING FLOOD PLAIN	FP
EXISTING FENCELINE	X X
PROPOSED SAWCUT	SAW
EXISTING BUILDING	
EXISTING UTILITY POLE	
EXISTING MANHOLE	MH
PROPOSED BOLLARD	
PROPOSED SIGN	
EXISTING CONTOUR	177
PROPOSED CONTOUR	177
WETLANDS LINE	
ORDINARY HIGH WATER LINE	OHW OHW
2007 TREELINE	
2007 SINGLE FAMILY RESIDENTIAL AREA	
LIMITS OF DISTURBANCE	LOD LOD
SOIL GROUP BOUNDARY	
STREAM BOUNDARY	
EXISTING IMPERVIOUS	
PROPOSED IMPERVIOUS	
OVERLAY AREA	
SILT FENCE	SF
COMPOST FILTER LOG	CFL
STABILIZED CONSTRUCTION ENTRANCE	
REINFORCED SILT FENCE	RSF RSF
SUPER SILT FENCE	SSF SSF
SENSITIVE AREA PROTECTION	SAP
DRAINAGE AREA BOUNDARY	
TIME OF CONCENTRATION PATH	>TC >TC
FILTER STRIP LOCATION	
LIDAR CONTOUR	177
STONE CHECK DAM	SCD

GENERAL NOTES

1. THE DNREC SEDIMENT AND STORMWATER PROGRAM RESERVES THE RIGHT TO ENTER PRIVATE PROPERTY FOR PURPOSES OF PERIODIC SITE REVIEWS.
2. THE DNREC SEDIMENT AND STORMWATER PROGRAM SHALL BE NOTIFIED WITHIN 30 BUSINESS DAYS IF THE PROPERTY OWNERSHIP IS TRANSFERRED TO A NEW PERSON OR ENTITY.
3. THE DNREC SEDIMENT AND STORMWATER PROGRAM MAY SEEK ENFORCEMENT ACTION AGAINST ANY OWNER DEEMED NEGLIGENT IN FULFILLING THE OPERATION AND MAINTENANCE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
4. THE DNREC SEDIMENT AND STORMWATER PROGRAM SHALL BE CONTACTED IF A CONCERN ARISES REGARDING A STORMWATER MANAGEMENT FACILITY, BEFORE ANY NON-ROUTINE MAINTENANCE, OR IF MODIFICATIONS TO THE FACILITY ARE DESIRED.
5. ANY DESIGN MODIFICATIONS MADE TO THE STORMWATER SYSTEM SHALL REQUIRE THE CREATION OF A NEW POST CONSTRUCTION STORMWATER MANAGEMENT PLAN AND/OR OPERATIONS AND MAINTENANCE PLAN, WITH APPROVAL OF THE PLAN(S) BY THE DNREC SEDIMENT AND STORMWATER PROGRAM.
6. FOR ALL STORMWATER EASEMENT AREAS (I.E., ACCESS, MAINTENANCE, OR OFFSITE) AND THE MINIMUM 10-FOOT WIDE ACCESSWAYS TO ALL STORMWATER FACILITIES AND THEIR STRUCTURAL COMPONENTS, REGULAR MOWING SHALL BE PERFORMED TO KEEP THE GRASS 6" OR LESS; NO TREES OR SHRUBS SHALL BE PLANTED, AND ANY FOUND GROWING SHALL BE REMOVED; AND NO PERMANENT STRUCTURES, SUCH AS FENCES OR SHEDS, SHALL BE LOCATED WITHIN THE EASEMENT OR ACCESSWAY.
7. TREES SHALL NOT BE PLANTED, AND SHALL BE REMOVED IF FOUND GROWING, ON AND WITHIN 15 FEET OF ALL POND EMBANKMENTS, ON POND SLOPES OR SAFETY BENCHES, AND WITHIN 10 FEET OF STRUCTURAL COMPONENTS, SUCH AS PIPE INLETS.
8. WHEN THE FACILITY IS EXCAVATED TO REMOVE ACCUMULATED SEDIMENT, THE DISPOSAL AREA SHALL BE PERMANENTLY STABILIZED SO THAT IT DOES NOT RECREATE AN EROSION PROBLEM. ANY MATERIAL TAKEN OFF-SITE SHALL STILL BE UTILIZED OR DISPOSED OF IN AN APPROVED DNREC MANNER.
9. BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL CALL MISS UTILITY AT 811 OR 1.800.282.8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ONSITE.

FILTER STRIP SEQUENCE OF CONSTRUCTION

1. BEFORE SITE WORK BEGINS, FILTER STRIP BOUNDARIES SHOULD BE CLEARLY MARKED.
2. ONLY VEHICULAR TRAFFIC USED FOR FILTER STRIP CONSTRUCTION SHOULD BE ALLOWED WITHIN THE FILTER STRIP BOUNDARY.
3. IF EXISTING TOPSOIL IS STRIPPED DURING GRADING, IT SHALL BE STOCKPILED FOR LATER USE.
4. CONSTRUCTION RUNOFF SHOULD BE DIRECTED AWAY FROM THE PROPOSED FILTER STRIP SITE, USING PERIMETER SILT FENCE, OR, PREFERABLY, A DIVERSION DIKE.
5. FILTER STRIPS REQUIRE LIGHT GRADING TO ACHIEVE DESIRED ELEVATIONS AND SLOPES. THIS SHOULD BE DONE WITH TRACKED VEHICLES TO PREVENT COMPACTION. TOPSOIL AND OR COMPOST AMENDMENTS SHOULD BE INCORPORATED EVENLY ACROSS THE FILTER STRIP AREA, STABILIZED WITH SEED (PERMANENT MIX #3 W/ ADDITIONAL WINTER RYE), AND PROTECTED BY BIODEGRADABLE EROSION CONTROL MATTING OR BLANKETS (SSM TYPE 1).

   EXAMPLE PRODUCTS INCLUDE: NORTH AMERICAN GREEN S75BN & EAST COAST EROSION BLANKETS ECS-1B
6. STORMWATER SHOULD NOT BE DIVERTED INTO THE FILTER STRIP UNTIL THE TURF COVER IS DENSE, WELL ESTABLISHED, AND APPROVED BY THE SITE CCR.

FILTER STRIP MAINTENANCE

FUNCTION:

FILTER STRIPS SPREAD RUNOFF UNIFORMLY OVER A FILTERING SURFACE OF VEGETATION, PROVIDING INFILTRATION AND POLLUTANT REMOVAL. FILTER STRIPS CAN PROVIDE SUBSTANTIAL TREATMENT AS LONG AS THEY ARE NOT OVERWHELMED BY SEDIMENT AND RUNOFF.

INSPECTION:

SEMI-ANNUAL (SPRING AND FALL) & AFTER STORM EVENTS OF 2 INCHES OR MORE.

TRASH AND DEBRIS:

REMOVE TRASH AND DEBRIS ON A REGULAR BASIS.

SOIL:

SOIL SHOULD BE TESTED ANNUALLY TO ENSURE PROPER PH AND FERTILITY INCLUDING: ORGANIC MATTER, MAGNESIUM (MG), PHOSPHORUS (P_2O_5), NITROGEN (N), POTASSIUM (K_2O), AND SOLUBLE SALTS. IF REQUIRED, FERTILIZER SHOULD ONLY BE APPLIED IN THE FALL.

EROSION:

IF BARE SOIL EXISTS WITHIN ANY AREA OF FILTER STRIP, RESEED AND/OR REPLANT AS REQUIRED BASED UPON INSPECTION FINDINGS. STABILIZE APPLICABLE ERODED AREAS WITH ROLLED EROSION CONTROL PRODUCTS (RECP) OR TURF REINFORCING MATS (TRM), AS REQUIRED. IF RECP IS APPLIED, IT IS RECOMMENDED TO USE TRULY BIODEGRADABLE PRODUCTS TO AID IN MOWING MAINTENANCE AND DETER WILDLIFE ENTANGLEMENT. THESE PRODUCTS CAN BE RECOGNIZED AS HAVING "BN" FOR BIONETTING OR "B" FOR BIODEGRADABLE.

MOWING:

MOW AS NEEDED BETWEEN SEPTEMBER 1 AND 30 TO ALLOW FOR REGROWTH OF WINTER COVER WHILE AVOIDING POTENTIAL NEGATIVE EFFECTS ON WILDLIFE SUCH AS NESTING BIRDS. USE MULCHING MOWER TO ENSURE THAT NUTRIENTS ARE RECYCLED. FOR WARM SEASON GRASSES, THE PREVIOUS SEASON'S STALKS SHOULD BE CUT DOWN TO 8-12 INCHES IN EARLY SPRING (MID MARCH), BEFORE NEW SEASON'S GROWTH EMERGES. THE APPROVED PLAN WILL SPECIFY THE MOW HEIGHT. FILTER STRIP VEGETATION SHOULD BE MAINTAINED AT A HEIGHT OF 2 TIMES THE DEPTH OF FLOW DURING THE QUALITY STORM, WHICH IS A MINIMUM 3-INCH HEIGHT.

SEEDING:

VEGETATED FILTER STRIP SEED MIX SHALL BE BED FOR ALL PERMANENT SEEDING IN FILTER STRIP AREAS. SEE SWM1.5 FOR DETAILS.

BUFFERS:

NA

FENCING:

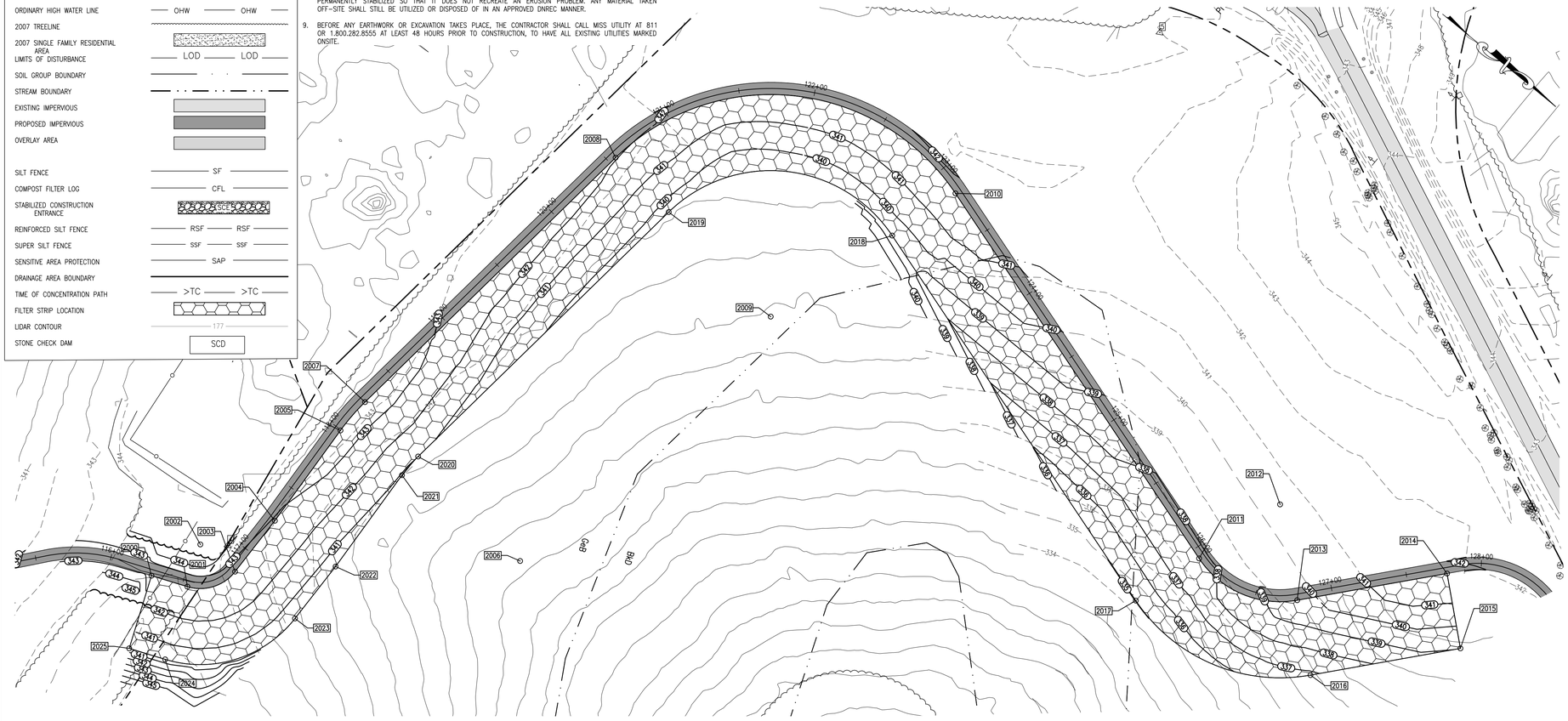
NA

SPECIAL CONSIDERATIONS:

CONSULT THE DELAWARE DEPARTMENT OF AGRICULTURE FOR LICENSING REQUIREMENTS PERTAINING TO THE APPLICATION OF CHEMICALS.

HIRE A PROFESSIONAL:

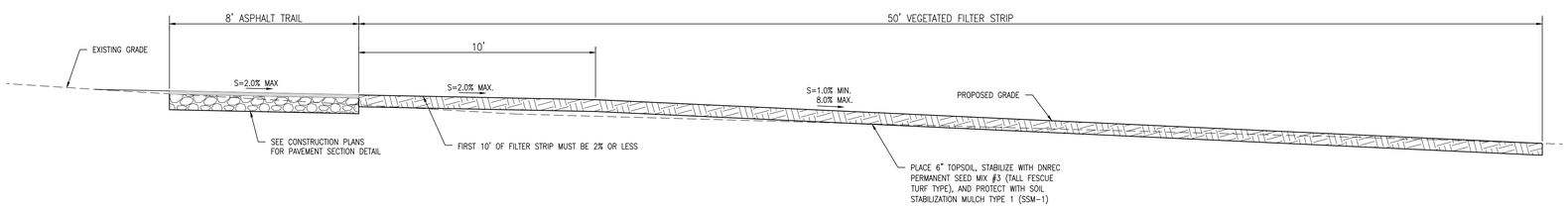
REPAIR OF SEVERE EROSION; VEGETATION CONTROL (CHEMICAL APPLICATION) IF LICENSING REQUIRED BY DE DEPARTMENT OF AGRICULTURE.



FILTER STRIP #1 - PLAN VIEW
SCALE: 1" = 40'

FILTER STRIP LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING
2000	FILTER STRIP	626404.3475	564308.1003
2001	FILTER STRIP	626427.1850	564298.7457
2002	RADIUS	626416.1926	564271.9098
2003	FILTER STRIP	626445.1854	564271.2624
2004	FILTER STRIP	626444.2370	564228.7918
2005	FILTER STRIP	626440.0516	564155.5406
2006	RADIUS	626585.8138	564147.2120
2007	FILTER STRIP	626440.7306	564130.8759
2008	FILTER STRIP	626466.4813	563902.1800
2009	RADIUS	626611.5645	563918.5160
2010	FILTER STRIP	626654.2690	563778.9011
2011	FILTER STRIP	626930.2089	563863.3040
2012	RADIUS	626948.9287	563802.1030
2013	FILTER STRIP	626997.5128	563843.7633
2014	FILTER STRIP	627062.6785	563767.7673
2015	FILTER STRIP	627100.6348	563800.3144
2016	FILTER STRIP	627035.4692	563876.3104
2017	FILTER STRIP	626915.5840	563911.1173
2018	FILTER STRIP	626639.6442	563826.7145
2019	FILTER STRIP	626516.1673	563907.7745
2020	FILTER STRIP	626490.4167	564136.4705
2021	FILTER STRIP	626489.9701	564152.6883
2022	FILTER STRIP	626494.2052	564226.8070
2023	FILTER STRIP	626495.1729	564270.1461
2024	FILTER STRIP	626446.1374	564345.0146
2025	FILTER STRIP	626423.2998	564354.3691



FILTER STRIP NO. 1 (TYP.)
NOT TO SCALE

0' 40' 80' 120'
SCALE: 1" = 40'

REVISIONS:

DATE:	DESCRIPTION:	BY:
11/7/16	REVISED PER DNREC COMMENTS	DLD/ATF
12/12/16	REVISED PER DNREC COMMENTS	ATF

WCCSP TRI-VALLEY TRAIL
SEDIMENT STORMWATER MANAGEMENT PLANS

POST CONSTRUCTION MANAGEMENT PLAN - FILTER STRIP #1

SEAL:

CIVIL ENGINEER:

CENTURY ENGINEERING
CONSULTING ENGINEERS, SURVEYORS
4134 N. DUPONT HWY.
DOVER, DELAWARE 19901

CEI CONTRACT NO. WCCSP-7A

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

DESIGNED BY: ATF

DRAWN BY: ATF

CHECKED BY: AES

DATE: DECEMBER 12, 2016

SCALE: AS NOTED

SHEET NO.: SWM1.8

CONTRACT NO.: 2016-WCCSP-100

G:\PROJECTS\135002.00E (DNREC Civil Engineering Services - 2012)\135002.02_Tri-Valley Trail Concept Plan\CADD FILES\Sheets\Stormwater Management Plans\SWM1-7_FilterStripDesignPlan.DS 2.dwg, 12/12/2016 3:29 PM